

INSECTS OF THE ORDER ORTHOPTERA OF THE PINCHOT EXPEDITION OF 1929¹

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The Orthoptera brought back in 1929 by the Pinchot Expedition to the South Seas were mostly taken on Barro Colorado Island, Canal Zone, and in the Galapagos Islands. This material, numbering 66 specimens of 20 species, represents no new genera and but one new species. There are, however, a number of new geographical records.

For convenience the following report is separated under geographical headings. All specimens bear the Pinchot expedition label, and one indicates the collector, Dr. A. K. Fisher. Some also bear the Accession No. 105848.

WEST INDIES

Nymphs of two well-known roaches comprise the only Orthoptera brought by the expedition from the West Indies. They are as follows:

Family BLATTIDAE

Periplaneta australasiae Fabricius: One small nymph labeled "G. Cayman, W. I., Apr. 17, 1929."

Pycnoscelus surinamensis Linnaeus: One immature specimen bearing same data as above.

BARRO COLORADO ISLAND, CANAL ZONE

The artificial island of Barro Colorado, standing in an artificial lake resulting from the Panama Canal project, seems to be a naturalist's paradise. Fairchild² presents a map of the island and its surroundings, together with several excellent photographs; and a small book by W. C. and M. H. Allee, entitled "Jungle Island," published in 1925, has to do with the flora and fauna of this island, but it contains no reference to Orthoptera. The only paper known to the writer listing even in part the forms occurring on Barro Colorado is one by Allee³ in 1926, which listed representative forms of various

¹ The narrative of this expedition will be found in the book *To the South Seas*, by Gifford Pinchot, published in 1930.

² *Journ. Heredity*, vol. 15, pp. 99-102, 1924.

³ *Ecology*, vol. 7, pp. 445-468, 1926.

stratifications of the tropical forest. No list of the Orthoptera of the island as a whole has yet appeared, and special collections should be formed before such a list approaching completeness is attempted.

All the Orthoptera taken here were collected on May 3, 1929.

Family TETTIGONIIDAE

Subfamily PHANEROPTERINAE

Insara bolivari Griffini: Two adult males. The National Museum also contains a male of this species taken on the island by S. W. Frost, January 21, 1929.

Subfamily LISTROSCELINAE

Phlugis teres De Geer: One adult female. A female taken by N. Banks on the island on June 26, 1924, is in the National Museum.

Family ACRIDIDAE

Subfamily ACRIDINAE

Amblytropidia insignis Hebard: One adult male.

Orphulella punctata De Geer: Three male and three female adults and one immature female. All these are of the brown phase, but specimens of both green and brown forms were taken on the island by P. Rau and are in the National Museum.

Subfamily OEDIPODINAE

Heliastus venezuelae Saussure: A single female is labeled "From boat 2 days out from Panama, July 23, 1929." Thus its exact locality of origin is unknown, but it is probably not Barro Colorado Island. Aside from *Paulinia acuminata* De Geer, which is included by Hebard under the subfamily name Paulininae, this seems to be the only member of the subfamily Oedipodinae now in our Panamanian lists.

Subfamily CYRTACANTHACRINAE⁴

Opshomala cylindroides Stal: One female. The female of this species and that of *O. goethalsi* Hebard are said to be almost inseparable.

⁴ Recently this rather well-established subfamily name for the spine-breasted grasshoppers has been dropped by some writers in favor of the name Catantopinae. As priority does not prevail in names higher than genera, one is allowed to use his judgment in such matters. If any change at all were necessary the name Podisminae would be preferable, as that is based on the oldest included generic name. Indeed this name is so much shorter and more euphonic that it would be chosen by the present writer for adoption except for the fact that the longer name Cyrtacanthacrinae is now so well established in general use.

arable. Neither species seems to have been recorded before from Barro Colorado, and the present specimen is here listed as *cylindrodes* mostly because it is the older of the two names.

Osmilia flavolineata De Geer: One male.

Xyleus rosulentus Stal: One adult male taken on the island by Allee. This species was not collected by the Pinchot expedition, but it is entered here for the purpose of record and to introduce the following matter for nomenclatorial interest:

In 1822 Kuhl erected a genus of reptiles under the name *Tropinotus*, which was, as I am informed by Dr. Leonhard Stejneger, a nomen nudum. Four years later, Bois⁵ validated the genus under the emended name *Tropidonotus*. In 1831 Serville erected his genus *Tropinotus* in the Orthoptera, and this generic name was emended to *Tropidonotus* by Stal in 1878. In 1848 Gistel⁶ proposed the generic name *Xyleus* to replace the preoccupied Servillean name. Not knowing of this erection of a replacing name by Gistel, Bolivar introduced for the same purpose the new name *Diedronotus* in 1906. Thus it is clear that Gistel's name *Xyleus* is the proper name for this genus, *Tropinotus* and *Diedronotus* falling into synonymy under Gistel's name.

