

***Acmaeodera chuckbellamyi* MacRae (Coleoptera: Buprestidae: Acmaeoderini), a New Species from Arizona, USA**

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***ACMAEODERA CHUCKBELLAMYI* MACRAE (COLEOPTERA: BUPRESTIDAE:
ACMAEODERINI), A NEW SPECIES FROM ARIZONA, USA**

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ABSTRACT

Acmaeodera chuckbellamyi MacRae, **new species**, is described from Arizona in the southwestern USA. The species is described, photographs of the unique holotype and the habitat near the type locality are presented, and comparisons are made to related species.

Key Words: jewel beetle, taxonomy, Nearctic, Polycestinae

The large, cosmopolitan buprestid genus *Acmaeodera* Eschscholtz, 1829 is represented in the USA by 146 species plus seven non-nominate subspecies (Bellamy 2008). The genus is especially diverse in Arizona, where 72 species and subspecies have been documented (MacRae, unpublished data). Recently, an additional, undescribed species has come to light in the form of a single specimen collected in 2003 by a hymenopterist in the Atascosa Mountains of southeastern Arizona. Subsequent visits to the collection locality by Paul Kaufman in 2007 and Rick Westcott in 2008 in an effort to recollect the species were not successful, and in 2011 the type locality and surrounding area was burned by the Murphy Fire. These events suggest that the probability of obtaining additional specimens for study in the near future is remote, and as a result the species is being described on the basis of this unique individual.

MATERIAL AND METHODS

Measurements were made from the center of the frons to the elytral apex (length) and across the humeri (width) using a vernier caliper (precision = 0.05 mm). Holotype label data are cited verbatim, with “quotation marks” separating data from individual labels, a forward slash “/” separating data from individual lines, and author comments presented in [square brackets] (p = printed).

***Acmaeodera chuckbellamyi* MacRae,
new species
(Fig. 1)**

Holotype Female. Length 7.15 mm, width 2.50 mm, widest across elytra just behind umbones; head, pronotum, underside and appendages shiny

black; elytra with black and red-orange vittate pattern as in Fig. 1, umbones red-orange below, sides red-orange except narrowly black along lateral margin; setae erect to semi-erect, mostly light colored to white, longer, thicker, and more densely placed on head and pronotum, moderately placed on elytra, less dense and semi-erect on underside. **Head:** Flattened above, slightly convex below middle, coarsely and densely punctate; clypeus depressed on base, front margin broadly, shallowly, evenly emarginate; antennae abruptly serrate from antennomere 5, which is slightly narrower than following antennomeres. **Pronotum:** Strongly, evenly convex, slightly depressed behind front margin, with a shallow median basal depression; punctures coarse and dense on disc, becoming much larger and reticulate laterally; anterior margin pronounced and broadly lobed at middle; posterior margin truncate; lateral margins distinct, broadly evenly arcuate, not visible from above; front angles subquadrate; hind angles quadrate and slightly depressed within. **Elytra:** Subflattened on disc, sides steep, umbones prominent and finely punctate, more coarsely below; humeral angles moderately triangular, slightly projecting below to about level with apex of hind angles; lateral margins weakly and sparsely serrate on about apical half, more strongly so on apical fourth and especially near apex; sutural area distinctly elevated; striae punctures coarse, dense, distinctly regular throughout, not placed in grooves, interstitial punctures indistinct; intervals more or less flattened throughout, ninth wider and prominently elevated, slightly flared in apical third. **Underside:** With punctures of medium size and moderately densely placed, smaller and less densely placed towards middle of abdominal ventrites; prosternum with front margin truncate at middle, then evenly angling to almost attain front angle of pronotum;



Fig. 1. *Acmaeodera chuckbellamyi*, holotype female, dorsal (left) and lateral (right) habitus. Scale bar = 1 mm.

ventrite 5 evenly rounded apically, subapical plate absent; left meso- and metatarsus missing.

Type Specimen. Holotype ♀ (CASC) labeled: “ARIZONA, Santa Cruz Co./Atascosa Mts., near Atascosa/Peak trailhead, along Ruby Road/31.405°, -111.147°, ±1430 m/10–12:00 hours, 2-VIII-2003 [p]” “Collected on flowers of/*Aloysia* sp. (Verbenaceae)/Mike Arduser [p]” “HOLOTYPE/*Acmaeodera/chuckbellamyi*/MacRae [p, red label]”.

