SCIENTIFIC NAME: *Ammopelmatus kelsoensis*
COMMON NAME: Kelso Jerusalem cricket
CLASS, FAMILY: Insecta, Stenopelmatidae

ORIGINAL DESCRIPTION: Tinkham, E.R. 1965. Studies in nearctic desert sand dune Orthoptera: A new genus and species of stenopelmatine crickets from the Kelso Dunes with notes on its multi-annual life history and key. Part X. The Great Basin Naturalist 35(3-4)67; plate 1, figs. A (foretibia with two ventral apical teeth), B (caudal tibia with one ventral apical tooth), and K (ventral view of caudal tibia showing single ventral tooth and spatulate carcars).

TYPE MATERIAL: *Holotype*: Female – CALIFORNIA: San Bernardino County; Kelso Dunes, 27 Apr 1963, E.R. Tinkham, collector. The original description refers only to an allotype and compares paratypes to it, but does not mention a holotype. The specimen is deposited in, and apparently considered a holotype by, the California Academy of Sciences (type #16450). *Paratypes*: 12 females from the "same habitat" at the Kelso Dunes, but exact location not given; nymphs and adults collected from April to October, 1957 to 1963.

RANKING/STATUS: G1S1 (NatureServe – CNDDB); VU/B1+2bd (IUCN).

GENERAL DESCRIPTION: Jerusalem crickets are large, striking orthopteran insects. The genus *Ammopelmatus* differs from other genera of stenopelmatine crickets in the following characters: having vestigial or absent tibial spines on the apical dorsal margins of the caudal tibiae; even, broadly spathulate ringlets of 6 apical caudal calcars; median or presubapical spur on the ventral surface of the foretibiae absent; pronotum not expanded anteriorly.

DIAGNOSTIC CHARACTERS: Leg characters, such as the form of spines and spurs, are important for differentiating species in this genus. Both this species and *Ammopelmatus muwu* have short, spatulate apical tibial spurs and calcars; the fore tibia with only two small ventral spines; and the hind tibia with only one ventral spur and with reduced or no dorsal teeth. *Ammopelmatus kelsoensis* can be distinguished from *A. muwu* by its straighter apical spur on the internal margin of the fore tibia, and sharper first major tooth on the external margin of the hind tibia. The two species are widely separated geographically as well, with *A. muwu* occurring only at Point Conception in Santa Barbara County.

DISTRIBUTION: Restricted to the Kelso Dunes.

HABITAT: Interior sand dunes. The known specimens were collected in a limited area at the north base of a sand declivity about 15-25 feet high. Scattered clumps of *Petalonyx thurberi*, *Croton californicum*, and *Oryzopsis hymenoides* were present in the area, and, in wetter years, *Dicoria canescens*, *Euphorbia* species, *Astragalus* species, and others were also found. A number of nocturnal sand-loving orthopterans occur together with *Ammopelmatus kelsoensis*; they include *Macrobaenetes*

kelsoensis, *Ammobaenetes* sp., the sand roach *Arenivaga* sp., *Anoplodusa arizonensis*, *Capnobotes fuliginosus*, *Eremopedes* sp., and the creosote leaf katydid *Insara covilleae*.

LIFE HISTORY/BEHAVIOR: *Ammopelmatus kelsoensis* is a nocturnal species. The last collection mentioned in the original description was of five nymphs collected at night in April 1960 from the surface of "icy cold" sands, whose temperature was 34^{o}F at 7:00 a.m. the next morning. At the time the original description was written, three of those nymphs had survived in captivity for over two-and-a-half years, and had still not reached adulthood. Based on the timing of captive specimens' molting, the species appears to take about four years to reach maturity, although conditions in captivity may have influenced the growth of the observed specimens.

During a decade of rearing specimens of this species, Tinkham obtained only one egg (probably because most of his specimens were nymphs when collected). The egg was white and large, measuring over 5 mm in length and 3 mm in maximum diameter. Tinkham postulated that the eggs are laid in the spring, and hatch with the fall rains, as do those of *Macrobaenetes and Ammobaenetes*.

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