

Preliminary List of the Insects and Related Terrestrial Arthropoda of Socorro Island, Islas Revillagigedo, Mexico

José G. Palacios-Vargas,¹ Judith Llampallas¹ and Charles L. Hogue²

Abstract.—A preliminary list of insects and related terrestrial arthropoda from Socorro Island, Islas Revillagigedo, Mexico. By José G. Palacios-Vargas, Judith Llampallas and Charles L. Hogue, *Bull. Southern California Acad. Sci.*, 81(3):138–147, 1982. Over half of the 128 species listed are newly recorded. Soil microarthropods (mites and springtails) are cited for the first time from the island.

Socorro Island is the largest of four islands comprising the Archipelago Revillagigedo. It is oceanic and volcanic in origin, major extrusive activity having occurred during the Miocene and Pliocene (Blásquez 1960a; Bryan 1949). It is located some 480 km SSW of Cabo San Lucas, Baja California and 592 km SW of Cabo Corrientes, Jalisco. Politically, the archipelago, belongs to the state of Colima, Mexico.

Socorro is perhaps the most interesting of the group because of its relatively large size and extensive relief (Mt. Evermann rises to an elevation of 1050 m) and consequent varied habitats for insects, arachnids and related terrestrial arthropods. Clarion Island and San Benedicto are both much smaller and less elevated than Socorro and the latter suffered virtual annihilation of its fauna during recent explosive vulcanism (1952); Roca Partida is little more than a rock jutting from the sea.

Socorro generally has a warm, xeric climate, with a mean annual rainfall of 761 mm. Its soils are derived from basaltic rock and are mostly fine, particulate argylaceous silts (Blásquez 1960b). At higher elevations (500–900 m) the climate is subhumid and still higher (above 900 m), temperate subhumid (Miranda 1961).

Mainly because of its geographic isolation and the volcanic history of the island, its floral diversity is very poor, comprised of only a few more than 100 species of vascular plants (Rzedowski 1978). The vegetation of the subhumid zone is a tropical forest, with major associations of *Dodonaea viscosa* thickets, *Ficus cotinifolia* forests, and *Bumelia socorrensis-Psidium galapageium* forest. High on the central mountain, there is even a meadow. More detailed information on the vegetation is found in Medina (1957).

A bibliography to 1957 and other basic data about the Revillagigedo Islands were compiled and published by Richards and Brattstrom (1959). Few papers deal with the insects and related arthropods, the fauna of which remains largely unknown on Socorro and the other three islands as well. The soil microfauna is particularly poorly known and recent discoveries by the senior authors have inspired the compilation of this list. The new records given here are the partial result of two recent expeditions to the island: the Steele Expedition (5–10 June 1977; C. L. Hogue collector) and the Gerardo Guerra Expedition (16–18 October 1977; J. G. Palacios-Vargas collector). The material collected by William A.

McDonald and Claude Blodget on the 1955 "Crest" expedition by Scripps Institution of Oceanography and formerly housed at the University of California, Los Angeles, has been deposited in the Natural History Museum of Los Angeles County. These and other collections known to us (e.g. California Academy of Sciences) contain many additional undetermined species. A total of 128 determined and unidentified species are definitely known from Socorro. The total insect, arachnid and related terrestrial arthropod fauna may number as high as several hundred species.

The microarthropods were collected by the senior author and determined with the aid of the second; most of the pyterygota were collected and identified by Hogue with the aid of the various specialists named as determiners in the list. Authority for each record in the following list is indicated after the name cited: "OD" if contained in the original description, "Orig." if a new record in the authors' collections and identified by the authors.

ARACHNIDA

SCORPIONIDA

Vaejovidae

Vaejovis janssi Williams, 1980.—OD (As *Vejovis mexicanus decipiens* Hoffmann, 1931 by Vázquez 1960.)

ARANEAE

Theridiidae

Latrodectus mactans (Fabricius, 1775).—Orig. C. L. Hogue det.

Steatoda quadrimaculata (O. P. Cambridge, 1896).—Levi 1957.

Anyphaenidae

Anyphaena judicata Cambridge, 1896.—Platnick and Lau 1975.

Dysderidae

Ariadna weaveri Beatty, 1970.—OD.

ACARIDA

MESOSTIGMATA

Ascidae

Cheiroleius sp.—Orig.

Macrochelidae

Genus sp.—Orig.