GALAPAGOS ISLANDS

The Orthoptera of the Galapagos have been rather fully covered. Günther in 1877⁷ presented a report on the forms taken in these islands by the expedition of H. M. S. *Peterel*; in 1889⁸ Howard listed a few forms; and Scudder,⁹ in 1893, gave an illustrated report of the Orthoptera of the Galapagos Islands in which appears a résumé of earlier literature, the most comprehensive treatment of the fauna of this region up to that time. In 1901 McNeill¹⁰ reported on the Orthoptera of the Hopkins Stanford Galapagos expedition of 1898-99, and in the following year Snodgrass¹¹ discussed the acridid genera *Schistocerca*, *Sphingonotus*, and *Halmenus* occurring in these islands. This paper is accompanied by a map of the islands comprising the Galapagos Group. The latest comprehensive report on Galapagos Orthoptera is by Hebard,¹² who treats the material collected by the expedition of the California Academy of Sciences to the Galapagos Islands, 1905-6. A review of previous records is also given. The latest mention of importance

⁵ Isis von Oken, 1826, p. 205.

⁶ Naturgeschichte des Thierreichs für höhere Schulen, p. xi, Stuttgart, 1848.

⁷ Proc. Zool. Soc. London, 1877, pp. 87-88.

⁸ Proc. U. S. Nat. Mus., vol. 12, pp. 192-194, 1889.

⁹ Bull. Mus. Comp. Zool., vol. 25, no. 1, 25 pp., 3 pls., 1893.

¹⁰ Proc. Washington Acad. Sci., vol. 3, pp. 487-506, 1901.

¹¹ Proc. Washington Acad. Sci., vol. 4, pp. 411-454, pls. 26, 27, 1902.

¹² Proc. California Acad. Sci., ser. 4, vol. 2, pp. 311-346, 1 pl., 11 figs., 1920.

is by William Beebe in 1924 in his book "Galapagos, World's End," where *Anaulacomera darwini*, *Galapagia solitaria*, *Schistocerca melanocera*, and *Halmenus robustus* are noted. These references include two new island records, *Galapagia solitaria* from Seymour Island and *Halmenus robustus* from Tower Island. The following species were also taken by Beebe but were not mentioned in his printed book: *Conocephalus exitiosus*, an immature female, Conway Bay, Indefatigable Island, May 1, 1923; *Gryllus assimilis*, one half-grown male nymph on Tower Island, April 28, 1923; *Cryptoptitum lepismoide*, an adult male on Tower Island, April 28, 1923. This last constitutes a new island record.

The Orthoptera of the Galapagos brought back by the Pinchot expedition are as follows:

Family TETTIGONIIDAE

Subfamily PSEUDOPHYLLINAE

Liparoscelis cooksoni Butler: One female, Tower Island, June 16. This short-winged katydid has hitherto been recorded from 6 of the 16 main islands of the Galapagos group, but the present record is the only one from Tower Island.

Family ACRIDIDAE

Subfamily OEDIPODINAE

Sphingonotus fuscoirroratus Stal: Three males and one female, Hood Island, July 1. This small grasshopper is recorded from 11 of the 16 islands.

Subfamily CYRTACANTHACRINAE

Halmenus robustus Scudder: Two males and two females from Tower Island, June 16. First record from Tower Island. From a careful study of descriptions and comparison with a paratype, this seems to be typical *robustus*.

Schistocerca literosa var. *hyalina* Scudder: Six males, three females, taken on Tower Island on June 16.

Schistocerca literosa var. *punctata* Scudder: Two females, Hood Island, July 1.

The above determination of varieties is made mostly from the respective localities of capture. From comparisons made with the

characters given in tabular form by Scudder,¹³ which Hebard¹⁴ says will easily distinguish these forms, I fail to appreciate differentiating characters of real value.

Schistocerca melanocera Stal: One adult female and a female nymph from Charles Island, June 27; 1 male and 2 females from Tower Island, June 16; and 3 males and 3 females labeled only Galapagos, June 19.

The specimens from Tower Island constitute a new island record. They, as well as the female from Charles Island, agree exactly with the colored figures of Hebard's paper of 1920, but those bearing the label "Galapagos" are decidedly lighter yellowish. These specimens were, however, evidently discolored from having been collected in spirits.

This is evidently the large grasshopper noted by Mr. Pinchot in his book on the expedition as being eaten with avidity by a large lizard.

Schistocerca intermedia Snodgrass: One adult male and an immature female on Duncan Island, June 26. The adult agrees exactly with the colored figure given by Hebard, sexual differences being allowed for.

Family GRYLLIDAE

Subfamily GRYLLINAE

Gryllus assimilis Fabricius: One male and two females. Charles Island, June 28. All macropterous.

