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Biological Sciences

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**Biological observations and a new state record of *Paracotalpa granicollis* Haldeman (Coleoptera: Scarabaeidae: Rutelinae) in New Mexico**

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## SCIENTIFIC NOTE

### Biological observations and a new state record of *Paracotalpa granicollis* Haldeman (Coleoptera: Scarabaeidae: Rutelinae) in New Mexico

Specimens of *Paracotalpa granicollis* Haldeman (Coleoptera: Scarabaeidae: Rutelinae) collected in northwestern New Mexico represent a new state record for the species. Individuals (males only) were observed in association with *Juniperus osteosperma* Torr. Little (Juniper; Cupressaceae). We provide an overview of the biology of species in the genus *Paracotalpa* Ohaus and discuss biological observations of *P. granicollis*.

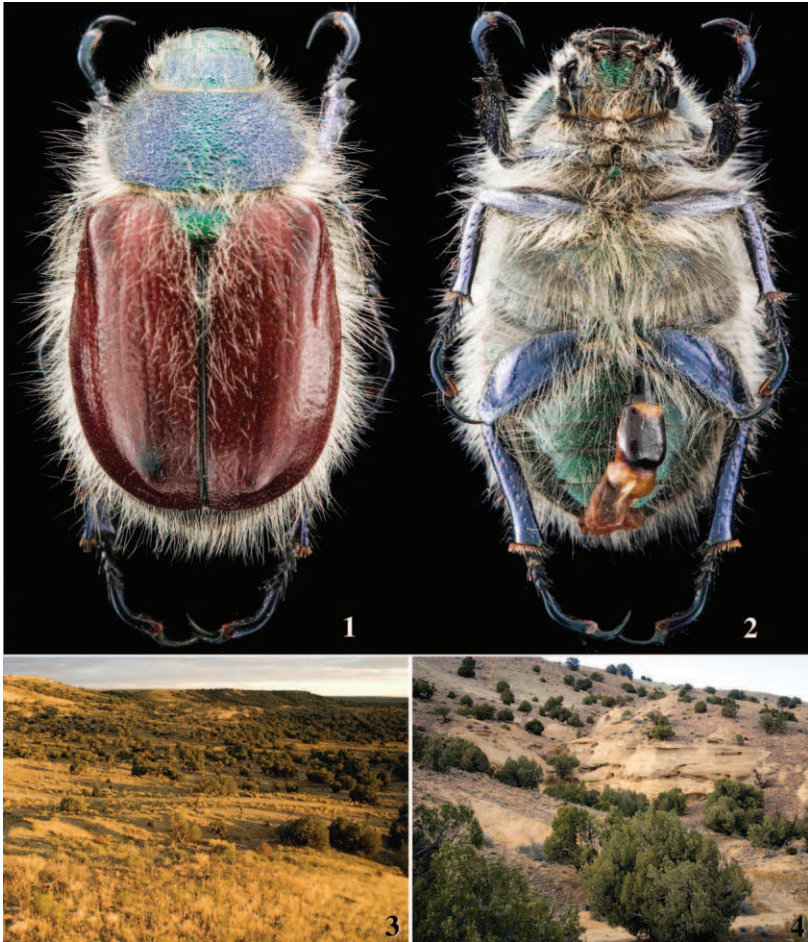
The genus *Paracotalpa* Ohaus (Coleoptera: Scarabaeidae: Rutelinae) includes four species that are distributed west of the Rocky Mountains in the United States (Saylor 1940; Jameson 2002). Species in the genus are commonly called “little bears” or “bear scarabs” due to their dense, long setae, are often striking in their coloration, and are obvious components of their habitat. Adult beetles range in size from 1–2 cm. Most *Paracotalpa* species inhabit arid regions, and adults are primarily active in spring months during the heat of the day (Cheary *et al.* 1972; Hardy 1972). *Paracotalpa* larvae, similar to other scarab beetle larvae, are parasitized by wasps in the families Scoliidae and Tiphiidae, as well as by flies in the family Tachinidae (Ritcher 1958). The larva of only one species, *Paracotalpa ursina* (Horn), has been described (Ritcher 1966).

*Paracotalpa ursina* adults are metallic blue-black or greenish with reddish brown to blackish elytra and are called “little bear scarabs.” This species occurs in many diverse habitats in coastal slope, San Joaquin Valley, and desert-edge localities in southern and central California. Adults feed on blossoms, buds, and leaves of various shrubs and trees, particularly those in the Rosaceae (Arnett 2000). Although the association is not understood, one specimen of *P. ursina* was collected in a nest of *Pogonomyrmex montanus* MacKay or *P. subnitidus* Emery (Hymenoptera: Formicidae) (MacKay 1983). Larvae have been found feeding on the roots of *Artemisia* sp. (sage brush; Asteraceae) at depths of 2.5–25 cm below the soil surface (Ritcher 1966). Since the species lives in areas where sage brush does not occur, larvae probably feed on other roots as well.

