COCKROACHES FROM GUANA ISLAND, BRITISH WEST
INDIES (BLATTARIA: BLATTELLIDAE: BLABERIDAE).

BY LOUIS M. ROTH

Museum of Comparative Zoology
Harvard University
Cambridge, MA 02138*

ABSTRACT

At least 8 species in 7 genera of cockroaches occur on Guana Island. *Symploce pararuficollis* new species is described, raising the number of West Indian *Symploce* to ten.

INTRODUCTION

Guana is a small island of 297 ha, on the north side of Tortola in the British Virgin Islands (Becker and Miller, 1992). Eight species in 7 genera of cockroaches occur on this island all reported here for the first time. Nine species of *Symploce* occur in the West Indies. A new species, *S. pararuficollis*, is described and compared with its close sympatric relative the more widely distributed *Symploce ruficollis* (Fabricius).

Most of the specimens are housed in the Museum of Comparative Zoology (MCZ) and the Bernice P. Bishop Museum, Honolulu, Hawaii (BPBM). Paratypes of the new taxon have been deposited in the Academy of Natural Sciences of Philadelphia (ANSP); Hope Entomological Collections, University of Oxford (HECO); Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands (RNHL).

Symploce pararuficollis new species

Figures 1A–D, 2

Material: Holotype, ♂, **British Virgin Islands, Guana Island**, North Bay, 14–34.vii.1984, Malaise trap, D. Ford & J. Lazell; no. 33449 in MCZ.

*Correspondence 81 Brush Hill Road, P.O. Box 540, Sherborn, MA 01770, U.S.A.
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Paratypes: **Guana Island.** MCZ: same data as holotype, 31♂♂ (2 with terminalia slides 241 & 262), 66♀♀. BPBM: Guana I., 0–80 m, 9♂♂, 2♀♀, 9–23.vii.1987, S.E. Miller & V.O. Becker; 1♂, 13.vii. 1988, 1♂, 1♀, 14–15.vii.1988, 2♂♂, 1♀, 17.vii.1988, S.E. Miller & C. O'Connell, Acc.#1988.350; Malaise trap, 1♂, 25.vii.1988; 2♀♀, 1–14.vii.1984, S.E. & P.M. Miller.

One pair (♂ & ♀) of paratypes has been deposited in each of the following museums: ANSP, HECO, and RNHL.

Description. Male: Interocular space less than distance between antennal sockets. Pronotum subparabolic, hind margin weakly convex. Tegmina and wings fully developed extending well beyond end of abdomen; tegmina with longitudinal discoidal sectors. Hind wing radial vein almost straight, apically bifurcate branch near middle, media vein weakly curved, simple, cubitus vein weakly curved with 3 complete and 1–3 incomplete rami, apical triangle well developed. Front femur Type A₂ or A₃ (if latter, first preterminal spine may be only slightly longer than preceding spines); with well developed pulvilli on four basal tarsomeres of all legs, tarsal claws symmetrical, simple, arolia well developed. First abdominal tergum with large group of anteromedial setae. Seventh and eighth abdominal terga unspecialized. Supraanal plate weakly asymmetrical, hind margin deeply invaginated forming 2 rounded lobes; intercercal plate, arising from ventral surface of supraanal plate lying anterior to paraprocts, consists of pair of dissimilar narrowly joined processes, each terminating with a group of setae; right and left paraprocts weakly dissimilar (Fig. 1A). Subgenital plate asymmetrical, with mediolateral lobes having single minute dark apical spine; apex of plate with group of 6–19 (median = 12, N = 27) small dark spines or pegs; near these spines are 2 dissimilar styli, the left one elongate and darkly sclerotized, the right one much smaller, rounded, knoblike and paler, interstyler margin produced as an upturned rounded lobe (Figs. 1B, 1C, 1D). Genitalia as in Fig. 1B: hook on left side; right phallomere consisting of 2 sclerites, one a cleft; median phallomere with narrowed spinelike apex; right of distal part of median phallomere is membrane which terminates in small dark sclerotization.

