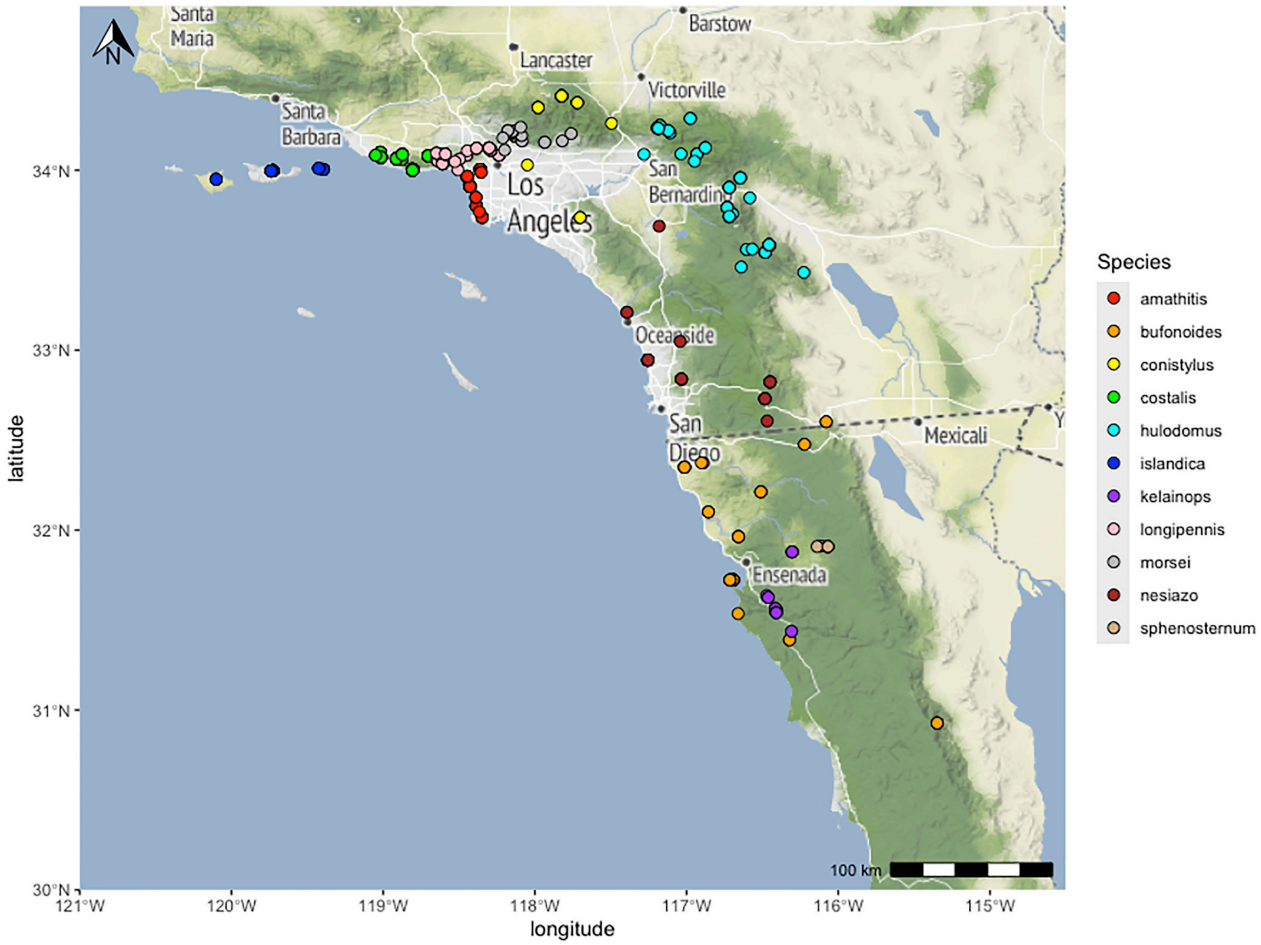

FIGURE 15. Distribution of Morsei Group species.

Aglaothorax sphenosternum Cole, Weissman, and Lightfoot, sp. nov.

Fig. 15 (distribution), Fig. 27 (male and female habitus, calling song, male and female terminalia, karyotype), Plate 5 (male terminalia), Plate 8 (female subgenital plate), Plate 12 (male titillators), Plate 15 (male calling song).

Common name. Wedge-breasted Shieldback.

History of recognition. None.

