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## An update of the blow flies (Diptera: Calliphoridae) of the Galápagos Islands, and first record of *Chrysomya rufifacies* (Macquart) from mainland Ecuador

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### Abstract

Seven species of Calliphoridae are reported from the Galápagos Islands, Ecuador: *Lucilia pionia* (Walker), *L. setosa* (James), *L. deceptor* (Curran), *L. eximia* (Wiedemann), *Cochliomyia macellaria* (Fabricius), *Chrysomya albiceps* (Wiedemann), and *Chrysomya megacephala* (Fabricius). *Lucilia eximia* is newly recorded from the islands. *Lucilia* sp. near *pionia* is recorded from the island of Española. The distribution and collection records of these species are discussed and listed, and a key to their identification is provided. *Chrysomya rufifacies* (Macquart) is reported for the first time from mainland Ecuador and the identification of this species is outlined.

**Key words:** Calliphoridae, endemic *Lucilia* species, *Lucilia eximia*, *Chrysomya rufifacies*, Galápagos Islands, Ecuador

### Introduction

The Galápagos Islands (Ecuador) are famous worldwide for their unique flora and fauna and are now one of the most intensively studied areas in the Neotropical Region, especially the marine biota, seed plants and vertebrates. The diversity of the arthropod fauna has been intensively surveyed and studied over the past several decades, as highlighted by the detailed reviews of the beetles and minor insect orders of the Galápagos by Peck (2001, 2006).

Knowledge of the Galápagos Diptera has been reviewed by Sinclair (2009) and a checklist is available at: <http://checklists.datazone.darwinfoundation.org/terrestrial-invertebrates/diptera/>. Introduced species and threats to the indigenous fauna have been discussed and analyzed by Peck *et al.* (1998) and Causton *et al.* (2006).

This paper continues a series of studies by various authors reviewing families of Galápagos Diptera (listed in Sinclair & Cumming, 2013). Seven species of Calliphoridae belonging to three genera are recorded from the Galápagos Islands: *Lucilia pionia* (Walker, 1849), *L. setosa* (James, 1966), *L. deceptor* (Curran, 1934), *L. eximia* (Wiedemann, 1819b), *Cochliomyia macellaria* (Fabricius, 1775), *Chrysomya albiceps* (Wiedemann, 1819a), and *Chrysomya megacephala* (Fabricius, 1794). Specimens collected from Española Island are assigned as *Lucilia* sp. near *pionia*. The study also reports the first record of *Chrysomya rufifacies* (Macquart, 1844) from mainland Ecuador.

### Material and methods

This study is based on blow fly (Diptera: Calliphoridae) specimens collected from the Galápagos Islands and deposited in the California Academy of Sciences (CAS), the Canadian National Collection of Insects (CNC), the Charles Darwin Research Station (CDRS), and the United States National Museum of Natural History (USNM) (Appendix 1). Dates of collection of examined specimens range from 1899 to 2007. The individual island records listed in Table 1 are based primarily on specimens examined by the authors and supplemented by additional records from Curran (1934) and James (1966).

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**APPENDIX 1.** Collection records for all specimens of Calliphoridae examined from the Galápagos Islands. Records listed under individual islands, using preferred Ecuadorian names (see Peck 2001).

### *Chrysomya albiceps*

**Caamaño:** 1.ii.2007, A. Mieles (1♀, CNC).

**Floreana:** Black beach, arid zone, 21.iii.1989, B.J. Sinclair (1♀, CNC); 6 km E, Black beach, 380 m, 21–28.iii.1989, *Scalesia* forest, Malaise, FIT, S. Peck & B.J. Sinclair (3♀, CNC); Black beach, 10 m littoral-arid, FIT, 21–28.iii.1989, S. Peck & B.J. Sinclair (1♀, CNC); 3 km E, Black beach, 120 m, 21–28.iii.1989, upper arid zone, Malaise, FIT, S. Peck & B.J. Sinclair (1♂, 2♀, CNC); 5 km E, Black beach, 350 m, 22–25.iii.1989, *Scalesia* forest, carrion trap, B.J. Sinclair (1♂, 2♀, CNC); 8 km E, Black beach, 360 m, 22–28.iii.1989, *Scalesia*, FIT, S. Peck & B.J. Sinclair (2♀, CNC); 5 km E, Black beach, 250 m, 22–28.iii.1989, trans. zone, Malaise, FIT, S. Peck & B.J. Sinclair (1♂, 1♀, CNC); 3 km E, Black beach, 100 m, 24.iii.1989, arid zone, dung trap, B.J. Sinclair (1♂, 2♀, CNC).

**Isabela:** Villamil, 4 km NW, 2–15.iii.1989, arid forest Malaise, 20 m, S. Peck & B.J. Sinclair (1♂, 1♀, CNC); Villamil, 12 km NW, 2–15.iii.1989, trans. forest, 150 m, FIT, S. Peck & B.J. Sinclair (1♂, CNC); Villamil, 2 km W, 2–15.iii.1989, brackish meadow, 2 m, Malaise, S. Peck & B.J. Sinclair (1♂, 1♀, CNC); Villamil, 9–15.iii.1989, 3 m arenal scrub carrion trap, S. Peck (2♂, 6♀, CNC); V. Alcedo, Zona Cumbre, Trampa Amarilla, 16–18.x.1999, L. Roque (1♂, CDRS); Alcedo Bosque Pega-Pega, 29.x.–2.xi.2000, yellow trap, L. Roque (1♀, CDRS); V. Alcedo, Zona Pega Pega, Trampa amarilla, 28.x.–