

Catalogue of Pyrgotidae (Diptera: Tephritoidea) from Chile

Christian R. González¹; Ramon Luciano Mello² & Mario Elgueta³

¹ Universidad Metropolitana de Ciencias de la Educación (UNCE), Facultad de Ciencias Básicas, Instituto de Entomología. Santiago, Chile. ORCID: <http://orcid.org/0000-0003-2582-6071>. E-mail: christian.gonzalez@umce.cl

² Universidade Federal de Mato Grosso do Sul (UFMS), Instituto de Biociências (INBIO), Setor de Zoologia, Laboratório de Sistemática de Diptera (LSD). Campo Grande, MS, Brasil. ORCID: <http://orcid.org/0000-0002-1914-5766>. E-mail: ramon.mello@ufms.br

³ Museo Nacional de Historia Natural, Área de Entomología. Santiago, Chile. ORCID: <http://orcid.org/0000-0002-7755-260X>. E-mail: mario.elgueta@mnhn.gob.cl

Abstract. A catalogue of the Pyrgotidae (Diptera) from Chile is provided. All valid names are presented, comprising three species in two genera for the country. All references known to us from the taxonomic and biological literature, to the included names, are provided, including information about name, author, year of publication, page number, type species, type locality, distribution, and references.

Keywords. Distribution; Neotropical Region; Teretrurinae.

INTRODUCTION

Pyrgotidae is a small family of Tephritoidea (Diptera) with worldwide distribution (Kim & Han, 2009). The family is composed by ca. 365 species in about 55 genera (Korneyev, 2006). According to Mello & Lamas (2016), the Neotropical fauna of Pyrgotidae is represented by 59 species in 13 genera. Among the Neotropical genera, *Leptopyrgota* Hendel is the most diverse with 33 species (Steyskal, 1967; Bernardi, 1991).

The family is divided into the subfamilies Pyrgotinae and Teretrurinae (McAlpine, 1990). Pyrgotinae, the most speciose subfamily, has a worldwide distribution and is composed by the tribes Prodalmaniini, Pyrgotini, Toxopyrgotini, and Toxurini (Korneyev, 2016). Teretrurinae, composed by 11 species in five genera, has a distribution restricted to South America and Oceania. The South American fauna of Teretrurinae is composed by the genera *Pyrgotosoma* Malloch and *Teretrura* Bigot.

South American Teretrurinae are restricted to Argentina and Chile (Steyskal, 1967), and the Chilean Pyrgotidae fauna is represented exclusively by the Teretrurinae. These flies can be easily recognized from other Pyrgotidae by the following combination of characters: ocelli present (absent in most Pyrgotinae); postpedicel rounded at apex; Sc reaching C at acute angle; R₄₊₅ bare dorsally; sternite 1 well developed, sclerotized and separated from sternite 2; and epandrium

setulose (Aczél, 1956a, b; McAlpine, 1973, 1990; Korneyev, 2004).

The immature stages of Pyrgotinae are internal abdominal parasites of adult Scarabaeidae (Coleoptera), and the adults are nocturnal (Mello, 2017). The only known biological record for a South American pyrgotid was presented by Mello *et al.* (2010) for the species *Carreapyrgota bernardii* Mello, Lamas & Rafael, 2010 flying in association with the scarab beetle *Pelidnota sordida* (Germar, 1824). The South American Teretrurinae are also likely to be nocturnal, given their often being collected in light traps as indicated on their specimens labels.

The Neotropical fauna of Pyrgotidae was catalogued by Stuardo (1946, as Otitidae), and Steyskal (1967), including the Chilean species. Studies of the species from southern South America are scarce (Malloch, 1933). The aim of this paper is to provide an updated catalogue of species of Chile with details of the taxonomic records.

MATERIAL AND METHODS

Distributions are cited for each species based on published records and new records of specimens in the collection of Museo Nacional de Historia Natural de Chile and from the database of specimens in the Canadian National Collection. Chilean distribution is presented by region (from north to south), province (from north to south)

Pap. Avulsos Zool., 2021; v.61: e20216112

<http://doi.org/10.11606/1807-0205/2021.61.12>

<http://www.revistas.usp.br/paz>

<http://www.scielo.br/paz>

Edited by: Rafaela Lopes Falaschi

Received: 14/08/2020

Accepted: 08/12/2020

Published: 29/01/2021

ISSN On-Line: 1807-0205

ISSN Printed: 0031-1049

ISNI: 0000-0004-0384-1825



and locality (arranged alphabetically). Since there are important vegetation and orographic differences in each province of the country, details of each collection record are provided. This catalogue follows the generic classification of Aczél (1956a, b).

