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Catalogue of Neotropical Diptera. Rangomaramidae^{1,2}

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Introduction

The taxonomic position of most genera included in this family has been always quite uncertain within the suborder Bibionomorpha (*sensu* Amorim & Yeates, 2006) (Jaschhof, 2011). The family Rangomaramidae was raised by Jaschhof & Didham (2002) for a group of five species from New Zealand described under the genus *Rangomarama* Jaschhof & Didham. The concept of the family has been revised by Amorim & Rindal's (2007) based on a phylogenetic study of the Mycetophiliformia, adding genera that previously had controversial positions. According to Amorim & Rindal's (2007) hypothesis, these genera are classified as follows: *Rangomarama* in a subfamily of its own, Rangomaraminae; *Heterotricha* Loew in another separate subfamily, Heterotrichinae; several genera proposed for species most of which were originally described as *Heterotricha*, including *Chiletricha* Chandler, *Eratomyia* Amorim & Rindal, *Rhynchoheterotricha* Freeman, *Kenyatricha* Chandler, and *Insulatricha* Jaschhof in the subfamily Chiletrichinae; and *Ohakunea* Tonnoir & Edwards and obviously related genera, such as *Colonomyia* Colless, *Cabamofa* Jaschhof, and *Rogambara* Jaschhof, in the subfamily Ohakuneinae. Other genera with wing venation quite plesiomorphic when compared, e.g., to mycetophilids and keroplatids, might belong to the family, as *Anisotricha* Chandler, *Nepaetricha* Chandler, *Madagotricha* Jaschhof & Jaschhof, *Sciarosoma* Chandler, *Sciaropota* Chandler, *Freemanomyia* Jaschhof and *Starkomyia* Jaschhof.

The monophyly of the clades referred to here as Chiletrichinae and Ohakuneinae is more or less clear. Grouping these four subfamilies (i.e., additionally the Rangomaraminae and Heterotrichinae), however, does not find unanimous approval. The connection of these four groups in a clade, proposed by Amorim & Rindal (2007), differs from the hypotheses of Chandler (2002), Hippa & Vilkkamaa (2005) and Hippa & Vilkkamaa (2006). Different aspects of the analysis by Amorim & Rindal (2007), e.g., the question of undersampling of cecids and sciarids, have been criticized by Jaschhof (2011). Conversely the family Rangomaramidae, with this composition, has been accepted by Evenhuis (2007), Pape *et al.* (2009), Hippa *et al.* (2009) and Pape & Thompson (2010).

As a catalogue, this is not exactly the place for a deeper discussion of problems of monophyly, but it is fair enough to indicate that, on the one hand, gathering these genera is taxonomically adequate (in the sense that it brings together genera that were spread or equivocally fit in other families) and comes out from a strict cladistic analysis. On the other hand, the problem involving these genera is considerably complex and the position of these four main clades, as explicitly demonstrated by Amorim & Rindal (2007), in a single group is not extremely stable, so this topology may be challenged by

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wider analyses, with better sampling of large families, additional information from not well known genera, and additional characters.

Very little is known about the biology of Rangomaramidae and nothing is known about their immature stages. *Rangomarama* species are mainly confined to *Nothofagus* forests, sometimes mixed with podocarps and broadleaf trees, although one species is present in *Podocarpus*-broadleaf forests without southern beeches (Jaschhof & Didham, 2002). Adults are usually collected with Malaise traps and sweepnetting in damp and umbrageous forests, where there is dead and rotting wood. It is supposed that the immature forms of rangomaramids would be found in these substrates, as often happens in other Mycetophiliformia species. Jaschhof (2004) refers to the species of *Insulatricha* and *Anisotricha*, in New Zealand, to occur in podocarp, broadleaf and southern beech forests, as well as in shrubland nearby native forests. Adults fly in the warmer seasons and males are collected much more often than females. The species of *Eratomyia* known from Colombia (Amorim & Falaschi, 2010) was collected above 2,000 m of altitude, but in higher latitudes the rangomaramids are usually collected at middle elevations (Jaschhof, 2004). *Chiletricha marginata* (Edwards), from southern Brazil, is found only in areas with temperate climate in higher altitudes, with a distribution concurrent with that of the Araucariaceae conifer *Araucaria angustifolia* O. Kuntze and of some Podocarpaceae.

