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A new species of *Platyceroides* Benesh (Coleoptera: Lucanidae) from Oregon

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Abstract. A new species of *Platyceroides* Benesh, *P. marshalli*, **n. sp.**, is described from southwestern Oregon, USA, and compared to the most similar species, *P. opacus* (Fall) and *P. potax* Paulsen.

Introduction

The genus *Platyceroides* Benesh (Coleoptera: Lucanidae: Lucaninae) currently contains eight recognized species from western North America (Paulsen and Hawks 2008; Paulsen 2014). My current revision of the genus uncovered a single male specimen of an undescribed species of *Platyceroides* from southern Oregon in the collection of the Bohart Museum at the University of California-Davis. The robust body and almost obsolete elytral striae positioned this undescribed species as most similar to two California species, *P. opacus* (Fall) and the recently described *P. potax* Paulsen from the southern and northern Sierra Nevada, respectively. These three species may be grouped together into the *opacus* species group based on their robust form, almost obsolete elytral striae, and elongate, sclerotized flagellum of the male genitalia. Within this group, the undescribed species differs in the form of the male genitalia, head, and integument, as well as being located over 300 km farther to the northwest than the other two species. In order to avoid describing a new species based on a single specimen, I undertook a field expedition to the location on the label near the appropriate date. In the first week of June 2015, I, together with Christopher Marshall (Oregon State Arthropod Collection), successfully collected additional specimens of the new species, including females and larvae. The description and diagnosis of the new species were crafted to highlight the differences between it, *P. opacus*, and *P. potax*. All species of *Platyceroides* will be further treated in my tribal revision in preparation.

Materials and Methods

Even with hundreds of *Platyceroides* specimens from numerous collections being studied during the generic revision, I found only a single specimen of the new species in the Bohart Museum of Entomology, University of California-Davis, CA, USA (UCDC). The additional specimens personally collected during this research will be deposited at the Oregon State Arthropod Collection, Corvallis, OR, USA (OSAC); M.J. Paulsen Collection, Lincoln, NE, USA (MJPC); and the University of Nebraska State Museum, Lincoln, NE, USA (UNSM).

Taxonomic Treatment

Platyceroides marshalli Paulsen, new species

Types. Holotype male (OSAC) labeled: a) “USA: OR: Jackson Co. / 7 km S of Gold Hill, Galls Creek / Rd; 42.367, -123.057; 566m / soil/litter under madrone branch / (~10 cm diam.); 3.IV.2015 / MJ Paulsen, C Marshall”; b) on red paper, “*Platyceroides* / *marshalli* Paulsen / HOLOTYPE”.

Allotype female (OSAC) labeled: a) as holotype; b) on red paper, "*Platyceroides / marshalli* Paulsen / ALLOTYPE". Paratype male, 2 females (MJPC; Fig. 1–2) labeled: a) as holotype. Paratype male (UNSM) labeled: a) "USA: OR: Jackson Co. / 6 km S of Gold Hill, Galls Creek / Rd; 42.376, -123.054; 520m / dead on road; 3.IV.2015 / MJ Paulsen, C Marshall". Paratype male (UCDC) labeled: a) "Griffin Crk Ore / Jackson Co. VI-6 1957"; b) "C. Fitch / Collector". All paratypes labeled on yellow paper: "*Platyceroides / marshalli* Paulsen / PARATYPE".

Description, holotype. Coleoptera: Scarabaeoidea: Lucanidae: Lucaninae: Platyceroidini. *Length*: 11.2 mm. *Width*: 5.0 mm. *Color*: Shiny black, with subtle violet metallic reflection. *Head*: Form narrow anteriorly, with gena not produced laterally as far as eye. Antennal club small (about 1/2 length of scape), distal antennomere of club smaller than dorsal surface of eye, antennomeres of club not entirely tomentose. Labrum relatively large, subequal in size to median antennomere of club. Mandibles simply falcate, externally rounded. *Pronotum*: Surface shiny (minutely alutaceous) with moderately deep punctures; punctures dense, generally separated by about 1 puncture diameter, distance between punctures becoming greater on center of disc and at sides. *Elytra*: Surface alutaceous, weakly shiny, with moderately deep punctures, some in vague rows, but striae not distinctly impressed or complete. *Wings*: Wings fully developed. *Legs*: Meso- and metatibiae not distinctly slender as in *P. potax*. *Abdomen*: Male genitalia with permanently everted internal sac sclerotized, elongate, with capitate apex; apex narrow, not strongly expanded dorsoventrally as in other species (see Fig. 6–8).