Uropodidae

Genus sp.—Orig.

Parasitidae

1 undetermined genus and species.—Orig.

PROSTIGMATA

Rhagidiidae

Rhagidia weyerensis (Packard, 1888).—Orig.

Bdellidae

Bdellodes sp.—Orig.

Cunaxidac

Cunaxa taurus (Kramer, 1881).—Orig.

Cunaxa sp.—Orig.

Smaridiidae

1 undetermined genus and species.—Orig.

Trombiculidae

Trombicula alfredugesi Oudemans, 1910.—Vázquez 1960 (Confirmed as probable by Loomis, pers. comm.)

CRYPTOSTIGMATA

Hypochthoniidae

Hypochthonius rufulus Kock, 1836.—Orig.

Nothriidae

Nothrus sp.—Orig.

Hermannilliidae

Hermannella sp.—Orig.

Plasmobatidae

Plasmobates sp.—Orig.

Gymnodamaeidae

Allodamaeus sp.—Orig.

Damaeidae

1 undetermined genus and species.—Orig.

Carabodidae

Austrocarabodes sp.—Orig.

Oribatulidae

Scheloribates sp.—Orig.

HEXAPODA

PROTURA

Protentomidae

1 undetermined genus and species.—Orig.

DIPLURA

Japygidae

1 undetermined genus and species.—Orig.

COLLEMBOLA

Hypogastruridae

Xenylla cf. *humicola* (Fabricius, 1780).—Orig.

Neanuridae

Friesea haldanei Rapoport and Mano, 1969.—Orig.

Friesea sp.—Orig.

Pseudachorutes sp. ca. *lunatus* Folsom, 1916.—Orig.

Pseudachorutes sp.—Orig.

Onychiuridae

Mesaphorura cf. *yossii* Rusek, 1977.—Orig.

Onychiurus encarpatus Denis, 1931.—Orig.

Isotomidae

Folsomides americanus Denis, 1931.—Orig.

Folsomides cf. *angularis* (Axelson, 1905).—Orig.

Isotomiella minor (Schaeffer, 1896).—Orig.

Entomobryidae

Lepidocyrtus cf. *helena* Snider, 1967.—Orig.

Lepidocyrtus sp. ca. *pallidus* Reuter, 1890.—Orig.

Pseudosinella violenta (Folsom, 1924).—Orig.

- Seira* sp.—Orig.
- Janetschekbrya* cf. *arida* Christiansen and Bellinger, 1980.—Orig.
- Neelidae**
- Megalothorax incertus* Börner, 1903.—Orig.
- Dicyrtomidae**
- Dicyrtoma atra* (Linnaeus, 1758).—Orig.
- Sminthuridae**
- Sphaeridia pumilis* Krausbauer, 1898.—Orig.
- Sphaeridia* n. sp.—Orig.
- THYSANURA**
- Lepismatidae**
- 1 undetermined genus and species.—Orig.
- ODONATA**
- Libellulidae**
- Pantala flavescens* (Fabricius, 1798).—Vázquez 1960.
- ISOPTERA**
- Termitidae**
- Kalotermes hubbardi* Banks, 1901.—Light 1930, 1935.
- Kalotermes jouteli* Banks, 1901.—Light 1930, 1935.
- Kalotermes marginipennis* (Latreille, 1817).—Light 1935.
- DERMAPTERA**
- Labiduridae**
- Labidura riparia* (Pallas, 1773).—Orig. C. L. Hogue det.
- ORTHOPTERA**
- Blattidae**
- Latiblatella picturata* Hebard, 1922.—Orig. F. W. Fisk det.
- Acrididae**
- Trimerotropis pallidipennis pallidipennis* (Burmeister, 1838).—Vázquez 1960.
- Schistocerca americana* socorro Dirsh, 1974.—OD (As *Schistocerca vaga vaga* by Vázquez 1960.)
- Tettigoniidae**
- Neoconocephalus maxillosus* (Fabricius, 1831).—Vázquez 1960.
- Gryllidae**
- Gryllus* sp.—[As *Gryllus assimilis* (Fabricius, 1775).—Vázquez 1960.]
- Oecanthus varicornis* (F. Walker, 1869).—Vázquez 1960.
- Cycloptilum erraticum* Scudder, 1893.—Hebard 1932 and Vázquez 1960.
- HEMIPTERA** (See Heidemann 1901)
- Nabidae**
- Nabis* sp.—Orig. C. L. Hogue det.
- Pentatomidae**
- Acrosternum hilare* (Say, 1832).—Orig. C. L. Hogue det.
- Nezara* sp.—Orig. C. L. Hogue det.
- Lygaeidae**
- Lygus keiferi* Van Duzee, 1933.—OD.
- HOMOPTERA**
- Acanaloniidae**
- Acanalonia clarionensis* Van Duzee, 1933.—OD.
- Cicadellidae**
- Omanolidia keiferi* Nielson, 1982.—OD.

