

FIGURE 15. Distribution of Morsei Group species.

***Aglaothorax amathitis* Cole, Weissman, and Lightfoot, sp. nov.**

Fig. 15 (distribution), Fig. 20 (male and female habitus, calling song, male and female terminalia, karyotype), Plate 5 (male terminalia), Plate 8 (female subgenital plate), Plate 11 (male titillators), Plate 14 (male calling song).

**Common Name.** Bluffs Shieldback.

**History of recognition.** Populations from Palos Verdes, Los Angeles County, California treated as *A. morsei* (Rentz & Birchim 1968).

**Type material.** HOLOTYPE MALE: USA, California, Los Angeles County, Playa Del Rey, Ballona Wetlands, 33.96557N, 118.44508W, 4 m, 24-VI-1992, DB and BI Weissman, leg. S92-58, R92-75, T92-27, deposited in CAS, Entomology type # 20237. PARATYPES: (n=61) USA, CA, Los Angeles Co., same data as holotype, CAS, 2♂, 2♀; El Segundo dunes, 33.909722, -118.427222, 6-VI-1941, Wd Pierce, LACM, 2♂, 2♀; El Segundo Sand dunes, 33.909722, -118.427222, 13-VII-1938, Wd Pierce, LACM, 1♂; same data except 17-VIII-1938, Wd Pierce, LACM, 1♂; El Segundo, 33.909722, -118.427222, 2-VIII-1977, JN Hogue, CSUN, 1♀; same data except 30-V-1941, Wd Pierce, LACM, 2♂, 3♀; Kenneth Hahn SRA, Baldwin Hills, 34.0042, -118.3592, 126 m, 26-VI-2006, JA Cole, JF Eguizabal, LACM, 4♂, 1♀; same data except 27-28-V-2008, JA Cole, AMNH, 2♂; same data except LACM, 9♂; same data except 27-28-VI-2006, JA Cole, JF Eguizabal, LACM, 8♂; same data except 28-V-2005, JA Cole, MFJ Storc, LACM, 1♂; same data except 29-30-V-2007, JA Cole, LACM, 1♂; same data except 7-VII-2021, JA Cole, J Bailey, LACM, 2♂; Ladera Linda Park, 12 miles south of I-405 off Western Boulevard, 33.7383, -118.3479, 149 m, 20-VI-2008, JA Cole, LACM, 5♂; Malaga dune, Rancho Palos Verdes, 33.8004, -118.3858, 61 m, 19-20-VI-2008, JA Cole, AMNH, 1♂; same data except LACM, 8♂, 2♀; Rancho Palos Verdes Peninsula, Center 9/11 Memorial, 33.76917, -118.36583, 265 m, 7-VII-2021, JA Cole, J Bailey, LACM, 1♂.

**Measurements.** (mm, ♂n=12, ♀n=4) Hind femur ♂13.24–16.25, ♀17.69–22.16, pronotum total length ♂7.79–10.52, ♀8.30–10.15, prozona length ♂3.27–5.43, ♀4.19–5.25, metazona dorsal length ♂4.10–6.60 ♀4.11–4.96, pronotum constriction width ♂2.57–3.35, ♀3.19–3.76, metazona dorsal width ♂5.60–7.24, ♀6.00–7.83, head width ♂3.40–4.20, ♀4.50–5.41, ovipositor length ♀11.68–15.75.

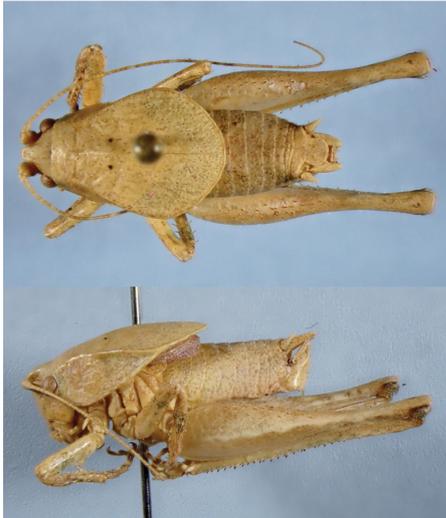
**Distribution.** Palos Verdes Peninsula and Los Angeles Basin, Los Angeles County, California.

**Habitat.** Coastal bluffs and stabilized sand dunes. Naturally inhabits coastal sage scrub, riparian, and grassland, but also found in disturbed habitats and on ornamental vegetation near residential areas. Taken from Iceplant or Hottentot Fig (*Carpobrotus edulis* (L.) L. Bolus), Lemonade Sumac (*Rhus integrifolia* (Nutt.) W.H. Brewer & S. Watson), Elderberry (*Sambucus* spp.), Rosemary (*Rosmarinus officinalis* L.), and Peruvian Pepper Tree (*Schinus molle* L.). Although typically found on herbaceous vegetation, they may be arboreal where trees occur.

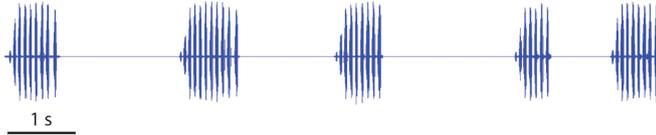
**Seasonal occurrence.** Wide adult activity season across spring and summer, from 12-V-1946 (no collector, LACM) to 27-IX-1980 (C. Nagano & E. Birdsall, LACM).