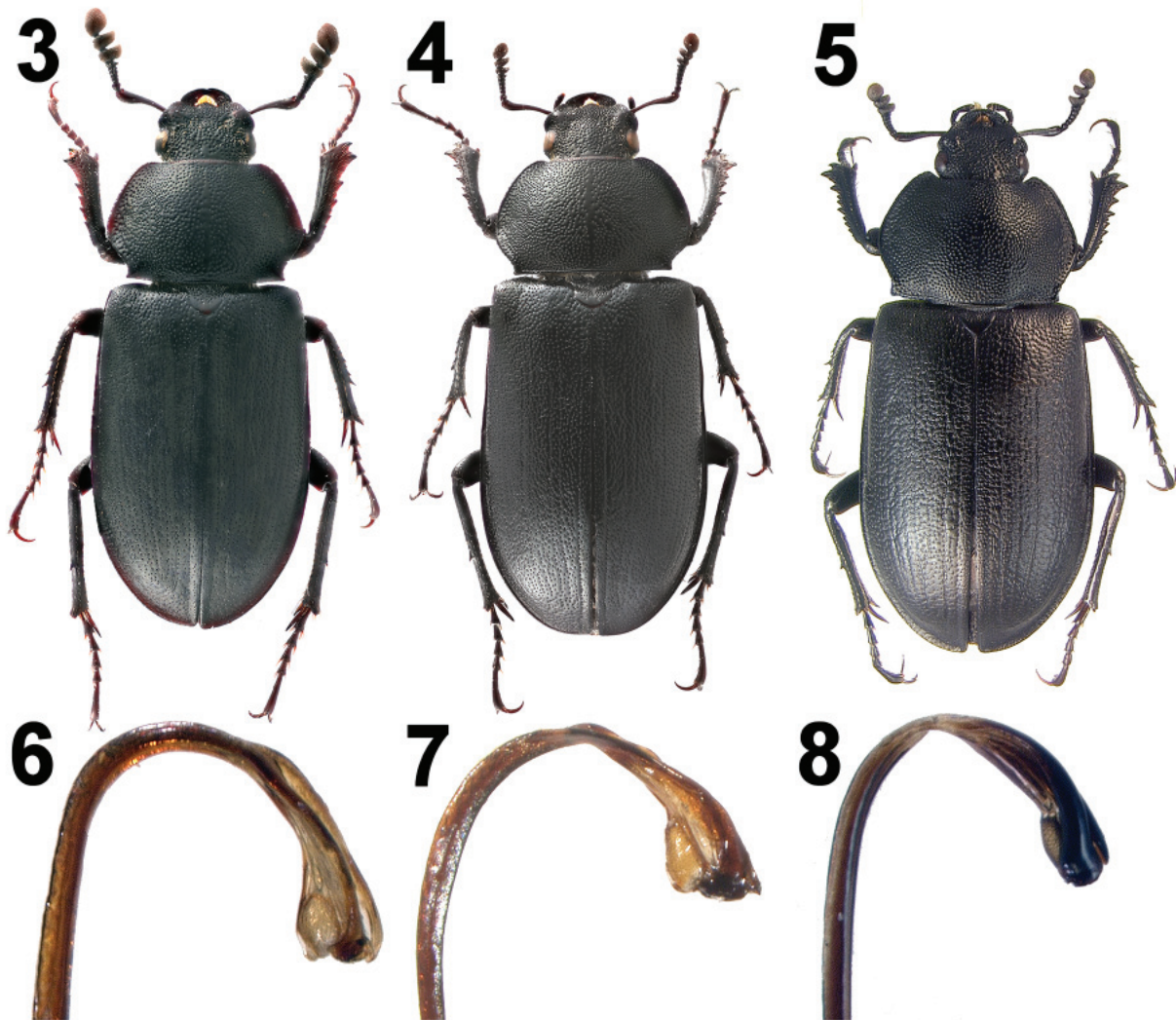
Figures 1–2. Dorsal habitus of paratypes of *Platyceroides marshalli*, n.sp. 1) Male. 2) Female.

