

CDF Checklist of Galapagos Grasshoppers, locusts and crickets

Stewart B. Peck, Daniel Otte

Last updated: 24 Jan 2014

Abstract

This Checklist of Galapagos Grasshoppers, locusts and crickets includes a total of all 36 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 Grasshoppers, locusts and crickets currently known.

The Order **Orthoptera** contains a varied assemblage of insects, which are usually herbivores, but some may be predators or scavengers.

Considering the richness of the mainland Ecuador fauna, the island fauna are highly impoverished.

Colonization may have been by flight (and wind) for strong fliers such as *Schistocerca*, *Sphingonotus*, and *Neoconocephalus*.

Rafting is more likely for weak fliers and flightless groups, especially in the Gryllidae (Nemobiinae and Mogoplistinae).

Seventy-four percent of the endemic species are flightless. Loss of flight ability on the Galapagos has occurred in *Halmenus* (maybe it is a descendent from a *Schistocerca* locust), *Closteridea*, *Gryllus*, and *Conocephalus*.

Of special note is the evolution of the two species of eyeless subterranean *Anurogryllus* crickets. No eyed ancestor of these is known in the islands. Evolution of endemics in the Orthoptera has been relatively frequent when compared to most other insect groups.

Methods

This checklist of all known Galapagos Grasshoppers, locusts and crickets 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Species Checklists represent the synthesis of many different records: literature citations, data from previously unpublished reports (grey literature), specimen records of natural history collections located in Galapagos and all over the world.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: 36 (31 accepted, 1 unidentified taxon, 4 new to science).

Origin of the taxa included: 4 accidental, 28 endemic, 1 indigenous.

1. *Anaulocomera darwinii* Scudder, 1893

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Anaulocomera cornucervi*

Origin: Native, Endemic.

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

References: Hebard, M. et al. (1920), Linsley, E.G. et al. (1966), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

2. *Anurogryllus sp. 2*

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

Origin: Native, Endemic.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

3. *Anurogryllus typhlops* Otte & Peck, 1998

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Isabela.

References: Otte, D. et al. (1998), Peck, S.B. et al. (2001).

4. *Closteridea bauri* Scudder, 1893
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Floreana, San Cristóbal, Santa Cruz.
References: Dirsh, V.M. et al. (1969), Hebard, M. et al. (1920), Linsley, E.G. et al. (1977), Linsley, E.G. et al. (1966), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).
5. *Conocephalus exitiosus* (McNeil, 1901)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz, Santiago.
References: Hebard, M. et al. (1920), Linsley, E.G. et al. (1966), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).
6. *Conocephalus sp. nov. 1*
Taxon status: Unpublished name (Nomen nudum).
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz.
References: Peck, S.B. et al. (2001).
7. *Conocephalus sp. nov. 2*
Taxon status: Unpublished name (Nomen nudum).
Origin: Native, Endemic.
Galapagos Distribution: San Cristóbal, Santa Cruz.
References: Peck, S.B. et al. (2001).
8. *Copiphora brevicauda* Karny, 1912
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz, Santa Fé.
References: Peck, S.B. et al. (1996), Peck, S.B. et al. (1998), Peck, S.B. et al. (2001).
9. *Cycloptilum erraticum* Scudder, 1893
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: No Data.
Galapagos Distribution: Española, Fernandina, Floreana, Genovesa, Isabela, Marchena, Pinta, Pinzón, San Cristóbal, Santa Cruz, Santiago.
References: Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).
10. *Cycloptilum lepismoide* McNeill, 1901
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Española, Fernandina, Floreana, Genovesa, Isabela, Marchena, Pinta, Pinzón, San Cristóbal, Santa Cruz, Santiago.
References: Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