**Stridulatory file.** (n=6) length 3.10–4.00 mm, 80–104 teeth, tooth density 27.1±2.9 (22.5–30.3) teeth/mm.

male HOLOTYPE USA. CA: Los Angeles Co. S92-58, R92-75, T92-27



calling song PARATYPE USA. CA: Los Angeles Co. 24.5°C JCR08KH01



karyotype PARATOPOTYPE USA. CA: Los Angeles Co. S92-58, T92-28



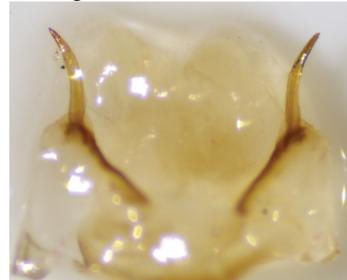
male terminalia HOLOTYPE USA. CA: Los Angeles Co. S92-58  
R V



female PARATOPOTYPE USA. CA: Los Angeles Co. S92-58



titillator PARATYPE USA. CA: Los Angeles Co. JAC000002758



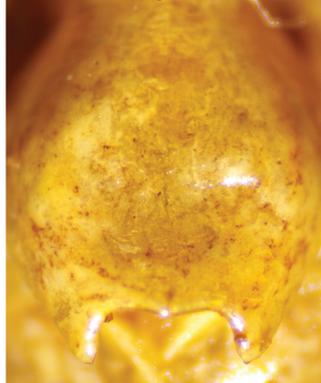
titillator PARATYPE USA. CA: Los Angeles Co. JAC000002741



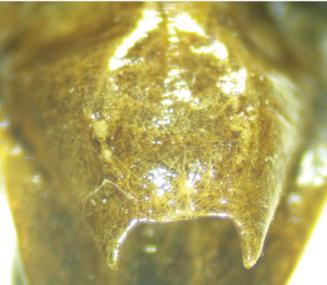
male PARATYPE USA. CA: Los Angeles Co. JAC000002764



female subgenital plate PARATOPOTYPE USA. CA: Los Angeles Co. S92-58



female subgenital plate PARATYPE USA. CA: Los Angeles Co. JAC000002745



**FIGURE 20.** *A. amathitis* male and female habitus, calling song, male and female terminalia, and karyotype. Idiogram showing karyotype  $2n\♂=24$ , S92-58, T92-28.

**Song.** (n=29) Pulse trains  $80\pm 40$  ms in length are repeated at a rapid rate of  $9.70\pm 0.93$  s<sup>-1</sup>. Mean peak frequency is  $16.02\pm 3.38$  kHz; using high frequency recording equipment the peak frequency borders on ultrasonic at 20.50 kHz. Echemes that consist of  $10\pm 6$  pulse trains (range 3–24 pulse trains/echeme) occur at a rate of 1–21 echemes/min<sup>-1</sup>. The number of pulse trains/echeme is similar to *A. costalis* but the *A. costalis* pulse train rate is approximately one third faster at 15 s<sup>-1</sup>.

**Karyotype.** (n=3)  $2n\text{♂}=24$  (22t+Xty t), paratopotype T92-28 (S92-58).

**Recognition.** Morphology, song, ecology, and geography. Male supra-anal plate rounded and tongue-like, paraproct with a subapical tooth, and titillators short, unlike Diminutiva Group species with the supra-anal plate heart-shaped or indented on the apical margin, the paraproct process tooth apical, and the titillators long and bowed. The male paraproct is cylindrical and twice as long as wide unlike *A. costalis*. The male supra-anal plate of *A. amathitis* is flat while those of *A. costalis* and *A. longipennis* are dorsally concave. The short male titillator arms do not have the basal notch found in *A. morsei* and *A. constrictans*. The female subgenital plate lateral processes are short, unlike Diminutiva Group species, with the posterior margin low and rounded rather than straight as in *A. costalis*. The *A. amathitis* pulse train rate of 9–11 s<sup>-1</sup> is faster than that of *A. morsei* at 4–6 s<sup>-1</sup>. The songs of *A. amathitis* and *A. longipennis* are similar, but the echemes of the former contain more pulse trains (3–24 vs. 2–6) that are produced a slower rate (9–11 vs. 11–15 s<sup>-1</sup>). This species inhabits stabilized sand dunes in the Los Angeles Basin.

**Etymology.** Gr. *amathitis* dwelling in sand. Named after the coastal sand dune habitats of this species.

**Notes.** This new species occurs in and around undeveloped habitats in the Los Angeles Basin. Whereas *A. longipennis* occurs more widely than initially thought, *A. amathitis* is known from few localities, most of which are disturbed and subject to high human impact, like Malaga dune in Palos Verdes and Kenneth Hahn State Recreation Area in Baldwin Hills. The coastal bluff and dunes habitats within the range of this species harbor many endemic and protected organisms, notable among them the federally endangered El Segundo Blue (*Euphilotes battoides allyni* Shields) and the Palos Verdes Blue (*Glaucopsyche lygdamus palosverdensis* Perkins & Emmel) butterflies. The type locality at Ballona Wetlands is now protected. Genetic resolution was only possible with fast evolving mtDNA markers (Fig. 3) suggesting recent divergence. Unlike with *A. longipennis* mitochondrial capture was not found in the *A. amathitis* lineage, which is expected in the absence of contemporary or historical sympatry with *A. dactyla*. An adult male from Malaga Dune at Rancho Palos Verdes succumbed to an *Ormia* tachinid fly parasitoid while in captivity.

**Material examined.** (n=7) In addition to Type Material above, **All USA, CA, Los Angeles Co.**, Ballona Wetlands, Playa del Rey, 33.9602, -118.4482, 4 m, 2-3-VII-2012, JA Cole, 1♂ sound record; Dockweiler Beach, El Segundo Blue Restoration Area by Imperial and Vista del Mar, 33.9222, -118.4333, 3-VII-2012, JA Cole, 1♂ sound record; Redondo Beach, 33.849182, -118.388408, 6-VIII-1938, no collector, LACM, 3♀; Windsor Hills, 33.988902, -118.353965, 114 m, 12-V-1946, LACM, 2♂.