Description, allotype. Differs from holotype in the following. *Length*: 11.6 mm. *Width*: 5.2 mm. *Color*: Piceous. *Head*: Antennal club smaller, antennomeres of club with expanded glabrous areas. *Pronotum*: Surface shinier (less alutaceous). *Elytra*: Surface shinier. Form more convex, less elongate. *Wings*: Wings reduced (1.5 mm). *Legs*: All legs more robust.

Variation in paratypes. Length: 11.0–11.8 mm. Width: 4.9–5.4 mm.

Etymology. I name this species in honor of Dr. Christopher Marshall of the Oregon State Arthropod Collection, who was indispensable and integral to my trip to search for additional specimens. My collecting trip would have been impossible without his assistance and participation, and finding the specimens was no easy task. Although there are very few patronyms among the Nearctic stag beetles, this one is richly deserved.

Diagnosis. Compared to *P. opacus* (Fig. 3), *P. marshalli* is shiny rather than opaque and the antennal club of males much smaller. The club is, however, slightly larger and more robust than that of *P. potax*. The meso- and metatibiae are not as slender as in *P. potax* (Fig. 4), and the head is much narrower anteriorly than in that species due to the less strongly produced genae (Fig. 5). The apex of the flagellum of the male genitalia of each species is distinctly shaped (Fig. 6–8).



Figures 3–5. Dorsal habitus of males of *Platyceroides* species in the opacus group. **3)** *P. opacus*. **4)** *P. potax*. **5)** *P. marshalli*, n.sp. **Figures 6–8.** Apex of flagellum of male genitalia of *Platyceroides* species in the opacus group. **6)** *P. opacus*. **7)** *P. potax*. **8)** *P. marshalli*, n.sp.

Distribution (Fig. 9). United States: Oregon: *Jackson Co.*: Galls Creek (6), Griffin Creek (1), Foothills Creek (larvae and disarticulated elytra only).

Temporal distribution. June (7).

Remarks. Adult males of *Platyceroides* species are fully winged. Females have reduced wings (~1.5 mm), fused elytra, and are flightless. During their apparently rather brief periods of activity each year, adults are most readily found immediately below or clinging to the underside of fallen branches; they are not found *within* the wood as are all other stag beetles in the region. For *Platyceroides* species that I have collected the branches are small, around 10 cm in diameter or smaller. Upon being exposed males are active and energetically attempt escape, which is more reminiscent of ground beetles (Carabidae) than stag beetles. Larvae are found at the log's interface with the soil or a short distance into the soft, decaying wood.

Our initial attempt to locate suitable habitat near Griffin Creek, the locality of the 1957 specimen, was unsuccessful. The area along the creek is close to Medford and is now fairly developed. The more remote areas along the creek were frequently precipitously steep with little access to suitable habitat. Due to the similarities of this new species with *P. opacus*, my initial instinct was to target oak logs as the likely larval host. However, searching in areas with oaks that were suggested by local residents (e.g., in the Cantrell-Buckley and Gold Hill vicinities) was not successful.

Shifting our strategy to search shady, wooded areas along the west side of other north-south running creeks finally resulted in the discovery of specimens. The first successful locality (Galls Creek; Fig. 10) included a few black oaks (*Quercus kelloggii* Newb.), but the fallen branches that yielded larvae and adults appeared to be madrone (*Arbutus menziesii* Pursh). The area also contained Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) and western hemlock (*Tsuga heterophylla* (Raf.) Sarg.). Rolling over the first madrone branch revealed larvae and an adult female. Digging in the soil and litter below the same branch resulted in the discovery of a mating pair. Other specimens were found beneath two other madrone branches out of the approximately 50 in the area. A damaged but more or less intact dead male specimen was also collected in the road, where it had apparently been run over by a vehicle. Although males of *P. potax* have been trapped in large numbers with ethanol lures (Paulsen 2014), a Lindgren funnel with ethanol as a lure placed at the Galls Creek site for 24 hours did not attract males of the new species.

We also collected living larvae together with disarticulated elytra near Foothills Creek, a significantly drier habitat to the west consisting of scrubby Oregon white oak (*Quercus garryana* Douglas). The branches associated with larvae at this site were clearly white oak. Due to the presence of elytra beneath the branches, it is likely that the mating activity at this drier site had already concluded. We did not locate any evidence of the species occurring along Antelope Creek, east of Griffin Creek. Additional collecting is necessary to discern the extent of the species' distribution, with earlier efforts required for drier habitats.