11. *Grylloides sigillatus* (Walker)
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Introduced, Accidental.
Galapagos Distribution: Genovesa, Marchena, San Cristóbal, Santa Cruz.
References: Peck, S.B. et al. (1996), Peck, S.B. et al. (1998), Peck, S.B. et al. (2001), Peck, S.B. et al. (1996).
12. *Gryllus abditus* Otte & Peck, 1997
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Española, Fernandina, Floreana, Isabela, San Cristóbal, Santa Cruz, Santa Fé, Santiago.
References: Otte, D. et al. (1997), Peck, S.B. et al. (2001).
13. *Gryllus abingdoni* Otte & Peck, 1997
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Pinta, Santa Cruz, Santa Fé.
References: Otte, D. et al. (1997), Peck, S.B. et al. (2001).
14. *Gryllus darwini* Otte & Peck, 1997
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Darwin, Santa Cruz.
References: Otte, D. et al. (1997), Peck, S.B. et al. (2001).
15. *Gryllus galapageius* Scudder, 1893
Taxon status: Accepted name; taxon occurs in Galapagos.
Syn.: *Gryllus assimilis*
Origin: Native, Endemic.
Galapagos Distribution: Santa Cruz, Santa Fé, Santiago.
References: Otte, D. et al. (1997), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).
16. *Gryllus genovesa* Otte & Peck, 1997
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Genovesa, Santa Cruz.
References: Otte, D. et al. (1997), Peck, S.B. et al. (2001).
17. *Gryllus isabela* Otte & Peck, 1997
Taxon status: Accepted name; taxon occurs in Galapagos.
Origin: Native, Endemic.
Galapagos Distribution: Isabela.
References: Otte, D. et al. (1997), Peck, S.B. et al. (2001).

18. *Gryllus marchena* Otte & Peck, 1997

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Isabela, Marchena, Santa Cruz.

References: Otte, D. et al. (1997), Peck, S.B. et al. (2001).

19. *Gryllus pinta* Otte & Peck, 1997

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Española, Pinta, Santa Cruz.

References: Otte, D. et al. (1997), Peck, S.B. et al. (2001).

20. *Halmenus choristopterus* Snodgrass, 1902

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Halmenus robustus choristopterus*

Origin: Native, Endemic.

Galapagos Distribution: Floreana, Isabela.

References: Dirsh, V.M. et al. (1969), Linsley, E.G. et al. (1977), Parkin, P. et al. (1972), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

21. *Halmenus cuspidatus* Snodgrass, 1902

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Halmenus robustus cuspidatus*

Origin: Native, Endemic.

Galapagos Distribution: Isabela.

References: Dirsh, V.M. et al. (1969), Linsley, E.G. et al. (1977), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

22. *Halmenus eschatus* Hebard, 1920

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Santa Cruz, Wolf.

References: Dirsh, V.M. et al. (1969), Hebard, M. et al. (1920), Linsley, E.G. et al. (1977), Linsley, E.G. et al. (1966), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

23. *Halmenus robustus* Scudder, 1893

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Halmenus robustus robustus*

Origin: Native, Endemic.

Galapagos Distribution: Floreana, Genovesa, Isabela, Santa Cruz, Santa Fé, Santiago.

References: Dirsh, V.M. et al. (1969), Linsley, E.G. et al. (1977), Linsley, E.G. et al. (1966), Parkin, P. et al. (1972), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

24. *Hygronemobius daphne* Otte & Peck, 1998

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

Galapagos Distribution: Darwin, Isabela, Santa Cruz.

References: Otte, D. et al. (1998), Peck, S.B. et al. (2001).

25. *Hygronemobius sp. nov. 1*

Taxon status: Unpublished name (Nomen nudum).

Origin: No Data.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1990), Peck, S.B. et al. (1996).

26. *Hygronemobius sp. nov. 2*

Taxon status: Unpublished name (Nomen nudum).

Origin: No Data.

Galapagos Distribution: Santa Cruz.

References: Peck, S.B. et al. (1990).

27. *Hygronemobius speculi* (McNeill, 1901)

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Darwin, Española, Fernandina, Floreana, Isabela, San Cristóbal, Santa Cruz, Santa Fé.

References: Hebard, M. et al. (1920), Linsley, E.G. et al. (1966), Otte, D. et al. (1998), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

28. *Jarmilaxipha ecuadorica* Otte & Peck, 1998

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Introduced, Accidental.