The Neotropical region has rangomaramid species belonging to the genera *Chiletricha*, *Eratomyia*, *Ohakunea*, *Colonomyia*, *Cabamofa* and *Rogambara*. The number of Neotropical species in each genus is given below. An undescribed specimen of *Rogambara* is known from Dominican amber. The acronyms of the depository institutions of the types are given below.

NHM – The Natural History Museum, Department of Entomology, London
CAS – California Academy of Sciences, Department of Entomology, San Francisco
IAvH – Alexander von Humboldt Biological Resources Research Institute, Bogota
INBio – Instituto Nacional de Biodiversidad, Santo Domingo de Heredia
MNHNP – Muséum National d’Histoire Naturelle, Paris
MZUSP – Museu de Zoologia da Universidade de São Paulo, São Paulo

Synopsis of the Neotropical diversity of the family

Chiletrichinae	
<i>Chiletricha</i> Chandler	8
<i>Eratomyia</i> Amorim & Rindal	2
Ohakuneinae	
<i>Ohakunea</i> Tonnoir & Edwards	1
<i>Colonomyia</i> Colless	7
<i>Cabamofa</i> Jaschhof	1
<i>Rogambara</i> Jaschhof	1
Total	20

Family RANGOMARAMIDAE Jaschhof & Didham, 2002

Rangomaramidae Jaschhof & Didham, 2002: 7. Type-genus: *Rangomarama* Jaschhof & Didham, 2002.

Ref. – Amorim & Rindal, 2007.

Subfamily Chiletrichinae Amorim & Rindal, 2007

Chiletrichinae Amorim & Rindal, 2007: 13. Type-genus: *Chiletricha* Chandler, 2002.

Genus *Chiletricha* Chandler, 2002

Chiletricha Chandler, 2002: 113. Type-species: *Chiletricha marginata* Edwards, 1940 (orig. des.).

Ref. – Amorim & Rindal, 2007.

dureti Chandler, 2002: 117, figs. 35 (♀ terminalia), 36 (wing). Type-locality: Chile, Linares, Fundo Molcho. Distr. – Chile (Linares), Argentina (Neuquén). Holotype ♀, MNHNP.

equalis (Freeman, 1951): 28, fig. 8 (♂ terminalia) (*Heterotricha*). Type-locality: Chile, Chiloé, Castro. Ref. – Chandler, 2002, figs. 28 (wing), 29-30 (♀ terminalia) (new comb., redescr., distr.). Distr. – Chile (Chiloé, Malleco), Argentina (Neuquén). Holotype ♂, NHM.

freemani Chandler, 2002: 116, figs. 46 (wing), 26 (♀ terminalia), 33-34 (♂ terminalia). Type-locality: Argentina, Neuquén, Pucará, Parque Nacional Lanín. Distr. – Argentina (Neuquén), Chile (Marga-marga). Holotype ♂, MNHNP.

marginata (Edwards, 1940): 444 (*Heterotricha*). Type-locality: Brasil, Santa Catarina, Nova Teutônia. Ref. – Lane, 1952: 131 (distr.); Chandler, 2002, figs. 19 (wing), 21 (♂ terminalia) (new comb., redescr., distr.); Amorim & Rindal, 2007, figs. 18 (thorax), 19, 195, 200 (♂ terminalia). Distr. – Brasil (Santa Catarina, São Paulo). Holotype ♂, NHM.

nudicostalis (Freeman, 1951): 28, fig. 7 (♂ terminalia) (*Heterotricha*). Type-locality: Chile, Chiloé, Mechuque I. Ref. – Chandler, 2002, figs. 23 (♂ terminalia), 27 (wing) (new comb., distr.). Distr. – Chile (Chiloé, Valdivia, Osorno). Holotype ♂, NHM.

