

CDF Checklist of Galapagos Ants, bees, wasps and related groups

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Abstract

This Checklist of Galapagos Ants, bees, wasps and related groups includes a total of all 78 taxa reported from the Galapagos Islands. For each name, detailed information is provided: its Galapagos distribution in islands groups or bioregions generated from the specimen records, comments about the taxonomy (especially synonyms), the origin (native and introduced), taxon status (accepted vs. rejected records) and relevant literature references.

Introduction

This publication lists all species of Galapagos Ants, bees, wasps and related groups currently known.

The **Hymenoptera** are among largest orders of insects, comprising diverse groups like sawflies, wasps, bees, termites, and ants.

The name refers to their transparent wings, from the Greek *hymen* meaning “membrane” and *pteron* meaning “wing”.

Methods

This checklist of all known Galapagos Ants, bees, wasps and related groups is automatically generated using the online database of the Charles Darwin Foundation Galapagos Species Checklist.

All CDF Galapagos Species Checklists represent the synthesis of many different records: literature citations, data from previously unpublished reports (grey literature), specimen records of natural history collections located in Galapagos and all over the world. To the best of their knowledge authors of the individual checklists revised all available data. When new information becomes available, the taxonomy of a group changes or new species are discovered, the CDF online database and thus this publication becomes updated.

For many poorly known species groups the higher taxonomic classification still regularly changes according to how our knowledge about species being related changes. In many well known groups the phylogeny is somewhat stable, but to avoid confusion, in particular for groups where taxonomic changes are frequent, all checklists presented here are sorted alphabetical according to genus name and specific epithet. Please refer to the website for the currently accepted taxonomic hierarchy of each group.

Please be aware that the distribution presented here is automatically generated from specimen records and does not always accurately reflect the known distribution for all species.

For marine species, the distribution generally refers to the five main bioregions of the archipelago (Far Northern, Northern, Western, South Eastern and the Elisabeth Bay Bioregion). For the terrestrial species more than 120 islands, islets and small rocks have been aggregated into Islands Groups, thus, for example, the island group "Santa Cruz" includes smaller islands like Santa Fé, Plaza Norte, Plaza Sur, Baltra, Daphne Mayor, Daphne Minor, and others.

IUCN red-list assessments presented here may deviate from the global IUCN list for the following reasons:

- for well known species groups like vascular plants or vertebrates updates proposed to the IUCN are shown instead of the outdated, but currently accepted status;
- for poorly known species groups (e.g., lichenized fungi) a general assessment is currently not possible and the list presented here is a regional red-list list for Galapagos archipelago.

Numbers of the species included in this list are auto-generated. Adding up the number of species in each category will not always equal the total number indicated. Some species have insufficient data to be categorized while others (e.g., category eradicated) will not be included in the total.

Results

Names of taxa included in this checklist: 78 (65 accepted, 1 unidentified taxon, 2 doubtful, 4 preliminary identification, 4 problematic, 2 new to science).

Origin of the taxa included: 55 accidental, 1 questionable accidental, 3 questionable native, 6 endemic, 2 questionable endemic.

1. *Adelomyrmex myops* (Wheeler, 1910)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Isabela.

References: Causton, C.E. et al. (2008), Herrera, H.W. et al. (2008).

2. *Anagyrus trinidadensis* (Kerrich, 1953)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Apoanagyrus trinidadensis* (Kerrich, 1953)

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Causton, C.E. et al. (2008), Peck, S.B. et al. (1998).

3. *Anthidium vigintiduopunctatum* Friese

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Unknown.

References: Gonzalez, V.H. et al. (2009).

4. *Aphytis acutaspidis* Rosen & DeBach, 1979

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

5. *Brachygastra lecheguana* (Latreille, 1824)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: San Cristóbal.

References: Causton, C.E. et al. (2008), Hogue, C. et al. (1993), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996), Roque-Albelo, L. et al. (1999).

6. *Brachymeria cabira* (Walker, 1838)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: No Data.

Galapagos Distribution: Isabela, San Cristóbal.

7. *Brachymeria funscolombi* (Dufoni)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: No Data.

Galapagos Distribution: Isabela, San Cristóbal.

8. *Brachymyrmex heeri* Forel, 1874

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz.

