

Ips borealis swainei

Scientific Name

Ips borealis swainei Hopping, 1939

Synonyms

Ips swainei Hopping, 1939

Diagnostic notes

Species:

- Has four spines on the elytral declivity.
- Potentially sympatric with related species *I. tridens*, *I. pilifrons*, *I. perturbatus* and morphologically similar species *I. pini*.
- Differs from the related species by the even, minute punctures on the upper female frons, and smaller size, 2.6–3.8 mm and from *I. pini* (*impunctate*) by the uniseriately punctured discal interstriae.

Subspecies:

- Diagnosable by morphology of female head only.
- Female frons protuberant, covered with short sparse pubescence, punctate area with fine tubercles; epistoma without tranverse row of tubercles.
- Wood (1982) provides more detail on subspecies level diagnosis.

Morphological Summary

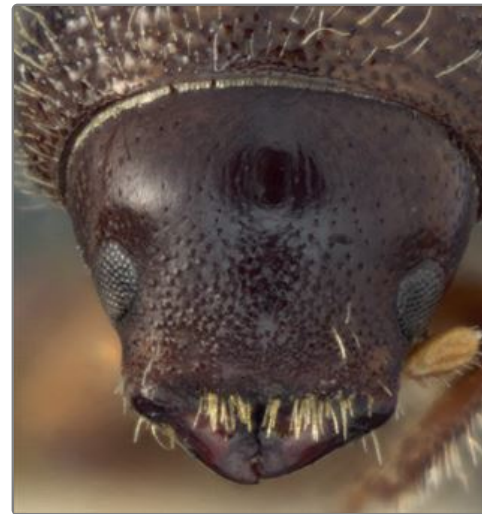
females

Body. 2.6-3.4(-4.1) mm long, 2.6-2.8 times longer than wide; pronotum 1.1-1.2 times longer than wide.

Head. Epistomal margin with uniseriate row of tubercles with gap at midline. Frons outline convex or protruding 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 absent; frons central fovea absent; circular tubercles above top of eyes absent. Vertex and pronotum without stridulatory apparatus (pars stridens). Antennal club sutures bisinuate.

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

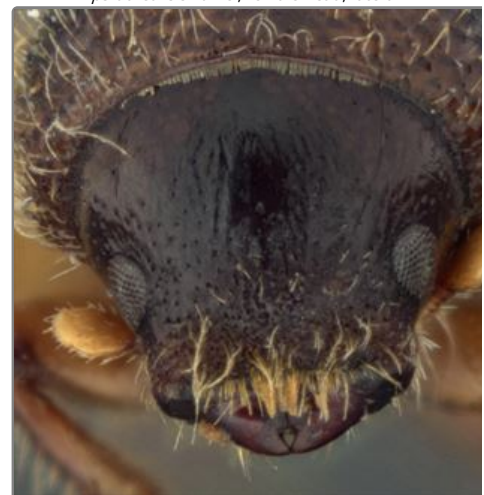
Elytra. Interstriae punctate (observed on interstriae 2 and 3 on middle third of elytral disc), punctures 0.3-0.5 times diameter of adjacent stria punctures (punctures and striae measured at steepest part of puncture wall), interstitial setae longer than width of scutellar shield, interstriae 2-3 times as wide as adjacent striae. Elytral declivity with four spines per side, spine 3 largest; spine 1 (largest on 2nd interstria) closer to suture than spine 2; spines 1 and 2 separated at base by distance greater than height of spine 1; spine 2 closer to spine 3 than spine 1; spine 3 tapered or straight sided with tapered apex, apex right-angled or obtuse to rounded, with apical half symmetrical or asymmetrical in lateral view; spines 2 and 3 on or not on shared tumescence, in line with spines 1 and 4 (posterodorsal



Ips borealis swainei, female frons



Ips borealis swainei, female head, lateral



Ips borealis swainei, male frons

view); declivital integument shiny.

males

Body. 2.6-3.4(-4.1) mm long, 2.6-2.8 times longer than wide; pronotum 1.1-1.2 times longer than wide.

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

Prothorax. Protibiae with three 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 0.3-0.5 times diameter of adjacent striae punctures (punctures and striae measured at steepest part of puncture wall), interstitial setae longer than width of scutellar shield, interstriae 2-3 times as wide as adjacent striae. Elytral declivity with four spines per side, spine 3 largest; spine 1 (largest on 2nd interstria) closer to suture than spine 2; spines 1 and 2 separated at base by distance greater than height of spine 1; spine 2 closer to spine 3 than spine 1; spine 3 tapered or straight sided with tapered apex, apex acute, right-angled or obtuse to rounded, with apical half symmetrical or asymmetrical in lateral view; spines 2 and 3 on or not on shared tumescence, in line with spines 1 and 4 (posterodorsal view); declivital integument shiny.

Geographic Distribution

Species: Canada (Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Northwest Territories, Nova Scotia, Ontario, Prince Edward Island, Quebec, Saskatchewan); USA (Alaska, Colorado, Maine, Michigan, Minnesota, Montana, South Dakota, Wyoming).

Subspecies: Canada (British Columbia)

Hosts

Picea spp.

Notes

I. borealis, *I. pilifrons*, and *I. tridens* form clade (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



Ips borealis swainei, male declivity



Ips borealis swainei, female lateral habitus



Ips borealis swainei, male lateral habitus

monograph. *Great Basin Naturalist Memoirs*, **6**: 1–1359.

Internet resources

https://www.barkbeetles.info/regional_chklist_target_species.php?lookUp=1700