

UNIVERSIDADE ESTADUAL DE FEIRA DE SANTANA

MAÍRA XAVIER ARAÚJO

TAXONOMIA DE *Trichomyia* HALIDAY IN CURTIS, 1839
(DIPTERA, PSYCHODIDAE, TRICHOMYIINAE) NA REGIÃO
NEOTROPICAL, COM ÊNFASE NAS ESPÉCIES DO BRASIL

FEIRA DE SANTANA - BA

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Dissertação apresentada à Coordenação do
Programa de Pós-Graduação em Zoologia,
Universidade Estadual de Feira de Santana,
como requisito parcial para obtenção do título
de Mestre em Zoologia.

Orientador: Dr. Freddy Ruben Bravo Quijano

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Feira de Santana, 17 de janeiro de 2013

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(Robert M. May, 1990. Nature 347: p.129-130)

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Nota taxonômica

A presente dissertação é parte dos requisitos para obtenção do título de Mestre no Programa de Pós-graduação em Zoologia da Universidade Estadual de Feira de Santana, e, como tal, não é considerada uma publicação, de acordo com as normas do Código Internacional de Nomenclatura Zoológica (ICZN, 1999: Artigo 8).

Os nomes sugeridos para os novos táxons de *Trichomyia* Haliday in Curtis, 1839 descritos nesta dissertação devem ser considerados provisórios e não devem ser citados em hipótese alguma, com exceção das espécies descritas no Capítulo 2, o qual já se encontra publicado na revista *Zootaxa*.

Resumo

As espécies do gênero *Trichomyia* Haliday in Curtis, 1839 possuem uma grande variação morfológica e necessita de uma urgente revisão genérica. Até o momento, 137 espécies são conhecidas para o gênero, o qual é cosmopolita. A Região Neotropical possui 68 espécies, muitas das quais ocorrem no Brasil. Inicialmente as espécies de *Trichomyia* foram divididas de acordo com o número de segmentos no palpo em dois grupos sem valor taxonômico. Os subgêneros atualmente conhecidos são *Apotrichomyia* Duckhouse, 1978; *Dicrotrichomyia* Duckhouse, 1978; *Dactylotrichomyia* Duckhouse, 1978; *Gondwanotrichomyia* Duckhouse, 1980; *Septemtrichomyia* Bravo, 1999 e *Opisthotrichomyia* Bravo, 2001, sendo os dois últimos exclusivamente neotropicais. O presente trabalho apresenta uma revisão do subgênero *Septemtrichomyia*, a proposta de dois novos subgêneros para a região Neotropical: *Syntrichomyia* sub. nov. e *Brachitrichomyia* subg. nov. além de 51 novas espécies: *T. amazonensis* sp. nov., *T. anira* sp. nov., *T. aquita* sp. nov., *T. araguaensis* sp. nov., *T. atlantica* sp. nov., *T. bahiensis* sp. nov., *T. carenata* sp. nov., *T. bifurcata* sp. nov., *T. caipora* sp. nov., *T. cerdosa* sp. nov., *T. cetrae* sp. nov., *T. cinthiae* sp. nov., *T. colligata* sp. nov., *T. complicata* sp. nov., *T. conchulata* sp. nov., *T. confusa* sp. nov., *T. crinita* sp. nov., *T. dentata* sp. nov., *T. elongata* sp. nov., *T. grossa* sp. nov., *T. hileiana* sp. nov., *T. hispida* sp. nov., *T. horrida* sp. nov., *T. imarui* sp. nov., *T. incrustabilis* sp. nov., *T. inedita* sp. nov., *T. jezeki* sp. nov., *T. lobata* sp. nov., *T. longa* sp. nov., *T. longiseta* sp. nov., *T. manacapurensis* sp. nov., *T. mariensis* sp. nov., *T. mendesi* sp. nov., *T. mineira* sp. nov., *T. nortensis* sp. nov., *T. notata* sp. nov., *T. paraensis* sp. nov., *T. pitinguensis* sp. nov., *T. plumata* sp. nov., *T. pseudosilvatica* sp. nov., *T. pua* sp. nov., *T. puntarensis* sp. nov., *T. ribeiroi* sp. nov., *T. rondonensis* sp. nov., *T. sertaneja* sp. nov., *T. sinuosa* sp. nov., *T. spinicauda* sp. nov., *T. spinosa* sp. nov., *T. stangae* sp. nov., *T. ituberensis* sp. nov., *T. truncata* sp. nov. Também, a redescritção de *T. inermis* Barretto, uma lista global de espécies de *Trichomyia* e uma chave de identificação para os machos das espécies neotropicais são apresentados. Com o presente trabalho, 188 espécies neotropicais passaram a ser conhecidas, ou seja, houve um aumento de 30% e a região Neotropical passou a apresentar uma riqueza maior que toda aquela presente nas demais regiões biogeográficas.

Palavras chave: psicodídeos, taxonomia, novas espécies, novos registros.

Abstract

The species of the genus *Trichomyia* Haliday in Curtis, 1839, shows a wide morphological variation and a revision is urgently needed. Hitherto, 137 species were known for the genus, which is cosmopolitan. The Neotropical region was 68 species, most of them in Brazil. Species of *Trichomyia* were divided according to the number of palpus segments in two groups without taxonomic value. The subgenera currently known are *Apotrichomyia* Duckhouse, 1978; *Dicrotrichomyia* Duckhouse, 1978; *Dactylotrichomyia* Duckhouse, 1978; *Gondwanotrichomyia* Duckhouse, 1980; *Septemtrichomyia* Bravo, 1999 and *Opisthotrichomyia* Bravo, 2001, being the last two exclusively Neotropical. This paper presents a revision of the subgenus *Septemtrichomyia*, proposes two new Neotropical subgenera: *Syntrichomyia* sub. nov. and *Brachitrichomyia* subg. nov.; and 51 new species: *T. amazonensis* sp. nov., *T. anira* sp. nov., *T. aquita* sp. nov., *T. araguaensis* sp. nov., *T. atlantica* sp. nov., *T. bahiensis* sp. nov., *T. carenata* sp. nov., *T. bifurcata* sp. nov., *T. caipora* sp. nov., *T. cerdosa* sp. nov., *T. cetrae* sp. nov., *T. cinthiae* sp. nov., *T. colligate* sp. nov., *T. complicata* sp. nov., *T. conchulata* sp. nov., *T. confusa* sp. nov., *T. crinita* sp. nov., *T. dentata* sp. nov., *T. elongata* sp. nov., *T. grossa* sp. nov., *T. hileiana* sp. nov., *T. hispida* sp. nov., *T. horrida* sp. nov., *T. imarui* sp. nov., *T. incrustabilis* sp. nov., *T. inedita* sp. nov., *T. jezeki* sp. nov., *T. lobata* sp. nov., *T. longa* sp. nov., *T. longiseta* sp. nov., *T. manacapurensis* sp. nov., *T. mariensis* sp. nov., *T. mendesi* sp. nov., *T. mineira* sp. nov., *T. nortensis* sp. nov., *T. notata* sp. nov., *T. paraensis* sp. nov., *T. pitinguensis* sp. nov., *T. plumata* sp. nov., *T. pseudosilvatica* sp. nov., *T. pua* sp. nov., *T. puntarensis* sp. nov., *T. ribeiroi* sp. nov., *T. rondonensis* sp. nov., *T. sertaneja* sp. nov., *T. sinuosa* sp. nov., *T. spinicauda* sp. nov., *T. spinosa* sp. nov., *T. stangae* sp. nov., *T. ituberensis* sp. nov., *T. truncatasp.* nov. Also, a redescription of *T. inermis* Barretto, a global list of species of *Trichomyia* and a key for males of the Neotropical species are presented. Presently 188 neotropical species are known, increasing in 30% the total number of known species. Certainly the Neotropical fauna is the richest between all the other faunas of the genus in the biogeographical regions of the world.

Key words: psychodid, taxonomy, new species, new records.

Capítulo 1:
Introdução Geral

Introdução

Diptera, grupo que se caracteriza pela presença de apenas um par de asas, é uma das maiores ordens de insetos com aproximadamente 159 mil espécies conhecidas e classificadas em cerca de 210 famílias (PAPE *et al.* 2011).

Psychodidae é uma dessas famílias constituída por dípteros de tamanho pequeno a médio, entre 1-5 mm de comprimento (WAGNER & IBÁÑEZ-BERNAL 2009), de corpo densamente piloso com voo curto e errático (QUATE & VOCKEROTH 1981) e cuja característica mais marcante é a presença de sensilas (ascóides) translúcidas de vários tamanhos e formatos nos flagelômeros (WAGNER & IBÁÑEZ-BERNAL 2009). Representantes da família são encontrados em todas as regiões biogeográficas do planeta, exceto na Antártida (QUATE & VOCKEROTH 1981) e, atualmente, são reconhecidas 3.026 espécies (PAPE *et al.* 2011).

A classificação de Psychodidae mais aceita atualmente inclui seis subfamílias: Phlebotominae Rondani, 1840; Bruchomyiinae Alexander, 1920; Psychodinae Rondani, 1856; Trichomyiinae Tonnoir, 1922, Sycoracinae Jung, 1954 e Horaiellinae Enderlein, 1936. Todas as subfamílias, com exceção de Horaiellinae, são encontradas na região Neotropical (DUCKHOUSE 1973).

O ciclo de vida de Psychodidae em geral inclui ovo, quatro estágios larvais, pupa e uma fase adulta (WAGNER 1997). O desenvolvimento larval geralmente está associado a lugares úmidos ou ainda a águas lânticas (VAILLANT 1963), porém, algumas espécies podem ser encontradas em lugares semidesérticos (QUATE & VOCKEROTH 1981). As espécies podem se desenvolver em diversos substratos, tais como: matéria orgânica em decomposição, superfície molhada de substrato rochoso, musgos, conchas de moluscos mortos, cascalho e areia, fendas de árvores, fungos, substratos contaminados e madeira em decomposição (JEŽEK *et al.* 2010). Adultos são principalmente noturnos e durante o dia são encontrados em lugares com sombras ou baixa luminosidade, como cavernas e em buracos de árvores e rochas (QUATE & VOCKEROTH 1981), bem como repousando sobre folhas de árvores e arbustos (DUCKHOUSE 1972).

Dentre os Psychodidae, os Phlebotominae possuem hábitos hematófagos e muitas das espécies podem ser vetores de algumas doenças, como por exemplo, a leishmaniose (FORATTINI 1973). Por sua vez, entre os Psychodinae, algumas espécies cosmopolitas comuns em locais de tratamento de esgoto, podem causar miasas quando larvas e ataques de asma quando adultos por meio das cerdas presentes em seus corpos (FORATTINI 1973, WAGNER *et al.* 2008).

A subfamília Trichomyiinae é reconhecida por apresentar olhos sem ponte ocular, em uma condição designada dicóptica, antena com 13 flagelômeros mais um apículo oval no último segmento, escapo menor ou igual em comprimento que o pedicelo, palpos curtos, formados por três ou quatro segmentos. Asa curta e larga, arredondada ou ligeiramente acuminada no ápice, Rs composta por apenas uma veia entre R e a forquilha medial, Sc é bem desenvolvida, terminando em C e veia transversal sc-r presente (DUCKHOUSE 1965; BRAVO 1996). O abdome em Trichomyiinae está conectado com o metatórax, sendo o tergito I e esternito I duas placas distintas (WAGNER 1982).

Trichomyia Haliday in Curtis, 1839 é o único gênero aceito para as espécies recentes de Trichomyiinae; as quais apresentam uma grande variação morfológica (DUCKHOUSE 1972), devido a isso, Wagner & Ibáñez-Bernal (2009) sugeriram uma urgente revisão genérica. Tal gênero é reconhecido pelas características citadas acima para a subfamília, além da CuA₂ longa, que se estende além da forquilha medial, próximo a margem da asa (WAGNER & IBÁÑEZ-BERNAL 2009). Outra característica do gênero é a inversão da terminália masculina, que gira 180° em relação ao eixo horizontal, sendo que a torção ocorre nos segmentos 8 e 9, cada um girado 90° quando comparado com o anterior (WAGNER 1982). O edeago das espécies recentes de *Trichomyia* é simétrico e o cerco não tem tenáculas, cerdas diferenciadas observadas nos cercos de Psychodinae (QUATE 1999). A terminália da fêmea é composta por um par de cercos largos e achatados; uma placa subgenital simples (= esternito 8) (BARRETTO 1961) e um par de espermatecas não esclerotizadas com formato de saco (WAGNER & IBÁÑEZ-BERNAL 2009).

As larvas de *Trichomyia* têm sido encontradas geralmente em madeira em decomposição, possuem corpo cilíndrico, delgado, com segmentos não anelares, cerdas simples e muito pequenas. Além disso, há projeções nos segmentos abdominais 1-7 usados para locomoção e uma antena de um segmento, a qual se projeta (QUATE & VOCKEROTH 1981). São fracamente esclerotizadas, com a presença ou ausência de

cerdas curtas e não modificadas (BORKENT & ROTHERAY 2009). Keilin & Tate (1937) na descrição da larva de *Trichomyia urbica* Haliday, 1839 observaram que, diferente de todos os outros psicodídeos, elas formavam galerias em troncos podres de árvores, da mesma forma que as larvas xilófagas.

O gênero *Trichomyia* foi criado por Haliday e publicado no trabalho de Curtis (1839) para abrigar apenas uma espécie: *Trichomyia urbica* Haliday, 1839, a qual foi descrita somente a partir da venação da asa. Nenhuma descrição da terminália havia sido feita até a redescrição de Satchell (1956) de espécimes depositados no Museu Britânico. O gênero permaneceu representado por uma única espécie até a descrição de *Trichomyia cirrata* Coquillet, 1902, a primeira espécie para a Região Neotropical. Duckhouse (1973) elaborou o primeiro e único catálogo para a região Neotropical, no entanto, não foram incluídas espécies do Chile descritas por Duchouse (1972), provavelmente porque estas últimas ainda não tinham sido publicadas até o aparecimento do catálogo. Entre os anos de 1973 e 1993 os estudos com *Trichomyia* na Região Neotropical cessaram, até Wagner (1993) publicar uma espécie para o Caribe. A partir de então os estudos com *Trichomyia* avançaram consideravelmente e as espécies tiveram um acréscimo de aproximadamente 70% de acordo com o total de espécies conhecidas.

O gênero *Trichomyia* é cosmopolita e apresenta 137 espécies descritas, sendo para a Região Neártica quatro espécies, para a Região Afrotropical cinco espécies, para a Região Oriental sete espécies, para a Região Paleártica oito espécies e para Australásia e Oceania 46 espécies. Para a Região Neotropical são conhecidas sessenta e oito espécies, sendo uma delas considerada *species inquirenda* (*Trichomyia fairchildi* Vargas & Díaz-Nájera) (DUCKHOUSE 1972, 1973; WAGNER 1993, 1999; WAGNER & MASTELLER 1996; QUATE 1996, 1999; BRAVO 1999, 2000, 2001a,b,c, 2002; ALEXANDER *et al.* 2001; IBÁÑEZ-BERNAL 2004; BEJARANO *et al.* 2009, 2010; PÉREZ-DORIA *et al.* 2010).

Classificações mais abrangentes referentes às afinidades entre as espécies de *Trichomyia* usaram o número de segmentos do palpo maxilar (BRAVO 2000). De acordo com Duckhouse (1965, 1978) as espécies de *Trichomyia* estão classificadas em Grupo A, as quais apresentam quatro segmentos no palpo maxilar e Grupo B que apresentam um palpo curto com três segmentos.

Hennig (1972) inferiu que o Grupo B seria provavelmente monofilético, porém o Grupo A não. Por outro lado, Duckhouse (1978) questionou este comentário por

considerar que faltariam caracteres críticos para tal consideração e colocou os Grupos A e B apenas como divisões úteis sem valor taxonômico.

Duckhouse (1978) ainda discutindo estes agrupamentos excluiu algumas espécies neotropicais com quatro segmentos no palpo, sendo os dois primeiros parcialmente fundidos e as considerou como espécies problema. Segundo Bravo (2000), nos grupos basais de Diptera, assim como nas espécies de Bruchomyiinae e Phlebotominae, o palpo maxilar é formado por cinco segmentos, número considerado como plesiomórfico. A redução para quatro segmentos do palpo maxilar, considerada uma condição derivada, é observada nas espécies de Sycoracinae, Psychodinae e algumas espécies de Trichomyiinae. A fusão parcial dos dois primeiros segmentos do palpo em algumas espécies neotropicais de *Trichomyia* seria o primeiro passo antes da redução para três segmentos e de acordo com isso tais espécies devem ser reconhecidas como uma linhagem evolutiva independente dentro de *Trichomyia* (BRAVO 2000).

Duckhouse (1978) propôs três subgêneros para espécies incluídas no Grupo B da Austrália e Papua-Nova Guiné, sendo eles: *Apotrichomyia* Duckhouse, 1978, que tem como característica principal uma projeção sinuosa na lateral distal dorsal do gonocoxito e uma projeção curta com dentes pequenos e fortes na porção lateral distal ventral também no gonocoxito; *Dicrotrichomyia* Duckhouse, 1978, subgênero reconhecido pela forma dos gonocoxitos, que carecem de um processo digitado de cerdas, sendo descoberto, esclerotizado e espiniforme mediodorsalmente; e *Dactylotrichomyia* Duckhouse, 1978 que podem ser reconhecidas pela presença de uma projeção curta, lateral distal ventral do gonocoxito, dirigida medialmente e com cerdas nodulares no ápice, além de gonóstilos geralmente com lobo ventral.

Para o Grupo A foi proposto o subgênero *Gondwanotrichomyia* Duckhouse, 1980 com base em algumas espécies do sul da África e Nova Zelândia, as quais apresentavam como características quatro palpômeros bem separados, um epândrio com um longo gancho afiado na sua superfície, cercos ligados e uma linha posterior única de cerdas sensoriais (DUCKHOUSE 1980).

Bravo (1999, 2001a) descreveu dois subgêneros para espécies da região Neotropical, *Septemtrichomyia* Bravo, 1999, o qual inclui espécies que apresentam um conjunto de 3-5 longas cerdas unidas em lobos presentes nas laterais do tergito 7 da terminália masculina e *Opisthotrichomyia* Bravo, 2001 que agrupa espécies que apresentam um lobo interno do gonocoxito com cerdas finas e compridas, além dos

gonocoxitos ventrais ao edeago e palpo maxilar com quatro segmentos, sendo os dois primeiros parcialmente fundidos.

O objetivo deste trabalho foi analisar qual o atual conhecimento taxonômico de *Trichomyia* na Região Neotropical, de forma a também incrementar o que existe para a diversidade do gênero nessa região, com ênfase nas espécies do Brasil. No capítulo 2 é feita uma revisão do subgênero *Septemtrichomyia* com a descrição de cinco novas espécies. O capítulo 3 é a proposta de um novo subgênero para algumas espécies do Panamá e Brasil, com a descrição de uma nova espécie. O capítulo 4 apresenta outra proposta de subgênero, incluindo a redescrição de *Trichomyia inermis*, Barretto, 1954, uma nova espécie e uma lista mundial das espécies de *Trichomyia*. O capítulo 5 foi criado para a descrição das 44 novas espécies que não foram incluídas em nenhum subgênero conhecido.

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Capítulo 2:

Taxonomy of Neotropical *Trichomyia* (*Septemtrichomyia*) Bravo (Diptera, Psychodidae, Trichomyiinae) with descriptions of five new species

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**Taxonomy of Neotropical *Trichomyia* (*Septemtrichomyia*) Bravo (Diptera,
Psychodidae, Trichomyiinae) with descriptions of five new species**

Resumo

O subgênero *Septemtrichomyia* Bravo do gênero *Trichomyia* Haliday in Curtis foi originalmente proposto para incluir quatro espécies Neotropicais: *T. botosaneanui* Wagner, *T. bou* Bravo, *T. cauga* Bravo e *T. mishi* Bravo. Cinco novas espécies são descritas para esse subgênero: *Trichomyia atlantica* sp. nov., *T. imarui* sp. nov., *T. jezeki* sp. nov., *T. amazonensis* sp. nov. and *T. sertaneja* sp. nov.; cinco espécies previamente descritas são incluídas em *Septemtrichomyia*: *T. dolichakis* Quate, *T. dolichopogon* Alexander, Freitas & Quate, *T. dolichothrix* Quate, *T. pedrabranquensis* Bravo e *T. sattelmairi* Wagner & Masteller e uma chave para os machos das 14 espécies Neotropicais de *Septemtrichomyia* é apresentada.

Palavras chave: Brasil, novos registros, psicodídeo, subgênero.

Abstract

Subgenus *Septemtrichomyia* Bravo of genus *Trichomyia* Haliday in Curtis was originally proposed to include four Neotropical species: *T. botosaneanui* Wagner, *T. bou* Bravo, *T. cauga* Bravo and *T. mishi* Bravo. Five new species are described for this subgenus: *Trichomyia atlantica* sp. nov., *T. imarui* sp. nov., *T. jezeki* sp. nov., *T. amazonensis* sp. nov. and *T. sertaneja* sp. nov.; five previously described species are included in *Septemtrichomyia*: *T. dolichakis* Quate, *T. dolichopogon* Alexander, Freitas & Quate, *T. dolichothrix* Quate, *T. pedrabranquensis* Bravo and *T. sattelmairi* Wagner & Masteller. A key to males of the 14 Neotropical species of *Septemtrichomyia* is presented.

Key words: moth flies, Brazil, new records, psychodid, subgenus.

Introduction

The cosmopolitan genus *Trichomyia* Haliday in Curtis includes 67 extant Neotropical species and one *species inquirenda* (*Trichomyia fairchildi* Vargas & Díaz-Nájera), all apparently endemic to that region (Duckhouse 1972, 1973; Wagner 1993, 1999; Wagner & Masteller 1996; Quate 1996, 1999; Bravo 1999, 2000, 2001a,b,c, 2002; Alexander *et al.* 2001; Ibáñez-Bernal 2004; Bejarano *et al.* 2009, 2010; Pérez-Doria *et al.* 2010). Two subgenera of *Trichomyia* currently with a Neotropical distribution were recently described by Bravo (1999, 2001a): *Opisthotrichomyia* Bravo and *Septemtrichomyia* Bravo. *Septemtrichomyia*, with four species is known from Brazil (*T. mishi* Bravo, *T. cauga* Bravo and *T. bou* Bravo) and the Caribbean Island of Martinica (*T. botosaneanui* Wagner).

In the present paper we describe five new species of subgenus *Septemtrichomyia* collected from Brazil. In addition, we comment on five previously described species and include them in *Septemtrichomyia*. A key for the identification of males of the 14 Neotropical species is included.

Material and Methods

Specimens examined in this study are deposited in the *Coleção de Invertebrados do Instituto Nacional de Pesquisa da Amazônia*, Amazonas, Brazil (INPA) and *Coleção Entomológica Prof. Johann Becker do Museu de Zoologia da Universidade Estadual de Feira de Santana*, Bahia, Brazil (MZFS), as indicated for each species. Specimens from Bahia were collected with CDC light trap. All specimens were treated with 10% KOH, dehydrated and mounted in Canada balsam. General morphological terminology follows that of Cumming & Wood (2009). Terminology for the antenna of *Trichomyia* is that of Ibáñez-Bernal (2004), while terminology for the wings follows that of Duckhouse (1972). Terminology for the male terminalia follows Sinclair (2000). Species of subgenus *Septemtrichomyia* have elongate bristles on tergum 7 in the males that are equal in length to 0.5 to 0.9 times the width of the tergum. Here we refer to these macrotrichia as “elongate bristles on tergum 7”.

Taxonomy

Trichomyia (*Septemtrichomyia*) Bravo

T. (Septemtrichomyia) Bravo, 1999: 1–2. Type species: *Trichomyia botosaneanui* Wagner, by original designation.

Other species included: *T. amazonensis* sp. nov. (Brazil), *T. atlantica* sp. nov. (Brazil), *T. bou* Bravo (Brazil), *T. cauga* Bravo (Brazil), *T. dolichakis* Quate (Costa Rica, Panama), *T. dolichopogon* Alexander, Freitas & Quate (Brazil), *T. dolichothrix* Quate (Panama), *T. imarui* sp. nov. (Brazil), *T. jezeki* sp. nov. (Brazil), *T. mishi* Bravo (Brazil), *T. pedrabranquensis* Bravo (Brazil), *T. sattelmairi* Wagner & Masteller (Puerto Rico) and *T. sertaneja* sp. nov. (Brazil).

According to Alexander *et al.* (2001), *Trichomyia pedicillata* Satchell, known only from the type locality in Panama, also has three pairs of long, hooked bristles on tergum 7, although the authors did not provide a formal description of this character nor of the material studied. This character was not included in the original description by Satchell (1956). We did not have access to the type material of *T. pedicillata*, and until new observations can be made, this species is not included in *Septemtrichomyia*.

Diagnosis. Head subcircular. Antenna with 13 pyriform and slightly asymmetrical flagellomeres. Maxillary palpus 3-segmented, first palp segment with inner sensorial pit; medial fork at the approximate center of the wing. Tergum 7 with pair of lateral lobes, each one with 3–5 elongate bristles on tergum 7, sometimes fused (as a single bristle). Hypandrium fused with gonocoxites. Gonocoxite with one posterior arm convergent to the midline, usually with rod-like setae on the inner margin. Gonostylus unsclerotized, ventrally articulated to the gonocoxite near the apex.

Comments. Bravo (1999) proposed that the gonostylus of the subgenus *Septemtrichomyia* has two distal arms, one dorsal arm and one ventral. However, based on a reexamination of the type specimens of *T. bou*, *T. cauga* and *T. mishi* and studies of new material, it is clear that there is only one arm (*i.e.* the second arm is actually the gonocoxite projected posteriorly). Bravo (1999) misinterpreted the gonostylus, which is ventral and articulated near the apex in all of the species of this subgenus.

Key to males of Neotropical *Septemtrichomyia*

1 Group of elongate bristles on tergum 7 with straight apices (Figs. 18, 31, 36)	2
- Group of elongate bristles on tergum 7 with curved apices (Figs. 4, 21)	7
2 Apex of arm of gonocoxite with three hairs (Wagner 1993, fig. 10)	
..... <i>T. botosaneanui</i> Wagner	
- Apex of arm of gonocoxite with a row of rod-like setae (Figs. 6, 13, 38)	3
3 Presence of spine-like projection at base of arm of gonocoxite (Fig. 17)	
..... <i>T. sertaneja</i> sp. nov.	
- Absence of spine-like projection at base of arm of gonocoxite	4
4 Internal margin of apex of gonocoxite with a row of rod-like setae (Bravo 1999, fig. 24)	<i>T. mishi</i> Bravo
- External margin of apex of gonocoxite with a row of rod-like setae (Figs. 31, 38)	5
5 Terminalia with one pair of parameres (Fig. 31).....	<i>T. amazonensis</i> sp. nov.
- Terminalia with two pairs of parameres (Fig. 38)	6
6 Aedeagal apodeme long, 4.0 times the length of gonostylus (Fig. 38)	
..... <i>T. imarui</i> sp. nov.	
- Aedeagal apodeme short, 0.5 times the length of gonostylus (Bravo 2001b, fig. 28)	
..... <i>T. pedrabranquensis</i> Bravo	
7 Gonocoxites with two dorsal appendages, basal one shorter, angular, distal one elongated and straight (Wagner & Masteller 1996, fig. 22)	
..... <i>T. sattelmairi</i> Wagner & Masteller	
- Gonocoxites never with two dorsal appendages	8
8 Parameres, in dorsal view, with medial arm (Bravo 1999, fig. 5)	<i>T. bou</i> Bravo
- Parameres, in dorsal view, never with medial arm	9
9 R_{2+3} and R_2 subequal in length	10
- R_{2+3} about 1.5 times the length of R_2	12
10 Apex of arm of gonocoxite with a row of rod-like setae (Alexander et al. 2001, fig. 3)	<i>T. dolichopogon</i> Alexander, Freitas & Quate
- Apex of arm of gonocoxite with setae	11
11 Ejaculatory apodeme long, 2.5 times the length of the gonostylus (Figs. 25, 26)	
..... <i>T. jezeki</i> sp. nov.	
- Ejaculatory apodeme short, 0.7 times the length of the gonostylus (Quate 1996, fig. 4c)	<i>T. dolichakis</i> Quate
12 Parameres triangular in dorsal view (Bravo 1999, fig. 13)	<i>T. cauga</i> Bravo
- Parameres never triangular in dorsal view, elongated	13

- 13 Ejaculatory apodeme short, 0.7 times the length of the paramere (Quate 1999, fig. 1F) *T. dolichothrix* Quate
 - Ejaculatory apodeme long, 1.7 times the length of the paramere
 *T. atlantica* sp. nov.

***Trichomyia bou* Bravo**

Trichomyia bou Bravo, 1999: 2–3, figs. 1–7.

Comments. The males of *T. bou* can be recognized by the presence of the following characters: elongate bristles on tergum 7 with curved apices; one pair of divergent, apically pointed parameres dorsally with medial arm; ventral arm of gonocoxite present; ejaculatory apodeme S-shaped in ventral view (Bravo 1999, Figs. 4–5).

Material examined. Type material: Holotype #m, BRAZIL, state of Bahia, Itabuna, Reserva Ecológica CEPEC 10.X.1986, Paulo S. Terra leg. (MZFS).

Other material examined: BRAZIL, Bahia, P. Seguro, Est. Vera Cruz, 3 #m, 5.XII.2009, F. Bravo leg. (MZFS).

Distribution. Collected from Itabuna and Porto Seguro (new record) in Bahia, Brazil.

***Trichomyia cauga* Bravo**

Trichomyia cauga Bravo, 1999: 3, figs. 8–15.

Comments. Males of *T. cauga* can be recognized by the presence of the following characters: elongate bristles on tergum 7 with curved apices; one pair of parameres triangular-shaped in dorsal and lateral views (Bravo 1999, Figs. 12, 13).

Material examined. Type material: Holotype #m, BRAZIL, Bahia, Itabuna, Reserva Ecológica CEPEC 04.VI.1986, Paulo S. Terra leg. (MZFS).

Distribution. Collected only from Itabuna in Bahia, Brazil.

***Trichomyia mishi* Bravo**

Trichomyia mishi Bravo, 1999: 3–4, figs. 16–24.

Comments. The males of *T. mishi* can be recognized by the presence of one pair of parameres, the medial one pyriform and the lateral one elongated and S-shaped (Bravo 1999, Fig. 23).

Material examined. Type material: Holotype #m, BRAZIL, state of Rio de Janeiro, Represa do Rio Grande, IX.1969, M. Alvarenga leg. (MZFS).

Distribution. Collected only from Represa do Rio Grande, Mangaratiba in Rio de Janeiro, Brazil.

***Trichomyia (Septemtrichomyia) pedrabranquensis* Bravo**

Trichomyia pedrabranquensis Bravo, 2001b: 131–132, Figs. 24–28.

Comments. Bravo (2001b) described *Trichomyia pedrabranquensis* based only on the holotype male; the elongate bristles on tergum 7 were not mentioned. These structures were lost in the holotype, but examinations of new specimens from the type locality and from Coração de Maria showed that elongate bristles are present on tergum 7. Bravo (2001b) misinterpreted the position of the gonostylus in this species, similar to the misinterpretation of the species originally described in *Septemtrichomyia*.

T. pedrabranquensis can be recognized by its short ejaculatory apodeme in dorsal view, 0.5 times the length of gonostylus, by the presence of a row of rod-like setae on the distal margins of the gonocoxites, by the wide apex of the gonostylus, not ending in acute apex, and by the triangular and wide parameres.

Material examined. Type material: Holotype #m, BRAZIL, Bahia, Serra da Jibóia, 24.VIII.2000, F. Bravo leg. (MZFS).

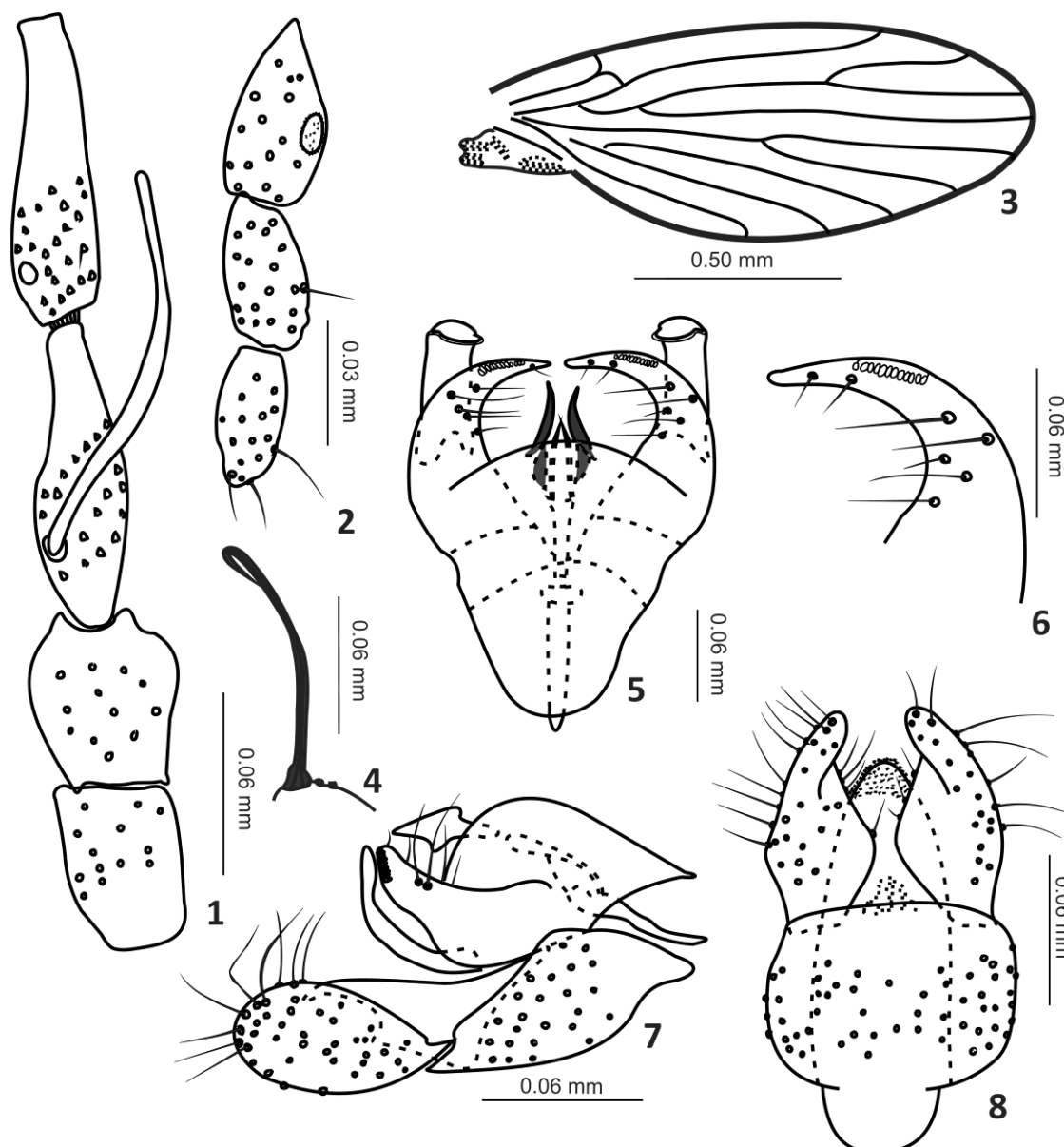
Other material examined. BRAZIL, Bahia, Santa Terezinha, Serra da Jibóia, 1 #m, 27–28.III.2009, T. Zacca, E. Menezes, W. Pina leg. (MZFS); Serra da Jibóia, 1 #m, 29.XI.2008, T. Zacca & E. Alvim, leg. (MZFS). Bahia, Coração de Maria, 1 #m, 14.XII.2002, I. Castro leg. (MZFS); Coração de Maria, 2 #m, I Castro leg. 18.XII. 2003 (MZFS); Coração de Maria, 1 #m, 06.VI.2002, F. Bravo leg. (MZFS).

Distribution. Collected from Serra da Jibóia and Coração de Maria (new record) in Bahia, Brazil.

Trichomyia atlantica Araújo & Bravo sp. nov.

(Figs. 1–8)

Diagnosis. Elongate bristles on tergum 7 with straight apices. Gonocoxite with posterior arm curved to the midline, apically pilose with row of 12–13 small rode-like sensilla. One pair of parameres, in dorsal view digitiform, sclerotized, ending in a point. Ejaculatory apodeme 1.2 times the length of the paramere.



Figs. 1–8. *Trichomyia atlantica* sp. nov. 1. Scape, pedicel and basal flagellomeres; 2. Palpus; 3. Right wing; 4. Elongate bristles on tergum 7 (paratype); 5. Male terminalia, dorsal; 6. Arm of gonocoxite 7. Male terminalia, lateral; 8. Cerci, epandrium, hypopod.

Description. Male. Head subcircular. Antenna incomplete in the specimens studied; scape longer than pedicel; basal flagellomeres pyriform and eccentric; ascoid 1.3 times the length of flagellomere (Fig. 1). Palpus formula 1.0:0.7:0.7 (Fig. 2). Wing (Fig. 3): Sc complete; R₅ complete at base; r-m and m-cu absent. Elongate bristles of tergum 7 with curved apices (Fig. 4). Male terminalia: Hypandrium fused with gonocoxite (Fig. 5). Gonocoxite with posterior arm curved to the midline, apex acute, apically pilose with row of 12–13 small, rod-like setae (Figs. 5, 6). Gonostylus digitiform with apex curved upward (Figs. 5, 7). One pair of parameres present, in dorsal view thin, digitiform, sclerotized, with acute apex (Figs. 5, 7); arrow-shaped in lateral view (Fig. 7). Aedeagus short, approximately 0.75 times the length of parameres (Fig. 5). Aedeagal apodeme 1.2 times the length of parameres. (Figs. 5, 7). Epandrium wider than long (Fig. 8). Cercus pilose, elliptical in ventral view (Figs. 8). Epipropect shorter than hypoproct, both with apical micropilosity (Fig. 8).

Material examined. Holotype #m, BRAZIL, Bahia, Ituberá, 12.VI.2002, F. Bravo leg. (MZFS); 13 paratypes: 1 #m, same locality, date and collector as holotype (MZFS); 6 #m, same locality and collector as holotype, 01.VII.2003 (MZFS); 4 #m, Bahia, Cachoeira, Fazenda Villa Rial, 20.VII.2004, F. Bravo leg. (MZFS); 1 #m, Bahia, Cachoeira, 24.V.2004, F. Bravo leg. (MZFS); 1 #m, Bahia, Porto Seguro, Estação Vera Cruz, 05.XII. 2002, F. Bravo leg. (MZFS).

Distribution. Known from Cachoeira and Ituberá in Bahia, Brazil.

Etymology. *atlantica* was based on the Atlantic forest; the Brazilian biome where this species was collected.

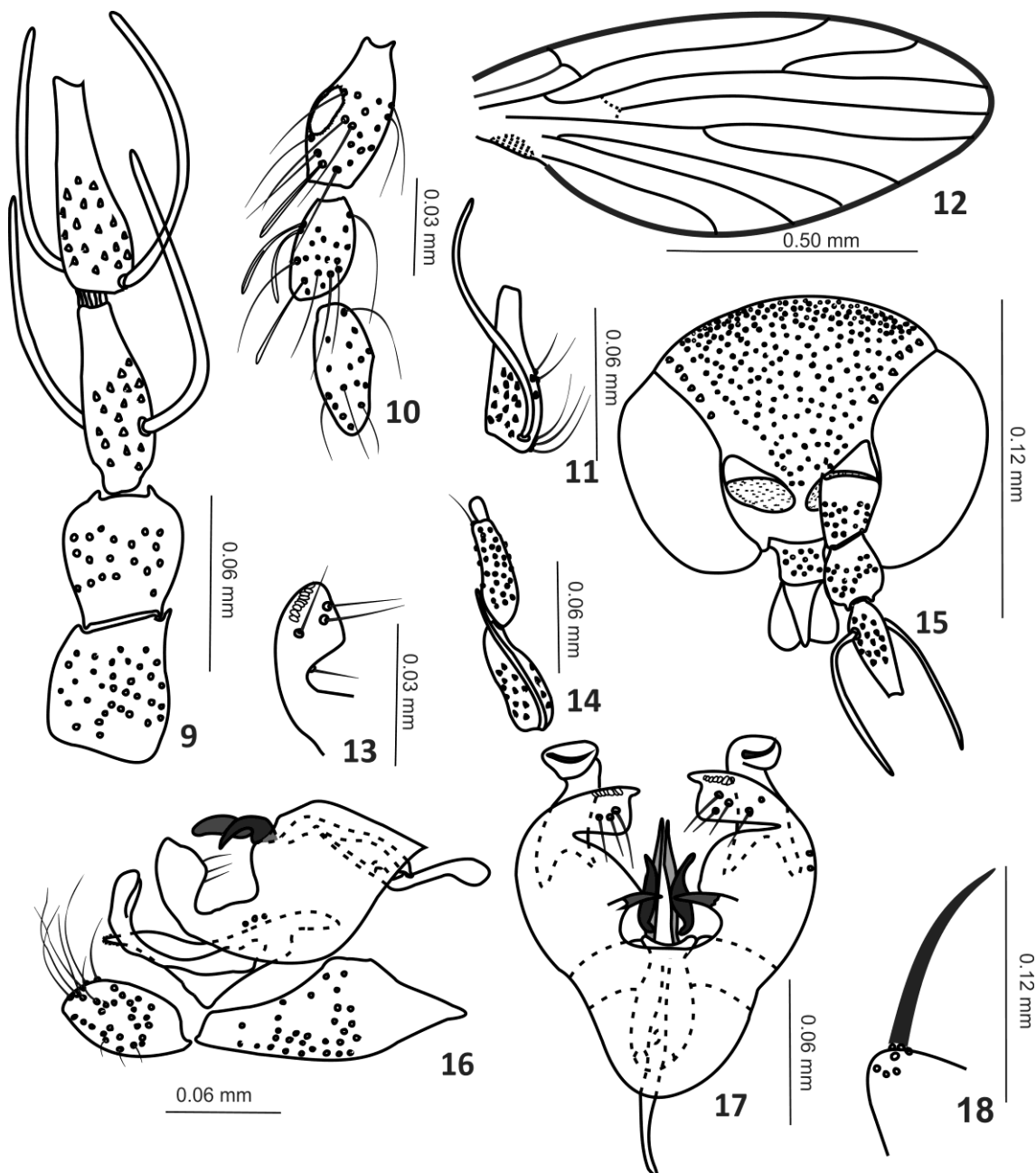
Comments. The male terminalia of *T. atlantica* and *T. bou* have similar posterior gonocoxite arms with acute apices. This character is not present in any of the other species of *Trichomyia*. *T. atlantica* and *T. bou* can be differentiated by comparison of the ejaculatory apodeme which is shorter in *T. atlantica*, and by the shape of paramere, with a short arm in *T. atlantica* and a long arm in *T. bou*.

***Trichomyia sertaneja* Araújo & Bravo sp. nov.**

(Figs. 9–18)

Diagnosis. Apex of gonocoxite thumb-like, curved to the midline, with a row of seven small rod-like setae. Gonostylus with basal, sclerotized spine on internal margin. One

pair of triangular parameres. Ejaculatory apodeme shorter than gonostylus extending beyond the margin of the gonocoxites.



Figs. 9–18. *Trichomyia sertaneja* sp. nov. 9. Scape, pedicel and basal flagellomeres; 10. Palpus; 11. Third flagellomere with ascoid; 12. Right wing; 13. Apex of gonocoxite; 14. Flagellomeres 12 and 13; 15. Head; 16. Male terminalia, lateral; 17. Male terminalia, dorsal; 18. Elongate bristles on tergum 7.

Description. Male. Head subcircular (Fig. 15). Antenna with 13 flagellomeres; scape as long as pedicel; pedicel subspherical; flagellomeres pyriform and eccentric; last flagellomere with apiculus (Fig. 9, 11, 14); basal ascoids 1.5 times the length of

flagellomere (Figs. 9, 11, 14); apical ascoids almost the same length as flagellomeres (Fig. 9); last flagellomere without ascoid and with oval apiculus (Fig. 14). Palpus formula 1.0:0.7:0.9 (Fig. 10). Wing (Fig. 12): Apex of Sc and sc-r unsclerotized; R₅ complete at base; m-cu absent. Elongated bristles of tergum 7 with straight apices (Fig. 18). Male terminalia: Hypandrium fused with gonocoxite (Fig. 17). Gonocoxite with posterior arm curved to the midline, apex thumb-like with row of seven small rod-like setae (Fig. 13, 17); presence of spine-like projection at base of arm of gonocoxite (Fig. 17). Gonostylus articulated to gonocoxite at middle, bare, with apex directed upward (Fig. 16, 17). One pair of triangular parameres present, claw-shaped in lateral view (Figs. 16, 17). Aedeagus extending beyond parameres (Fig. 17); apex of gonocoxite thumb-like, curved to the midline, with a row of seven small rod-like setae (Figs. 13, 17); ejaculatory apodeme, almost as long as gonostylus, narrow anteriorly (Fig. 16, 17). Epandrium pilose, posterior end broader than anterior. Cercus pilose, subelliptical in lateral view (Fig. 16). Epiproct not observed. Hypopocot with apical micropilosity.

Material examined. Holotype #m, BRAZIL, Bahia, Município de Coração de Maria, 21.XI.2003, I. Castro leg. (MZFS); 3 paratypes: 1 #m same locality as holotype, 18.XII.2003, F. Bravo leg. (MZFS); 1 #m same locality as holotype, 28.I.2004, F. Bravo leg. (MZFS); 1 #m, Bahia, Município de Cachoeira, Fazenda Villa Rial, 20.VII.2004, F. Bravo leg. (MZFS).

Distribution. Known from Coração de Maria and Cachoeira, in Bahia, Brazil.

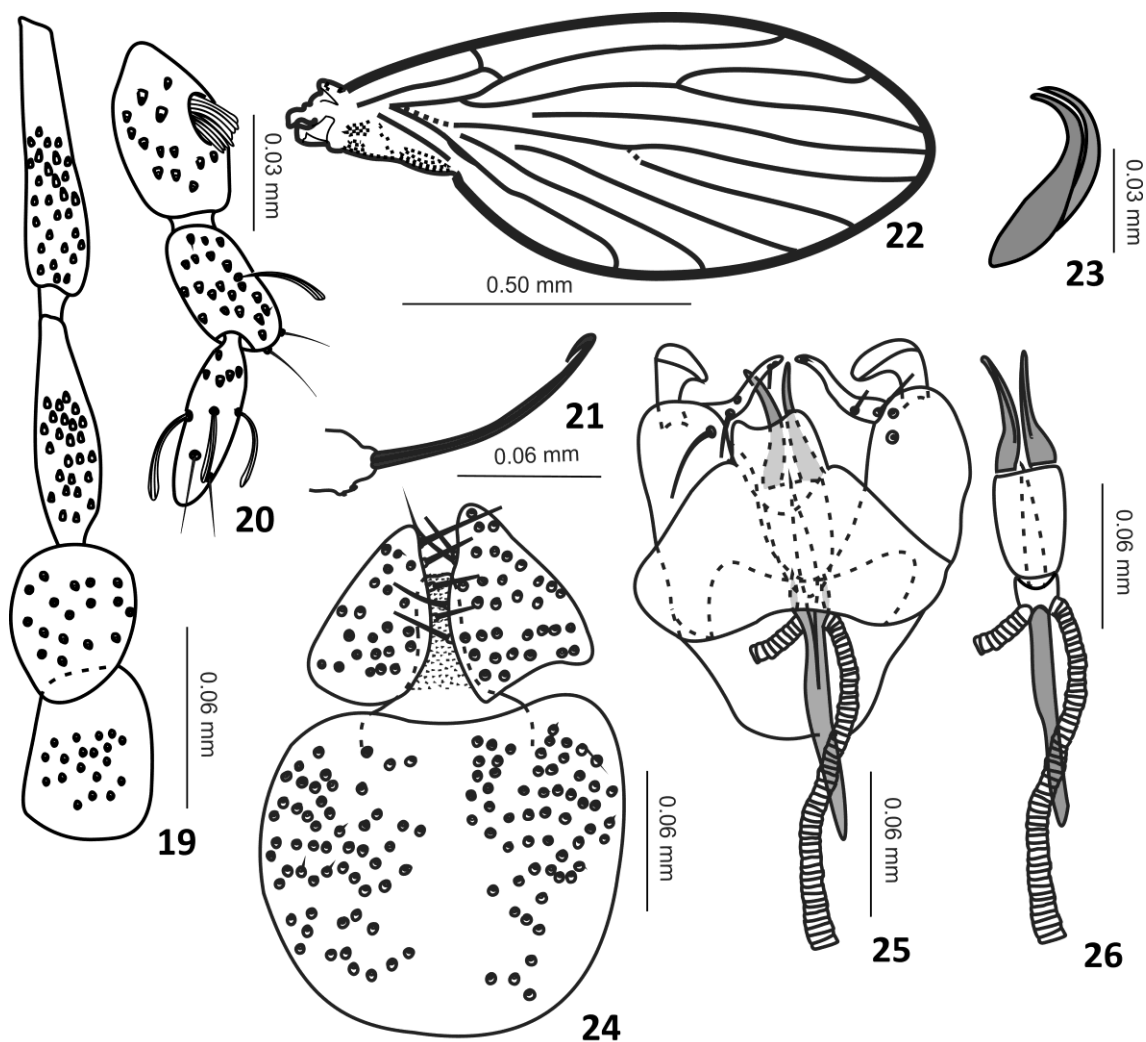
Etymology. *sertaneja* is the Brazilian name for people living in the interior lands of that county.

Comments. *T. sertaneja* is easily recognized by the thumb-like apex of the gonostylus, and by the presence of a spine-like projection at the base of the gonocoxite.

***Trichomyia jezeki* Araújo & Bravo sp. nov.**

(Figs. 19–26)

Diagnosis. Posterior arm of gonocoxite with apex digitiform, without rod-like setae on the margin. Gonostylus shorter than posterior arm of gonocoxite, with apex curved upward. Presence of one pair of sclerotized parameres, digitiform and apically divergent, 0.5 times the length of ejaculatory apodeme.



Figs. 19–26. *Trichomyia jezeki* sp. nov. 19. Scape, pedicel and basal flagellomeres; 20. Palpus (paratype); 21. Elongate bristles on tergum 7 (paratype); 22. Right wing (paratype); 23. Paramere, lateral; 24. Cerci, epandrium, hypopocyt; 25. Male terminalia, dorsal; 26. Aedeagus, parameres and ejaculatory apodeme.

Description. Male. Head subcircular. Antenna incomplete in the specimens studied; scape subcylindrical, pedicel subspherical; basal flagellomeres pyriform and slightly eccentric (Fig. 19); ascoids observed in only one paratype; S-shaped 1.3 times the length of flagellomere. Palpus formula 1.0:0.8:0.9. (Fig. 20). Wing (Fig. 22): Sc complete; R_5 incomplete at base, not reaching R_{2+3+4} ; M_2 with unsclerotized base; base of M_3 not reaching CuA_1 , r-m and m-cu absent. Elongate bristles of tergum 7 with curved apices (Fig. 21). Male terminalia: Hypandrium and gonocoxites fused (Fig. 25). Posterior arm of gonocoxite slender apically, digitiform, without rod-like setae on the internal margin (Fig. 25). Gonostylus shorter than posterior arm of gonocoxite, apex curved upward (Fig. 25). One pair of sclerotized parameres present, apically bifurcated,

articulated to a subrectangular basal plate (Figs. 23, 25, 26). Aedeagus subtriangular (Figs. 25, 26). Ejaculatory apodeme long, 2.5 times the length of the gonostylus (Figs. 25, 26). Epandrium wider than long (Fig. 24); cercus subtriangular in ventral view (Fig. 24). Hypopocot with apex truncate and with apical micropilosity (Fig. 24).

Material examined. Holotype #m, BRAZIL, state of Pará, N. [Novo] Repartimento, Vic. [Vicente] Bandeirante, Sítio Pedro Roqueta, 19. VIII.1998, without name of collector (MZFS); 3 paratypes: 1 #m, same locality and data as holotype (MZFS); 1 #m, state of Amazonas, Pitinga, R.[Rua] dos Paturis, 02–04.VI.1998, without name of collector (INPA); 1 #m, Manaus, INPA, 08–12.II.2008, H.F. Mendes leg. (INPA).

Distribution. Known from Novo Repartimento in Pará, Brazil, Pitinga and Manaus in Amazonas, Brazil.

Etymology. Named in honor of Dr. Jan Ježek of the National Museum in Prague, the Czech Republic, in recognition of his contribution to psychodid systematics.

Comments. *T. jezeki* sp. nov. shows some similarities to *T. botosaneanui* and *T. satterlmairi* in the shapes of their gonocoxites and gonostylus, but the parameres are differently shaped. Additionally, the new species can be confused with *T. dolichakis*. The differences are subtle at the apices of the parameres, which are wide and rounded in *T. dolichakis* and thinner and pointy in *T. jezeki*, in addition to the ejaculatory apodeme that is longer in the new species.

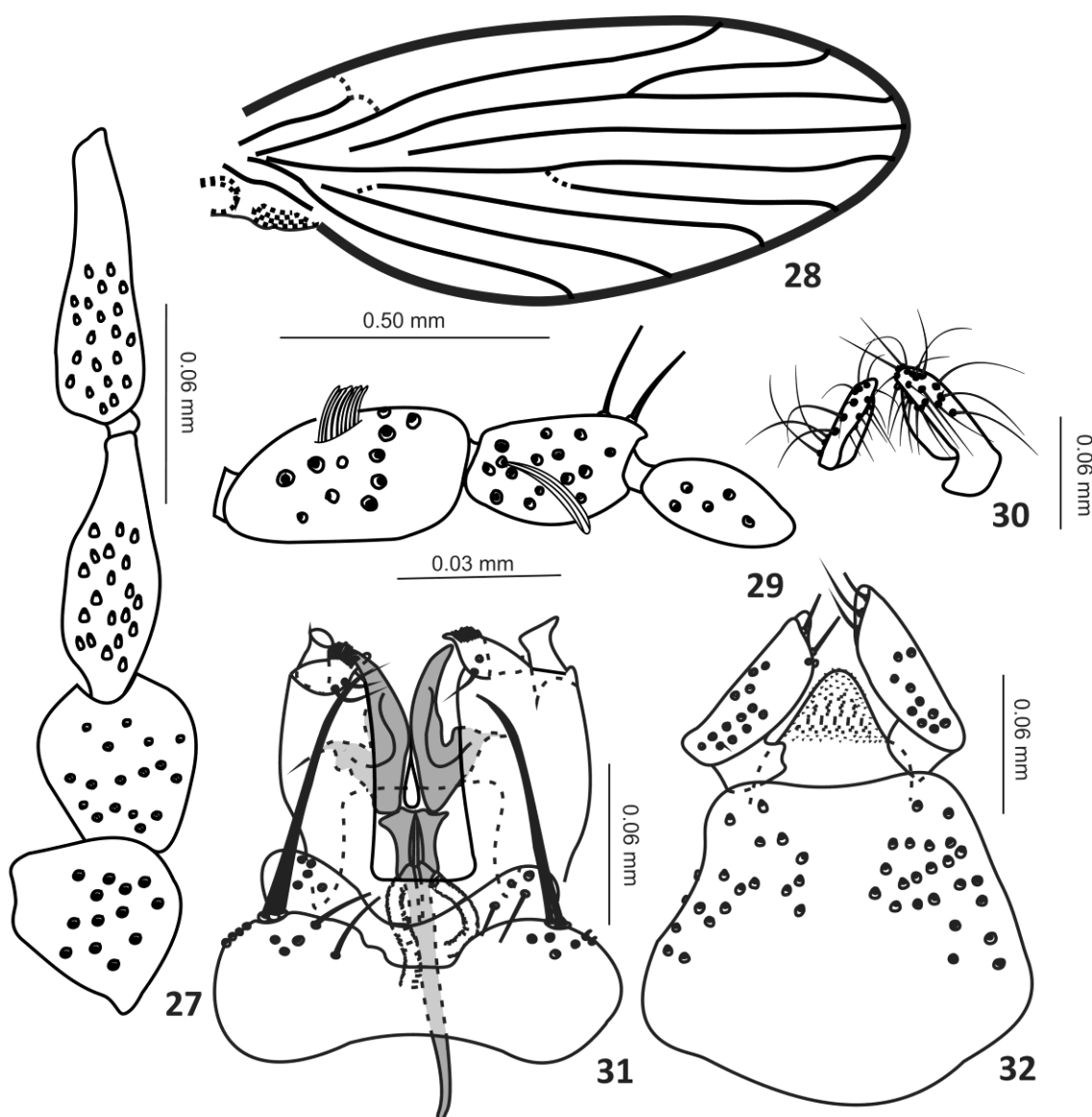
***Trichomyia amazonensis* Araújo & Bravo sp. nov.**

(Figs. 27–32)

Diagnosis. Gonocoxite with posterior arm short, with approximately nine rod-like setae in a row. Gonostylus with apex curved upward, almost the same size as the arm of the gonocoxite. One pair of parameres present, bifurcate, with the internal tip larger and thicker than the external one.

Description. Male. Head subcircular. Antenna incomplete in the specimens studied; scape shorter than pedicel (Fig. 27); basal flagellomeres pyriform, eccentric (Fig. 27), ascoids S-shaped, only observed in one paratype, 1.5 times as long as the flagellomere. Palpus formula 1.0:0.6:0.5 (Fig. 29). Wing (Fig. 28): Apex of Sc and sc-r unsclerotized; R₅ incomplete at base; base of M₂ and M₃ unsclerotized; r-m and m-cu

absent. Elongate bristles of tergum 7 with straight apices (Fig. 31). Male terminalia: Hypandrium and gonocoxites fused (Fig. 31). Gonocoxites with short posterior arm, apical margin with row of nine rod-like setae. Gonostylus, short, with apex curved upward (Fig. 31). One pair of parameres present, bifurcate, sclerotized, external arm shorter than internal arm (Fig. 31). Aedeagus short, subtriangular (Fig. 31). Ejaculatory apodeme long, 4.5 times the length of the gonostylus (Fig. 31). Epandrium with posterior margin wider than anterior margin, wider than long (Fig. 32); cercus pilose, subrectangular (Figs. 30, 32). Hypopoct triangular (Fig. 32).



Figs. 27–32. *Trichomyia amazonensis* sp. nov. 27. Scape, pedicel and basal flagellomeres; 28. Right wing (paratype); 29. Palpus; 30. Cerci; 31. Male terminalia and tergum 7, dorsal; 32. Cerci, epandrium, hypopoct.

Material examined. Holotype #m, BRAZIL, Amazonas, Pitinga, R. dos Paturis, 02–04.VI.1998, without name of collector (MZFS); 16 paratypes: 7 #m, same locality and data as holotype (INPA), 1 #m, Pará, N. [Novo] Repartimento, Vic. [Vicente] Bandeirante, Sítio Pedro Roqueta, 19. VIII.1998, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Cajatuba Km 69/3, 06.X.1998, without name of collector (MZFS); 4 #m, Amazonas, Pres. [Presidente] Figueiredo, Pitinga, 04.XII.1998, R.Q., L.M.C. (sic.) leg. (MZFS); 2 #m, state of Roraima, Pitinga, 13–15.XII.1997, R.Q, R.N., P.E. (sic.) leg. (MZFS); 1 #m, Amazonas, Pres.[Presidente] Figueiredo, Pitinga, 15.XIII.1998, R.Q., L.M.C. (sic.) leg. (MZFS)

Distribution. Known from Novo Repartimento in Pará, Brazil, Presidente Figueiredo and Manacapuru in Amazonas, Brazil, and Pitinga in Roraima, Brazil.

Etymology. *amazonensis* based on the type locality.

Comments. *T. amazonensis* is easily distinguished from the other species of *Septemtrichomyia* by its bifurcate parameres, and by the apical position of the row of rod-like setae on the posterior arms of the gonocoxite. These rods are situated on the lateral margins of the posterior gonocoxite arms in other species of the subgenus.

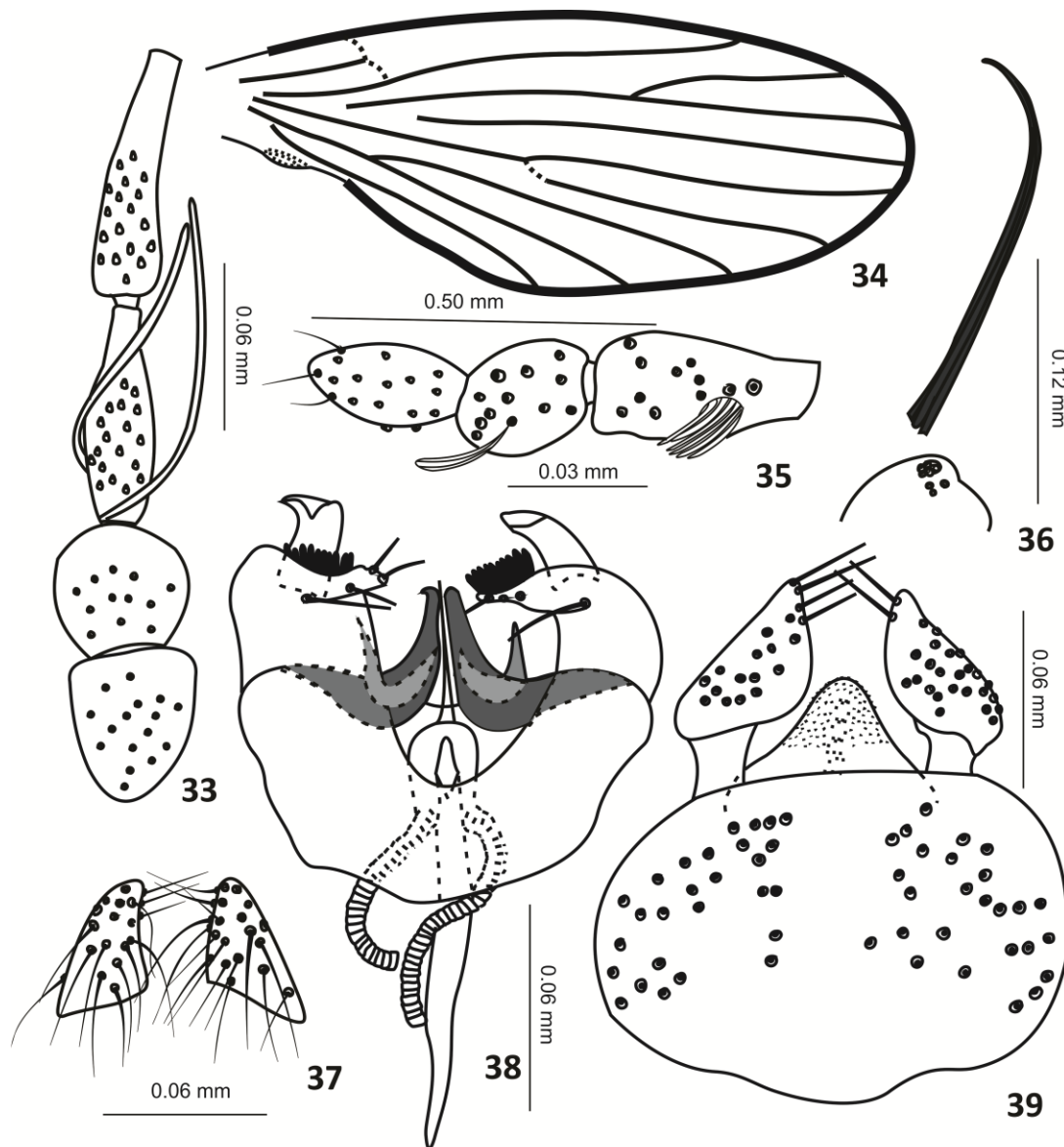
***Trichomyia imarui* Araújo & Bravo sp. nov.**

(Figs. 33–39)

Diagnosis. Gonocoxite with posterior arm short, with a row of nine rod-like setae. Two pairs of U-shaped parameres present; dorsal paramere longer and wider than ventral one.