Comparisons. Among the USA fauna, *A. chuckbellamyi* most closely resembles *Acmaeodera robigo* Knull, 1954, known only from Texas and Oklahoma; however, it is immediately separated from that species by the form of the ninth elytral interval, which is highly elevated from behind the umbone, making the elytra appear laterally flared on the apical half when viewed from above. The ninth interval is less distinctly elevated on *A. robigo*, and the elytra do not appear at all flared apically. *Acmaeodera chuckbellamyi* appears most closely related to *Acmaeodera rubrovittata* Nelson, 1994 from southern Mexico (Guerrero, Morelos, and Puebla), which also exhibits a well-developed ninth elytral interval. This character is also seen in *Acmaeodera cazieri* Knull, 1960, *Acmaeodera parkeri* Cazier, 1940, *Acmaeodera ruricola* Fisher, 1949, and *Acmaeodera setosa* Waterhouse, 1882, being more strongly developed in the latter three species. Differences between *A. chuckbellamyi* and *A. rubrovittata* include a slightly broader, more flattened appearance (although the L/W ratio does not differ); the ninth elytral interval slightly more elevated basally; the front margin of the clypeus broadly, shallowly, evenly emarginate (in *A. rubrovittata*, it appears

broadly, slightly triangularly emarginate); the sutural intervals of the elytra more distinctly elevated; the coarser punctation of the elytral striae; the last abdominal ventrite more coarsely, densely, discretely punctate; and the red-orange color pattern of the elytra extending well over the sides almost completely to the lateral margins. In this last character, *A. chuckbellamyi* more resembles *A. robigo* than *A. rubrovittata* (in 19 paratypes of the latter that were examined, the red-orange pattern does not reach the margin except as a spot on one side of one specimen). It is possible that *A. chuckbellamyi* and *A. rubrovittata* represent clinal extremes of a single species distributed broadly from southeastern Arizona to southern Mexico; however, without comparable material from the wide intervening area it seems reasonable for now to regard them as distinct species.

Ecology. The type specimen was collected on flowers of *Aloysia* sp. (Verbenaceae) just east of the Atascosa Lookout Trailhead (Fig. 2) by Mike Arduser, a hymenopterist who was collecting bees from the flowers. Mr. Arduser (*in litt.*) described the locality as grasslands with *Aloysia* sp. and *Eysenhardtia* sp. (Fabaceae) shrubs in the draws



Figs. 2–3. 2) GoogleEarth map portion of southeastern Arizona, USA showing type locality of *Acmaeodera chuckbellamyi* (31.405°, -111.147°) in relation to the Atascosa Lookout Trailhead; 3) Habitat ~0.5 mi W of Atascosa Lookout Trailhead. Note abundance of *Aloysia* sp. shrubs in draw. Photographed 25 August 2007 by P. Kaufman.

and *Quercus* sp. (Fagaceae) trees at the foot of the slope. He also noted that the habitat was rockier and drier further up the trail but still supported *Aloysia* sp. shrubs that were in flower and attracting nectar-feeding insects such as bees, wasps, flies, and beetles. Mr. Arduser reported that there was no evidence of fire at the time of his visit. In early August 2007 and again later that same month, Paul Kaufman visited the locality and reported (*in litt.*) that he did not find *Aloysia* sp. shrubs at the Atascosa Lookout Trailhead, but that he did find them a short distance (~0.8 km) west along Ruby Road (Fig. 3). The plants were in flower at this second locality, and nectar-feeding insects were plentiful; however, no *Acmaeodera* spp. were observed on the flowers. At the Atascosa Lookout Trailhead, the only flower-visiting buprestid observed was *Acmaeodera rubronotata* Laporte and Gory, 1835 on flowers of an undetermined aster. Mr. Kaufman noted that the area appeared to have been burned in a prior year. In late July 2008, Rick Westcott visited the area, reporting (*in litt.*) that he could not find *Aloysia* sp. shrubs or any other flowers suitable for *Acmaeodera* and repeating Mr. Kaufman's earlier observation that the area appeared to have burned in a prior year. In June 2011, the area was burned by the 27,550-hectare Murphy Fire. This large fire significantly affected the type locality and surrounding areas, completely killing stands of pinyon pine and juniper at higher elevations along the Atascosa Lookout Trail (tinyurl.com/mqwkhm9).

Etymology. I take great pleasure in naming this species in honor of the late Charles "Chuck" Bellamy. Chuck was a consummate student of Buprestidae and my friend and mentor. During our 20-year friendship, I marveled at his productivity, heeded his sage counsel, and savored his cerebral wit.

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