

# Ips paraconfusus

## Scientific Name

*Ips paraconfusus* Lanier, 1970

## Synonyms

Common names: California five-spined engraver, California five-spined Ips (English)

## Diagnostic notes

-Has five spines on the elytral declivity, body length less than 4.5 mm, and frons is moderately to densely tuberculate near epistoma, the first declivital spine closer to the second declivital spine than to suture in most.

-Males have third declivital spine acute or subacute, and obtuse or subacute in females.

-Males with frons central tubercle present, absent in females.

-Some specimens distinguishable from *I. confusus* and *I. hoppingi* only by characters of the female pars stridens (Lanier, 1970b) and DNA (Cognato and Sun 2007).

-*Ips paraconfusus* may be sympatric with *I. confusus* in USA: California.

## Morphological Summary

### females

**Body.** 3.8-4.3(-4.8) mm long, 2.6-2.8 times longer than wide; pronotum 1.2-1.3 times longer than wide.

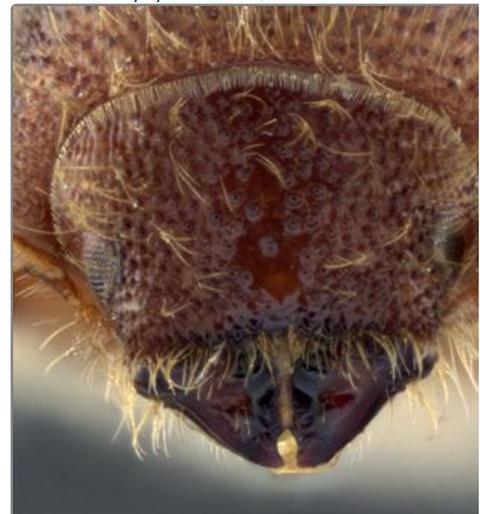
**Head.** Epistomal margin with uniseriate row of tubercles with gap at midline. Frons outline convex in lateral view; vestiture fine (not hiding part of integument); surface sculpture near epistoma densely tuberculate-punctate; central carina absent; central tubercle absent; transverse carina absent; frons central fovea present; circular tubercles above top of eyes present - up to, or more than one third of all tubercles. Vertex and pronotum with stridulatory apparatus (pars stridens). Antennal club sutures acutely angulate.

**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 0.6-0.7 times diameter of adjacent striae (punctures and striae measured at steepest part of puncture wall), interstitial setae shorter than width of scutellar shield or longer than width of scutellar shield, interstriae (4-)5(-6) times as wide as adjacent striae. Elytral declivity with 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 greater than height of spine 1; spine 2 closer to spine 1 than spine 3; spine 3 straight sided with tapered apex, pedunculate (capitate) or hooked, apex right-angled or obtuse to rounded, with apical half asymmetrical in lateral view; spines 2 and 3 on shared tumescence, not in line with spines 1 and 4 (posterodorsal



*Ips paraconfusus*, male frons



*Ips paraconfusus*, female frons



*Ips paraconfusus*, male elytral disc

view); spine 4 closer to spine 3 than spine 5 or 5 than spine 3; declivital integument shiny.

#### males

**Body.** 3.5-4.2(-4.8) mm long, 2.6-2.8 times longer than wide; pronotum 1.2-1.3 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; central carina absent; central tubercle present and single, separated from base of epistomal setae by 0-1 tubercle diameters; transverse carina absent; frons central fovea present; 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 acutely angulate.

**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 0.6-0.7 times diameter of adjacent striae (punctures and striae measured at steepest part of puncture wall), interstitial setae shorter than width of scutellar shield or longer than width of scutellar shield, interstriae (4-)5(-6) times as wide as adjacent striae. Elytral declivity with 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 greater than height of spine 1; spine 2 closer to spine 1 than spine 3; spine 3 pedunculate (capitate) or hooked, apex acute or right-angled, with apical half asymmetrical in lateral view; spines 2 and 3 on shared tumescence, not in line with spines 1 and 4 (posterodorsal view); spine 4 closer to spine 3 than spine 5 or 5 than spine 3; declivital integument shiny.

#### Geographic Distribution

USA (California, Nevada, Oregon).

#### Hosts

*Pinus* spp.

#### Notes

Clade formed by (((*I. confusus* + *I. hoppingi*) + *I. paraconfusus*) + *I. montanus*), 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.

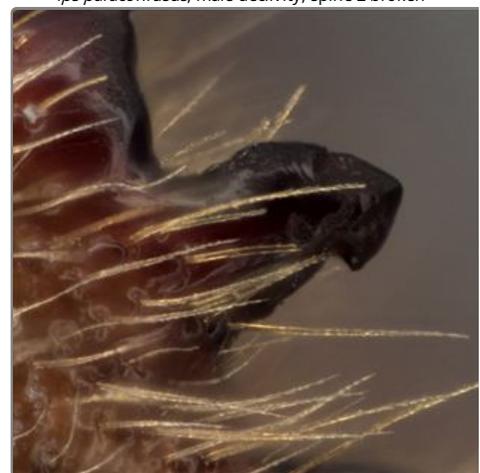
EPPO. No date. Data Sheets on Quarantine Pests: *Ips confusus* and



*Ips paraconfusus*, male declivity



*Ips paraconfusus*, male declivity, spine 2 broken



*Ips paraconfusus*, male declivity, spine 3

*paraconfusus*. European and Mediterranean Plant Protection Organization.

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=1718](https://www.barkbeetles.info/regional_chklist_target_species.php?lookUp=1718)



*Ips paraconfusus*, female declivity



*Ips paraconfusus*, male lateral habitus