Description. Male. Head subcircular. Palpus formula 1.0:0.6:0.7 (Fig. 35). Antenna incomplete in the specimens studied; scape and pedicel subspherical; basal flagellomeres pyriform, eccentric; ascoids 0.9 times as long as flagellomere (Fig. 33). Wing (Fig. 34): Apex of Sc and sc-r unsclerotized; R₅ incomplete, M₂ with base unsclerotized, r-m and m-cu absent. Elongate bristles of tergum 7 with straight apices (Fig. 36). Male terminalia: Epandrium wider than long (Fig. 39); cercus pilose subtriangular (Fig. 37, 39). Hypandrium and gonocoxites fused (Fig. 38). Gonocoxite with posterior arm short, with row of nine rod-like setae (Fig. 38). Gonostylus approximately the same length as gonocoxite arm (Fig. 38). Hypopocot triangular, with

apical micropilosity (Fig. 39). Two pairs of U-shaped parameres present; dorsal paramere longer and wider than ventral one (Fig. 39). Aedeagus simple, with one opening (Fig. 39). Aedeagal apodeme long, four times the length of gonostylus (Fig. 38).



Figs. 33–39. *Trichomyia imarui* sp. nov. 33. Scape, pedicel and basal flagellomeres (paratype); 24. Right wing; 35. Palpus (paratype); 36. Elongate bristles on tergum 7 (paratype); 37. Cerci; 38. male terminalia, dorsal; 39. Cerci, epandrium, hypopocit.

Material examined. Holotype #m, BRAZIL, Pará, N.[Novo] Repartimento, Vic. [Vicente] Bandeirante, Sítio Pedro Roqueta, 19. VIII.1998, without name of

collector (MZFS); 3 paratypes: 2 #m, same locality and data as holotype (MZFS), 1 #m, same locality as holotype, 15.VIII.1998, without name of collector (INPA).

Distribution. Known from Novo Repartimento in Pará, Brazil.

Etymology. *imauri* means mosquito in the indigenous Brazilian Tupi-Guarani linguistic family.

Comments. The rows of rod-like setae in *T. imarui* sp. nov., *T. bou*, *T. cauga*, and *T. mishi* are located on the external margin of the posterior arm of the gonocoxite, much like a crest; in the other species, the rod-setae are smaller and internal (*T. pedrabranquensis*, *T. sertaneja*, *T. atlantica*), or apical (*T. amazonensis*), or thin (*T. botosaneanui*, *T. dolichakis*), or absent (*T. jezeki*).

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Capítulo 3:

A new subgenus and species of Neotropical *Trichomyia* (Diptera, Psychodidae)

Submetido na Zoologia: 23 Out. 2012

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A new subgenus and species of Neotropical *Trichomyia* (Diptera, Psychodidae)

RESUMO

Um grupo de 18 espécies neotropicais de *Trichomyia* Haliday in Curtis, 1839 apresenta quatro segmentos no palpo, sendo os dois primeiros parcialmente fundidos, cinco dessas espécies foram incluídas no subgênero *Opisthotrichomyia* Bravo, 2001. Uma nova espécie do Brasil é descrita e um novo subgênero proposto para quatro espécies neotropicais desse grupo morfológico: *T. biloba* Quate, 1999 do Panamá, e *T. onorei* Bravo, 2002, *T. queirozi* Bravo, 2002 e *T. horrida* **sp. nov.** do Brasil. *Syntrichomyia* **subgen. nov.** pode ser reconhecido pelos gonocoxitos e gonóstilos fundidos, e pelo hipoprocto bilobado. Uma chave para os machos desse novo subgênero é apresentada.

Palavras chave: Brasil; Neotrópicos; *Syntrichomyia* subgen. nov.; taxonomia; Trichomyiinae.

ABSTRACT

A group of 18 species of Neotropical *Trichomyia* Haliday in Curtis, 1839 presents four segments in the palpus, the first two partially fused; five of these species were included in the subgenus *Opisthotrichomyia* Bravo, 2001. A new species from Brazil is described and a new subgenus proposed for four Neotropical species of this morphological group: *T. biloba* Quate, 1999 from Panamá, and *T. onorei* Bravo, 2002, *T. queirozi* Bravo, 2002 and *T. horrida* **sp. nov.** from Brazil. *Syntrichomyia* **subgen. nov.** can be recognized by its fused gonocoxites and gonostyli, and by its bilobed hypoproct. A key to the males of this new subgenus is presented.

Key words: Brazil; Neotropics; *Syntrichomyia* subgen. nov.; taxonomy; Trichomyiinae.

Trichomyia Haliday in Curtis, 1839 is a cosmopolitan genus of Psychodidae comprising 142 extant described species. It is the only genus to extant species of Trichomyiinae, and according Wagner & Ibáñez-Bernal (2009), a generic revision is urgently needed. The first classification of the species of *Trichomyia* was proposed by Duckhouse (1965), who recognized two informal categories: group A, composed of the more “primitive” and usually larger species with palpus with four segments; and group B, composed of more specialized and usually smaller species with three segments in the

palpus. Later, Duckhouse (1978) pointed out a number of problems with his own early classification, particularly because some Neotropical species could not be assigned to either group.

In order to improve the classification of *Trichomyia*, Duckhouse (1978) proposed three subgenera for the species of group B that occur in Australia and New Guinea: *Apotrichomyia* Duckhouse, 1978, *Dactylotrichomyia* Duckhouse, 1978, and *Dicrotrichomyia* Duckhouse, 1978. Two years later, he created the subgenus *Gondwanotrichomyia* Duckhouse, 1980 for the species of group A from southern Africa and New Zealand. Bravo (1999, 2001a) proposed two subgenera, *Septemtrichomyia* Bravo, 1999 and *Opisthotrichomyia* Bravo, 2001 for the Neotropical species.

The Neotropical fauna of *Trichomyia* includes 72 extant species and one *species inquirenda* (*Trichomyia fairchildi* Vargas & Díaz-Nájera, 1953) (Duckhouse 1972, 1973; Wagner 1993, 1999; Wagner & Masteller 1996; Quate 1996, 1999; Bravo 1999, 2000, 2001a,b,c, 2002; Alexander *et al.* 2001; Ibáñez-Bernal 2004; Bejarano *et al.* 2009, 2010; Pérez-Doria *et al.* 2010; Araújo & Bravo, 2012), nineteen of which have been included in the two subgenera proposed by Bravo (1999, 2001a, Araújo & Bravo, 2012). Herein we describe a new subgenus and a new species of *Trichomyia* for the Neotropical region.

MATERIAL AND METHODS

We examined one male specimen of the new species from the Brazilian Amazon, housed in the Invertebrate Collection of the Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil (INPA), as well as the type specimens of two species of *Trichomyia* (*Opisthotrichomyia*) deposited in the Prof. Johann Becker Entomology Collection of the Zoology Museum of the Universidade Estadual de Feira de Santana, Feira de Santana, Bahia, Brazil (MZFS). The specimen from the Brazilian Amazon (which was preserved in 70% alcohol) was treated with 10% KOH, dehydrated, and mounted in Canada balsam. The terminology for most morphological characters follows Cumming & Wood (2009), with the exceptions mentioned below: the terminology for the antenna follows Ibáñez-Bernal (2004), the terminology for the wing venation follows Duckhouse (1972), and the terminology for the male terminalia follows Sinclair (2000). The label data are cited in full, with the original spellings,

punctuations, and dates. Information presented within square brackets is complementary data not included on the labels.

TAXONOMY

Syntrichomyia **subgen. nov.**

Type species. *Trichomyia queirozi* Bravo, 2002: 60-61, Figs. 14-21 (type deposited in MZFS)

Etymology. *syn*, a Greek prefix meaning “together” alludes to the basal fusion of the gonostyli.

Diagnosis. Palpus four segmented, the first two segments partly fused. Gonocoxites and hypandrium fused, plate-like, with lateroposterior bristles, some bristles embedded in the lateral arms. Gonostyli fused basally and divergent apically, little sclerotized. Hypoproct bilobed.

Description. Male. Head subcircular, eyes without ocular bridge. Antenna. Scape similar in length to pedicel; flagellum with 13 flagellomeres, with a pair of simple ascoids, C-shaped; basal flagellomere pyriform, approximately the same length as second; following flagellomeres slightly asymmetrical; apical flagellomeres elongated; terminal flagellomere with apiculus. Palpus four segmented, first two segments partially fused. Wing. Length 2.00-2.26 times width, with rounded apex; Sc ending at C; sc-r ending at R₁; apex of Sc and base of R thickened; r-m and m-cu absent. Male terminalia. Hypandrium fused with gonocoxites, forming a plate-like sclerite (gonocoxal plate) with a set of bristles on lateroposterior margin, some embedded in the lateral arms; gonostyli fused basally and divergent apically, unsclerotized; cerci short and compact, wider than long; epandrium wider than long; hypoproct weakly or strongly bilobed.

Female. Only a female specimen of *T. biloba* is available, but according to Quate (1999), it is similar to the male. Characteristics of the female genitalia will not be discussed here because we only have one representative of one species.

Remarks. Species of *Trichomyia* with a four segmented palpus, the first two segments separated by a small articular area (partly fused according Duckhouse 1978) are known only from the Neotropical region, and were not classified in the artificial groups A or B proposed by Duckhouse (1965) (see Duckhouse 1978). According Bravo (2000), these Neotropical species should be considered an independent lineage of

Trichomyia, but there are no phylogenetic studies to support this hypothesis. Currently, 18 species have been classified into this Neotropical group (Barretto, 1954; Satchell, 1956; Duckhouse, 1974a, b; Quate, 1996; Wagner & Masteller, 1996; Bravo, 2001a, 2002; Ibáñez-Bernal, 2004; Bejarano, 2009a,b, 2010) and only one subgenus, *Opisthotrichomyia*, was proposed, comprising five species with a four segmented palpus, the first two segments partly fused (Bravo 2001a).

We propose another subgenus, *Syntrichomyia*, for the Neotropical group of species with a four segmented palpus. It can be recognized by the presence of three characters which are not present in other species of *Trichomyia*: gonocoxal plate with a characteristic group of posterolateral bristles; gonostylus unsclerotized, fused basally; hypoproct bilobed. These characteristics are putative synapomorphies for the group, which need to be tested within the context of a broad phylogenetic analysis.

Species included. *T. biloba* Quate, 1999; *T. onorei* Bravo, 2002; *T. queirozi* Bravo, 2002; *T. horrida* **sp. nov.**

Key to species of *Syntrichomyia*

1. Gonocoxal plate with short or long lateral arms on posterior margin, crowned with a set of bristles; median surface of gonocoxal plate with bristles (Fig. 5; Quate 1999: Fig. 1D) 2
- 1'. Gonocoxal plate with posterior margin straight, without arms, and a set of bristles on posterolateral margin; median surface of gonocoxal plate without bristles (Bravo 2002: Figs. 11, 21) 3
2. Gonocoxal plate with short lateral arms, 0.2 times the length of gonostylus, with approximately six bristles; gonostylus (= edeagus of Quate 1999: Fig. 1D) terminating in a tip, without bristles *Trichomyia biloba* Quate, 1999
(Distribution: Panama, Barro Colorado Island)
- 2'. Gonocoxal plate with long lateral arms, 0.6 times the length of gonostylus, with four bristles; gonostylus terminates in rounded apex with apical bristles (Fig.5)
Trichomyia horrida **sp. nov.** (Distribution: Brazil, state of Amazonas)
3. Ejaculatory apodeme short, 0.5 times the length of gonostylus (Bravo 2002: Fig. 11); cerci joined by sclerotized bridge (Bravo 2002: Fig. 12); M₂ incomplete, separated from M₁ (Bravo 2002: Fig. 9) *Trichomyia onorei* Bravo, 2002
(Distribution: Brazil, state of Bahia)

3'. Ejaculatory apodeme long, approximately the same length as gonostylus (Bravo 2002: Figs. 19, 21); cercus without sclerotized bridge (Bravo 2002: Fig. 20); M₂ complete, forked to M₁ (Bravo 2002: Fig. 18) *Trichomyia queirozi* Bravo, 2002 (Distribution: Brazil, state of Bahia)

Trichomyia (Syntrichomyia) queirozi Bravo

Trichomyia queirozi Bravo, 2002: 60-62, Figs. 14-21

Remarks. The males of *T. queirozi* can be easily recognized by: 1) M₂ articulated with M₁ (Bravo 2002: Fig. 18); 2) gonocoxal plate without lateral arms (Bravo 2002: Fig. 21); 3) ejaculatory apodeme ending before anterior margin of gonocoxal plate, curved in lateral view (Bravo 2002: Figs. 20, 21); 4) cercus with medial bridge.

Material examined. The holotype male is labeled "Brasil, BA [Bahia] Serra da Jibóia[,] 01.IV.2001, lg. I. Castro" (MZFS). Holotype condition: The holotype is mounted in permanent slide; the head and the male terminalia are turned.

Distribution. Known only from the type locality.

Trichomyia (Syntrichomyia) onorei Bravo

Trichomyia onorei Bravo, 2002: 59-60, Figs. 7-13

Remarks. The males of *T. onorei* can be easily recognized by: 1) M₂ not articulated with M₁ (Bravo 2002: Fig. 9); 2) gonocoxal plate without lateral arms (Bravo 2002: Fig. 11); 3) ejaculatory apodeme ending beyond anterior margin of gonocoxal plate (Bravo 2002: Figs. 10, 11); 4) cercus with medial bridge (Bravo 2002: Fig. 12).

Material examined. The holotype male is labeled "Brasil, BA[Bahia], Itabuna[,] Reserva Ecológica CEPEC[,] Mata - Light trap[,] 04.VI.1984[,] Paulo S. Terra col." (MZFS). Holotype condition: The holotype is mounted in permanent slide; the male terminalia is very clear, but the characters can be observed.

Distribution. Known only from the type locality.

Trichomyia (Syntrichomyia) biloba Quate

Trichomyia biloba Quate, 1999: 413, Figs. 1A-D.

Remarks. The males of *T. biloba* can be easily recognized by: 1) M₂ not articulated with M₁ (Quate 1999: Fig. 1A); 2) gonocoxal plate with short lateral arms

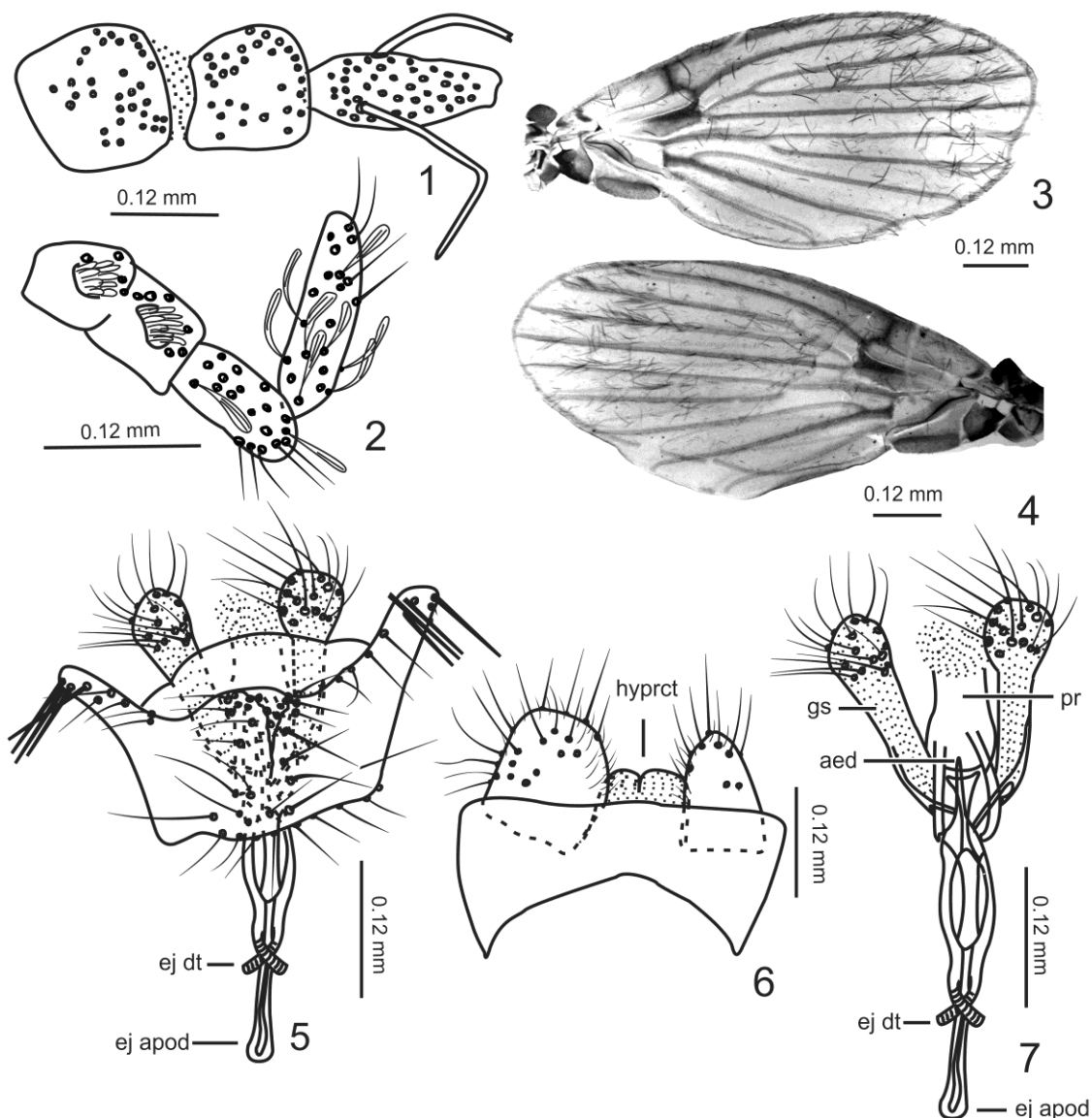
(Quate 1999: Fig. 1D); 3) ejaculatory apodeme ending beyond anterior margin of gonocoxal plate (Quate 1999: Fig. 1D).

Material examined. The type specimen was not examined.

Distribution. Known only from the type locality, Panama.

Trichomyia (*Syntrichomyia*) *horrida* **sp. nov.**

Figs. 1–7



Figs. 1–7. *Trichomyia horrida* **sp. nov.** 1. Scape, pedicel and basal flagellomere with two ascoids, one of them broken; 2. Palpus; 3. Left wing; 4. Right wing; 5. Male terminalia, dorsal; 6. Cercus, epandrium, hypoproct; 7. Aedeagus, ejaculatory apodeme, parameres and gonostylus (abbreviations: aed = aedeagus, ej apod = ejaculatory apodeme, ej dt = ejaculatory duct, gs = gonostylus, hyprct = hypoproct, pr = fused parameres).

Diagnosis. Gonocoxal plate with long lateral arms, 0.6 times length of gonostylus, crowned with elongated bristles; presence of bristles on median surface of gonocoxal plate; gonostyli unsclerotized, claviform, with apical bristles.

Description. Male. Antenna incomplete in the specimen studied; first flagellomere pyriform, with paired ascoids, 1.25 times length of flagellomere (Fig. 1). Palpus four-segmented, first two segments with sensorial setae inside pits; palpus formula 1.0:0.8:1.3:2.0 (Fig. 2). Wing (Figs. 3, 4). Right and left wings with wing membrane outside C vein, certainly an anomaly; length. 2.2 times width, R_5 complete at base, M_2 with unsclerotized at base. Male terminalia. Gonocoxal plate with lateral arms, 0.6 times the length of gonostylus, each with four apical bristles; presence of bristles on the median surface of the gonocoxal plate (Fig. 5). Gonostyli unsclerotized, claviform, with apical bristles (Figs. 5, 7). Parameres fused, little short than gonostylus, with sclerotized apical margin U-shaped (Figs. 5, 7). Aedeagus short, 0.4 times length of gonostylus (Fig. 7). Ejaculatory apodeme 0.5 times length of gonostylus (Figs. 5, 7). Epandrium wider than long (Fig. 6). Hypoproct unsclerotized, slightly bilobed at apex (Fig. 6).

Female. Unknown.

Material examined. The holotype male is labeled “Brasil, AM [Amazonas] Pururu, Est.[Estrada] Nunes de Melo, CDC [light trap,] Km 8-12[,] 26.XI.1998 [without name of collector]” (INPA). Holotype condition: The holotype is mounted in permanent slide; some flagellomeres lost.

Etymology. The Latin epithet *horridus*, refers to the many bristles present on the male terminalia.

Distribution. Known only from type locality.

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Capítulo 4:

***Trichomyia (Brachitrichomyia) plumata* subgen. nov., sp. nov. (Diptera:
Psychodidae: Trichomyiinae) from the Neotropical region**

Revista escolhida para submissão:
Acta Entomologica Musei Nationalis Pragae (AEMNP)

***Trichomyia (Brachitrichomyia) plumata* subgen. nov., sp. nov. (Diptera:
Psychodidae: Trichomyiinae) from the Neotropical region**

Resumo. Um novo subgênero para espécies de *Trichomyia* é proposto, com palpo com quatro segmentos, sendo os dois primeiros parcialmente fundidos e com os braços do gonocoxito longos, cada um com cerdas na margem interna. O novo subgênero foi nomeado *Brachitrichomyia* e inclui sete espécies Neotropicais, *Trichomyia armata* Barretto, 1954; *T. brasiliensis* Satchell, 1956; *T. inermis* Barretto, 1954; *T. pseudodactylis* Quate, 1996; *T. quatei* Bravo, 2001; *T. risaraldensis* Bejarano, Pérez-Doria & Sierra, 2009 e *T. plumata* sp. nov. que é descrita e ilustrada. Novas ilustrações da terminália masculina de *T. inermis* são feitas, e sua distribuição é expandida. Uma chave para os machos das espécies desse novo subgênero e uma lista global de espécies recentes são incluídas.

Palavras chave: Brasil, Neotropicais, subgênero, taxonomia, psicodídeo.

Abstract. A new subgenus for *Trichomyia* is proposed based on following characters: palpus four-segmented, the first two partially fused and with long posterior gonocoxites arms, each one with bristles on the internal margin. The new subgenus was named *Brachitrichomyia* and includes seven Neotropical species, *Trichomyia armata* Barretto, 1954; *T. brasiliensis* Satchell, 1956; *T. inermis* Barretto, 1954; *T. pseudodactylis* Quate, 1996; *T. quatei* Bravo, 2001; *T. risaraldensis* Bejarano, Pérez-Doria & Sierra, 2009 and *T. plumata* sp. nov. that is described and illustrated. New illustrations of male terminalia of *T. inermis* are provided, and new records are made. A key to males to the species of this new subgenus and a global list of extant species of *Trichomyia* are included.

Key words. Brazil, Neotropics, subgenus, taxonomy, psychodid.

Introduction

The genus *Trichomyia* Haliday in Curtis includes 143 extant species globally and 18 fossil species (DUCKHOUSE 1972, 1973; HENNIG 1972; WAGNER 1990, 1993,

1999, 2001; QUATE 1965, 1996, 1999; WAGNER & MANTELLER 1996; BRAVO 1999, 2000, 2001a,b,c, 2002; ALEXANDER *et al.* 2001; IBÁÑEZ-BERNAL 2004; WITHERS 2003; DUCKHOUSE & LEWIS 2007; LAK *et al.* 2008; BEJARANO *et al.* 2009a,b, 2010; BERAN *et al.* 2010; CURLER & MOULTON 2010; PÉREZ-DORIA *et al.* 2010; KVIFTE 2012; ARAÚJO & BRAVO 2012; ARAÚJO & BRAVO in press).

The Neotropical fauna of *Trichomyia* is the richest in terms of the number of species (74), followed by the Australasian/Oceania (46), Palearctic (8), Oriental (7) Afrotropical (5) and Nearctic (4) regions. Thirty-seven species of the genus are known in Brazil.

An informal classification of *Trichomyia* was proposed by DUCKHOUSE (1965, 1978) dividing the species into “group A” (comprising large species with palpi with four well-separated segments) and “group B” (comprising small species with palpi with three segments, and some Neotropical species with four segments, the first two being partially fused). Seven subgenera were subsequently proposed for the genus, one for “group A” (*Gondwanotrichomyia* Duckhouse, 1980) and six for “group B” (*Apotrichomyia* Duckhouse, 1978; *Dactylotrichomyia* Duckhouse, 1978; *Dicrotrichomyia* Duckhouse, 1978; *Septemtrichomyia* Bravo, 1999 and *Opisthotrichomyia* Bravo, 2001, *Syntrichomyia* Araújo & Bravo, in press), the last three subgenera being from the Neotropical region (DUCKHOUSE 1978, 1980, BRAVO 1999, 2001a). Significant morphological diversity can be seen within the genus, and WAGNER (2009) suggested the need for a generic review.

In the present paper, a new species and subgenus of *Trichomyia* are proposed and *Trichomyia inermis* Barretto, 1954, was redescribed. A key to the males of the species of this new subgenus is provided. A global list of extant species of *Trichomyia* is presented.

Material and Methods

The specimens examined in this study were deposited in the following collections:

INPA Coleção de Invertebrados do Instituto Nacional de Pesquisa da Amazônia, Amazonas, Brazil;

MZFS Coleção Entomológica Prof. Johann Becker do Museu de Zoologia da Universidade Estadual de Feira de Santana, Bahia, Brazil.

The specimens from Bahia were collected using a light trap. All specimens were cleared with 10% KOH, dehydrated, and mounted using Canada balsam. The general morphological terminology follows CUMMING & WOOD (2009) and the specific terminology of Psychodidae follows WAGNER & IBÁÑEZ-BERNAL (2009).

Taxonomy

***Brachitrichomyia* subgen. nov.**

Type species. *Trichomyia quatei* Bravo, 2001: 32-33, Figs. 1-3, 6-8.

Etymology. The Latin epithet *brachi*, refers to the presence of a long and wide posterior arm of gonocoxite.

Diagnosis. Palpus four-segmented, the first two partially fused; presence of sensilla in depressed pits on the inner sides of segments 1 and 2 or, in one species, only with sensilla on segment 2. Gonocoxites projected dorsally, fused basally, each with a long posterior arm, 1.0-3.5 times the length of ejaculatory apodeme; presence of bristles along $\frac{1}{2}$ or the entire internal margin of the arm of gonocoxite. Gonostylus unsclerotized, articulated ventrally to the gonocoxite, C-shaped, lost in some species. Parameres curved and joined at apex. Aedeagus in the midst of the parameres, resembling a filament.

Description. Male. Head subcircular, eyes without ocular bridge. Antenna: scape similar in length to pedicel; flagellum with 13 flagellomeres with pair of simple ascoids, straight, longer than flagellomere; flagellomeres piriform; terminal flagellomeres shorter than basal flagellomeres; apical flagellomere with apiculus separate for a suture. Palpus four-segmented, first two palpomeres partially fused, with sensilla in depressed pits on the inner side of segments 1 and 2 or, in *Trichomyia pseudodactylis* Quate, 1996, with sensilla in depressed pits only on segment 2. Radial fork distal to medial fork. Male terminalia: Gonocoxites projected dorsally, fused basally, each one with long posterior arm, 1.0-2.0 times the length of ejaculatory apodeme; presence of bristles, filiform or feathered, along $\frac{1}{2}$ or the entire inner margin of the arm of gonocoxite. Gonostylus unsclerotized, articulated ventrally to gonocoxite, the same length as gonocoxite arm or longer, C-shaped, lost in two species (*Trichomyia armata* Barretto,

1954 and *Trichomyia brasiliensis* Satchell, 1956). Cercus long, longer than arm of gonocoxite. Parameres curved and joined at apex. Aedeagus in the midst of the parameres, resembling a filament.

Female. Only one female specimen of *T. armata* was described and, according to BARRETTO (1954), it was similar to the male. The characteristics of the female genitalia will not be discussed here because we only have one representative of one species.

Included species: *T. armata*; *T. brasiliensis*; *T. inermis*; *T. plumata* sp. nov; *T. pseudodactylis*; *T. quatei*; *T. risaraldensis*.

Remarks. BRAVO (2001c) proposed an unnamed group of three Neotropical species with gonocoxites with long posterior arms and long bristles on their inner margins (*T. armata*, *T. brasiliensis*, and *T. quatei*). BEJARANO *et al.* (2009a) included in this unnamed group *T. risaraldensis* and *T. pseudodactylis*. This taxon is assigned here the name *Brachitrichomyia*, and classified as a subgenus.

Brachitrichomyia subgen. nov. is a natural group with at least one exclusive character: ovoid shaped parameres, fused apically to the middle of the aedeagus. Two diagnostic characters of the new subgenus show variations: the first character refers to the presence of sensilla in depressed pits on segments 1 and 2 that are observed in all species (except *T. pseudodactylis*, with sensilla only on segment 2, which is assumed to be a secondary modification in that species); the second character refers to the presence of a long, unsclerotized gonostylus, although this structure would be secondarily absent in *T. armata* and *T. brasiliensis* according BRAVO (2001c).

Key to males of Neotropical *Brachitrichomyia*

1. Sensilla in depressed pit on segment 2 and absent in segment 1; ejaculatory apodeme short, 0.3 times the length of the arm of gonocoxite *Trichomyia pseudodactylis* Quate, 1996 (Distribution: Panama)
- Sensilla in depressed pits on segments 1 and 2; ejaculatory apodeme short or long, 0.2-1.0 times the length of the arm of gonocoxite 2
2. Bristles of internal margin of arm of gonocoxite simples not feathered 3
- Bristles of internal margin of arm of gonocoxite feathered 6
3. Gonostylus lost 4
- Gonostylus present 5

4. Fourth segment of palpus 1.3 times the length of third segment; CuA₂ ending after medial fork *Trichomyia armata* Barretto, 1954
(Distribution: Brazil, states of São Paulo and Paraná)
- Fourth segment of palpus 0.8 times the length of third segment; CuA₂ ending before medial fork *Trichomyia brasiliensis* Satchell, 1956
(Distribution: Brazil, state of Santa Catarina)
5. Ejaculatory apodeme 0.2 times the length of arm of gonocoxite; bristles on apical half of gonocoxite arm *Trichomyia risaraldensis* Bejarano, Pérez-Doria & Sierra, 2009
(Distribution: Colombia, Risaralda)
- Ejaculatory apodeme 0.4 times the length of arm of gonocoxite; bristles on entire internal margin of gonocoxite arm *Trichomyia quatei* Bravo, 2001
(Distribution: Brazil, state of Bahia)
6. Cercus long, subrectangular in ventral view; arm of gonocoxite sub-parallel *Trichomyia inermis* Barretto, 1954 (Distribution: Brazil, states of São Paulo, Bahia, new record and Amazonas, new record)
- Cercus drop-shaped in ventral view; arm of gonocoxite convergent to midline *Trichomyia plumata* sp. nov. (Distribution: Brazil, state of Amazonas)

***Trichomyia (Brachitrichomyia) armata* Barretto, 1954**

Trichomyia armata Barretto, 1954: 127-129, Figs. 1-12; BRAVO (2001c), Fig. 3.

Diagnosis. Male: Palpus with sensilla in depressed pits on segments 1 and 2; segment 4 of palpus 1.3 times the length of third segment; radial fork apical to medial fork; CuA₂ ending after medial fork; posterior arm of gonocoxite subtriangular in dorsal view, ending in pointed apex, with simple bristles on apical half; gonostylus absent; presence of small ventral tubercle on gonocoxite with pair of apical bristles; cercus trapezoidal in ventral view with distal margin 0.8 times the length of ventral margin; cercus long and subrectangular in ventral view; ejaculatory apodeme short, 0.4 times the length of arm of gonocoxite. Female similar to male, cercus short, 3.0 times the length of lobe on sternite 8, and wide, 1.2 times its length.

Material examined. HOLOTYPE m* (MZFS), labelled: 'SÃO PAULO, SP/ Horto Florestal/ Cantareira/ Barretto & Coutinho/ col. 04.XI.1940 [white label, printed]'; PARATYPES: 10 m*m* 1f* (MZFS), same locality, data and collector as holotype; 7

m*m* 1 f* (MZFS), labelled: ‘Mogi das Cruzes, SP/ Km 67, Estrada/ Rio-São Paulo/ Barretto & Coutinho/ col. 01.XII.1940 [white label, printed]’

Additional material. 1 f* (MZFS) , labelled: ‘BRASIL, PR, Guarapuava/ Aguas de Santa Clara/ Malaise trap/ 01.IX.1986/ PROFAUPAR [white label, printed]// *Trichomyia armata*/Barreto, 1954/ Freddy Bravo det. - 94 [white label, printed]’; 1 m* (MZFS) , labelled: ‘BRASIL, PR, Jundiá do Sul/ Fazenda Monte Verde/ Malaise trap/ 08.XII.1986/ PROFAUPAR [white label, printed]// *Trichomyia armata*/Barreto, 1954/ Freddy Bravo det. - 94 [white label, printed]’; 1 f* (MZFS) , labelled: ‘BRASIL, PR, Jundiá do Sul/ Fazenda Monte Verde/ Malaise trap/ 15.XII.1986/ PROFAUPAR [white label, printed]// *Trichomyia armata*/Barreto, 1954/ Det. Freddy Bravo, 1995 PROFAUPAR [white label, printed]’.

Distribution. Brazil, states of São Paulo and Paraná.

***Trichomyia (Brachitrichomyia) brasiliensis*, Satchell, 1956**

Trichomyia brasiliensis, Satchell, 1956: 152-153, Figs. 6 A-E.

Diagnosis. Male: Palpus with sensilla in depressed pits on segments 1 and 2; segment 4 of palpus 0.8 times the length of third segment; radial fork apical to medial fork; CuA₂ ending before medial fork; posterior arms of gonocoxite subtriangular in dorsal view ending in pointed apex, with simple bristles on apical ¼; gonostylus absent; presence of small ventral tubercle on the gonocoxite with pair of apical bristles; cercus trapezoidal in ventral view; distal margin of cercus the same length as ventral margin; ejaculatory apodeme short, 0.2 times the length of gonocoxite. Female unknown.

Material examined. The holotype was not examined; however, the description and figures of SACHELL (1956) allowed the diagnosis of the species.

Distribution. Known only from the type locality, Brazil, state of Santa Catarina.

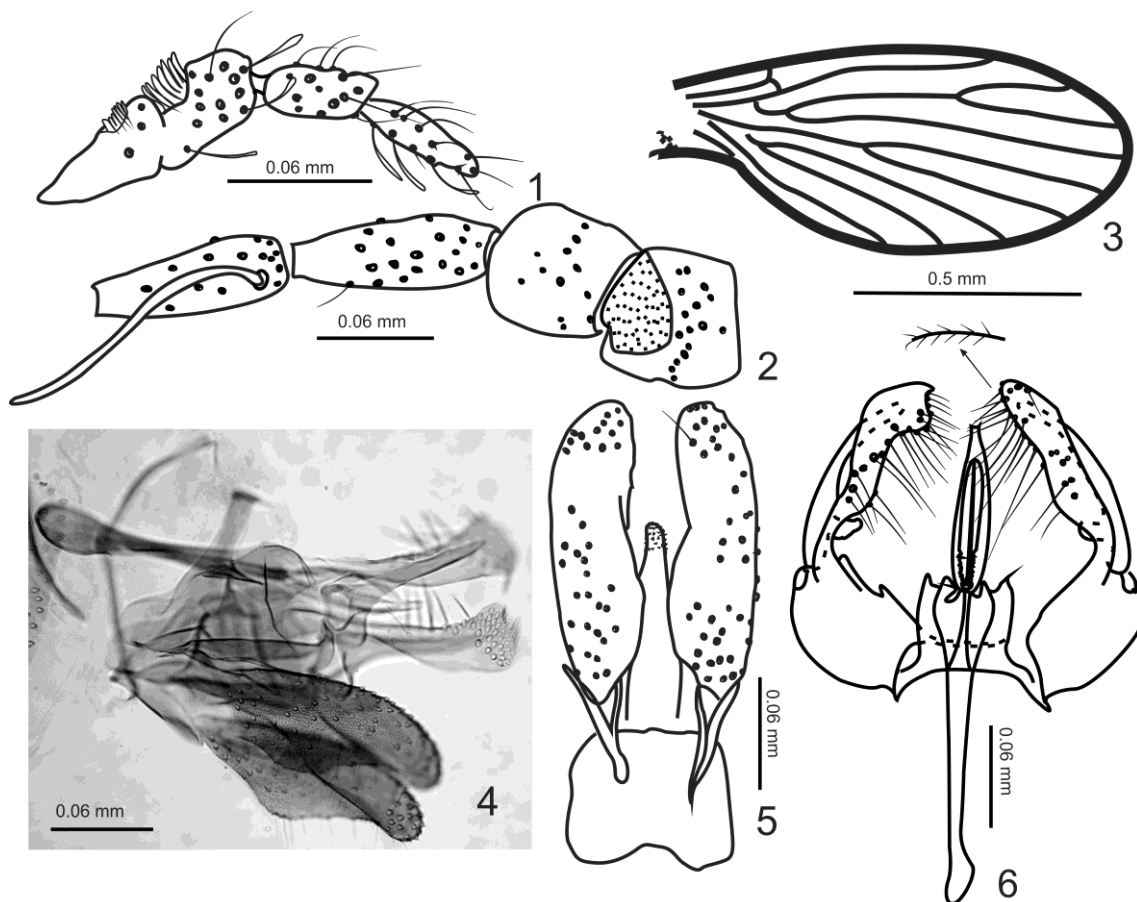
***Trichomyia (Brachitrichomyia) inermis*, Barretto, 1954**

Trichomyia inermis Barretto, 1954: 129-130, Figs. 13-17.

(Figs. 1-6)

Diagnosis. Male: Palpus with sensilla in depressed pits on segments 1 and 2 (Fig. 1); segment 4 of palpus 1.2 times the length of third segment (Fig. 1); ascoids 1 and 2 the same length, ascoid longer than flagellomere (Fig. 2); radial fork apical to medial fork;

CuA₂ ending after medial fork (Fig. 3); posterior arms of gonocoxite with lateral margins sinuous in dorsal view, with feathered bristles on the entire surface of internal margin (Figs. 4, 6); gonostylus present, blade-shaped, straight, approximately the same length as arm of gonocoxite (Figs. 4, 6); without ventral tubercle on gonocoxite; cercus trapezoidal in ventral view; distal margin of cercus the same length as ventral margin (BARRETTO 1954: Fig. 14); cercus subrectangular in ventral view (Fig. 5); ejaculatory apodeme long, as long as arm of gonocoxite (Fig. 6). Female unknown.



Figs. 1-6 – *Trichomyia inermis* Barretto, 1954, male. 1 – Palpus; 2 – Scape, pedicel and basal flagellomeres; 3 – Right wing; 4 – Male terminalia, lateral; 5 – Cercus, epandrium, hypoproct; 6 – Male terminália, dorsal.

Material examined. HOLOTYPE m* (MZFS), labelled: ‘SÃO PAULO, SP/ Horto Florestal/ Cantareira/ Barreto e Coutinho/ col. 04.X.1940 [white label, printed]’.

Additional material. 3m*m* (MZFS), labelled: ‘BRAZIL, BAHIA/ Cachoeira, Fzda Vila/ Rial, 24.X.2004/ Lg. F. Bravo [white label, printed]// *Trichomyia inermis* Barretto/ Det. Freddy Bravo, 2004 [white label, printed]’; 1 m* (MZFS), labelled: ‘BRAZIL,

AM/ Manacapuru/ Cajatuba, Km 69/3/ CDC copa Lote 011/ 20.IV.1998/ Col. RQ, RN, PE [white label, printed]'; 1 m* (MZFS), labelled: 'BRAZIL, AM/ Manacapuru, Lotes 0122A+0125, Est. Do/Cajatuba, Sítio do Sr./Simplício CDC (copa)/24-25.IV.119 [white label, printed]'.

Distribution. Brazil, states of São Paulo, Bahia (new record) and Amazonas (new record).

Remarks. The initial description of male terminalia of *T. inermis* prepared by Barretto (1954) provided only a lateral view, which made the identification of the species more difficult. As the holotype is on a permanent slide, the redescription was based on new material.

***Trichomyia (Brachitrichomyia) pseudodactylis*, Quate, 1996**

Trichomyia pseudodactylis, Quate, 1996: 7-8, Figs. 1 d-f.

Diagnosis. Male: Palpus with sensilla in depressed pit on segment 2, absent in segment 1; segment 4 of palpus slightly longer than third segment (QUATE 1996); posterior arms of gonocoxite subtriangular in dorsal view ending in pointed apices, with simple bristles on apical ½; gonostylus C-shaped, longer than arm of gonocoxite; presence of small ventral tubercle on gonocoxite, with pair of apical bristles; cercus trapezoidal in ventral view; distal margin of cercus 1.1 times the length of ventral margin; ejaculatory apodeme short, 0.3 times the length of arm of gonocoxite. Female unknown.

Material examined. The type specimen was not examined; however, the description and figures of QUATE (1996) allowed the diagnosis of the species.

Distribution. Known only from the type locality, Costa Rica, Guanacaste.

***Trichomyia (Brachitrichomyia) quatei*, Bravo, 2001**

Trichomyia quatei, Bravo, 2001: 32-36, Figs 1-3, 5-8

Diagnosis. Male: Palpus with sensilla in depressed pits on segments 1 and 2; segment 4 of palpus the same length as third segment; radial fork apical to medial fork; CuA₂ ending after medial fork; posterior arms of gonocoxite subtriangular in dorsal view, ending in rounded apex, with simple bristles along the entire internal margin surface; gonostylus present, C-shaped, longer than gonocoxite arm; without ventral tubercle on the gonocoxite; cercus trapezoidal in ventral view, with tuft of bristles apically; distal

margin of cercus same length as ventral margin; ejaculatory apodeme short, 0.5 times the length of gonocoxite arm. Female unknown.

Material examined: HOLOTYPE m* (MZFS), labelled: 'BRASIL, BA, Itabuna/Res. Ecol., CEPEC/ Mata- light trap/ 10.X.1985/ Paulo S. Terra col. [white label, printed]// Holótipo [red label]'.

Distribution: Known only from the type locality, Brazil, state of Bahia.

***Trichomyia (Brachitrichomyia) risaraldensis*, Bejarano, 2009**

Trichomyia risaraldensis Bejarano, 2009: 296-299, Figs 1-9.

Diagnosis. Male: Palpus with sensilla in depressed pits on segments 1 and 2; segment 4 of palpus 1.4 times the length of third segment; radial fork apical to medial fork; CuA₂ ending after medial fork; posterior arms of gonocoxite subtriangular in dorsal view, ending in pointed apex, with simple bristles on apical ½; gonostylus C-shaped, longer than gonocoxite; presence of small ventral tubercle on gonocoxite, with pair of apical bristles; cercus trapezoidal in ventral view; distal margin of cercus same length as ventral margin; ejaculatory apodeme short, 0.2 times the length of gonocoxite arm. Female unknown.

Material examined. The type specimens were not examined; however, the description and figures of BEJARANO *et al.* (2009a) allowed the diagnosis of the species.

Distribution. Known only from the type locality, Colombia, Risaralda.

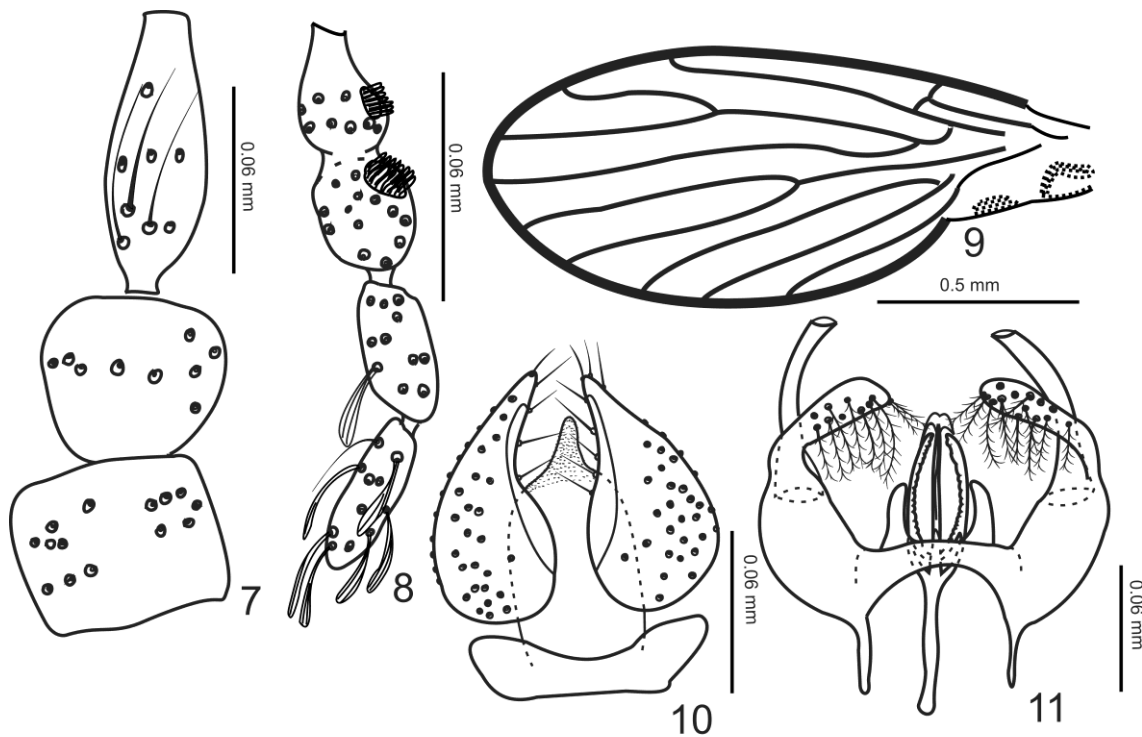
***Trichomyia (Brachitrichomyia) plumata* sp. nov.**

(Figs. 7-11)

Diagnosis. Male: Palpus with sensilla in depressed pits on segments 1 and 2; segment 4 of palpus 1.2 times the length of third segment; radial fork apical to medial fork; CuA₂ ending approximately at same place as medial fork; posterior arms of gonocoxite subrectangular in dorsal view with acute apex, convergent, with feathered bristles on entire surface; gonostylus present, blade-shaped, with truncate apex; cercus drop-shape in ventral view; ejaculatory apodeme long, 0.9 times the length of gonocoxite arm. Female unknown.

Description. Male. Palpus four segmented with sensilla in depressed pits on segments 1 and 2; palpus formula 1.0:0.9:1.1:1.3 (Fig. 8). Antenna incomplete in the specimens

studied; scape subcylindrical and pedicel subspherical; basal flagellomeres pyriform, not eccentric (Fig. 7); ascoids lost. Wing (Fig. 9): Sc complete; sc-r complete; R_5 complete at base; r-m and m-cu absent, radial fork apical to medial fork; CuA_2 ending approximately at same point as medial fork. Male terminalia (Figs. 10-11): hypandrium and gonocoxites fused dorsally; posterior arms of gonocoxite subrectangular in dorsal view with acute apex, 8.8 times the length of gonostylus, convergent, with feathered bristles on entire surface; gonostylus present, blade-shaped, with truncate apex; cercus drop-shape in ventral view; epandrium narrow; cercus drop-shaped; apex of hypoproct triangular, with microtrichia; pair of lobes $\frac{1}{2}$ the length of parameres lateral to parameres; ejaculatory apodeme long, 0.9 times the length of arm of gonocoxite



Figs. 7–11. *Trichomyia plumata* sp. nov. 7. Scape, pedicel and basal flagellomere; 8. Palpus; 9. Left wing; 10. Cercus, epandrium, hypoproct; 11. male terminalia, dorsal.

Type material. HOLOTYPE m* (MZFS), labelled: ‘Manacapuru (AM)/ Cajatuba, Km 69/3/ 3CDC copa/9.X.1998 [white label]’; PARATYPES: 1 m* (MZFS), labelled: ‘BRASIL, AM/ Manacapuru/ Cajatuba, Km 69/3/CDC copa Lote 011/20.IV.1998/ Col. RQ, RN, PE [white label, printed]’; 1 m* (MZFS), labelled: ‘BRASIL, AM/ Manacapuru/ Cajatuba, Km 69/3/ CDC/ 08.XI.199 [white label, printed]’; 1 m*

(MZFS), labelled: 'BRASIL, AM/ Purupuru, Est./ Nunes de Melo/ Km 4 (base de árvore/ 24.XI.1998 [white label, printed]'.

Etymology. The Latin epithet *plumatus*, refers to the presence of evident branched bristles on the posterior arm of gonocoxite.

Distribution. Brazil, state of Amazonas: Manacapuru, Purupuru.

Discussion

The unique exclusive character of this new subgenus is the oval format of their fused parameres and central aedeagus. Other morphological characteristics demonstrate variations in some species: the trapezoidal format of the cercus (drop-shaped only in the new species described here); the presence of depressed pits in palpus segment 1 and 2 (except in *T. pseudodactylis*, where they are absent and the sensilla scattered along segment 2); gonocoxite expanded dorso-ventrally, with a ventrally articulated gonostylus (except in *T. armata* and *T. brasiliensis*, with no gonostylus). The presence of a posterior gonocoxite arm is not a characteristic unique to the species of this subgenus, being present in many tropical species of *Trichomyia* – but the presence of bristles on the internal margin of this arm is probably the second exclusive character to this subgenus. Only two species have long ejaculatory apodeme – the new species described here and *T. inermis*; the other species all have short ejaculatory apodeme. *Trichomyia armata* and *T. brasiliensis* are morphologically similar species, both have lost their gonostylus and have a trapezoidal cercus; certain morphological differences, however, allow them to be accepted as independent species. These morphological differences are: the relative sizes of the fourth palpus segment and the ejaculatory apodeme and cercus, and the distributions of the bristles on the internal margin of the arm of gonocoxite. It will be necessary to collect more specimens and examine the holotype specimen of *T. brasiliensis* to better determine if the size differences mentioned above represent discrete measures or if they constitute a continuous spectrum in a polymorphic species, or according to this last hypothesis, if the two species should be regarded as distinct.

List world of species extant of *Trichomyia*

Genus *Trichomyia* Haliday in Curtis (see list of KVIFTE 2012)

Trichomyia Haliday in Curtis, 1839: 745. Type species: *Trichomyia urbica* Haliday, 1839, mon.

Diplonema Loew, 1845: 7. Type species: *Diplonema buceras* Loew, 1845, mon.

Eubonetia Vargas & Diaz Nájera, 1953: 155. Type species: *Trichomyia cirrata* Coquillett, 1902, orig. des.

Lepria Enderlein, 1937: 112. Type species: *Lepria squamosa* Enderlein, 1937, orig. des.

Phalaenomyia Loew, 1985: 9. Type species: *Diplonema buceras* Loew, 1845, subsequent designation of Evenhuis, 1994

Termitodiperon Holmgren, 1905: 533. Type species: *Termitodipteron wasmanni* Holmgren, 1905, mon.

Subgenus *Apotrichomyia* Duckhouse

Apotrichomyia Duckhouse, 1978: 211. Type species: *Trichomyia complexa* Duckhouse, 1965, orig. des.

Trichomyia complexa Duckhouse, 1965 (Australasian/Oceania)

Trichomyia reducta Duckhouse, 1978 (Australasian/Oceania)

Subgenus *Dactylotrichomyia* Duckhouse

Dactylotrichomyia Duckhouse, 1978: 213. Type species: *Trichomyia tanypenis* Duckhouse, 1978, orig. des.

Trichomyia ancyropeis Duckhouse, 1978 (Australasian/Oceania)

Trichomyia annectens Duckhouse, 1978 (Australasian/Oceania)

Trichomyia barbata Duckhouse, 1978 (Australasian/Oceania)

Trichomyia bifalcata Duckhouse, 1978 (Australasian/Oceania)

Trichomyia biuncata Duckhouse, 1978 (Australasian/Oceania)

Trichomyia contigua Duckhouse, 1978 (Australasian/Oceania)

Trichomyia coronula Duckhouse, 1978 (Australasian/Oceania)

Trichomyia crucis Duckhouse, 1978 (Australasian/Oceania)

Trichomyia divaricata Duckhouse, 1978 (Australasian/Oceania)

Trichomyia divergens Duckhouse, 1978 (Australasian/Oceania)

Trichomyia dolichostylis Duckhouse, 1978 (Australasian/Oceania)

Trichomyia falcata Quate & Quate, 1967 (Australasian/Oceania)

Trichomyia fergusonii Duckhouse, 1965 (Australasian/Oceania)

Trichomyia furtiva Quate & Quate, 1967 (Australasian/Oceania)
Trichomyia hawaiiensis Quate, 1954 (Australasian/Oceania)
Trichomyia humerosa Duckhouse, 1978 (Australasian/Oceania)
Trichomyia incomplexa Duckhouse, 1965 (Australasian/Oceania)
Trichomyia inopis Duckhouse, 1978 (Australasian/Oceania)
Trichomyia jugabilis Duckhouse, 1978 (Australasian/Oceania)
Trichomyia juxta Duckhouse, 1978 (Australasian/Oceania)
Trichomyia noctivolata Quate & Quate, 1967 (Australasian/Oceania)
Trichomyia paenefalcata Duckhouse, 1978 (Australasian/Oceania)
Trichomyia palauensis Quate, 1959 (Australasian/Oceania)
Trichomyia palmata Duckhouse, 1978 (Australasian/Oceania)
Trichomyia parafalcata Duckhouse, 1978 (Australasian/Oceania)
Trichomyia paranocivolata Duckhouse, 1978 (Australasian/Oceania)
Trichomyia propinqua Duckhouse, 1978 (Australasian/Oceania)
Trichomyia repanda Duckhouse, 1978 (Australasian/Oceania)
Trichomyia tanypenis Duckhouse, 1978 (Australasian/Oceania)
Trichomyia triaina Duckhouse, 1978 (Australasian/Oceania)
Trichomyia trivialis Quate & Quate, 1967 (Australasian/Oceania)

Subgenus *Dicrotrichomyia* Duckhouse

Dicrotrichomyia Duckhouse, 1978: 204. Type species: *Trichomyia leei* Duckhouse, 1965, orig. des.

Trichomyia brachypenis Duckhouse, 1978 (Australasian/Oceania)
Trichomyia bulbosa Duckhouse, 1978 (Australasian/Oceania)
Trichomyia leei Duckhouse, 1965 (Australasian/Oceania)
Trichomyia lyrata Duckhouse, 1978 (Australasian/Oceania)
Trichomyia quadrispinosa Duckhouse, 1978 (Australasian/Oceania)
Trichomyia trukensis Quate, 1959 (Australasian/Oceania)
Trichomyia uncinata Duckhouse, 1978 (Australasian/Oceania)

Subgenus *Gondwanotrichomyia* Duckhouse

Gondwanotrichomyia Duckhouse, 1980: 184. Unavailable name; genus-group name proposed after 1980 without type-species designation.

Gondwanotrichomyia Duckhouse, 1985: 355. Type species: *Trichomyia nodosa* Duckhouse, 1980, orig. des.

Trichomyia capsulata Duckhouse, 1980 (Australasian/Oceania)

Trichomyia madsoni Duckhouse, 1965 (Australasian/Oceania)

Trichomyia nodosa Duckhouse, 1980 (Afrotropical region)

Trichomyia fusca Satchell, 1950a (Australasian/Oceania)

Trichomyia oahuensis Quate, 1954 (Australasian/Oceania)

Trichomyia pollex Duckhouse, 1978 (Australasian/Oceania)

Trichomyia singularis Quate & Quate, 1967 (Australasian/Oceania)

Subgenus *Opisthotrichomyia* Bravo

Opisthotrichomyia Bravo, 2001: 50. Type species: *Trichomyia brevitarsa* (Rapp, 1945), orig. des.

Trichomyia nocturna Bravo, 2001 (Neotropical region)

Trichomyia fluminensis Bravo, 2001 (Neotropical region)

Trichomyia brevitarsa (Rapp, 1945) (*Trichomyia maldonadoi* Vargas, 1953, syn.) (Neotropical region)

Trichomyia festiva Bravo, 2001 (Neotropical region)

Trichomyia vargasi (Barretto, 1954) (Neotropical region)

Subgenus *Septemtrichomyia* Bravo

Septemtrichomyia Bravo, 1999: 1. Type species: *Trichomyia botosaneanui* Wagner, 1993, orig. des.

Trichomyia amazonensis Araújo & Bravo, 2012 (Neotropical region)

Trichomyia atlantica Araújo & Bravo, 2012 (Neotropical region)

Trichomyia botosaneanui Wagner, 1993 (Neotropical region)

Trichomyia bou Bravo, 1999 (Neotropical region)

Trichomyia cauga Bravo, 1999 (Neotropical region)

Trichomyia dolichakis Quate, 1996 (Neotropical region)

Trichomyia dolichopogon Alexander, Freitas & Quate, 2001 (Neotropical region)

Trichomyia dolichothrix Quate, 1999 (Neotropical region)

Trichomyia imarui Araújo & Bravo, 2012 (Neotropical region)

Trichomyia jezeki Araújo & Bravo, 2012 (Neotropical region)

Trichomyia mishi Bravo, 1999 (Neotropical region)

Trichomyia pedrabranquensis Bravo, 2001 (Neotropical region)

Trichomyia satterlmairi Wagner & Manteller, 1996 (Neotropical region)

Trichomyia sertaneja Araújo & Bravo, 2012 (Neotropical region)

Subgenus *Syntrichomyia* Araújo & Bravo

Syntrichomyia Araújo & Bravo, in press. Type species: *Trichomyia queirozi* Bravo, 2002, orig. des.

Trichomyia biloba Quate, 1999 (Neotropical region)

Trichomyia onorei Bravo, 2002 (Neotropical region)

Trichomyia queirozi Bravo, 2002 (Neotropical region)

Trichomyia horrida Araújo & Bravo, in press (Neotropical region)

Subgenerically Unplaced species

Trichomyia batu Quate, 1962 (Oriental Region)

Trichomyia caelibata Quate, 1965 (Oriental Region)

Trichomyia malaya Quate, 1962 (Oriental Region)

Trichomyia ransangi Quate, 1965 (Oriental Region)

Trichomyia swinhoei Cockerell, 1917 (Oriental Region)

Trichomyia trifida Quate, 1965 (Oriental Region)

Trichomyia trifilis Quate, 1965 (Oriental Region)

Trichomyia carlestolrai Wagner, 2001 (Palearctic region)

Trichomyia itocoae Tokunaga & Komyo, 1956 (Palearctic region)

Trichomyia kostovi Jezek, 1990 (Palearctic region)

Trichomyia malickyi Wagner, 1982 (Palearctic region)

Trichomyia minima Withers, 2004 (Palearctic region)

Trichomyia parvula Szabó, 1960 (Palearctic region)

Trichomyia stepani Beran, Doczkal, Pfister & Wagner, 2010 (Palearctic region)

Trichomyia urbica Haliday in Curtis, 1839 (Palearctic region)

Trichomyia brochata Quate, 1957 (Afrotropical region)

Trichomyia congoensis Satchell, 1956b (Afrotropical region)

Trichomyia dlinzae Duckhouse, 1980 (Afrotropical region)

Trichomyia piricornis Freeman, 1949 (Afrotropical region)

Trichomyia nuda (Dyar, 1926) (Nearctic region)

Trichomyia sequoia Quate, 1955 (Nearctic region)

Trichomyia wirthi Quate, 1955 (Nearctic region)
Trichomyia styloryncha Curler & Moulton, 2010 (Nearctic region)
Trichomyia acanthostylis Quate, 1996 (Neotropical region)
Trichomyia andina Pérez-Dória & Sierra, 2010 (Neotropical region)
Trichomyia annae Bravo, 2001 (Neotropical region)
Trichomyia armata Barretto, 1954 (Neotropical region)
Trichomyia aurea Duckhouse, 1972 (Neotropical region)
Trichomyia barrettoi Barretto, 1954a (Neotropical region)
Trichomyia botosaneanui Wagner, 1993 (Neotropical region)
Trichomyia brasiliensis Satchell, 1956 (Neotropical region)
Trichomyia buchholzi Wagner & Manteller, 1996 (Neotropical region)
Trichomyia capitanea Duckhouse, 1972 (Neotropical region)
Trichomyia chepuensis Duckhouse, 1972 (Neotropical region)
Trichomyia cirrata Coquillett, 1902 (Neotropical region)
Trichomyia clavellata Quate, 1996 (Neotropical region)
Trichomyia colosensis Bejarano, Pérez-Dória & Sierra, 2010 (Neotropical region)
Trichomyia coutinhoi (Barretto, 1954) (Neotropical region)
Trichomyia danieli Bravo 2001 (Neotropical region)
Trichomyia eatoni Satchell, 1956 (Neotropical region)
Trichomyia edwarsi Tonnoir, 1929 (Neotropical region)
Trichomyia figueroai Duckhouse, 1972 (Neotropical region)
Trichomyia flinti Wagner & Manteller, 1996 (Neotropical region)
Trichomyia iarae Bravo, 2001 (Neotropical region)
Trichomyia inermis Barretto, 1954 (Neotropical region)
Trichomyia intricata Quate, 1996 (Neotropical region)
Trichomyia itabunensis Bravo, 2002 (Neotropical region)
Trichomyia ivani Bravo, 2001 (Neotropical region)
Trichomyia kenricki Duckhouse, 1972 (Neotropical region)
Trichomyia manni Duckhouse, 1972 (Neotropical region)
Trichomyia masneri Wagner, 1993 (Neotropical region)
Trichomyia nebulicola Ibáñez-Bernal, 2004 (Neotropical region)
Trichomyia pedicillata Satchell, 1956 (Neotropical region)
Trichomyia pseudodactylis Quate, 1996 (Neotropical region)
Trichomyia ptilotis Quate, 1996 (Neotropical region)

- Trichomyia quatei* Bravo, 2001 (Neotropical region)
- Trichomyia quimbaya* Bejarano, Pérez-Doria & Sierra, 2009 (Neotropical region)
- Trichomyia ramalhoi* Bravo, 2001 (Neotropical region)
- Trichomyia rawlinsi* Wagner, 1999 (Neotropical region)
- Trichomyia riocensensis* Alexander, Freitas & Quate, 2001 (Neotropical region)
- Trichomyia risaraldensis* Bejarano, Pérez-Doria & Sierra, 2009 (Neotropical region)
- Trichomyia saga* Bravo, 2000 (Neotropical region)
- Trichomyia saurotis* Quate, 1996 (Neotropical region)
- Trichomyia serrajiboiensis* Bravo, 2001 (Neotropical region)
- Trichomyia silvatica* Bravo, 2002 (Neotropical region)
- Trichomyia squamosa* (Enderlein, 1937) (Neotropical region)
- Trichomyia sulbaianensis* Bravo, 2002 (Neotropical region)
- Trichomyia teimosensis* Bravo, 2002 (Neotropical region)
- Trichomyia travassosi* (Barreto, 1956) (Neotropical region)
- Trichomyia triangularis* Quate, 1996 (Neotropical region)
- Trichomyia tritruncula* Quate, 1996 (Neotropical region)
- Trichomyia vazi* (Barretto, 1954) (Neotropical region)
- Trichomyia wasmanni* (Holmgren, 1905) (Neotropical region)
- Trichomyia xaniostylis* Quate, 1996 (Neotropical region)
- Species inquirenda*
- Trichomyia fairchildi* Vargas & Diaz Najera, 1953 (Neotropical region)

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Capítulo 5:
Taxonomy of *Trichomyia* Haliday 1839 (Diptera, Psychodidae, Trichomyiinae)
from Neotropical region, with emphasis on Brazilian species

Revista escolhida para submissão:

Zootaxa

**Taxonomy of *Trichomyia* Haliday 1839 (Diptera, Psychodidae, Trichomyiinae)
from Neotropical region, with emphasis on Brazilian species**

Resumo

As espécies de *Trichomyia* se encontram distribuídas em todas as regiões biogeográficas do planeta, exceto na Antártida. A Região Neotropical possui a maior riqueza de espécies de *Trichomyia*, com 75 espécies, a região Neártica apresenta 4 espécies, a região Paleártica 8 espécies, a região Afrotropical 5 espécies, a região Oriental 7 espécies e a região Australiana e Nova Guiné 46 espécies. No gênero são reconhecidos dois grupos morfológicos, grupo A para espécies com quatro segmentos no palpo completamente separados e grupo B para espécies com três segmentos no palpo, somados a um grupo com quatro segmentos no palpo, sendo os dois primeiros separados apenas por um pequena área articular. Atualmente são propostos oito subgêneros, quatro para a região Neotropical. No presente trabalho foram estudados 1.330 espécimes de *Trichomyia*, quase que exclusivamente do Brasil, dos estados do Amazonas, Pará, Bahia, Roraima, Rondônia e Minas Gerais. São descritas 44 novas espécies: *T. anira* sp. nov., *T. aquita* sp. nov., *T. araguaensis* sp. nov., *T. bahiensis* sp. nov., *T. carenata* sp. nov., *T. bifurcata* sp. nov., *T. caipora* sp. nov., *T. cerdosa* sp. nov., *T. cetrae* sp. nov., *T. cinthiae* sp. nov., *T. colligata* sp. nov., *T. complicata* sp. nov., *T. conchulata* sp. nov., *T. confusa* sp. nov., *T. crinita* sp. nov., *T. dentata* sp. nov., *T. elongata* sp. nov., *T. grossa* sp. nov., *T. hileiana* sp. nov., *T. hispida* sp. nov., *T. incrustabilis* sp. nov., *T. inedita* sp. nov., *T. lobata* sp. nov., *T. longa* sp. nov., *T. longiseta* sp. nov., *T. manacapurensis* sp. nov., *T. mariensis* sp. nov., *T. mendesi* sp. nov., *T. mineira* sp. nov., *T. nortensis* sp. nov., *T. notata* sp. nov., *T. paraensis* sp. nov., *T. pitinguensis* sp. nov., *T. pseudosilvatica* sp. nov., *T. pua* sp. nov., *T. puntarenas* sp. nov., *T. ribeiroi* sp. nov., *T. rondonensis* sp. nov., *T. sinuosa* sp. nov., *T. spinicauda* sp. nov., *T. spinosa* sp. nov., *T. stangae* sp. nov., *T. ituberensis* sp. nov., *T. truncata* sp. nov. Algumas dessas espécies foram agrupadas em grupos morfológicos sem valor taxonômico, apenas para facilitar o estudo. A distribuição de cinco espécies de *Trichomyia* é ampliada e uma chave para machos das espécies neotropicais do gênero é apresentada. Com o presente trabalho o número de espécies conhecidas mundialmente passa a 144, ou seja, há um incremento de 30%, e

assim, a riqueza de espécies na região Neotropical passa a ser a maior que o total de espécies presentes nas outras regiões biogeográficas.