Acronyms used (following Evenhuis, 2020): **CNC**: Canadian National Collection, Ottawa, Canada; **NHMUK**: The Natural History Museum, London, United Kingdom; **MNNC**: Museo Nacional de Historia Natural de Chile, Santiago, Chile; **OUMNH**: Oxford University Museum of Natural History, Oxford, United Kingdom; **USNM**: National Museum of Natural History [formerly, United States National Museum], Smithsonian Institution, Washington, D.C., USA.

RESULTS

Family Pyrgotidae Schiner

Pyrgotinae Schiner, 1868: 229. Type genus: *Pyrgota* Wiedemann, 1830: 580.

Subfamily Teretrurinae Malloch

Teretrurini Malloch, 1933: 248. Type genus: *Teretrura* Bigot, 1885: clxv.

Genus *Pyrgotosoma* Malloch

Pyrgotosoma Malloch, 1933: 252.

Type species: *Pyrgotosoma flavida* [= *flavidum*] Malloch, 1933: 253 (monotypy).

References: Aczél, 1956a: 181 (list); Aczél, 1956b: 8 (comments), 9 (key), 12 (list); Steyskal, 1967: 5 (catalogue); Korneyev, 2004: 22 (comments), Hernández-Ortiz, 2010: 957 (classification); Mello et al., 2010: 45 (comments); Mello & Lamas, 2014: 1 (comments).

Pyrgotosoma. Misspelling. Ref. Stuardo, 1946: 131 (catalogue [as Otitidae]).

flavidum Malloch

Pyrgotosoma flavida Malloch, 1933: 253.

Holotype: male, Argentina: Bariloche (NHMUK). Original misspelling.

Distribution: Chile, Región de Ñuble: Diguillín Province (Los Pirineos) (MNNC); Región del Bío-bío: Arauco Province (Pichinahuel) (CNC); Región de La Araucanía: Malleco Province (Angol, Galletué, Pehuenco) (CNC); Región de Magallanes: Magallanes Province (Laguna Amarga) (CNC). Argentina: Río Negro Province (San Carlos de Bariloche, Lago Gutiérrez, Lago Nahuel Huapi (Eastern End).

References: Malloch, 1933: 253 (description, fig. 52: head, lateral view), 254 (fig. 53: female sternite 6); Stuardo, 1946: 131 (catalogue, as Otitidae and *Pyrgotosoma – sic!*); Aczél, 1956a: 181 (list); Aczél, 1956b: 12 (list); Steyskal, 1967: 5 (catalogue); Mello, 2014: 501 (list, key), 503 (list).

Pyrgotosoma flavida. Genus misspelling. Reference Stuardo, 1946: 131 (cat.).

Pyrgotosoma flavidum. Corrected spelling. Reference Steyskal, 1967: 5 (cat.); Mello, 2014: 501 (list, key), 503 (list).

Genus *Teretrura* Bigot

Teretrura Bigot, 1885: clxv.

Type species: *Teretrura flaveola* Bigot, 1885: clxv (monotypy).

References: Hendel, 1913: 78 (key), 79-81 (redescription); Hendel, 1914: 170 (list); Bezzi, 1929: 2 (list); Hendel, 1934: 142 (key); Malloch, 1933: 248 (redescription), 249 (key); Curran, 1934: 270 (key); Enderlein, 1942: 101 (key); Stuardo, 1946: 131 (catalogue); Aczél, 1956a: 168-169 (comments), 171 (comments), 173 (comments), 181 (list); Aczél, 1956b: 8 (comments), 9 (comments, key), 12 (list); Hennig, 1958: 580 (comments); Steyskal, 1967: 5 (catalogue); McAlpine, 1990: 367 (morphology); Sabrosky, 1999: 28 (list), 302 (catalogue); Evenhuis & Pont, 2004: 57 (list); Korneyev, 2004: 22 (comments); Hernández-Ortiz, 2010: 957 (classification); Mello et al., 2010: 45 (comments); Mello & Lamas, 2014: 1 (comments); Mello, 2014: 500 (comments).

flaveola Bigot

Teretrura flaveola Bigot, 1885: clxv.

Holotype: female, Chile (without locality) (OUMNH).

Distribution: Chile, Región de La Araucanía: Cautín Province (Los Paraguas, E Volcan Llaima). Argentina.

