

SCIENTIFIC NAME: *Rhopalolemma robertsi*
COMMON NAME: None; a cleptoparasitic bee
CLASS, FAMILY: Insecta, Apidae (subfamily Nomadinae)

ORIGINAL DESCRIPTION: Roig-Alsina, A. 1991. Cladistic analysis of the Nomadini s. str. with description of a new genus. Journal of the Kansas Entomological Society 64:34-35, figs. 16-22 (wings, face, sting apparatus, foretarsus, antenna, female sternum 6, and dorsal view of metasoma).

TYPE MATERIAL: *Holotype:* Female - California: San Bernardino County; 8 km south of Twenty-nine Palms, 5 May 1973, R.B. Roberts. Deposited in the Essig Museum, University of California, Berkeley; placed on indefinite loan to the California Academy of Sciences, type #16607. Known only from the holotype female.

RANKING/STATUS: G1/S1 (NatureServe-CNDDDB).

GENERAL DESCRIPTION: Like all cleptoparasitic bees, the female lacks pollen-collecting structures. The holotype female measures 8 mm in length, with a black head and thorax and reddish metasoma. Like many other related bees in the same tribe (Blastini), it has light-colored bands of closely appressed, short, plumose setae on the abdomen, the pattern of which is illustrated in the original description.

DIAGNOSTIC CHARACTERS: With only one species known from California, the generic characters are useful identification aids for females. The presence of a brush of setae on the inner apex of the asymmetrical second segment of the foretarsus is diagnostic for the genus, at least in females (such brushes are present in males of other genera of Nomadinae). Another character present in males of some genera of Nomadinae, but only females of *Rhopalolemma*, is the carinate lateral margin on the clypeus and the shiny groove lateral to it.

DISTRIBUTION: The current distribution is restricted to the type locality. In spite of at least 70 years of collecting in the area by many active solitary bee specialists, the species is only known from the holotype female. Only two species of *Rhopalolemma* are known; the second, *R. rotundiceps*, was described from Arizona in 1997.

HABITAT: Specific habitat information was not recorded by Roberts. In Arizona, *R. rotundiceps* was collected and studied in Organ Pipe Cactus National Monument in a shallow wash in a creosote-bush scrub, and collected in three other desert localities.

LIFE HISTORY/BEHAVIOR: Cleptoparasitic Nomadinae do not excavate their own nests or collect pollen for their larvae. Instead, the females enter the nests of pollen-collecting species and lay their eggs in the open, unfinished cells while the host females are absent. Eggs of *R. rotundiceps* are rather straight, laid in grooves in the host nest cell wall, and corrugated in appearance on the exposed side. The late-stage larva of that species is covered by a uniform, clear, thin, rigid film that fits the

integument closely and precisely. A similar film is present on other non-cocoon-spinning bee larvae, and is probably salivary- or dermal-gland in origin, serving to protect the larvae from parasites or desiccation. The eggs and larvae of *R. robertsi* are expected to be very similar to those of *R. rotundiceps*.

The host species of *Rhopalolemma robertsi* is unknown. It occurs in the range of *Protodufourea eickworti*, (family Halictidae, subfamily Rhophitinae), a known host of *R. rotundiceps* in Arizona, but its larger body size might preclude it utilizing nests of that species. However, all known host associations for bees in the tribe Biastini, to which *Rhopalolemma* belongs, involve halictid bees in the subfamily Rhophitinae, so the host of *R. robertsi* is likely a member of that subfamily as well.

Adult cleptoparasitic bees take nectar from flowers, but no floral association is known for *R. robertsi*; *R. rotundiceps* has been taken on *Phacelia*.

SELECTED REFERENCES:

- Michener, C.D. 2000. *The Bees of the World*. 913 pp. Baltimore: Johns Hopkins University Press.
- Rozen, J.G. Jr., Roig-Alsina, A., and B.A. Alexander. 1997. The cleptoparasitic bee genus *Rhopalolemma*, with reference to other Nomadinae (Apidae), and biology of its host *Protodufourea* (Halictidae: Rhophitinae). *American Museum Novitates* 3194: 28 pp., 45 figures, 3 tables.

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