Palavras chave: Neotropicais; psicodídeos; novos registros, novas espécies.

Abstract

Trichomyia species are distributed throughout the world, except in Antarctica. The Neotropical region has the greatest species richness of *Trichomyia*, with 75 species, compared to 4 in the Nearctic region, 8 in the Palearctic, 5 in the Afrotropical region, 7 in Oriental region, and 46 in the region of Australia and New Guinea. Two morphological groups are recognized for the genus: group A, comprising species with four well-separated palpus segments; and group B, comprising species with three palpus segments, and a group of species with four palpus segments but with the first two palpi separated by only a small articular area. We examined 1,330 specimens of *Trichomyia* that were almost exclusively Brazilian (from the states of Amazonas, Pará, Bahia, Roraima, Rondônia, and Minas Gerais), and 44 new species are described: *T. anira* sp. nov., *T. aquita* sp. nov., *T. araguaensis* sp. nov., *T. bahiensis* sp. nov., *T. carenata* sp. nov., *T. bifurcata* sp. nov., *T. caipora* sp. nov., *T. cerdosa* sp. nov., *T. cetrae* sp. nov., *T. cinthiae* sp. nov., *T. colligata* sp. nov., *T. complicata* sp. nov., *T. conchulata* sp. nov., *T. confusa* sp. nov., *T. crinita* sp. nov., *T. dentata* sp. nov., *T. elongata* sp. nov., *T. grossa* sp. nov., *T. hileiana* sp. nov., *T. hispida* sp. nov., *T. incrustabilis* sp. nov., *T. inedita* sp. nov., *T. lobata* sp. nov., *T. longa* sp. nov., *T. longiseta* sp. nov., *T. manacapurensis* sp. nov., *T. mariensis* sp. nov., *T. mendesi* sp. nov., *T. mineira* sp. nov., *T. nortensis* sp. nov., *T. notata* sp. nov., *T. paraensis* sp. nov., *T. pitinguensis* sp. nov., *T. pseudosilvatica* sp. nov., *T. pua* sp. nov., *T. puntarenas* sp. nov., *T. ribeiroi* sp. nov., *T. rondonensis* sp. nov., *T. sinuosa* sp. nov., *T. spinicauda* sp. nov., *T. spinosa* sp. nov., *T. stangae* sp. nov., *T. ituberensis* sp. nov., *T. truncata* sp. nov. Some species were placed into morphological groups without taxonomic value to facilitate their study. Currently are known 144 species, representing an increase of 37%, a number greater than the combined total of the other biogeographical areas. The distributions of five species of *Trichomyia* were expanded, and a key to the males of the Neotropical species of *Trichomyia* is presented.

Key words: Neotropics, psychodid, moth flies, new records, new species

Introduction

The cosmopolitan genus *Trichomyia* Haliday in Curtis, 1839, the type genus of Trichomyiinae, is the unique for the extant species of this subfamily. Two other genera of fossil species are known for the subfamily: *Eatonisca* Meunier, 1905 and *Eotrichomyia* Nel *et al.*, 2002. According Wagner & Ibáñez-Bernal (2009), a generic revision to *Trichomyia* is urgently needed due to its wide morphological diversity.

There are currently 144 accepted extant species of *Trichomyia*, 18 fossil species, (Duckhouse 1972, 1973; Hennig 1972; Wagner 1990, 1993, 1999, 2001; Quate 1965, 1996, 1999; Wagner & Manteller 1996; Bravo 1999, 2000, 2001a,b,c, 2002; Alexander *et al.* 2001; Ibáñez-Bernal 2004; Withers 2003; Duckhouse & Lewis 2007; Lak *et al.* 2008; Bejarano *et al.* 2009a,b, 2010; Beran *et al.* 2010; Curler & Moulton 2010; Pérez-Doria *et al.* 2010; Kvitte 2012; Araújo & Bravo 2012; Araújo & Bravo, in press; Araújo & Bravo, unpubl.). The Neotropical region has the greatest species richness of *Trichomyia*, with 75 species, followed by 46 in the Australian and New Guinea region, 4 in the Nearctic, 8 in the Palearctic, 5 in the Afrotropical region, and 7 in Asia. Thirty-eight species of the genus are recognized from Brazil.

The first described species of *Trichomyia* from the Neotropical region was *Trichomyia cirrata* Coquillet, 1902 from Mexico, although only the females were described. Satchell (1956) later redescribed the female and described the male based on specimens collected in Brazil. Duckhouse (1974) had doubtful, however, that the males described by Satchell (1956) were truly specimens of *T. cirrata*. Ibanez-Bernal (2004) did not accept the view of Satchell (1956) and considered the males of this species as remaining undescribed.

Duckhouse (1973) elaborated the first catalogue of Neotropical psychodids and listed 16 species of *Trichomyia*, but did not include six species of *Trichomyia* from Chile and Argentina described by Duckhouse (1972), probably due to the temporal proximity of the publications. There was thus a hiatus between the years 1973 and 1993 without the description of any new species of *Trichomyia* from the Neotropical region, with 70% of all of the currently known species being described after 1993.

The first classification of *Trichomyia* species was proposed by Duckhouse (1965), who established two informal categories: group A, composed of the more “primitive” and usually larger species with four palpus segments; and group B, composed of more specialized, and usually smaller, species with three palpus segments.

Duckhouse (1978) later pointed out a number of problems with this classification, particularly because some Neotropical species could not be assigned to either group.

In order to improve the classification of *Trichomyia*, Duckhouse (1978) proposed three subgenera for the Australian and New Guinea species of group B: *Apotrichomyia* Duckhouse, 1978, *Dactylotrichomyia* Duckhouse, 1978, and *Dicrotrichomyia* Duckhouse, 1978. Two year later, he created the subgenus *Gondwanotrichomyia* Duckhouse, 1980 for the species of group A from southern Africa and New Zealand. Bravo (1999, 2001a) proposed two subgenera, *Septemtrichomyia* Bravo, 1999 and *Opisthotrichomyia* Bravo, 2001 for the Neotropical species and currently two new subgenera were created for this region, *Syntrichomyia* Araújo & Bravo, in press and *Brachitrichomyia* Araújo & Bravo, unpubl.

The present paper describes 44 new species of *Trichomyia* from the Neotropical region, organized into a number of groups according to their morphological characteristics. A key to the males of the Neotropical species of *Trichomyia* and new records of the species are presented.

Material and Methods

We examined 1,330 specimens of male of *Trichomyia* from distinct localities, but with emphasis on Brazilian species deposited in the *Coleção de Invertebrados do Instituto Nacional de Pesquisa da Amazônia*, Amazonas, Brazil (INPA) and *Coleção Entomológica Prof. Johann Becker do Museu de Zoologia da Universidade Estadual de Feira de Santana*, Bahia, Brazil (MZFS), as indicated for each species. Additional materials were obtained from the Reserva Florestal Adolpho Ducke in the state of Amazonas, collected using a CDC light trap. All specimens were treated with 10% KOH, dehydrated and mounted in Canada balsam. The general morphological terminology follows Cumming & Wood (2009); the antenna terminology of *Trichomyia* follows Ibáñez-Bernal (2004); wing terminology and the terminology for the male terminalia follows Wagner & Ibáñez-Bernal (2009).

Key to males of Neotropical species of *Trichomyia*

1. Maxillary palpus four segmented, first segment not fused or partially fused to second segment ... 2
 - Maxillary palpus three segmented ... 33
2. First segment of palpus well separated; flagellomeres cylindrical; first flagellomere 1.4-2.0 times the length of second flagellomere; species known only from south of South America ... 3
 - First segment of palpus partially fused to second segment; flagellomeres piriform; first and second flagellomere with approximately the same length; species wide distributed in South America ... 9
3. Gonostylus with apical projection approximately 0.5 times the length of gonostylus, extended towards ejaculatory apodeme ... *Trichomyia figueroai* Duckhouse, 1972 (Distribution: Chile)
 - Gonostylus not so shaped ... 4
4. Gonostylus bifurcated at apex ... 5
 - Gonostylus not bifurcated at apex ... 6
5. Gonocoxites fused to epandrium with pair of dorsal narrow projections; cerci narrower in distal half, finger-like ... *Trichomyia kenricki* Duckhouse, 1972 (Distribution: Chile)
 - Gonocoxites not fused to epandrium; epandrium strip-like, short; gonocoxites with pair of dorsal projections, wide, plate-like; cerci uniformly wide ... *Trichomyia aurea* Duckhouse, 1972 (Distribution: Chile)
6. Gonostylus strongly constricted in middle, with short, broad process on inner side at base; cercus tapered to naked, bluntly-pointed tips ... *Trichomyia capitanea* Duckhouse, 1972 (Distribution: Chile)
 - Gonostylus not constricted in middle, without process; cercus not so shaped ... 7
7. Gonostylus twice as broad in distal half as at base; each cerci with two dorsal processes, one pair setose, the other pair smaller, naked ... *Trichomyia edwarsi* Tonnoir, 1929 (Distribution: Chile)
 - Gonostylus narrower in distal half than at base; cerci without processes ... 8
8. Gonocoxites with one pair of ventral gonapophyses fused beneath aedeagus to form broad, grooved plate, its posterior edge concave in dorsal view; cerci each with naked knob at apex, on inner side; gonostylus narrower at apex ... *Trichomyia manni* Duckhouse, 1972 (Distribution: Chile)

- Gonapophyses of gonocoxites lacking; cerci without naked knob at apex; gonostylus with rounded apex ... *Trichomyia chepuensis* Duckhouse, 1972 (Distribution: Chile)
- 9. Gonostylus totally sclerotized ... 10 (*nebulica* group)
 - Gonostylus slightly sclerotized ... 12
 - 10. Gonostylus directed to the external portion; two arms of gonocoxite, each with an elongated bristle in the apex, spur-like; ejaculatory apodeme long, 2.25 times the length of gonostylus ... *Trichomyia quimbaya* Bejarano, Pérez-Doria & Sierra. 2009 (Distribution: Colômbia)
 - Gonostylus directed to the inner portion; one arm of gonocoxite with elongated bristles across its surface; ejaculatory apodeme short, once the length of gonostylus ... 11
 - 11. Aedeagus simple with truncated apex ... *Trichomyia nebulicola* Ibáñez-Bernal, 2004 (Distribution: México)
 - Aedeagus expanded in the medial portion with pointed apex ... *Trichomyia andina* Pérez-Dória & Sierra, 2010 (Distribution: Colombia)
 - 12. Gonocoxites fused with epandrium, plate-like ... 13
 - Gonocoxites fused with epandrium or not, but never plate-like ... 17
 - 13. Gonostylus independent, articulated to gonocoxite; hypandrium and gonocoxites fused, forming a large dorsal plate, overing all structures of apical terminalia; hypoproct with rounded apex ... *Trichomyia incrustabilis* Araújo & Bravo **sp. nov.** (Distribution: Brazil, states of Pará and Amazonas)
 - Gonostyli fused basally; hypandrium and gonocoxites fused, forming a plate-like sclerite (gonocoxal plate), never overing all structures of apical terminalia; hypoproct weakly or strongly bilobed ... 14 (subgenus *Syntrichomyia*)
 - 14. Gonocoxal plate with short or long lateral arms on posterior margin, crowned with a set of bristles; median surface of gonocoxal plate with bristles ... 15
 - Gonocoxal plate with posterior margin straight, without arms, and a set of bristles on posterolateral margin; surface of gonocoxal plate without bristles ... 16
 - 15. Gonocoxal plate with short lateral arms, 0.2 times the length of gonostylus, with approximately six bristles; gonostylus (= aedeagus of Quate 1999) terminating in a tip, without bristles ... *Trichomyia biloba* Quate, 1999 (Distribution: Panama)
 - Gonocoxal plate with long lateral arms, 0.6 times the length of gonostylus, with four bristles; gonostylus ending in rounded apex with apical bristles ... *Trichomyia horrida* Araújo & Bravo, in press (Distribution: Brazil, state of Amazonas)

16. Ejaculatory apodeme short, 0.5 times the length of gonostylus; cerci joined by sclerotized bridge; M_2 incomplete, separated from M_1 ... *Trichomyia onorei* Bravo, 2002 (Distribution: Brazil, state of Bahia)
- Ejaculatory apodeme long, approximately the same length as gonostylus; cercus without sclerotized bridge; M_2 complete, forked to M_1 ... *Trichomyia queirozi* Bravo, 2002 (Distribution: Brazil, state of Bahia)
17. Gonocoxite with setae-bearing internal lobe ... 18 (subgenus *Opistotrichomyia*)
- Gonocoxite without internal lobe ... 23
18. Gonostylus claviform, subspherical apex sculptured ... *Trichomyia nocturna* Bravo, 2001b (Distribution: Brazil, state of São Paulo)
- Gonostylus never claviform, apex with other formats, never subspherical or sculptured ... 19
19. Ejaculatory apodeme short, about 0.5 times the length of gonostylus ... 20
- Ejaculatory apodeme long, the same size or larger than the gonostylus ... 21
20. Gonocoxite with simple protrusion on median dorsal surface with bristles; aedeagus with two openings ... *Trichomyia fluminensis* Bravo, 2001b (Distribution: Brazil, state of Rio de Janeiro)
- Gonocoxite with quadrate, knob-like protrusion on median dorsal surface with bristles; aedeagus simple, expanded apically ... *Trichomyia riococensis* Alexander, Freitas & Quate, 2001 (Distribution: Brazil, state of Minas Gerais and Rondônia)
21. Apex of gonostylus not bifurcated, narrow, like a bristle; ejaculatory apodeme larger than cercus ... *Trichomyia brevitarsa* (Rapp, 1945) (Distribution: Costa Rica, Panamá, Colômbia)
- Apex of gonostylus bifurcated, ejaculatory apodeme smaller than cercus ... 22
22. Ejaculatory apodeme short, 0.2 times the length of cercus ... *Trichomyia festiva* Bravo, 2001b (Distribution: Brazil, state of Bahia)
- Ejaculatory apodeme long, 0.5 times the length of cercus ... *Trichomyia vargasi* (Barretto, 1954) (Distribution: Brazil, state of São Paulo)
23. Gonostylus subelliptical with short and apical hook sharp projection ... *Trichomyia saurotis* Quate, 1996 (Distribution: Costa Rica)
- Gonostylus never subelliptical and with apical projection ... 24
24. Gonocoxites projected dorsally, fused basally, with two long posterior arms, 1.0-3.5 times the length of ejaculatory apodeme ... 25 (subgenus *Brachitrichomyia*)

- Gonocoxites not projected dorsally, fused or not basally and without arm of gonocoxite ... 31
- 25. Sensilla in depressed pit on segment 2 and absent in segment 1; ejaculatory apodeme short, 0.3 times the length of arm of gonocoxite ... *Trichomyia pseudodactylis* Quate, 1996 (Distribution: Panama)
- Sensilla in depressed pit on segments 1 and 2; ejaculatory apodeme short or long, 0.2-1.0 times the length of gonocoxite ... 26
- 26. Ejaculatory apodeme short, 0.2-0.4 times the length of arm of gonocoxite; bristles of internal margin of arm of gonocoxite simple not feathered ... 27
- Ejaculatory apodeme long, the same length of arm of gonocoxite; bristles of internal margin of arm of gonocoxite feathered ... 30
- 27. Gonostylus lost ... 28
- Gonostylus present ... 29
- 28. Four segment of palpus 1.3 times the length of third segment; CuA₂ ending after medial fork ... *Trichomyia armata* Barretto, 1954 (Distribution: Brazil, state of São Paulo)
- Four segment of palpus 0.8 the length of third segment; CuA₂ ending before medial fork ... *Trichomyia brasiliensis* Satchell, 1956 (Distribution: Brazil, state of Santa Catarina)
- 29. Ejaculatory apodeme 0.2 times the length of arm of gonocoxite; bristle of arm of gonocoxite in ½ apical ... *Trichomyia risaraldensis* Bejarano, Pérez-Doria & Sierra, 2009 (Distribution: Colombia)
- Ejaculatory apodeme 0.4 times the length of arm of gonocoxite; bristle of arm of gonocoxite in all internal margin ... *Trichomyia quatei* Bravo, 2001 (Distribution: Brazil, state of Bahia)
- 30. Cercus, in ventral view, long, subrectangular; arm of gonocoxite sub-parallel ... *Trichomyia inermis* Barretto, 1954 (Distribution: Brazil, states of São Paulo, Bahia and Amazonas)
- Cercus, in ventral view, drop-shaped; arm of gonocoxite convergent to midline ... *Trichomyia plumata* Araújo & Bravo, unpubl. (Distribution: Brazil, state of Amazonas)
- 31. Gonocoxite, in dorsal view, with small lobe in the internal side; gonostylus bare, turned to the midline ... *Trichomyia saga* Bravo, 2000 (Distribution: Brazil, state of São Paulo)
- Gonocoxite, in dorsal view, subcylindrical, pilose, straight ... 32

32. Ejaculatory apodeme short, 0.3 the length of the gonocoxite; gonostylus short 0.5 times the length of the gonocoxite, cercus long, triangular in ventral view ... *Trichomyia buchholzi* Wagner & Masteller, 1996 (Distribution: Porto Rico)
- Ejaculatory apodeme long, the same length of the gonocoxite; gonostylus long, the same length of the gonocoxite; cercus small, subcircular ... *Trichomyia triangularis* Quate, 1996 (Distribution: Costa Rica)
33. Tergum 7 with pair of lateral lobes, each one with 3–5 elongated bristles, sometimes fused (as a single bristle) ... 34 (subgenus *Septemtrichomyia*)
- Tergum 7 without elongated bristles ... 47
34. Group of elongated bristles on tergum 7 with straight apices ... 35
- Group of elongated bristles on tergum 7 with curved apices ... 40
35. Apex of arm of gonocoxite with three hairs ... *Trichomyia botosaneanui* Wagner, 1993 (Distribution: Caribe, Martinica)
- Apex of arm of gonocoxite with a row of rod-like setae ... 36
36. Presence of spine-like projection at base of arm of gonocoxite ... *Trichomyia sertaneja* Araújo & Bravo, 2012 (Distribution: Brazil, state of Bahia)
- Absence of spine-like projection at base of arm of gonocoxite ... 37
37. Internal margin of apex of gonocoxite with a row of rod-like setae ... *Trichomyia mishi* Bravo, 1999 (Distribution: Brazil, state of Rio de Janeiro)
- External margin of apex of gonocoxite with a row of rod-like setae ... 38
38. Terminalia with one pair of parameres ... *Trichomyia amazonensis* Araújo & Bravo, 2012 (Distribution: Brazil, states of Pará, Amazonas and Roraima)
- Terminalia with two pairs of parameres ... 39
39. Ejaculatory apodeme long, 4.0 times the length of gonostylus ... *Trichomyia imarui* Araújo & Bravo, 2012 (Distribution: Brazil, state of Pará)
- Ejaculatory apodeme short, 0.5 times the length of gonostylus ... *Trichomyia pedrabranquensis* Bravo, 2001 (Distribution: Brazil, state of Bahia)
40. Gonocoxites with two dorsal appendages, basal one shorter, angular, distal one elongated and straight ... *Trichomyia sattelmairi* Wagner & Masteller, 1996 (Distribution: Porto Rico)
- Gonocoxites never with two dorsal appendages ... 41
41. Parameres, in dorsal view, with medial arm ... *Trichomyia bou* Bravo, 1999 (Distribution: Brazil, state of Bahia)
- Parameres, in dorsal view, never with medial arm ... 42

42. R2+3 and R2 subequal in length ... 43
- R2+3 about 1.5 times the length of R2 ... 45
43. Apex of arm of gonocoxite with a row of rod-like setae ... *Trichomyia dolichopogon* Alexander, Freitas & Quate, 2001 (Distribution: Brazil, state of Minas Gerais)
- Apex of arm of gonocoxite with setae ... 44
44. Ejaculatory apodeme long, 2.5 times the length of the gonostylus ... *Trichomyia jezeki* Araújo & Bravo, 2012 (Distribution: Brazil, states of Pará and Amazonas)
- Ejaculatory apodeme short, 0.7 times the length of the gonostylus ... *Trichomyia dolichakis* Quate, 1996 (Distribution: Costa Rica)
45. Parameres triangular in dorsal view ... *Trichomyia cauga* Bravo, 1999 (Distribution: Brazil, state of Bahia)
- Parameres never triangular in dorsal view, elongated ... 46
46. Ejaculatory apodeme short, 0.7 times the length of the paramere ... *Trichomyia dolichothrix* Quate, 1999 (Distribution: Panamá)
- Ejaculatory apodeme long, 1.7 times the length of the paramere ... *Trichomyia atlantica* Araújo & Bravo, 2012 (Distribution: Brazil, state of Bahia)
47. Gonocoxites without arm; gonostylus dorsally and apically articulated to gonocoxite ... 48
- Gonocoxites with one or two arms; gonostylus articulated ventrally to gonocoxite ... 50
48. Gonostylus bare *Trichomyia masneri* Wagner, 1993 (Distribution: Caribe, Dominican Republic)
- Gonostylus with elongated or rod-like bristles apically ... 49
49. Gonostylus with elongated bristles in the apical upper margin ... *Trichomyia sulbaianensis* Bravo, 2002 (Distribution: Brazil, state of Bahia)
- Gonostylus with a row of rod-like bristles in the apex and elongated bristles in the external lateral margin ... *Trichomyia xaniostylis* Quate, 1996 (Distribution: Costa Rica)
50. One pair of arm of gonocoxite ... 51
- Two pair of arm of gonocoxite (including bifurcations) ... 91
51. Arm of gonocoxite short in view dorsal, 0.2-0.3 times the length of ejaculatory apodeme with elongated bristles ... 52

- Arm of gonocoxite long in view dorsal, larger than 0.2-0.3 times the length of ejaculatory apodeme with elongated or reduced bristles ... 55
- 52. Apex of gonocoxite with projection spur-like ... 53
 - Apex of gonocoxite without projection spur-like ... 54
- 53. Expansion in the basal portion of gonocoxite truncated; gonostylus with rounded apex; two rod-like bristles in the apex of cercus ... *Trichomyia crinita* Araújo & Bravo **sp. nov.** (Distribution: Brazil, state of Amazonas)
 - Expansion in the basal portion of gonocoxite bifurcated apically; apex of gonostylus truncated, bristles with curved apex in the apex of cercus ... *Trichomyia paraensis* Araújo & Bravo **sp. nov.** (Distribution: Brazil, state of Pará)
- 54. Gonostylus long, the same length of ejaculatory apodeme, bristles rod-like in the apex of cercus ... *Trichomyia cerdosa* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
 - Gonostylus short, 0.2 times the length of ejaculatory apodeme, cercus without differentiated bristles in the apex ... *Trichomyia aquita* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)
- 55. Cercus with apex with three digitiform process ... 56 (*tritruncula* group)
 - Cercus never with apex with three digitiform process ... 57
- 56. Process digitiforms in the apex of cercus with spiniform bristles; arm of gonocoxite with two bristles in the apex ... *Trichomyia itabunensis* Bravo, 2002 (Distribution: Brazil, state of Bahia)
 - Process digitiforms in the apex of cercus without bristles; arm of gonocoxite with bristles throughout its length ... *Trichomyia tritruncula* Quate, 1996 (Distribution: Costa Rica)
- 57. Gonostylus strongly esclerotized, directed to the inner portion ... 58 (*intricata* group)
 - Gonostylus slightly esclerotized, directed or not to the inner portion ... 61
- 58. Gonostylus inflated, with digitiform processes apically ... *Trichomyia rondonensis* Araújo & Bravo **sp. nov.** (Distribution: Brazil, state of Rondônia)
 - Gonostylus with other formats, never inflated (bifurcated, tapered, with rounded apex) ... 59
- 59 Arm of gonocoxite ending in acute apex; gonostylus bifurcate, projected horizontally to the inner portion... *Trichomyia cetrae* Araújo & Bravo **sp. nov.** (Distribution: Brazil, state of Bahia)

- Arm of gonocoxite ending in rounded apex; gonostylus simple, projected diagonally to the apex ...60

60 Gonostylus tapered, parameres with curved tip and acute apex ... *Trichomyia intricata* Quate, 1996 (Distribution: Costa Rica)

- Gonostylus with rounded apex, curved parameres with truncated apex ... *Trichomyia puntarenas* Araújo & Bravo **sp. nov.** (Distribution: Costa Rica)

61. Gonostylus apically bifurcated with external projection thumb-like ... *Trichomyia ptilotis* Quate, 1996 (Distribution: Costa Rica)

- Gonostylus without apical bifurcation ... 62

62. Arm of gonocoxite digitiform, with rounded apex and expanded base; cercus with projection with bristles ... 63 (*flinti* group)

- Arm of gonocoxite with other formats; cercus with or without projection with bristles ... 65

63. Projection with rod-like bristles in the medial portion of cercus ... *Trichomyia lobata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)

- Projection with bristles in the apex of cercus ... 64

64 Ascoids annealed; elongated projection in the medial portion of arm of gonocoxite; ejaculatory apodeme short, 1.8 times the length of ventral parameres ... *Trichomyia anira* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Amazonas, Roraima and Pará)

- Ascoids not annealed; arm of gonocoxite without medial projection; ejaculatory apodeme long, 3.8 times the length of ventral parameres ... *Trichomyia flinti* Wagner & Manteller, 1996 (Distribution: Porto Rico)

65. Gonostylus small, inconspicuous, setose lobe at center in the internal lateral of gonocoxite, about as wide as long ... *Trichomyia clavellata* Quate, 1996 (Distribution: Costa Rica)

- Gonostylus large or small; without setose lobe at center in the internal lateral of gonocoxite ... 66

66. Cercus with elongated apex and two apical bristles ... 67

- Cercus without or with more than two bristles in the apex ... 69

67. Elongated bristles in the apex of cercus and in the arm of gonocoxite ... *Trichomyia elongata* Araújo & Bravo **sp. nov.** (Distribution: Brazil, state of Bahia)

- Bristles rod-like in the apex of cercus and in the arm of gonocoxite ... 68

68. Gonocoxites with posterior arm, sinuous; aedeagus short, ending at base of parameres ... *Trichomyia hispida* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
- Gonocoxites with posterior arm tapering apically; aedeagus ending at apex of parameres ... *Trichomyia complicata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
69. Projection of gonocoxite with apical lamellate bristle ... *Trichomyia ivani* Bravo, 2001c (Distribution: Brazil, state of Bahia)
- Projection of gonocoxite with other kinds of bristles, never lamellate ... 70
70. One pair of horizontal and sclerotized parameres, directed to the inner portion ... 71
- Parameres never horizontal and sclerotized, directed to the inner portion... 72
71. Arm of gonocoxite with narrow base and expanded medial portion, with rod-like bristles in the apex ... *Trichomyia nortensis* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Amazonas and Pará)
- Arm of gonocoxite with narrow base and expanded apex, without rod-like bristles in the apex ... *Trichomyia ramalhoi* Bravo, 2001c. (Distribution: Brazil, state of Bahia)
72. Ventral projection of gonocoxites with a prominent strong tooth on inner side ... *Trichomyia rawlinsi* Wagner, 1999 (Distribution: Caribe, Dominican Republic)
- Ventral projection of gonocoxites without a tooth on inner side ... 73
73. Parameres and aedeagus covered with an expansion of gonocoxite ... 74
- Parameres and aedeagus never or partly covered with an expansion of gonocoxite ... 76
74. Sclerotized expansion of gonocoxite covering the parameres and aedeagus ... *Trichomyia spinicauda* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
- Membranous expansion of gonocoxite covering the parameres and aedeagus ... 75
75. Cercus with spiniform bristles in the dorsal view; reduced gonostylus, 0,3 times the length of parameres ... *Trichomyia spinosa* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Amazonas, Pará and Rondônia,
- Cercus without spiniform bristles in the dorsal view; elongated gonostylus, 1,5 times the length of parameres ... *Trichomyia longiseta* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)
76. Cercus with rod-like bristles in the apex ... 77
- Cercus with bristles, never rod-like in the apex ... 78

77. Hypandrium involving the aedeagus, with a subspherical projection dorsal; Elongated arm of gonocoxite with lateral bristles and two apical espiniform setae ... *Trichomyia inedita* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Amazonas and Pará)
- Hypandrium not involving the aedeagus; sinuous arm of gonocoxite with elongated bristles in the apex ... *Trichomyia notata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Rondônia)
78. Parameres strongly sclerotized ... 79
- Parameres slightly sclerotized ... 85
79. Arm of gonocoxite with rod-like bristles in the apex ... *Trichomyia conchulata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Amazonas and Pará)
- Arm of gonocoxite never with rod-like bristles in the apex ... 80
80. One pair of parameres trifurcated, claw-shaped ... *Trichomyia sinuosa* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Amazonas and Pará)
- Parameres with other formats, never trifurcated ... 81
81. Gonostylus with several strong spines ... *Trichomyia acanthostylis* Quate, 1996 (Distribution: Costa Rica)
- Gonostylus bare ... 82
82. Epandrium with lateroapical expansions with bristles ... *Trichomyia caipora* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Amazonas, Pará and Roraima)
- Epandrium without lateroapical expansions with bristles ... 83
83. Arm of gonocoxite with truncated apex ... *Trichomyia pedicillata* Satchell, 1956 (Distribution: Pará)
- Arm of gonocoxite with rounded or pointed apex ... 84
84. Arm of gonocoxite with rounded apex; ejaculatory apodeme long, 2.6 times the length of gonostylus ... *Trichomyia grossa* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
- Arm of gonocoxite with pointed apex; ejaculatory apodeme short, once the length of gonostylus ... *Trichomyia bahiensis* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
85. Arm of gonocoxite curved and directed to inner portion; elongated gonostylus truncated apically ... 86 (*truncata* group)
- Arm of gonocoxite curved or not; gonostylus never truncated apically ... 89

86. Presence of one pair of complex parameres; with four expansions, directed to the dorsal, inner, apical and ventral portions ... *Trichomyia manacapurensis* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)
 - Curved parameres, simple and convergents ... 87
87. Absence of expansion of gonocoxite with dentiform margin ... *Trichomyia cinthiae* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)
 - Presence of expansion of gonocoxite with dentiform margin ... 88
88. Presence of one pair of curved parameres with two medial expansion ... *Trichomyia dentata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará and Amazonas)
 - Presence of one pair of curved parameres without medial expansion ... *Trichomyia truncata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará and Amazonas)
89. Elongated arm of gonocoxite expanded apically with elongated apical bristles ... *Trichomyia carenata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará and Amazonas)
 - Arm of gonocoxite expanded basally with bristles ... 90
90. Arm of gonocoxites with apicolateral bristles and two apical bristles thicker than the others ... *Trichomyia araguaensis* Araújo & Bravo, **sp. nov.** (Distribution: Venezuela)
 - Arm of gonocoxite with apicolateral bristles and one bare expansion articulated in the medial portion of arm ... *Trichomyia pitinguensis* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)
91. Cercus with apex bifurcated ... 92
 - Cercus without apex bifurcated ... 93
92. Gonocoxite with a ventral expansion, that in dorsal view is parallel to aedeagus, hypoproct with truncated apex ... *Trichomyia colosensis* Pérez-Dória et al, 2010 (Distribution: Colombia)
 - Gonocoxite with elongated and lanciform expansion that in dorsal view cross between them in the apex, hypoproct with pointed apex ... *Trichomyia mariensis* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
93. Cercus with six elongated and thick bristles, 0.7 times the length of cercus ... *Trichomyia iarae* Bravo, 2001c (Distribution: Brazil, state of Bahia)
 - Cercus with small bristles, always less than 0.2 times the length of cercus ... 94
94. Arm of gonocoxites with one thick bristle at apex, turned to midline ... *Trichomyia annae* Bravo, 2001c (Distribution: Brazil, state of Bahia)

- Arm of gonocoxite without or with more than one bristle at apex, usually turned to apex ... 95
- 95. The two arms of gonocoxite with apical bristles ... 96
 - Only one pair of arm of gonocoxite with apical bristles ... 103
- 96. Cercus without special apical bristles ... *Trichomyia danieli* Bravo 2001c (Distribution: Brazil, state of Bahia)
 - Cercus with special apical bristles (rod-like, spiniform) ... 97
- 97. Cercus with two apical bristles ... 98
 - Cercus with more than two apical bristles ... 101
- 98. Arm of gonocoxite bifurcated in the medial portion ... 99
 - Arms of gonocoxite with independent origin ... 100
- 99. Presence of one pair of subtriangular parameres; with divergent tip upward of arms of gonocoxite ... *Trichomyia colligata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Roraima and Pará)
 - Presence of one pair of subtriangular parameres; with divergent tip below of arms of gonocoxite ... *Trichomyia bifurcata* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará and Amazonas)
- 100. Arms of gonocoxite broader and with rounded apex, subspherical, ejaculatory apodeme short, 0.8 times the length of gonostylus ... *Trichomyia hileiana* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará, Roraima and Amazonas)
 - Arms of gonocoxite elongated, expanded in the base and apex, ejaculatory apodeme long, 1.5 times the length of gonostylus ... *Trichomyia teimosensis* Bravo, 2002 (Distribution: Brazil, state of Bahia)
- 101. Hypoproct with pointed apex ... *Trichomyia mineira* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Minas Gerais)
 - Hypoproct with rounded apex, never pointed ... 102
- 102. Presence of two pair of parameres; the inner subtriangular, with pointed apex, reaching the apex of gonocoxite, the external, smaller than inner, curved and with rounded tip; gonostylus with truncated apex ... *Trichomyia ribeiroi* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará and Amazonas)
 - Presence of one pair of esclerotized curved parameres with apex directed to the external portion; gonostylus with rounded apex ... *Trichomyia mendesi* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará, Roraima and Amazonas)

103. One pair of arm of gonocoxite with a row of rod-like bristles, cercus with apical expansion ... *Trichomyia pua* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)
- One pair of arm of gonocoxite with or without a row of rod-like bristles, cercus never with apical expansion ... 104
104. Cercus with elongated rod-like bristles in the apex ... 105 (*longa* group)
- Cercus without special bristles in the apex ... 107
105. Hypandrium and gonocoxites fused forming a wide dorsal plate, covering the parameres and aedeagus ... *Trichomyia confusa* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Amazonas)
- Hypandrium and gonocoxites fused never forming a wide dorsal plate ... 106
106. Arm of gonocoxite external with rod-like bristles in the apex; parameres complex, a distal pair with a hook-like apex; the proximal pair with three expansions, all shorter than the distal ... *Trichomyia ituberensis* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
- Arm of gonocoxite external without rod-like bristles in the apex; two pair of parameres, dorsal pair smaller than ventral pair and distally curved to the midline ... *Trichomyia longa* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, state of Bahia)
107. Arm of gonocoxite bifurcated in the apical portion ... 108
- Arm of gonocoxite never bifurcated in the apical portion ... 109
108. Gonostylus subtriangular slowly bifurcated basally; cercus with a row of broad bristles in the apex ... *Trichomyia silvatica* Bravo, 2002 (Distribution: Brazil, state of Bahia)
- Gonostylus subtriangular, without slowly bifurcated basally; cercus with a row of hairs in the apex ... *Trichomyia pseudosilvatica* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará, Rondônia and Amazonas)
109. Gonostylus subtriangular; ejaculatory apodeme short, less than gonostylus ... *Trichomyia stangae* Araújo & Bravo, **sp. nov.** (Distribution: Brazil, states of Pará, Roraima and Amazonas)
- Gonostylus with expanded base and apex; ejaculatory apodeme long, larger than gonostylus ... *Trichomyia serrajiboensis* Bravo, 2001c (Distribution: Brazil, state of Bahia)

Taxonomy

1. Species with four segmented palpus well separated

Neotropical species included. *Trichomyia chepuensis* Duckhouse, 1972; *Trichomyia manni* Duckhouse, 1972; *Trichomyia edwardsi* Tonnoir, 1929; *Trichomyia capitanea* Duckhouse, 1972; *Trichomyia aurea* Duckhouse, 1972; *Trichomyia kenricki* Duckhouse, 1972 and *Trichomyia figueiroai* Duckhouse, 1972.

Remarks. The species with four segments of palpus well separated were classified by Duckhouse (1972) as “Group A”, are species usually large compared with the species of “Grupo B” and considered more “primitive”. Its distribution is limited to southern South America, southern Africa and southern Australia and New Zealand. In the Neotropical region the only species already described has distribution in Chile and Argentina.

2. Species with four segments of palpus, the first two partially fused

2.1 Subgenus *Opistotrichomyia* Bravo

Opistotrichomyia Bravo, 2001: 50. Type species: *Trichomyia brevitarsa* (Rapp, 1945), by original designation

Included species. *Trichomyia brevitarsa* (Rapp, 1945); *Trichomyia vargasi* (Barretto, 1954); *Trichomyia nocturna* Bravo, 2001; *Trichomyia festiva* Bravo, 2001; *Trichomyia fluminensis* Bravo, 2001 and *Trichomyia riocensensis* Alexander, Freitas & Quate, 2001

Remarks. The males of *Opistotrichomyia* can be recognized by gonocoxite projected ventrally and with an internal lobe with elongated bristles; and gonostylus usually articulate apically to the gonocoxite. The subgenus *Opistotrichomyia* was initially created for grouping five species from Brazil and Panamá, in this paper *T. riocensensis* also from Brazil, species published later, was included in this subgenus.

2.2 Subgenus *Syntrichomyia* Araújo & Bravo

Syntrichomyia Araújo & Bravo, in press. Type species: *Trichomyia queirozi* Bravo, 2002, by original designation.

Included species. *Trichomyia biloba* Quate, 1999; *Trichomyia onorei* Bravo, 2002; *Trichomyia queirozi* Bravo, 2002; *Trichomyia horrida* Araújo & Bravo, in press.

Remarks. The males of *Syntrichomyia* can be recognized by gonocoxites and hypandrium fused, plate-like, with lateroposterior bristles; gonostyli fused basally and divergent apically, little sclerotized and hypoproct bilobed.

2.3 Subgenus *Brachitrichomyia* Araújo & Bravo

Brachitrichomyia Araújo & Bravo, unpubl. Type species: *Trichomyia inermis* Barretto, 1954, by original designation.

Included species. *Trichomyia armata* Barretto, 1954; *Trichomyia brasiliensis*, Satchell, 1956; *Trichomyia inermis* Barretto, 1954; *Trichomyia pseudodactylis*, Quate, 1996; *Trichomyia quatei*, Bravo, 2001; *Trichomyia risaraldensis* Bejarano, 2009 and *Trichomyia plumata* Araújo & Bravo, unpubl.

Remarks. The males of *Brachitrichomyia* can be recognized by gonocoxites projected dorsally, each one with elongated posterior arm, 1.0-3.5 times the length of ejaculatory apodeme; parameres curved and joined at apex; aedeagus in the middle of parameres, like a filament.

2.4 *nebulica* group

Species with sclerotized bare gonostylus with pointed apex.

***Trichomyia andina* Bejarano, Pérez-Dória & Sierra, 2010: 76-77, Figs. 1-7**

Remarks. The males of *T. andina* can be recognized by pigmentation of gonostylus that extending from the base to the medial portion and ends on darker edge covered with small irregular bristles, gonocoxite with a small lobe with thick bristles and a

membranous sac covering the aedeagus and parameres. Aedeagus expanded in the medial portion and ejaculatory apodeme the same length of gonostylus.

Material examined. The type specimens were not examined; however, the description and figures of BEJARANO *et al.* (2010) allowed the identification of the specimens.

Other material examined. Brazil, Rondônia, Caucalândia, 200 km SSE of Porto Velho, 25.V-6.VI.1998, 1 #m, L.W. Quate leg. (MZFS).

Distribution. Known from Colômbia and Brazil, state of Rondônia (new record).

***Trichomyia nebulica* Ibáñez-Bernal, 2004: 8-13, Figs. 21-35**

Remarks. The males of *T. nebulica* can be recognized by the triangular gonocoxite with tubular expansion and concave internal margin; gonostylus bifid and subretangular aedeagus with truncated apex. Ejaculatory apodeme 1.3 times the length of gonocoxite.

Material examined. The type specimens were not examined

Distribution. Known only from the type locality in Mexico

***Trichomyia quimbaya* Bejarano, Pérez-Doria & Sierra. 2009: 98-100, Figs. 1-5**

Remarks. The males of *Trichomyia quimbaya* can be recognized by the gonocoxite with two digitiform expansions with one spiniform bristle in each and subretangular aedeagus with two expanded tip. Gonostylus subtriangular. Ejaculatory apodeme long, 1.8 times the length of gonocoxite.

Material examined. The type specimens were not examined; however, the description and figures of BEJARANO *et al.* (2009) allowed the identification of the specimens.

Other material examined. Brazil, Amazonas, Manacapuru, Est. Cajatuba, Km 6, 24-29.X.1997, 5 #m, without name of colector (MZFS); Pará, Santarém, Ponte de Pedras, Km 13+2, 18.XI.1998, 77 #m, R.F., R.A.N, F.L.S leg. (MZFS); Amazonas, Manacapuru, Cajatuba, Km 69/3, 9.X.1998, 16 #m, without name of colector (MZFS); Amazonas, Presidente Figueredo, Pitinga, 4.XII.1998, 26 #m, R.Q., L.M.S. leg. (MZFS); Amazonas, Manacapuru, Cajatuba, Km 69/3, 06.X.1998, 17 #m, without name of colector (MZFS); Amazonas, Presidente Figueredo, Pitinga, 15.XIII.1998, 10 #m, R.R., L.M.S. leg. (MZFS); Amazonas, Manacapuru, Ramal A, Cajatuba, 29.VII –

01.VIII.1997, 2 #m, without name of colector (MZFS); Amazonas, Purupuru, Estrada Nunes de Melo, Km 8, 30.XI.1998, 5 #m, without name of colector (MZFS); Amazonas, Manacapuru, Km 69/3, 07.X.1998, 2 #m, without name of colector (MZFS); Pará, Santarém, Est. Aeroporto, Km 13, Comunidade D. Sta. Maria, Chacara N. Sra de Nazaré, 28.XI.1998, 1 #m, R.F., F.L.S. leg. (MZFS)

Distribution. Known Colombia and Brazil, states of Pará and Amazonas (new records).

2.5 Unplaced species of *Trichomyia* with four segments of palpus, the first two partially fused

Trichomyia buchholzi Wagner & Masteller, 1996

Trichomyia incrustabilis Araújo & Bravo sp. nov

Trichomyia saga Bravo, 2000

Trichomyia saurotis Quate, 1996

Trichomyia triangularis Quate, 1996

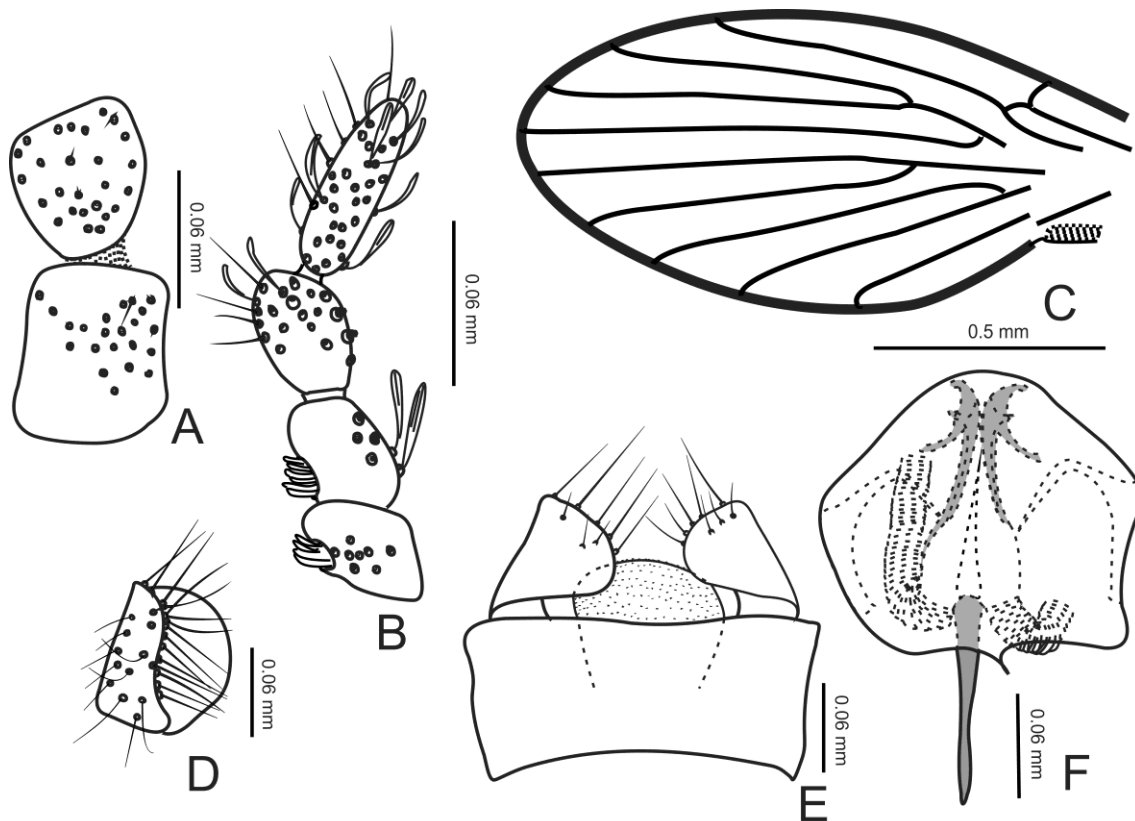
***Trichomyia incrustabilis* Araújo & Bravo, sp. nov.**

(Figs. 1A-F)

Diagnosis. R₅ complete at base; hypandrium and gonocoxites fused, forming a large dorsal plate, covering all structures of apical terminalia; two pairs of sclerotized parameres; one directed to dorsal portion and one directed to external lateral, with hook shaped; ejaculatory apodeme long, twice the length of parameres.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 1A); flagellomeres and ascoids lost in the specimen studied. Palpus four segmented, with the two first segments fused; palpus formula 1.0:1.6:1.9:2.9; first and second segment with sensilla in depressed pit on inner side (Fig. XX). Wing (Fig. 1B): R₅ complete at base; r-m and m-cu absent (Fig. 1C). Male terminalia. Hypandrium and gonocoxites fused, forming a large dorsal plate, covering all structures of apical terminalia. (Fig. 1F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, curved and with pointed apex (Fig. 1F). Presence of two pairs of sclerotized parameres; one directed to dorsal

portion and one directed to external lateral, with hook shaped (Fig. 1F). Aedeagus subtriangular ending in the midline of parameres. Ejaculatory apodeme long, twice the length of parameres (Fig. 1F). Epandrium longer than wide, subretangular (Fig. 1E). Cercus curved (Fig. 1E) with many lateral bristles in dorsal view (Fig. 1D). Hypoproct subcircular with apical micropilosity (Fig. 1E).



Figs. 1A–B. *Trichomyia incrustabilis* Araújo & Bravo **sp. nov.** A. Scape and pedicel; B. Palpus; C. Right wing; D. Cercus dorsal view; E. Cerci, epandrium, hypoproct; F. Male terminalia, dorsal.

Material examined. Brazil, Pará, Santarém, Km 13+2, Ponte de pedras, 18-19.XI,1998, holotype #m, RF, RDN, FLS leg. (MZFS). 8 paratypes: 2 #m, same locality, date and collectors as holotype (MZFS); 1 #m, same locality as holotype, BR163, Km 55, IBAMA, 02.XII.1998, RF, RDN, FLS leg. (INPA); 1 #m, Pará, Bragança, Vila Buriti, Km14, Sítio Barra Bode, 01.X.1998, without name of collector (INPA); 4 #m, Amazonas, Pitinga, 258 Km of Manaus, 16.XII.1997, RQ, RN, PE leg. (MZFS)

Etymology. The Latin epithet *incrustabilis* = misterious, refers to the male terminalia, totally covered dorsally by a dorsal plate.

Distribution. Known from Santarém and Bragança in Pará, Brazil; and Pitinga in Amazonas, Brazil.

***Trichomyia saga* Bravo, 2000: 187-190, Figs. 1-15**

Remarks. The males of *T. saga* can be recognized by cylindrical aedeagus with truncated apex; gonocoxite with a lobe in the internal margin and ejaculatory apodeme 1.6 times the length of gonostylus.

Material examined. Brazil, São Paulo, Ribeirão Preto (Campus Universitário, USP), holotype #m, 21.III.1994, Freddy Bravo leg (MZFS); 1 paratype #f, same locality, date and collector as holotype (MZFS)

Distribution. Known only from the type locality in Brazil, state of São Paulo.

3. Species with three segmented palpus

3.1 Subgenus *Septemtrichomyia* Bravo

Septemtrichomyia Bravo, 1999: 1–2. Type species: *Trichomyia botosaneanui* Wagner, 1993, by original designation

Remarks. The males of *Septemtrichomyia* can be recognized by tergum 7 with pair of lateral lobes, each one with 3–5 elongated bristles, sometimes fused (as a single bristle) (see Araújo & Bravo, 2012)

Included species. *T. amazonensis* Araújo & Bravo, 2012; *T. atlantica* Araújo & Bravo, 2012; *T. botosaneanui* Wagner, 1993; *T. bou* Bravo, 1999; *T. cauga* Bravo, 1999; *T. dolichakis* Quate, 1996, *T. dolichopogon* Alexander, Freitas & Quate, 200; *T. dolichothrix* Quate, 1999; *T. imarui* Araújo & Bravo, 2012; *T. jezeki* Araújo & Bravo, 2012; *T. mishi* Bravo, 1999; *T. pedrabranquensis* Bravo, 2001c, *T. sattelmairi* Wagner & Masteller, 1996 and *T. sertaneja* Araújo & Bravo, 2012.

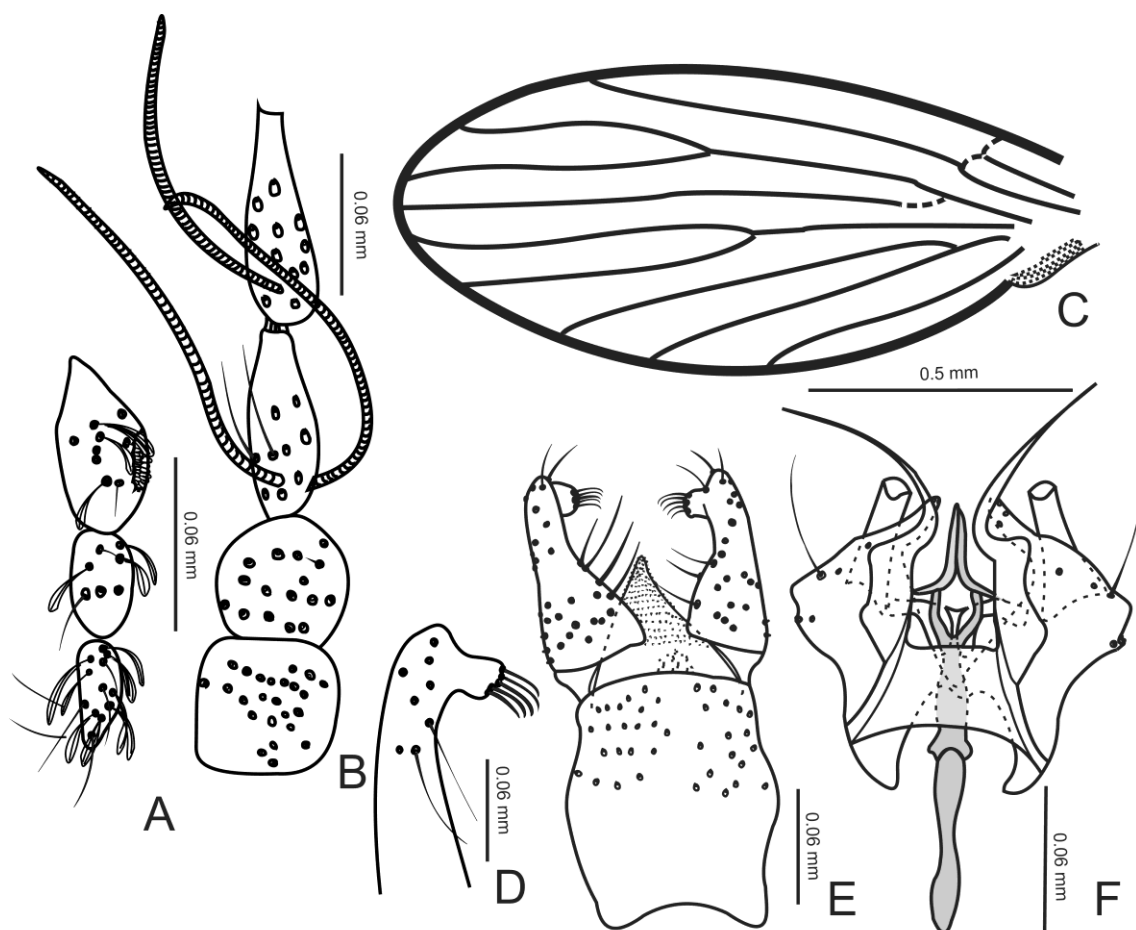
3.2 *flinti* group

Species with digitiform arm of gonocoxite, with expanded base and rounded apex;
Cercus with projection with bristles.

***Trichomyia anira* Araújo & Bravo, sp. nov.**

(Figs. 2A–F)

Diagnosis. Ascoids annealed, apex of Sc unsclerotized, sc-r unsclerotized, R₅ with base unsclerotized; one pair of dorsal expansion hook-shaped on gonocoxite; three pair of sclerotized parameres, one fused in the apex L-shaped, one pair L-shaped with rounded tip and one fused U-shaped; cercus with an expansion with apical bristles.



Figs. 2A–F. *Trichomyia anira* sp. nov. A. Palpus; B. Scape, pedicel and basal flagellomeres; C. Right wing; D. Cercus, dorsal view; E. Cerci, epandrium, hypoproct and epiproct; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical; flagellomeres piriform and eccentric; ascoids 1.8 times as long as the length of flagellomere, annealed (Fig. 2B). Palpus three segmented; palpus formula 1.0:0.6:0.6; first segment with sensilla in depressed pit on inner side (Fig. 2A). Wing: apex of Sc unsclerotized, sc-r unsclerotized, R₅ with base unsclerotized; r-m and m-cu absent (Fig. 2C). Male terminalia. Hypandrium and gonocoxites fused with one pair of dorsal expansion hook-shaped, with thin tip. Arm of gonocoxite digitiform with an elongated bristle laterobasal. Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare and with expanded base (Fig. 2F). Presence of three pair of sclerotized parameres, being one fused in the apex L-shaped, one pair L-shaped with rounded tip and one fused U-shaped involving the aedeagus (Fig. 2F). Aedeagus expanded apically. Ejaculatory apodeme long, 1.6 times the length of gonostylus (Fig. 2F). Epandrium longer than wide (Fig. 2E). Cercus digitiform with an expansion with five apical bristles with curved apex (Fig. 2D). Epiproct membranous, subtriangular. Hypoproct tapering with apical micropilosity (Fig. 2E).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba, Km 69/3, 09.X.1998, holotype #m, without name of collector. (MZFS); 42 paratypes: 18 #m, same locality and data as holotype (MZFS); 1 #m, same locality as holotype, Km6, 24-29.X.1997, without name of collector. (MZFS); 6 #m, same locality as holotype, 20.IV.1998, R.Q.,R.N.,P.E. (sic.) leg. (MZFS); 5 #m, Amazonas, Manaus, Reserva Ducke, 26-31.VIII.2011, M.X. Araújo leg. (MZFS); 7 #m, Amazonas, Pres. Figueiredo, Pitinga, 15.XIII.1998, R.Q.,L.M.C. leg.(MZFS); 1 #m, Amazonas, Pitinga, R. dos Paturis, 02-04.VI.1998, without name of collector. (MZFS); 2 #m, Roraima, Pitinga, 13-15.XII.1997, RQ.,R.N.,P.E. (sic.) leg. (MZFS); 2 #m, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22.VIII.1998, without name of collector (MZFS).

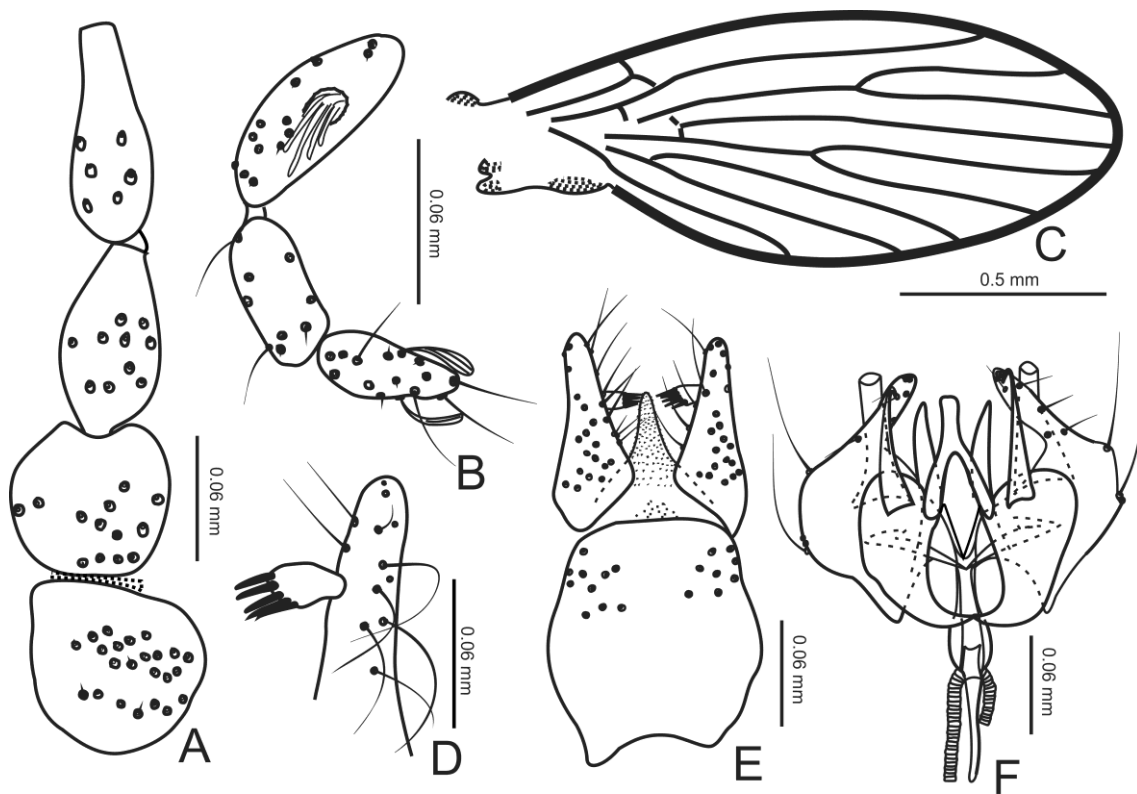
Etymology. From tupi, *anira* = ring, refers to annular appearance of ascoids.

Distribution. Known from Manacapuru, Manaus and Presidente Figueiredo in Amazonas, Brazil; Pitinga in Roraima, Brazil; and Novo Repartimento in Pará.

***Trichomyia lobata* Araújo & Bravo, sp. nov.**

(Figs. 3A–F)

Diagnosis. R_5 with base unsclerotized; r-m unsclerotized; dorsal subtriangular expansion with curved apex on gonocoxite; three pair of parameres; one subtriangular, one Y-shaped and one pair directed horizontally in the medial portion of gonocoxite; ejaculatory apodeme short, 0.8 times the length of gonostylus.



Figs. 3A–F. *Trichomyia lobata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Cercus, dorsal view; E. Cerci, epandrium, hypoproct and epiproct; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 3A); flagellomeres pyriform and eccentric (Fig. 3A); ascoids not visualized. Palpus three segmented; palpus formula 1.0:0.6:0.6 (Fig. 3B); first segment with sensilla in depressed pit on inner side (Fig. 3B). Wing. R_5 with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 3C). Male terminalia. Hypandrium and gonocoxites fused with a dorsal subtriangular expansion with curved apex. Arm of gonocoxite digitiform and pilose with two elongated bristles in the external lateral (Fig. 3F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, and with expanded base (Fig. 3F). Presence of three pair of parameres; one pair subtriangular, one pair fused in the apex, Y-shaped and one pair

directed horizontally in the medial portion of gonocoxite (Fig. 3F). Aedeagus bifid (Fig. 3F). Ejaculatory apodeme short, 0.8 times the length of gonostylus. Epandrium long than wide (Fig. 3E). Cercus digitiform (Fig. 3E) with a medial expansion with about five apical rod-like setae (Fig. 3D). Hypoproct with apical micropilosity (Fig. 3E).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba, Km 69/3, 06.X.1998, holotype #m, without name of collector (MZFS).

Etymology. The epithet *lobata* refers to the lobe in the cercus.

Distribution. Known from Manacapuru in Amazonas, Brazil.

***Trichomyia flinti* Wagner & Manteller, 1996: 451-253, Figs. 1-9**

Remarks. The males of *T. flinti* can be recognized by the presence of two pair of parameres, one S-shaped and other subtriangular. Ejaculatory apodeme long, 3.8 times the length of subtriangular parameres.

Material examined. The type material was not examined.

Distribution. Known only from the type locality in Porto Rico.

3.3 *intricata* group

Species with gonostylus strongly esclerotized, directed to the inner portion of male terminalia

***Trichomyia intricata* Quate, 1996: 10-11, fig. a**

Remarks. The males of *T. intricata* can be recognized by gonostylus cone-shaped, slightly curved. Ejaculatory apodeme the same length of gonostylus. In the description of Quate (1996) is not mentioned anything about the sclerotization of gonostylus, but de acordo to the drawing and the resemblance of the set of other structures of the male terminalia with other species of the subgenus proposed, this species must be included in *intricata* group.

Material examined. The type material was not examined.

Distribution. Known only from the type locality in Costa Rica.