References: Hendel, 1913: 81 (comments); Bezzi, 1929: 2 (list); Malloch, 1933: 249 (key, redescription), 250 (fig. 51: head, lateral view); Stuardo, 1946: 131 (catalogue); Aczél, 1956a: 167-168 (comments), 170-173 (comments), 181 (list); Aczél, 1956b: 7 (fig. A: wing), 9 (key), 10 (redescription); Steyskal, 1967: 5 (catalogue); Sabrosky, 1999: 302 (catalogue); Evenhuis & Pont, 2004: 57 (list); Mello, 2014: 501 (list), 502 (key), 503 (list).

tinctipennis Malloch

Teretrura tinctipennis Malloch, 1933: 251.

Holotype: male, Chile: Casa Pangué (USNM).

Distribution: Chile. Región del Maule: Curicó Province (El Coigo) (CNC); Región de La Araucanía: Arauco Province

(Pichinahuel) (CNC), Malleco Province (Malalcahuelo) (CNC); Región de Los Lagos: Llanquihue Province (Casa Panguat PN Vicente Pérez Rosales); Región de Magallanes: Última Esperanza Province (Lago Lazo at PN Torres del Paine) (MNNC), Magallanes Province (Río Cameron) (CNC). Argentina: Río Negro Province (Bariloche).

References: Stuardo, 1946: 131 (catalogue); Aczél, 1956a: 181 (list); Aczél, 1956b: 9 (key), 12 (list); Steyskal, 1967: 5 (catalogue); Mello, 2014: 501 (list), 502 (key), 503 (list).

DISCUSSION

The diversity of Pyrgotidae in Chile is low compared with other countries of South America (Steyskal, 1967; Mello, 2014). Finally, in this catalogue we recognize three species of Pyrgotidae in two genera and one subfamily for Chile. The genus *Teretrura* Bigot is the most species-richest with two species.

ACKNOWLEDGMENTS

We are very grateful to Dr. James E. O'Hara (CNC) for sending information about material from the collection.

AUTHORS' CONTRIBUTION

All the authors contributed with results collections, writing, supervision, editing and revision of the manuscript.

