

FIGURE 6. Distribution of Ovatus Group species.

Aglaothorax giganteus (Rentz & Birchim, 1968) stat. rev.

Neduba (*Aglaothorax*) *ovata gigantea*—Rentz & Birchim, 1968: 77.

Aglaothorax segnis—Tinkham, 1944: 291 (Incorrect synonymy).

Aglaothorax giganteus stat. rev. (Revised to species status with corrected gender).

Fig. 6 (distribution), Fig. 8 (male and female habitus, calling song, male and female terminalia, karyotype), Plate 4 (male terminalia), Plate 7 (female subgenital plate), Plate 10 (male titillators), Plate 14 (male calling song).

Common name. Gigantic Shieldback.

History of recognition. Described as a subspecies of *Neduba* (*Aglaothorax*) *ovata* (Rentz & Birchim 1968). Confused with *A. segnis* (Tinkham 1944). Returned to *Aglaothorax* (Rentz & Colles 1990) where this species remains as a subspecies of *A. ovatus* (Cigliano *et al.* 2025). We elevate *A. giganteus* to species rank based on morphology, geography, and phylogeny.

Type material. The holotype male in ANSP is from 8 miles west of Lone Pine on the eastern slope of the Sierra Nevada, Inyo County, California, USA. Images of the holotype and allotype are available at OSFO (Cigliano *et al.* 2025). PARATYPES EXAMINED: (n=39) **USA, CA, Inyo Co.**, 11 mi. W Lone Pine, 36.605879, -118.261588, 19-VII-1961, d C Rentz, LACM, 1♂; same data except, 6-VII-1961, d C Rentz, LACM, 1♀; Big Pine Canyon, 37.164931, -118.289546, 16-VIII-1938, ER Tinkham, CAS, 2♂; Big Pine Canyon, Big Pine, 37.164931, -118.289546, 4-VIII-1931, ER Tinkham, CAS, 4♂; Big Pine Cyn, 9 mi W Big Pine, 37.164818, -118.453317, 25-VIII-1957, ER Tinkham, CAS, 2♂, 1♀; Lone Pine Canyon, 36.60611, -118.06194, 20-VIII-1938, ER Tinkham, CAS, 5♂; Lone Pine, 36.606044, -118.062865, 28-VII-1940, LC Kiutert, CAS, 1♂. TOPOTYPES EXAMINED (n=34): **USA, CA, Inyo Co.**, 11 mi. W Lone Pine, 36.605879, -118.261588, no date, ER Tinkham, CAS, 2♂; 6.8 M W Big Pine on road to Sage Flat Camp, 37.164931, -118.289623, 2042 m, 28-VIII-1996, DB Weissman, BI Weissman, d CF Rentz, CAS, 2♂; 7 miles W Lone Pine on road to Whitney Portal, 36.605957, -118.207391, 1785 m, 5-VIII-1978, d B Weissman, CAS, 1♂; 7-8 miles W of Lone Pine on Whitney Portal, 36.605957, -118.207391, 1785 m, 18-VIII-1982, d B Weissman, CAS, 2♂, 1♀; 9 mi. W Lone Pine, 36.605934, -118.225457, 8-VII-1961, JK d rew, CAS, 1♂, 1♀; Whitney Portal Road, 4.8 miles west of Lone Pine, 36.59500, -118.15194, 1558 m, 10-VII-2019, JA Cole, J Bailey, JAC, 2♂; Whitney Portal Road, 6 miles west of Lone Pine, 36.5949, -118.1563, 1611 m, 8-9-VII-2008, JA Cole, AMNH, 2♂; same data except JAC, 4♂; same data except LACM, 8♂; Whitney Portal Road, 6 miles west of Lone Pine, 36.59511, -118.16033, 1636 m, 1-VII-2017, JA Cole, LACM, 4♂; same data except JAC 3♂, 1♀.

Measurements. (mm, ♂n=4, ♀n=2) Hind femur ♂18.65–20.45, ♀20.53–22.75, pronotum total length ♂13.95–15.10, ♀14.95–16.23, prozona length ♂6.08–6.90, ♀7.14–8.09, metazona dorsal length ♂7.60–8.64, ♀7.76–8.69, pronotum constriction width ♂4.30–4.70, ♀3.80–5.40, metazona dorsal width ♂9.10–9.40, ♀9.65–10.91, head width ♂6.05–6.20, ♀6.48–7.64, ovipositor length ♀20.88–23.30.

Distribution. Eastern Sierra Nevada at moderate to high elevations.

Habitat. Desert scrub and pinyon-juniper woodland. Taken from Big Sagebrush (*Artemisia tridentata* Nutt.), Crucifixion Thorn (*Castela emoryi*), Singleleaf Pinyon (*Pinus monophylla* Torr. & Frém.), and Stansbury Cliffrose (*Purshia stansburiana* (Torr.) Henrickson). Inhabits elevations between 1500 and 2000 m.

