

# Ips pilifrons sulcifrons

## Scientific Name

*Ips pilifrons sulcifrons* Wood, 1960

## Diagnostic notes

Species:

-Has four spines on the elytral declivity and general appearance is similar to *I. borealis*.

-Potentially sympatric with related species *I. borealis*, *I. tridens*, *I. hunteri*, and morphologically similar species *I. pini*.

-Differs from related species by deep, coarse **strial punctures**, large size, 3.9–5.0 mm and from *I. pini* by uniseriately punctured discal interstriae.

Subspecies:

-Diagnosable by female only.

-Female **frons** strongly protuberant, elevated area with median sulcus (groove), most with dense pile-like patches of setae, and not extending above level of eyes. 4.4–5.0 mm (Wood 1982).

## Morphological Summary

### females

**Body.** 4.4-5.0 mm long, 2.4-2.6 times longer than wide; pronotum 1.0-1.1 times longer than wide.

**Head.** Epistomal margin with uniseriate row of tubercles absent or present with gap at midline. **Frons** outline protruding in lateral view; vestiture coarse and dense (hiding part of integument), with vertical groove in setal patch; surface sculpture near epistoma densely tuberculate-punctate or with isolated tubercles; **central carina** absent; **central tubercle** absent; **transverse carina** absent or present; **frons** central fovea present or 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.

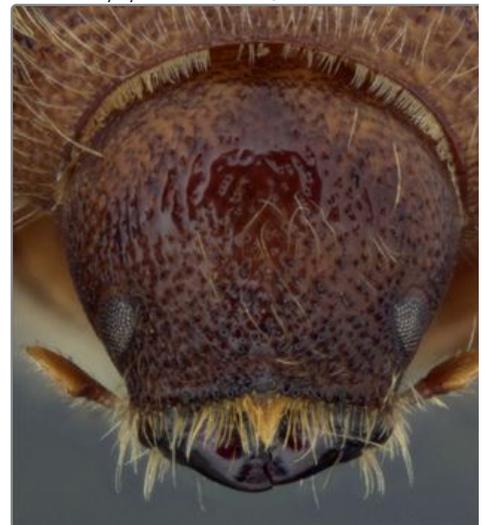
**Prothorax.** Protibiae with three or four socketed teeth on apical half (does not include apical spine).

**Elytra.** **Interstriae punctate** (observed on interstriae 2 and 3 on middle third of elytral disc), punctures 0.5-0.7 times diameter of adjacent **strial punctures** (punctures and striae measured at steepest part of puncture wall), interstitial setae longer than width of scutellar shield, **interstriae** 3-4 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** pedunculate (capitate), apex acute or right-angled, with apical half symmetrical or asymmetrical in lateral view; spines 2 and 3 on shared tumescence, not in line with spines 1 and 4 (posterodorsal view); declivital integument shiny.

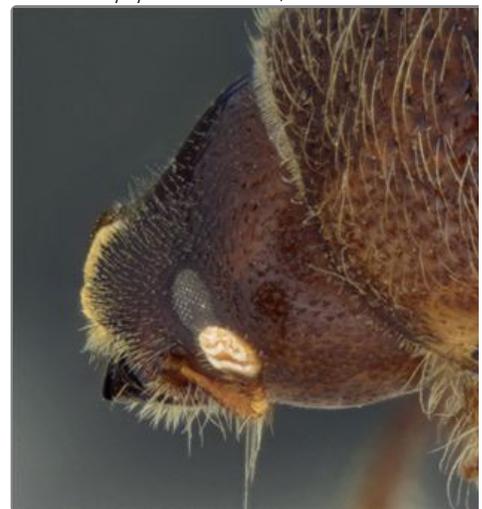
### males



*Ips pilifrons sulcifrons*, female frons



*Ips pilifrons sulcifrons*, male frons



*Ips pilifrons sulcifrons*, female head, lateral

**Body.** 4.4-5.0 mm long, 2.4-2.6 times longer than wide; **pronotum** 1.0-1.1 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; **transverse carina** absent or present; **frons** central fovea absent; circular tubercles above top of eyes absent, 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 three or 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 0.5-0.7 times diameter of adjacent **strial punctures** (punctures and **striae** measured at steepest part of puncture wall), **interstitial setae** longer than width of **scutellar shield**, **interstriae** 3-4 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** pedunculate (capitate), apex acute or right-angled, with apical half asymmetrical in lateral view; spines 2 and 3 on or not on shared tumescence, not in line with spines 1 and 4 (posterodorsal view); declivital integument shiny.

### Geographic Distribution

Species: Mexico (Coahuila); USA (Arizona, Colorado, Idaho, Nevada, New Mexico, Utah, Wyoming).

Subspecies: USA (Colorado, New Mexico)

### Hosts

*Picea engelmannii* and *P. pungens* (Wood 1982).

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

### Internet resources

[https://www.barkbeetles.info/regional\\_chklist\\_target\\_species.php?](https://www.barkbeetles.info/regional_chklist_target_species.php?)



*Ips pilifrons sulcifrons*, male head, lateral



*Ips pilifrons sulcifrons*, female declivity



*Ips pilifrons sulcifrons*, male declivity

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*Ips pilifrons sulcifrons*, female lateral habitus



*Ips pilifrons sulcifrons*, male lateral habitus