***Trichomyia styloryncha*, Curler, 2010: 52-54, figs. 1-7**

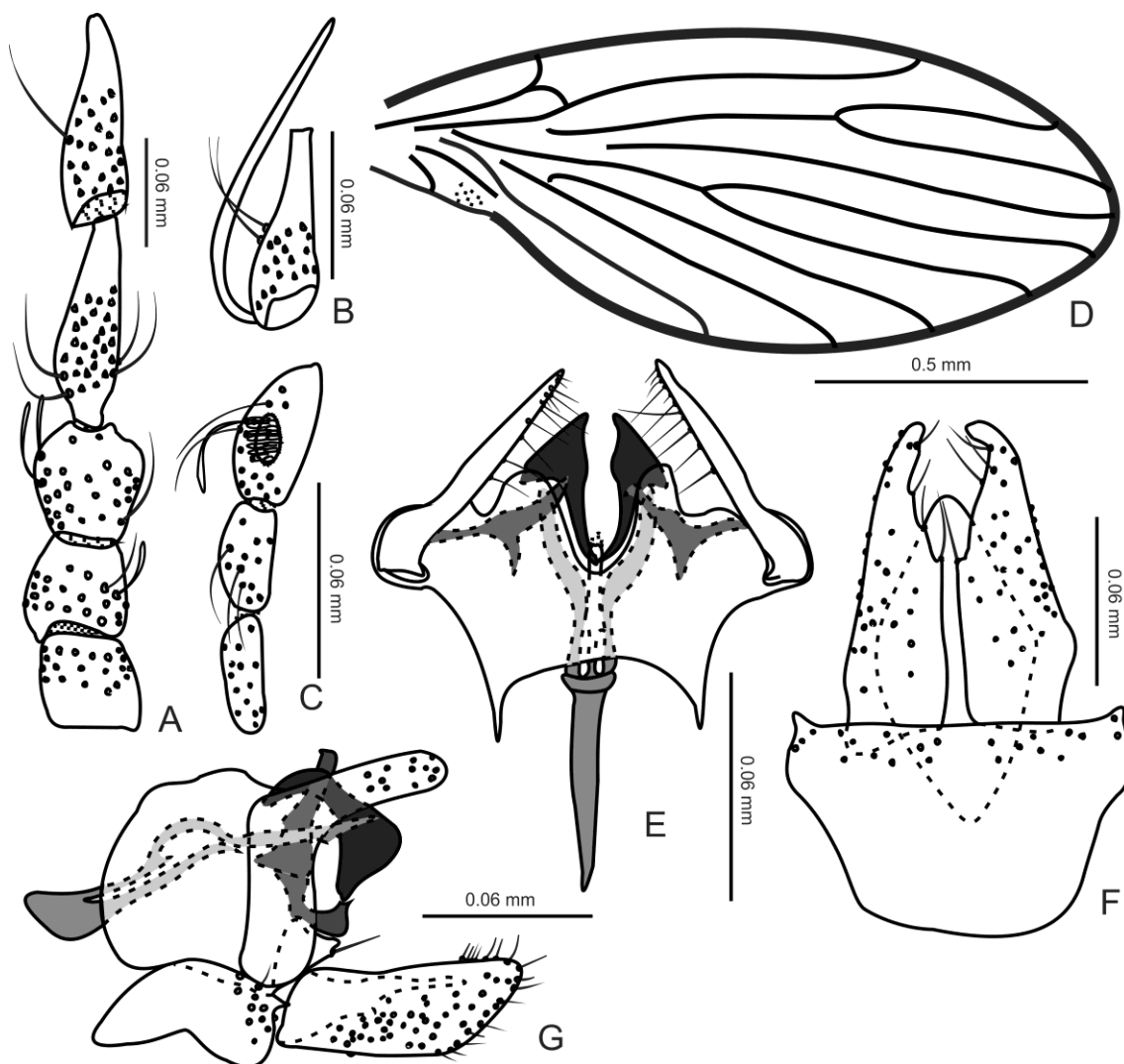
Remarks. The males of *T. styloryncha* can be recognized by gonostylus digitiform, inflated apically and directed to the inner portion. Gonocoxite membranous basally and ejaculatory apodeme 0,8 times the length of gonostylus.

Material examined. The type material was not examined.

Distribution. Known only from the type locality in United States.

***Trichomyia cetrae* Araújo & Bravo, sp. nov**

(Figs. 4A-G)



Figs. 4A–G. *Trichomyia cetrae* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Flagellomere with ascoid; C. Palpus; D. Left wing; E. Male terminalia, dorsal; F. Cerci, epandrium and hypopoct; G. Male terminalia, lateral.

Diagnosis. Medial posterior expansion on gonocoxite, bifurcated apically; gonostylus bifurcated, sclerotized, articulated ventrally at gonocoxite; two pair of parameres, one dorsal subtriangular and one ventral wider than dorsal paramere; ejaculatory apodeme twice the length of gonostylus

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape with the same length of pedicel; pedicel subspherical (Fig. 4A); flagellomeres pyriform and eccentric (Fig. 4A); ascoids twice the length of flagellomere (Fig. 4B). Palpus formula 1.0:0.7:0.9 (Fig. 4C). Wing. R_5 incomplete at base; r-m and m-cu absent (Fig. 4D). Male terminalia: Hypandrium fused with gonocoxites, with medial posterior expansion, bifurcated apically (Fig. 4E). Arm of gonocoxites L inverted shaped in lateral view (Fig. 4G) and with elongated bristles along the internal margin (Fig. 4E). Gonostylus bifurcated, sclerotized, articulated ventrally at gonocoxite (Fig. 4E). Parameres, two pair, dorsal pair subtriangular and ventral pair wider than dorsal parameres (Figs. 4E, 4G). Aedeagus truncated in the apex (Fig. 4E). Ejaculatory apodeme twice the length of gonostylus (Figs. 4E, 4G). Epandrium pilose, apically larger than basally (Fig. 4F). Cercus pilose (Figs. 4E), subelliptical in lateral view (Fig. 4G). Sternite 10 with apical micropilosity (Fig. 4F).

Material examined. Brazil, Bahia, Cachoeira municipality, Fazenda Villa Rial, 24.V.2004, holotype #m, F. Bravo leg. (MZUEFS).

Etymology. The epithet *cetrae* is an allusion to the shape of the male terminalia that resembles a scepter.

Distribution. Known from Cachoeira in Bahia.

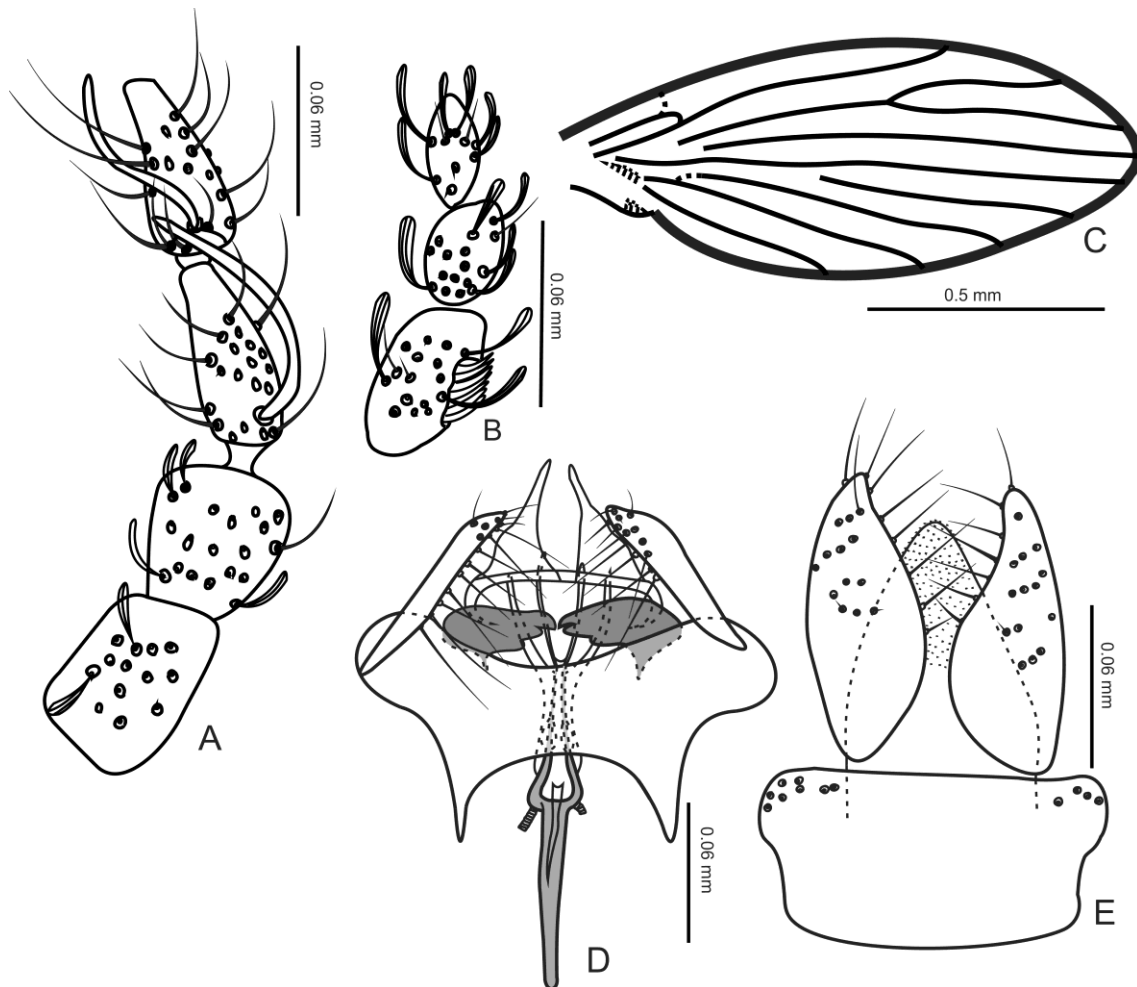
***Trichomyia rondonensis* Araújo & Bravo, sp. nov**

(Figs. 5A-E)

Diagnosis. Apex of Sc unsclerotized; inflated gonostylus, sclerotized; two pair of subtriangular parameres, which together form a sheath covering the other two. Aedeagus bifid, divergent; ejaculatory apodeme 1.5 times the length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical and pedicel subspherical (Fig. 5A); flagellomeres pyriform (Fig. 5A); ascoids 1.2 times the length of flagellomere (Fig. 5A). Palpus

formula 1.0:0.6:0.7 (Fig. 5B). Wing. R_5 complete at base; apex of Sc unsclerotized, M_2 not reaching M_1 , M_3 with base unsclerotized, r-m present and m-cu absent (Fig. 5C). Male terminalia. Hypandrium fused with gonocoxites, with medial posterior expansion. Arm of gonocoxite pilose with bristles along the internal margin (Fig. 5D).



Figs. 5A–E. *Trichomyia rondonensis* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Male terminalia, dorsal; E. Cerci, epandrium and hypopod.

Gonostylus inflated, slightly trifurcated, sclerotized, articulated ventrally at gonocoxite (Fig. 5D). Parameres, two pair, the dorsal subtriangular, fused, membranous, covering the aedeagus and the other parameres, divergent (Fig. 5D). Aedeagus bifid, divergent (Fig. 5D). Ejaculatory apodeme 1.5 times the length of gonostylus (Fig. 5D). Epandrium pilose, apically larger than basally (Fig. 5E). Cercus pilose, subtriangular (Figs. 5E). Sternite 10 with apical micropilosity (Fig. 5E).

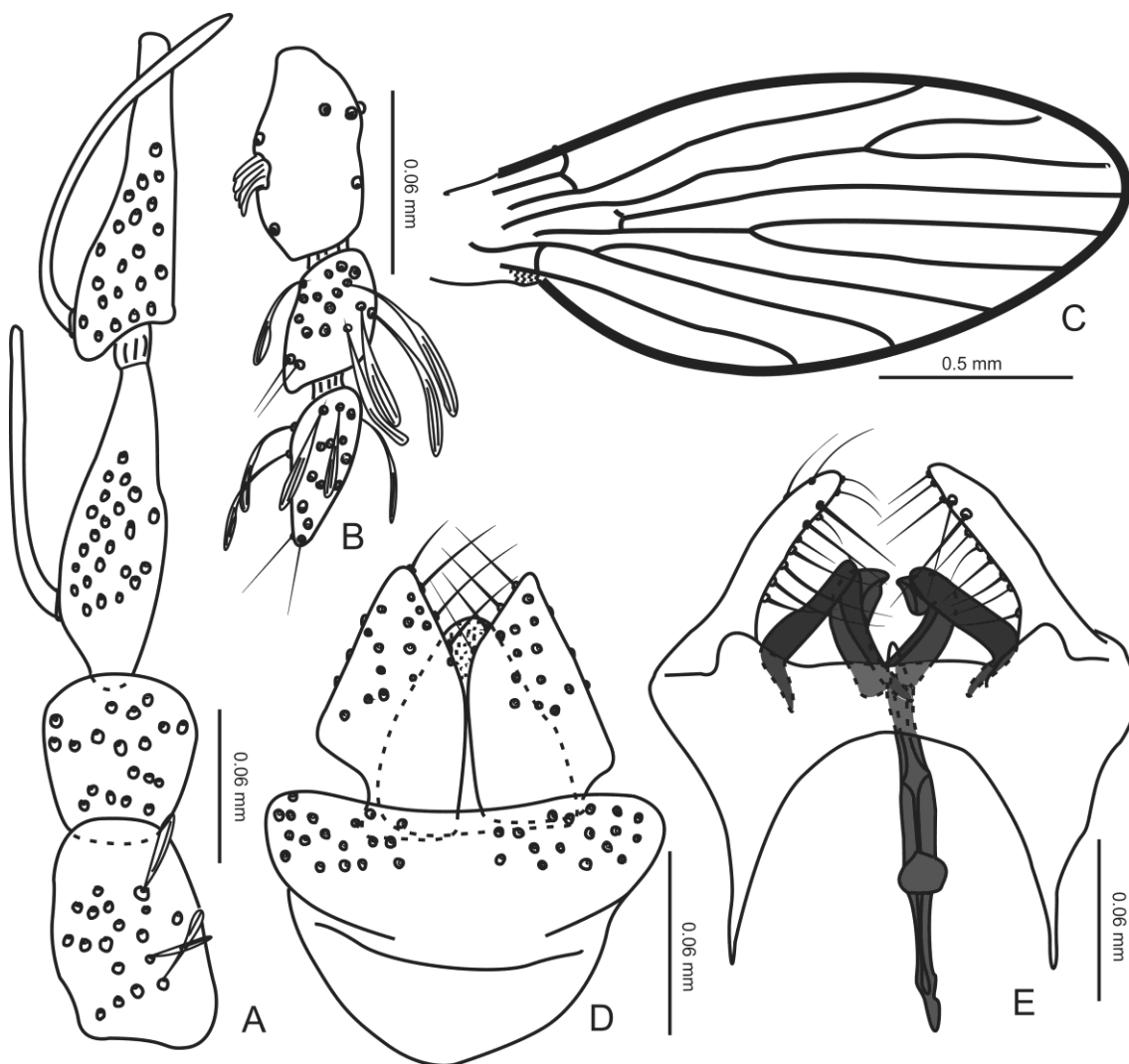
Material examined. Brazil, Rondônia, Caucaalândia, 200km SSE of Porto Velho, 25. V-06.VI.98, holotype #m, L.W. Quate leg. (MZFS); 1 paratype #m, same locality, date and collector as holotype (MZFS)

Etymology. The epithet *rondonensis* was based on the type locality.

Distribution. Known from Caucaalândia in Rondônia

***Trichomyia puntarenas* Araújo & Bravo, sp. nov.**

(Figs. 6A-E)



Figs. 6A–E. *Trichomyia puntarenas* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cerci, epandrium and hypopocit; E. Male terminalia, dorsal.

Diagnosis. Gonostylus with rounded apex, esclerotized; m-cu present; two pair of curved parameres with truncated apically; ejaculatory apodeme the same length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; subcylindrical scape and subspherical pedicel (Fig. 6A); flagellomeres pyriform and excentric (Fig. 6A); ascoids 1.3 times the length of flagellomere (Fig. 6A). Palpus formula 1.0:0.5:0.7 (Fig. 6B). Wing. R_5 with base unsclerotized, r-m unsclerotized and m-cu present (Fig. 6C). Male terminalia. Hypandrium fused with gonocoxites, with medial posterior expansion. Arm of gonocoxite pilose with bristles along the internal margin (Fig. 6E). Gonostylus projected diagonally toward the apex, with rounded apex (Fig. 6E). One pair of curved parameres truncated apically (Fig. 6E). Aedeagus simple, with a single opening ending near the base of the parameres. (Fig. 6E). Ejaculatory apodeme the same length of gonostylus (Fig. 6E). Epandrium pilose, apically larger than basally (Fig. 6D). Cercus pilose, subtriangular (Figs. 6D). Sternite 10 with apical micropilosity (Fig. 6D).

Material examined. Costa Rica, Puntarenas, Monteverde, Est. Biol. Monteverde, 28. IV-01.V.97, holotype #m, L.W. Quate (MZFS).

Etymology. The epithet *puntarenas* was based on the type locality

Distribution. Known from Puntarenas in Costa Rica

3.4 *tritruncula* group

Species with three digitiform process in the apex of cercus.

***Trichomyia itabunensis* Bravo, 2002: 58-59, Figs. 1-6**

Remarks. The males of *T. itabunensis* can be recognized by the curved arm of gonocoxite, C-shaped. Process digitiform in the apex of cercus with spiniform bristles. Two pair of parameres, being one larger and more sclerotized than other. Ejaculatory apodeme long, 4.0 times the length of gonostylus.

Material examined. Brazil, Bahia: Itabuna (Reserva Ecológica CEPEC), holotype #m, 10.X.1985, P. S. Terra leg. (MZFS).

Distribution. Known only from the type locality in Brazil, state of Bahia.

***Trichomyia tritruncula* Quate, 1996: 8-9, Figs. 2f-g**

Remarks. The males of *T. itabunensis* can be recognized by the curved arm of gonocoxite (= gonostylus by Quate, 1996) with bristles throughout its length. Process digitiform in the apex of cercus without bristles. Ejaculatory apodeme short, 0.6 times the length of arm of gonocoxite.

Material examined. The type specimens were not examined

Distribution. Known only from the type locality in Costa Rica

3.5 *truncata* group

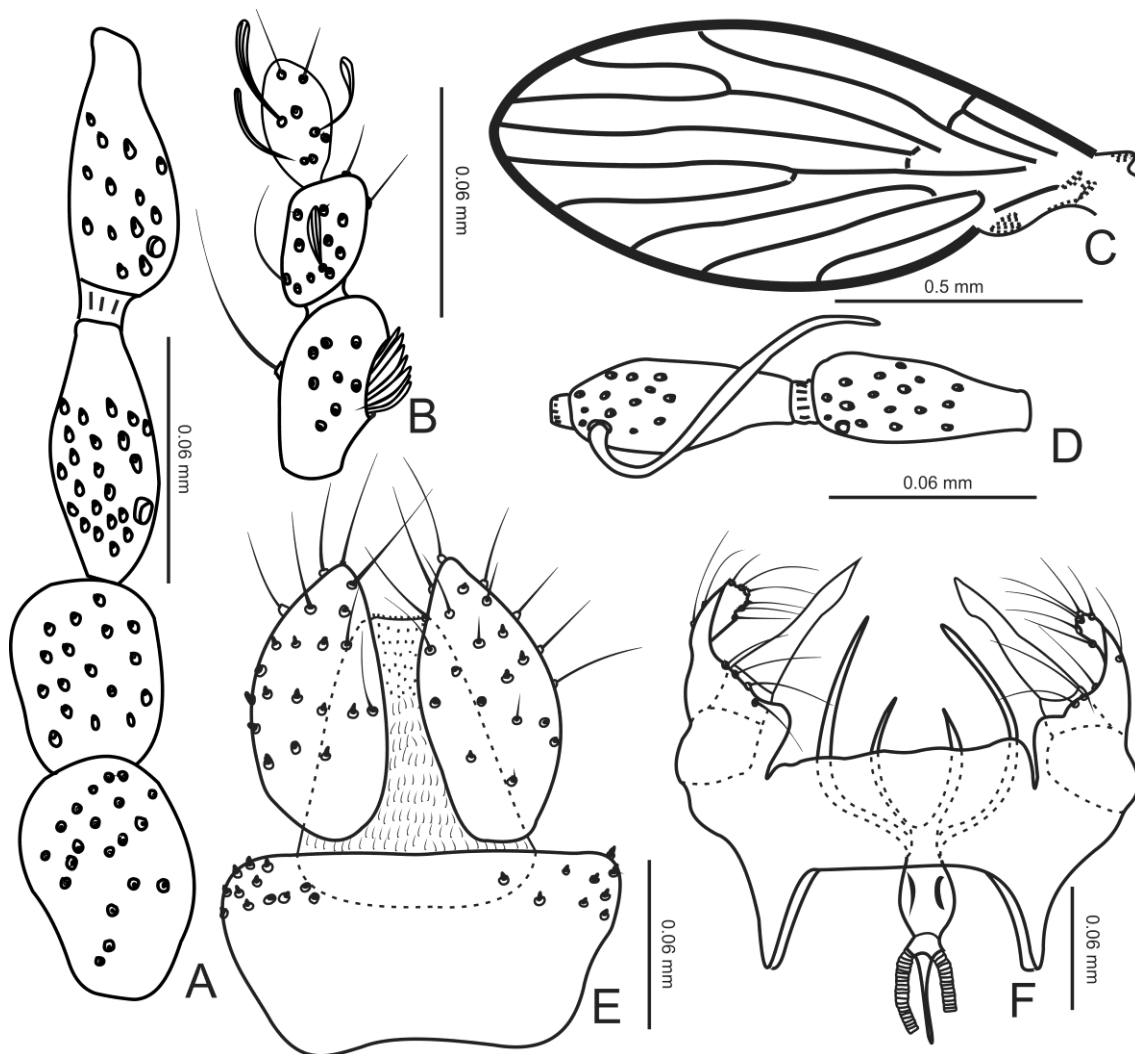
Species with arm of gonocoxite curved with elongated bristles and directed to inner portion; elongated gonostylus, bare, slowly sclerotized and truncated in the apex.

***Trichomyia cinthiae* Araújo & Bravo, sp. nov.**

(Figs. 7A-F)

Diagnosis. M_2 with base unsclerotized, m-cu present; one pair of curved parameres. Aedeagus bifid and convergent; ejaculatory apodeme short, 0.5 times the length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subcylindrical (Fig. 7A); flagellomeres pyriform and eccentric (Fig. 7A); ascoids 1.1 times as long as the length of flagellomere (Fig. 7D). Palpus three segmented; palpus formula 1.0:0.7:0.7 (Fig. 7B); first segment with sensilla in depressed pit on inner side (Fig. 7B). Wing. R_5 with base unsclerotized; M_2 with base unsclerotized r-m unsclerotized and m-cu present (Fig. 7C). Male terminalia. Hypandrium and gonocoxites fused. Arm of gonocoxite with apicolateral bristles (Fig. 7F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, curved and truncated (Fig. 7F). Presence of one pair of curved parameres (Fig. 7F). Aedeagus bifid and convergent (Fig. 7F). Ejaculatory apodeme short, 0.5 times the length of gonostylus. Epandrium pilose, longer than wide (Fig. 7E). Cercus piriform and pilose (Fig. 7E). Hypoproct with apical micropilosity, truncated in the apex and with setulae in the medial and basal portion (Fig. 7E).



Figs. 7A–F. *Trichomyia cinthiae* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Flagellomeres with ascoid; E. Cerci, epiandrium and hypopod; F. Male terminalia, dorsal.

Material examined. Brazil, Amazonas, Manaus, Reserva Ducke, 26-31.VIII.2011, holotype #m, M.X. Araújo leg. (MZFS); 4 paratypes: 1#m, same locality, date and collector as holotype (INPA); 2 #m, Amazonas, Presidente Figueiredo, Pitinga, 04.XII.1998, RQ, LMC leg. (MZFS); 1 #m, Amazonas, Purupuru, Est. Nunes de Melo, Km 8-12, 26.XI.1998, without name of collector (INPA).

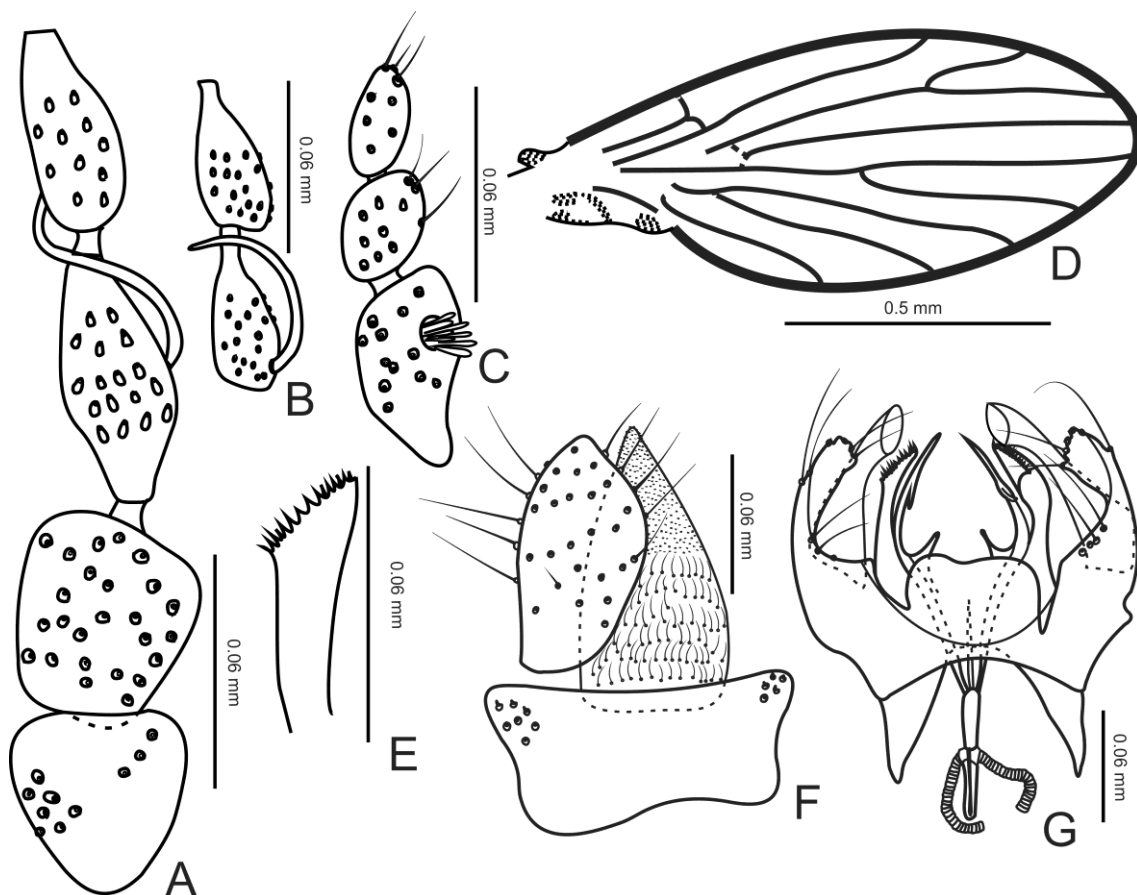
Etymology. Named in honor of Dra. Cínthia Barreto Chagas, in recognition of her help in the realization of this study.

Distribution. Known from Manaus, Presidente Figueiredo and Purupuru in Amazonas, Brazil.

***Trichomyia dentata* Araújo & Bravo, sp. nov.**

(Figs. 8A-G)

Diagnosis. Expansion medial slowly bifurcated and one pair of lateral elongated expansions with apical margin dentiform on gonocoxite; one pair of parameres curved with two medial expansions; ejaculatory apodeme short, 0.7 times the length of gonostylus; hypoproct with apical micropilosity and setulae in the medial and basal surface.



Figs. 8A–G. *Trichomyia dentata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Flagellomeres with ascoid; C. Palpus; D. Right wing; E. Cerci, epandrium and hypoproct; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subtriangular; pedicel subcylindrical (Fig. 8A); flagellomeres pyriform (Fig. 8A); ascoids 1.1 times as long as the length of flagellomere (Fig. 8B). Palpus three segmented; palpus formula 1.0:0.5:0.5 (Fig. 8C); first segment with sensilla in depressed pit on inner side (8C). Wing. R_5 with base unsclerotized; r-m unsclerotized

and m-cu absent (Fig. 8D). Male terminalia. Hypandrium and gonocoxites fused with an expansion medial slowly bifurcated and a pair of lateral elongated expansions with apical dentiform margin (Fig. 8E). Arm of gonocoxite curved with apicolateral bristles (Fig. 8G). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, curved and truncated (Fig. 8G). Presence of one pair of curved parameres with two medial expansions (Fig. 8G). Aedeagus ending at base of parameres (Fig. 8G). Ejaculatory apodeme short, 0.7 times the length of gonostylus. Epandrium longer than wide (Fig. 8F). Cercus piriform and pilose (Fig. XX). Hypoproct with apical micropilosity and setulae in the medial and basal surface (Fig. XX).

Material examined. Brazil, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22.VIII.1998, holotype #m, without name of collector (MZFS); 4 paratypes: 3#m, Amazonas, Manacapuru, Km75, 25-27.VII.1997, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 9.X.1998, without name of collector (INPA).

Etymology. The epithet refers the appearance dentiform of apex of basal projection of gonocoxite.

Distribution. Known from Novo Repartimento in Pará, Brazil; and Manacapuru in Amazonas, Brazil.

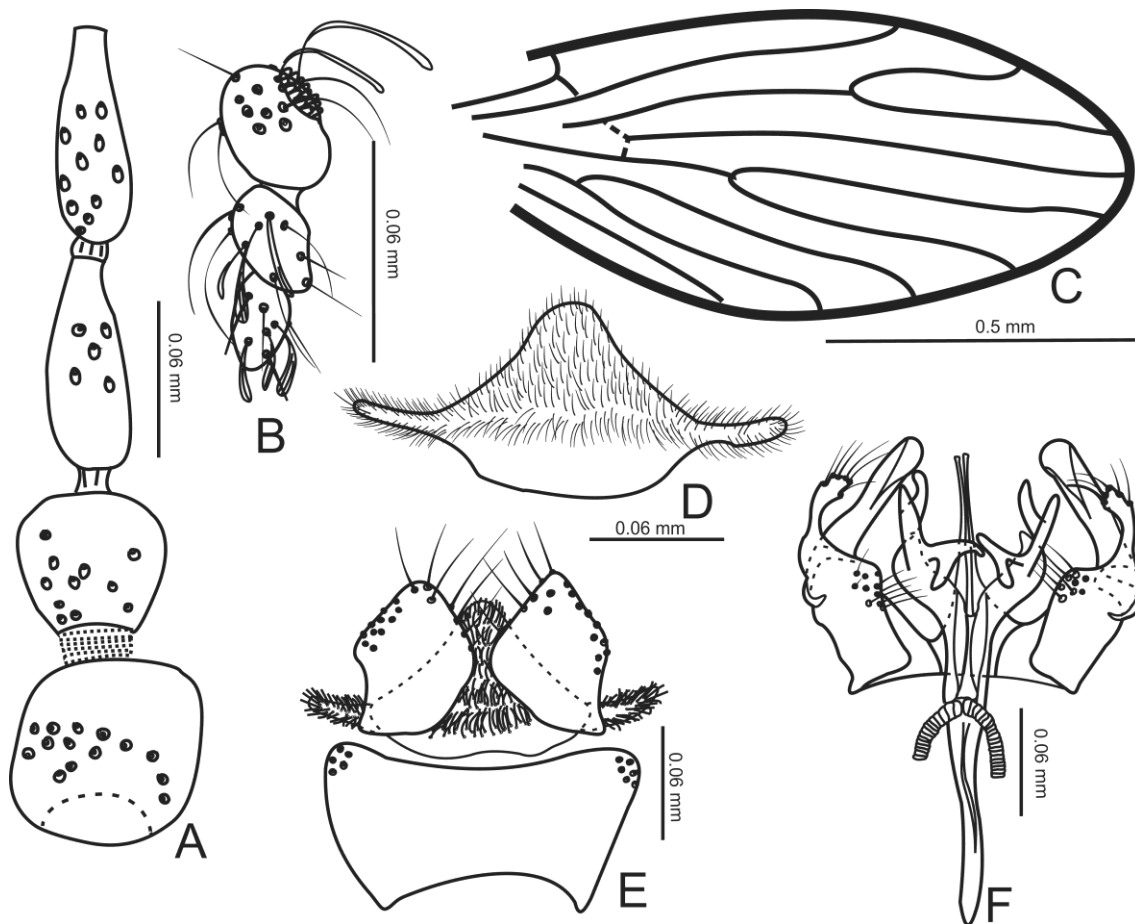
***Trichomyia manacapurensis* Araújo & Bravo, sp. nov.**

(Figs. 9A-F)

Diagnosis. One pair of parameres with four expansions, directed to the dorsal, inner, apical and ventral portions; aedeagus ending above the apex of parameres; hypoproct with setulae in the medioapical surface and with expansions in the base.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 9A); flagellomeres pyriform and eccentric (Fig. 9A); ascoids not visualized. Palpus three segmented; palpus formula 1.0:0.8:0.6 (Fig. 9B); first segment with sensilla in depressed pit on inner side (Fig. 9B). Wing. R_5 with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 9C). Male terminalia. Hypandrium and gonocoxites fused. Arm of gonocoxite curved, with apicolateral and basal bristles, expanded base (Fig. 9F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare and truncated (Fig. 9F). Presence of one pair of

parameres with four expansions, directed to the dorsal, inner, apical and ventral portions (Fig. 9F). Aedeagus ending above the apex of parameres (Fig. 9F). Ejaculatory apodeme long, the same length of gonostylus. Epandrium pilose, longer than wide (Fig. 9E). Cercus pilose (Fig. 9E). Hypoproct with setulae in the medioapical surface and with expansions in the base (Fig. 9D).



Figs. 9A–F. *Trichomyia manacapurensis* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Hypoproct; E. Cerci, epandrium and hypoproct; F. Male terminalia, dorsal.

Material examined. Brazil, Amazonas, Manacapuru, Est. do Cajatuba, Sítio do Sr. Simplício, 24-25.IV.1998, holotype #m, without name of collector (MZFS). 6 paratypes: 3 #m, same locality as holotype, Km 6, 24-29.X.1997, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 06.X.1998, without name of collector (INPA); 1 #m, Amazonas, Manacapuru, Cajatuba, Ramal A, 29.VII a 01.VIII.1997, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, 01.VIII.1997, without name of collector (MZFS).

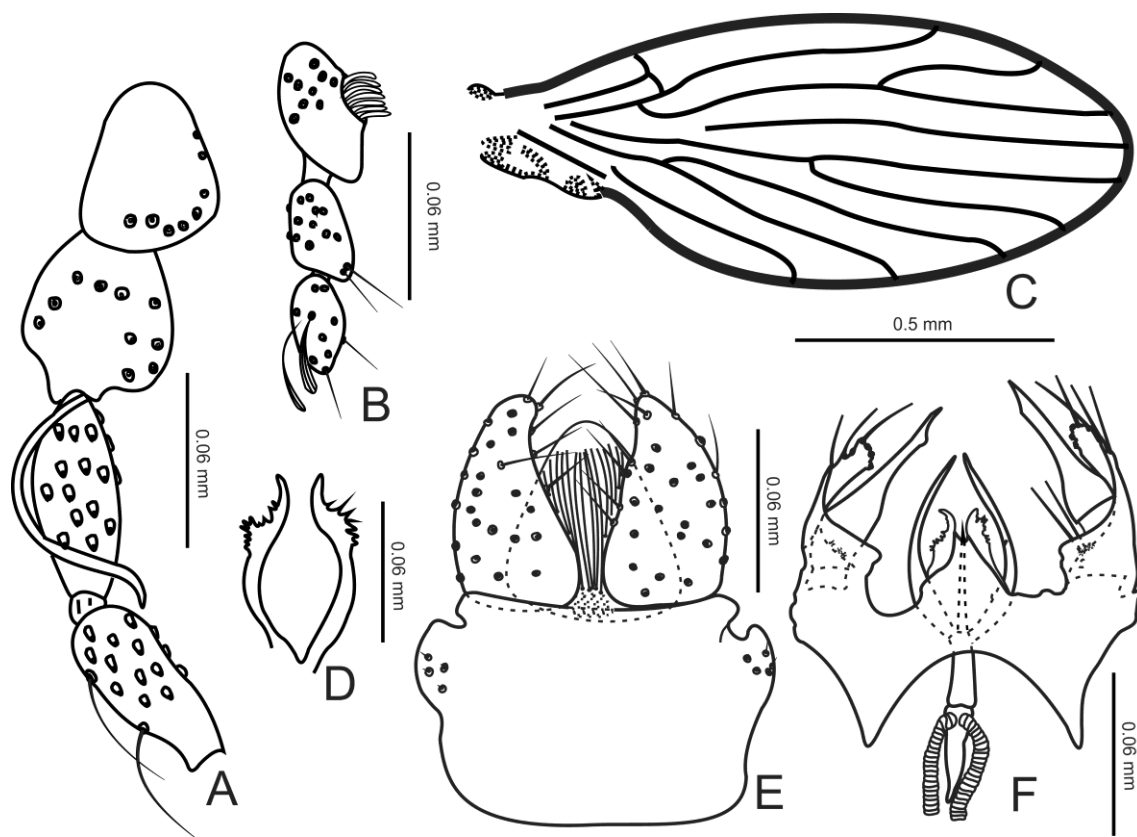
Etymology. The epithet *manacapurensis* is allusive to type locality.

Distribution. Known from Manacapuru in Amazonas, Brazil.

***Trichomyia truncata* Araújo & Bravo, sp. nov.**

(Figs. 10A-F)

Diagnosis. Hypandrium and gonocoxites fused with dentiform lateral expansion with rounded apex; one pair of parameres curved, convergent apically; ejaculatory apodeme short, 0.6 times the length of gonostylus; hypoproct with elongated setae in its surface.



Figs. 10A–F. *Trichomyia truncata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Expansion of gonocoxite; E. Cerci, epandrium and hypoproct; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 10A); basal flagellomeres pyriform and eccentric (Fig. 10A); ascoids 1.3 times as long as the length of flagellomere (Fig. 10A). Palpus three segmented; palpus formula 1.0:0.5:0.7 (Fig. 10B); first segment with

sensilla in depressed pit on inner side (Fig. 10B). Wing. R₅ incomplete at base; r-m and m-cu absent (Fig. 10C). Male terminalia. Hyandrium and gonocoxites fused with dentiform expansion in the lateral and with rounded apex (Fig. 10D). Arm of gonocoxite curved with bristles basally and apically (Fig. 10F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, truncated (Fig. 10F). Presence of one pair of parameres curved, convergent apically (Fig. 10F). Aedeagus arriving until the medial portion of ventral parameres (Fig. 10F). Ejaculatory apodeme short, 0.6 times the length of gonostylus. Epandrium longer than wide, expanded in the medial portion (Fig. 10E). Cercus subtriangular (Fig. 10E). Hypoproct with elongated setae in its surface (Fig. 10E). Epiproct membranous and subcircular. (Fig. 10E).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba, Km 69/3, 06.X.1998, holotype #m, without name of collector (MZFS); 12 paratypes: 4 #m, same locality as holotype, 9.X.1998, without name of collector (MZFS); 1 #m, same locality as holotype, Km 75, 25-27.VII.1997, without name of collector (INPA); 4 #m, same locality and date as holotype (INPA); 1 #m, same locality as holotype, 20.IV.1998, RQ, RN, PE cols (MZFS); 2 #m, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22.VIII.1998, without name of collector (MZFS).

Etymology. The epithet *truncata* is allusive to format of gonostylus.

Distribution. Known from Manacapuru in Amazonas, Brazil; and Novo Repartimento in Pará, Brazil.

3.6 *longa* group

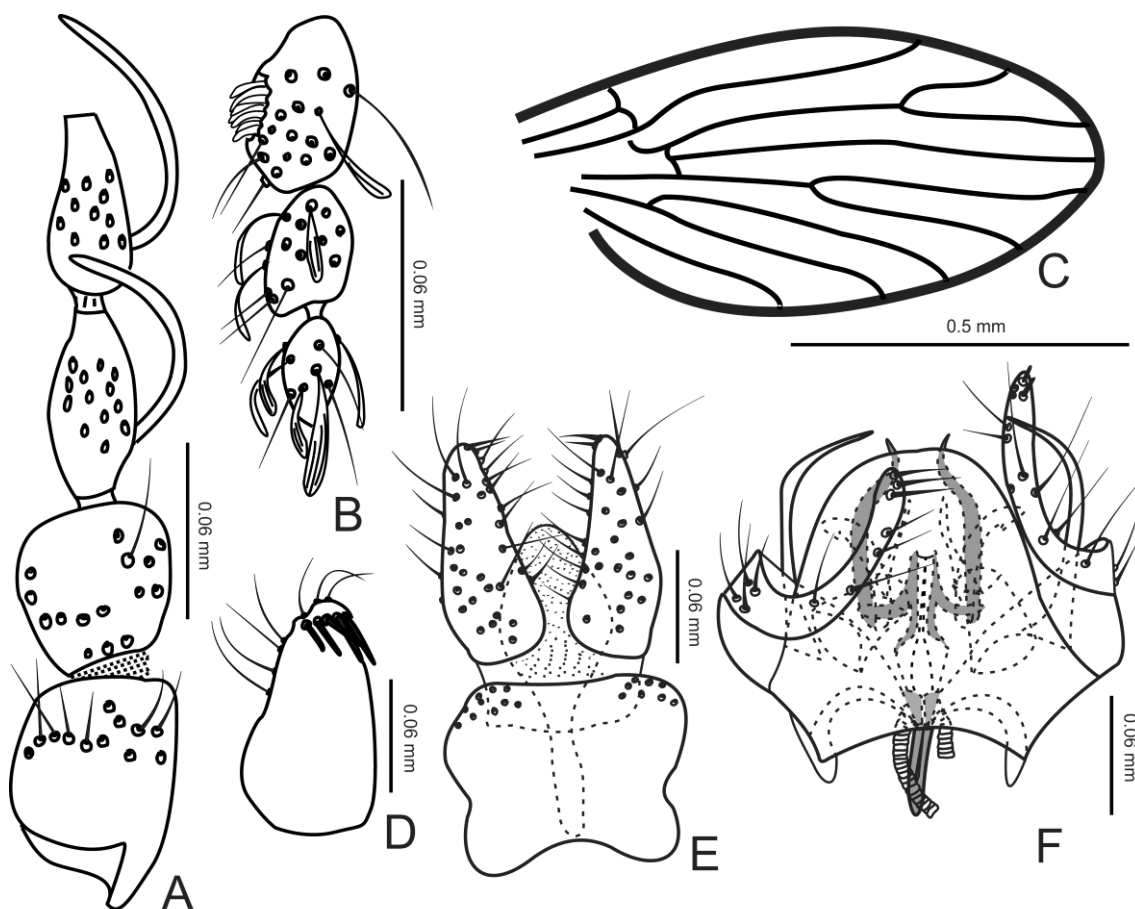
Species with elongated rod-like bristles in the apex of cercus and elongated arms of gonocoxite with half of the male terminalia.

***Trichomyia confusa* Araújo & Bravo, sp. nov.**

(Figs. 11A-F)

Diagnosis. Hyandrium and gonocoxites fused forming a wide dorsal plate; two pair of arms, the dorsal longer and wider than the dorsal, curved, directed dorsally, with elongated bristles and apical setae, ventral arm curved, directed to the inner portion,

bare and with pointed apex; gonostylus wide; ejaculatory apodeme short, the same length of gonostylus; piriform cercus with a row of apical rod-like setae.



Figs. 11A–F. *Trichomyia confusa* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cercus, dorsal view; E. Cerci, epandrium and hypopocyt; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 11A); basal flagellomeres pyriform and centric (Fig. 11A); ascoids 1.4 times as long as the length of flagellomere (Fig. 11A). Palpus three segmented; palpus formula 1.0:0.6:0.6 (Fig. 11B); first segment with sensilla in depressed pit on inner side (Fig. 11B). Wing. R_5 complete at base; r-m present and m-cu absent (Fig. 11C). Male terminalia. Hypandrium and gonocoxites fused forming a wide dorsal plate. Gonocoxites with two pair of arms, the dorsal longer and wider than the dorsal, curved, directed dorsally, with elongated bristles and apical setae, about three. The ventral arm curved, directed to the inner portion, bare and with pointed apex. (Fig. 11F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, truncated, small and wide (Fig. 11F). Presence of three pair of

parameres; one esclerotized pair, curved and with tip directed to the apex, and the others two little esclerotized, with the same origin but different directions, being one thinner and other thicker than the esclerotized. (Fig. 11F). Aedeagus ending at middle portion of parameres (Fig. 11F). Ejaculatory apodeme short, the same length of gonostylus. Epandrium pilose, subquadrangular (Fig. 11E). Cercus piriform (Fig. 11E) with a row of apical five rod-like setae, in dorsal view (Fig. 11D). Hypoproct with apical micropilosity (Fig. 11E).

Material examined. Brazil, Amazonas, Manacapuru, Km 75, 25-27.VII.1997, holotype #m, without name of collector (MZFS); 6 paratypes: 1#m, same locality, date and collectors as holotype (INPA); 1 #m, same locality as holotype, Simplício, 74 km WSW of Manaus, 20.IV.1998, RQ, RN, PE leg. (INPA); 2 #m, Amazonas, Manaus, Reserva Ducke, 26-31.VIII.2011, M.X. Araújo leg. (MZFS); 1 #m, Amazonas, Estrada de Cajatuba, 24-29.X.1997, without name of collector (INPA); 1 #m, same locality as holotype, Km 69/3, 06.X.1998, without name of collector (MZFS).

Etymology. The epithet *confusa* refers to the great complexity of parameres.

Distribution. Known from Manacapuru and Manaus in Amazonas, Brazil.

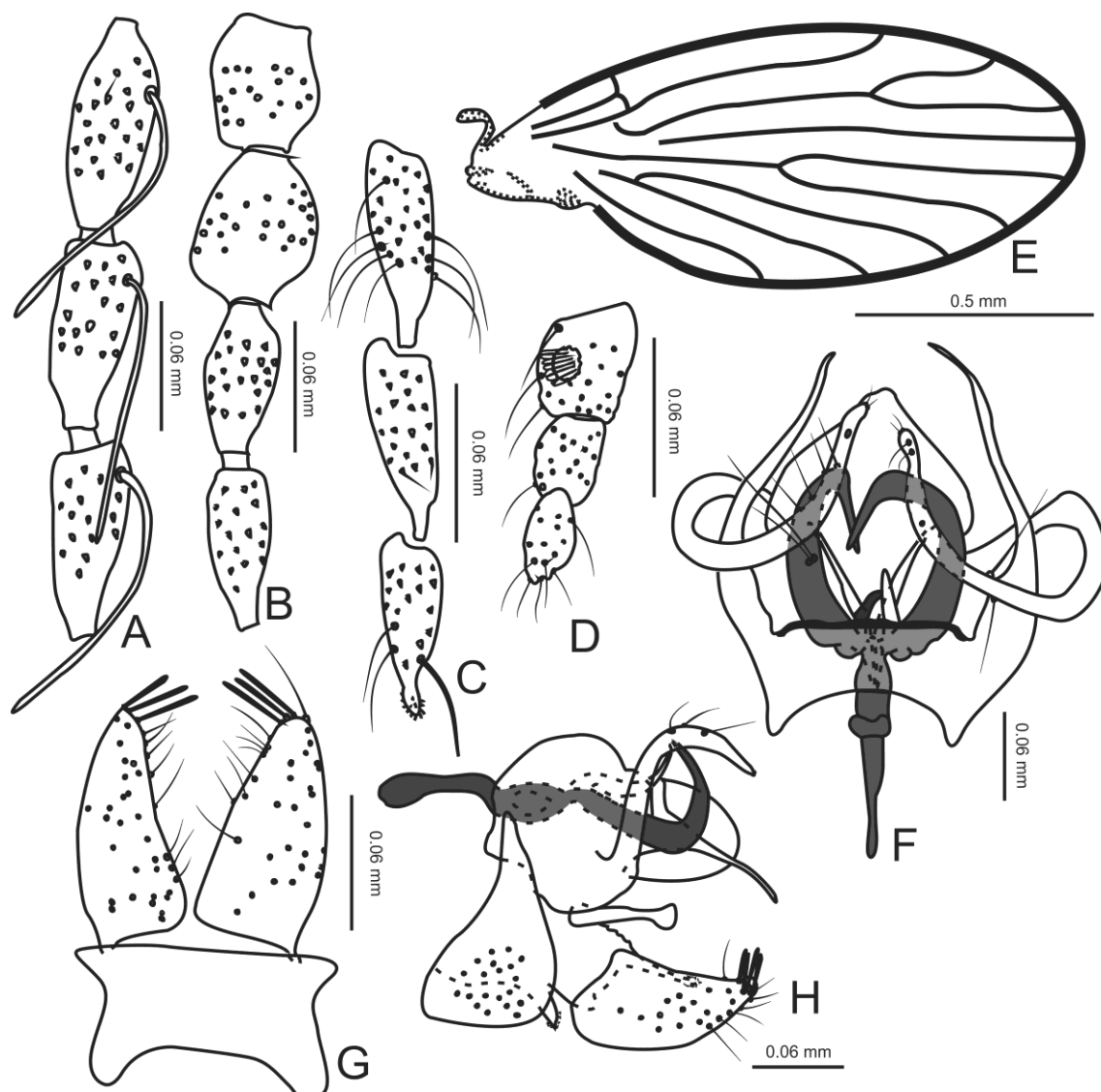
***Trichomyia longa* Araújo & Bravo, sp. nov.**

(Figs. 12A-H)

Diagnosis. Gonocoxites with two elongated arms, one pilose and one bare, both curved; two pair of parameres, a dorsal smaller than ventral paramere and distally curved to the midline; ejaculatory apodeme short, 1.2 times the length of gonostylus, cercus with apical rod-like bristles.

Description. Male. Head subcircular. Antenna with 13 flagellomeres; scape shorter than pedicel; pedicel subspherical; flagellomeres pyriform (Fig. 12B); 13th flagellomere subcylindrical with terminal apiculus separated by suture (Fig. 12C); ascoids pair 1.4 times the length of flagellomere (Fig. 12A). Palpus with three segments; palpus formula 1.0:0.7:0.8 (Fig. 12D); 1st segment with sensilla in depressed pit on inner side. Wing. R₅ incomplete at base; r-m and m-cu absent (Fig. 12E). Male terminalia. Hypandrium fused with gonocoxites. Gonocoxites with two elongated arms, one pilose and one bare, both curved (Fig. 12F). Gonostylus articulated ventrally to gonocoxite, bare, subrectangular in lateral view (Figs. 12F, 12H). Parameres, two pair, a

dorsal smaller than ventral paramere (Fig. 12F); dorsal paramere distally curved to the midline (Fig. 12F). Aedeagus simple (Fig. 12F). Ejaculatory apodeme short, 1.2 times the length of gonostylus. Epandrium pilose, wider than long (Fig. 12G). Cercus pilose (Fig. 12G), subelliptical in lateral view with a group of apical, thick bristles (Fig. 12H). Hypoproct with apical micropilosity (Fig. 12H).



Figs. 12A–H. *Trichomyia longa* sp. nov. A. Flagellomeres with ascoids; B. Scape, pedicel and basal flagellomeres; C. Apical flagellomeres; D. Palpus; E. Right wing; F. Male terminalia, dorsal; G. Cerci, epandrium and hypoproct; H. Male terminalia, lateral.

Material examined. Brazil, Bahia, Porto Seguro municipality, Estação Vera Cruz, holotype #m, 05.XII.2002, F. Bravo leg. (MZFS); 1 paratype #m same locality, date and collector than holotype (MZFS).

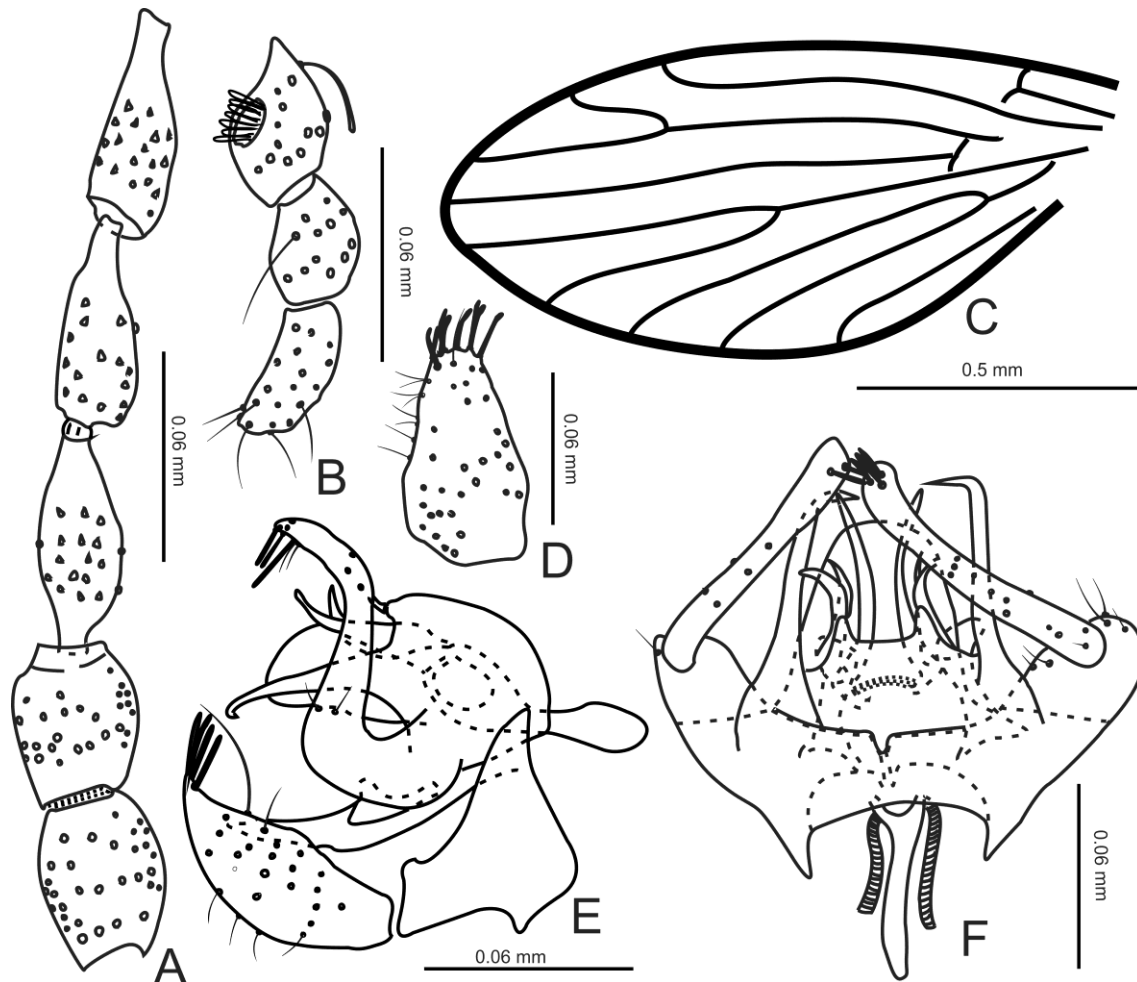
Etymology. The epithet *longa* refers to the elongated arms of gonocoxite.

Distribution. Known from Porto Seguro in Bahia, Brazil.

***Trichomyia ituberensis* Araújo & Bravo, sp. nov.**

(Figs. 13A-F)

Diagnosis. Parameres complex, a distal pair with a hook-like apex; the proximal pair with three expansions, all shorter than the distally; ejaculatory apodeme short, 1.7 times the length of gonostylus; cercus with apical rod-like bristles.



Figs. 13A–F. *Trichomyia ituberensis* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Cercus, dorsal view; E. Male terminalia, lateral; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete; scape slightly large than pedicel; pedicel subspherical (Fig. 13A); basal flagellomeres pyriform (Fig. 13A); ascoids lost in preparation. Palpus with three segments; palpus formula 1.0:0.7:0.9 (Fig. 13B); 1st segment with sensilla in depressed pit on inner side (Fig. 13B). Wing. R₅ articulated at R₄; r-m present; m-cu absent (Fig. 13C). Male terminalia. Hypandrium fused with gonocoxites. Arm of gonocoxites curved in lateral view (Fig. 13F) and convergent in dorsal view (Fig. 13E) with some apical, rod-like bristles (Fig. 13F). Gonostylus articulated ventrally to gonocoxite, bare (Fig. 13F). Parameres complex, a distal pair with a hook-like apex; the proximal pair with three expansions, all shorter than the distal (Fig. 13F). Aedeagus bifid, ending at the same level of distal paramere (Fig. 13F). Ejaculatory apodeme short, 1.7 times the length of gonostylus. Epandrium wider than long (Fig. 13E). Cercus pilose (Figs. 13D, 13E), apex narrower than base in lateral view (Fig. 13D) with four apical, elongated and rod-like bristles (Fig. 13D). Material examined. Brazil, Bahia, Ituberá municipality, 12.VI.2002, holotype #m, F. Bravo leg. (MZFS).

Etymology. The epithet *ituberensis* is allusive to type locality.

Distribution. Known from Ituberá in Bahia, Brazil.

3.7 Unplaced species of *Trichomyia* with three segments of palpus

Trichomyia acanthostylis Quate, 1996

Trichomyia annae Bravo, 2001c

Trichomyia aquita Araújo & Bravo, **sp. nov.**

Trichomyia araguaensis Araújo & Bravo, **sp. nov.**

Trichomyia bahiensis Araújo & Bravo, **sp. nov.**

Trichomyia carenata Araújo & Bravo, **sp. nov.**

Trichomyia bifurcata Araújo & Bravo, **sp. nov.**

Trichomyia caipora Araújo & Bravo, **sp. nov.**

Trichomyia cerdosa Araújo & Bravo, **sp. nov.**

Trichomyia clavellata Quate, 1996

Trichomyia colligata Araújo & Bravo, **sp. nov.**

Trichomyia colosensis Bejarano, Pérez-Dória & Sierra, 2010

Trichomyia complicata Araújo & Bravo, **sp. nov.**

- Trichomyia conchulata* Araújo & Bravo, **sp. nov.**
Trichomyia crinita Araújo & Bravo, **sp. nov.**
Trichomyia danieli Bravo, 2001c
Trichomyia elongata Araújo & Bravo, **sp. nov.**
Trichomyia grossa Araújo & Bravo, **sp. nov.**
Trichomyia hileiana Araújo & Bravo, **sp. nov.**
Trichomyia hispida Araújo & Bravo, **sp. nov.**
Trichomyia iarae Bravo, 2001c
Trichomyia inedita Araújo & Bravo, **sp. nov.**
Trichomyia ivani Bravo, 2001c
Trichomyia longiseta Araújo & Bravo, **sp. nov.**
Trichomyia mariensis Araújo & Bravo, **sp. nov.**
Trichomyia masneri Wagner, 1993
Trichomyia mendesi Araújo & Bravo, **sp. nov.**
Trichomyia mineira Araújo & Bravo, **sp. nov.**
Trichomyia nortensis Araújo & Bravo, **sp. nov.**
Trichomyia notata Araújo & Bravo, **sp. nov.**
Trichomyia paraensis Araújo & Bravo, **sp. nov.**
Trichomyia pedicillata Satchell, 1956
Trichomyia pitinguensis Araújo & Bravo, **sp. nov.**
Trichomyia pseudosilvatica Araújo & Bravo, **sp. nov.**
Trichomyia ptilotis Quate, 1996
Trichomyia pua Araújo & Bravo, **sp. nov.**
Trichomyia ramalhoi Bravo, 2001c
Trichomyia rawlinsi Wagner, 1999
Trichomyia ribeiroi Araújo & Bravo, **sp. nov.**
Trichomyia serrajiboensis Bravo, 2001c
Trichomyia silvatica Bravo, 2002
Trichomyia sinuosa Araújo & Bravo, **sp. nov.**
Trichomyia spinicauda Araújo & Bravo, **sp. nov.**
Trichomyia spinosa Araújo & Bravo, **sp. nov.**
Trichomyia stangae Araújo & Bravo, **sp. nov.**
Trichomyia sulbaianensis Bravo, 2002
Trichomyia teimosensis Bravo, 2002

Trichomyia xaniostylis Quate, 1996

***Trichomyia acanthostylis* Quate, 1996 : 11-12, Figs. 3e-h**

Remarks. The males of *T. acanthostylis* can be recognized by the filiform gonostylus with spiniform bristles; elongated arm of gonocoxite with bristles in the apex; ejaculatory apodeme long, 2.5 times the length of gonostylus.

Material examined. The type specimens were not examined; however, the description and figures of Quate (1996) allowed the identification of the specimens.

Other material examined. Costa Rica, Heredia, Puerto Viejo de Sarapaque, Est. Biol. La Selva, 1 #m, 01.VII.1993, without name of colector (MZFS).

Distribution. Known from the type locality in Costa Rica.

***Trichomyia annae* Bravo, 2001c: 123-125, figs. 9-17.**

Remarks. The males of *T. annae* can be recognized by the two pair of gonocoxites, one more long with rounded apex and thick bristle, the other narrowest and with elongated bristles in its surface; ejaculatory apodeme long, 5.0 times the length of gonostylus

Material examined. Brazil, Bahia: Serra da Jibóia, holotype #m, 16.VI.2000, F. Bravo leg. (MZFS); 1 paratype #m, same locality, and collector than holotype, 14.III.2001 (MZFS).

Distribution. Known from the type locality in Brazil, state of Bahia.

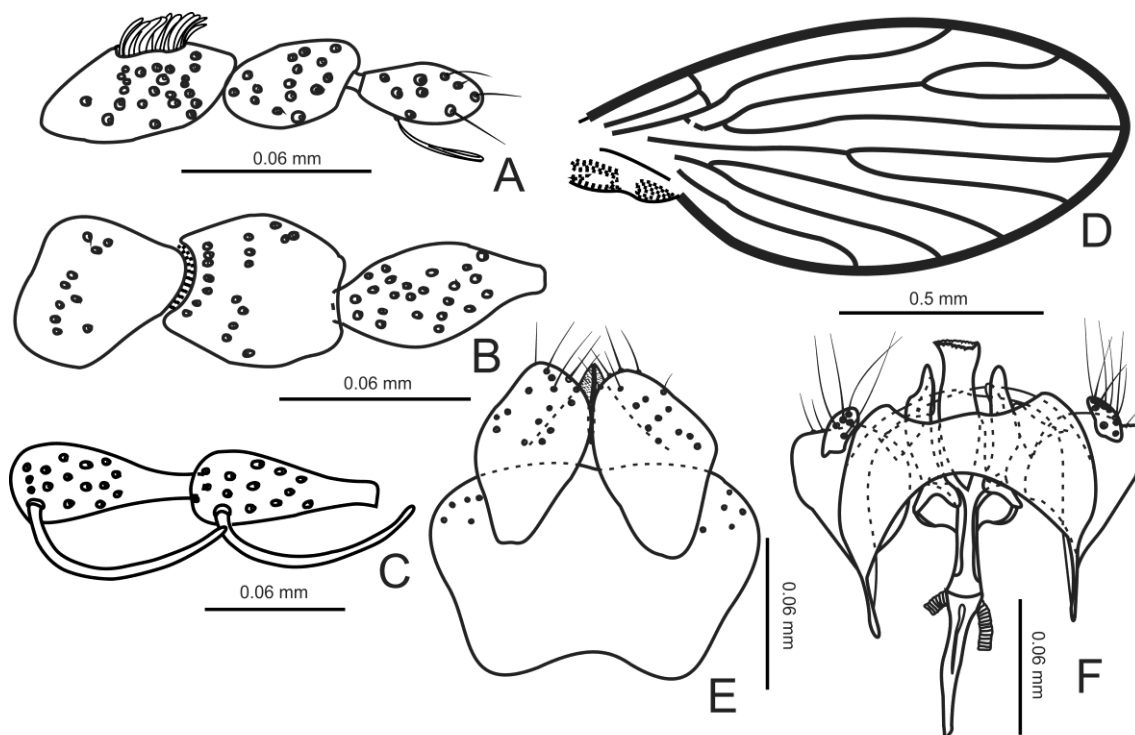
***Trichomyia aquita* Araújo & Bravo, sp. nov.**

(Figs. 14A-F)

Diagnosis. Hypandrium and gonocoxites fused with a basal expansion, curved and directed to the inner portion; arm of gonocoxite directed to dorsal portion with elongated bristles; two pair of parameres; the external digitiform, about the same length of the inner, the inner fused, cup-shaped; ejaculatory apodeme 3.0 times the length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subcylindrical (Fig. 14B); flagellomere basal pyriform and

eccentric (Fig. 14B); ascoids 1.3 times as long as the length of flagellomere (Fig. 14C). Palpus three segmented; palpus formula 1.0:0.5:0.6 (Fig. 14A); first segment with sensilla in depressed pit on inner side (Fig. 14A). Wing. R_{2+3} and R_4 with base unsclerotized; r-m and m-cu absent (14D).