References: Causton, C.E. et al. (2008), Herrera, H.W. et al. (2008).

9. *Camponotus conspicuus zonatus* Emery, 1894

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Floreana, Isabela, Marchena, Pinta, San Cristóbal, Santa Cruz, Santiago.

10. *Camponotus macilentus* F. Smith, 1877

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Fernandina, Floreana, Isabela, Marchena, Pinta, Santa Cruz, Santiago.

References: Jaramillo, P. et al. (2005), McMullen, C.K. et al. (2010), McMullen, C.K. et al. (2011), Stitz, H. et al. (1932), von Aesch, L. et al. (2005).

11. *Camponotus planus* F. Smith, 1877

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Fernandina, Isabela, Marchena, San Cristóbal, Santa Cruz, Santiago.

References: Jaramillo, P. et al. (2010), Stitz, H. et al. (1932), von Aesch, L. et al. (2005).

12. *Cardiocondyla emeryi* Forel, 1881

Taxon status: Accepted name; taxon occurs in Galapagos.

Cardiocondyla emeryi Forel, 1881: 5 (w.) VIRGIN IS. AndrÃ©, 1881b: 69 (m.); Forel, 1904f: 422 (q.); Emery, 1909a: 26 (m. ergatoid m., not q.); Arnold, 1916: 201 (q.). Senior synonym of nereis: Wilson & Taylor, 1967: 53; of monilicornis: Baroni Urbani, 1973: 200; of mahdii, mauritia, rasalamae: Bolton, 1982: 312. See also: Smith, M.R. 1944a: 33; Kugler, J. 1984: 3; Seifert, 2003a: 276. Current subspecies: nominal

plus fezzanensis.

Origin: Introduced, Accidental.

Galapagos Distribution: Fernandina, Floreana, Genovesa, Isabela, Marchena, Pinta, San Cristóbal, Santa Cruz, Santa Fé, Santiago, Wolf.

References: Lubin, Y.D. et al. (1984), von Aesch, L. et al. (2005).

13. *Cardiocondyla minutior* Forel, 1899

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Fernandina, Floreana, Isabela, Marchena, Pinta, San Cristóbal, Santa Cruz, Santiago, Wolf.

14. *Cardiocondyla nuda* (Mayr, 1866)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: von Aesch, L. et al. (2005).

15. *Centrodora mireyae* (DeSantis, 1981)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

16. *Centrodora perkinsi* (Waterston, 1917)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

17. *Cheiloneurus elegans* (Dalmon, 1820)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Cheiloneurus elegans elegantissimus* DeSantis, 1964

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

18. *Coccophagus rusti* Compere, 1928

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

19. *Conura femorata* (Fabricius, 1775)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Floreana, Isabela, San Cristóbal.

References: Peck, S.B. et al. (1998).

20. *Crematogaster "JTL-022"*

Taxon status: Identification not yet confirmed.

Origin: Introduced, Accidental.

Galapagos Distribution: San Cristóbal.

21. *Crematogaster curvispinosa* Mayr, 1862

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Accidental.

Galapagos Distribution: Santa Cruz.

22. *Cylindromyrmex whymeri* (Cameron, 1891)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Holcaponera whymeri* Cameron, 1891: 92, fig. (w.) ECUADOR. Combination in *Cylindromyrmex*: Forel, 1892f: 256. Junior synonym of *striatus*: Emery, 1901a: 54. Revived from synonymy and senior synonym of *schmidti*, *tibialis*, *williamsi*: De Andrade, 1998a: 596.

Origin: Introduced, Questionable Accidental.

Galapagos Distribution: Isabela, Santa Cruz.

23. *Cyphomyrmex nesiotus* Snelling & Longino, 1992

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Isabela.

24. *Cyphomyrmex rimosus* (Spinola, 1851)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz.

References: Causton, C.E. et al. (2008), Herrera, H.W. et al. (2008).

25. *Cyphomyrmex sp. nov. "hh04"*

Taxon status: Unpublished name (Nomen nudum).

Origin: No Data.

Galapagos Distribution: Isabela, Santa Cruz.

26. *Diplazon laetatorius* Fabricius, 1781

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998), Peck, S.B. et al. (1996).