Paralebra keiferi Young, 1957.—OD.

Diceratolebra sola Young, 1957.—OD.

MALLOPHAGA

Philopteridae

Penenirmus quadripustulatus (Kellogg and Mann, 1912).—(As *Docophorus californiensis* var. *quadripustulatus* Kellogg and Mann, 1912.)

Saemundssonia breviantenna (Piaget, 1880).—Kellogg and Mann 1912:58 (As *Docophorus breviantennatus* Piaget, 1880.)

Quadraceps birostris (Giebel, 1874).—Kellogg and Mann 1912:58 (As *Nirmus gloria*s Kellogg and Kuwana, 1902.)

Bruelia melanococa (Carriker, 1903).—Kellogg and Mann 1912:59–60 (As *Nirmus melanococcus* Carriker, 1903.)

Columbicola columbae (Linnaeus, 1758).—Kellogg and Mann 1912:62 (As *Lipeurus baculus* Nitzsch, 1818.)

Menoponidae

Actornithophilus milleri (Kellogg and Kuwana, 1902).—Kellogg and Mann 1912:63 (As *Colpocephalum milleri* Kellogg and Kuwana, 1902.)

Eidmanniella aurifasciata (Kellogg, 1899).—Kellogg and Mann 1912:65 (As *Menopon singularis* Kellogg and Kuwana, 1902.)

Astromenopon becki (Kellogg, 1906).—Kellogg and Mann 1912:65 (As *Menopon becki* Kellogg, 1906.)

COLEOPTERA

Cicindelidae

Cicindela trifasciata sigmoidea LeConte, 1851.—Horn 1936 and Orig., Nagano det. (As *Cicindela tortuosa* LeConte, 1851 by Vázquez 1960; *Cicindela trifasciata ascendens* LeConte, 1851 by Cazier 1954.)

Carabidae

Selenophorus pyritosus Dejean, 1829.—Orig. D. Shpeley det.

Dytiscidae

Rhantus calidus (Fabricius, 1792).—Orig.

Scarabaeidae

Ataenius hoguei Cartwright and Spangler 1981.—OD.

Elateridae

Nematodes cuneatus (Guerín, 1843).—Orig. E. C. Becker det.

Dicrepidius sp. cf. *D. corvinus* Candèze, 1859.—Orig. E. C. Becker det.

Bostrichidae

Amphicerus cornutus (Pallas, 1772).—Orig. C. L. Hogue det. (As *Apate punctipennis* LeConte, 1858 and *Sinoxylon* sp. by Vázquez 1960.)

Trogidae

1 undetermined genus and species.—Vázquez 1960.

Tenebrionidae

Phaleria debilis LeConte, 1866.—Vázquez 1960; Triplehorn and Watrous 1979:289 (As *Phaleria insularis* Champion, 1886 by Vázquez 1960.)

Hypogena tricornis Dalman, 1823.—Blaisdell 1943 (As *Ulosonia tricornis*. See Spilman 1973:42 for nomenclatural problems associated with this species.)

Cerambycidae (See Linsley 1935)

Stenodontes dasytomus socorroensis Linsley and Chemsak, 1966.—OD. [As *Stendodontes (Mallodon) miolarius* Linsley (not Bates), 1942.]

Acanthoderes socorensis Linsley, 1942.—OD (As *Acanthoderes peninsularis* Linsley (not Horn), 1935.)

Neoclytus steelei Chemsak and Linsley, 1978.—OD.

Neoptychodes trilineatus Linnaeus, 1781.—Chemsak and Linsley 1978.

Oreoderes glauca pacifica Chemsak and Linsley, 1978.—OD.

Trichastylopsis hoguei Chemsak and Linsley, 1978.—OD.