Figs. 14A–F. *Trichomyia aquita* sp. nov. A. Palpus; B. Scape, pedicel and basal flagellomere; C. Flagellomere with ascoids D. Right wing; E. Cerci, epandriuma and hypoproct; F. Male terminalia, dorsal.

Male terminalia. Hypandrium and gonocoxites fused with a basal expansion, curved and directed to the inner portion. Arm of gonocoxite directed to dorsal portion with elongated bristles (Fig. 14F); gonostylus slightly sclerotized, articulated ventrally to gonocoxite, subtriangular, bare with rounded apex (Fig. 14F). Presence of two pair of parameres; the external digitiform, about the same length of the inner, the inner fused, cup-shaped (Fig. 14F). Aedeagus bifid (Fig. 14F). Ejaculatory apodeme 3.0 times the length of gonostylus. Epandrium longer than wide (Fig. 14E). Cercus pilose and piriform (Fig. 14E). Hypoproct with apical micropilosity (Fig. 14E).

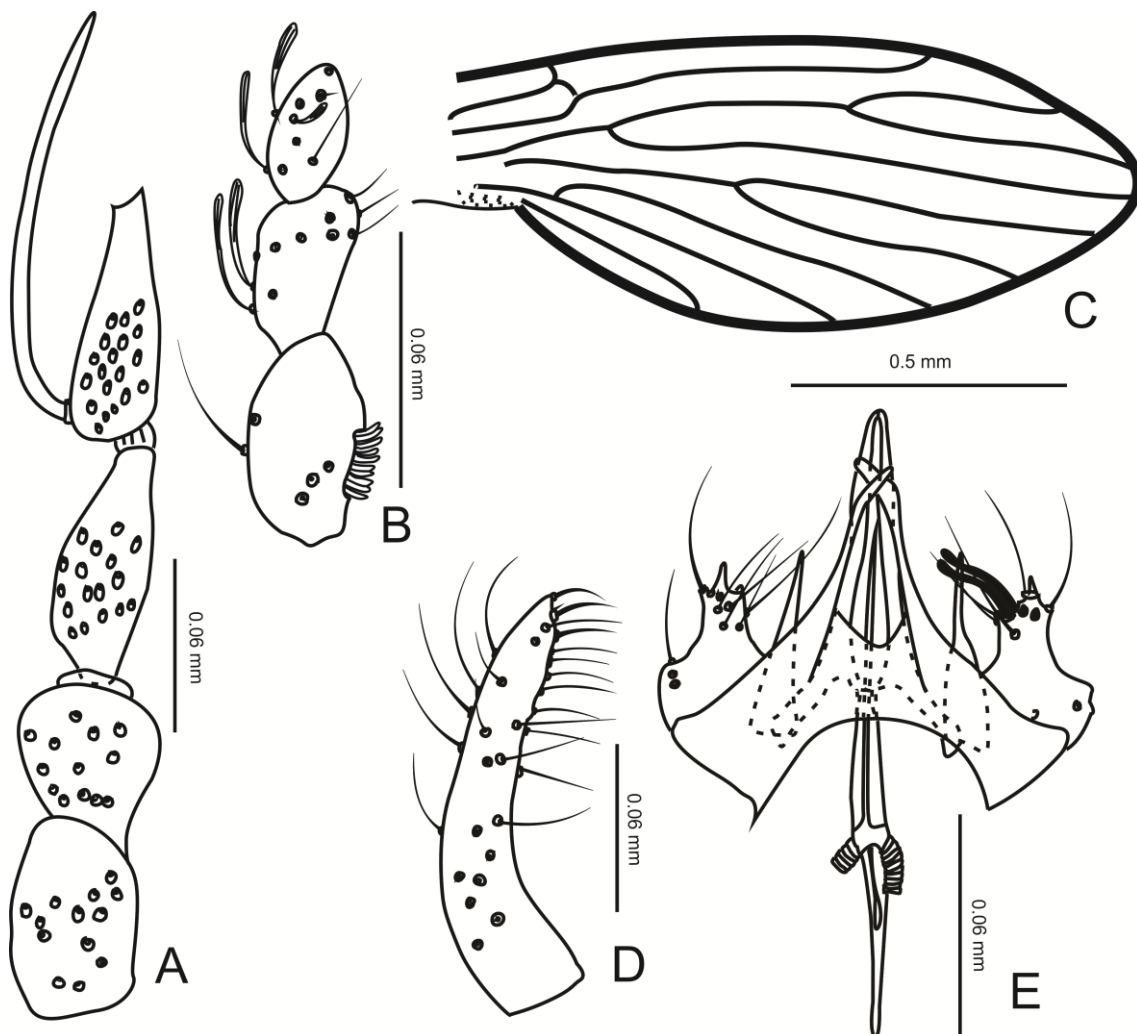
Material examined. Brazil, Amazonas, Presidente Figueiredo, Pitinga, 04.XII.1998, holotype #m, RQ, LMC leg. (MZFS) 4 paratypes: 2 #m, same locality, date and collectors as holotype, (MZFS); 2 #m, same locality as holotype, 15.XIII.1998, RR, LMS leg. (INPA)

Etymology. From tupi-guarani *aquitã* = short, refers to the size of the arm of gonocoxite.

Distribution. Known from Presidente Figueiredo in Amazonas, Brazil.

***Trichomyia araguaensis* Araújo & Bravo, sp. nov.**

(Figs. 15A-E)



Figs. 15A–E. *Trichomyia araguaensis* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cercus E. Male terminalia, dorsal.

Diagnosis. R_5 complete; basal expansions with rounded tips that cross in the apex, directed to the inner portion on gonocoxite; arm of gonocoxites expanded in the base,

with apicolateral bristles and two apical bristles thicker than the others, stare-like; ejaculatory apodeme about the same length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subspherical, pedicel subcylindrical (Fig. 15A); flagellomeres pyriform and eccentric (Fig. 15A); ascoids 2.1 times as long as the length of flagellomere (Fig. 15A). Palpus three segmented; palpus formula 1.0:0.6:0.6 (Fig. 15B); first segment with sensilla in depressed pit on inner side (Fig. 15B). Wing. R_5 complete; r-m and m-cu absent (Fig. 15C). Male terminalia. Hypandrium and gonocoxites fused with basal expansion with rounded tips that cross in the apex, directed to the inner portion. Arm of gonocoxites expanded in the base, with apicolateral bristles and two apical bristles thicker than the others, stare-like (Fig. 15E). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare and subtriangular (Fig. 15E). Presence of one pair of subtriangular parameres, convergent apically (Fig. 15E). Aedeagus ending at middle of parameres (Fig. 15E). Ejaculatory apodeme about the same length of gonostylus. Epandrium lost in the specimen studied. Cercus elongated and pilose (Fig. 15D).

Material examined. Venezuela, Aragua, 10 Km N El Limon, holotype #m, 19.IX.1993, L.W. Quate leg. (MZFS)

Etymology. The epithet refersto the type locality.

Distribution. Known from Aragua in Venezuela.

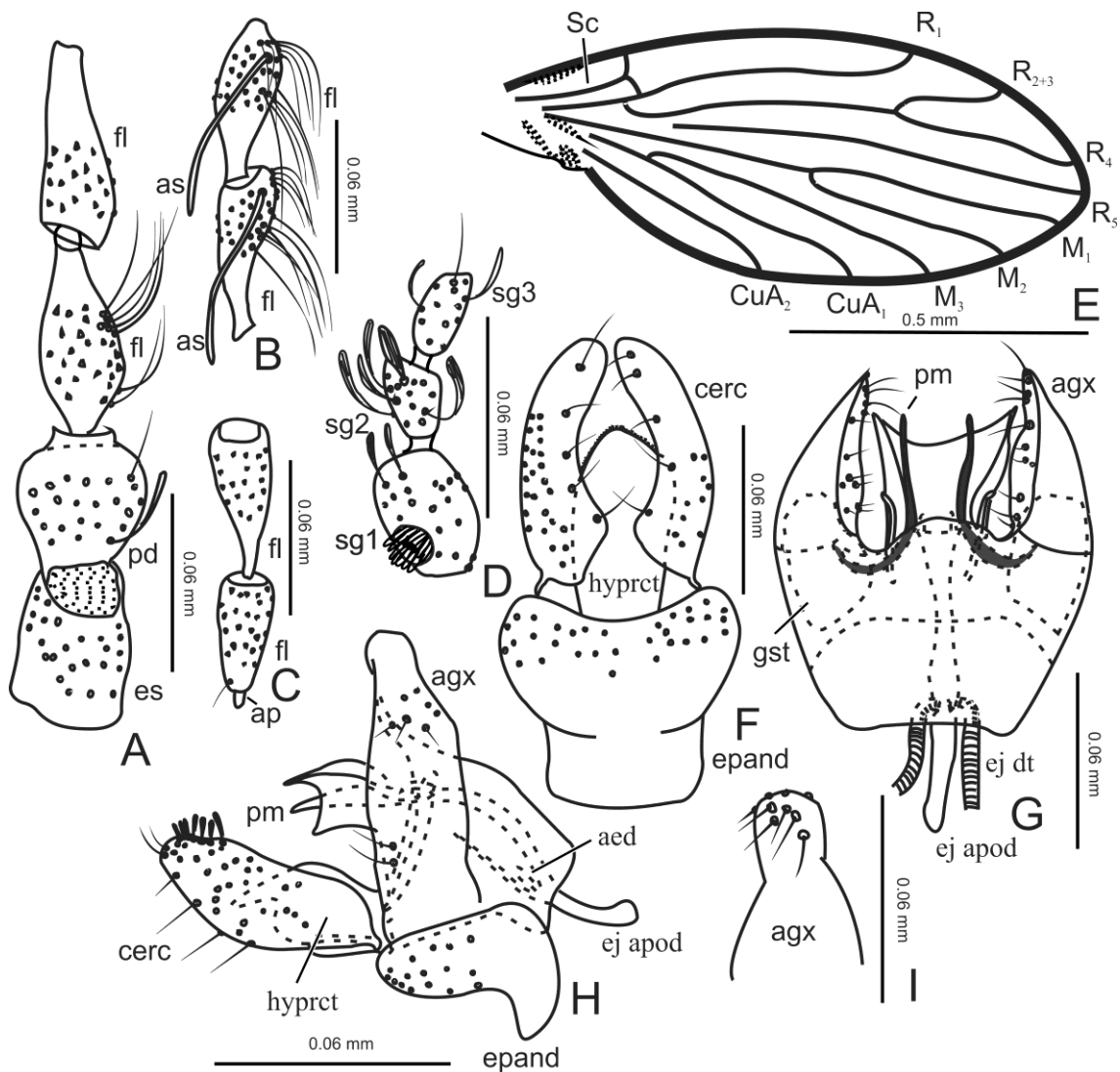
***Trichomyia bahiensis* Araújo & Bravo, sp. nov.**

(Figs. 16A-I)

Diagnosis. Gonocoxites with arm lobe-like, upright in lateral view and with few short spiniform bristles in the internal surface; gonostylus plate-like; one pair of parameres united by a thin ventral membrane; ejaculatory apodeme short, 0.4 times the length of gonocoxite; cercus with few small spatulate bristles near the apex.

Description. Male. Head subcircular. Antenna: scape subcylindrical, pedicel subspherical (Fig. 16A); flagellum with 13 flagellomeres, 1st to 12th flagellomeres pyriform and eccentric (Fig. 16A); 13th flagellomere subcylindrical with terminal apiculus separated by suture (Fig. 16C); ascoids 1.1 times as long as the length of

flagellomere (Fig. 16B). Palpus three segmented; palpus formula 1.0:0.6:0.7 (Fig. 16D); first segment with sensilla in depressed pit on inner side (Fig. 16D).



Figs. 16A–I. *Trichomyia bahiensis* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Flagellomeres with ascoids C. Last flagellomeres; D. Palpus; E. Right wing; F. Cerci, epandrium and hypoproct; G. Male terminalia, dorsal; H. Male terminalia, lateral; I. Arm of gonocoxite. (abbreviations: aed = aedeagus, agx= arm of gonocoxite, ap= apiculus, as= ascoid, cerc= cercus, CuA= cubital anal, ej apod = ejaculatory apodeme, ej dt = ejaculatory duct, epand= epandrium, es= scape, fl=flagellomere; gst = gonostylus, hyprect = hypoproct, M= medial, pd= pedicel, pm = parameres, R= radial, Sc= subcosta, sg1= first segment of palpus; sg2= second segment of palpus; sg3= third segment of palpus).

Wing. R_5 incomplete at base; r-m and m-cu absent (Fig. 16E). Male terminalia. Hypandrium and gonocoxites fused. Gonocoxites with arm lobe-like, upright in lateral view and with few short spiniform bristles in the internal surface (Figs. 16G, 16I).

Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, plate-like (Fig. 16G). Presence of one pair of parameres ending at the same level of aedeagus, united by a thin ventral membrane (Fig. 16G). Aedeagus filiform (Figs. 16G, 16H). Ejaculatory apodeme short, 0.4 times the length of gonocoxite. Epandrium with posterior margin larger than the anterior margin (Fig. 16F). Cercus ovoid (Figs. 16F, 16H); dorsal surface of cercus with few small spatulate bristles near the apex (Fig. 16H). Hypoproct with apical micropilosity (Fig. 16F).

Material examined. Brazil, Bahia, Ituberá municipality, 12.VI.2002, holotype #m, F. Bravo leg. (MZFS); 5 paratypes: 3#m, Bahia, Porto Seguro municipality, Estação Vera Cruz, 05.XII.2002, F. Bravo leg. (MZFS); 1 #m, Bahia, Cachoeira municipality, Fazenda. Villa Rial, 25.IV.2004, F. Bravo leg. (MZFS); 1 #m, Fazenda Villa Rial, 20.VII.2004, F. Bravo leg. (MZFS).

Etymology. The epithet *bahiensis* refers to the type locality.

Distribution. Known from Cachoeira, Ituberá and Porto Seguro in Bahia, Brazil.

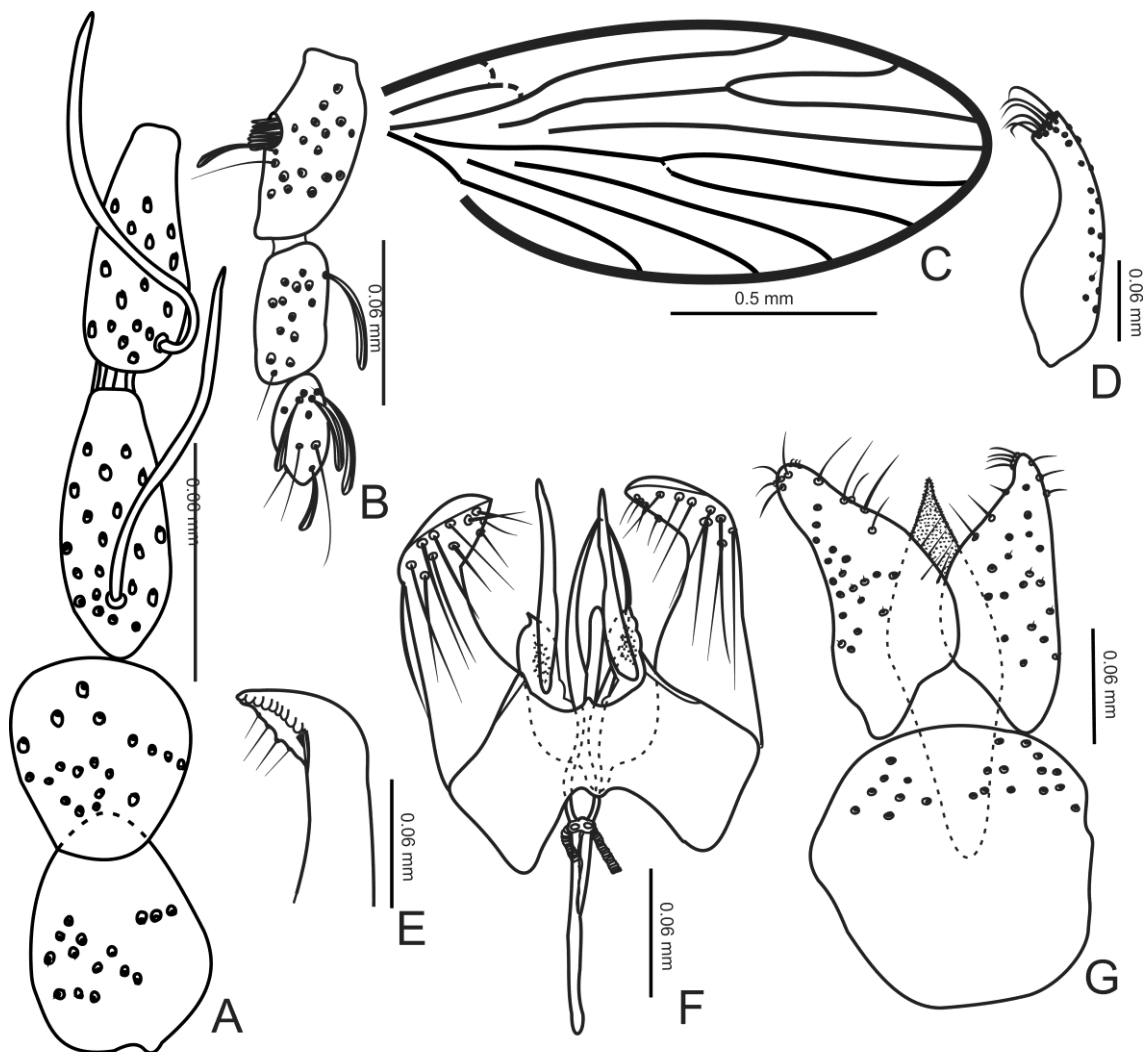
***Trichomyia carenata* Araújo & Bravo, sp. nov.**

(Figs. 17A-G)

Diagnosis. Apex of Sc unsclerotized; arm of gonocoxite with apical bristles and projections keel-shaped in the posterior margin; three pair of parameres; the inner fused apically, the external, slightly thicker; the third pair is half the size than the other two; ejaculatory apodeme long, the same length as the pair of parameres parallel to aedeagus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical, pedicel subspherical; flagellomeres pyriform; ascoids 1.4 times as long as the length of flagellomere (Fig. 17A). Palpus three segmented; palpus formula 1.0:0.7:0.6; first segment with sensilla in depressed pit on inner side (Fig. 17B). Wing. apex of Sc unsclerotized; sc-r unsclerotized; R₅ incomplete at base; M₂ with base unsclerotized; M₃ not reaching M₄, r-m and m-cu absent (Fig. 17C). Male terminalia. Hypandrium and gonocoxites fused. Gonocoxites with posterior arm with apical bristles, being the basal 2.5 times the length of apical; in the 1/4 apical with projections keel-shaped in the posterior margin (Figs. 17E, 17F). Gonostylus not visualized. Presence of three pair of parameres; the inner is fused apically, slender and tapered, almost the same length as the gonocoxite; the external, slightly thicker and the

same length as the internal; the third pair is half the size than the other two, twice wider than the external and ends on a small pointed expansion (Fig. 17F). Aedeagus with a single opening reaching half the length of the largest parameres (Fig. 17F). Ejaculatory apodeme long, the same length as the pair of parameres parallel to aedeagus. Epandrium subcircular (Fig. 17G); cercus digitiform, with a row of setae in an expansion on the ventral surface of the apex, about fourteen (Fig. 17D). Hypoproct tapering apically with apical micropilosity (Fig. 17G).



Figs. 17A–G. *Trichomyia carenata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cercus, lateral view; E. Arm of gonocoxite, ventral view; F. Male terminalia, dorsal; G. Cerci, epandrium, hypoproct.

Material examined. Brazil, Pará, Bragança, Vila Buriti, Km 14, Sitio Barra Bode 01.X.1998, holotype ♀, without name of collector (MZFS); 13 paratypes: 2 ♀, Pará,

N. Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22. VIII.1998, without name of colector (MZFS); 7 #m, Amazonas, Manacapuru, Cajatuba Km 69/3 , 09.X.1998, without name of colector (MZFS); 1 #m, Amazonas, Manacapuru, Est. Cajatuba Km 6 , 24-29.X.1997, without name of colector (MZFS); 1 #m, Amazonas, Manacapuru, Km 75 , 25-27.VII.1997, without name of colector (MZFS); 1 #m, Amazonas, BR307, Km12 15.VIII.2010 without name of colector (MZFS); 1 #m, Amazonas, Manacapuru, Simplicio, Km 74, WSW of Manaus, 26.IV.1998, R.Q, R.N., P.E. (sic.) leg. (MZFS);

Etymology. The epithet is allusive to projections with keel-shaped presents in the arm of gonocoxite in ventral view.

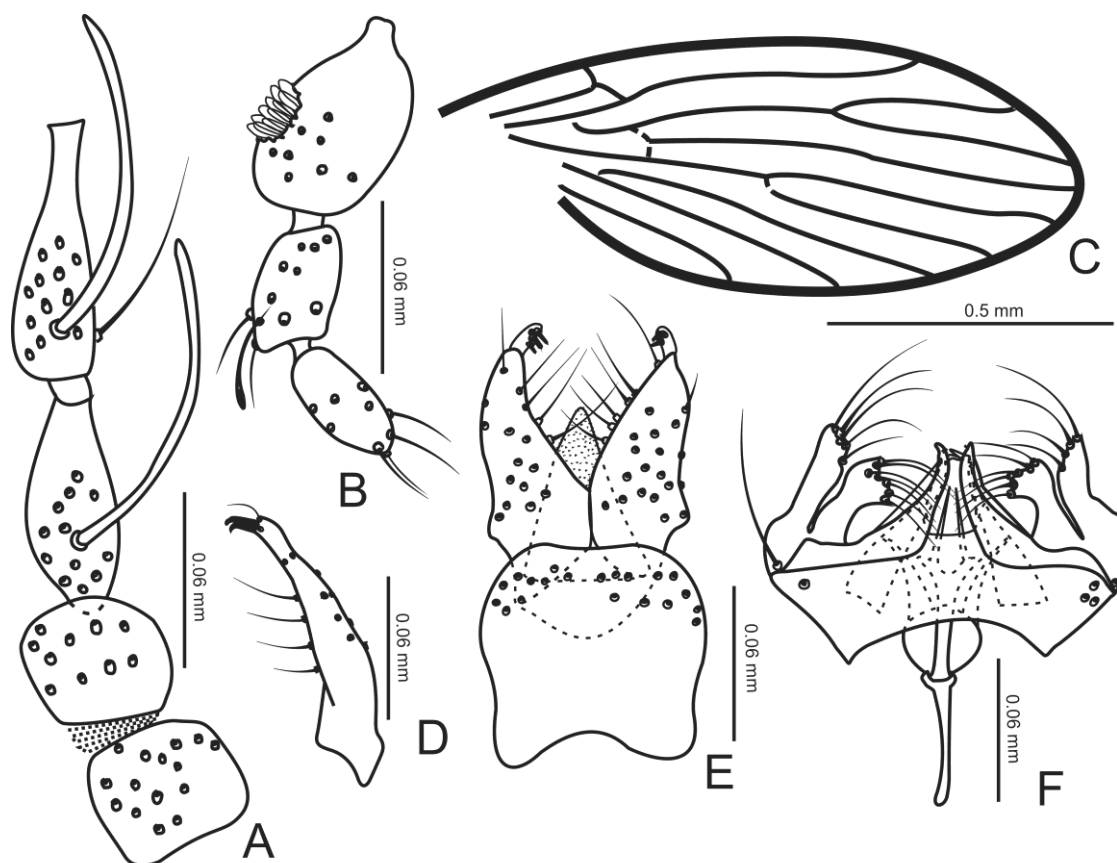
Distribution. Known from Bragança and Novo Repartimento in Pará, Brazil; Manacapuru in Amazonas, Brazil

***Trichomyia bifurcata* Araújo & Bravo, sp. nov.**

(Figs. 18A-F)

Diagnosis. M_2 with base unsclerotized; r-m unsclerotized; two basal expansions on gonocoxite, the dorsal side expanded basally, with divergent apex; the ventral side with narrow tip, curved to inner portion; arm of gonocoxite bifurcated with elongated bristles in the apex; cercus with an expansion with two apical setae.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 18A); flagellomeres pyriform and eccentric (Fig. 18A); ascoids 1.25 times as long as the length of flagellomere (Fig. 18A). Palpus three segmented; palpus formula 1.0:0.5:0.6 (Fig. 18B); first segment with sensilla in depressed pit on inner side (Fig. 18B). Wing. R_5 with base unsclerotized; M_2 with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 18C). Male terminalia. Hypandrium and gonocoxites fused with two basal expansions, the dorsal side expanded basally, with divergent apex; the ventral side with narrow tip, curved to inner portion. Arm of gonocoxite bifurcated with elongated bristles (Fig. 18F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, near to the base, bare, subtriangular (Fig. 18F). Presence of one pair of triangular parameres (Fig. 18F). Aedeagus bifid (18F). Ejaculatory apodeme 0.8 times the length of gonostylus. Epandrium subquadrangular (Fig. 18E). Cercus digitiform (Fig. 18E) with an expansion with two apical setae (Fig. 18D). Hypoproct with apical micropilosity (Fig. 18E).



Figs. 18A–F. *Trichomyia bifurcata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cercus, lateral view; E. Cerci, epandrium and hypopocot; F. Male terminalia, dorsal.

Material examined. Brazil, Pará, Santarém, Estrada para alter do Chão, Jurupari, Km1315, 25.XI.1998, holotype #m, RF, RAN, FLS leg. (MZFS); 16 paratypes: 5 #m, Amazonas, Manacapuru, Cajatuba, km 69/3, 6.X.1998, without name of collector (MZFS); 2 #m, Amazonas, Presidente Figueiredo, Pitinga, 04.XII.1998, RQ, LMC leg. (INPA); 3 #m, Amazonas, Manacapuru, Cajatuba, km 69/3, 20.IV.1998, RQ, RN, PE (INPA); 4 #m, Amazonas, Manacapuru, Cajatuba, km 69/3, 13.X.1998, without name of collector (MZFS); 1#m, Pará, Barbarena, Est. Caripi, Km4, 24.X.1997, without name of collector (INPA); 1#m, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos Sem Terra, 27.VIII.1998, without name of collector (MZFS).

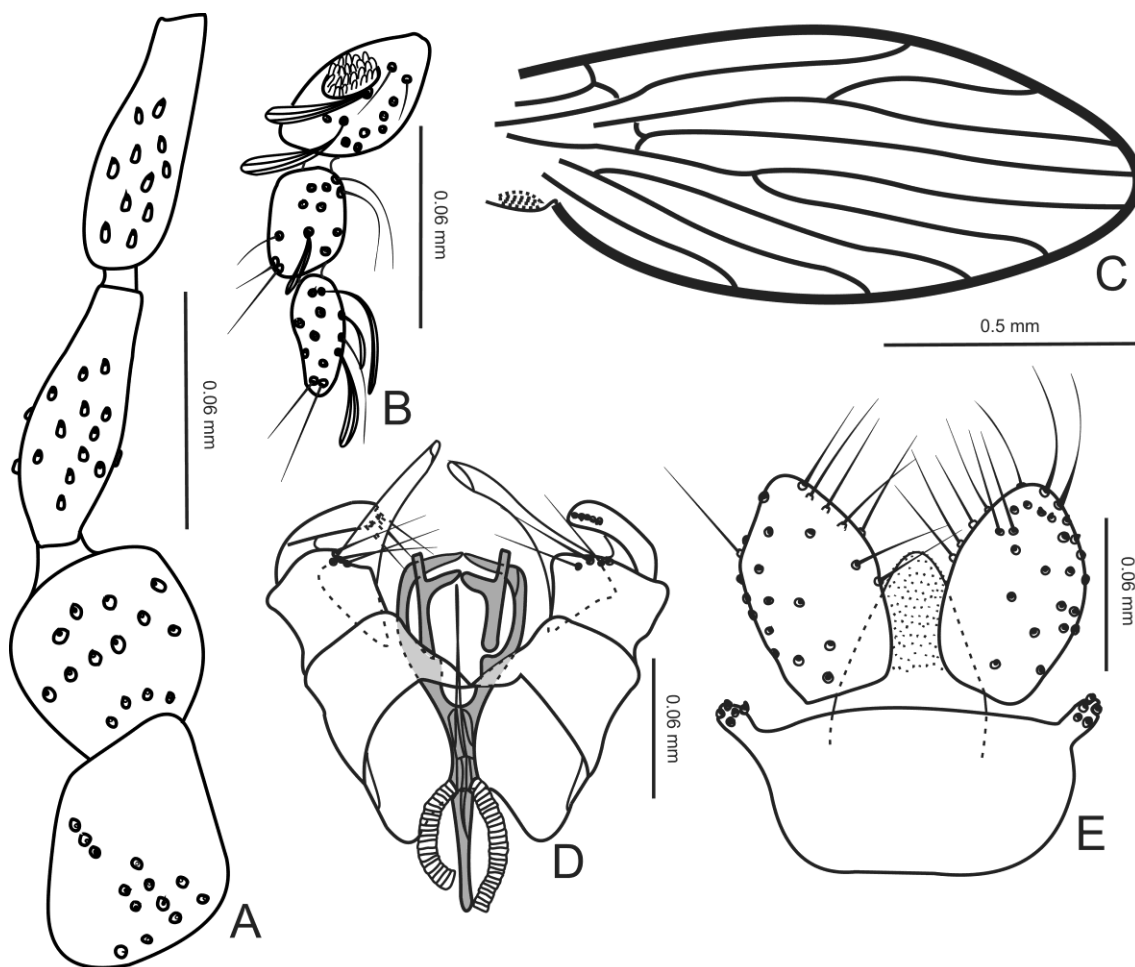
Etymology. The epithet *bifurcata* is allusive to the large number of bifurcated structures (arm of gonocoxite, aedeagus)

Distribution. Known from Santarém, Barbarena and Novo Repartimento in Pará, Brazil; Manacapuru and Presidente Figueiredo in Amazonas, Brazil.

***Trichomyia caipora* Araújo & Bravo, sp. nov.**

(Figs. 19A-E)

Diagnosis. R₅ complete at base; two pair of parameres; one with curved tip directed to the inner portion and one with fork shaped; ejaculatory apodeme short, 0.6 times the length of gonostylus; epandrium with lateroapical expansions with bristles.



Figs. 19A–E. *Trichomyia caipora* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Male terminalia, dorsal; E. Cerci, epandrium and hypoproct.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 19A); flagellomeres pyriform and eccentric (Fig. 19A); ascoids not visualized. Palpus three segmented; palpus formula 1.0:0.6:0.5 (Fig. 19B); first segment with sensilla in depressed pit on inner side (Fig. 19B). Wing. R₅ complete at base; r-m present and m-cu absent (Fig.

19C). Male terminalia. Hypandrium and gonocoxites fused. Arm of gonocoxite curved with basal and apical bristles, expanded base (Fig. 19D). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, curved and truncated apically (Fig. 19D). Presence of two pair of parameres; one pair with curved tip directed to the inner portion and one pair with fork shaped (Fig. 19D). Aedeagus filiform ending at middle of parameres (Fig. 19D). Ejaculatory apodeme short, 0.6 times the length of gonostylus. Epandrium longer than wide, with lateroapical expansions with bristles (Fig. 19E). Cercus pilose and subovalares (Fig. 19E). Hypoproct with apical micropilosity (Fig. 19E).

Material examined. Brazil, Pará, Barbarena, Est. Caripi, Km 4, 24.X.1997, holotype #m, without name of collector (MZFS); 5 paratypes: 3 #m, Amazonas, Manacapuru, Km 75, 25-27.VII.1997, without name of collector (MZFS); 1 #m, Pará, Novo Repartimento, Vic. Bandeirante, Sítio Pedro Roqueta, 19.VIII.1998, without name of collector (INPA); 1 #m, Roraima, Pitinga, 13-15.XII.1997, RQ, RN, PE leg. (INPA)

Etymology. The specific name is a noun in apposition taken from the Amazonian folklore. "Caipora" is a small entity, whose protects the forest.

Distribution. Known from Barbarena and Novo Repartimento in Pará, Brazil; Manacapuru in Amazonas, Brazil; and Pitinga in Roraima.

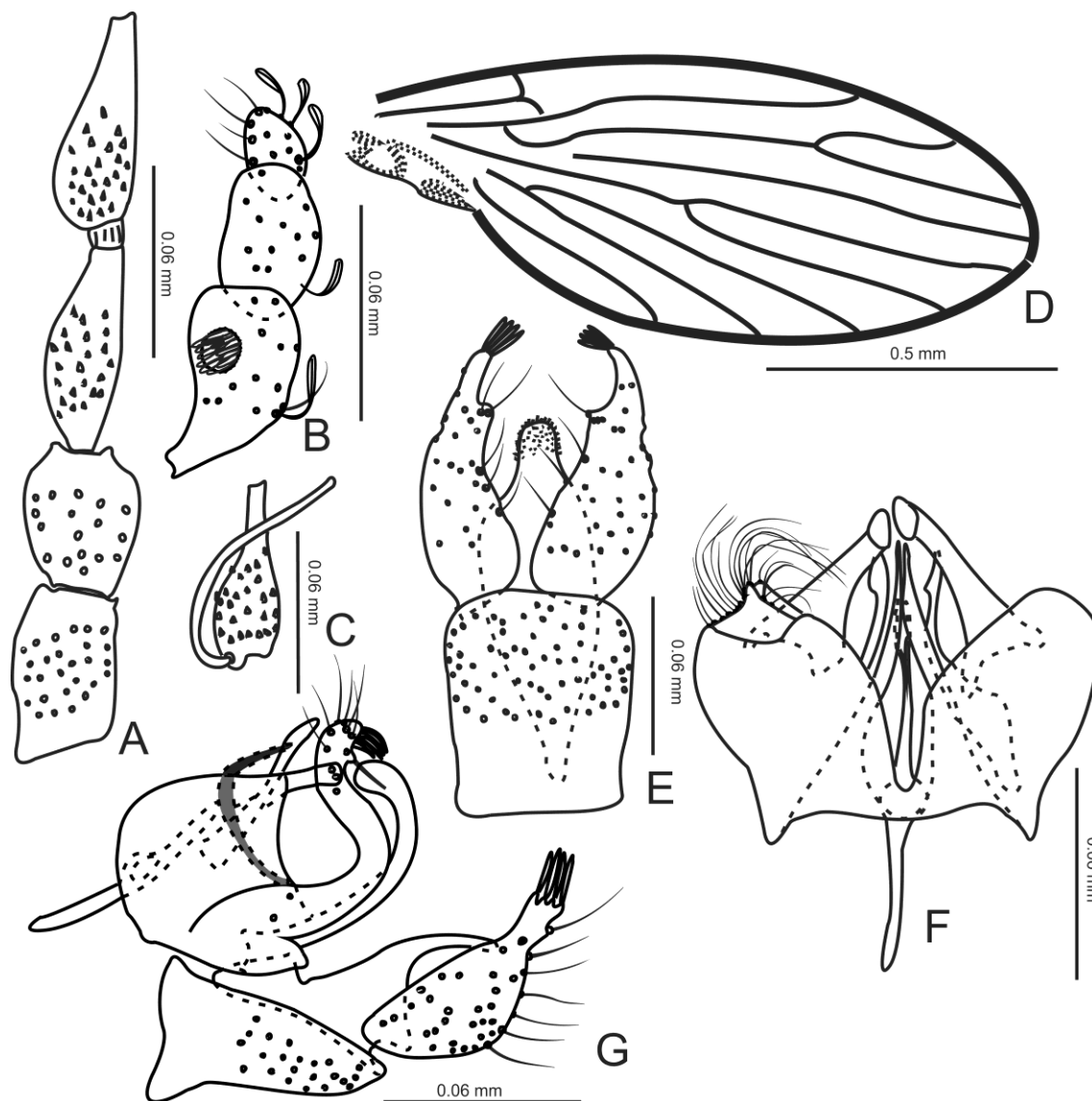
***Trichomyia cerdosa* Araújo & Bravo, sp. nov.**

(Figs. 20A-G)

Diagnosis. Arm of gonocoxites S-shaped in lateral view with a tuft of elongated apical bristles; one pair of elongated parameres with lanciform apex; ejaculatory apodeme short, 0.3 times the length of gonostylus; cercus with apical bristles, spatulate.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape with the same length of pedicel; pedicel subspherical (Fig. 20A); basal flagellomeres pyriform, asymmetric (Fig. 20A); ascoids 1.6 times the length of flagellomere (Fig. 20C). Palpus with three segments; palpus formula 1.0:0.6:0.5 (Fig. 20B); 1st segment with sensilla in depressed pit on inner side (Fig. 20B). Wing. R₅ incomplete at base; r-m and m-cu absent (Fig. 20D). Male terminalia. Hypandrium fused with gonocoxites. Arm of gonocoxites S-shaped in lateral view with a tuft of elongated apical bristles (Fig. 20F). Gonostylus articulated ventrally to gonocoxite,

long, with almost the same length of the lobe of gonocoxite in lateral view, bare (Figs. 20F, 20G). Parameres, one pair, elongated with lanciform apex (Fig. 20F). Aedeagus ending before the apex of parameres (Fig. 20F). Ejaculatory apodeme short, 0.3 times the length of lobe of gonostylus, in lateral view. Epandrium pilose, longer than wide (Fig. 20E). Cercus pilose (Figs. 20E, 20G), piriform in lateral view with four apical bristles, spatulate (Fig. 20G). Hypoproct with apical micropilosity (Fig. 20E).



Figs. 20A–G. *Trichomyia cerdosa* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Flagellomere with ascoide; D. Right wing; E. Cerci, epandrium and hypoproct; F. Male terminalia, dorsal; G. Male terminalia, lateral.

Material examined. Brazil, Bahia, Ituberá municipality, 12.VI.2002, holotype #m, F. Bravo (MZFS); 2 paratypes: 1 #m, same locality and collector as holotype,

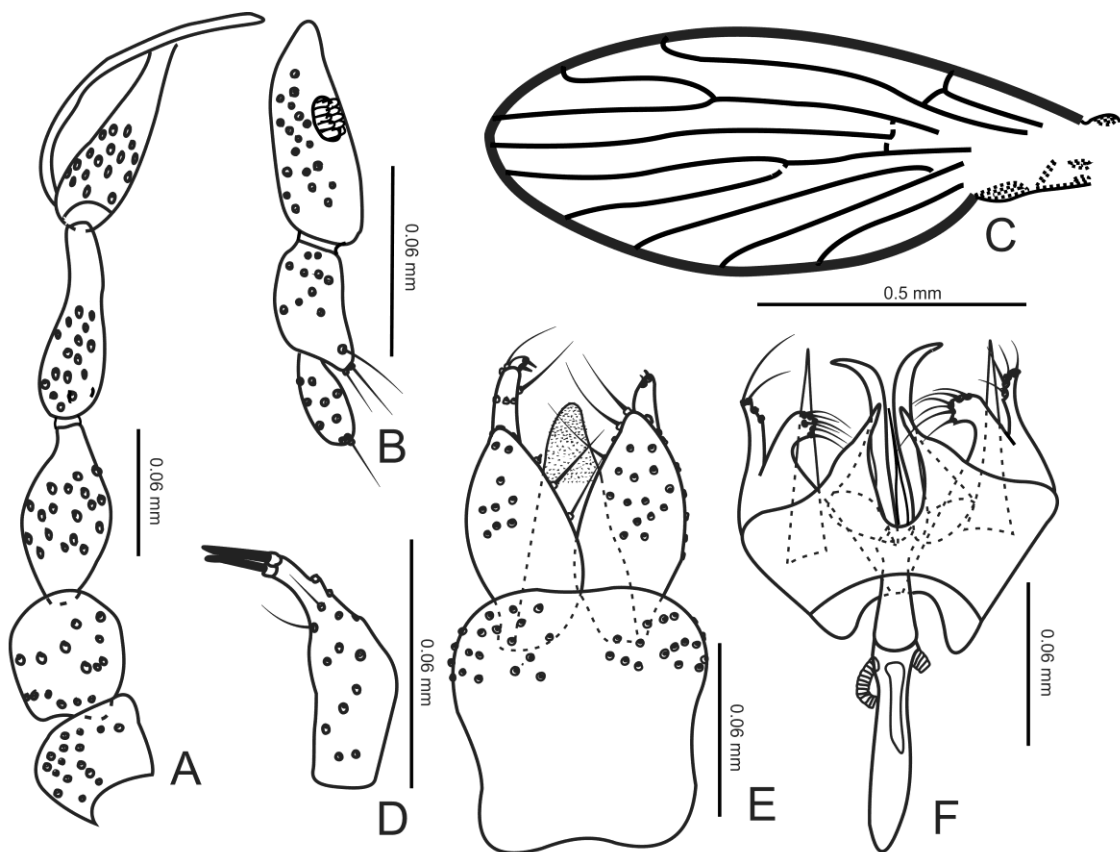
01.VII.2003 (MZFS); 1 #m, Brazil, Bahia, Cachoeira, Fazenda Villa Rial, F. Bravo leg.
24.V.2004 (MZFS).

Etymology. The epithet *cerdosa* is allusive to the large quantity of bristles on the arm of gonocoxite.

Distribution. Known from Ituberá and Cachoeira in Bahia, Brazil.

***Trichomyia colligata* Araújo & Bravo, sp. nov.**

(Figs.21A-F)



Figs. 21A–F. *Trichomyia colligata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cercus, lateral view; E. Cerci, epandrium, hypopocit; F. Male terminalia, dorsal.

Diagnosis. M_2 with base unsclerotized; r-m unsclerotized; arm of gonocoxite bifurcated, with bristles in the two projections; one pair of subtriangular parameres; with divergent apex; ejaculatory apodeme 1.4 times the length of gonostylus, cercus with apical expansion with two elongated rod-like bristles.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 21A); flagellomeres pyriform and eccentric, with many lateral bristles in dorsal view (Fig. 21A); ascoids 1.4 times as long as the length of flagellomere (Fig. 21A). Palpus three segmented; palpus formula 1.0:0.4:0.3 (Fig. 21B); first segment with sensilla in depressed pit on inner side (Fig. 21B). Wing. R_5 with base unsclerotized; M_2 with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 21C). Male terminalia. Hypandrium and gonocoxites fused with a pair of subtriangular expansion. Arm of gonocoxite bifurcated, with bristles in the two projections (Fig. 21F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, triangular (Fig. 21F). Presence of one pair of subtriangular parameres; with divergent apex (Fig. 21F). Aedeagus subtriangular reaching to the middle of the parameres (Fig. 21F). Ejaculatory apodeme 1.4 times the length of gonostylus. Epandrium pilose, wide than longer (Fig. 21E). Cercus piriform (Fig. 21E) with apical expansion with two elongated rod-like bristles (Fig. 21D). Hypoproct with apical micropilosity (Fig. 21E).

Material examined. Brazil, Roraima, Pitinga, 13-15.XI.1997, holotype #m, RQ, RN, PE leg. (MZFS); 6 paratypes: 4#m, same locality, date and collectors as holotype (INPA); 2 #m, Pará, Novo Repartimento, Vic. Bandeirante, Sítio Pedro Roqueta, 19.VIII.1998, without name of collector (MZFS).

Etymology. The Latin epithet *colligata* = together, refers to the arms of gonocoxite.

Distribution. Known from Pitinga in Roraima, Brazil; and Novo Repartimento in Pará, Brazil.

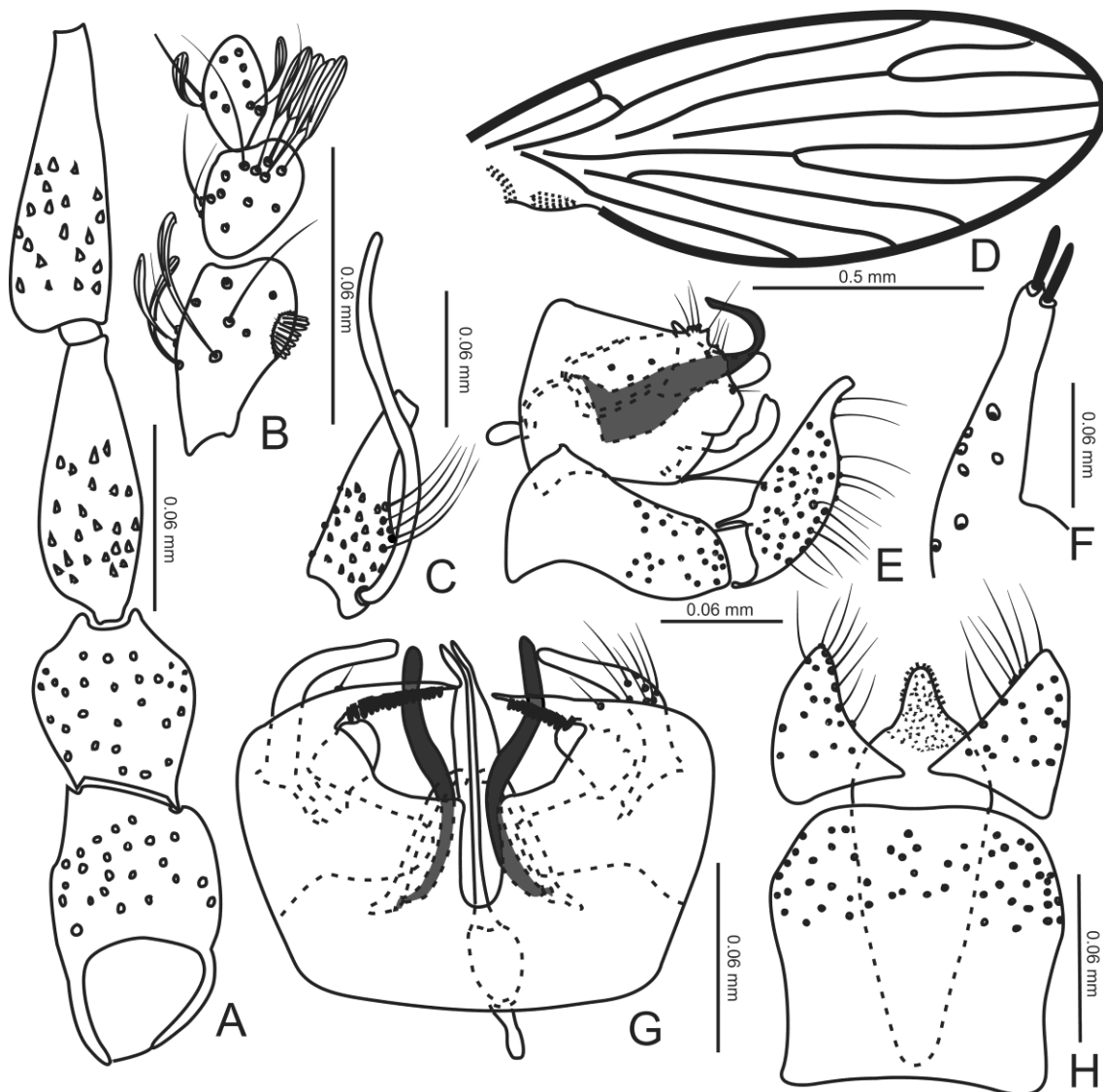
***Trichomyia complicata* Araújo & Bravo, sp. nov.**

(Figs. 22A-H)

Diagnosis. Gonocoxites with posterior arm tapering apically, anterior margin with a row of small rod-like setae; two pair of digitiform parameres; the inner paramere about twice longer than external paramere; ejaculatory apodeme short, 0.3 times the length of gonostylus; cercus with two short apical bristles.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 22A); flagellomeres

pyriform and eccentric (Fig. 22A); ascoids 1.8 times as long as the length of flagellomere (Fig. 22C). Palpus three segmented; palpus formula 1.0:0.6:0.6 (Fig. 22B); first segment with sensilla in depressed pit on inner side (Fig. 22B). Wing. R_5 incomplete at base; r-m and m-cu absent (Fig. 22D).



Figs. 22A–H. *Trichomyia complicata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Flagellomere with ascoid; D. Right wing; E. Male terminalia, lateral; F. Cercus, dorsal view; G. Male terminalia, dorsal; H. Cerci, epandrium and hypoproct.

Male terminalia. Hypandrium and gonocoxites fused. Gonocoxites with posterior arm tapering apically; anterior margin with a row of small rod-like setae (Fig. 22G). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, curved (Figs. 22G, 22E). Presence of two pair of digitiform parameres; the inner paramere about

twice longer than external paramere (Figs. 22G, 22E). Aedeagus ending at apex of parameres (Fig. 22G). Ejaculatory apodeme short, 0.3 times the length of gonostylus. Epandrium longer than wide (Fig. 22H). Cercus piriform (Fig. 22H) with two short apical bristles (Fig. 22F). Hypoproct with apical micropilosity (Fig. 22H).

Material examined. Brazil, Bahia, Ituberá municipaliy, 15.VII.2002, holotype #m, I. Castro leg. (MZFS); 12 paratypes: 6 #m, same locality as holotype, 12.VI.2002, F. Bravo leg. (MZFS); 6 #m, same locality, 01.VII.2003, F. Bravo leg. (MZFS).

Etymology. From Latin, *complicatus*, refers to the shape of parameres.

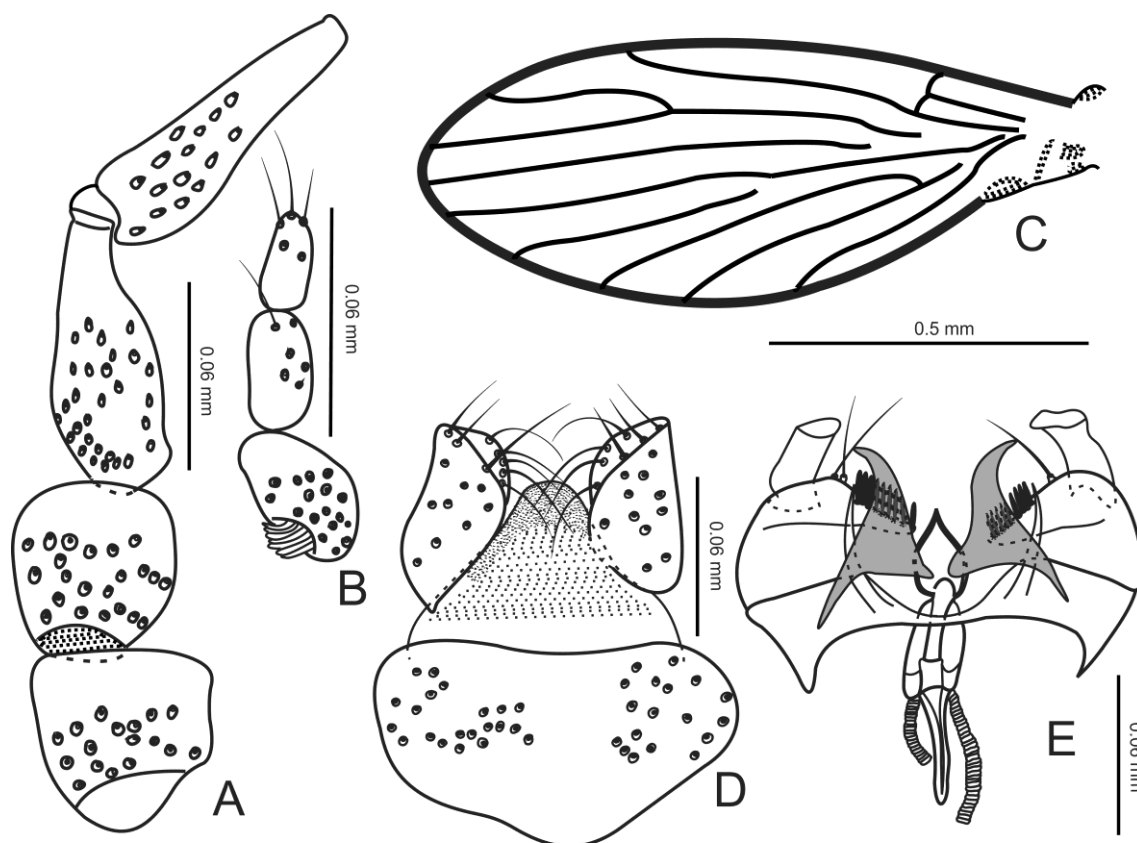
Distribution. Known from Ituberá in Bahia, Brazil.

***Trichomyia conchulata* Araújo & Bravo, sp. nov.**

(Figs. 23A-F)

Diagnosis. M_2 not reaching M_1 , basal curved expansion, with pointed apex on gonocoxite; arm of gonocoxite with a row of nine rod-like bristles; one pair of subtriangular parameres; esclerotized; ejaculatory apodeme 1.15 times the length of gonostylus; aedeagus bifid, with tips united apically; epandrium subtriangular.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical (Fig. 23A); basal flagellomeres pyriform and eccentric (Fig. 23A); ascoids not visualized. Palpus three segmented; palpus formula 1.0:0.8:0.6 (Fig. 23B); first segment with sensilla in depressed pit on inner side (Fig. 23B). Wing. R_5 incomplete at base; M_2 not reaching M_1 , r-m and m-cu absent (Fig. 23C). Male terminalia. Hypandrium and gonocoxites fused with a basal curved expansion, with pointed apex. Arm of gonocoxite curved and directed to the inner portion, with a row of nine rod-like bristles (Fig. 23E). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare (Fig. 23E). Presence of one pair of subtriangular parameres; esclerotized (Fig. 23E). Aedeagus bifid, with tips united apically (Fig. 23E). Ejaculatory apodeme 1.15 times the length of gonostylus. Epandrium pilose, subtriangular, longer than wide (Fig. 23D). Cercus curved with apical bristles (Fig. 23D). Hypoproct with apical micropilosity and epiproct expanded basally, subtriangular (Fig. 23D). Epiproct subtriangular, membranous and with rounded apex (Fig. 23D).



Figs. 23A–E. *Trichomyia conchulata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Cerci, epandrium and hypopoc; E. Male terminalia, dorsal.

Material examined. Brazil, Amazonas, Manacapuru, Estrada do Cajatuba, Sítio do Sr Simplício, 24-25.IV.1998, holotype #m, without name of collector (MZFS); 3 paratypes: 1 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 6.X.1998, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 9.X.1998, without name of collector (INPA); 1 #m, Pará, Novo Repartimento, Ramal dos sem terra, 22.VIII.1998, without name of collector (MZFS).

Etymology. From Latin, *conchulata* = small shell, refers to the shape of cercus.

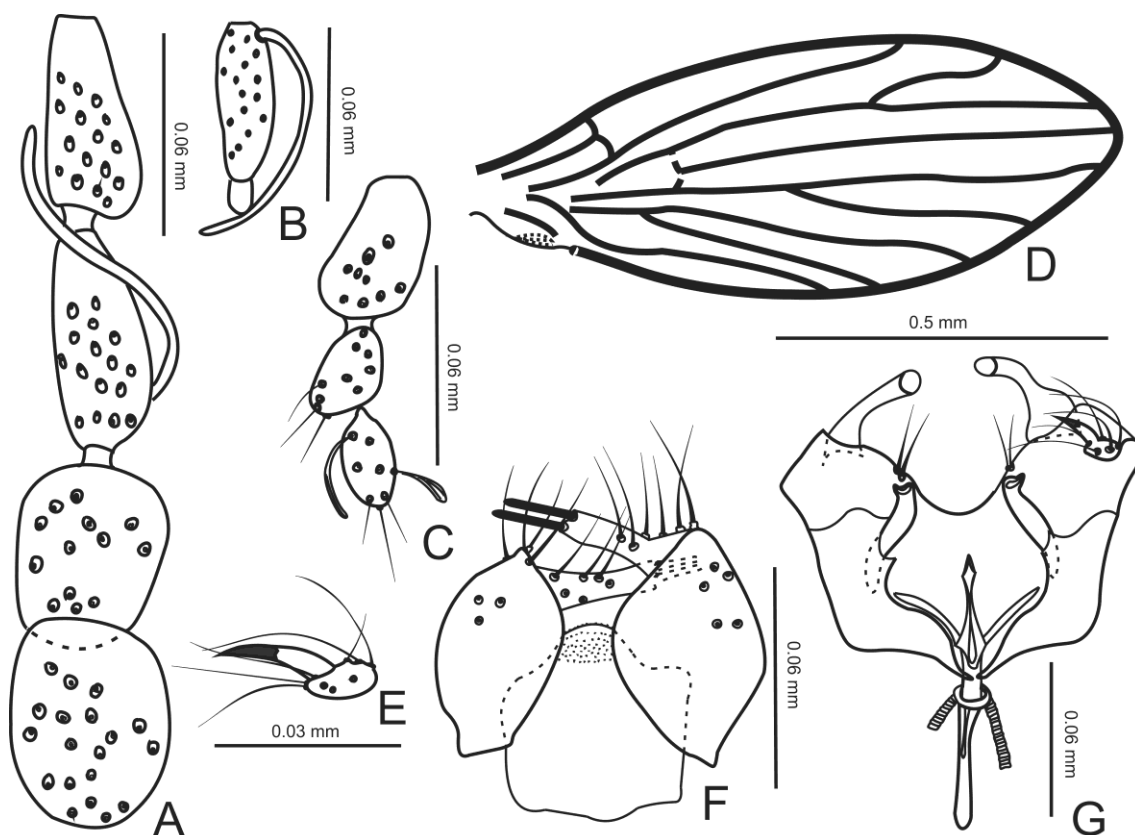
Distribution. Known from Manacapuru in Amazonas, Brazil; and Novo Repartimento in Pará, Brazil.

***Trichomyia crinita* Araújo & Bravo, sp. nov.**

(Figs. 24A-G)

Diagnosis. Gonocoxite with elongated basal expansion and two hairs in the inner lateral; arm of gonocoxite with an expansion spur-shaped with sclerotized apex and with

elongated bristles; one pair of filiform parameres; ejaculatory apodeme short, 1.2 times the length of gonostylus; cercus with two rod-like bristles.



Figs. 24A–G. *Trichomyia crinita* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Flagellomere with ascoid; C. Palpus; D. Right wing; E. Arm of gonocoxite; F. Cerci, epandrium and hypopod; G. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 24A); flagellomeres pyriform and eccentric (Fig. 24A); ascoids 1.4 times as long as the length of flagellomere (Fig. 24B); 13th flagellomere subcylindrical with terminal apiculus separated by suture (Fig. 24B). Palpus three segmented; palpus formula 1.0:0.5:0.7 (Fig. 24C); first segment with sensilla in depressed pit on inner side (Fig. 24C). Wing. R₅ with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 24D). Male terminalia. Hypandrium and gonocoxites fused with elongated basal expansion and two hairs in the inner lateral. Arm of gonocoxite with an expansion spur-shaped with sclerotized apex and with elongated bristles. (Fig. 24G). Gonostylus digitiform, slightly sclerotized, articulated ventrally to gonocoxite, bare, curved, with rounded tip (Fig. 24G). Presence of one pair of filiform parameres (Fig. 24G). Aedeagus with pointed apex (Fig. 24G). Ejaculatory

apodeme short, 1.2 times the length of gonostylus. Epandrium lost in the specimen studied. Cercus with an apical expansion with two rod-like bristles (Fig. 24F). Hypoproct with apical micropilosity (Fig. 24F).

Material examined. Brazil, Amazonas, Manacapuru, 27.XI.2001, holotype #m, without name of collector (MZFS).

Etymology. From Latin, *crinita* = comet, refers to the shape of arm of gonocoxite.

Distribution. Known from Manacapuru in Amazonas, Brazil.

***Trichomyia danieli* Bravo, 2001c: 125-126, figs. 18-23.**

Remarks. The males of *Trichomyia danieli* can be recognized by two arm of gonocoxite, both with elongated apical bristles; hypoproct with pointed apex and ejaculatory apodeme long, 1.5 times the length of gonocoxite.

Material examined. Brazil, Bahia: Serra da Jibóia, holotype #m, 16.III.2001, I. Castro & I. Soares leg. (MZFS).

Distribution. Known from the type locality in Brazil, state of Bahia.

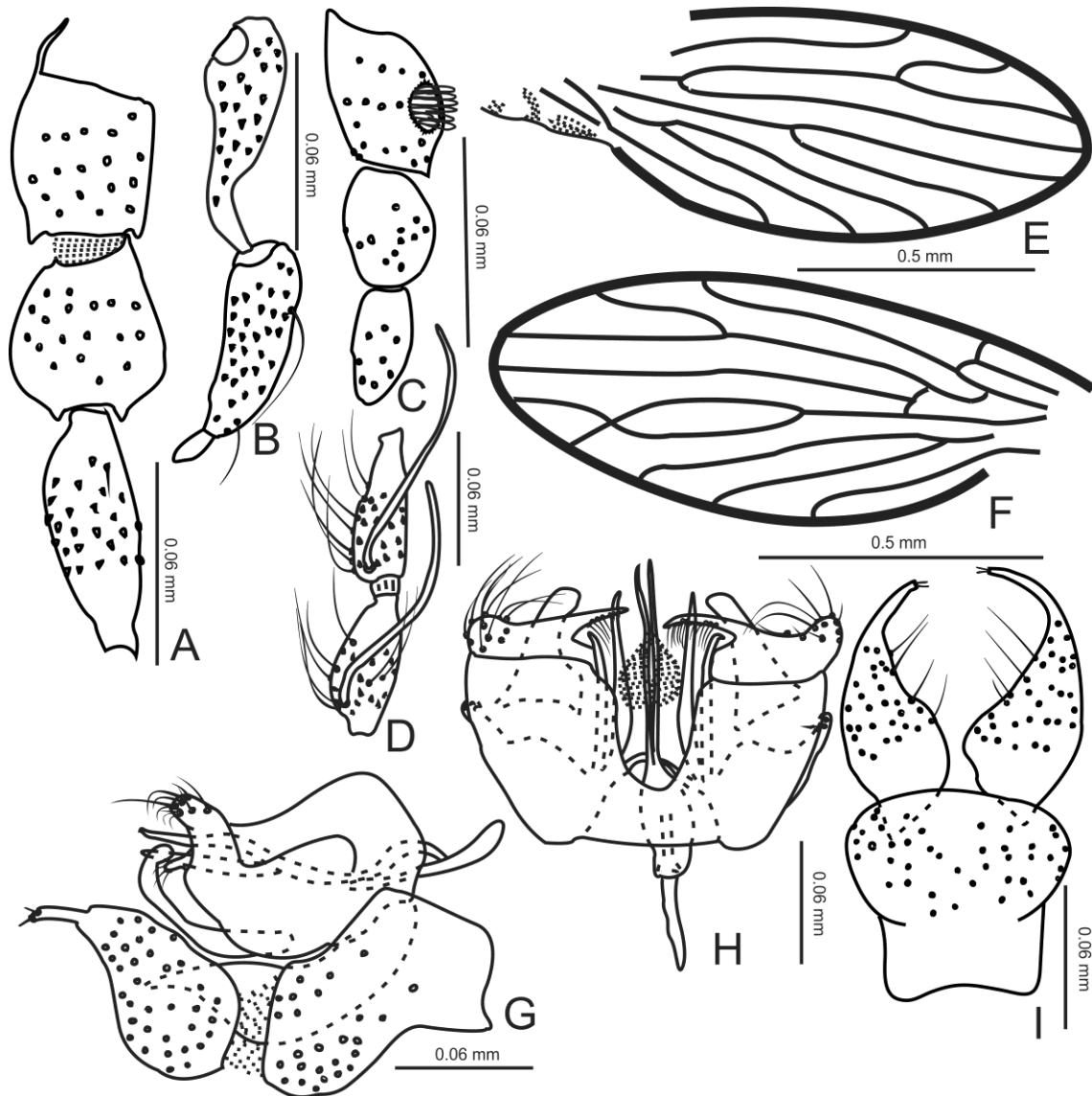
***Trichomyia elongata* Araújo & Bravo, sp. nov.**

(Figs. 25A-I)

Diagnosis. R_5 complete at base; r-m present; arm of gonocoxite directed to midline, apically bifurcated and with a group of elongated bristles in the center; one pair of lanciform parameres; aedeagus ending after the apex of parameres; ejaculatory apodeme short, 0.5 times the length of medial expansion of gonocoxite; cercus with apical projection with two setae.

Description. Male. Head subcircular. Antenna with 13 flagellomeres; scape with apprimately with the same length than pedicel; pedicel subspherical (Fig. 25A); flagellomeres pyriform, eccentric (Figs 25A, 25B); basal ascoids 1.7 times the length of flagellomere (Fig. 25D); 13th flagellomere subcylindrical with terminal apiculus separated by suture (Fig. 25B). Palpus with three segments; palpus formula 1.0:0.9:0.9 (Fig. 25C); 1st segment with sensilla in depressed pit on inner side (Fig. 25C). Wing. R_5

complete at base; r-m present; m-cu absent (Fig. 25E). Male terminalia. Hypandrium fused with gonocoxites with a pair of medial laciform expansion (Fig. 25H).