MARQUESAS ISLANDS, OCEANIA

Three species only of Orthoptera were brought back from the Marquesas, one being undescribed. They are as follows:

Family TETTIGONIIDAE

Subfamily LISTROSCELINAE

Phisis? sp.: One male without legs. Fatuhiva, September 18.

Subfamily COIPHORINAE

Euconocephalus lineatipes Bolivar: One female, Fatuhiva, September 18.

¹³ Bull. Mus. Comp. Zool., vol. 25, p. 16, 1893.

¹⁴ Proc. California Acad. Sci., ser. 4, vol. 2, p. 327, 1920.

Family ACRIDIDAE

Subfamily CYRTACANTHACRINAE

PATANGA PINCHOTI, new species

Collected on Eiao, September 28, 1929.

This species runs out to the genus *Patanga* in the key given by Uvarov in his revision of the group *Cyrtacanthacrini*.¹⁵ Some relation to the genus *Austracris* is indicated in the somewhat strongly retrorse prosternal spine, and it is indeed possible that it really should be referred there. This species is named in honor of the noted leader of the expedition, Hon. Gifford Pinchot.

Description.—Head with the face rather strongly retreating; eyes almost but not quite twice as high as long, the anterior margin straight; fastigium of vertex flat, transverse diamond shaped, broadly rounding into the frontal costa, which is equally broad throughout, or barely narrowed at the ocellus, and with the slightly elevated lateral margins just reaching the clypeus; antenna about twice as long as the pronotum.

Pronotum with a very low but persistent median carina, the lateral carinae indicated only posteriorly; the pronotal disk cut by three transverse sulci, the posterior one situated about the middle; the anterior margin of disk almost straight, very slightly and roundly angulate, while the posterior margin is obtuse-angulate, the tip entire and narrowly rounded. The surface of the pronotal disk is punctated on the metazona, the rest dully rugose. Prosternal spine sub-cylindrical, apically pointed and the whole directed rather decidedly backward, though normally not nearly reaching the mesosternum; in a couple of somewhat crushed specimens almost or quite reaching the sternum. Tegmina rather slender, apically slightly narrowing and curved very gently backward, the apical third more transparent than the basal portion: wings hyaline with black venation.

Posterior femora rather slender and with the apical third or more with the margins subparallel.

Cerci of the male slender, gently flattened laterally, tapering gradually to a point, gently curved inward, the whole about five times as long as basally broad and reaching the tip of the supraanal plate. Supraanal plate sulcate above in the basal half or slightly more, the lateral margins straight and gently converging to near the triangularly pointed tip, where they terminate in a lateral shoulder. Subgenital plate of male elongate, sharply pointed and directed upward and backward, extending decidedly beyond and slightly above the tip of the supraanal plate. Valves of the ovipositor moderately recurved.

¹⁵ Ann. Mag. Nat. Hist., ser. 9, vol. 11, p. 143, 1923.

General color brown, the tegmina obscurely maculate with rather large rounded spots of darker color; side of pronotum with a generally obscure dark spot, and the head with a distinct postocular stripe and sometimes with a dark perpendicular streak below the eyes: legs marked with black spots, especially noticeable on the posterior femora.

Measurements.—Length, to end of tegmina, ♂ 41, ♀ 51 mm.; antenna, ♂ 14, ♀ 16 mm.; pronotum, ♂ 7, ♀ 8.5 mm.; tegmina, ♂ 33, ♀ 46 mm.; posterior femora, ♂ 20, ♀ 25 mm.; cerci, ♂ 2.25 mm.

Type material.—Four males and seven females and one female nymph. Type, ♂; allotype, ♀; and paratypes A to C, ♂, D to I, ♀, and J, nymph. Type, U.S.N.M. No. 43590.

Remarks.—There is very little variation in size or appearance noticeable in this series of specimens.

The present species seems much like the one described as *Valanga rapana* by Uvarov¹⁶ and may indeed prove to be the same. Its characters appear, however, to indicate proper association with the species of the genus *Patanga* rather than those of the genus *Valanga*. If Uvarov's species does ultimately prove to be the one here described, it would seem advisable to refer it to the genus *Patanga*.

The *Valanga stercoraria* of Holdhaus may belong to *Patanga*, or to a new one. Certain of the characters noted for that species by Uvarov¹⁷ seem at variance with those of the genus *Valanga*. The excised posterior margin of the pronotal disk of *stercoraria* mentioned by Uvarov is not noted in the original description of the species by Holdhaus.¹⁸

¹⁶ Ann. Mag. Nat. Hist., ser. 9, vol. 19, p. 560, fig. 2, 1927.

¹⁷ Ann. Mag. Nat. Hist., ser. 9, vol. 12, p. 359, 1923.

¹⁸ Denkschr. kais. Akad. Wiss., math.-naturw. Klasse, Wien, vol. 84, p. 557, 1909.