penae Chandler, 2002: 117, figs. 37 (wing), 39-41 (♂ terminalia). Type-locality: Chile, Santiago, Cerro el Roble. Distr. – Chile (Santiago). Holotype ♂, MNHNP.

seminuda (Freeman, 1951): 27, fig. 6 (♂ terminalia), 270 (wing) (*Heterotricha*). Type-locality: Chile, Chiloé, Ancud. Ref. – Chandler, 2002, figs. 20 (wing), 22 (♂ terminalia), 25 (♀ terminalia) (new comb., redescr., distr.); Amorim & Rindal, 2007, figs. 16 (wing), 17 (mouthparts), 154 (wing). Distr. – Chile (Chiloé, Tierra del Fuego, Cautín, Osorno, Malleco), Argentina (Neuquén, Chubut). Holotype ♂, NHM.

spinulosa Chandler, 2002: 118, figs. 1 (thorax), 38 (wing), 31-32 (♀ terminalia), 42-45 (♂ terminalia). Type-locality: Chile, Curicó, El Coigual. Distr. – Chile (Curicó). Holotype ♂, MNHNP.

Genus *Eratomyia* Amorim & Rindal, 2007

Eratomyia Amorim & Rindal, 2007: 14. Type-species: *Eratomyia magnifica* Amorim & Rindal, 2007 (orig. des.).

magnifica Amorim & Rindal, 2007: 14, figs. 7 (head), 8 (thorax), 9 (apex of anterior tibia), 10 (wing), 11-15 (♂ terminalia). Type-locality: Ecuador, Quito-Baeza, E. Papallacta, 2,900 m. Distr. – Ecuador. Type ♂, MZUSP.

risaralda Amorim & Falaschi, 2010: 56, figs. 1 (wing), 2-3 (♂ terminalia), 4 (♀ terminalia). Type-locality: Colombia, Risaralda SFF, Otún Quimbaya, El Molinillo, 2,220 m. Type ♂, IAvH.

Subfamily Ohakuneinae Amorim & Rindal, 2007

Ohakuneinae Amorim & Rindal, 2007: 15. Type-genus: *Ohakunea* Tonnoir & Edwards, 1927.

Ref. – Chandler, 2002 (before the publication of *Cabamofa* and *Rogambara*, composing a clade with *Ohakunea* and *Colonomyia*); Jaschhof, 2005 (dealing with a “group of genera” including *Ohakunea* that corresponds to the composition of the Ohakuneinae)

Genus **Cabamofa** Jaschhof, 2005

Cabamofa Jaschhof, 2005: 328. Type-species. *Cabamofa mira* Jaschhof, 2005 (orig. des.).
Ref. – Amorim & Rindal, 2007.

mira Jaschhof, 2005: 330, figs. 16-17 (head), 18 (maxillary palpus), 19 (antenna), 20 (thorax), 21-22 (apex of fore tibia), 23 (flagellomere), 24-25 (wing), 26 (♂ terminalia). Type-locality: Costa Rica, Prov. Puntarenas, Parque Nacional Corcovado, Quebrada Ceniza, 300 m. Ref. – Amorim & Rindal, 2007, figs. 38 (thorax), 39 (head), 40-41 (wing), 42 (apex of fore tibia), 43 (tarsal claw), 44-47 (♂ terminalia) (descr. of male terminalia). Distr. – Costa Rica. Holotype ♂, INBio

Genus **Colonomyia** Colless, 1963

Colonomyia Colless, 1963: 305. Type-species. *Colonomyia albicaulis* Colless, 1963: 305 (orig. des.).
Ref. – Matile & Duret, 1994; Hippa & Jaschhof, 2004; Amorim & Rindal, 2007.