*Paracotalpa deserta* Saylor is a desert species and is entirely black. It occurs in the Colorado Desert region of southern California and northern Baja California, Mexico. Specimens have been collected at the base of *Larrea* sp. (creosote; Zygophyllaceae) and *Franseria* sp. (burr sage; Asteraceae), but the association with these plants is uncertain (Hardy 1972). Evans and Hogue (2006) recorded adults emerging from the soil at the base of *Larrea tridentata* (Sessé and Moc. ex DC.) Coville and burr sage in the afternoon and feeding on the leaves and blossoms of *Abronia villosa* S. Watson (Nyctaginaceae) and *Camissonia claviformis* (Torr. and Frém.) Raven (Onagraceae). LaRue (1992) observed *P. deserta* adults emerging from the soil at the base of *Camissonia* species.

The strikingly colored *Paracotalpa puncticollis* (LeConte) is called the “punctate bear scarab.” The head and pronotum are metallic green and the elytra are yellow with thin black stripes. The species is found in pinyon-juniper habitats in southern California and Nevada, Arizona, and New Mexico (Cheary *et al.* 1972). Cheary *et al.* (1972) reported that this species is associated with several species of *Juniperus*, and peak activity of adults is from March to April. Gut analysis demonstrated that adults feed on needles of *Juniperus* species. Adults were observed swarming at dusk, but their activity ceased at dark and they were not attracted to blacklights.

Adults of *Paracotalpa granicollis* (“hairy bear scarab”) are 12–18 mm in length and are distinguished by the rugose, metallic blue-green head and pronotum with reddish brown elytra (Figs. 1–2). Adults feed on the buds and leaves of peaches and are reported as pests of apple blossoms (Arnett 2000). *Paracotalpa granicollis* occupies the juniper woodlands of the northeast and central Great Basin Ranges in California and similar habitats in Idaho, Nevada, Oregon, Washington, and Utah (Evans and Hogue 2006). In Nevada, the species has been observed commonly from January to April in communities with *Grayia* spp. (Chenopodiaceae) and *Lycium* spp. (Solanaceae) (Jorgensen 1963; Dorsal and Beck 1965). It was less commonly observed in communities with *Atriplex* spp., *Bassia* spp. (both Chenopodiaceae), *Coleogyne* spp. (Rosaceae), *Larrea* spp., *Franseria* spp., and *Artemisia*



**Figs. 1–2.** Habitus views of *Paracotalpa granicollis*, male, from New Mexico. **1)** dorsal view; **2)** ventral view (male genitalia exerted).

**Figs. 3–4.** Juniper woodlands near Farmington, New Mexico, where *Paracotalpa granicollis* was collected.

spp. (Jorgensen 1963; Dorald and Beck 1965). Adults seem to prefer sandy bajada soils (Jorgensen 1963).

In April 2005, one of us (PK) collected two specimens of *P. granicollis* in Farmington, New Mexico (San Juan County) (Figs. 3–4). The species was previously unknown in New Mexico, and the specimens represent the southernmost distribution for the species. The following spring (2006), *P. granicollis* was first noticed on March 25. Individuals were active during the middle of the day and were attracted to *J. osteosperma* trees that were blooming and producing an abundance of pollen. Twelve specimens were collected from the air as they were flying around the juniper trees. Additional specimens were observed on April 3 (one individual flying around a juniper tree that was not releasing pollen), April 12 (four specimens landing on or flying around juniper trees that were not releasing pollen), April 14 (one specimen collected on a juniper tree that was approximately 13 km from the original

location), and April 19 (one specimen collected from a juniper tree). All specimens were collected or observed during the middle of the day (10:00 am–2:00 pm) on bright, sunny, and often very windy days. All collected individuals were males. A search in the area did not reveal any females.

Specimens are vouchered at the National Museum of Natural History (Smithsonian; currently housed at the University of Nebraska State Museum, Lincoln, NE); New Mexico State University, Las Cruces, NM; Museum of Southwestern Biology, University of New Mexico, Albuquerque, NM; and PK personal collection.

Specimens are labeled: “USA: New Mexico: San Juan County: Farmington,” and with specific label data as follows: “2-iv-2005, 36°43.643N / 108°05.246W, #752, caught on the wing while flying through area, Det Dr. B. C. Ratcliffe”; same but “#754”; “25-iii-2006, 36°43.643N / 108°05.246W, #1904, Collected by hand after landing on branch of *Juniperus osteosperma* (Juniper) that was full of pollen, Det P. O. Kaufman”; same, but “#1907, netted while flying around *Juniperus osteosperma* (Juniper) in middle of day”; specimens #1908–1917 with same label data as previous specimen; same, but “12-iv-2006, #1934, collected on *Juniperus osteosperma* (Juniper) in middle of day”; same, but “#1936, netted while flying around *Juniperus osteosperma* (Juniper) in middle of day”; “14-iv-2006, 12S 749458 / 4074530N UTM, Collected on *Juniperus osteosperma* (Juniper) in middle of day, #1935; 19-iv-2006, 36°43.613N / 108°05.258W, On *Juniperus osteosperma* (Juniper)-east side of tree in afternoon.”

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