Color. Yellowish brown. Head yellowish or yellowish white with dark spot in upper lateral corners of the clypeus; antennae and maxillary palpi dark brown. Pronotum with disk darker than area

around it; small, round, dark spots surround bases of minute setae. Tegmina humeral area whitish, remainder yellowish brown. Hind wing unbranched costal veins distally blackish, remainder whitish; radial, media, and cubitus (with complete branches) veins, dark brown, distally with yellowish tinge. Abdominal terga lateral borders whitish, anterior segments medially whitish or pale, becoming darker on posterior segments, supraanal plate yellowish brown. Abdominal sterna yellowish white, becoming darker on terminal segments, with dark lateral dot on each segment. Left style very dark, right style paler, upturned interstyler lobe white. Coxae whitish, some black dots on anterior and posterior surfaces; femora pale, whitish or yellowish, tibiae very dark reddish brown, metatarsi dark, remaining tarsomeres may be lighter. Cerci with about proximal 5 cercomeres dark brown, remaining segments whitish with dark lateral borders (extent of whitish areas variable and may be considerably reduced), ventrally brown.

Female: Supraanal plate trigonal, apex shallowly indented (similar to *ruficollis*). Color essentially as in male, but dark areas may be more intense and extensive, particularly on abdominal terga; supraanal plate mostly whitish; subgenital plate medially with broad, dark brown longitudinal band.

Measurements (mm) (♀ in parentheses). Length, 11.0–13.1 (12.0–15.0); pronotum length $\times$ width, 3.2–3.7 $\times$ 4.4–5.2 (3.3–4.0 $\times$ 4.5–5.5); tegmen length, 12.0–14.0 (12.5–15.0; hind tibia length, 5.3–5.7 (5.7–6.0); interocular width, 0.5–0.6 (0.8–0.9).

Comments.—*Symploce pararuficollis* clearly is most closely related to *ruficollis* because of the similarities of wing venation, and male supraanal plate, styli, interstyler margin, and genital phallomeres. Both species have asymmetrical supraanal plates and key out to couplet 2 in Roth (1984: 27); *pararuficollis* is easily distinguished by the pale femora and very dark tibiae (legs essentially monochromatic in *ruficollis*), fewer number of small dark spines near the apex of the subgenital plate, and larger size (Figs. 1C–E, 2).

Nine species of *Symploce* occur in the West Indies (Roth, 1984). The new species adds one more taxon to the cockroach fauna of these islands. So far *pararuficollis* is known only from Guana Island. *Symploce ruficollis* also occurs on Guana, but is more widely distributed in the West Indies (see below).

Fig. 1. *Symploce* spp., males from Guana Island, West Indies. A–D. *Symploce pararuficollis* paratype: A. supraanal plate, paraprocts, and intercercal plate (ventral); B. subgenital plate and genitalia (dorsal); C, D. apices of 2 subgenital plates showing styli, interstylar lobe, and variation in number of spines (ventral); E, F. *Symploce ruficollis*: E. apex of subgenital plate (ventral); F. intercercal plate (ventral). Abbreviations: a, supraanal plate; b, intercercal plate; c, paraprocts; d, left style; e, interstylar lobe; f, right style; g, sclerites of right phallomere; h, hooklike left phallomere; i, median phallomere; j, membrane associated with median phallomere. Figs. E and F drawn to same scale as C and D.

Additional cockroach records from Guana Island

Blattellidae

Symploce ruficollis (Fabricius)

Figures 1E, 1F, 2

Symploce ruficollis (Fab.): Roth, 1984: 46, figs. 13A–H, 14A–H (redescription, synonymy, and literature).

Material: **British Virgin Is. MCZ: Guana Island**, North Bay, 5♂♂ (1 with terminalia slide 263), 15♀♀, 14–30.vii.1984, Malaise trap, D. Ford & J. Lazell. BPBM: 1♀, 13.vii.1988, 1♀, 14–15.vii.1988, Malaise trap, 2♂♂, 3♀♀, 12.vii.1988, S. E. Miller & C. O'Connell, Acc.#1988.350; 0–80 m, 4♂♂, 4♀♀, 9–23.vii.1987, S. E. Miller &

Fig. 2. Comparison of pronotum width and tegmen length in *Symploce pararuficollis* and *S. ruficollis*.