27. *Dorymyrmex pyramicus albemarlensis* Wheeler, 1919
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, No Data.
Galapagos Distribution: Española, Fernandina, Genovesa, Isabela, Marchena, Pinta, Santa Cruz, Santa Fé.
References: Wheeler, W.M. et al. (1924), Wheeler, W.M. et al. (1933).
28. *Encarsia citrina* (Craw, 1891)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (1998).
29. *Encarsia diaspidicola* (Silvestri, 1909)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (1998).
30. *Encarsia pergandiella* Howard, 1907
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Causton, C.E. et al. (2008), Peck, S.B. et al. (1998).
31. *Evania appendigaster* (Linnaeus, 1758)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (1998), Peck, S.B. et al. (1996).
32. *Hypoponera beebei* (Wheeler, 1924)
Taxon status: Taxonomic status unresolved or unrevised.
Origin: No Data.
Galapagos Distribution: Marchena, Santa Cruz.
References: Linsley, E.G. et al. (1966), Peck, S.B. et al. (1994), Peck, S.B. et al. (1994).
33. *Hypoponera opaciceps* (Mayr, 1887)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Fernandina, Floreana, Isabela, San Cristóbal, Santa Cruz.
References: Peck, S.B. et al. (1994), Peck, S.B. et al. (1994).
34. *Hypoponera punctatissima* (Roger, 1859)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Causton, C.E. et al. (2008).

35. *Hypoconera* sp.

Taxon status: Taxon not identified to species, subspecies, form or variety.

Origin: No Data.

Galapagos Distribution: Floreana, Isabela, San Cristóbal, Santa Cruz, Santiago.

References: Lubin, Y.D. et al. (1984), von Aesch, L. et al. (2005).

36. *Leptogenys* "*jel-san*"

Taxon status: Identification not yet confirmed.

Origin: Native, Questionable Endemic.

Galapagos Distribution: Santa Cruz.

37. *Leptogenys* sp. nov. "*hh03*"

Taxon status: Unpublished name (Nomen nudum).

Origin: No Data.

Galapagos Distribution: Santa Cruz.

38. *Macroteleia absona* Muesebeck, 1977

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

39. *Megachile timberlakei* Cockerell

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Unknown.

References: Rasmussen, C. et al. (2012).

40. *Monomorium destructor* (Jerdon, 1851)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Floreana, Isabela, Santa Cruz.

References: Causton, C.E. et al. (2008), von Aesch, L. et al. (2005).

41. *Monomorium floricola* (Jerdon, 1851)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Española, Fernandina, Floreana, Genovesa, Isabela, Marchena, Pinta, San Cristóbal, Santa Cruz, Santa Fé, Santiago.

References: Causton, C.E. et al. (2008), Linsley, E.G. et al. (1966), Lubin, Y.D. et al. (1984), McMullen, C.K. et al. (2011), Palacios, R.A. et al. (1975), Peck, S.B. et al. (1994), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996), von Aesch, L. et al. (2005), Wheeler, W.M. et al. (1924).

42. *Monomorium pharaonis* Linnaeus, 1758
Taxon status: Taxonomic status unresolved or unrevised.
Origin: No Data.
Galapagos Distribution: Santa Cruz.
References: Linsley, E.G. et al. (1966), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996).
43. *Nylanderia fulva nesiotis* Wheeler, 1919
Taxon status: Taxonomic status unresolved or unrevised.
Prenolepis fulva Mayr, 1862: 698 (w.q.) BRAZIL. Forel, 1891b: 94 (m.); Forel, 1912i: 67 (m.). Combination in Pr. (Nylanderia): Forel, 1908b: 67; in Paratrechina (Nylanderia): Emery, 1925b: 222; in Nylanderia: Kempf, 1972a: 166; in Paratrechina: Snelling, R.R. & Hunt, 1976: 122; in Nylanderia: LaPolla, Brady & Shattuck, 2010a: 127. Senior synonym of fumata: Wild, 2007b: 45. See also: Fernández, 2000: 146; Fox, et al. 2010: 795. Current subspecies: nominal plus biolleyi, cubana, fumatipennis, incisa, longiscapa, nesiotis.
Origin: No Data.
Galapagos Distribution: Santa Cruz.
References: Wheeler, W.M. et al. (1933).
44. *Odontomachus bauri* Emery, 1892
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Questionable Native.
Galapagos Distribution: Floreana, Isabela, San Cristóbal, Santa Cruz.
References: Linsley, E.G. et al. (1966), von Aesch, L. et al. (2005).
45. *Odontomachus ruginodis* Smith, 1937
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
46. *Odynerus galapagensis* Williams, 1926
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Isabela.
References: Abedrabbo, S. et al. (1991), Arnaud, P. H. Jr. et al. (1970), Linsley, E.G. et al. (1966), Williams, F.X. et al. (1926).
47. *Orasema costaricensis* Wheeler & Wheeler, 1937
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (1998).
48. *Paratrechina longicornis* (Latreille, 1802)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Española, Floreana, Isabela, San Cristóbal, Santa Cruz.