NEUROPTERA

Chrysopidae

Chrysopa collaris Schneider, 1851.—Orig. P. Adams det.

Coniopterygidae

Coniopteryx simplicior Meinander, 1981.—OD.

LEPIDOPTERA

Sphingidae

Manduca sexta (Linnaeus, 1763).—Orig. C. L. Hogue det.

Perigonia lusca continua Vázquez, 1958b.—OD.

Erinnyis obscura socorroensis Clark, 1926.—OD.

Lycaenidae

Strymon columella socorroica (Vázquez, 1958a).—OD.

Noctuidae

Callopistria floridensis (Guenée, 1852).—Orig.

Anomis editrix (Guenée, 1852).—Orig.

Agrotis subterranea n. ssp.—Orig.

Agrotis malefida Guenée, 1852.—Orig.

Cobubatha limbata (H. Edwards, 1881).—Orig.

Catabena virrina (Walker, 1851).—Orig.

Forsebia perlaeta (H. Edwards, 1882).—Orig.

Melipotis perpendicularis (Guenée, 1852).—Orig.

Melipotis samelica (Guenée, 1852).—Orig.

Melipotis acontoides Guenée, 1852.—Orig.

Melipotis n. sp.—Orig.

Mythimna possibly *imperfecta* (Smith, 1894).—Orig.

Ophiuches minualis minualis (Guenée, 1854).—Orig.

Peridroma saucia (Hübner, 1808).—Orig.

Platysenta sutor (Guenée, 1852).—Orig.

Pseudalelia sequax Franclemont, 1951.—Orig.

Platysenta selenosa (Guenée, 1852).—Orig.

Physula migralis (Guenée, 1852).—Orig.

Ponometia exigua (Fabricius, 1803).—Orig.

Spodoptera sunia (Guenée, 1852).—Orig.

Pieridae

Phoebis sennae (Linnaeus, 1758).—Orig. C. L. Hogue det. (Sight record.)

Choreutidae

Tortyra n. sp.—Orig.

Hesperiidae

Erynnis zarucco funeralis (Scudder and Burgess, 1870).—Vázquez 1960.

DIPTERA

Culicidae

Aedes taeniorhynchus (Wiedmann, 1821).—Aitken 1942; Vázquez 1960.

Ceratopogonidae

Dasyhelea calvescens Macfie, 1938.—Wirth 1978.

Chironomidae

Telmatobius latipennis Wirth, 1949.—OD.

Thalassomya pilipes Edwards, 1926.—Wirth 1969.

Mycetophilidae

1 undetermined genus and species

Calliphoridae

Cochliomyia macellaria (Fabricius, 1775).—Vázquez 1960.

Sciariidae

1 undetermined genus and species.—Orig.

Asilidae

Adrenosoma n. sp.—Orig. E. M. Fisher det.

Syrphidae

Procecidochares flavipes Aldrich, 1929.—OD.

Volucella ca. *V. anna* Williston, 1887.—Cole 1969.

Muscidae

Fannia scalaris (Fabricius, 1794).—Orig. C. L. Hogue det.

Sarcophagidae

Peckia craigi Dodge, 1964.—OD.

Helicobia morionella (Aldrich, 1930).—Dodge 1964.

Socorromyia blodgeti Dodge, 1964.—OD.

HYMENOPTERA

Megachilidae

Lithurge socorroensis Mitchell, 1938.—OD.

Halictidae

Lasiglossum sp.—Orig. R. R. Snelling det.

Sphecidae

Bembix sp.—Orig. C. L. Hogue det. (See Williams 1926:349.)

Formicidae

Camponotus socorroensis Wheeler, 1934.—OD.

Pheidole hyatti Emery, 1895.—Wheeler 1934.

Solenopsis geminata (Fabricius, 1804).—Wheeler 1934.

Forelius foetidus keiferi Wheeler, 1934.—OD.

Camponotus picipes Wheeler, 1933.—OD.

Hypoponera sp.—Orig. R. R. Snelling det.

CHILOPODA

SCOLOPENDROMORPHA

Scolopendridae

Scolopendra tenuitarsis Pocock, 1895.—Vázquez 1960.

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¹Laboratorio de Acarología, Departamento de Biología, Facultad de Ciencias, Universidad Nacional Autónoma de México, 04510-México, D.F. (Palacios-Vargas, Llampallas). ²Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, California 90007 (Hogue).