Figs. 25A–I. *Trichomyia elongata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Last flagellomeres; C. Palpus; D. Flagellomeres with ascoids; E. Right wing; F. Left wing; G. Male terminalia, lateral; H. Male terminalia, dorsal; I. Cerci and epandrium.

Gonocoxites with posterior arm, directed to midline, apically bifurcated and with a group of elongated bristles in the center (Fig. 25H). Gonostylus articulated to gonocoxite at the middle, bare, with apex directed upward (Fig. 25H). Parameres, one pair, lanciform (Fig. 25H). Aedeagus ending after the apex of parameres (Fig. 25H). Ejaculatory apodeme short, 0.5 times the length of medial expansion of gonocoxite. Epandrium pilose, posteriorly larger than anteriorly (Fig. 25I). Cercus pilose, piriform,

with apical elongated projection with two setae (Figs. 25G, 25I). Epiproct shorter than hypoproct, both with apical micropilosity (Fig. 25G).

Material examined. Brazil, Bahia, Cachoeira, Fazenda Villa Rial, holotype #m, 24.V.2004, F. Bravo leg. (MZFS); 1 paratype #m, same locality, date and collector than holotype (MZFS).

Etymology. The epithet *elongata* refers to the elongated apex of cercus.

Distribution. Known from Cachoeira in Bahia, Brazil.

Remarks. The paratype present M_1 and M_2 veins fused near the apex (Fig. 25F).

***Trichomyia grossa* Araújo & Bravo, sp. nov.**

(Figs. 26A-F)

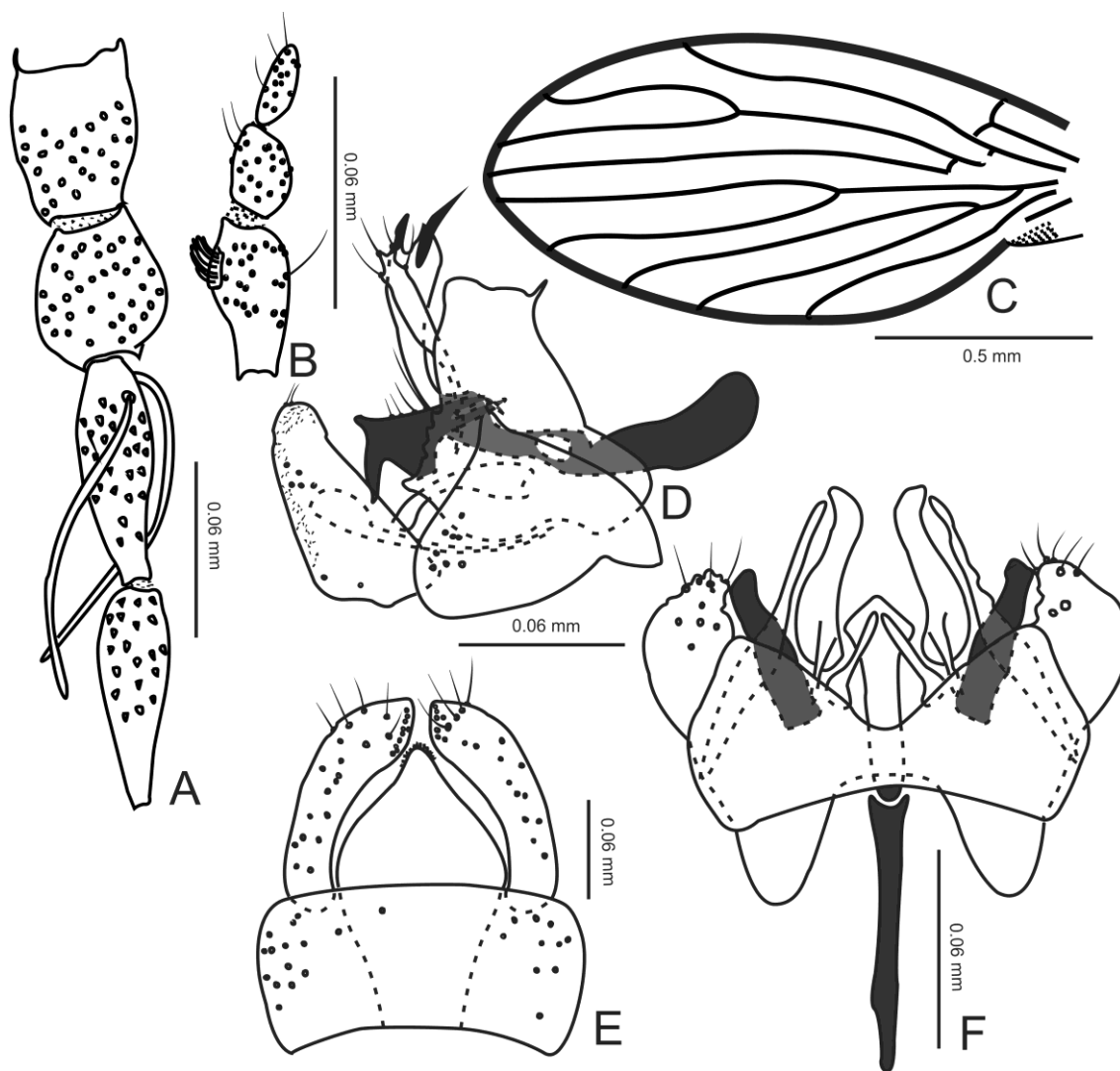
Diagnosis. R_5 complete at base; lanciform expansion on gonocoxite; two pair of parameres, sclerotized internal and smaller than external; ejaculatory apodeme 1.5 the length of external paramere.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape shorter than pedicel; pedicel subspherical; basal flagellomeres pyriform and eccentric (Fig. 26A); ascoids 1.3 times the length of flagellomere (Fig. 26A). Palpus with three segments; palpus formula 1.0:0.5:0.6 (Fig. 26B); 1st segment with sensilla in depressed pit on inner side (Fig. 26B). Wing. R_5 complete at base; r-m and m-cu absent (Fig. 26C). Male terminalia. Hypandrium fused with gonocoxites with lanciform ventral expansion (Fig. 26F). Gonocoxites with posterior arm subrectangular in lateral view with a row of basal bristles (Figs. 26D, 26F). Gonostylus articulated to gonocoxite basally, bare, with apex directed downward (Fig. 26F). Parameres, two pair, sclerotized internal and smaller than external (Fig. 26F). Aedeagus ending after the apex of internal paramere (Fig. 26F). Ejaculatory apodeme 1.5 the length of external paramere. Epandrium pilose, subrectangular (Fig. 26E). Cercus pilose (Figs. 26D, 26E), subelliptical in lateral view, larger basally than apically (Fig. 26D). Epiproct shorter than hypoproct, both with apical micropilosity (Fig. 26D).

Material examined. Brazil, Bahia, Porto Seguro, Estação Vera Cruz, holotype #m, 05.XII.2002, F. Bravo leg. (MZFS).

Etymology. The epithet *grossa* refers to the shape of arm of gonocoxite.

Distribution. Known from Porto Seguro in Bahia, Brazil.



Figs. 26A–F. *Trichomyia grossa* sp. nov. A. Scape, pedicel and basal flagellomeres; 2. Palpus; C. Left wing; D. Male terminalia, lateral; E. Cerci, epandrium and hypopoct; F. Male terminalia, dorsal.

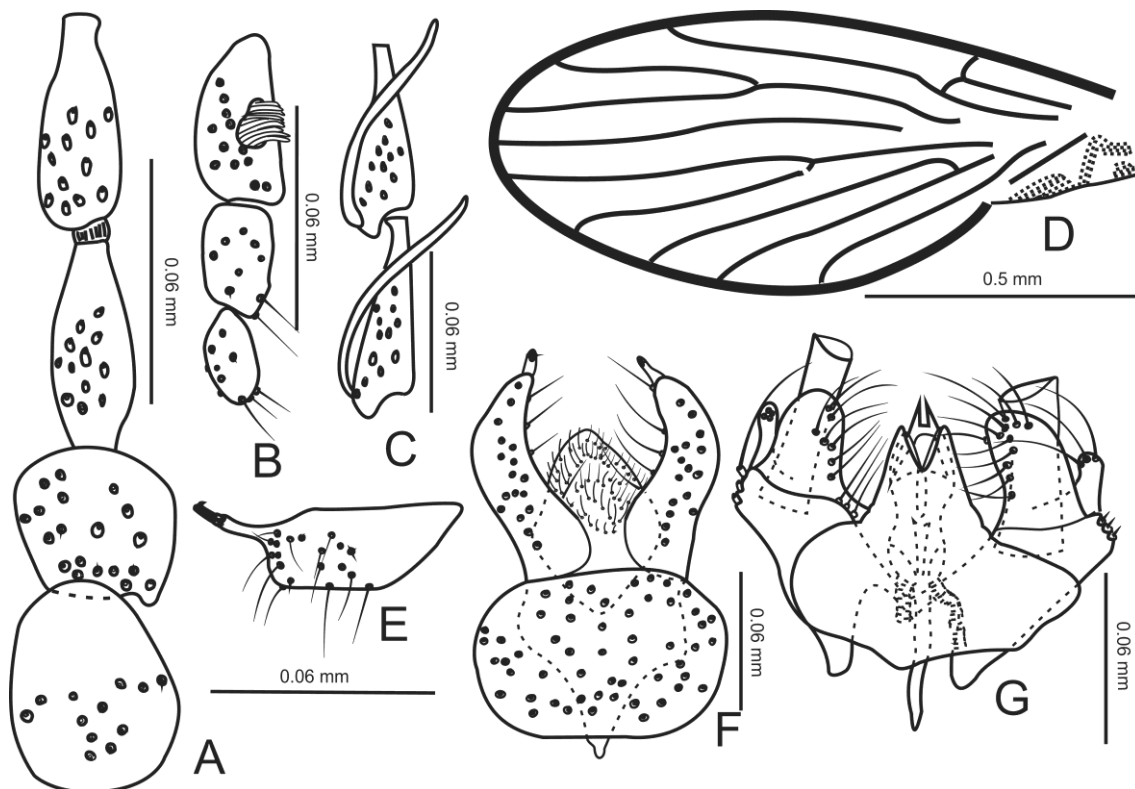
***Trichomyia hileiana* Araújo & Bravo, sp. nov.**

(Figs. 27A–G)

Diagnosis. M_2 not reaching M_1 ; bifurcated basal expansion on gonocoxite; two pair of arms of gonocoxite, the dorsal larger and broader than the ventral and both with bristles; ejaculatory apodeme 0.8 times the length of gonostylus; cercus with an elongated projection with two apical bristles.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; oval scape; subquadrangular pedicel (Fig. 27A); basal flagellomeres pyriform and eccentric (Fig. 27A); ascoids 1.2 times as long as the length of

flagellomere (Fig. 27C). Palpus three segmented; palpus formula 1.0:0.6:0.5 (Fig. 27B); first segment with sensilla in depressed pit on inner side (Fig. 27B). Wing. M_2 not reaching M_1 ; R_5 incomplete at base; r-m and m-cu absent (Fig. 27D).



Figs. 27A–G. *Trichomyia hileiana* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Flagellomeres with ascoids; D. Left wing; E. Cercus, lateral view; F. Cerci, epandrium and hypoproct; G. Male terminalia, dorsal.

Male terminalia. Hypandrium and gonocoxites fused with bifurcated basal expansion and with bristles lateroposterior. Two pair of arms of gonocoxites, the dorsal larger and broader than the ventral and both with bristles (Fig. 27G). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, truncated (Fig. 27G). Presence of one pair of fused parameres; H-shaped (Fig. 27G). Aedeagus ending at midline of parameres (Fig. 27G). Ejaculatory apodeme 0.8 times the length of gonostylus. Epandrium longer than wide, subcircular (Fig. 27F). Cercus digitiform (Fig. 27F) with an elongated projection with two apical bristles (Fig. 27E). Hypoproct with setulae apical (Fig. 27F).

Material examined. Brazil, Amazonas, Presidente Figueiredo, Pitinga, 04.XII.1998, holotype #m, RQ, LMC leg. (MZFS); 37 paratypes: 1 #m, same locality as holotype, 15.XII.1998, RR, LMS leg. (INPA); 2 #m, same locality as holotype,

06.X.1998, without name of collector (MZFS); 3 #m, same locality as holotype, Km 75, 25-27.VII.1997, without name of collector (INPA); 22 #m, same locality, date and collectors as holotype (MZFS); 3 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 9.X.1998, without name of collector (INPA); 1 #m, Pará, Santarém, Km13, N.S. Nazaré, Com. Santa Maria, 27.XI.1998, FF, RDN cols (MZFS); 3 #m, Pará, Santarém, Estrada para Alter do Chão, Jurupari, Km 1315, 25.XI.1998, RF, RAN, FLS cols (MZFS); 1 #m, Roraima, Pitinga, 13-15.XII.1997, RQ, RN, PE cols (MZFS); 1 #m, Amazonas, Manacapuru, Estrada do Cajatuba, Sitio do Sr. Simplicio, 24-25.IV.1998, without name of collector (INPA);

Etymology. The epithet *hileiana* refers to the erudite term, given by Alexander Humboldt to the old province which included the forests of the Amazon.

Distribution. Known from Presidente Figueiredo and Manacapuru in Amazonas, Brazil; Santarém in Pará, Brazil; and Pitinga in Roraima, Brazil.

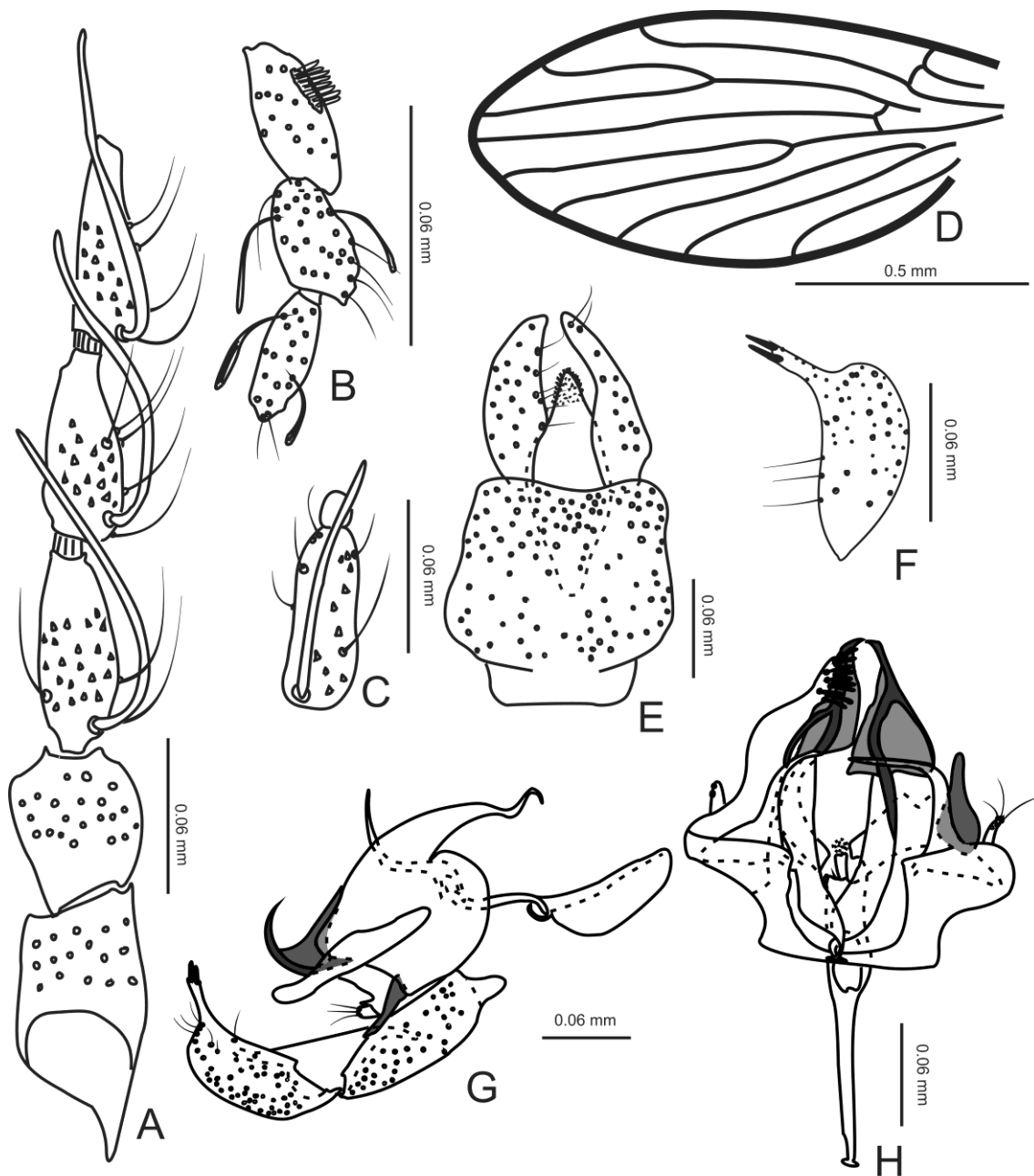
***Trichomyia hispida* Araújo & Bravo, sp. nov.**

(Figs. 28A-H)

Diagnosis. R_5 complete at base; r-m present; arm of gonocoxite sinuous, apically with many short and thick bristles; two pair of parameres, the subtriangular dorsal with sharp apex; the ventral, with sharp apex, longer than the dorsal paramere, jointed apically by a ventral membrane; ejaculatory apodeme twice the length of gonostylus; cercus with a projection with two apical bristles.

Description. Male. Head subcircular. Antenna: scape subcylindrical approximately with the same length of pedicel (Fig. 28A); pedicel subspherical (Fig. 28A); flagellum with 13 flagellomeres, 1st to 12th pyriforms and eccentric (Fig. 28A); 13th flagellomere subcylindrical with terminal apiculus separated by suture (Fig. 28C); pair of digitiform ascoids present in all flagellomeres; basal ascoids 1.3-1.4 times the length of flagellomere (Fig. 28A); apical ascoids 1.2 times the length of flagellomere (Fig. 28C). Palpus three segmented; palpus formula 1.0:0.7:0.8 (Fig. 28B); first segment with sensilla in depressed pit on inner side (Fig. 28B). Wing. R_5 complete at base; r-m present; m-cu absent (Fig. 28D). Male terminalia. Hypandrium fused with gonocoxites narrow (Fig. 28H). Gonocoxites with posterior arm, sinuous, apically with many short and thick bristles (Fig. 28H). Gonostylus articulated ventrally to gonocoxite, digitiform,

bare (Fig. 28H). Two pair of parameres, the first dorsal pair, subtriangular, with sharp apex and directed to the midline (Fig. 28H); the second pair of parameres, ventral, complex, with sharp apex, longer than the dorsal parameres, jointed apically by a ventral membrane. Aedeagus short (Fig. 28H). Ejaculatory apodeme twice the length of gonostylus. Epandrium subrectangular (Figs. 28E, 28G). Cercus bottle-shaped in lateral view with two apical bristles (Fig. 28F). Hypoproct with apical micropilosity (Fig. 28E).



Figs. 28A–H. *Trichomyia hispida* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Last flagellomere; D. Left wing; E. Cerci, epandrium and hypoproct; F. Cercus, lateral; G. Male terminalia, lateral; H. Male terminalia, dorsal.

Material examined. Brazil, Bahia, Coração de Maria municipality, 28.I.2004, holotype #m, F. Bravo leg. (MZFS); 3 paratypes: 1 #m, same locality, date and collector than holotype (MZFS); 2 #m, Brazil, Bahia, Cachoeira municipality, Fazenda Villa Rial, 28.VII.2004, F. Bravo leg. (MZFS).

Etymology. From Latin, *hispidus*, meaning bristly referring to the presence of apical bristles in the cercus.

Distribution. Known from Coração de Maria and Cachoeira in Bahia, Brazil.

***Trichomyia iarae* Bravo, 2001c: 122-123, figs. 1-8.**

Remarks. The males of *T. iarae* can be recognized by elongated bristles in the apex of cercus, 0.6 times the length of gonostylus, two arms of gonocoxite with bristles and ejaculatory apodeme short, 0.2 times the length of external arm of gonocoxite.

Material examined. Brazil, Bahia: Serra da Jibóia, holotype #m, 16.VI.2000, F. Bravo leg. (MZFS)

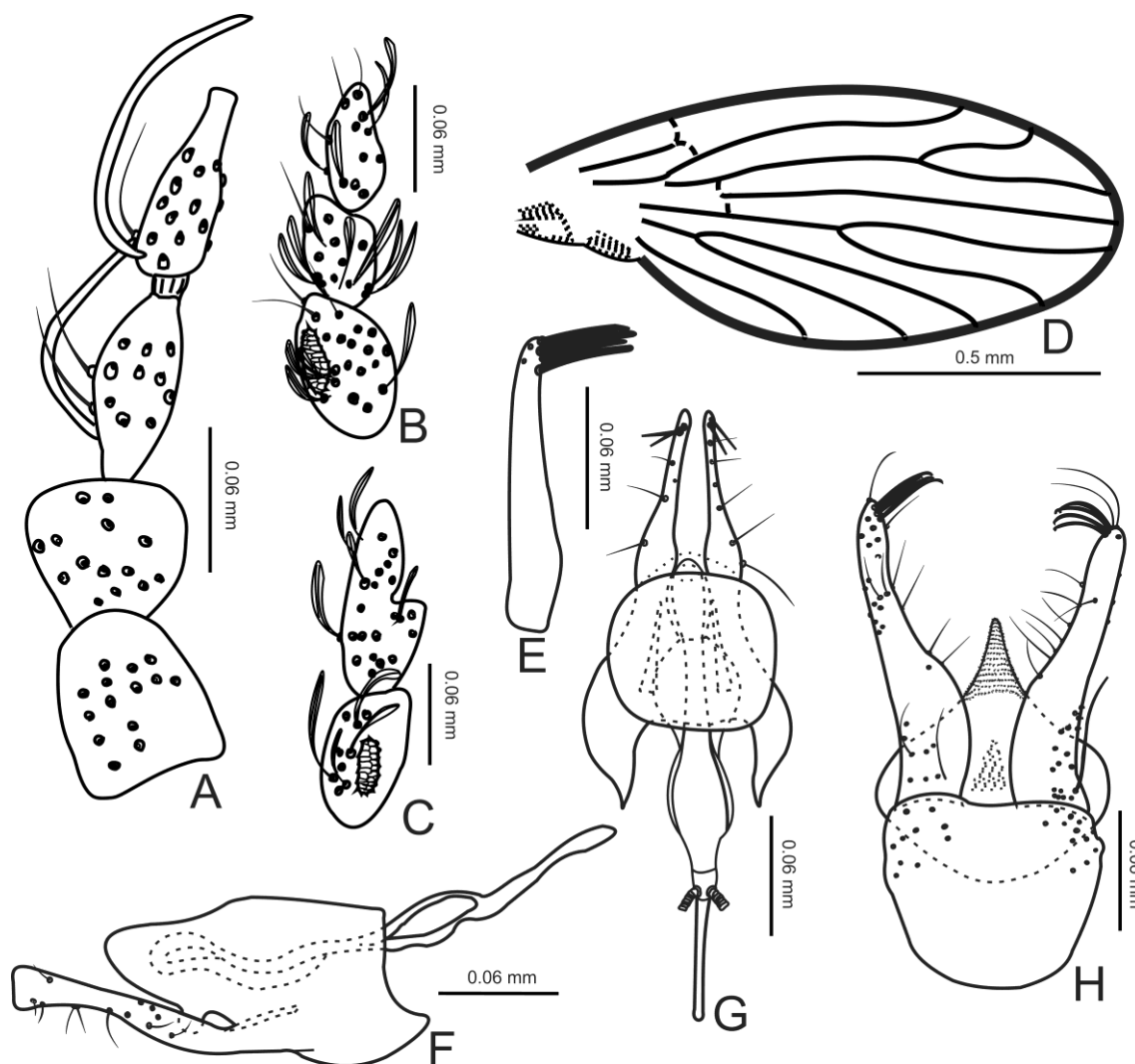
Distribution. Known from the type locality in Brazil, state of Bahia.

***Trichomyia inedita* Araújo & Bravo, sp. nov.**

(Figs. 29A-H)

Diagnosis. Apex of Sc unsclerotized; M_2 with base unsclerotized; hypandrium involving the aedeagus, with a subspherical dorsal projection; arm of gonocoxite elongated coated laterally by bristles and apically by two setae; one pair of parameres; involving the aedeagus, curved-shaped; ejaculatory apodeme short, 1.25 times the length of gonostylus; cercus with apical rod-like bristles.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 29A); flagellomeres pyriform and eccentric (Fig. 29A); ascoids 1.3 times as long as the length of flagellomere (Fig. 29A). Palpus three segmented; palpus formula 1.0:0.7:0.8 (Fig. 29B); first segment with sensilla in depressed pit on inner side (Fig. 29B). Wing. apex of Sc unsclerotized; sc-r unsclerotized; R_5 with base unsclerotized; M_2 with base unsclerotized, r-m unsclerotized and m-cu absent (Fig. 29D). Male terminalia. Hypandrium and gonocoxites fused, hypandrium involving the aedeagus, with a dorsal subspherical projection (Fig. 29F).



Figs. 29A–H. *Trichomyia inedita* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Left palpus; C. Right palpus; D. Right wing; E. Cercus, lateral view; F. Dorsal male terminalia, lateral view; G. Male terminalia, dorsal; H. Cerci, epandrium, hypoproct and epiproct.

Gonocoxites with arm elongated coated laterally by bristles and apically by two setae (Fig. 29G). Gonostylus unsclerotized, subtriangular (Fig. 29G). Presence of one pair of parameres; involving the aedeagus, curved-shaped (Fig. 29G). Aedeagus with expanded and rounded apex (Fig. 29G). Ejaculatory apodeme short, 1.25 times the length of gonostylus. Epandrium subcircular (Fig. 29H); elongated cercus, digitiform, with rod-like bristles in the ventral surface of the apex, about five (Fig. 29E, 29H). Hypoproct tapering apically with apical micropilosity and expanded basally (Fig. 29H). Epiproct triangular with pointed apex (Fig. 29H).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba Km 69/3, 12.X.1998, holotype #m, without name of collector (MZFS); 29 paratypes: 11 #m, same

locality and data as holotype (MZFS), 6 #m, same locality as holotype, Km 75, 25-27.VII.1997, without name of colector (MZFS); 6 #m, same locality as holotype, 09.X.1998, without name of colector (MZFS); 2 #m, Pará, N. Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22. VIII.1998, without name of colector (MZFS); 1 #m, Pará, Santarém, Est. p/ Alter do Chão, Jurupari, Km 1315, 25. XI. 1998, R.F., R.A.N., F.L.S. (sic.) leg. (MZFS); 1 #m, Pará, Bragança, Est. p Malhado, Com. Iararaca, Km 20, 06.X.1998, without name of colector (MZFS); 1 #m, Roraima, Pitinga, 13-15.XII.1997, R.Q, R.N., P.E. (sic.) leg. (MZFS) 1 #m, Amazonas, Manaus, Reserva Ducke, 26-31.VIII.2011, M.X. Araújo leg. (MZFS).

Etymology. The epiteht is allusive to the different shaped of hypandrium that involving the aedeagus, with a subspherical projection, characteristic totally different from other species of the genus.

Distribution. Known from Manacapuru and Manaus in Amazonas, Brazil; and Novo Repartimento, Santarém and Bragança in Pará, Brazil.

Remarks. The right palpus of holotype has a mutacion, with the two last segments fused (Fig. 29C).

***Trichomyia ivani* Bravo, 2001c: 128, figs. 35-41.**

Remarks. The males of *T. ivani* can be recognized by lamellated bristles in the apex of expansion of gonocoxite, elongated epandrium and ejaculatory apodeme long, twice the length of expansion of gonocoxite.

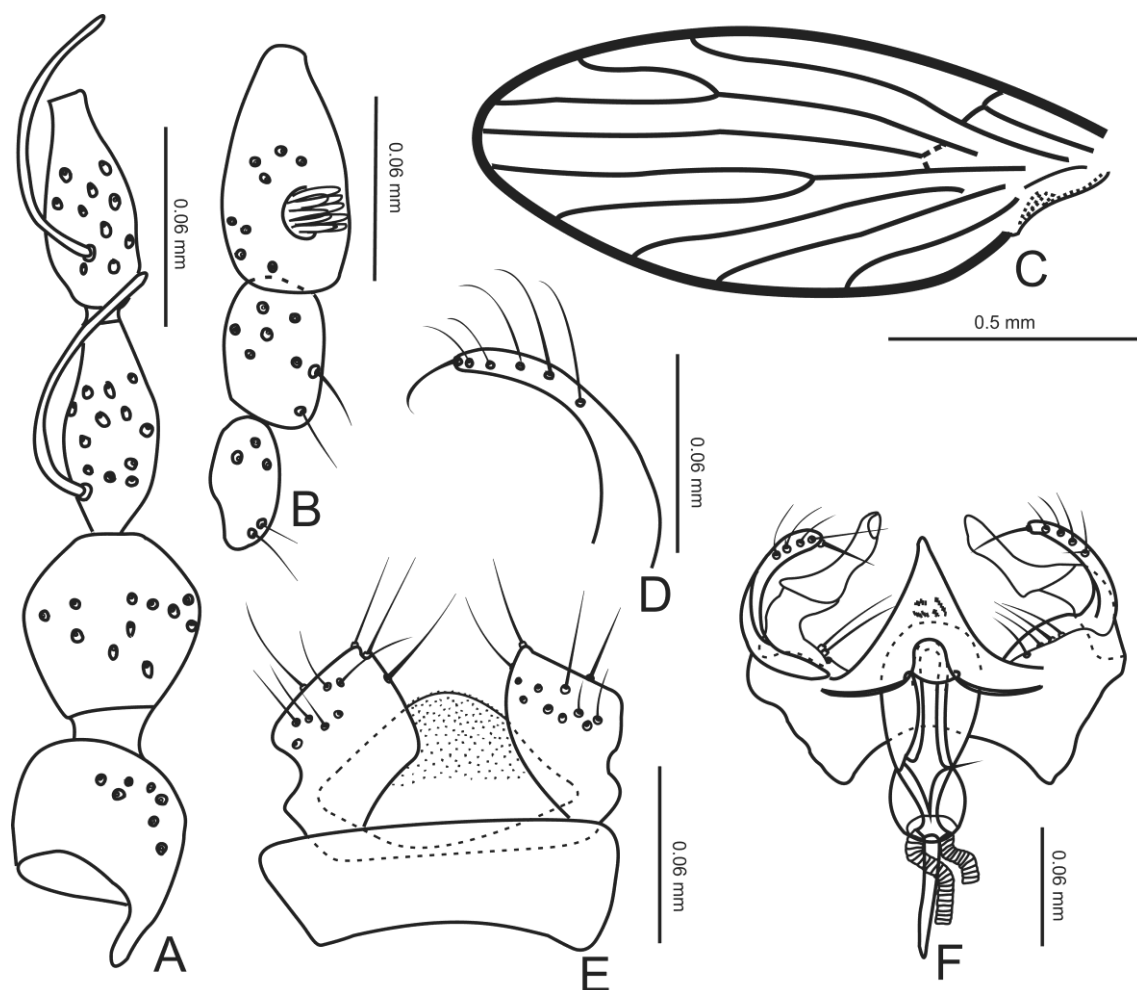
Material examined. Brazil, Bahia: Serra da Jibóia, holotype #m, 16.VI.2000, F. Bravo leg. (MZFS); 1 paratype #m, same locality and collector as holotype, 24.VIII.2000 (MZFS).

Distribution. Known from the type locality in Brazil, state of Bahia.

***Trichomyia longiseta* Araújo & Bravo, sp. nov.**

(Figs. 30A-F)

Diagnosis. Triangular projection on gonocoxite, covering apex of parameres; arm of gonocoxite curved with a spur-like bristle apically; ejaculatory apodeme short, 0.7 times the length of gonostylus.



Figs. 30A–F. *Trichomyia longiseta* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Arm of gonocoxite; E. Cerci, epandrium and hypopocyt; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 30A); basal flagellomeres pyriform and centric (Fig. 30A); ascoids 1.2 times as long as the length of flagellomere (Fig. 30A). Palpus three segmented; palpus formula 1.0:0.5:0.5 (Fig. 30B); first segment with sensilla in depressed pit on inner side (Fig. 30B). Wing. R_5 with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 30C). Male terminalia. Hypandrium and gonocoxites fused with a triangular projection, covering apex of parameres. Arm of gonocoxite pilose, curved, with a spur-like bristle apically and bristles tinner and the same length basally (Figs. 30F, 30D). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, curved and digitiform (Fig. 30F). Presence of one pair of fused parameres; subcircular and with a pilose struture in the apex (Fig. 30F). Aedeagus ending at base of parameres, with rounded apex (Fig. 30F). Ejaculatory apodeme short,

0.7 times the length of gonostylus. Epandrium longer than wide (Fig. 30E). Cercus pilose (Fig. 30E). Hypoproct with apical micropilosity (Fig. 30E).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba, Km 69/3, 12.X.1998, holotype #m, without name of collector (MZFS); 8 paratypes: 1 #m, same locality as holotype, 06.X.1998, without name of collector (MZFS); 1 #m, same locality as holotype, 12.X.1998, without name of collector (INPA); 1 #m, same locality as holotype, 20.IV.1998, RQ, RN, PE leg. (INPA); 3 #m, Amazonas, Manacapuru, Km75, 25-27.VII.1997, without name of collector (MZFS); 1 #m, Amazonas, Manaus, Reserve Ducke, 26-31.VIII.2011, M.X. Araújo leg. (INPA); 1 #m, Amazonas, BR307, Km 12, 15.VIII.2010, without name of collector (INPA).

Etymology. The epithet *longiseta* refers to the largest and thickest bristle in the arm of gonocoxite apically.

Distribution. Known from Manacapuru and Manaus in Amazonas, Brazil.

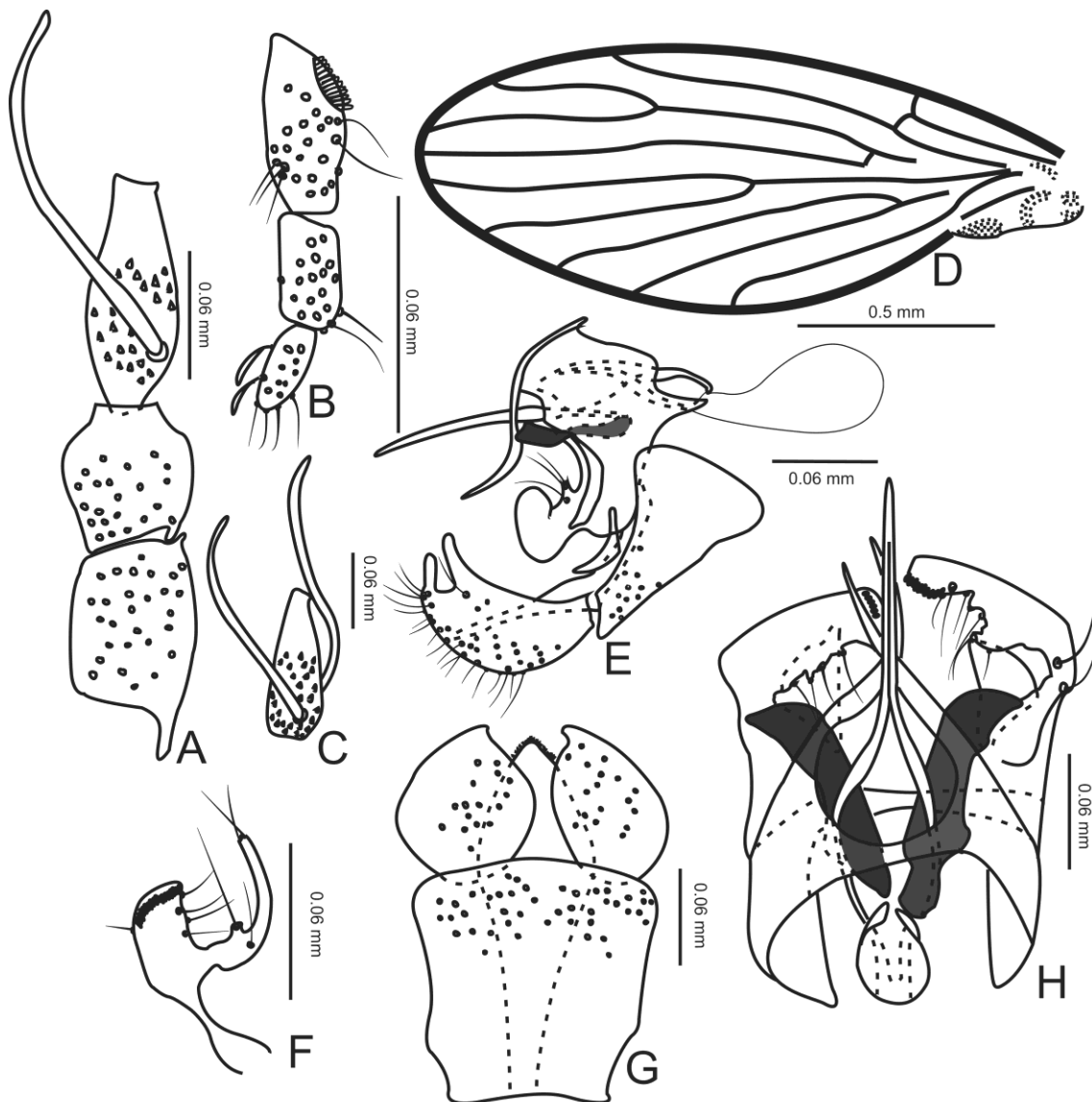
***Trichomyia mariensis* Araújo & Bravo, sp. nov.**

(Figs. 31A-H)

Diagnosis. R_5 complete at base; hypandrium strip-like; long and lanciform prolongations on gonocoxite that cross between them in the apex; arm of gonocoxite curved to the midline, pilose apically with row of small rod-like bristles; aedeagus long, approximately twice the length of parameres; cercus pilose with bifurcated apex.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape larger than pedicel; pedicel subspherical; basal flagellomeres, eccentric (Fig. 31A); ascoids 1.6 times the length of flagellomere (Fig. 31C). Palpus with three segments; palpus formula 1.0:0.5:0.4 (Fig. 31B); 1st segment with sensilla in depressed pit on inner side (Fig. 31B). Wing. R_5 complete at base; r-m and m-cu absent (Fig. 31D). Male terminalia. Hypandrium strip-like (Fig. 31H). Gonocoxites with two long and lanciform prolongations that cross between them in the apex (Fig. 31F). Arm of gonocoxite curved to the midline, pilose apically with row of small rod-like bristles (Fig. 31H). Gonostylus articulated to gonocoxite at the middle, bare, small, triangular (Fig. 31H). One pair of gonocoxite wide, sclerotized (Fig. 31H). Aedeagus long, approximately twice the length of parameres (Fig. 31E). Ejaculatory apodeme short, 1.2 times the length of parameres. Epandrium pilose, subrectangular (Fig. 31G). Cercus

pilose, bifurcated apex (Figs. 31E, 31G). Epiproct shorter than hypoproct, both with apical micropilosity (Fig. 31E).



Figs. 31A–H. *Trichomyia mariensis* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Flagellomere with ascoide; D. Left wing; E. Male terminalia, lateral; F. Arm of gonocoxite; G. Cerci, epandrium and hypoproct; H. Male terminalia, dorsal.

Material examined. Brazil, Bahia, Coração de Maria, holotype #m, 18.XII.2003, I. Castro leg. (MZFS).

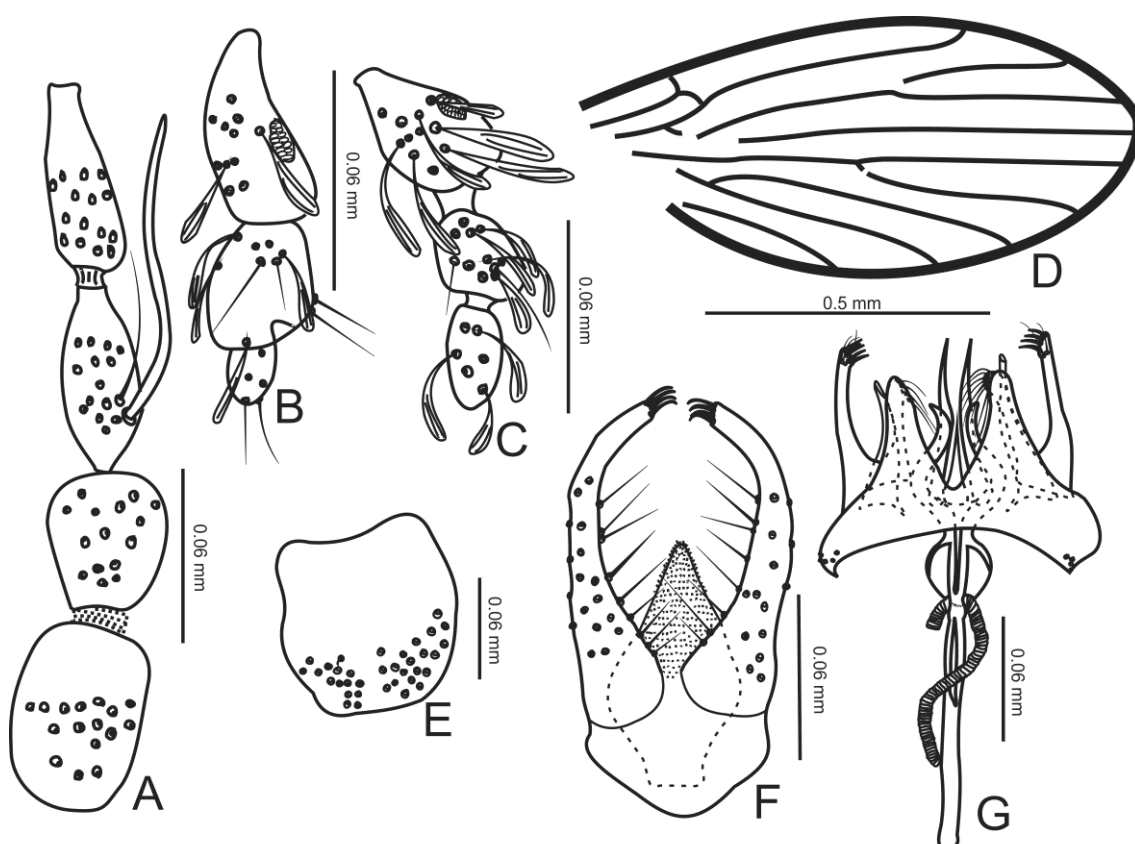
Etymology. The epithet *mariensis* refers to the type locality.

Distribution. Known from Coração de Maria in Bahia, Brazil.

***Trichomyia mendesi* Araújo & Bravo, sp. nov.**

(Figs. 32A-G)

Diagnosis. R_{2+3} incomplete at base, R_4 with a rupture in the base, M_2 unsclerotized in the base; basal expansion with rounded apex on gonocoxite; two arms of gonocoxite, the dorsal longest and thinner than the ventral with apical bristles, the ventral arm with expanded apex with hairs; ejaculatory apodeme long, twice the length of gonostylus; elongated cercus with four apical curved setae.



Figs. 32A–G. *Trichomyia mendesi* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus (holotype); C. Palpus (paratype); D. Right wing; E. Epandrium; F. Cerci and hypopocyt; G. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical and elongated; pedicel subspherical (Fig. 32A); basal flagellomeres pyriform (Fig. 32A); ascoids 1.6 times as long as the length of flagellomere (Fig. 32A). Palpus three segmented; palpus formula 1.0:0.5:0.6 (Fig. 32C); first segment with sensilla in depressed pit on inner side (Fig. 32C). Wing. R_5 incomplete at base; R_{2+3} incomplete at base, R_4 with a rupture in the base, M_2

unsclerotized in the base, r-m and m-cu absent (Fig. 32D). Male terminalia. Hypandrium and gonocoxites fused with a pair of basal expansion with rounded apex. Two arms of gonocoxite, the dorsal longest and thinner than the ventral, with about four setae, apically and with bristles, about twice the length size of smaller, near to the apex. The ventral arm with expanded apex with hairs (Fig. 32G). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, truncated and subtriangular (Fig. 32G). Presence of two pair of parameres; the subtriangular inner with pointed apex, reaching the apex of arm of gonocoxite, the external, smaller than inner, curved and with rounded apex (Fig. 32G). Aedeagus subtriangular. Ejaculatory apodeme long, twice the length of gonostylus. Epandrium subquadrangular (Fig. 32E). Cercus elongated, pilose and curved (Fig. 32F) with four apical curved setae (Fig. 32F). Hypoproct with apical micropilosity (Fig. 32F).

Material examined. Brazil, Amazonas, Manacapuru, Km 75, 25-27.VII.1997, holotype #m, without name of collector. (MZFS); 157 paratypes: 84 #m, same locality and date as holotype, without name of collector. (MZFS); 7 #m, same locality as holotype, Km 69/3, 13.X.1998, without name of collector. (MZFS); 5 #m, same locality as holotype, 21.IV.1998, RQ, RN, PE leg. (MZFS); 13 #m, same locality as holotype, Km 69/3, 09.X.1998, without name of collector. (INPA); 1 #m, Pará, Santarém, BR 163, Km 55, Ibama, 02.XII.1998, RF, RDN, FLS leg. (MZFS); 22 #m, same locality as holotype, Km 69/3, 06.X.1998, without name of collector. (INPA); 1 #m, same locality as holotype, Km 69/3, 12.X.1998, without name of collector. (INPA); 1 #m, Pará, Santarém, Ponte de Pedra Km 13+2, 18.XI.1998, RF, RDN, FLS leg. (MZFS); 2 #m, Amazonas, Estrada da Cajatuba, 24-29.X.1997, without name of collector. (MZFS); 1 #m, Roraima, Pitinga, 13-15.XII.1997, RQ, RN, PE leg. (MZFS); 2 #m, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22.VIII.1998, without name of collector. (MZFS); 12 #m, same locality as holotype, Km 69/3, 20.IV.1998, RQ, RN, PE leg. (MZFS); 6 #m, Amazonas, Manaus, Reserva Ducke, 26-31.VIII.2011, M.X. Araújo leg. (INPA).

Etymology. Named in honor of Chico Mendes (Francisco Alves Mendes Filho), one of the most important Brazilian environmentalists, who dedicated his life to the protection of the Amazon Forest.

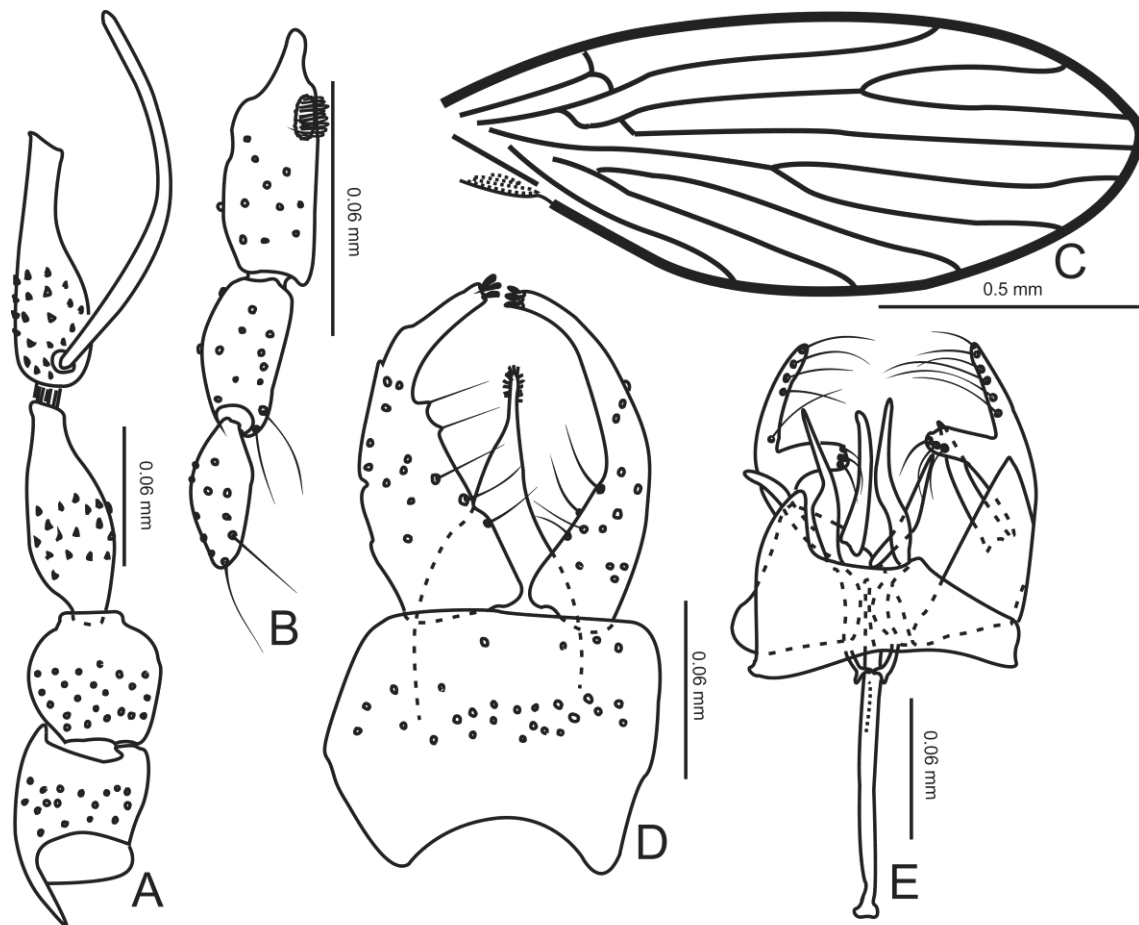
Distribution. Known from Manacapuru and Manaus in Amazonas, Brazil; Santarém and Novo Repartimento in Pará, Brazil; and Pitinga in Roraima, Brazil.

Remarks. In the holotype has a mutation in the palpus, being the last segment, reduced and fused to the second segment (Fig. 32B)

***Trichomyia mineira* Araújo & Bravo, sp. nov.**

(Figs. 33A-E)

Diagnosis. R_5 complete at base; medial posterior expansion on gonocoxite, bifurcated apically; two arms of gonocoxite, the dorsal shorter than ventral, with three elongated bristles; the ventral with a row of elongated bristle in the dorsal surface; ejaculatory apodeme short, twice the length of gonostylus; cercus with apical rod-like bristles.



Figs. 33A–E. *Trichomyia mineira* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cerci, epandrium and hypropoct; E. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape with the same length of pedicel; pedicel subspherical; 1st flagellomere pyriform; posterior flagellomeres pyriform and eccentric (Fig. 33A); ascoids 1.6 times

the length of flagellomere (Fig. 33A). Palpus with three segments; palpus formula 1.0:0.6:0.7 (Fig. 33B); 1st segment with sensilla in depressed pit on inner side (Fig. 33B). Wing. R₅ complete at base; r-m and m-cu absent (Fig. 33C). Male terminalia. Hypandrium fused with gonocoxites with medial posterior expansion, bifurcated apically (Fig. 33E). Gonocoxites with two arms, the dorsal shorter than ventral and directed to the midline; the apex of dorsal arm with three elongated bristles; the ventral arm with a row of elongated bristle in the dorsal surface (Fig. 33E). Gonostylus digitiform (Fig. 33E). Parameres, two pair, with approximately the same length (Fig. 33E). Aedeagus ending at the same level of parameres (Fig. 33E). Ejaculatory apodeme short, twice the length of gonostylus. Epandrium pilose, wider than long (Fig. 33D). Cercus pilose, piriform with short apical and thick bristles (Figs. 33D). Hypoproct, sharp apex with apical micropilosity (Fig. 33D).

Material examined. Brazil, Minas Gerais, Parque Estadual do Rio Doce, 40 Km and of Belo Horizonte, 14-18.V.1998, holotype #m, Quate & Alexander leg. (MZFS)

Etymology. The epithet *mineira* is allusive to the type locality.

Distribution. Known from Belo Horizonte in Minas Gerais, Brazil.

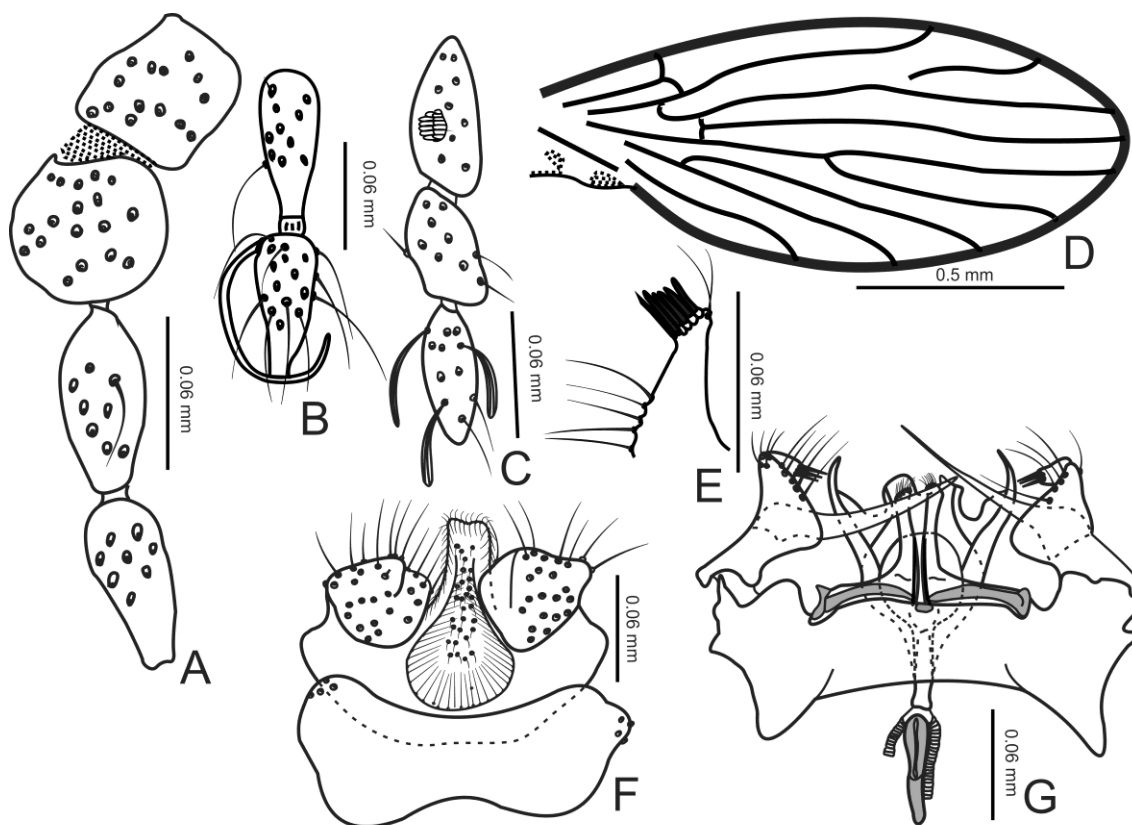
***Trichomyia nortensis* Araújo & Bravo, sp. nov.**

(Figs. 34A-G)

Diagnosis. R₂₊₃ not reaching R₄, r-m present; arm of gonocoxite with a row of six rod-like setae in the apex; elongated gonostylus with apex directed diagonally to the inner portion; three pairs of fused parameres; one pair L-shaped, with a row of apical setulae, one pair divergent apically, and one pair sclerotized, all joined by a membrane; ejaculatory apodeme short, the same length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical; basal flagellomeres piriform (Fig. 34A); ascoids 1.25 times the length of flagellomere (Fig. 34B). Palpus three segmented; palpus formula 1.0:0.7:0.9; first segment with sensilla in depressed pit on inner side (Fig. 34C). Wing. R₂₊₃ not reaching R₄, r-m present and m-cu absent (Fig. 34D). Male terminalia. Hypandrium and gonocoxites fused (Fig. 34G). Gonocoxites with posterior arm expanded medially, projected downward with a row of six rod-like setae in the apex and a row of bristles apically (Fig. 34E). Gonostylus ventrally to gonocoxite, elongated

and with apex directed diagonally to the inner portion (Fig. 34G). Presence of three pairs of fused parameres; one pair L-shaped, with a row of apical setulae, one pair directed diagonally and divergent apically, and one sclerotized pair horizontal disposed, all joined by a membrane. Ejaculatory apodeme short, the same length of gonostylus. Epandrium narrow in the medial portion. Cercus subquadrangular with bristles in the apex, fused in a expanded plate in the medial portion. Hypoproct piriform with setulae (Fig. 34F).



Figs. 34A–G. *Trichomyia nortensis* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Flagellomeres with ascoide; C. Palpus; D. Right wing; E. Arm of gonocoxite; F. Cerci, epandrium and hypoproct; G. Male terminalia, dorsal.

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba Km 69/3, 12.X.1998, holotype #m, without name of collector. (MZFS); 25 paratypes: 13 #m, same locality and data as holotype (MZFS), 6 #m, same locality as holotype, 13.X.1998, without name of collector (MZFS); 1 #m, same locality as holotype, 21.IV.1998, R.Q.,R.N.,P.E. (MZFS); 7 #m, Amazonas, Manacapuru, Km 75, 25-27.VII.1997. (MZFS); 9 #m, same locality as holotype, 06.X.1998, without name of collector (MZFS) 3 #m, same locality as holotype, 09.X.1998, without name of collector (MZFS)

2 #m, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22.VIII.1998, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Sitio do Sr Simplicio, 23.IV.1998, R.Q.,R.N., P.E. (sic.) leg. (MZFS); 1 #m, Amazonas, Manacapuru, Ramal A, Cajatuba, 29. VII – 01.VIII.1997, without name of collector (MZFS); 1 #m, Amazonas, Purupuru, Est. Nunes de Melo, Km8-12, 26.XI.1998, without name of collector (MZFS);

Etymology. The epithet is allusive the North region, where the specimen was found.

Distribution. Known from Manacapuru and Purupuru in Amazonas, Brazil; and Novo Repartimento in Pará, Brazil.

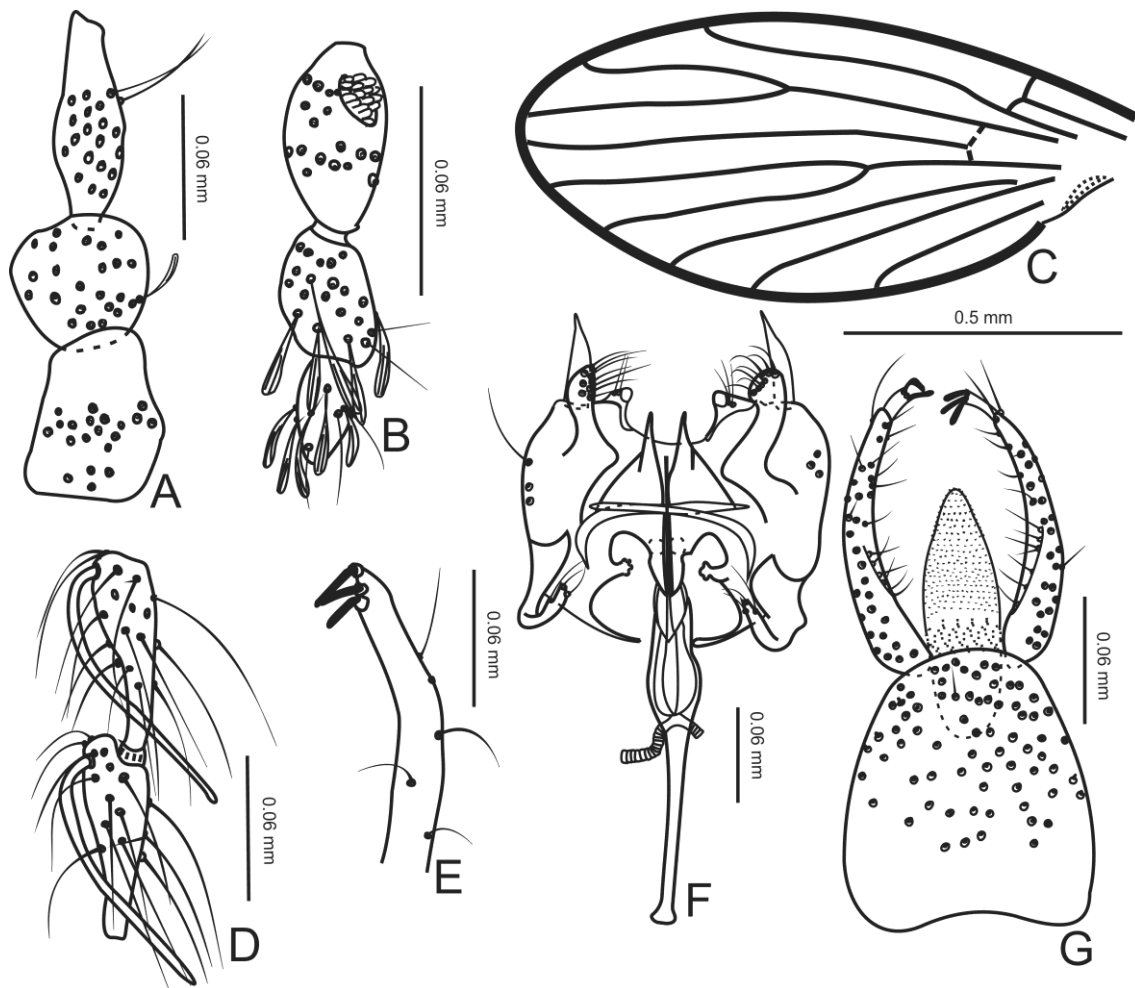
***Trichomyia notata* Araújo & Bravo, sp. nov.**

(Figs. 35A-G)

Diagnosis. Two pair of expansions on gonocoxite, one apical pair, truncated and with hairs and one basal pair hand-like; one pair of arms in the medial portion, with bristles and one pair of basal expansios directed to the inner portion, with hairs; ejaculatory apodeme long, 1.9 times the length of gonostylus; elongated cercus with three apical rod-like setae.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcilindrical; pedicel subspherical (Fig. 35A); basal flagellomeres pyriform and centric (Fig. 35A); ascoids 1.4 times as long as the length of flagellomere (Fig. 35D). Palpus three segmented; palpus formula 1.0:0.6:0.5 (Fig. 35B); first segment with sensilla in depressed pit on inner side (Fig. 35B). Wing. R₅ with unsclerotized base; r-m unsclerotized and m-cu absent (Fig. 35C). Male terminalia. Hypandrium and gonocoxites fused with two pair of expansions, one apical pair, truncated and with hairs and one basal pair hand-like (Fig. 35F). Gonocoxites with one pair of arms in the medial portion, with bristles and one pair of basal expansios directed to the inner portion, with hairs (Fig. 35F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare and subtriangular (Fig. 35F). Presence of one pair of subtriangular parameres (Fig. 35F). Aedeagus ending at midlle of parameres (Fig. 35F). Ejaculatory apodeme long, 1.9 times the length of gonostylus. Epandrium wide than longer (Fig. 35G). Cercus elongated and digitiform (Fig. 35G) with three apical rod-like setae (Fig. 35E).

Hypoproct with apical micropilosity (Fig. 35G). Epiproct subcircular and membranous (Fig. 35G).



Figs. 35A–G. *Trichomyia notata* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Flagellomeres with ascoids; E. Cercus; F. Male terminalia, dorsal; G. Cerci, epandrium, hypoproct and epiproct.