Seasonal occurrence. Summer (1-VII-2017, JA Cole, LACM) through fall (9-X-1995, DB Weissman & VF Lee, CAS).

Stridulatory file. (n=4) length 5.00–5.55 mm, 83–98 teeth, tooth density 17.7±0.9 (16.6–18.7) teeth/mm.

Song. (n=15). Loud song of frequently repeated echemes as in *A. ovatus*. Pulse trains 60±20 ms in length are repeated at a rate of 9.52±0.88 s⁻¹. Mean peak frequency is 12.26±3.41 kHz, with high frequency recordings finding peak frequency energy as high as 19.46 kHz. Echemes group 2–6 (mean 3±1) pulse trains with 0.79–3.02 (mean 1.88±0.64) s silent intervals between echemes. At McMurray Meadows, Inyo County, California on 11-VII-2003, a 100 m transect was made along a chorus. Four males were found, each in large *Purshia* bushes, spaced from their nearest neighbors by 25 to 50 m. Singing males were not common and, at this date early in the season, may have been among the first males to mature at this high elevation site.

Karyotype. (n=3) 2n♂=23 (22t+Xt), topotype T82-148 (S82-71).

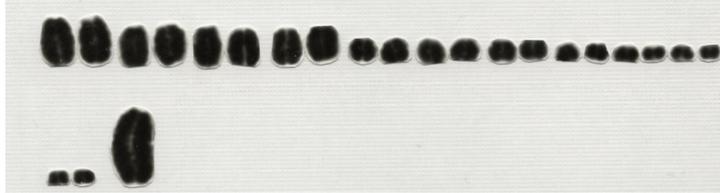
male TOPOTYPE USA. CA: Inyo Co.
JAC00000115



calling song TOPOTYPE USA. CA: Inyo Co. 25.0°C JCR08LO-03



karyotype TOPOTYPE USA. CA: Inyo Co. S82-71, T82-148



male terminalia TOPOTYPE USA. CA: Inyo Co.
JAC000003035

R

S82-71

V



female TOPOTYPE USA. CA: Inyo Co.
JAC000003031



male USA. CA: Inyo Co. JAC000003046



titillator PARATYPE
USA. CA: Inyo Co.



female subgenital plate
TOPOTYPE JAC000003031



FIGURE 8. *A. giganteus* male and female habitus, calling song, male and female terminalia, and karyotype.

Recognition. Large body size, pronotum 14–15 mm long in male, a size range beginning at the maximum size of male *A. ovatus*. Red-brown middorsal abdominal stripe and white tegmina, unlike the unstriped abdomen, wood-brown body, and brown tegmina of *A. gurneyi*. Male paraproct process with a heavy, subapical, ventrally directed tooth, unlike the apical mesally directed tooth of *A. segnis* and *A. strobilion*. Pronotum heavily and irregularly rugose on prozona; the only other *Ovatus* Group species that approaches this condition is *A. tinkhamorum*, but in that species the prozona appears warty rather than wrinkled. *A. giganteus* males have an abrupt, strong elevation of the metazona after the transverse sulcus unlike all other *Ovatus* Group species. Pronotum with abundant longitudinal black streaks on disk; no broad white longitudinal stripes as in *A. ovatus*, and not with reduced black streaking on disk as in *A. armiger* and *A. tinkhamorum*. Female body size overlaps with *A. ovatus*, but in that species the ovipositor tends to be longer than the hind femur.

Notes. The concatenated phylogenetic consensus (Fig. 4) found a monophyletic *A. giganteus* but paraphyletic relationships were observed with nDNA (Fig. 2) and mtDNA (Fig. 3) gene trees. The original description (Rentz & Birchim 1968) expounds upon this species. Among the discussion, a courtship-copulation sequence was described, and variation between years was hypothesized to be dependent upon variable climate in their arid habitat. We noticed variation in abundance over years as well: the katydids were abundant during collecting events in 2003, 2008, and 2017, all wetter than average years for California that accompanied El Niño Southern Oscillation (ENSO) events, the 2017 event being a particularly strong one. During those years katydids could be found generally throughout the habitat on all types of vegetation. An increase in the number of eggs broken from diapause and increased survivorship due to an abundance of vegetation for food and water are non-mutually exclusive hypotheses for the population booms.

Material examined. (n=11) **All USA, CA, Inyo Co.**, 4.3 miles W of Independence, off Onion Valley Road, 36.802685, -118.277974, 1770 m, 9-X-1995, d B Weissman, VF Lee, CAS, 1♂; Buttermilk Brea, 8 miles west of Bishop, 37.363451, -118.541063, 1981 m, 3-VII-1973, KE Stager, LACM, 1♀; McMurray Meadows Road, 3.0 miles south of Glacier Lodge Road, 6 miles southwest of Big Pine, 37.1023, -118.3196, 13-VII-2003, JA Cole, JF Eguizabal, LACM, 6♂; same data except JAC, 2♂; same data except 4-VIII-2004, JA Cole, LACM, 1♂.