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

References: Otte, D. et al. (1998), Peck, S.B. et al. (2001).

29. *Neoconocephalus triops* (Linnaeus, 1758)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Conocephalus insulanus*, *C. insularum*

Origin: Native, Indigenous.

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

References: Hebard, M. et al. (1920), Hickin, N. et al. (1979), Linsley, E.G. et al. (1966), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

30. *Nesoecia cooksonii* (Butler, 1877)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Nesoecia cooksoni ensifer*, *N. pallidus*, *N. paludicola*

Origin: Native, Endemic.

Galapagos Distribution: Española, Fernandina, Floreana, Genovesa, Isabela, Pinzón, Santa Cruz, Santa Fé, Santiago.

References: Linsley, E.G. et al. (1977), Parkin, P. et al. (1972), Peck, S.B. et al. (2001).

31. *Nesoecia padulicola* McNeill, 1901

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Isabela.

32. *Pteronemobius cristobalensis* Otte & Peck, 1998

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: San Cristóbal, Santa Cruz.

References: Otte, D. et al. (1998), Peck, S.B. et al. (2001).

33. *Pteronemobius santacruzensis* Otte & Peck, 1998

Taxon status: Accepted name; taxon occurs in Galapagos.

Origin: Native, Endemic.

Galapagos Distribution: Isabela, San Cristóbal, Santa Cruz.

References: Otte, D. et al. (1998), Peck, S.B. et al. (2001).

34. *Schistocerca literosa* (Walker, 1870)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Schistocerca discoidalis*, *Schistocerca punctata*, *Schistocerca hyalina*

Origin: Native, Endemic.

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

References: Chapman, R.F. et al. (2000), Dirsh, V.M. et al. (1969), Hebard, M. et al. (1920), Linsley, E.G. et al. (1977), Linsley, E.G. et al. (1966), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

35. *Schistocerca melanocera* (Stål, 1860)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Schistocerca minor*, *Schistocerca pallida*, *Schistocerca lineata*, *Schistocerca immaculata*, *Schistocerca intermedia*, *Schistocerca borealis*

Origin: Native, Endemic.

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

References: Chapman, R.F. et al. (2000), Dirsh, V.M. et al. (1969), Hebard, M. et al. (1920), Hickin, N. et al. (1979), Linsley, E.G. et al. (1977), Linsley, E.G. et al. (1966), Parkin, P. et al. (1972), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001).

36. *Sphingonotus fuscoirroratus* (Stål, 1860)

Taxon status: Accepted name; taxon occurs in Galapagos.

Syn.: *Sphingonotus tetranesiotis* Snodgrass, 1902, *S. tetranesiotis tetranesiotis* Snodgrass, 1902, *S. tetranesiotis barringtonensis* Snodgrass, 1902, *S. tetranesiotis charlesensis* Snodgrass, 1902, *S. tetranesiotis hoodensis* Snodgrass, 1902, *S. tetranesiotis indefatigabilensis* Snodgrass, 1902, *S. trinesiotis* Snodgrass, 1902, *S. trinesiotis trinesiotis* Snodgrass, 1902, *S. trinesiotis indefatigabilensis* Snodgrass, 1902, *S. trinesiotis albemarlensis* Snodgrass, 1902, *S. trinesiotis chathamensis* Snodgrass, 1902 fide Roskov et al. (2013)

Origin: Native, Endemic.

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

References: Dirsh, V.M. et al. (1969), Hebard, M. et al. (1920), Linsley, E.G. et al. (1977), Linsley, E.G. et al. (1966), Peck, S.B. et al. (1996), Peck, S.B. et al. (2001), Roskov Y. et al. (2013).

Acknowledgements

We are grateful for the financial report received for this project. Please refer to the website (www.darwinfoundation.org/datazone/checklist/) for a detailed list of all our donors.