V. Becker; 2♀♀, 1–14.vii.1984, S. E. & P. M. Miller; Necker Island, 2♂♂, 4♀♀, 24.vii.1988, Acc.#1988.350, C. O'Connell.

Measurements (mm) (♀ in parentheses). Length, 8.6–10.4 (10.0–12.0); pronotum length $\times$ width, 2.5–2.8 $\times$ 3.6–4.0 (3.0–3.4 $\times$ 4.0–4.8); tegmen length, 9.3–10.2 (10.2–12.0); hind tibia length, 4.0–4.5 (4.3–4.6); interocular width, 0.6 (0.8).

Comments.— As pointed out above, *ruficollis* is very close to its sympatric relative *pararuficollis*, but the 2 taxa can be easily distinguished by differences in leg color; there is hardly any overlap in size, as shown by pronotal width and length of tegmina (Fig. 2). The number of small dark spines on the ventral surface of the subgenital plate near the styli is greater in *ruficollis* (25 or more; cp. Figs. 1C and 1D, with 1E), and there are some small differences in the intercercal plate (cp. Figs. 1A and 1F). *Symploce ruficollis* occurs on the following islands of the West Indies: St. Thomas; Culelebra; Guana; and Porto Rico (Roth, 1984); Necker.

Euthlastoblatta facies (Walker)

Euthlastoblatta facies (Walker): Princis, 1969: 758 (literature and synonymy).

Material: **British Virgin Is.** BPBM: **Guana I.**, 0–80 m, 1♂, 9–23.vii.1987, S. E. Miller & V. O. Becker.

Comments.— The male agrees well with Rehn's (1932: 108, Pl. VII, figs. 6–7) description of *Aglaopteryx devia* Rehn which Princis (1959: 128) synonymized with *facies* Walker.

The species has been recorded from Puerto Rico, Mona, Culebra, St. Thomas, Dominica, and the Barbados (Princis, 1969: 758). This is the first record for Guana Island. The type locality of *facies* is unknown.

Cariblatta antiguensis Saussure & Zehntner

Cariblatta antiguensis Sauss. & Zehn.: Rehn & Hebard, 1927: 40, Pl. 2, figs. 3, 4); Princis, 1969: 782 (literature).

Material: **British Virgin Is.** BPBM. **Guana I.**, 0–80 m, 1♂, 3♀♀, 9–23.vii.1987, S. E. Miller & V. O. Becker, 1♀ (Malaise trap), 10–11.vii.1988, 1♀ (U.V. light trap), 12.vii.1988, 1♀, 13.vii.1988, S. E. Miller & C. O'Connell, Acc.#1988.350. Two retained in MCZ.

Comments.— This is the first record for Guana Island. It has also been reported from St. Croix, St. Bartholomew, Antigua, and Trinidad.

Plectoptera rhabdota Rehn & Hebard

Plectoptera rhabdota Rehn & Hebard, 1927: 305, Pl. 21, figs. 8, 9, Pl. 22, fig. 9, Pl. 23, fig. 7; Princis, 1965, 363 (literature and synonymy).

Material: **British Virgin Is.** BPBM: **Guana I.**, 1♂ (U.V. light trap), 12.vii.1988, S. E. Miller & C. O'Connell, Acc.#1988.350.

Comments.— This is the first record for Guana Island. It is also known from Puerto Rico and St. Thomas.

Two undetermined species of *Plectoptera* have the following data: **British Virgin Is.: Tortola I.**: Mt. Sage Nat. Park; 406 m, 13–15.vii.1987, S. E. Miller & V. O Becker, Acc.#1987.335.

Blaberidae

Pycnoscelus surinamensis (Linnaeus)

Pycnoscelus surinamensis (Linn.): Princis, 1964: 264 (literature and synonymy).

Material: **British Virgin Is.** BPBM: **Guana I.**, 1♀ nymph (U.V. light trap), 4–10.vii.1988. S. E. Miller & C. O'Connell, Acc. #1988.350.

Comments.— This is a circumtropical, thelytokous parthenogenetic species, commonly found in the tropics. Its close relative *Pycnoscelus indicus* (Fabricius) is bisexual and cannot reproduce parthenogenetically (Roth & Willis, 1961: 12; Roth, 1966: 774; Roth, 1974: 215). It is known to damage plants in the field and greenhouses (Roth, 1979: 12).