References: Jaramillo, P. et al. (2005), Linsley, E.G. et al. (1966), McMullen, C.K. et al. (2010), von Aesch, L. et al. (2005), Wheeler, W.M. et al. (1933).

49. *Paratrechina steinheili* (Forel, 1893)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: San Cristóbal, Santa Cruz.

50. *Paratrechina vaga* (Forel, 1901)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, No Data.

Galapagos Distribution: Santa Cruz.

51. *Pheidole "hh01"*

Taxon status: Identification not yet confirmed.

Origin: No Data.

Galapagos Distribution: Isabela, Santa Cruz, Santiago.

52. *Pheidole aff. megacephala* (Fabricius, 1793)

Taxon status: Identification not yet confirmed.

Origin: Introduced, Accidental.

Galapagos Distribution: San Cristóbal, Santa Cruz.

References: Mueller-Dombois, D. et al. (1987).

53. *Pheidole cf. williamsi* Wheeler, 1919

Taxon status: The identification of this taxon or its occurrence in Galapagos is doubtful.

Origin: No Data.

Galapagos Distribution: San Cristóbal, Santa Cruz.

54. *Pheidole flavens* Roger, 1863

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz.

55. *Pheidole williamsi* Wheeler, 1919

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Isabela, Pinta, Santa Cruz.

References: Linsley, E.G. et al. (1966), Lubin, Y.D. et al. (1984).

56. *Polistes versicolor* (Oliver, 1791)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Floreana, Isabela, San Cristóbal.

References: Abedrabbo, S. et al. (1991), Causton, C.E. et al. (2008), Footitt, R.G. et al. (2009), Langlor,

D.W. et al. (2009), McMullen, C.K. et al. (2011), Peck, S.B. et al. (1994), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996), Peck, S.B. et al. (1994), Roque-Albelo, L. et al. (1999).

57. *Pteroptrix albifemur* (Girault, 1915)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Archenomus imitatrix* (Fullaway)

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

58. *Pyramica membranifera* (Emery, 1869)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Isabela, Santa Cruz, Santiago.

References: Causton, C.E. et al. (2008), Herrera, H.W. et al. (2008).

59. *Rogeria curvipubens* Emery, 1894

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Isabela, Santa Cruz.

References: Causton, C.E. et al. (2008), Herrera, H.W. et al. (2008).

60. *Sceliphron caementarium* (Drury, 1773)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Causton, C.E. et al. (2008).

61. *Solenopsis geminata* (Fabricius, 1804)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Floreana, Isabela, San Cristóbal, Santa Cruz.

References: Causton, C.E. et al. (2006), Causton, C.E. et al. (2012), Causton, C.E. et al. (2008), Causton, C.E. et al. (2012), Causton, C.E. et al. (2008), Heraty, J.M. et al. (1994), Herrera, H.W. et al. (2008), Herrera, H.W. et al. (2010), Hoffmann, B.D. et al. (2004), Holway, D.A. et al. (2002), Lubin, Y.D. et al. (1984), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996), Pezzatti, P. et al. (1998), Plentovich, S. et al. (2011), Plentovich, S. et al. (2010), Roque-Albelo, L. et al. (1999), Tschinkel, W.R. et al. (2006), von Aesch, L. et al. (2005), Wheeler, W.M. et al. (1919).

