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Platyceroidini, a new tribe of North American stag beetles (Coleoptera: Lucanidae: Lucaninae)

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Abstract. The tribe Platyceroidini is created to accommodate two genera of North American stag beetles, *Platyceroides* Benesh and *Platyceropsis* Benesh (Lucanidae: Lucaninae). These genera are removed from the tribe Platycerini Mulsant.

Tribal placement of *Platyceroides* Benesh and *Platyceropsis* Benesh

The genus *Platyceroides* is currently recognized to contain seven species from western North America (Benesh 1946, Paulsen 2005). The species' distributions range from British Columbia to California throughout the Cascade, Sierra Nevada, and Coast mountain ranges. Species of *Platyceroides* have fully-winged males, but flightless females (Benesh 1946). This situation is found in two other groups of scarabaeoids from the region, the families Pleocomidae LeConte and Diphyllostomatidae Holloway.

The genus *Platyceropsis* contains one species in which both sexes are flightless and is distributed from British Columbia to northern California along the Pacific coast (Benesh 1946), where it is found under beach driftwood. The validity of *Platyceropsis* with respect to the monophyly of *Platyceroides* has not yet been examined.

Species in these genera are similar in appearance to species of the Holarctic genus *Platycerus* Geoffroy, with which they have been placed in the tribe Platycerini Mulsant, variably considered to form the subfamily Platycerinae Mulsant (Maes 1992, Paulsen 2005) or to belong in the Lucaninae (Holloway 1969, Howden and Lawrence 1974, Paulsen 2008). The Lucaninae can be defined by the presence of an ocular canthus, as well as a permanently everted internal sac of the male genitalia (Holloway 1969). Thus, *Platyceroides* and *Platyceropsis* are here considered to belong to the Lucaninae. The association of these two genera with *Platycerus* into a single, higher-level taxon, whether Platycerinae or Platycerini, necessitates hedging on some characters, in particular the visible 6th abdominal ventrite used by Benesh (1946) to define the Platycerini. Although present in *Platycerus* species, the character is not clearly present in *Platyceroides* or *Platyceropsis* species, and its usefulness in defining relationships between these taxa was questioned by Holloway (1969). Howden and Lawrence (1974) listed the following characters present in the Platycerini: eye canthus short (less than 1/4 length of eye), partially geniculate antennae, body length usually less than 15 mm, and lateral margin of pronotum arcuate. Other characters of *Platycerus* species are not found in the other genera, especially the strongly excised anterior margin of the head, indistinct labrum, and distinct sexual dimorphism in both the mandibular form and number of antennomeres that form the club. Furthermore, the eye canthus, while still short, is more pronounced in *Platyceroides* and *Platyceropsis* species. Holloway (1969: 973) first discussed the dissimilarity between the genera of Platycerini and noted that "nothing in either the male or female genitalia or in external morphological characters suggests that they are particularly closely related". The two groups have very different biogeographic patterns, and preliminary molecular analyses indicate a great degree of molecular divergence between the two groups (Paulsen and Hawks, unpublished data). Based on the molecular and

morphological differences between these genera and *Platycerus,* we hypothesize that they are not closely related, and propose a new tribal placement for *Platyceroides* and *Platyceropsis* below.

Platyceroidini, new tribe

Type genus: *Platyceroides* Benesh 1946: 175, here designated.

Description. Coleoptera: Scarabaeoidea: Lucanidae: Lucaninae. Length: 7.6-13.2 mm. Width: 3.2-5.8 mm. Color: Black to reddish-brown, occasionally with metallic reflections. *Head*: Anterior margin straight or weakly emarginate, not deeply, semi-circularly excised. Eye canthus weak but distinct (anterior margin of eye located on dorsal surface of head, per Holloway 1969). Antenna partially geniculate; antennal club composed of 3 antennomeres in both sexes. Mandibles small in both sexes, approximately 1/3 to 1/2 length of head; form not strongly sexually dimorphic, simply falcate, at most with weakly indicated tooth internally near base. *Pronotum*: Form broadly rounded, narrowly to broadly explanate. *Elytra*: Surface punctate, weakly striate. *Wings*: Males mostly with functional flight wings (one species with flightless males), females flightless in all species. *Abdomen*: Sixth ventrite rarely visible beyond apex of 5th ventrite unless genitalia protruding. Male genitalia with internal sac permanently everted, with saclike accessory lobes not strongly sclerotized; flagellum present or absent.

Composition. *Platyceroides* (7 species), *Platyceropsis* (1 species).

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