

Ips knausi

Scientific Name

Ips knausi Swaine, 1915

Diagnostic notes

- Has four spines on the elytral declivity.
- Distinguished from other *Ips* by its large size (5.0–6.5 mm) and emarginate spine 3.
- Sister species (Cognato and Sun 2007) to *I. emarginatus*, from which *I. knausi* is diagnosable by the presence of interstitial punctures on the elytral disc and of the fourth declivital spine.

Morphological Summary

females

Body. 4.9-6.5 mm long, 2.7-2.9 times longer than wide; pronotum 1.1-1.2 times longer than wide.

Head. Epistomal margin with uniseriate row of tubercles with elongate mesal tubercle. Frons outline convex in lateral view; vestiture fine (not hiding part of integument); surface sculpture near epistoma densely tuberculate-punctate; central carina absent; central tubercle absent, without pair of circular tubercles on either side of midline; transverse carina present, punctate; frons central fovea present; circular tubercles above top of eyes present - up to one third of all tubercles. Vertex and pronotum without stridulatory apparatus (pars stridens). Antennal club sutures bisinuate.

Prothorax. Protibiae with four socketed teeth on apical half (does not include apical spine).

Elytra. Interstriae punctate (observed on interstriae 2 and 3 on middle third of elytral disc), punctures 0.5-0.6 times diameter of adjacent striae punctures (punctures and striae measured at steepest part of puncture wall), interstriae (4-)-5(-6) times as wide as adjacent striae. Elytral declivity with four or five spines per side, spine 3 largest; spine 1 (largest on 2nd interstria) closer to spine 2 than suture or suture than spine 2; spines 1 and 2 separated at base by distance less or greater than height of spine 1; spine 2 closer to spine 1 than spine 3 or 3 than spine 1; spine 3 tapered or emarginate, apex acute or right-angled, with apical half symmetrical in lateral view; spines 2 and 3 not on shared tumescence, in or not in line with spines 1 and 4 (posterodorsal view); declivital integument mat.

males

Body. 4.9-6.5 mm long, 2.7-2.9 times longer than wide; pronotum 1.1 times longer than wide.

Head. Epistomal margin with uniseriate row of tubercles with elongate mesal tubercle. Frons outline convex in lateral view; vestiture fine (not hiding part of integument); surface sculpture near epistoma densely tuberculate-punctate; central carina absent; central tubercle absent or



Ips knausi, male frons



Ips knausi, female frons



Ips knausi, male declivity

present and single, without pair of circular tubercles on either side of midline; transverse carina present, punctate; frons central fovea absent; circular tubercles above top of eyes present - up to, or more than one third of all tubercles. Vertex and pronotum without stridulatory apparatus (pars stridens). Antennal club sutures bisinuate. Prothorax. Protibiae with four socketed teeth on apical half (does not include apical spine).

Elytra. Interstriae punctate (observed on interstriae 2 and 3 on middle third of elytral disc), punctures 0.5-0.6 times diameter of adjacent striae punctures (punctures and striae measured at steepest part of puncture wall), interstriae (4-)5(-6) times as wide as adjacent striae. Elytral declivity with four spines per side, spine 3 largest; spine 1 (largest on 2nd interstria) closer to spine 2 than suture or suture than spine 2; spines 1 and 2 separated at base by distance less or greater than height of spine 1; spine 2 closer to spine 1 than spine 3 or 3 than spine 1; spine 3 emarginate, apex acute or right-angled, with apical half asymmetrical in lateral view; spines 2 and 3 not on shared tumescence, in or not in line with spines 1 and 4 (posterodorsal view); declivital integument mat.

Geographic Distribution

USA (Arizona, Colorado, Nevada, New Mexico, South Dakota, Utah).

Hosts

Pinus spp. Principally *Pinus ponderosa*.

Notes

Clade formed by ((*I. emarginatus* + *I. knausi*) + *I. sexdentatus*), see Cognato and Sun (2007).

References

- Cognato, A.I. 2015. Biology, systematics, and evolution of *Ips*. In *Bark beetles: biology and ecology of native and invasive species*. Edited by F.E. Vega and R.W. Hofstetter. Elsevier, San Diego, California. Pp. 351–370.
- Cognato, A.I. and Sun, J.H. 2007. DNA based cladograms augment the discovery of a new *Ips* species from China (Coleoptera: Curculionidae: Scolytinae). *Cladistics*, 23: 539–551.
- Wood, S.L. 1982. The bark and ambrosia beetles of North and Central America (Coleoptera: Scolytidae), a taxonomic monograph. *Great Basin Naturalist Memoirs*, 6: 1–1359.

Internet resources

https://www.barkbeetles.info/regional_chklist_target_species.php?lookUp=1713



Ips knausi, female declivity



Ips knausi, male lateral habitus