62. *Solenopsis globularia pacifica* Wheeler, 1919

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Questionable Native.

Galapagos Distribution: Española, Fernandina, Floreana, Genovesa, Isabela, Pinta, San Cristóbal, Santa Cruz, Santa Fé, Santiago.

References: Linsley, E.G. et al. (1966), von Aesch, L. et al. (2005), Wheeler, W.M. et al. (1924).

63. *Solenopsis gnomia* Pacheco, Herrera & Mackay, 2007
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Questionable Endemic.
Galapagos Distribution: Isabela, Santa Cruz.
References: Pacheco, J. et al. (2007).
64. *Spalangia cameroni* Perkins, 1910
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (1998).
65. *Spalangia drosophilae* Ashmead, 1887
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (1998).
66. *Spalangia endius* Walker, 1839
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (1998).
67. *Strumigenys emmae* (Emery, 1890)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Floreana, Isabela, Santa Cruz.
68. *Strumigenys louisianae* Roger, 1863
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Floreana, Isabela, San Cristóbal, Santa Cruz.
References: von Aesch, L. et al. (2005).
69. *Tapinoma melanocephalum* (Fabricius, 1793)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Española, Fernandina, Floreana, Isabela, Marchena, Pinta, San Cristóbal, Santa Cruz, Santa Fé, Santiago.
References: Linsley, E.G. et al. (1966), Lubin, Y.D. et al. (1984), McMullen, C.K. et al. (2011), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996), von Aesch, L. et al. (2005), Wheeler, W.M. et al. (1924).
70. *Tetramorium bicarinatum* (Nylander, 1846)
Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Española, Fernandina, Floreana, Genovesa, Isabela, San Cristóbal, Santa Cruz, Santiago.

References: Causton, C.E. et al. (2008), von Aesch, L. et al. (2005).

71. *Tetramorium caldarium* (Roger, 1857)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Floreana.

References: von Aesch, L. et al. (2005).

72. *Tetramorium cf. lanuginosum* Mayr, 1810

Taxon status: The identification of this taxon or its occurrence in Galapagos is doubtful.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

73. *Tetramorium lanuginosum* Mayr, 1870

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Española, Floreana, San Cristóbal, Santa Cruz, Wolf.

74. *Tetramorium simillimum* (F. Smith, 1851)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Española, Floreana, Isabela, San Cristóbal, Santa Cruz, Santiago.

References: Linsley, E.G. et al. (1966), Lubin, Y.D. et al. (1984), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996), von Aesch, L. et al. (2005), Wheeler, W.M. et al. (1933).

75. *Trissolcus teretis* Johnson

Taxon status: Taxonomic status unresolved or unrevised.

Origin: Introduced, Accidental.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1998).

76. *Venturia canescens* Gravenhorst, 1829

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: San Cristóbal.

References: Peck, S.B. et al. (1998), Peck, S.B. et al. (1996).

77. *Wasmannia auropunctata* (Roger, 1863)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Española, Floreana, Isabela, Marchena, San Cristóbal, Santa Cruz, Santiago.

References: Causton, C.E. et al. (2006), Causton, C.E. et al. (2005), Causton, C.E. et al. (2012), Causton,

C.E. et al. (2008), Causton, C.E. et al. (2012), Causton, C.E. et al. (2008), Fournier, D. et al. (2005), Herrera, H.W. et al. (2008), Holway, D.A. et al. (2002), Linsley, E.G. et al. (1977), Lubin, Y.D. et al. (1984), McMullen, C.K. et al. (2010), Orivel, J. et al. (2009), Peck, S.B. et al. (1998), Peck, S.B. et al. (1996), Peck, S.B. et al. (1986), Peck, S.B. et al. (1996), Peck, S.B. et al. (1986), Roque-Albelo, L. et al. (1999), von Aesch, L. et al. (2005).

78. *Xylocopa darwini* Cockerell, 1926

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Floreana, Isabela.

References: Abedrabbo, S. et al. (1991), Cockerell, T.D.A. et al. (1935), Helsen, P. et al. (2008), Jaramillo, P. et al. (2010), Jaramillo, P. et al. (2010), Linsley, E.G. et al. (1966), McMullen, C.K. et al. (1987), McMullen, C.K. et al. (2010), McMullen, C.K. et al. (2011), Parkin, P. et al. (1972).