- acutistyla** Matile & Duret, 1994: 144, fig. 4 (♂ terminalia). Type-locality: Chile, Osorno, Pucatrihué. Distr. – Chile (Osorno). Holotype ♂, MNHNP.
- borea** Hippa & Jaschhof, 2004: 347, figs. 9 (hind basitarsus), 10 (♂ terminalia), 11, 14 (gonostyle), 12 (base of wing), 13 (♀ terminalia), 15-16 (parameres). Type-locality: Costa Rica, Cartago, Finca Los Lagos, Madre Selva, 2,600 m. Distr. – Costa Rica, Honduras, Venezuela. Holotype ♂, INBio.
- brasilliana** Amorim & Rindal, 2007: 15, figs. 20 (thorax), 21 (♂ terminalia). Type-locality: Brazil, São Paulo, Salesópolis, Boracéia. Distr. – Brazil (São Paulo). Holotype ♂, MZUSP.
- freemani** Amorim & Rindal, 2007: 16, figs. 22 (head), 23-24 (wing), 25 (thorax), 26 (♂ terminalia), 27 (♀ terminalia). Type-locality: Chile, Dalcahue, I. Chiloé. Distr. – Chile (Dalcahue). Holotype ♂, MZUSP.
- magellanica** Matile & Duret, 1994: 144, figs. 1 (wing), 3 (♂ terminalia). Type-locality: Argentina, Neuquén, Pucará, Parque Nacional Lanín. Ref. – Hippa & Jaschhof, 2004: 349, figs. 17 (♂ terminalia), 18 (gonostyle), 19 (apex of fore tibia), 20 (♀ terminalia). Distr. – Argentina (Neuquén, Ushuaia), Chile (Chiloé, Llanquihue, Osorno, Malleco) Holotype ♂, MNHNP.
- obtusistyla** Matile & Duret, 1994: 145, figs. 2 (wing), 5 (♂ terminalia). Type-locality: Argentina, Neuquén, Parque Nacional Lanín, Pucará. Ref. – Hippa & Haschhof, 2004, figs. 27 (4th flagellomere), 28 (apex of fore tibia), 29 (♂ terminalia), 30 (gonostyle). Distr. – Argentina (Neuquén), Chile (Llanquihue). Holotype ♂, MNHNP.
- sp.** Amorim & Rindal, 2007: 17, figs. 28 (head), 29-30 (wing), 31 (♀ terminalia). Distr. – Argentina (Río Negro) and Chile (Magallanes).

Genus **Ohakunea** Tonnoir & Edwards, 1927

Ohakunea Tonnoir & Edwards, 1927: 799. Type-species. *Ohakunea bicolor* Edwards, 1927 (orig. des.).
Ref. – Jaschhof & Hippa, 2003; Amorim & Rindal, 2007; Jaschhof & Jaschhof, 2008.

chilensis Freeman, 1951: 28, fig. 9 (♂ terminalia). Type-locality: Chile, L. Correntoso. Ref. – Jaschhof & Hippa, 2003, figs. 17 (apex of fore tibia), 18 (♂ terminalia) (redescr.). Amorim & Rindal, 2007: 18, figs. 32-33 (mouthparts), 34 (wing), 35 (thorax), 36-37 (♂ terminalia) (distr.). Distr. – Chile (Llanquihue, Dalcahue), Argentina (Río Negro). Holotype ♂, NHM.

Genus **Rogambara** Jaschhof, 2005

Rogambara Jaschhof, 2005: 323. Type-species. *Rogambara dentata* Jaschhof, 2005 (orig. des.).

Ref. – Amorim & Rindal, 2007. As stated above, there is an undescribed specimen of *Rogambara* in Dominican amber.

dentata Jaschhof, 2005: 325, figs. 1 (head), 2-4 (antenna), 5 (thorax), 6-7 (apex of fore tibia), 8-9 (wing), 10-12 (♂ terminalia), 13-14 (♀ terminalia), 15 (spermatheca). Type-locality: Costa Rica, Prov. Limón, Reserva Biológica Hitoy Cerere, Sendero Espavel, 550 m. Distribution: Costa Rica. Holotype ♂, MNHNP.

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