REFERENCES

- Aczél, M. 1956a. Revisión parcial de las Pyrgotidae neotropicales y antárticas con sinopsis de los géneros y especies (Diptera, Acalypratae). Parte I. *Revista Brasileira de Entomologia*, 4: 161-184.
- Aczél, M. 1956b. Revisión parcial de las Pyrgotidae neotropicales y antárticas con sinopsis de los géneros y especies (Diptera, Acalypratae). Parte II. *Revista Brasileira de Entomologia*, 5: 1-70.
- Bernardi, N. 1991. Notas sobre o gênero *Leptopyrgota* Hendel, com descrição de vinte e uma novas espécies do Brasil (Diptera, Pyrgotidae). *Revista Brasileira de Zoologia*, 7(3): 327-350.
- Bezzi, M. 1929. Australian Pyrgotidae (Diptera). With an Appendix by J.R. Malloch. *Proceedings of the Linnean Society of New South Wales*, 54: 1-20.
- Bigot, J.M.F. 1885. [Diagnoses de deux genres nouveaux de diptères appartenant à la famille des Ortalidae]. *Bulletin Bimensuel de la Société Entomologique de France*, 1885(18): clxv-clxvi.
- Curran, C.H. 1934. Family Pyrgotidae. In: *The families and genera of North American Diptera*. New York, The Ballou Press. p. 268-270.
- Enderlein, G. 1942. Klassifikation der Pyrgotiden. *Sitzungsberichte der Gesellschaft Naturforschender Freunde*, 2: 98-134.
- Evenhuis, N.L. 2020. *The insect and spider collections of the world website*. Available: <http://hbs.bishopmuseum.org>. Access: 12/2020.
- Evenhuis, N.L. & Pont, A.C. 2004. The Diptera genera of Jacques-Marie-Frangile Bigot. *Zootaxa*, 751: 1-94.
- Hendel, F. 1913. Neue Beiträge zur Kenntnis der Pyrgotinen. *Archiv für Naturgeschichte*, 79(9-12): 77-117.
- Hendel, F. 1914. Diptera, Familien Muscaridae, subfamilien Pyrgotinae. In: Wytsman P. (Ed.). *Genera Insectorum*. Bruxelles. Fascicle 157, p. 1-179.
- Hendel, F. 1934. Übersicht über die Gattungen der Pyrgotiden, nebst Beschreibung neuer Gattungen und Arten. *Encyclopédie Entomologique, Diptera*, 7: 141-156.
- Hennig, W. 1958. Die Familien der Diptera Schizophora und ihre phylogenetischen Verwandtschaftsbeziehungen. *Beiträge zur Entomologie*, 8(5/6): 505-688.
- Hernández-Ortiz, V. 2010. Pyrgotidae (Pyrgotid flies). In: Brown, B.V.; Borkent, A.; Cumming, J.M.; Wood, D.M.; Woodley, N.E. & Zumbado, M.A. (Eds.). *Manual of Central American Diptera*. Vol. 2. Ottawa, National Research Council Press. p. 955-961.
- Kim, S.K. & Han, H.Y. 2009. Taxonomic review of the Korean Pyrgotidae (Insecta: Diptera: Tephritoidea). *Korean Journal of Systematic Zoology*, 25(1): 65-80. [DOI](#)
- Korneyev, V. 2004. Genera of Palaearctic Pyrgotidae (Diptera, Acalyprata), with nomenclatural notes and a key. *Vestnik Zoologii*, 38: 19-46.
- Korneyev, V. 2006. A revision of Afrotropical species of the *Eupyrgota* (Diptera, Pyrgotidae): the *spinifemur* group and *latipennis* subgroup of species. *Vestnik Zoologii*, 40: 3-25. http://www.v-zool.kiev.ua/pdfs/2006/2/02_Korneyev.pdf.
- Korneyev, V. 2016. New taxa and synonymy in the family Pyrgotidae (Diptera, Tephritoidea). I. Tribes Prodalmanniini and Toxopyrgotini. *Vestnik Zoologii*, 50: 39-48. [DOI](#)
- Malloch, J.R. 1933. Acalyprata (Helomyzidae, Trypetidae, Sciomyzidae, Sapromyzidae, etc.). *Diptera of Patagonia and South Chile*. London, The British Museum (Natural History). Part 6, Fascicle 4, 248-254, Plates I-VII
- McAlpine, D.K. 1973. The Australian Platystomatidae (Diptera, Schizophora) with a revision of five genera. *Australian Museum Memoir*, 15: 1-256.
- McAlpine, D.K. 1990. The taxonomic position of the Ctenostylidae (= Lochmostylinae; Diptera: Schizophora). *Memórias do Instituto Oswaldo Cruz*, 84 (Suppl. 4): 365-371, 1989.
- Mello, R.L. 2014. Pyrgotidae. In: Roig-Juñent, S.; Claps, L.E. & Morrone, J.J. (Eds.). *Biodiversidad de artrópodos argentinos*. San Miguel de Tucumán, Editorial INSUE-UNT. v. 4, p. 499-503.
- Mello, R.L. 2017. Lista das espécies de Pyrgotidae (Diptera, Tephritoidea) do Estado do Mato Grosso do Sul. *Iheringia, Série Zoologia*, 107(supl.): 1-2, e2017145. [DOI](#)
- Mello, R.L. & Lamas, C.J.E. 2014. Review of the genera *Stenopyrgota* Malloch and *Tropidothrinax* Enderlein (Diptera, Pyrgotidae). *Revista Brasileira de Entomologia*, 58: 1-6. [DOI](#)
- Mello, R.L. & Lamas, C.J.E. 2016. Family Pyrgotidae. *Zootaxa*, 4122(1): 582-584.
- Mello, R.L.; Lamas, C.J.E. & Rafael, J.A. 2010. Revision of the Neotropical genus *Carrerapyrgota* Aczél (Diptera, Pyrgotidae) with the description of two new species. *Zootaxa*, 2515: 45-64.
- Sabrosky, C.W. 1999. Family-group names in Diptera. An annotated catalog. *Myia*, 10: 1-360.
- Schiner, R.J. 1868. Diptera. In: von Wüllerstorff-Urbair, B. (Ed.). *Reise der österreichischen Fregatte Novara (q. v.) Zoologischer Theil. Vol. 2. Abtheilung. 1. (Sect.)*, Wien, B.K. Gerold's Sohn. p. 1-388.
- Steyskal, G.C. 1967. 56. Family Pyrgotidae. In: Papavero, N. (Ed.). *A catalogue of the Diptera of the America South of the United States*. São Paulo, Secretaria da Agricultura, Departamento de Zoologia. p. 1-8.
- Stuardo, C. 1946. *Catálogo de los dípteros de Chile*. Santiago del Chile, Ministerio de Agricultura, Impresiones Universitaria. 250p.
- Wiedemann, C.R.W. 1830. *Aussereuropäische zweiflügelige Insekten. Als Fortsetzung des Meigenschen Werks*. Hamm, Schulz. v. 2, xii + 684p., 5 pls.