Material examined. Brazil, Rondônia, Cacaulândia, 200Km SSE of Porto Velho, 25.V-06.VI.1998, holotype #m, L.W. Quate leg. (MZFS)

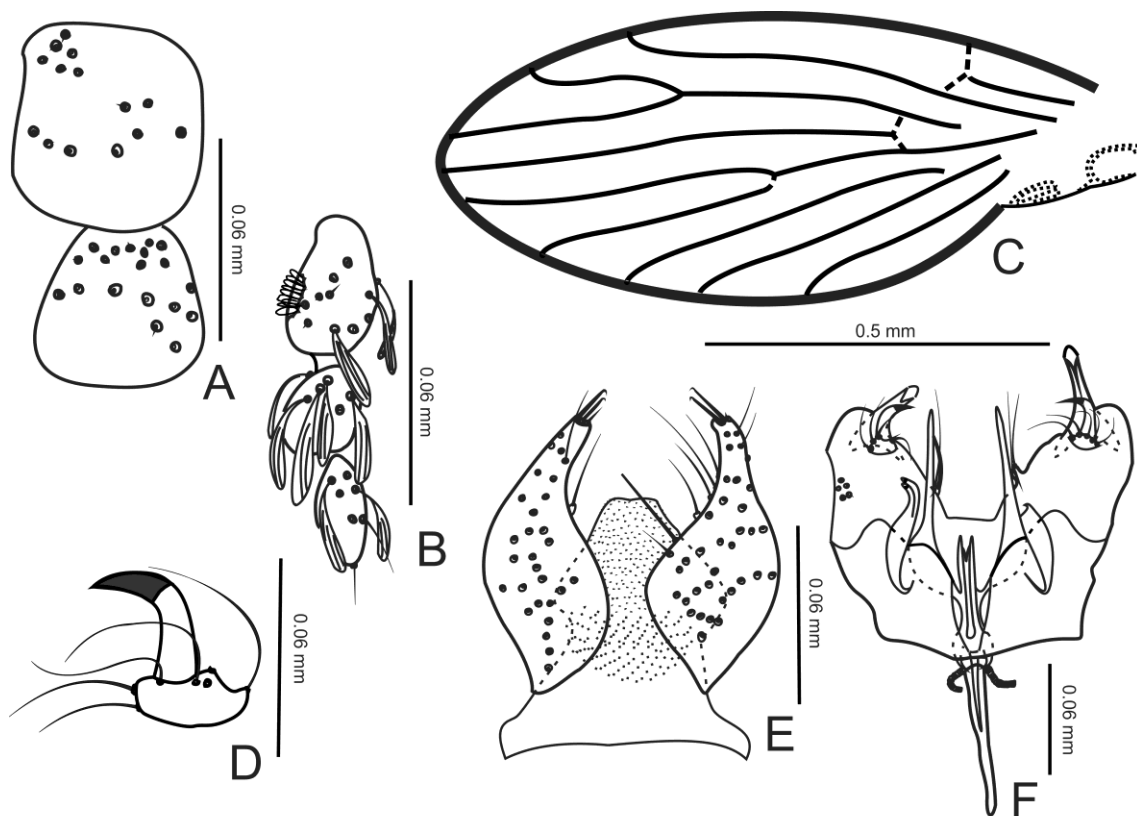
Etymology. From latin, *notata* = notable, marked, pronounced, refers to the great and notable male terminalia.

Distribution. Known from Cacaulândia in Rondônia, Brazil.

***Trichomyia paraensis* Araújo & Bravo, sp. nov.**

(Figs. 36A-F)

Diagnosis. R_5 , M_2 and Sc with base unsclerotized; r-m and sc-r unsclerotized; two pair of expansion on gonocoxite, one bifurcated and basal and other reduced with two elongated apical bristles; curved expansion on gonocoxite, spur-shaped, sclerotized apically; one pair of elongated subtriangular parameres directed to the apex; ejaculatory apodeme long, twice the length of gonostylus; cercus with two apical setae with curved tip.



Figs. 36A–F. *Trichomyia paraensis* sp. nov. A. Scape and pedicel; B. Palpus; C. Left wing; D. Arm of gonocoxite; E. Cerci and hypopod; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subcylindrical (Fig. 36A); flagellomeres and ascoids lost in the specimen studied. Palpus three segmented; palpus formula 1.0:0.6:0.8 (Fig. 36B); first segment with sensilla in depressed pit on inner side (Fig. 36B). Wing. R_5 , M_2 and Sc with base unsclerotized; r-m and sc-r unsclerotized; and m-cu absent (Fig. 36C). Male terminalia. Hypandrium and gonocoxites fused with two pair of expansion, one bifurcated and basal and other reduced with two elongated apical bristles (Fig. 36F). Arm of gonocoxites with a curved expansion spur-shaped, sclerotized apically, and with

basal elongated bristles (Figs. 36D, 36F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, truncated (Fig. 36F). Presence of one pair of elongated subtriangular parameres directed to the apex (Fig. 36F). Aedeagus ending above of parameres (Fig. 36F). Ejaculatory apodeme long, twice the length of gonostylus. Epandrium lost in the specimen studied. Cercus pilose, piriform (Fig. 36E) with two apical setae with curved tip (Fig. 36E). Hypoproct tapering, with apical micropilosity (Fig. 36E).

Material examined. Brazil, Pará, Novo Repartimento, Vicinal 45, 27.XI.2001, holotype #m, J.A.Rafael, J.Vidal leg. (MZFS).

Etymology. The epithet *paraensis* refers to the type locality.

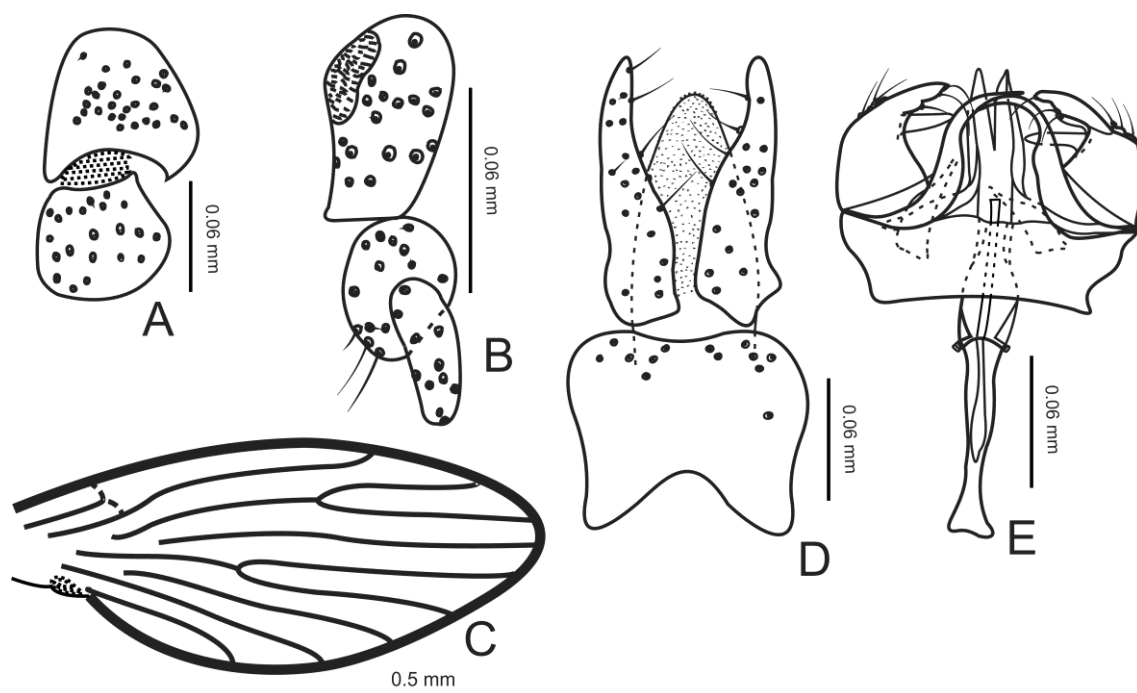
Distribution. Known from Novo Repartimento in Pará, Brazil.

***Trichomyia pitinguensis* Araújo & Bravo, sp. nov.**

(Figs. 37A-E)

Diagnosis. The last segment of palpus articulated medially in the second segment; Sc with base unsclerotized, sc-r unsclerotized; arm of gonocoxite with apicolateral bristles and one bare expansion articulated in the medial portion; one pair of parameres fused medially; ejaculatory apodeme long, 2.3 times the length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subcylindrical (Fig. 37A); flagellomeres lost in the specimens studied; ascoids not visualized. Palpus three segmented; palpus formula 1.0:0.7:0.7 (Fig. 37B); first segment with sensilla in depressed pit on inner side, the last segment articulated medially in the second segment (Fig. 37A). Wing. Sc with base unsclerotized; sc-r unsclerotized; R₅ incomplete at base; r-m and m-cu absent (Fig. 37C). Male terminalia. Hypandrium and gonocoxites fused with basal expansion directed to the apex with tips that intersect in the interior portion. Arm of gonocoxite with apicolateral bristles and one bare expansion articulated in the medial portion (Fig. 37E). Gonostylus slightly sclerotized, articulated in the base of gonocoxite, bare, subtriangular (Fig. 37E). Presence of one pair of parameres fused medially (Fig. 37E). Aedeagus simple, truncated (Fig. 37E). Ejaculatory apodeme long, 2.3 times the length of gonostylus. Epandrium pilose, subquadrangular, expanded basally (Fig. 37D). Cercus digitiform and pilose (Fig. 37D). Hypoproct with apical micropilosity (Fig. 37D).



Figs. 37A–E. *Trichomyia pitinguensis* sp. nov. A. Scape and pedicel; B. Palpus; C. Right wing; D. Cerci, epandrium and hypoproct; E. Male terminalia, dorsal.

Material examined. Brazil, Amazonas, Presidente Figueiredo, Pitinga, 04.XII.1998, holotype #m, RQ, LMC leg. (MZFS); 1 paratype #m, same locality, date and collectors as holotype (MZFS).

Etymology. The epithet *pitinguensis* is allusive to the type locality.

Distribution. Known from Presidente Figueiredo in Amazonas, Brazil.

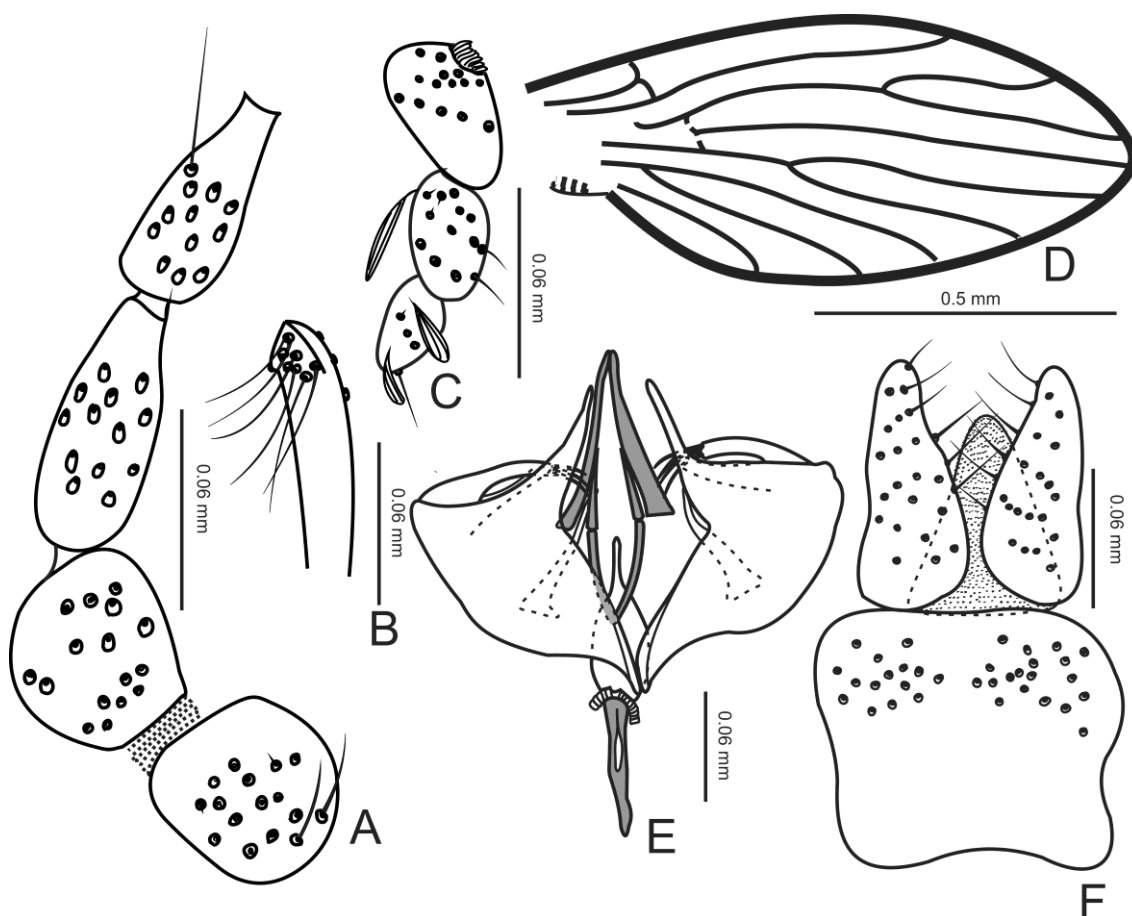
***Trichomyia pseudosilvatica* Araújo & Bravo, sp. nov.**

(Figs. 38A-F)

Diagnosis. Expansion basal on gonocoxite directed to the apex and with expanded base; arm of gonocoxite bifurcated, one bare expansion, one expansion with about four bristles; aedeagus expanded basally and tapered apically; ejaculatory apodeme short, about the same length of gonostylus; cercus with a row of dorsal hairs.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 38A); basal flagellomeres pyriform and eccentric (Fig. 38A); ascoids not visualized. Palpus three segmented; palpus formula

1.0:0.7:0.5 (Fig. 38C); first segment with sensilla in depressed pit on inner side (Fig. 38C). Wing. R_5 with base unsclerotized, r-m unsclerotized and m-cu absent (Fig. 38D).



Figs. 38A–F. *Trichomyia pseudosilvatica* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Cercus, dorsal view; C. Palpus; D. Right wing; E. Male terminalia, dorsal; F. Cerci, epandrium and hypoproct.

Male terminalia. Hypandrium and gonocoxites fused with basal expansion directed to the apex and with expanded base (Fig. 38E). Arm of gonocoxite bifurcated, one bare expansion, directed to the apex and other with about four bristles, directed to inner portion (Fig. 38E). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare and subtriangular (Fig. 38E). Presence of two pair of sclerotized parameres, one upper, above the aedeagus and attached apically, thicker and approximately the same length as the lower, which is curved and convergent apically (Fig. 38E). Aedeagus expanded basally and tapered apically (Fig. 38E). Ejaculatory apodeme short, about the same length of gonostylus. Epandrium subquadrangular with rounded tips (Fig. 38F). Cercus digitiform (Fig. 38F) with a row of dorsal hairs (Fig. 38B). Hypoproct with micropilosity (Fig. 38F).

Material examined. Brazil, Pará, Bragança, Vila Bacuri, Sítio Berra Bode, 02.X.1998, holotype #m, without name of colector (MZFS); 17 paratypes: 2 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 9.X.1998, without name of colector (MZFS); 3 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 6.X.1998, without name of colector (INPA); 2 #m, Amazonas, Manacapuru, Estrada do Cajatuba, Sítio do Sr Simplício, 24-25.IV.1998, without name of colector (MZFS); 5 #m, Amazonas, Presidente Figueiredo, Pitinga, 04.XII.1998, RQ, LMC leg. (MZFS); 1 #m Amazonas, Manacapuru, Cajatuba, Km 69/3, 20.IV.1998, RQ, RN, PE leg. (MZFS); 1 #m Amazonas, Manacapuru, Km 75, 25-27.VII.1997, without name of colector (INPA); 1 #m, Amazonas, Presidente Figueiredo, Pitinga, 15.XIII.1998, RR/LMS leg. (MZFS); 2 #m, Rondônia, Cacaulândia, 200Km SSE od Porto Velho, 25.V-6.VI.1998, L.W Quate col (MZFS).

Etymology. The epithet refers to the strong similarity with *T. silvatica* Bravo, 2002.

Distribution. Known from Bragança in Pará, Brazil; Manacapuru and Presidente Figueiredo in Amazonas, Brazil; and Cacaulândia in Rondônia, Brazil.

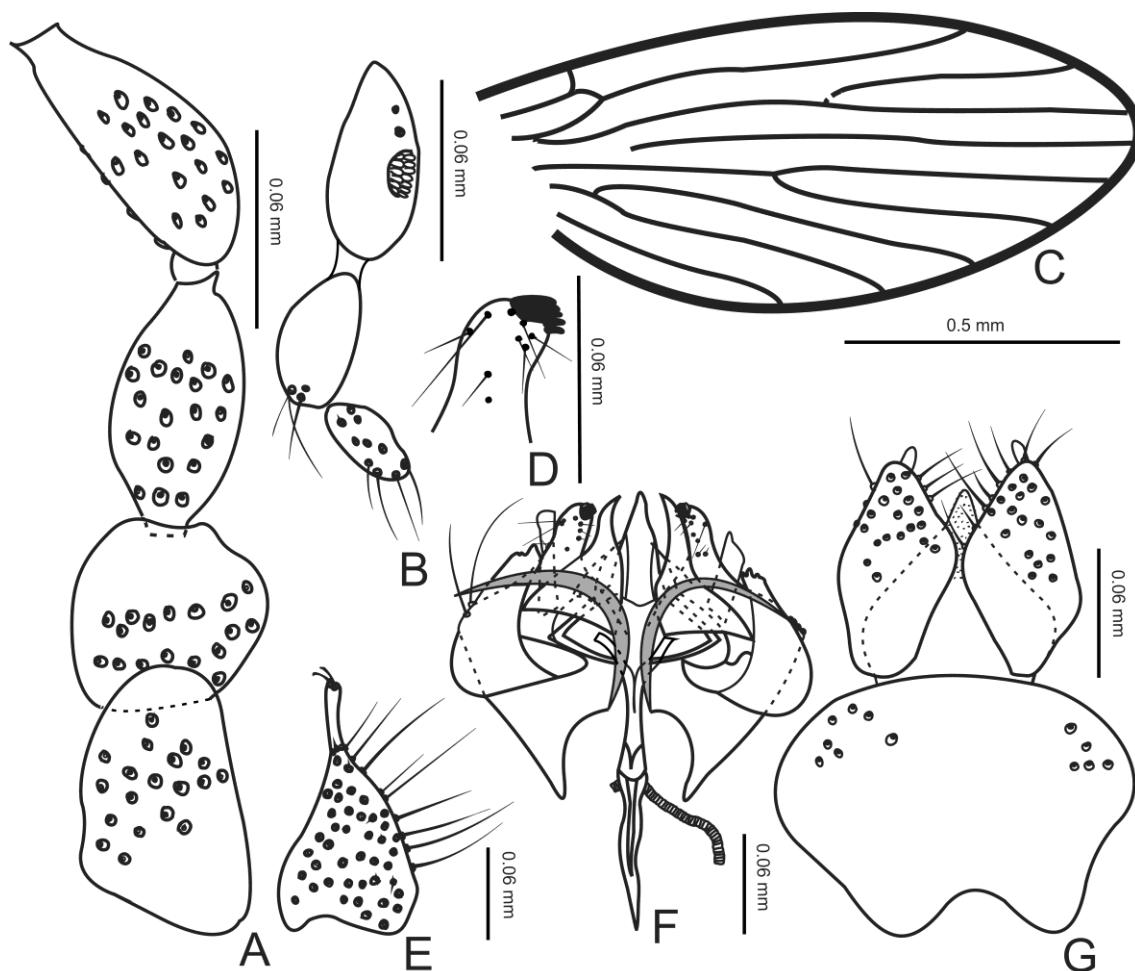
***Trichomyia pua* Araújo & Bravo, sp. nov.**

(Figs. 39A-G)

Diagnosis. Basal esclerotized curved expansion on gonocoxite; two pair of arms of gonocoxites, the curved dorsal projected ventrally and the digitiform ventral with rounded apex and a row of rod-like setae; three pair of subtriangular parameres; one dorsal subtriangular, one more basal and ventral, with an apical bristle and one fused apically involving the aedeagus as a hood; ejaculatory apodeme twice the length of gonostylus; cercus with an apical expansion with two setulae.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcilindrical; pedicel subspherical (Fig. 39A); basal flagellomeres pyriform and eccentric (Fig. 39A); ascoids not visualized. Palpus three segmented; palpus formula 1.0:0.7:0.5 (Fig. 39B); first segment with sensilla in depressed pit on inner side (Fig. 39B). Wing. R_{2+3} with base unsclerotized; R_5 incomplete at base; r-m and m-cu absent (Fig. 39C). Male terminalia. Hypandrium and gonocoxites fused with a basal esclerotized curved expansion. Two pair of arms of gonocoxites, the dorsal

curved, projected ventrally and the ventral digitiform, with rounded apex and a row of rod-like setae (Fig. 29F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, truncated (Fig. 29F).



Figs. 39A–G. *Trichomyia pua* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Arm of gonocoxite; E. Cercus, lateral view; F. Male terminalia, dorsal; G. Cerci, epandrium and hypoproct.

Presence of three pair of subtriangular parameres; one dorsal subtriangular, one more basal and ventral, with an apical bristle and less than the dorsal and one fused apically involving the aedeagus as a hood (Fig. 39F). Aedeagus bifid with truncated apex (Fig. 39F). Ejaculatory apodeme twice the length of gonostylus. Epandrium longer than wide, pilose (Fig. 29G). Cercus subtriangulares in lateral view (Fig. 29E) with an apical expansion with two setulae (Fig. 29E). Hypoproct with apical micropilosity (Fig. 29G).

Material examined. Brazil, Amazonas, Silves, Saracá, 16.XII.1997, holotype #m, RF, FLS, LMC leg. (MZFS); 11 paratypes: 2 #m, same locality, date and collectors as holotype (INPA); 5 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 6.X.1998,

without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Estrada para Cajatuba, Km 6, 24-29.X.1997, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 08.XI.1998, without name of collector (INPA); 1 #m, Amazonas, Manacapuru, Km 69/3, 20.IV.1998, RQ, RN, PE leg. (MZFS); 1 #m, Amazonas, Presidente Figueiredo, Pitinga, 15.XIII.1998, RR, LMS cols (MZFS).

Etymology. From Tupi-guarani, *puã*, spherical, refers to the male terminalia.

Distribution. Known from Silves, Manacapuru and Presidente Figueiredo in Amazonas, Brazil.

***Trichomyia ramalhoi* Bravo, 2001c: 128-129, figs 42-47.**

Remarks. The males of *T. ramalhoi* can be recognized by cercus with bristles with curved apex; two pair of parameres, the external larger and C-shaped, the internal more sclerotized and ejaculatory apodeme long, 7.0 times the length of gonostylus.

Material examined. Brazil, Bahia: Serra da Jibóia, holotype #m, 04.IV.2001, F. Bravo leg. (MZFS).

Distribution. Known from the type locality in Brazil, state of Bahia.

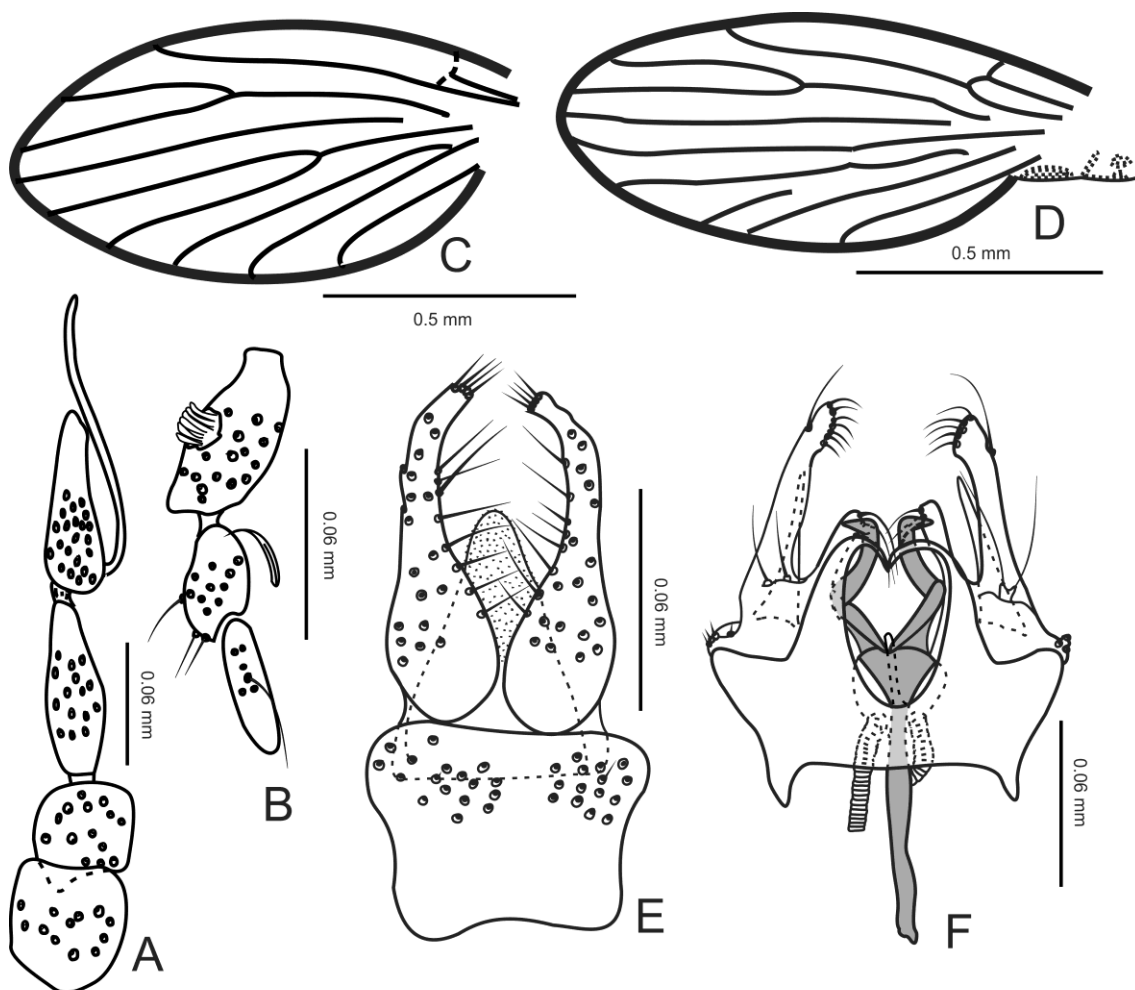
***Trichomyia ribeiroi* Araújo & Bravo, sp. nov.**

(Figs. 40A-F)

Diagnosis. A pair of basal curved expansion on gonocoxite; arm of gonocoxite bifurcated, with apical and basal bristles; one pair of esclerotized curved parameres; ejaculatory apodeme long, 1.5 times the length of gonostylus; cercus with about four apical setae

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 40A); basal flagellomeres pyriform and eccentric (Fig. 40A); ascoids 1.6 times as long as the length of flagellomere (Fig. 40A). Palpus three segmented; palpus formula 1.0:0.5:0.7 (Fig. 40B); first segment with sensilla in depressed pit on inner side (Fig. 40B). Wing. In the wings of paratypes Sc have base unsclerotized; sc-r is unsclerotized; R₅ incomplete at base; r-m and m-cu absent (Fig. 30C). Male terminalia. Hypandrium and gonocoxites fused with a pair of basal curved expansion, in dorsal view, fused apically (Fig. 40F). Arm of gonocoxite

bifurcated, with apical and basal bristles (Fig. 40F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite, bare, subtriangular (Fig. 40F).



Figs. 40A–F. *Trichomyia ribeiroi* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing (paratype); D. Right wing (holotype); E. Cerci, epandrium and hypoproct; F. Male terminalia, dorsal.

Presence of one pair of esclerotized curved parameres with apex directed to the external portion (Fig. 40F). Aedeagus simple, with a single opening (Fig. 40F). Ejaculatory apodeme long, 1.5 times the length of gonostylus. Epandrium subquadrangular pilose (Fig. 40E). Cercus pilose, expanded in the base and elongated (Fig. 40E), with about four apical setae (Fig. 40E). Hypoproct with apical micropilosity (Fig. 40E).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba, Km 69/3, 9.X.1998, holotype #m, without name of collector (MZFS); 27 paratypes: 1 #m, same locality, date as holotype, without name of collector (MZFS); 1 #m, same locality as holotype, Km 6, 24-29.X.1997, without name of collector (INPA) 7 #m, same locality

as holotype, 20.IV.1998, RQ, RN, PE leg. (MZFS); 5 #m, same locality as holotype, Estrada do Cajatuba, Sítio do Sr. Simplício, 24-25.IV.1998, without name of collector (INPA); 1 #m, same locality as holotype, 06.X.1998, without name of collector (INPA); 2 #m, same locality as holotype, 13.X.1998, without name of collector (MZFS), 3 #m, same locality as holotype, Km 75, 25-27.VII.1997, without name of collector (INPA); 2 #m, same locality as holotype, 21.IV.1998, RQ, RN, PE leg. (MZFS); 1 #m, Amazonas, Pitinga, R. dos Paturis, 02-04.VI.1998, without name of collector (MZFS); 3 #m, Amazonas, Manaus, Reserva Ducke, 26-31.VIII.2011, M.X. Araújo (INPA); 1 #m, Pará, Santarém, Est. para Alter do Chão, Jurupari, Km 1315, 25.XI.1998, RF, RAN, FLS cols (MZFS).

Etymology. Named in honor of José Cláudio Ribeiro da Silva, defender environmentalist of Amazon, killed in 2011.

Distribution. Known from Manacapuru, Pitinga and Manaus in Amazonas, Brazil; and Santarém in Pará, Brazil.

Remarks. The wing of holotype presents differentiated veins (Fig. 30D); with Sc complete, without base unsclerotized; sc-r present; and medial veins not connected. Furthermore, the wing is more elongated than the wings of paratypes.

***Trichomyia serrajiboensis* Bravo, 2001c: 127-128, figs. 29-34.**

Remarks. The males of *T. serrajiboensis* can be recognized by expansion basal in the hypoproct; gonostylus with expanded base and apex; ejaculatory apodeme long, twice the length of gonostylus.

Material examined. Brazil, Bahia: Serra da Jibóia, holotype #m, 14.III.2001, F. Bravo leg. (MZFS).

Distribution. Known from the type locality in Brazil, state of Bahia.

***Trichomyia silvatica* Bravo, 2002: 62-63, figs. 22-27.**

Remarks. The males of *T. silvatica* can be recognized by bifurcated arm of gonocoxite, gonostylus with expanded base slowly bifurcated; ejaculatory apodeme the same length of gonostylus.

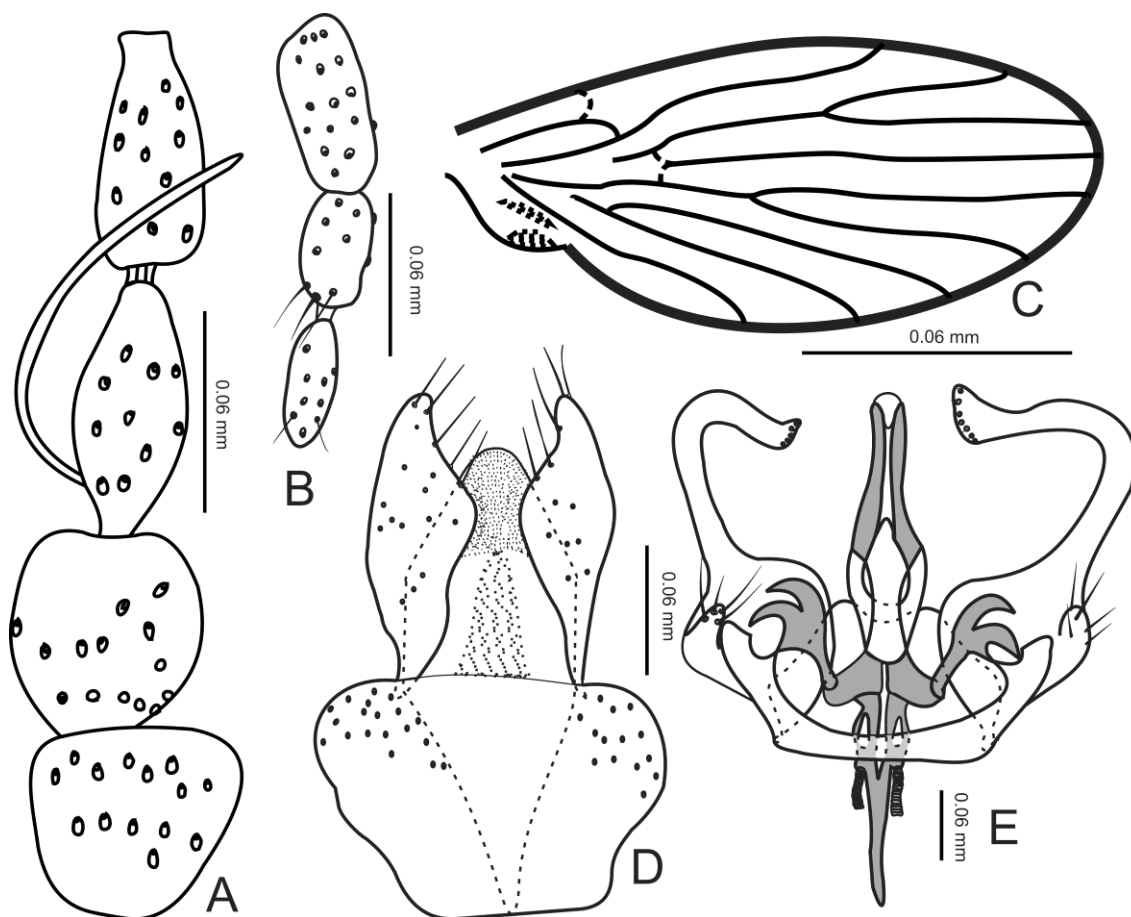
Material examined. Brazil, Bahia: Itabuna (Reserva Ecológica CEPEC), holotype #m, 10.X.1985, P.S. Terra leg. (MZFS).

Other material examined. Brazil, Bahia, Cachoeira, 1 #m, 20.VII.2004, F. Bravo leg. (MZFS)

Distribution. Known from the type locality in Brazil, state of Bahia (Itabuna and Cachoeira - new record).

Trichomyia sinuosa Araújo & Bravo, sp. nov.

(Figs. 41A-E)



Figs. 41A–E. *Trichomyia sinuosa* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Right wing; D. Cerci, epandrium, hypoproct and epiproct; E. Male terminalia, dorsal.

Diagnosis. Basal expansion with a group of bristles on gonocoxite; sinuous arm of gonocoxite, C-shaped; two pair of sclerotized parameres; being one pair trifurcated, claw-shaped and one pair 1.3 times the length of aedeagus; ejaculatory apodeme short, 0.7 times the length of aedeagus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical; pedicel subspherical; flagellomeres pyriform; ascoids 1.4 times as long as the length of flagellomere (Fig. 41A). Palpus three segmented; palpus formula 1.0:0.6:0.7 (Fig. 41B); first segment with sensilla in depressed pit on inner side. Wing: apex of Sc unsclerotized; R₅ with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 41C). Male terminalia. Hypandrium and gonocoxites fused with a basal expansion with a group of bristles. Arm of gonocoxite tapering, C-shaped with a row of setulae. Gonostylus not visualized (Fig. 41E). Presence of two pair of sclerotized parameres; being one trifurcated pair, claw-shaped and one pair 1.3 times the length of aedeagus. Aedeagus with rounded tip, subtriangular (Fig. 41E). Ejaculatory apodeme short, 0.7 times the length of aedeagus. Epandrium with anterior margin larger than the posterior margin (Fig. 41D). Cercus losangular with lateroapical bristles (Fig. 41D). Hypoproct with apical micropilosity (Fig. 41D). Epiproct subtriangular with rounded tip (Fig. 41D).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba Km 69/3, 09.X.1998, holotype #m, without name of collector. (MZFS); 3 paratypes: 2 #m, same locality, date as holotype. (MZFS); 1 #m, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22.VIII.1998, without name of collector (MZFS).

Etymology. The epithet *sinuosa* is allusive to the shape of arm of gonocoxite.

Distribution. Known from Manacapuru in Amazonas, Brazil; and Novo Repartimento in Pará, Brazil.

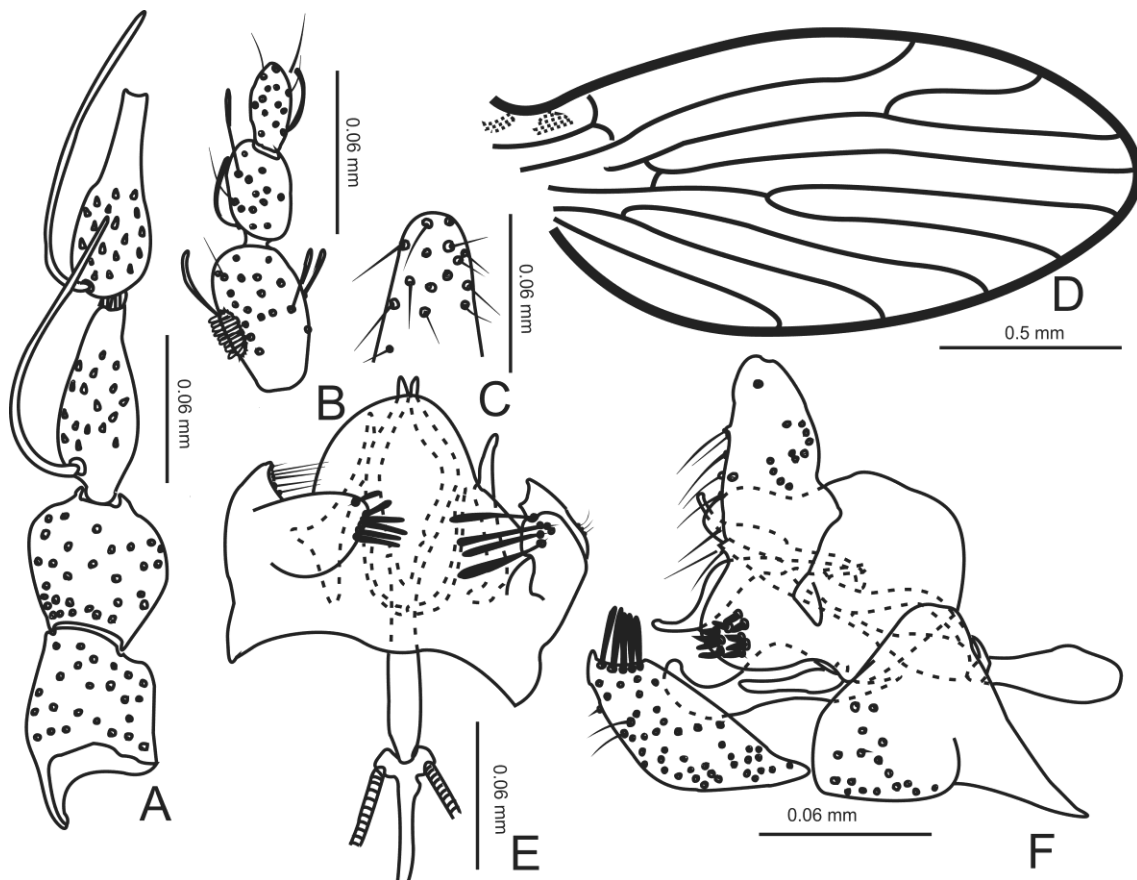
***Trichomyia spinicauda* Araújo & Bravo, sp. nov.**

(Figs. 42A-F)

Diagnosis. R₅ complete at base; r-m present; medial posterior expansion, rounded apically; arm of gonocoxites directed upward with rod-like bristles in the inner apex; ejaculatory apodeme 1.6 times the length of gonostylus.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape with the same length of pedicel; pedicel subspherical; basal flagellomeres pyriform and eccentric (Fig. 42A); pair of ascoids in each flagellomere, C-shaped, 1.3 times the length of flagellomere (Fig. 42A). Palpus with three segments;

palpus formula 1.0:0.6:0.6 (Fig. 42B); 1st segment with sensilla in depressed pit on inner side (Fig. 42B). Wing. R₅ complete at base; r-m present; m-cu absent (Fig. 42D).



Figs. 42A–F. *Trichomyia spinicauda* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Arm of gonocoxite, internally; D. Right wing; E. Male terminalia, dorsal; F. Male terminalia, lateral.

Male terminalia. Hypandrium fused with gonocoxites, with a medial posterior expansion, rounded apically (Fig. 42E). Arm of gonocoxites directed upward with rod-like bristles in the inner apex and a group of small and thick bristles on the base of arm (Figs. 42E, 42C). Gonostylus articulated to gonocoxite at the middle, bare, with apex directed upward (Fig. 42E). Parameres, two pair, the dorsal thinner than ventral, and the ventral subtriangular (Fig. 42E). Aedeagus bifid ending before the apex of ventral parameres (Fig. 42E). Ejaculatory apodeme 1.6 times the length of gonostylus. Epandrium pilose, subrectangular (Fig. 42F). Cercus pilose with truncated apex in lateral view and a row of few, short and thick bristles (Figs. 42E, 42F). Hypoproct with apical micropilosity (Fig. 42F).

Material examined. Brazil, Bahia, Coração de Maria municipality, holotype #m, 14.VIII.2002, F. Bravo leg. (MZFS); 3 paratypes: 1 #m, same locality and collector than holotype 18.XII.2003 (MZFS); 1 #m same locality of holotype, 18.XII.2003, I. Castro leg. (MZFS); 1 #m same locality of holotype, 02.XI.2003, I. Castro leg. (MZFS).

Etymology. From Latin, *cauda*, meaning tail; extreme part, and *spina*, spine; thorn referring to the arrangement of bristles in the apex of arm of gonocoxite.

Distribution. Known from Coração de Maria in Bahia, Brazil.

***Trichomyia spinosa* Araújo & Bravo, sp. nov.**

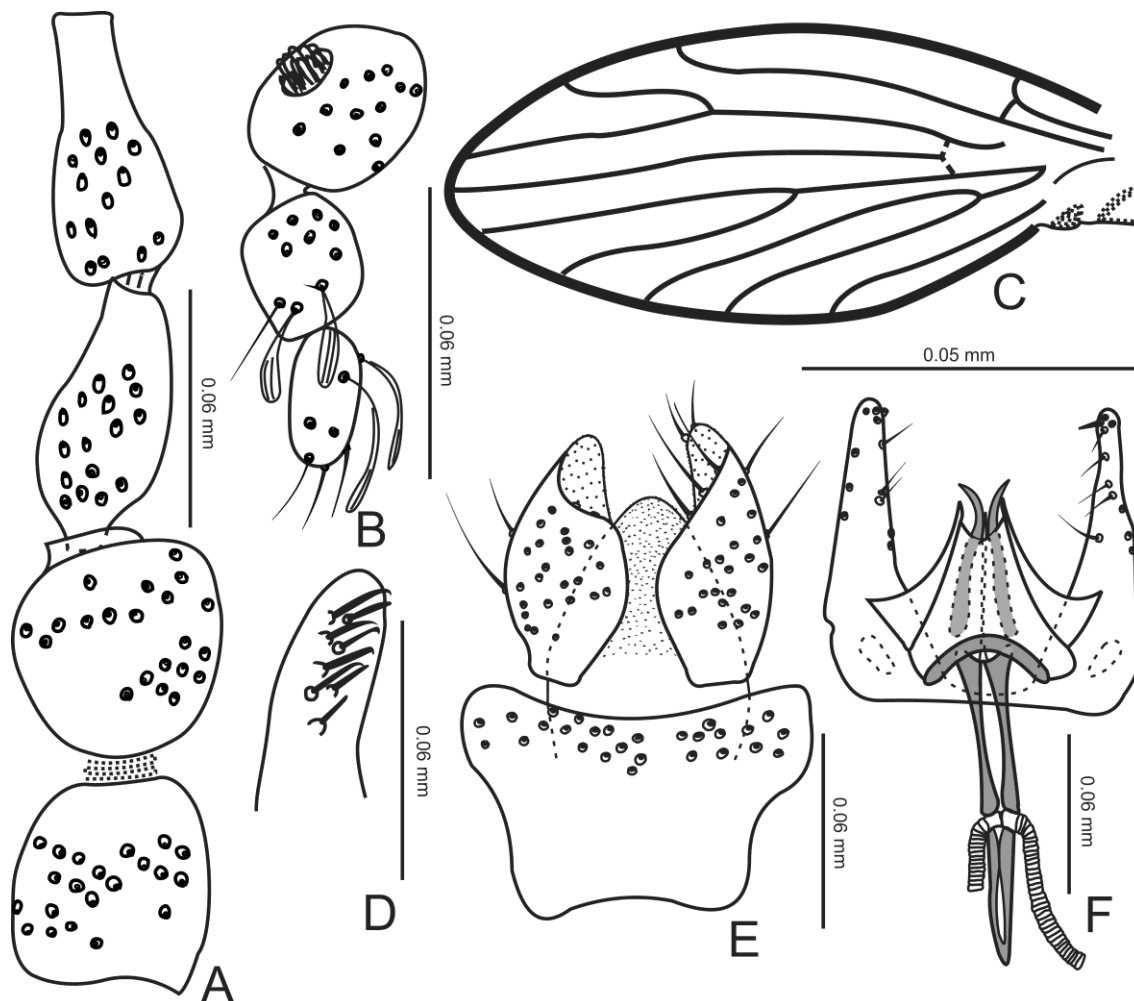
(Figs. 43A-F)

Diagnosis. Membranous expansion on gonocoxite, covering parameres and aedeagus; arm of gonocoxite pilose and directed to the apex with apical setae, spur-like; gonostylus reduced, 0,3 times the length of parameres, ovalar; ejaculatory apodeme 3.5 times the length of gonostylus; cercus with a row of rod-like setae.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape and pedicel subspherical (Fig. 43A); flagellomeres pyriform and eccentric (Fig. 43A); ascoids not visualized. Palpus three segmented; palpus formula 1.0:0.7:0.7 (Fig. 43B); first segment with sensilla in depressed pit on inner side (Fig. 43B). Wing. R_5 with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 43C). Male terminalia. Hypandrium and gonocoxites fused with a membranous expansion, covering parameres and aedeagus. Arm of gonocoxite pilose and directed to the apex with apical setae, spur-like, about three (Fig. 43F). Gonostylus reduced, 0,3 times the length of parameres, ovalar, slightly sclerotized, articulated ventrally to gonocoxite (Fig. 43F). Presence of one pair of elongated and esclerotized parameres, with divergent tips (Fig. 43F). Aedeagus ending near at apex of parameres (Fig. 43F). Ejaculatory apodeme 3.5 times the length of gonostylus. Epandrium pilose, longer than wide (Fig. 43E). Cercus pilose and piriform (Fig. 43E), with a row of about eight rod-like setae, in dorsal view (Fig. 43D). Hypoproct with apical micropilosity (Fig. 43E).

Material examined. Brazil, Amazonas, Manacapuru, Cajatuba, Km 69/3, 06..X.1998, holotype #m, without name of collector (MZFS); 16 paratypes: 2 #m, same locality, date and collectors as holotype (MZFS); 6 #m, same locality as holotype, 20.IV.1998, RQ, RN, PE leg. (INPA); 3 #m, same locality as holotype, 13.X.1998,

without name of collector (MZFS); 2 #m, same locality as holotype, 21.IV.1998, RQ, RN, PE leg. (MZFS); 1 #m, same locality as holotype, Km 75, 25-27.VII.1997, without name of collector (INPA); 1#m, Pará, Novo Repartimento, Vic. Bandeirante, Ramal dos sem terra, 22.VIII.1998, without name of collector (MZFS); 1#m, Rondônia, Cacaúlândia, 200Km SSE of Porto Velho, 25. V-06.VI.998 L.W. Quate (MZFS)



Figs. 43A–F. *Trichomyia spinosa* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Cercus, dorsal view; E. Cerci, epandrium and hypopocit; F. Male terminalia, dorsal.

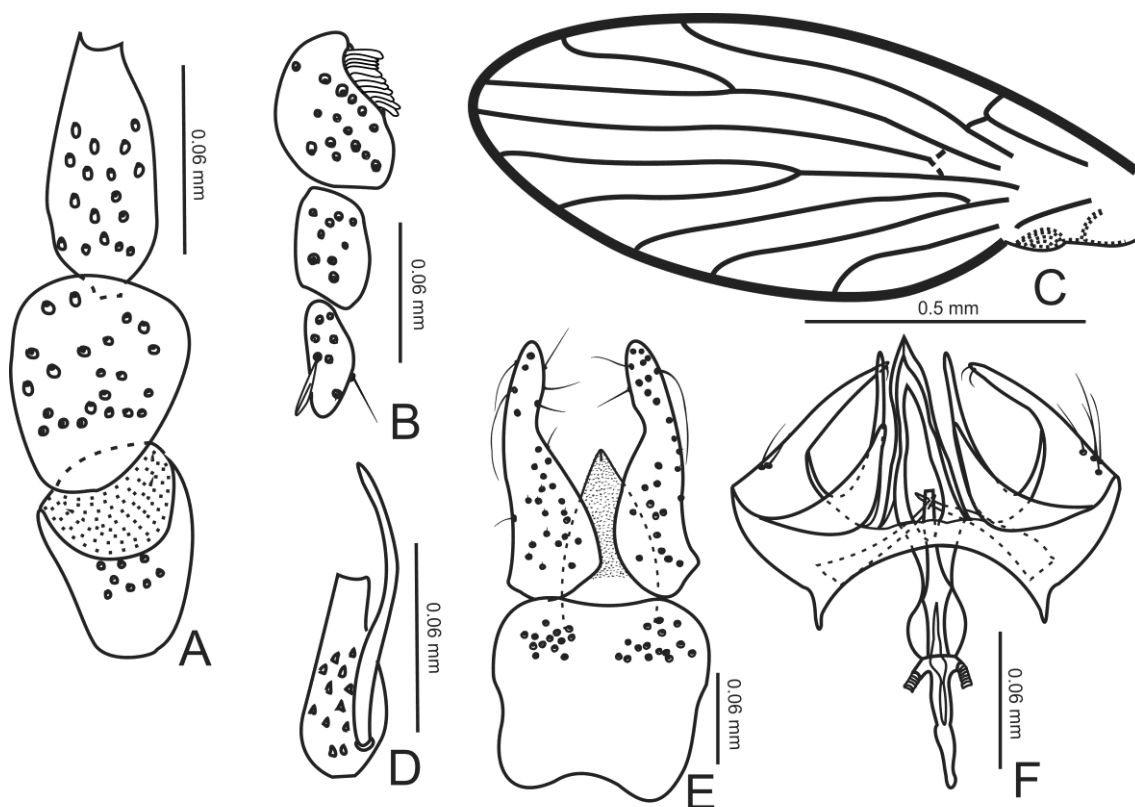
Etymology. From Latin, *spinus* = provided with spines, refers to the presence of thick bristles, spines-like, in ventral view of cercus.

Distribution. Known from Manacapuru in Amazonas, Brazil; Novo Repartimento in Pará, Brazil; and Cacaúlândia in Rondônia, Brazil.

***Trichomyia stangae* Araújo & Bravo, sp. nov.**

(Figs. 44A-F)

Diagnosis. Basal subtriangular expansion on gonocoxite; two arms of gonocoxite, the dorsal, thinner, curved with rounded apex; the ventral arm expanded at the base, curved; one pair of parameres convergents that join apically; ejaculatory apodeme short, the same length of gonostylus.



Figs. 44A–F. *Trichomyia stangae* sp. nov. A. Scape, pedicel and basal flagellomeres; B. Palpus; C. Left wing; D. Flagellomere with ascoid; E. Cerci, epandrium and hypoprot; F. Male terminalia, dorsal.

Description. Male. Head subcircular. Antenna incomplete in the studied specimens; scape subcylindrical and pedicel subspherical (Fig. 44A); basal flagellomeres pyriform and centric (Fig. 44A); ascoids 1.4 times as long as the length of flagellomere (Fig. 44D). Palpus three segmented; palpus formula 1.0:0.6:0.7 (Fig. 44B); first segment with sensilla in depressed pit on inner side (Fig. 44B). Wing. R_5 with base unsclerotized; r-m unsclerotized and m-cu absent (Fig. 44C). Male terminalia. Hypandrium and gonocoxites fused with basal subtriangular expansion. Two arms of gonocoxite, the dorsal, thinner, curved with rounded apex; the ventral arm expanded at

the base, curved, with mediolateral bristles and two setulae apically, about 5.0 times the length of mediolateral (Fig. 44F). Gonostylus slightly sclerotized, articulated ventrally to gonocoxite in the basal portion, bare, curved and subtriangular (Fig. 44F). Presence of one pair of parameres convergents that join apically (Fig. 44F). Aedeagus truncated apically (Fig. 44F). Ejaculatory apodeme short, the same length of gonostylus. Epandrium subquadrangular, with rounded apex (Fig. 44E). Cercus digitiform (Fig. 44E). Hypoproct with apical micropilosity (Fig. 44E).

Material examined. Brazil, Amazonas, Presidente Figueiredo, Pitinga, 04.XII.1998, holotype #m, RQ, LMC leg. (MZFS); 8 paratypes: 2 #m, same locality, date and collectors as holotype (INPA) 1 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 9.X.1998, without name of collector (MZFS); 1 #m, Amazonas, Manacapuru, Cajatuba, Km 69/3, 6.X.1998, , without name of collector (MZFS); 1 #m, Pará, Bragança, Estrada para malhado, Com. Jararaca, Km 20, 07.X.1998, without name of collector (MZFS); 1 #m, Pará, Bragança, Estrada para Monte Alegre, Sítio Boa Esperança, Km17, 28.IX.1998, RF, RBN, FLS leg. (MZFS); 1 #m, Amazonas, Manaus, Reserva Ducke, 26-31.VIII.2011, M.X. Araújo (INPA), 1 #m, Roraima, Km4, São Luiz do Anauá, Fazenda Zulmira, 4.II.2004, M. Rocha leg. (INPA)

Etymology. Named in honor of Dorothy Stang, missionary, sustainable development defender in the Amazon rainforest.

Distribution. Known from Presidente Figueiredo, Manacapuru and Manaus in Amazonas, Brazil; Bragança in Pará, Brazil; and São Luiz do Anauá in Roraima, Brazil.

***Trichomyia sulbaianensis* Bravo, 2002: 63, figs. 28-33.**

Remarks. The males of *T. sulbaianensis* can be recognized by gonostylus expanded apically with apical bristles; ejaculatory apodeme long, 1.6 times the length of gonostylus.

Material examined. Brazil, Bahia: Itabuna (Reserva Ecológica CEPEC), holotype #m, 10.X.1985, P.S. Terra leg. (MZFS).

Distribution. Known from the type locality in Brazil, state of Bahia.

***Trichomyia teimosensis* Bravo, 2002: 63-65, figs. 34-40.**

Remarks. The males of *T. teimosensis* can be recognized by two pairs of gonocoxite with elongated bristles; elongated gonostylus with slowly curved apex; ejaculatory apodeme 1.25 times the length of gonostylus.

Material examined. Brazil, Bahia: Serra do Teimoso, holotype #m, 27.IV.2001, F. Bravo leg. (MZFS); 3 paratypes: 1 #m, Bahia, Itabuna (Reserva Ecológica CEPEC), 10.X.1987, P. S. Terra leg. (MZFS); 1#m, same locality as holotype, II.1968, without name of collector (MZFS); 1#m, same locality as holotype, IX.1969, without name of collector (MZFS).

Distribution. Known from the type locality in Brazil, state of Bahia.

***Trichomyia xaniostylis* Quate, 1996: 9-10, figs. 2h-m**

Remarks. The males of *T. xaniostylis* can be recognized by gonostylus with a row of rod-like bristles in the apex and elongated bristles in the external lateral margin; ejaculatory apodeme long, twice the length of gonostylus.

Material examined. The type specimens were not examined; however, the description and figures of Quate (1996) allowed the identification of the specimens.

Other material examined. Brazil, Roraima, Km 3, Sl. Do Anaua, 34.X.2003, 3 #m, M. Rocha leg. (MZFS); Roraima, Km 4, S.J. Baliza, 30.IV.2005, 4 #m, without name of collector (MZFS); Roraima, Km 4, São Luiz do Anauá, Faz. Zulmira, 4.II.2004, 1 #m, M. Rocha (MZFS); Amazonas, Purupuru, Est. Nunes de Melo, Km 4, 24.XI.1998, 1 #m, without name of collector (MZFS); Pará, Novo Repartimento, Vic. Bandeirante, Sítio Pedro Roqueta, 19.VIII.1998, 1 #m, without name of collector (MZFS).

Distribution. Known from Costa Rica and Brazil, states of Roraima, Amazonas and Pará (new records).

Discussion

The cosmopolitan genus *Trichomyia*, whose monophyly has not yet been established (i.e., there are no proposals for its synapomorphy) comprises species that can easily be identified by the presence of eyes without ocular bridge and a long CuA2 of the wing that extends beyond the fork to the median margin of the wing (Wagner & Ibáñez-Bernal 2009). This genus presents 144 extant species throughout the world prior

to this paper (Duckhouse 1972, 1973; Hennig 1972; Wagner 1990, 1993, 1999, 2001; Quate 1965, 1996, 1999; Wagner & Manteller 1996; Bravo 1999, 2000, 2001a,b,c, 2002; Alexander *et al.* 2001; Ibáñez-Bernal 2004; Withers 2003; Duckhouse & Lewis 2007; Bejarano *et al.* 2009a,b, 2010; Beran *et al.* 2010; Curler & Moulton 2010; Pérez-Doria *et al.* 2010; Kvifte 2012; Araújo & Bravo 2012; Araújo & Bravo, in press; Araújo & Bravo, unpubl.).

Duckhouse (1965) proposed the division of the genus *Trichomyia* into two groups without taxonomic values: Group A, comprising species with four well-separated palpus segments; and Group B, comprising species with three palpus segments. These grouping were unsatisfactory, however, because they did not include neotropical species with four palpus segments but with the first two partially fused (i.e., united only by a narrow articular area) (Duckhouse 1978).

Both morphological groups of *Trichomyia* are found in the Neotropical region (in addition to the species with four palpus segments, with the first two partially fused). No species with the first two palpus segments fused have been described for any biogeographical regions outside the Neotropics, making them endemic. The group with four well-separated palpus segments that occurs only in southern South America is morphologically distinct from other neotropical *Trichomyia* species, and more closely resembles those from Africa and Australia (Duckhouse 1972; 1980).

The wide morphological diversity in *Trichomyia* observed in the descriptions in this work and in the publications cited above make it difficult to establish groups of species and, as suggested by Wagner & Ibáñez-Bernal (2009), a generic revision is urgently needed through the use of modern methodologies including cladistics to create credible hypotheses about these taxa and their interrelationships.

The genus *Trichomyia* was once considered to be poorly represented in the neotropics, largely due its usually discrete habits and to the lack of specific collections (Duckhouse 1978). The present study increased the species richness of the Neotropical *Trichomyia* from 75 species to 119 – an increase of 44 species, which corresponds to 37% of the total number of known species, and that corroborates the observations of Duckhouse (1978). As conducted were in only a few regions in northeastern and northern Brazil, intensive collecting in Central America, the Caribbean and other regions of South America would most likely considerably increase the number of species of this genus.

The richness of *Trichomyia* just in the Neotropical region is now greater than that seen in all of the other biogeographical regions of the planet summed together, as the Australasian/Oceania region has 46 species, Palearctic has only 8 species, Oriental region 7 species, Afrotropical region 5 species, and the Nearctic 4 species (total= 70). This significant discrepancy between the neotropics and other parts of the world may be a true indication of the great biodiversity of that region, or may simply reflect the lack of intensive studies in other parts of the world.

The known diversity of *Trichomyia* in Brazil before the present work was 38 species, and has now increased to 82 with the species described here. The states with the largest number of records are Amazonas and Pará, followed by Bahia, Roraima, Rondônia, and Minas Gerais – with most of the species being identified from the Atlantic (17%) and Amazon (82%) forests; the semiarid (Caatinga) and seasonally inundated (Pantanal) biomes have relatively few species – and the majority of specimens that have been collected in these regions are females, in contrast to the large numbers of males found in the forest biomes. *Trichomyia* are most diverse in tropical regions around the world – particularly in regions with humid forests (Duckhouse, 1978, 1980, 1985; Bravo 2001a, b).

Some species of *Trichomyia* show wide distributions in the Neotropical region, including *T. armata* from São Paulo State (which is also encountered in Paraná); *T. inermis* from São Paulo (which is also found in Bahia and Amazonas); *T. andina* and *T. quimbayia* originally recorded in Colombia (which is also found in the Brazilian states of Rondônia, Pará, and Amazonas); *T. xaniostylis* described for Costa Rica (with new records for Roraima, Amazonas, and Pará). The present paper likewise includes the first species of *Trichomyia* from Venezuela (*T. araguaensis* **sp. nov.**) and a new species from Costa Rica (*T. puntarenas* **sp. nov.**).

All of the Neotropical species are apparently endemic, with no records yet of their occurrence in other biogeographical regions. Despite some similarities with nearctic species, as for example, *T. styloryncha* from North America, which was included here in the same morphological group – and with strong resemblances to *T. intricata* from Costa Rica, *T. puntarenas* from Costa Rica, and *T. cetrae* **sp. nov.** and *T. rondonensis* **sp. nov.** from states of Bahia and Rondônia, respectively, in Brazil.

The division of these species into subgroups in the present work was based on morphological characters and does not have any value as indicating monophyletic

groups. Duckhouse (1972) had previously noted that the wide diversity and range of the structures of *Trichomyia* hindered groupings with large numbers of species.

Among the groupings proposed, the *intricata* group comprises neotropical species and one Nearctic species (as previously mentioned) that are morphologically similar and between the species with three segments in the palpus are the only with strongly sclerotized gonostyli. The *nebulica* group, with four palpus segments, the first two partially fused, also have sclerotized gonostyli. The two groups were not united because they belong to independent evolutionary lineages within *Trichomyia* as determined by their palpus segments (Duckhouse 1980; Bravo 2000), and the morphological differences between the species in the *nebulica* group are much larger than those in the *intricata* group.

The present paper concentrated only on the taxonomic aspects of this group, and there is not yet sufficient data to consider some of the groups proposed for the Neotropical *Trichomyia* as subgenus, with the exception of the *intricata* group, which shows probable synapomorphies (gonostylus strongly sclerified, directed to the inner portion of male terminalia, plus a set of other features). Some authors believe that *Trichomyia* should be divided into a number of different genera, as has been done with *Psychoda*, which according to Cordeiro et al. (2011) despite being a large group and have their division desirable, this should only be done following cladistic hypotheses that would represent natural groups. We likewise defend the view that new subgenera of *Trichomyia* should only be delimited on the same basis before that new subgenera are proposed.

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Addendum

Depois de finalizada a dissertação, a descrição de uma nova espécie de *Trichomyia* foi publicada do estado de Espírito Santo, *Trichomyia pintoii* Santos & Leite, 2012, com isto a riqueza do gênero sobe para 76 espécies neotropicais e 39 espécies do Brasil.

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Referência.

Santos, C. B. & Leite, G. R. (2012) A new species of *Trichomyia* Haliday (Diptera: Psychodidae: Trichomyiinae) from the Brazilian Atlantic Forest, with a checklist of Western Hemisphere species. *Zootaxa*, 3573: 40–46

Anexo 1.

Normas de submissão da Revista Zootaxa

Zootaxa is a peer-reviewed international journal for rapid publication of high quality papers on any aspect of systematic zoology, with a preference for large taxonomic works such as monographs and revisions. *Zootaxa* considers papers on all animal taxa, both living and fossil, and especially encourages descriptions of new taxa. All types of taxonomic papers are considered, including theories and methods of systematics and phylogeny, taxonomic monographs, revisions and reviews, catalogues/checklists, biographies and bibliographies, identification guides, analysis of characters, phylogenetic relationships and zoogeographical patterns of distribution, descriptions of taxa, and nomenclature. Open access publishing option is strongly encouraged for authors with research grants and other funds. For those without grants/funds, all accepted manuscripts will be published but access is secured for subscribers only. All manuscripts will be subjected to peer review before acceptance. *Zootaxa* aims to publish each paper within one month after the acceptance by editors.

Preparation of manuscripts

1) *General*. All papers must be in English. Authors whose native language is not English are encouraged to have their manuscripts read by a native English-speaking colleague before submission. Nomenclature must be in agreement with the *International Code of Zoological Nomenclature* (4th edition 1999), which came into force on 1 January 2000. Author(s) of species name must be provided when the scientific name of any animal species is first mentioned (the year of publication needs not be given; if you give it, then provide a full reference of this in the reference list). Authors of plant species names need not be given. Metric systems should be used. If possible, use the common font New Times Roman and use as little formatting as possible (use only **bold** and *italics* where necessary and indentions of paragraphs except the first). Special symbols (e.g. male or female sign) should be avoided because they are likely to be altered when files are read on different machines (Mac versus PC with different

language systems). You can code them as m# and f#, which can be replaced during page setting. The style of each author is generally respected but they must follow the following general guidelines.

2) The **title** should be concise and informative. The higher taxa containing the taxa dealt with in the paper should be indicated in parentheses: e.g. A taxonomic revision of the genus *Aus* (Order: family).