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References

1. Abedrabbo, S. (1991) *Nueva Avispa Introducida en las Islas*. Carta Informativa 31: 4.
2. Arnaud, P. H. Jr. (1970) *Lists of the scientific publications and insect taxa described by Francis Xavier Williams (1882-1967)*. Occas. Pap. Calif. Acad. Sci. 80: 1-33.
3. Causton, C.E., Sevilla C. & Porter S.D. (2005) *Eradication of the little fire ant, *Wasmannia auropunctata* from Marchena Island, Galápagos on the edge of success?* Florida Entomologist 88: 159–168.
4. Causton, C.E., Peck, S. B., Sinclair, B. J., Roque-Albelo, L., Hodgson, C. J. & B. Landry. (2006) *Alien insects: threats and implications for the conservation of the Galapagos Islands*. Annals of the Entomological Society of America, 99(1), 121-143.
5. Causton, C.E., Sevilla, C. (2008) *Latest Records of Introduced Invertebrates in Galapagos and Measures to control them*. Galapagos Report 2006-2007, CDF, GNP and INGALA, Puerto Ayora, Galapagos, Ecuador, p. 142-145.
6. Causton, C.E., Sevilla, C. (2008) *Últimos Registros de Invertebrados Introducidos en Galápagos y Medidas para Controlarlos*. Informe Galápagos 2006-2007, CDF, GNP and INGALA, Puerto Ayora, Galápagos, Ecuador, p. 146-149.

7. Causton, C.E., Sevilla, C., Cabrera, W., Carrion, A. & Carrion, V. (2012) *Evaluación del Manejo de Hormigas Invasoras Galápagos. Reporte técnico*. Fundación Charles Darwin, Dirección Parque Nacional Galápagos, Island Conservation. 80pp.
8. Causton, C.E., Sevilla, C., Cabrera, W., Carrion, A. & Carrion, V. (2012) *Plan Estratégico Manejo Hormigas Invasoras Galápagos. Reporte técnico*. Fundación Charles Darwin, Dirección Parque Nacional Galápagos, Island Conservation. 20pp.
9. Cockerell, T.D.A. (1935) *The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 28 The Carpenter Bees of the Galapagos Islands*. Proc. Calif. Acad. Sci., Fourth Series, 21(28): 379-382.
10. Footitt, R.G., Adler, P.H. (2009) *Insect Biodiversity: Science and Society*, John Wiley & Sons. pp. 494.
11. Fournier, D., Estoup, A., Orivel, J., Foucaud, J., Jourdan, H. Le Breton, J., & Keller, L. (2005) *Clonal reproduction by males and females in the little fire ant*. Nature 435 (7046): 1230–4. doi:10.1038/nature03705. PMID 15988525
12. Gonzalez, V.H., Koch, J.B. & Griswold, T. (2009) *Anthidium vigintiduopunctatum Friese (Hymenoptera: Megachilidae): the elusive “dwarf bee” of the Galapagos Archipelago?* Biological Invasions DOI 10.1007/s10530-009-9651-9
13. Helsen, P., Verdyck, P., Tye, A., Van Dongen, S. (2008) *Low levels of genetic differentiation between Opuntia echios varieties on Santa Cruz (Galápagos)* Springer-Verlag. 2009
14. Heraty, J.M. (1994) *Biology and importance of two eucharitid parasites of Wasmannia and Solenopsis*. In Williams, D. F. (ed.) *Exotic ants: Biology, impact, and control of introduced species*, Westview Press, Boulder, CO.: 104-120.
15. Herrera, H.W., Longino, J.T. (2008) *New records of introduced ants (Hymenoptera: Formicidae) in the Galapagos Islands*. Galapagos Research 65: 16-19.
16. Herrera, H.W., Causton, C.E. (2008) *Distribution of Fire Ants Solenopsis geminata and Wasmannia auropunctata (Hymenoptera: Formicidae) in the Galapagos Islands*. Galapagos Research 65: 11-14.
17. Herrera, H.W., Causton, C.E. (2010) *First Inventory of ants (Hymenoptera: Formicidae) on Baltra Island, Galápagos*. Noticias de Galápagos 67: 13-17
18. Hoffmann, B.D., O'Connor, S. (2004) *Eradication of two exotic ants from Kakadu National Park*. Ecological Management and Restoration 5:98–105
19. Hogue, C. (1993) *Latin American Insects and Entomology*. University of California Press. 430 pp.
20. Holway, D.A., Lach, L., Suarez, A.V., Tsutsui, N.D. & Case, T.J. (2002) *The Causes and Consequences of Ant Invasions* Annu. Rev. Ecol. Syst. 33: 181-233.
21. Jaramillo, P., Reyes, D. & Yáñez, P. (2005) *Arthropods in the Charles Darwin Research Station herbarium, Galápagos, during 1999-2001. GALAPAGOS RESEARCH*. Noticias de Galápagos. 63: 23-25.
22. Jaramillo, P., Trigo, M. M., Ramírez, E. & Mauchamp, A. (2010) *Insect Pollinators of Jasminocereus thouarsii, an endemic cactus of the Galapagos Islands*. Galapagos Research 67: 21-25.