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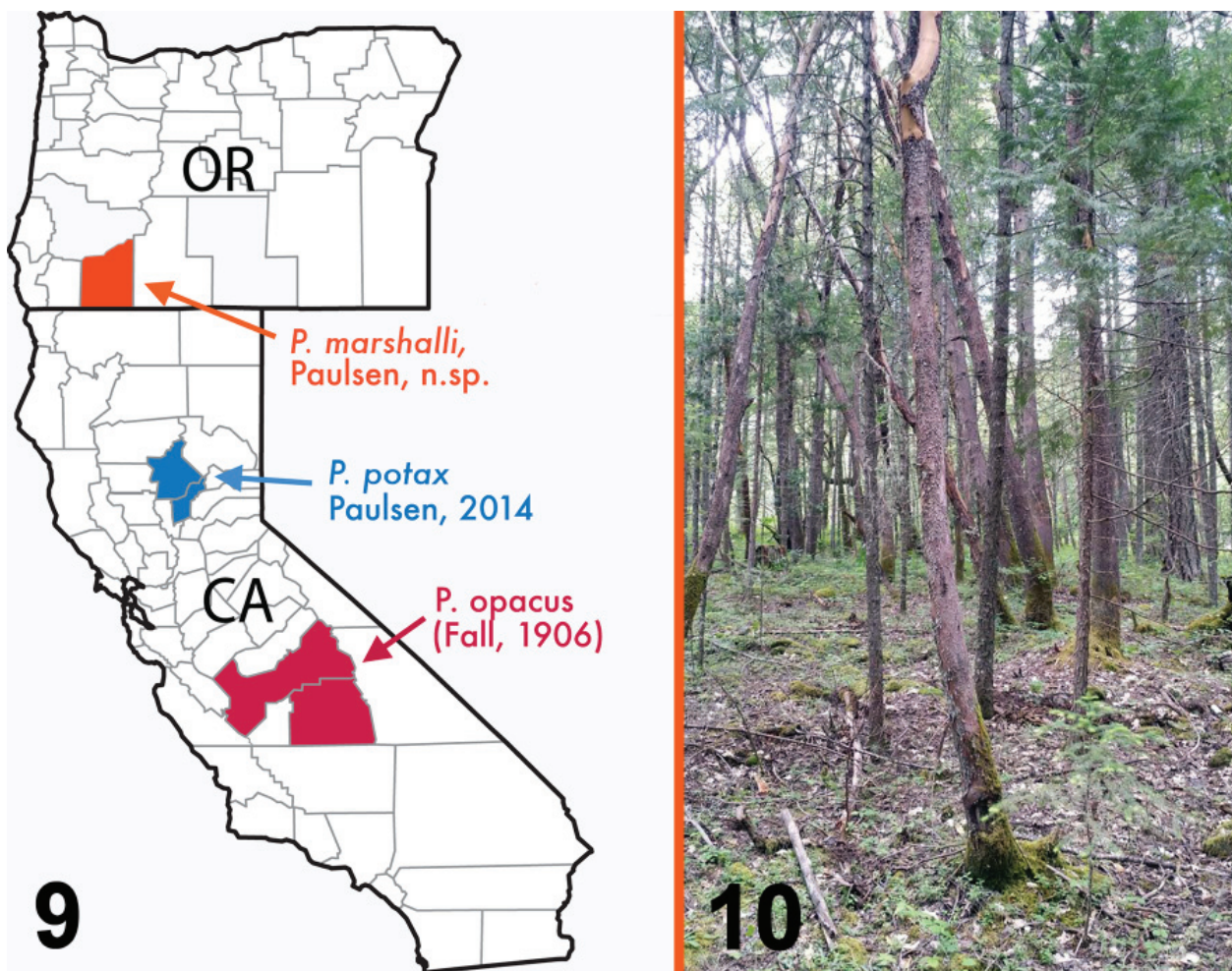


Figure 9. County-level distributions of *Platyceroides* species in the *opacus* group. **Figure 10.** Habitat of *P. marshalli* at the type locality. Photo by C. Marshall.