3) The **name(s) of all authors** of the paper must be given and should be typed in the upper case (e.g. ADAM SMITH, BRIAN SMITH & CAROL SMITH). The address of each author should be given in *italics* each starting a separate line. E-mail address(es) should be provided if available.

4) The **abstract** should be concise and informative. Any new names or new combinations proposed in the paper should be mentioned. Abstracts in other languages may also be included in addition to English abstract. The abstract should be followed by a list of **key words** that are not present in the title. Abstract and key words are not needed in short correspondence.

5) The arrangement of the **main text** varies with different types of papers (a taxonomic revision, an analysis of characters and phylogeny, a catalogue etc.), but should usually start with an **introduction** and end with a list of **references**. References should be cited in the text as Smith (1999), Smith and Smith (2000) or Smith *et al.* 2001 (3 or more authors), or alternatively in a parenthesis (Smith 2000; Smith & Smith 2000; Smith *et al.* 2001). All literature cited in the text must be listed in the references in the following format.

A) **Journal paper:**

Smith, A. (1999) Title of the paper. *Title of the journal in full*, volume number, page range.

B) **Book chapter:**

Smith, A. & Smith, B. (2000) Title of the Chapter. *In*: Smith, A, Smith, B. & Smith, C. (Eds), *Title of Book*. Publisher name and location, pp. x–y.

C) **Book:**

Smith, A., Smith, B. & Smith, C. (2001) *Title of Book*. Publisher name and location, xyz pp.

C) **Internet resources**

Author (2002) *Title of website, database or other resources*, Publisher name and

location (if indicated), number of pages (if known). Available from: <http://xxx.xxx.xxx/>
(Date of access).

Dissertations resulting from graduate studies and non-serial proceedings of conferences/symposia are to be treated as books and cited as such. Papers not cited must not be listed in the references.

Please note that (1) **journal titles must be written in full (not abbreviated)**; (2) journal titles and volume numbers are followed by a ","; (3) page ranges are connected by "n dash", not hyphen "-", which is used to connect two words. For websites, it is important to include the last date when you see that site, as it can be moved or deleted from that address in the future.

On the use of dashes: (1) Hyphens are used to link words such as personal names, some prefixes and compound adjectives (the last of which vary depending on the style manual in use). (2) En-dash or en-rule (the length of an 'n') is used to link spans. In the context of our journal that means numerals mainly, most frequently sizes, dates and page numbers (e.g. 1977–1981; figs 5–7) and also geographic or name associations (Murray–Darling River; a Federal–State agreement). (3) Em-dash or em-rule (the length of an 'm') are used far more infrequently, and are used for breaks in the text or subject, often used much as we used parentheses. In contrast to parentheses an em-dash can be used alone; e.g. What could these results mean—that Niel had discovered the meaning of life? En-dashes and em-dashes should not be spaced.

6) Legends of **illustrations** should be listed after the list of references. Small illustrations should be grouped into plates. When preparing illustrations, authors should bear in mind that the journal has a matter size of 25 cm by 17 cm and is printed on A4 paper. For species illustration, line drawings are preferred, although good quality B&W or colour photographs are also acceptable.

7) **Tables**, if any, should be given at the end of the manuscript. Please use the table function in your word processor to build tables so that the cells, rows and columns can remain aligned when font size and width of the table are changed. Please do not use Tab key or space bar to type tables.

8) **Keys** are not easy to typeset. In a typical dichotomous key, each lead of a couplet should be typed simply as a paragraph as in the box below:

1 Seven setae present on tarsus I ; four setae present on tibia I; leg I longer than the body; legs black in color ... Genus A

- Six setae present on tarsus I; three setae present on tibia I; leg I shorter than the body;

legs brown in color ... 2

2 Leg II longer than leg I ... Genus B

- Leg II shorter than leg I ... Genus C

Deposition of specimens

Whenever possible, authors are advised to deposit type specimens in national or international public museums or collections. Authors are also advised to request registration numbers of deposited material in advance of the acceptance of papers to avoid unnecessary delay of publication. Some countries (e.g. Australia) require that primary type specimens be deposited in collections of the country of origin; authors are advised to take this into consideration.

Anexo 2

Normas de submissão da Revista Zoologia

ZOOLOGIA, the journal of the Sociedade Brasileira de Zoologia (SBZ), publishes original scientific articles on Zoology, authored by members and non-members of the Society. Members of the SBZ publish free of charge, whereas non-members are required to pay page charges, as indicated in the updated price list published in the Society's homepage (www.sbzoologia.org.br). Manuscripts should be prepared solely in American English. Manuscript submission to ZOOLOGIA is available online only at <http://mc04.manuscriptcentral.com/zool-scielo>. The system is user friendly and allows authors to monitor the submission process. If you have any difficulty with the system, there are many tutorials at the SBZool site that can help you. All documents should be prepared with a word-processor software (preferably MS Word or compatible). ZOOLOGIA refrains from publishing simple occurrence notes, new records (e.g. geographic, host), distribution notes, case studies based on observation of few specimens, list of species, and similar purely descriptive studies, unless well justified by the authors. Justification should be sent prior submission to the Managing Editor

MANUSCRIPTS

The text must be left-justified and the pages should be numbered. Use Times New Roman font, 12 points. The front page must include: 1) the title of the article including the name(s) of the higher taxonomic category(ies) of the animals treated; 2) the name(s) of the author(s) with their professional affiliation, only for correspondence purposes, additional affiliations should be included in the Acknowledgments section; 3) name of the Corresponding Author with complete addresses for correspondence, including e-mail; 4) an abstract in English; 5) up to five key words in English, in alphabetical order and different of those words used in the title. The total information on the items 1 to 5 cannot exceed 3,500 characters including the spaces, except if authorized by the Managing Editor.

Literature citations should be typed in small capitals, as follows: SMITH (1990), (SMITH 1990), SMITH (1990: 128), SMITH (1990, 1995), LENT & JURBERG

(1965), GUIMARÃES et al. (1983). Articles by the same author or sequences of citations should be in chronological order.

Only the names of genera and species should be typed in italics. The first citation of an animal or plant taxon in the text must be accompanied by its author's name in full, the date (of plants, if possible) and the family.

ARTICLES AND INVITED REVIEW

Title. Avoid verbiage such as “preliminary studies on...”, “aspects of ...”, and “biology or ecology of...”. Do not use author and date citations with scientific names in the title. When taxon names are mentioned in the title, it should be followed by the indication of higher categories in parenthesis.

Abstract. The abstract should be factual (as opposed to indicative) and should outline the objective, methods used, conclusions, and significance of the study. Text of the abstract should not be subdivided nor should it contain literature citations (exceptions are analyzed by the editors). It should contain a single paragraph.

Key words. Up to five key words in English, in alphabetical order and different of those words used in the title, separated by semicolon. Avoid using composite key words.

Introduction. The introduction should establish the context of the paper by stating the general field of interest presenting findings of others that will be challenged or expanded, and specifying the specific question to be addressed. Accounts of previous work should be limited to the minimum information necessary to give an appropriate perspective. The introduction should not be subdivided.

Material and Methods. This section should be short and concise. It should give sufficient information to permit repetition of the study by others. Previously published or standard techniques must be referenced, but not detailed. If the material and methods section is short, it should not be subdivided. Avoid extensive division into paragraphs and sub items.

Results. This section should contain a concise account of the new information. Tables and figures are to be used as appropriate, but information presented in them should not be repeated in the text. Avoid detailing methods and interpreting results in this section.

Taxonomic papers have a distinct style that must be adhered to in preparing a manuscript. In taxonomic papers the results section is to be replaced by a section headed TAXONOMY, beginning at the left-hand margin. The description or redescription of species, in a single paragraph, is accompanied by a taxonomic summary section. The

taxonomic summary section comprises a listing of site, locality and specimens deposited (with respective collection numbers). The appropriate citation sequence and format include: COUNTRY, Province or State: City or County (minor area as locality, neighborhood, and others, lat long, altitude, all in parenthesis), number of specimens, sex, collection date, collector followed by the word leg., collection number. This is a general guideline that should be adapted to different situations and groups. Several examples can be found in the previous numbers of the ZOOLOGIA. The taxonomic summary is followed by a remarks section (Remarks). The Remarks section replaces the discussion of other articles and gives comparisons to similar taxa. Museum accession numbers for appropriate type material (new taxa) and for voucher specimens (surveys) are required. Type specimens, especially holotypes (syntypes, cotypes), paratypes, and a representative sample of voucher specimens, should not be maintained in a private collection; deposition of specimens in established collections is required. Appropriate photographic material should be deposited if necessary. Frozen tissues must also include accession numbers if deposited in a museum/collection.

Discussion. An interpretation and explanation of the relationship of the results to existing knowledge should appear in the discussion section. Emphasis should be placed on the important new findings, and new hypotheses should be identified clearly. Conclusions must be supported by fact or data. Subdivisions are possible. A section labeled Conclusion is not allowed in ZOOLOGIA.

Results and Discussion. The combination of Results and of Discussion into a single section should be avoided. It will ONLY be acceptable if well justified and when the separation is clearly impossible.

Acknowledgments. These should be concise. Ethics require that colleagues be consulted before being acknowledged for their assistance in the study. Literature Cited. Citations are arranged alphabetically. All references cited in the text must appear in the literature cited section and all items in this section must be cited in the text. Citation of unpublished studies or reports is not permitted, i.e., a volume and page number must be available for serials and a city, publisher, and full pagination for books. Abstracts not subjected to peer review may not be cited. Work may be cited as "in press" only exceptionally and until the copyediting stage when the reference should be completed or suppressed if not published by then. If absolutely necessary, a statement may be documented in the text of the paper by "pers. comm.", providing the person cited is aware of the manuscript and the reference to his person therein. Personal

communications do not appear in the Literature Cited section. The references cited in the text should be listed at the end of the manuscript, according to the examples below. The title of each periodical must be complete, without abbreviations. Online Supplementary Material. Tables, movies, photographs, documents, and any other electronic supplementary material may be associated to the manuscript in the moment of submission and, upon approval and publication, will be made available in the site of the journal for free access by the readers.

Periodicals

Always add DOI whenever available (as shown below).

GUEDES, D.; R.J. YOUNG & K.B. STRIER. 2008. Energetic costs of reproduction in female northern muriquis, *Brachyteles hypoxanthus* (Primates: Platyrrhini: Atelidae). *Revista Brasileira de Zoologia* 25 (4): 587-593. doi: 10.1590/S0101-81752008000400002.

LENT, H. & J. JURBERG. 1980. Comentários sobre a genitália externa masculina em *Triatoma Laporte, 1832* (Hemiptera, Reduviidae). *Revista Brasileira de Biologia* 40 (3): 611-627.

Books

HENNIG, W. 1981. *Insect phylogeny*. Chichester, John Wiley, XX+514p.

Chapter of book

HULL, D.L. 1974. Darwinism and historiography, p. 388-402. In: T.F. GLICK (Ed.). *The comparative reception of Darwinism*. Austin, University of Texas, IV+505p.

Electronic publications

MARINONI, L. 1997. *Sciomyzidae*. In: A. SOLIS (Ed.). *Las Familias de insectos de Costa Rica*. Available online at: <http://www.inbio.ac.cr/papers/insectoscr/texto630.html> [Accessed: date of access].

Illustrations. Photographs, line drawings, graphs, and maps should be termed figures. Photos must be clear and have good contrast. Please, organize, whenever possible, line drawings (including graphics, if it is the case) as plates of figures or pictures considering the size of the page of the journal. The size of an illustration, if necessary, should be indicated using horizontal or vertical scale bars (never as a magnification in the caption). Each figure must be numbered in Arabic numerals in the lower right corner. When preparing the illustrations, authors should bear in mind that the journal has a matter size of 17.0 by 21.0 cm and a column size of 8,3 by 21,0 cm including space for captions. Figures must be referred to in numerical sequence in the text;

indicate the approximate placement of each figure in the margins of the manuscript. Half-tone illustrations must be saved and sent as separate TIFF files with LZW compression; vectorial images (maps, graphics, line drawings, diagrams) should be preferentially provided as vectors in Adobe Illustrator (AI), Corel Draw (CDR) or EPS formats. The required final resolution is 300 dpi for color photos and 600 dpi for half-tone photos or line art. The illustration files should be uploaded to the submission. Upload is limited to 10 MB per file. Color figures can be published if the additional costs are covered by the authors. Alternatively, the authors may choose to publish black and white illustrations in the paper version of the manuscript and retain the color versions in the electronic version at no additional cost. Captions of the figures should be typewritten right after the Literature Cited. Use a separate paragraph for the caption of each figure or group of figures. Please, note previous publications and follow the pattern adopted for captions.

Tables. Tables should be generated by the table function of the word-processing program being used, numbered in Roman numerals and inserted after the list of figures captions. Do not use paragraph marks inside of table cells. Legends are provided immediately before each respective table.

VOUCHER AND TYPE SPECIMENS

Specimens including types (where appropriate) or vouchers that have received authoritative identification are the foundations for all biological studies from taxonomy and systematics to ecology and biogeography and including all aspects of biodiversity survey and inventory. Representative individuals (or parts of entire specimens that retain diagnostic information for identification) used in any study reported in the Journal should be deposited in a recognized biological collection, so that such are freely available to the research community. Vouchers should also be deposited to substantiate records of sequence data in all molecular studies (e.g., phylogeography and diagnostics), and ideally the physical voucher should be the remaining portion(s) of individual specimens that have been processed for DNA extraction. It is recommended that such specimens not be limited to the holotype and a limited number of paratypes in descriptions, or relatively few specimens derived from survey or from ecological studies. It is a requirement of ZOOLOGIA that all manuscripts must document the collection(s) where the specimens (types or vouchers) are deposited along with their respective catalogue or accession numbers in those repositories.

Anexo 3

Normas de submissão da Revista *Acta Entomologica Musei Nationalis Pragae*

Journal *Acta Entomologica Musei Nationalis Pragae* (AEMNP) publishes entomological papers focused on (i) insect taxonomy and nomenclature, (ii) morphology of adult and immature stages and/or their biology with possible applications in taxonomy and phylogeny, (iii) phylogeny at least partly based on morphological characters (or with morphology at least mapped on the tree). (iv) catalogues applicable for further taxonomy and biodiversity studies, and (v) general papers on methodology of insect taxonomy. Manuscripts are reviewed by two peer reviewers and evaluated by the editorial board. Papers not conforming to the journal style may be returned without a review. Manuscripts submitted to AEMNP must contain unpublished work and cannot be simultaneously submitted elsewhere.

AEMNP will consider manuscripts of any length but the editorial board may decide to publish long contributions in a supplementary issue. No page charges are required. Each author will receive 50 reprints and a PDF file for private use. AEMNP only accepts manuscripts in clear and concise English; papers requiring extensive linguistic corrections will be returned to the authors. Subject to the editor's approval, papers may contain a translation of the summary or identification keys into other languages.

Authors must follow the International Code of Zoological Nomenclature and its important recommendations, especially Recommendation 16C on the deposition of the type material in institutional collections.

B) Submitting of the manuscript and editorial process

Manuscripts should be submitted electronically to the journal office by e-mail or on a CDROM. The text (in .doc standard text file or .rtf format, 12 pt font size) should be double spaced and left justified; do not divide words and avoid unusual fonts.

Author(s) will receive one set of proofs. Requested original artwork and storage media will be returned together with the reprints.

All correspondence should be sent to the AEMNP journal office by e-mail or via usual postal service to the following address:

Department of Entomology,
National Museum, Kunratice 1
CZ-148 00 Praha 4
Czech Republic

C) Structure of the manuscript

Manuscript should be structured as follows: title page, abstract, keywords, main text, acknowledgements, references, figure legends and figures. The main text should be divided into introduction, material and methods, results and discussion; some of them can be omitted where appropriate (e.g. in short notes). Page headings are supplied by the editors and approved by the authors in proofs.

Title page must contain:

- i) Short and concise title. Leave out the author and year of description in names of taxa unless necessary. Higher taxa must always be specified and placed in parentheses, e.g. (Coleoptera: Buprestidae).
- ii) Authors' names, with first name(s) spelled out and last names in capital letters.
- iii) Addresses of all authors; specify e-mail addresses and include country name code into the postal code where available (e.g. CZ-148 00).

Abstract should provide a concise summary of the paper and must list all nomenclatorial acts contained in the paper; it should not exceed 20 lines of text unless necessary. Genus and species group names must contain the author and year of description (separated by a comma) at first appearance.

Key words (at most 20 words) may overlap with words in the title.

Latin names of taxa of the genus and species group must be italicized in the main text, with author(s) as well as names of higher taxonomical units in plain font. At first appearance in the main text, genus and species group names must contain (an) unabbreviated name(s) of the author(s) and year of description, separated by a comma. The author(s) and year of description should be omitted in all subsequent appearances.

Four-letter codens following Arnett's The insect and spider collections of the world should be used for both private and institutional collections and explained in Material and methods. Codens for private collections should be created as follows: JSDI – John Smith, Dublin, Ireland.

Material. Place exact label data of type specimens in quotation marks; we encourage the use of slashes (/) to separate lines on the same label and of double slashes (//) to separate two labels. In all other locality data, list **COUNTRIES** in bold capital letters, and **STATES** and **PROVINCES** in bold small caps. Dates should preferably be formatted without spaces and with months in Roman numbers (e.g. 12.viii.2003).

Use the following symbols: male – **m***; males – **m*m***; female – **f***; females – **f*f***; unsexed specimen(s) – **spec.**; egg or egg batch – **E**; larvae of the first to n-th instar – **L1** to **Ln**; pupa – **P**. Indicate reared specimens as ‘ex ovo’, ‘ex larva’ or ‘ex pupa’ together with the date at which the immature stage has been collected. Additional remarks (such as the currently valid geographical name of a locality) should be placed in [square brackets]. Use the following symbols for latitude and longitude data: ° for degrees, ' (not ’) for minutes and " (not double quotation marks ") for seconds.

Descriptions and redescriptions of taxa should be concise and uniform throughout the paper. Use standardized abbreviations in the text: **gen. nov.**, **sp. nov.**, **ssp. nov.**, **syn. nov.**, **comb. nov.**, **stat. nov.**, **stat. restit.**

Citations in the text should include the author(s) and year, not separated by a comma. Give all names in small caps and separate multiple entries in parentheses by a comma: BOROVEC (2003) or (DE LATTIN 1967, LONBERG & GUSTAVSON 1937) or VESELÝ et al. (2002a,b) (more than two authors). Refer to unpublished work as NOVÁK (in press / in prep. / unpubl. / pers. comm. 2006).

References are listed alphabetically. Arrange several papers from the same author(s) chronologically; distinguish multiple papers published in the same year by single letters attached after the year (e.g. **1990a,b,c**), ordered as they appear in the text. Journal names should be italicized and unabbreviated unless, in exceptional cases, the complete name cannot be found. Titles of monographs and conference proceedings should also be italicized.

Use issue numbers (in brackets) only if separate issues were numbered separately or appeared in different years (see LONBERG & GUSTAVSON 1937). Papers in languages other than English, German, French, Italian, Spanish, Portuguese and Latin but with a translated title should have it in brackets along with the original title; papers without translated titles should be accompanied with an English translation in square brackets. Transliterate titles in cyrillics following standard rules (e, ё, э = e, ж = zh, й = y, x = kh, ц = ts, ч = ch, ш = sh, щ = shch, ь, ы = ’, ю = yu, я = ya) and omit titles in other alphabets (see REN 2004). Details should be specified in a short note placed in

brackets at the end of the reference, e.g. (in Czech, German abstract) or (in Russian, English summary without title). Do not italicize names of species and genus group taxa in references.

Examples:

BOROVEC R. 2003: Revision of genera *Gyratogaster*, *Leianisorhynchus* and *Altonomus* (Coleoptera:Curculionidae: Entiminae: Cyphicerini). *Klapalekiana* **39**: 1-30.

LATTIN G. de 1967: *Grundriss der Zoogeographie*. Fischer Verlag, Jena, 602 pp.

LONBERG E. & GUSTAVSON C. 1937: Contribution to the life history of the striped wrasse. *Arkiv för Zoologi* **29(7)**: 1-16.

MAJER K. 1993: Dasytidae, Melyridae. Pp. 91-92. In: JELÍNEK J. (ed.): Check-list of Czechoslovak Insects IV. (Coleoptera). Seznam československých brouků. *Folia Heyrovskiana, Supplementum* **1**: 3-172 (in English and Czech).

PASHCHENKO N. F. 1988: Podotryad Aphidinea – tli. [Suborder Aphidinea – aphids]. Pp. 546-686. In: LER P. A. (ed.): *Operedelitel' nasekomykh Dal'nego Vostoka SSSR v shesti tomakh. Tom II. Ravnokrylye i poluzhestkokrylye*. [Key to the insects of the Far East of the Soviet Union in six volumes. Vol. II. Orthoptera and Hemiptera]. Nauka, Leningrad, 972 pp (in Russian).

VESELÝ P., RESL K. & TĚŠÍK I. 2002: Zajímavé nálezy stěvlíkovitých brouků (Coleoptera: Carabidae) z České republiky v letech 1997-2001 a doplněk údajů o sbírech z předcházejícího období. (Interesting findings of ground beetles (Coleoptera: Carabidae) from the Czech Republic in the years 1997-2001 with supplementary pre-1997 data). *Klapalekiana* **38**: 85-109 (in Czech, English summary).

Tables can be submitted in text format (MS Word files in .rtf and .doc formats) or in spreadsheets (MS Excel .xls format). Formatting should be kept simple; final layout assembled by the journal office will be approved by the authors in proofs. Complex formatting must be consulted with the editors prior to submission, and AEMNP reserves the right to simplify overly complicated tables.


Black-and-white illustrations (ink drawings, graphs and maps) are accepted as original artwork or in TIFF format with at least 600 dpi resolution in printed size. Other file formats must be consulted with the editors prior to submission. Original artwork must have sufficient contrast and not be more than twice as large as the printed size. In both cases, all figures should be assembled into final panels, consecutively numbered and provided with scale lines (where appropriate). Detailed figure legends including information on scales should be placed at the end of the manuscript text. The width to height ratio of complete panels should be at least 0.71 to fill the type area (129×181 mm) with possibly some bottom space left after rescaling. Allow for space for figure legends (ca 7.5 mm for a single line and 10.7 mm for two lines of text).

Photographs and colour illustrations are accepted as original artwork or in TIFF format with at least 300 dpi resolution for 10×14 cm printed size. Photographs and illustrations of poor quality as well as poorly assembled panels will be returned to the authors and will result in a delay in the review and publishing process.

Figure legends should be prepared as follows:

Figs. 75-82. 75-77 – colour pattern of pronotum. 75-76 – *Coccinella marussii* Kapur, 1973. 75 – male; 76 – female. 77 – *C. hodeki* sp. nov., male. 78-82 – colour pattern of elytra. 78 – *C. marussii*; 79 – *C. hodeki* sp. nov.; 80-81 – *C. magnopunctata* Rybakow, 1889; 82 – *C. t. transversogut* Faldermann, 1835. Scale bars = 5 mm.

Anexo 4

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Taxonomy of Neotropical *Trichomyia* (*Septemtrichomyia*) Bravo (Diptera, Psychodidae, Trichomyiinae) with descriptions of five new species

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Abstract

Subgenus *Septemtrichomyia* Bravo of genus *Trichomyia* Haliday in Curtis was originally proposed to include four Neotropical species: *T. botosaneanui* Wagner, *T. bou* Bravo, *T. cauga* Bravo and *T. mishi* Bravo. Five new species are described for this subgenus: *Trichomyia atlantica* sp. nov., *T. imarui* sp. nov., *T. jezeki* sp. nov., *T. amazonensis* sp. nov. and *T. ser-taneja* sp. nov.; five previously described species are included in *Septemtrichomyia*: *T. dolichakis* Quate, *T. dolichopogon* Alexander, Freitas & Quate, *T. dolichothrix* Quate, *T. pedrabranquensis* Bravo and *T. sattelmairi* Wagner & Masteller. A key to males of the 14 Neotropical species of *Septemtrichomyia* is presented.

Key words: moth flies, Brazil, new records, psychodid, subgenus

Introduction

The cosmopolitan genus *Trichomyia* Haliday in Curtis includes 67 extant Neotropical species and one species *inquirenda* (*Trichomyia fairchildi* Vargas & Díaz-Nájera), all apparently endemic to that region (Duckhouse 1972, 1973; Wagner 1993, 1999; Wagner & Masteller 1996; Quate 1996, 1999; Bravo 1999, 2000, 2001a,b,c, 2002; Alexander *et al.* 2001; Ibáñez-Bernal 2004; Bejarano *et al.* 2009, 2010; Pérez-Doria *et al.* 2010). Two subgenera of *Trichomyia* currently with a Neotropical distribution were recently described by Bravo (1999, 2001a): *Opisthotrichomyia* Bravo and *Septemtrichomyia* Bravo. *Septemtrichomyia*, with four species is known from Brazil (*T. mishi* Bravo, *T. cauga* Bravo and *T. bou* Bravo) and the Caribbean Island of Martinica (*T. botosaneanui* Wagner).

In the present paper we describe five new species of subgenus *Septemtrichomyia* collected from Brazil. In addition, we comment on five previously described species and include them in *Septemtrichomyia*. A key for the identification of males of the 14 Neotropical species is included.

Material and methods

Specimens examined in this study are deposited in the *Coleção de Invertebrados do Instituto Nacional de Pesquisa da Amazônia*, Amazonas, Brazil (INPA) and *Coleção Entomológica Prof. Johann Becker do Museu de Zoologia da Universidade Estadual de Feira de Santana*, Bahia, Brazil (MZFS), as indicated for each species. Specimens from Bahia were collected with CDC light trap. All specimens were treated with 10% KOH, dehydrated and mounted in Canada balsam. General morphological terminology follows that of Cumming & Wood (2009). Terminology for the antenna of *Trichomyia* is that of Ibáñez-Bernal (2004), while terminology for the wings follows that of Duckhouse (1972). Terminology for the male terminalia follows Sinclair (2000). Species of subgenus *Septemtrichomyia* have elongate bristles on tergum 7 in the males that are equal in length to 0.5 to 0.9 times the width of the tergum. Here we refer to these macrotrichia as “elongate bristles on tergum 7”.

Taxonomy

Trichomyia (*Septemtrichomyia*) **Bravo**

T. (Septemtrichomyia) Bravo, 1999: 1–2. Type species: *Trichomyia botosaneanui* Wagner, by original designation.

Other species included: *T. amazonensis* **sp. nov.** (Brazil), *T. atlantica* **sp. nov.** (Brazil), *T. bou* Bravo (Brazil), *T. cauga* Bravo (Brazil), *T. dolichakisi* Quate (Costa Rica, Panama), *T. dolichopogon* Alexander, Freitas & Quate (Brazil), *T. dolichostrix* Quate (Panama), *T. imarui* **sp. nov.** (Brazil), *T. jezeki* **sp. nov.** (Brazil), *T. mishi* Bravo (Brazil), *T. pedrabranquensis* Bravo (Brazil), *T. sattelmairi* Wagner & Masteller (Puerto Rico) and *T. sertaneja* **sp. nov.** (Brazil).

According to Alexander *et al.* (2001), *Trichomyia pedicillata* Satchell, known only from the type locality in Panama, also has three pairs of long, hooked bristles on tergum 7, although the authors did not provide a formal description of this character nor of the material studied. This character was not included in the original description by Satchell (1956). We did not have access to the type material of *T. pedicillata*, and until new observations can be made, this species is not included in *Septemtrichomyia*.

Diagnosis. Head subcircular. Antenna with 13 pyriform and slightly asymmetrical flagellomeres. Maxillary palpus 3-segmented, first palp segment with inner sensorial pit; medial fork at the approximate center of the wing. Tergum 7 with pair of lateral lobes, each one with 3–5 elongate bristles on tergum 7, sometimes fused (as a single bristle). Hypandrium fused with gonocoxites. Gonocoxite with one posterior arm convergent to the midline, usually with rod-like setae on the inner margin. Gonostylus unsclerotized, ventrally articulated to the gonocoxite near the apex.

Comments. Bravo (1999) proposed that the gonostylus of the subgenus *Septemtrichomyia* has two distal arms, one dorsal arm and one ventral. However, based on a reexamination of the type specimens of *T. bou*, *T. cauga* and *T. mishi* and studies of new material, it is clear that there is only one arm (*i.e.* the second arm is actually the gonocoxite projected posteriorly). Bravo (1999) misinterpreted the gonostylus, which is ventral and articulated near the apex in all of the species of this subgenus.

Key to males of Neotropical *Septemtrichomyia*

1	Group of elongate bristles on tergum 7 with straight apices (Figs. 18, 31, 36)	2
-	Group of elongate bristles on tergum 7 with curved apices (Figs. 4, 21)	7
2	Apex of arm of gonocoxite with three hairs (Wagner 1993, fig. 10)	<i>T. botosaneanui</i> Wagner
-	Apex of arm of gonocoxite with a row of rod-like setae (Figs. 6, 13, 38)	3
3	Presence of spine-like projection at base of arm of gonocoxite (Fig. 17)	<i>T. sertaneja</i> sp. nov.
-	Absence of spine-like projection at base of arm of gonocoxite	4
4	Internal margin of apex of gonocoxite with a row of rod-like setae (Bravo 1999, fig. 24)	<i>T. mishi</i> Bravo
-	External margin of apex of gonocoxite with a row of rod-like setae (Figs. 31, 38)	5
5	Terminalia with one pair of parameres (Fig. 31)	<i>T. amazonensis</i> sp. nov.
-	Terminalia with two pairs of parameres (Fig. 38)	6
6	Aedeagal apodeme long, 4.0 times the length of gonostylus (Fig. 38)	<i>T. imarui</i> sp. nov.
-	Aedeagal apodeme short, 0.5 times the length of gonostylus (Bravo 2001b, fig. 28)	<i>T. pedrabranquensis</i> Bravo
7	Gonocoxites with two dorsal appendages, basal one shorter, angular, distal one elongated and straight (Wagner & Masteller 1996, fig. 22)	<i>T. sattelmairi</i> Wagner & Masteller
-	Gonocoxites never with two dorsal appendages	8
8	Parameres, in dorsal view, with medial arm (Bravo 1999, fig. 5)	<i>T. bou</i> Bravo
-	Parameres, in dorsal view, never with medial arm	9
9	R_{2+3} and R_4 subequal in length	10
-	R_{2+3} about 1.5 times the length of R_4	12
10	Apex of arm of gonocoxite with a row of rod-like setae (Alexander <i>et al.</i> 2001, fig. 3)	<i>T. dolichopogon</i> Alexander, Freitas & Quate
-	Apex of arm of gonocoxite with setae	11
11	Ejaculatory apodeme long, 2.5 times the length of the gonostylus (Figs. 25, 26)	<i>T. jezeki</i> sp. nov.
-	Ejaculatory apodeme short, 0.7 times the length of the gonostylus (Quate 1996, fig. 4c)	<i>T. dolichakisi</i> Quate
12	Parameres triangular in dorsal view (Bravo 1999, fig. 13)	<i>T. cauga</i> Bravo
-	Parameres never triangular in dorsal view, elongated	13

- 13 Ejaculatory apodeme short, 0.7 times the length of the paramere (Quate 1999, fig. 1F) *T. dolichothrix* Quate
 - Ejaculatory apodeme long, 1.7 times the length of the paramere *T. atlantica* sp. nov.

Trichomyia bou Bravo

Trichomyia bou Bravo, 1999: 2–3, figs. 1–7.

Comments. The males of *T. bou* can be recognized by the presence of the following characters: elongate bristles on tergum 7 with curved apices; one pair of divergent, apically pointed parameres dorsally with medial arm; ventral arm of gonocoxite present; ejaculatory apodeme S-shaped in ventral view (Bravo 1999, Figs. 4–5).

Material examined. Type material: Holotype ♂, BRAZIL, state of Bahia, Itabuna, Reserva Ecológica CEPEC 10.X.1986, Paulo S. Terra leg. (MZFS).

Other material examined: BRAZIL, Bahia, P. Seguro, Est. Vera Cruz, 3 ♂, 5.XII.2009, F. Bravo leg. (MZFS).

Distribution. Collected from Itabuna and Porto Seguro (new record) in Bahia, Brazil.

Trichomyia cauga Bravo

Trichomyia cauga Bravo, 1999: 3, figs. 8–15.

Comments. Males of *T. cauga* can be recognized by the presence of the following characters: elongate bristles on tergum 7 with curved apices; one pair of parameres triangular-shaped in dorsal and lateral views (Bravo 1999, Figs. 12, 13).

Material examined. Type material: Holotype ♂, BRAZIL, Bahia, Itabuna, Reserva Ecológica CEPEC 04.VI.1986, Paulo S. Terra leg. (MZFS).

Distribution. Collected only from Itabuna in Bahia, Brazil.

Trichomyia mishi Bravo

Trichomyia mishi Bravo, 1999: 3–4, figs. 16–24.

Comments. The males of *T. mishi* can be recognized by the presence of one pair of parameres, the medial one pyriform and the lateral one elongated and S-shaped (Bravo 1999, Fig. 23).

Material examined. Type material: Holotype ♂, BRAZIL, state of Rio de Janeiro, Represa do Rio Grande, IX.1969, M. Alvarenga leg. (MZFS).

Distribution. Collected only from Represa do Rio Grande, Mangaratiba in Rio de Janeiro, Brazil.

Trichomyia (Septemtrichomyia) pedrabranquensis Bravo

Trichomyia pedrabranquensis Bravo, 2001b: 131–132, Figs. 24–28.

Comments. Bravo (2001b) described *Trichomyia pedrabranquensis* based only on the holotype male; the elongate bristles on tergum 7 were not mentioned. These structures were lost in the holotype, but examinations of new specimens from the type locality and from Coração de Maria showed that elongate bristles are present on tergum 7. Bravo (2001b) misinterpreted the position of the gonostylus in this species, similar to the misinterpretation of the species originally described in *Septemtrichomyia*.

T. pedrabranquensis can be recognized by its short ejaculatory apodeme in dorsal view, 0.5 times the length of gonostylus, by the presence of a row of rod-like setae on the distal margins of the gonocoxites, by the wide apex of the gonostylus, not ending in acute apex, and by the triangular and wide parameres.

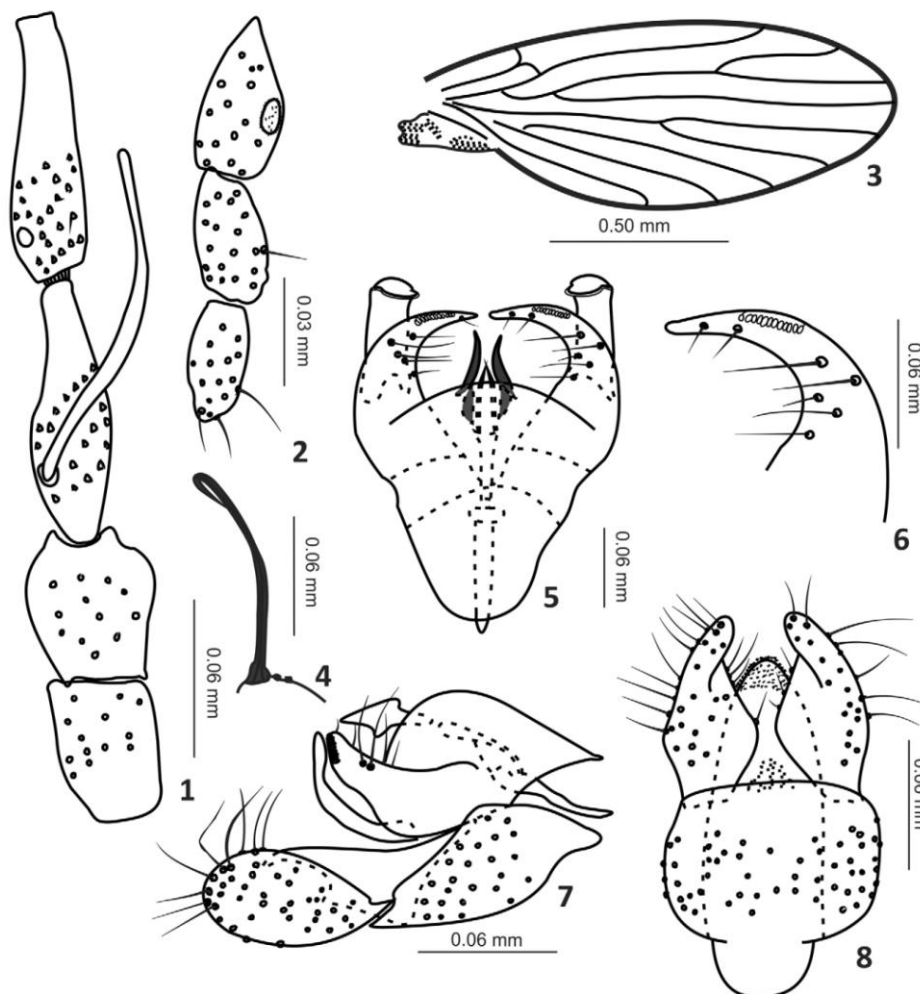
Material examined. Type material: Holotype ♂, BRAZIL, Bahia, Serra da Jibóia, 24.VIII.2000, F. Bravo leg. (MZFS).

Other **material examined**. BRAZIL, Bahia, Santa Terezinha, Serra da Jibóia, 1 ♂, 27–28.III.2009, T. Zacca, E. Menezes, W. Pina leg. (MZFS); Serra da Jibóia, 1 ♂, 29.XI.2008, T. Zacca & E. Alvim, leg. (MZFS). Bahia, Coração de Maria, 1 ♂, 14.XII.2002, I. Castro leg. (MZFS); Coração de Maria, 2 ♂, I Castro leg. 18.XII. 2003 (MZFS); Coração de Maria, 1 ♂, 06.VI.2002, F. Bravo leg. (MZFS).

Distribution. Collected from Serra da Jibóia and Coração de Maria (new record) in Bahia, Brazil.

Trichomyia atlantica Araújo & Bravo sp. nov.

(Figs. 1–8)



FIGURES 1–8. *Trichomyia atlantica* sp. nov. 1. Scape, pedicel and basal flagellomeres; 2. Palpus; 3. Right wing; 4. Elongate bristles on tergum 7 (paratype); 5. Male terminalia, dorsal; 6. Arm of gonocoxite 7. Male terminalia, lateral; 8. Cerci, epandrium, hypopod.

Diagnosis. Elongate bristles on tergum 7 with straight apices. Gonocoxite with posterior arm curved to the midline, apically pilose with row of 12–13 small rod-like sensilla. One pair of parameres, in dorsal view digitiform, sclerotized, ending in a point. Ejaculatory apodeme 1.2 times the length of the paramere.

Description. Male. Head subcircular. Antenna incomplete in the specimens studied; scape longer than pedicel; basal flagellomeres pyriform and eccentric; ascoid 1.3 times the length of flagellomere (Fig. 1). Palpus formula 1.0:0.7:0.7 (Fig. 2). Wing (Fig. 3): Sc complete; R_5 complete at base; r-m and m-cu absent. Elongate bristles of tergum 7 with curved apices (Fig. 4). Male terminalia: Hypandrium fused with gonocoxite (Fig. 5). Gonocoxite with posterior arm curved to the midline, apex acute, apically pilose with row of 12–13 small, rod-like setae (Figs. 5, 6). Gonostylus digitiform with apex curved upward (Figs. 5, 7). One pair of parameres present, in dorsal view thin, digitiform, sclerotized, with acute apex (Figs. 5, 7); arrow-shaped in lateral view (Fig. 7). Aedeagus short, approximately 0.75 times the length of parameres (Fig. 5). Aedeagal apodeme 1.2 times the length of parameres (Figs. 5, 7). Epandrium wider than long (Fig. 8). Cercus pilose, elliptical in ventral view (Figs. 8). Epipropect shorter than hypopocot, both with apical micropilosity (Fig. 8).

Material examined. Holotype ♂, BRAZIL, Bahia, Ituberá, 12.VI.2002, F. Bravo leg. (MZFS); 13 paratypes: 1 ♂, same locality, date and collector as holotype (MZFS); 6 ♂, same locality and collector as holotype, 01.VII.2003 (MZFS); 4 ♂, Bahia, Cachoeira, Fazenda Villa Rial, 20.VII.2004, F. Bravo leg. (MZFS); 1 ♂, Bahia, Cachoeira, 24.V.2004, F. Bravo leg. (MZFS); 1 ♂, Bahia, Porto Seguro, Estação Vera Cruz, 05.XII. 2002, F. Bravo leg. (MZFS).

Distribution. Known from Cachoeira and Ituberá in Bahia, Brazil.

Etymology. *atlantica* was based on the Atlantic forest; the Brazilian biome where this species was collected.

Comments. The male terminalia of *T. atlantica* and *T. bou* have similar posterior gonocoxite arms with acute apices. This character is not present in any of the other species of *Trichomyia*. *T. atlantica* and *T. bou* can be differentiated by comparison of the ejaculatory apodeme which is shorter in *T. atlantica*, and by the shape of paramere, with a short arm in *T. atlantica* and a long arm in *T. bou*.

Trichomyia sertaneja Araújo & Bravo sp. nov.

(Figs. 9–18)

Diagnosis. Apex of gonocoxite thumb-like, curved to the midline, with a row of seven small rod-like setae. Gonostylus with basal, sclerotized spine on internal margin. One pair of triangular parameres. Ejaculatory apodeme shorter than gonostylus extending beyond the margin of the gonocoxites.

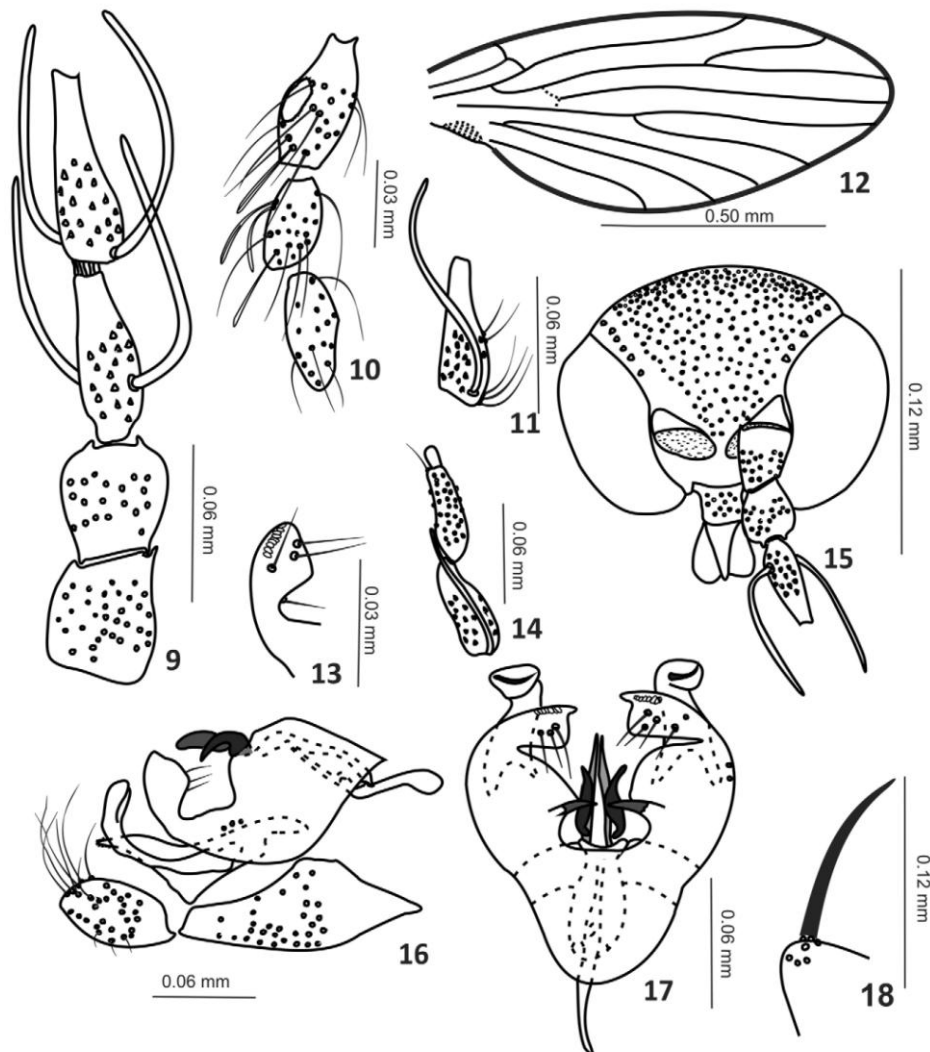
Description. Male. Head subcircular (Fig. 15). Antenna with 13 flagellomeres; scape as long as pedicel; pedicel subspherical; flagellomeres pyriform and eccentric; last flagellomere with apiculus (Fig. 9, 11, 14); basal ascoids 1.5 times the length of flagellomere (Figs. 9, 11, 14); apical ascoids almost the same length as flagellomeres (Fig. 9); last flagellomere without ascoid and with oval apiculus (Fig. 14). Palpus formula 1.0:0.7:0.9 (Fig. 10). Wing (Fig. 12): Apex of Sc and sc-r unsclerotized; R_5 complete at base; m-cu absent. Elongated bristles of tergum 7 with straight apices (Fig. 18). Male terminalia: Hypandrium fused with gonocoxite (Fig. 17). Gonocoxite with posterior arm curved to the midline, apex thumb-like with row of seven small rod-like setae (Fig. 13, 17); presence of spine-like projection at base of arm of gonocoxite (Fig. 17). Gonostylus articulated to gonocoxite at middle, bare, with apex directed upward (Fig. 16, 17). One pair of triangular parameres present, claw-shaped in lateral view (Figs. 16, 17). Aedeagus extending beyond parameres (Fig. 17); apex of gonocoxite thumb-like, curved to the midline, with a row of seven small rod-like setae (Figs. 13, 17); ejaculatory apodeme, almost as long as gonostylus, narrow anteriorly (Fig. 16, 17). Epandrium pilose, posterior end broader than anterior. Cercus pilose, subelliptical in lateral view (Fig. 16). Epipropect not observed. Hypopocot with apical micropilosity (Fig. 16).

Material examined. Holotype ♂, BRAZIL, Bahia, Município de Coração de Maria, 21.XI.2003, I. Castro leg. (MZFS); 3 paratypes: 1 ♂ same locality as holotype, 18.XII.2003, F. Bravo leg. (MZFS); 1 ♂ same locality as holotype, 28.I.2004, F. Bravo leg. (MZFS); 1 ♂, Bahia, Município de Cachoeira, Fazenda Villa Rial, 20.VII.2004, F. Bravo leg. (MZFS).

Distribution. Known from Coração de Maria and Cachoeira, in Bahia, Brazil.

Etymology. *sertaneja* is the Brazilian name for people living in the interior lands of that county.

Comments. *T. sertaneja* is easily recognized by the thumb-like apex of the gonostylus, and by the presence of a spine-like projection at the base of the gonocoxite.

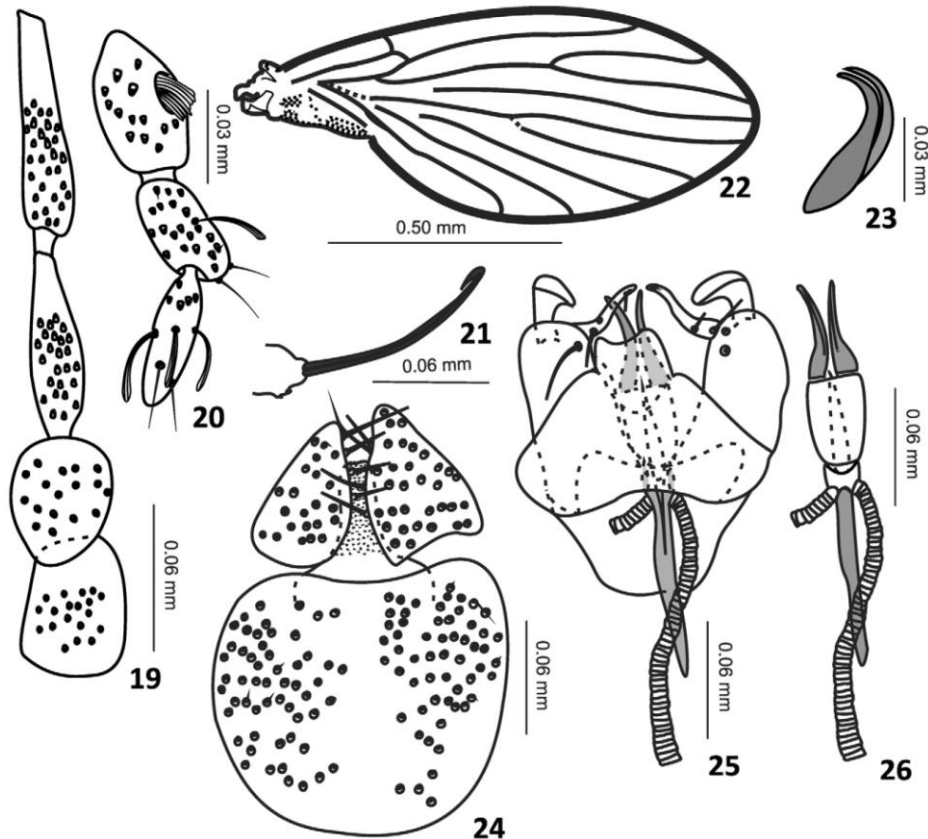


FIGURES 9–18. *Trichomyia sertaneja* sp. nov. 9. Scape, pedicel and basal flagellomeres; 10. Palpus; 11. Third flagellomere with ascoid; 12. Right wing; 13. Apex of gonocoxite; 14. Flagellomeres 12 and 13; 15. Head; 16. Male terminalia, lateral; 17. Male terminalia, dorsal; 18. Elongate bristles on tergum 7.

Trichomyia jezeki Araújo & Bravo sp. nov.

(Figs. 19–26)

Diagnosis. Posterior arm of gonocoxite with apex digitiform, without rod-like setae on the margin. Gonostylus shorter than posterior arm of gonocoxite, with apex curved upward. Presence of one pair of sclerotized parameres, digitiform and apically divergent, 0.5 times the length of ejaculatory apodeme.



FIGURES 19–26. *Trichomyia jezeki* sp. nov. 19. Scape, pedicel and basal flagellomeres; 20. Palpus (paratype); 21. Elongate bristles on tergum 7 (paratype); 22. Right wing (paratype); 23. Paramere, lateral; 24. Cerci, epandrium, hypopocot; 25. Male terminalia, dorsal; 26. Aedeagus, parameres and ejaculatory apodeme.

Description. Male. Head subcircular. Antenna incomplete in the specimens studied; scape subcylindrical, pedicel subspherical; basal flagellomeres pyriform and slightly eccentric (Fig. 19); ascoids observed in only one paratype; S-shaped 1.3 times the length of flagellomere. Palpus formula 1.0:0.8:0.9. (Fig. 20). Wing (Fig. 22): Sc complete; R_3 incomplete at base, not reaching R_{2+3+4} ; M_2 with unsclerotized base; base of M_3 not reaching CuA_1 , r-m and m-cu absent. Elongate bristles of tergum 7 with curved apices (Fig. 21). Male terminalia: Hypandrium and gonocoxites fused (Fig. 25). Posterior arm of gonocoxite slender apically, digitiform, without rod-like setae on the internal margin (Fig. 25). Gonostylus shorter than posterior arm of gonocoxite, apex curved upward (Fig. 25). One pair of sclerotized parameres present, apically bifurcated, articulated to a subrectangular basal plate (Figs. 23, 25, 26). Aedeagus subtriangular (Figs. 25, 26). Ejaculatory apodeme long, 2.5 times the length of the gonostylus (Figs.

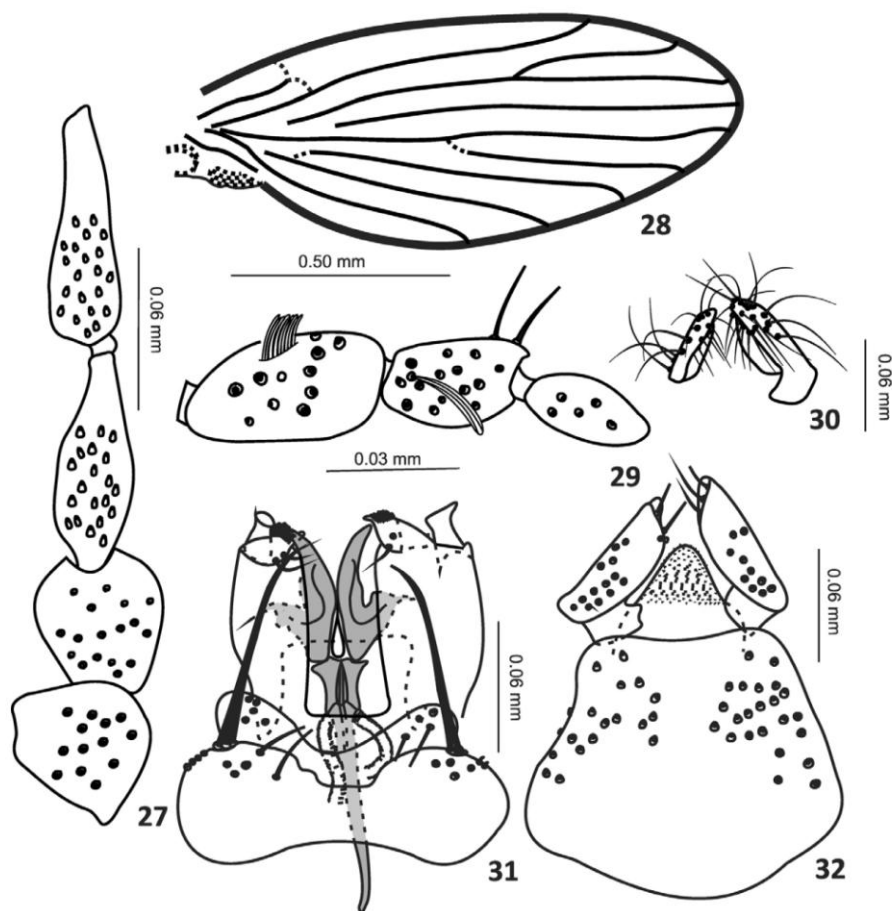
25, 26). Epaandrium wider than long (Fig. 24); cercus subtriangular in ventral view (Fig. 24). Hypopocyt with apex truncate and with apical micropilosity (Fig. 24).

Material examined. Holotype ♂, BRAZIL, state of Pará, N. [Novo] Repartimento, Vic. [Vicente] Bandeirante, Sitio Pedro Roqueta, 19. VIII.1998, without name of collector (MZFS); 3 paratypes: 1 ♂, same locality and data as holotype (MZFS); 1 ♂, state of Amazonas, Pitinga, R.[Rua] dos Paturis, 02–04.VI.1998, without name of collector (INPA); 1 ♂, Manaus, INPA, 08–12.II.2008, H.F. Mendes leg. (INPA).

Distribution. Known from Novo Repartimento in Pará, Brazil, Pitinga and Manaus in Amazonas, Brazil.

Etymology. Named in honor of Dr. Jan Ježek of the National Museum in Prague, the Czech Republic, in recognition of his contribution to psychodid systematics.

Comments. *T. jezeki* sp. nov. shows some similarities to *T. botosaneanui* and *T. satterlmairi* in the shapes of their gonocoxites and gonostylus, but the parameres are differently shaped. Additionally, the new species can be confused with *T. dolichakis*. The differences are subtle at the apices of the parameres, which are wide and rounded in *T. dolichakis* and thinner and pointy in *T. jezeki*, in addition to the ejaculatory apodeme that is longer in the new species.



FIGURES 27–32. *Trichomyia amazonensis* sp. nov. 27. Scape, pedicel and basal flagellomeres; 28. Right wing (paratype); 29. Palpus; 30. Cerci; 31. Male terminalia and tergum 7, dorsal; 32. Cerci, epaandrium, hypopocyt.

***Trichomyia amazonensis* Araújo & Bravo sp. nov.**

(Figs. 27–32)

Diagnosis. Gonocoxite with posterior arm short, with approximately nine rod-like setae in a row. Gonostylus with apex curved upward, almost the same size as the arm of the gonocoxite. One pair of parameres present, bifurcate, with the internal tip larger and thicker than the external one.

Description. Male. Head subcircular. Antenna incomplete in the specimens studied; scape shorter than pedicel (Fig. 27); basal flagellomeres pyriform, eccentric (Fig. 27), ascoids S-shaped, only observed in one paratype, 1.5 times as long as the flagellomere. Palpus formula 1.0:0.6:0.5 (Fig. 29). Wing (Fig. 28): Apex of Sc and sc-r unsclerotized; R_5 incomplete at base; base of M_2 and M_3 unsclerotized; r-m and m-cu absent. Elongate bristles of tergum 7 with straight apices (Fig. 31). Male terminalia: Hypandrium and gonocoxites fused (Fig. 31). Gonocoxites with short posterior arm, apical margin with row of nine rod-like setae. Gonostylus, short, with apex curved upward (Fig. 31). One pair of parameres present, bifurcate, sclerotized, external arm shorter than internal arm (Fig. 31). Aedeagus short, subtriangular (Fig. 31). Ejaculatory apodeme long, 4.5 times the length of the gonostylus (Fig. 31). Epandrium with posterior margin wider than anterior margin, wider than long (Fig. 32); cercus pilose, subrectangular (Figs. 30, 32). Hypopocot triangular (Fig. 32).

Material examined. Holotype ♂, BRAZIL, Amazonas, Pitinga, R. dos Paturis, 02–04.VI.1998, without name of collector (MZFS); 16 paratypes: 7 ♂, same locality and data as holotype (INPA), 1 ♂, Pará, N. [Novo] Repartimento, Vic. [Vicente] Bandeirante, Sítio Pedro Roqueta, 19. VIII.1998, without name of collector (MZFS); 1 ♂, Amazonas, Manacapuru, Cajatuba Km 69/3, 06.X.1998, without name of collector (MZFS); 4 ♂, Amazonas, Pres. [Presidente] Figueiredo, Pitinga, 04.XII.1998, R.Q., L.M.C. (sic.) leg. (MZFS); 2 ♂, state of Roraima, Pitinga, 13–15.XII.1997, R.Q, R.N., P.E. (sic.) leg. (MZFS); 1 ♂, Amazonas, Pres.[Presidente] Figueiredo, Pitinga, 15.XIII.1998, R.Q., L.M.C. (sic.) leg. (MZFS)

Distribution. Known from Novo Repartimento in Pará, Brazil, Presidente Figueiredo and Manacapuru in Amazonas, Brazil, and Pitinga in Roraima, Brazil.

Etymology. *amazonensis* based on the type locality.

Comments. *T. amazonensis* is easily distinguished from the other species of *Septemtrichomyia* by its bifurcate parameres, and by the apical position of the row of rod-like setae on the posterior arms of the gonocoxite. These rods are situated on the lateral margins of the posterior gonocoxite arms in other species of the subgenus.

***Trichomyia imarui* Araújo & Bravo sp. nov.**

(Figs. 33–39)

Diagnosis. Gonocoxite with posterior arm short, with a row of nine rod-like setae. Two pairs of U-shaped parameres present; dorsal paramere longer and wider than ventral one.

Description. Male. Head subcircular. Palpus formula 1.0:0.6:0.7 (Fig. 35). Antenna incomplete in the specimens studied; scape and pedicel subspherical; basal flagellomeres pyriform, eccentric; ascoids 0.9 times as long as flagellomere (Fig. 33). Wing (Fig. 34): Apex of Sc and sc-r unsclerotized; R_5 incomplete, M_2 with base unsclerotized, r-m and m-cu absent. Elongate bristles of tergum 7 with straight apices (Fig. 36). Male terminalia: Epandrium wider than long (Fig. 39); cercus pilose subtriangular (Fig. 37, 39). Hypandrium and gonocoxites fused (Fig. 38). Gonocoxite with posterior arm short, with row of nine rod-like setae (Fig. 38). Gonostylus approximately the same length as gonocoxite arm (Fig. 38). Hypopocot triangular, with apical micropilosity (Fig. 39). Two pairs of U-shaped parameres present; dorsal paramere longer and wider than ventral one (Fig. 39). Aedeagus simple, with one opening (Fig. 39). Aedeagal apodeme long, four times the length of gonostylus (Fig. 38).

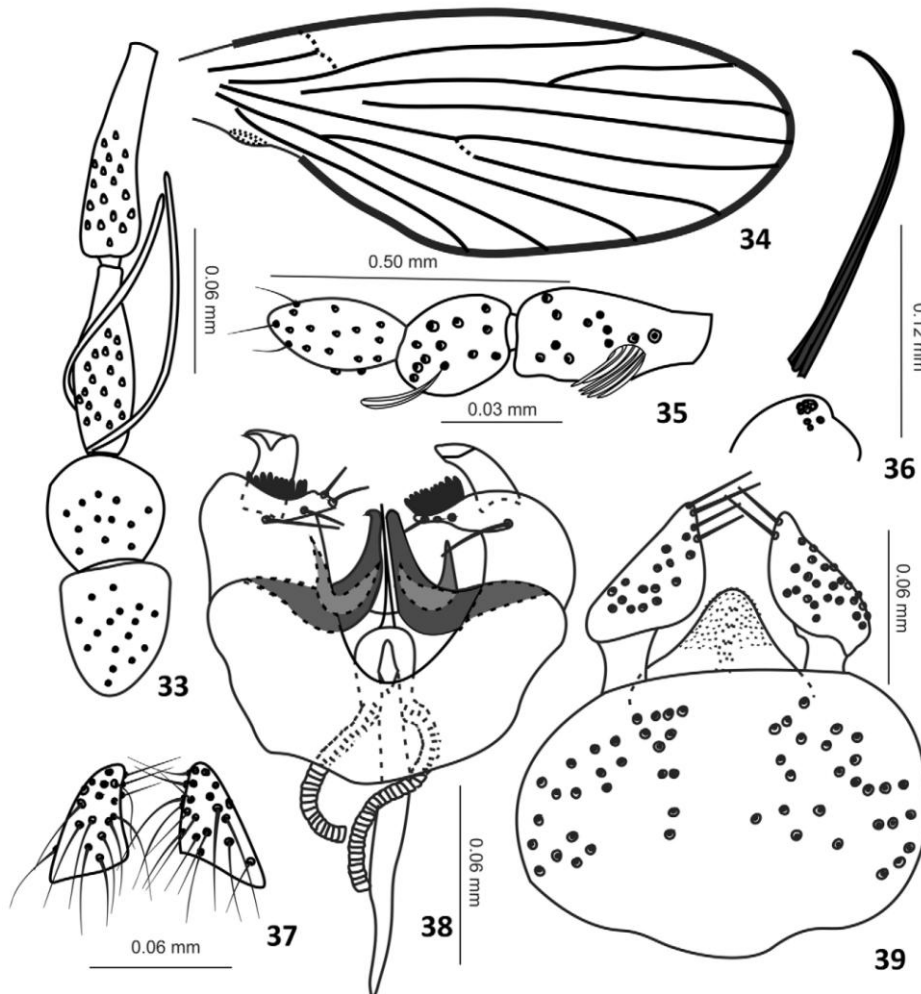
Material examined. Holotype ♂, BRAZIL, Pará, N.[Novo] Repartimento, Vic. [Vicente] Bandeirante, Sítio Pedro Roqueta, 19. VIII.1998, without name of collector (MZFS); 3 paratypes: 2 ♂, same locality and data as holotype (MZFS), 1 ♂, same locality as holotype, 15.VIII.1998, without name of collector (INPA).

Distribution. Known from Novo Repartimento in Pará, Brazil.

Etymology. *imarui* means mosquito in the indigenous Brazilian Tupi-Guarani linguistic family.

Comments. The rows of rod-like setae in *T. imarui* sp. nov., *T. bou*, *T. cauga*, and *T. mishi* are located on the external margin of the posterior arm of the gonocoxite, much like a crest; in the other species, the rod-setae are

smaller and internal (*T. pedrabranquensis*, *T. sertaneja*, *T. atlantica*), or apical (*T. amazonensis*), or thin (*T. botosaneanui*, *T. dolichakis*), or absent (*T. jezeki*).



FIGURES 33–39. *Trichomyia imarui* sp. nov. 33. Scape, pedicel and basal flagellomeres (paratype); 24. Right wing; 35. Palpus (paratype); 36. Elongate bristles on tergum 7 (paratype); 37. Cerci; 38. male terminalia, dorsal; 39. Cerci, epandrium, hypoproct.

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