23. Jaramillo, P., Atkinson, R. (2010) *Evaluating Genetic Diversity for the Conservation of the Threatened Galápagos Endemic Calandrina galapagosa (Portulacaceae)* Biotropica. The journal, of Tropical, Biology and Conservation
24. Langlor, D.W., Sweeney, J. (2009) *Ecological Impacts of Non-Native Invertebrates and Fungi on Terrestrial Ecosystems* Springer. 66 pp.
25. Linsley, E.G., Usinger, R.L. (1966) *Insects of the Galápagos Islands*. Proceedings of the California Academy of Sciences Fourth Series 33(7): 113-196.
26. Linsley, E.G. (1977) *Insects of the Galápagos (Supplement)*. Occasional Papers of the California Academy of Sciences 125: 1-50.
27. Lubin, Y.D. (1984) *Changes in the native fauna of the Galápagos Islands following invasion by the little red fire ant, Wasmannia auropunctata*. Biological Journal of the Linnean Society 21(1-2): 229-242.
28. McMullen, C.K. (1987) *Biología reproductiva de las Angiospermas de las Islas Galapagos*. Pg. 39 - 52. Memorias: Taller sobre investigación Botánica y manejo en galapagos.
29. McMullen, C.K. (2010) *Nocturnal and diurnal pollination of Clerodendrum molle (Verbenaceae) in the Galápagos Islands* Plant Syst Evol (2011) 292:15-23
30. McMullen, C.K. (2011) *Pollination of the heterostylos Galápagos native, Cordia lutea (Boraginaceae)* Plant Syst Evol (2012) 298:569-579
31. Mueller-Dombois, D., Loope, L. (1987) *Algunos Aspectos Ecológicos unicos en Ecosistemas de Islas Oceánicas*. Memorias Taller sobre investigación Botánica y manejo en Galápagos. Pg. 24-32.
32. Orivel, J., Grangier, J., Foucaud, J., Le Breton, J., ANDRÈS, F. X., Jourdan, H., Delabie, J. C., Fournier, D., Cerdan, P., Facon, B., Estoup. A. & Dejean, A. (2009) *Ecologically heterogeneous populations of the invasive ant Wasmannia auropunctata within its native and introduced ranges*. Ecological Entomology, 34(4), 504-512.
33. Pacheco, J., Herrera, H.W. & Mackay, W. (2007) *A new species of Thief Ant of the Genus Solenopsis from the Galápagos Islands (Hymenoptera: Formicidae)*. Sociobiology 50(3): 1075-1086.
34. Palacios, R.A., Bravo, L.D. (1975) *Estudio morfologico de las semillas de Prosopis, II: Algunas especies Norteamericanas y Neotropicales*. Darwiniana 19(2-4): 357-372.
35. Parkin, P., Parkin D.T., Ewing, A.W. & Ford, H.A. (1972) *A report on the arthropods collected by the Edinburgh University Galapagos Islands Expedition, 1968*. The Pan-pacific Entomologist 48: 100-107.
36. Peck, S.B., Kukalova-Peck J. (1986) *Preliminary summary of the subterranean fauna of the galapagos islands, Ecuador. Part II. The insects, evolution, and biogeography*. Proc. 9th Intl. Congr. Speleology, Barcelona 2: 166-169.
37. Peck, S.B., Peck, J. (1986) *The Galapagos Islands. Volcanic caves and cave fauna of the Galapagos Islands*. The Canadian Caver 18(1): 42-49.
38. Peck, S.B. (1994) *Aerial dispersal of insects between and to islands in the Galápagos archipelago, Ecuador*. Annls. Entomol. Soc. Am. 87(2): 218-224.