Type material. HOLOTYPE MALE: **México, Baja California,** 11 miles east of Ojos Negros on road to Laguna Hanson, 31.90864N, 116.07022W, 1160 m, 9-VIII-1988, DB Weissman, DC Lightfoot, S88-85, R88-124, T88-58, 3.0 [stridulatory file length, mm], 104 [stridulatory file tooth count], excised tegmen in gelcap below specimen, deposited in CAS, Entomology type #20376. PARATYPES: (n=8) **México, Baja California**, 11 mi. E of Ojos Negros on road to Laguna Hanson, 31.908643, -116.070218, 1160 m, 9-VIII-1988, DB Weissman, DC Lightfoot, CAS, 2♂, 3♀; Laguna Hanson Road, 18 km east of Ojos Negros, 31.91139, -116.11694, 1033 m, 28-VI-2019, JA Cole, d B Weissman, LACM, 3♂.

Measurements. (mm, ♂n=7, ♀n=1) Hind femur ♂12.78–13.80, ♀15.13, pronotum total length ♂7.65–8.47, ♀7.25, prozona length ♂3.42–4.56, ♀3.63, metazona dorsal length ♂3.80–4.63, ♀3.62, pronotum constriction width ♂2.60–2.84, ♀2.69, metazona dorsal width ♂5.26–6.57, ♀5.05, head width ♂3.46–3.90, ♀4.05, ovipositor length ♀9.01.

Distribution. Northern Baja California, México.

Habitat. Chaparral. On Yerba Santa, Laurel Sumac, and *Salvia* spp.

Seasonal occurrence. Sparse records span summer (28-VI-2019, JA Cole & DB Weissman, CAS to 9-VIII-1998, DB Weissman & DC Lightfoot, CAS).

Stridulatory file. (n=3) length 2.90–3.10 mm, 92–107 teeth, tooth density 33.6±1.7 (31.7–34.7) teeth/mm.

Song. (n=6) Standard small *Aglaothorax* song type with a slow pulse train rate. Pulse trains 70±10 ms are repeated at a rate of 6.08±0.44 s^{-1}. Mean peak frequency is 15.48±0.35 kHz. Echemes contain a variable number (mean 14 ± 7, range 4–26) of pulse trains repeated at rates between 7 and 14 min^{-1}.

Karyotype. (n=5) 2n♂=22 (2m+18t+Xty t), holotype T88-58 (S88-85). The presence of one pair of metacentric autosomes, combined with an autosome number reduction from 22 to 20 when compared with other widespread Morsei Group members, is most easily explained by a Robertsonian fusion involving two telocentric pairs.

Recognition. Morphology, karyotype. Both sexes may be diagnosed by the broad, conical prosternal spines, in contrast to the long, thin, spines typical of other Morsei and Diminutiva Group species. In addition, males have a concave supra-anal plate, which contrasts with the flat, square plate of *A. nesiazo* to the north. Male *A. sphenosternum* also have long, thin, cylindrical paraproct processes, unlike San Diego County, California *A. nesiazo* or the two other Baja California species *A. bufonoides* and *A. kelainops*. The apical paraproct tooth eliminates *A. costalis*, *A. morsei*, and *A. hulodomus* from consideration. The male titillator arms are short and nearly straight, unlike the arms of *A. bufonoides* that are smoothly curved laterally. The male stridulatory file tooth density is higher than both other Baja California species at 33.6 ± 1.7 teeth/mm versus 29.3 ± 3.2 in *A. bufonoides* and 26.2 ± 0.9 in *A. kelainops*. Female *A. sphenosternum* have the subgenital plate lateral processes as long as wide, whereas *A. kelainops* females have those processes slightly longer than wide. This is the only *Aglaothorax* with a 2n♂=22 karyotype.

Etymology. G. *spheno* wedge + *sternum* breast, breastbone. Descriptive of the conical prosternal spines that help diagnose this species.

Notes. Like *A. kelainops* (see species account above p. 64), this species is genetically related to a subset of *A. bufonoides*, albeit to a different subset of populations (Figs. 3–4). A chromosome evolution hypothesis that explains the reduction in chromosome number from 2n♂=24 to 2n♂=22 is Robertsonian fusion, during which two pairs of telocentric autosomes underwent centric fusion. Once evolved, such divergent karyotypes may create reproductive isolation through reduction in hybrid fitness (Shaw *et al.* 1998; White 1978). Reproductive isolation via chromosome differences may explain the biogeography, where closely situated populations do not overlap in sympatry (Fig. 15). Songs are statistically identical, thus reinforcement of premating isolation via calling songs has not occurred as in other nedubines with (*Neduba duplocantans* Cole, Weissman, and Lightfoot 2021; Cole *et al.* 2021) and without (*Aglaothorax costalis*; Cole 2016, also see species account above p. 43) chromosome differences.