This checklist would not be possible without adjunct and collaborating scientists, and volunteers of the Charles Darwin Foundation. The following scientists and volunteers have contributed to the CDF Checklist of Galapagos Grasshoppers, locusts and crickets: Sandra Abedrabbo, Fabián Bersosa, Ruth Boada, Charlotte Causton, Germania Estévez, Lilian Guzmán, Henri W. Herrera, María T. Lasso, María Piedad Lincango, E. G. Linsley, Yale Lubin, Alejandro Mieles, Renato Oquendo, Helmut W. Rogg, Lázaro Roque-Álbelo, Bradley J. Sinclair, Leslie Usinger.

References

1. Chapman, R.F., Espelie, K.E., Peck, S.B. (2000) *Cuticular hydrocarbons of grasshoppers from the Galapagos Islands, Ecuador*. *Biochemical Systematics and Ecology* 28: 579-588.
2. Dirsh, V.M. (1969) *Acridoidea of the Galapagos Islands (Orthoptera)*. *Bull. British Museum Entomology* 23(2): 28-51.
3. Hebard, M. (1920) *Expedition of the California Academy of Sciences to the Galapagos Islands, 1905-1906. 17. Dermaptera and Orthoptera*. *Proceedings of the California Academy of Sciences, Fourth Series* 2(17): 311-346.
4. Hickin, N. (1979) *Animal life of the Galapagos*. Ferundune Books, Faringdon, U.K., 236 pp.
5. 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.
6. Linsley, E.G. (1977) *Insects of the Galápagos (Supplement)*. *Occasional Papers of the California Academy of Sciences* 125: 1-50.
7. Otte, D., Peck, S.B. (1997) *New species of gryllus (Orthoptera: Grylloidea: Gryllidae) from the Galapagos Islands*. *Journal of Orthoptera Research* 6: 161-173.
8. Otte, D., Peck, S.B. (1998) *A new blind Anurogryllus from the Galapagos Islands, Ecuador (Orthoptera: Gryllidae: Brachytrupinae)*. *Journal of Orthoptera Research* 7: 227-229.
9. Otte, D., Peck, S.B. (1998) *Crickets of the Galapagos Islands, Ecuador (Orthoptera: Gryllidae: Nemobiinae and Trigonidiinae)*. *Journal of Orthoptera Research* 7: 231-240.
10. 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.
11. Peck, S.B. (1990) *Eyeless arthropods of the Galapagos Islands, Ecuador: Composition and origin of the cryptozoic fauna of a young, tropical, oceanic archipelago*. *Biotropica* 22(4): 366-381.

12. Peck, S.B. (1996) *Diversity and distribution of the orthopteroid insects of the Galápagos Islands, Ecuador*. Canadian Journal of Zoology 74: 1497-1510.
13. Peck, S.B. (1996) *The arthropods of the allobiosphere (barren lava flows) of the Galapagos islands, Ecuador* Noticias de Galápagos 56: 9-12.
14. 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.
15. Peck, S.B. (2001) *Small Orders of Insects of the Galápagos Islands, Ecuador: Evolution, Ecology, and Diversity*. NRC Research Press, Ottawa, Ontario, Canada, 278 pp.
16. Roskov Y., Kunze T., Paglinawan L., Orrell T., Nicolson D., Culham A., Bailly N., Kirk P., Bourgoin T., Baillargeon G., Hernandez F., De Wever A., (eds.) (2013) *Species 2000 & ITIS Catalogue of Life, 2013 Annual Checklist* Digital resource at www.catalogueoflife.org/annual-checklist/2013/. Species 2000: Reading, UK

Disclaimer

The Charles Darwin Foundation Galapagos Species Checklist is a continuously updated list of all species currently known from the Galapagos Islands and reflects up-to-date knowledge compiled by scientists of the Charles Darwin Foundation (CDF) in collaboration with experts from around the world. CDF shares this data publicly and invites comments, corrections and additions.

Please do not hesitate to contact us; your input is very welcome. However, please understand that additions, changes, and corrections will be posted at periodic intervals after thorough cross-referencing of all new data. As an independent international scientific organization, the Charles Darwin Foundation relies on funding from donors who support our work. Please contact us at datazone@fcdarwin.org.ec if you would like to support the Charles Darwin Foundation Galapagos Species Checklist and help make knowledge of Galapagos biodiversity more widely available.