39. Peck, S.B. (1994) *Sea-surface (Pleuston) transport of insects between islands in the Galápagos archipelago, Ecuador*. *Anns. Entomol. Soc. Am.* 87(5): 576-582.
40. Peck, S.B. (1996) *Origin and development of an insect fauna on a remote archipelago: The Galápagos Islands, Ecuador*. In: Keast A., Miller S.E. (eds.): *The origin and evolution of Pacific Island biotas, New Guinea to eastern Polynesia: patterns and processes*. SPB Academic Publishing, Amsterdam, The Netherlands, p. 91-122.
41. Peck, S.B. (1996) *The arthropods of the allobiosphere (barren lava flows) of the Galapagos islands, Ecuador* *Noticias de Galápagos* 56: 9-12.
42. Peck, S.B., Heraty, J., Landry, B. & Sinclair, B.J. (1998) *Introduced insect fauna of an oceanic archipelago: The Galápagos Islands, Ecuador*. *Am. Entomol.* 44: 218-237.
43. Pezzatti, P., Irzan, T. & Cherix, D. (1998) *Ants (Hymenoptera, Formicidae) of Floreana lost paradise?* *Noticias de Galápagos* 59: 11–20.
44. Plentovich, S., Swenson, C., Reimer, N., Richardson, M., & Garon, N. (2010) *The effects of hydramethylnon on the tropical fire ant, Solenopsis geminata (Hymenoptera: Formicidae), and non-target arthropods on Spit Island, Midway Atoll, Hawaii*. *J Insect Conserv* 14:459–465
45. Plentovich, S., Eijzenga, J., Eijzenga, H., & Smith, D. (2011) *Indirect effects of ant eradication efforts on offshore islets in the Hawaiian Archipelago*. *Biological Invasions* 13: 345-557.
46. Rasmussen, C. (2012) *Megachile timberlakei Cockerell (Hymenoptera: Megachilidae): Yet another adventive bee species to the Galapagos Archipelago* *The pan-Pacific Entomologist* 88(1):98–102
47. Roque-Albelo, L., Causton, C. (1999) *El niño and introduced insects in the galápagos islands: different dispersal strategies, similar effects*. *Noticias de Galápagos* 60: 30-36.
48. Stitz, H. (1932) *The Norwegian Zoological Expedition to the Galapagos Islands 1925, Conducted by Alf Wollebæk. 5. Formicidae*. *Med. Zool. Mus., Oslo* 31: 367-372.
49. Tschinkel, W.R. (2006) *The Fire Ants*. Belknap Press.
50. Wheeler, W.M. (1919) *Expedition of the California Academy of Sciences to the Galapagos Islands, 1905-1906. Part 15. The ants of Cocos Island*. *Proc. Calif. Acad. Scs., 4th Series* 2(2): 299-308.
51. Wheeler, W.M. (1924) *The Formicidae of the Harrison Williams Galapagos Expedition*. *Zoologica* 5(10): 101-122.
52. Wheeler, W.M. (1933) *The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 6 Formicidae of the Templeton Crocker Expedition*. *Proc. Cal. Acad. Sc., Fourth Series* 21(6): 57-64.
53. Williams, F.X. (1926) *Expedition of the California Academy of Sciences to the Galapagos Islands, 1905-1906. XVIII. The bees and aculeate wasps of the Galapagos Islands*. *Proceedings of the California Academy of Sciences Fourth Series* 2(18): 347-357.
54. von Aesch, L., Cherix, D. (2005) *Introduced Ant Species and Mechanisms of Competition on Floreana Island (Galápagos, Ecuador) (Hymenoptera: Formicidae)*. *Sociobiology* 45(2): 463-481.

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