Material examined. See Type Material above. QUESTIONABLE PLACEMENT: (n=2) **México, BCN,** 11.2 km E Ojos Negros on road to Laguna Hanson, 31.908726, -116.139372, 1200 m, 2-VIII-1981, DB Weissman, DC Lightfoot, CAS, 1♂; 17.9 km E Ojos Negros on road to Laguna Hanson, 31.90864, -116.068237, 1463 m, 29-VII-1978, d B Weissman, d C Lightfoot, CAS, 1♂.

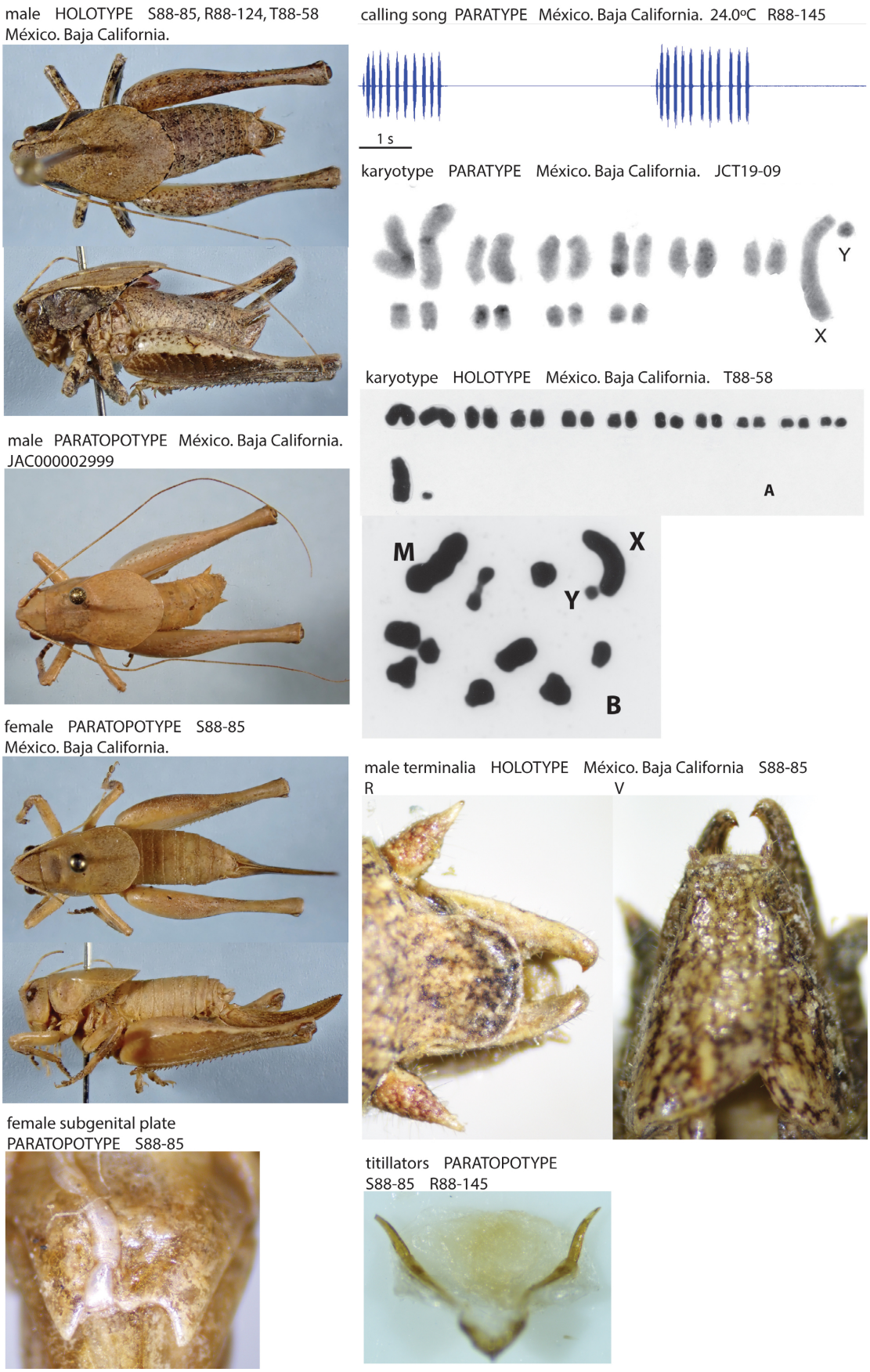

FIGURE 27. *A. sphenosternum* male and female habitus, calling song, male and female terminalia, and idiogram A. Karyotype 2n♂=22 showing largest autosomal pair M composed of metacentric chromosomes; B. Sex chromosomes X and y, in same male, are marked and associated (without apparent chiasmata), to ensure proper segregation at anaphase.