Hemiblabea brunneri (Saussure)

Hemiblabea brunneri (Saussure): Rehn and Hebard, 1927: 269; Princis, 1963: 138 (literature and synonymy).

Material: **British Virgin Is.** BPBM: **Gorda I.**, Biras Hill, 1♂, 22.vii.1988, S. E. Miller & C. O'Connell, Acc.#1988.350.

Comments.— The bright yellow lateral and cephalic margins of the pronotum is distinctive. The species has been recorded from Puerto Rico, Culebra, St. Vincent, St. Thomas, and St. John's Island.

Panchlora sagax Rehn and Hebard

Panchlora sagax Rehn & Hebard, 1927: 251, Pl. 19, figs. 1–4; Princis, 1964: 177 (literature and synonymy).

Material: **British Virgin Is.** BPBM: **Guana I.**, 1♂, 1–14.vii.1984, S. E. & P. M. Miller, 0–80 m, 2♂♂, 1♀, 9–23.vii.1987, S. E. Miller & V. O. Becker, 2♂♂, 11.vii.1988, 1♂, 13.vii.1988, S. E. Miller & C. O'Connell, Acc.#1988.350. Two retained in MCZ.

Comments.— This is the first record for Guana Island. The species is also known from Puerto Rico, Dominica, and Colombia.

?Polyphagidae

One specimen which appears to be a polyphagid nymph has the following data: **British Virgin Is.** BPBM: **Guana I.**: 1♂ nymph, 4–10.vii.1988, S. E. Miller & C. O'Connell, Acc.#1988.350.

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LITERATURE CITED

- Becker, V. O., and Miller, S. E. 1992. The butterflies of Guana Island, British Virgin Islands. Bull. Allyn Mus. 136: 1–9.
- Princis, K. 1959. Revision der Walkerschen und Kirbyschen Blattarietypen im British Museum of Natural History, London. III. Opusc. Entomol. 24: 125–150.
- . 1963. Blattariae: Subordo Polyphagoidea Fam.: Homoeogamiidae....etc. Subordo Blaberoidea: Fam. Blaberidae. In M. Beier (Edit.), Orthopterorum Catalogus Pars 4: 76–172, W. Junk, 's-Gravenhage.
- . 1964. Blattariae: Blattariae: Subordo Blaberoidea: Fam.: Panchloridae....Pycnoscelidae. In M. Beier (Edit.), Orthopterorum Catalogus Pars 6: 174–400, W. Junk, 's-Gravenhage.
- . 1969. Blattariae: Subordo Epilamproidea Fam.: Blattellidae. In M. Beier (Edit.), Orthopterorum Catalogus Pars 13: 711–1038, W. Junk, 's-Gravenhage.
- Rehn, J. A. G. 1932. New or little known neotropical Blattidae (Orthoptera). Trans. Amer. Entomol. Soc. 58: 103–137.
- Rehn, J. A. G., and Hebard, M. 1927. The Orthoptera of the West Indies. Number 1. Blattidae. Bull. Amer. Mus. Nat. Hist. 54: 1–320.
- Roth, L. M. 1966. Sexual isolation in parthenogenetic *Pycnoscelus surinamensis* and application of the name *Pycnoscelus indicus* to its bisexual relative (Dictyoptera: Blattaria: Blaberidae: Pycnoscelinae). Ann. Entomol. Soc. Amer. 60: 774–779.
- . 1974. Reproductive potential of bisexual *Pycnoscelus indicus* and clones of its parthenogenetic relative, *Pycnoscelus surinamensis*. Ann. Entomol. Soc. Amer. 67: 215–223.
- . 1979. Cockroaches and plants. Horticulture, Aug. pp. 12–13.
- . 1984. The genus *Symptloce* Hebard. I. Species from the West Indies. (Dictyoptera: Blattaria, Blattellidae). Entomol. scand. 15: 25–63.
- Roth, L. M., and Willis, E. R. 1961. A study of bisexual and parthenogenetic strains of *Pycnoscelus surinamensis* (Blattaria: Epilamprinae). Ann. Entomol. Soc. Amer. 54: 12–25.