

**Pest Common Name**

Comb-Clawed Beetle

**Pest Scientific Name**

*Isomira comstocki* Papp

**Host Plants**

Peaches, raspberries, blackberries

## Comb-Clawed Beetles: A Potential Pest for Small Fruits and Peaches in Idaho

### Description

COMB-CLAWED BEETLES BELONG to the subfamily Alleculinae within the family Tenebrionidae. They are small beetles that are most commonly seen on flowering plants in woodlands and areas bordering woodlands (Figures 1A and 1B). The most distinctive feature is the comb-like (pectinate) claws on the **tarsi** (last segments of the legs), which give the beetle its common name (Figure 1C). This feature differentiates it from other darkling beetles. Out of the eighteen genera within Alleculinae, only three genera and four species are known to occur in Idaho: *Isomira comstocki* (Papp 1956), *Mycetochara procer*a (Casey 1891), *Pseudocistela opaca* (LeConte 1859), and *P. pinguis* (LeConte 1859).

Adult comb-clawed beetles are elongate-oval in shape, slightly flattened dorsally, and approximately  $\frac{1}{5}$ – $\frac{2}{5}$  in (5–10 mm) in length. Coloration ranges from pale yellow to almost black, with the surface varying from dull to shiny. The body surface is moderately to densely **punctate**, meaning it is dotted with many small dimples, like a golf ball and covered with **pubescence** (hairs). The antennae are **filiform** (thread-like) and moderately long, with segments that may slightly widen toward the tip (Figure 1D). Legs are long and slender, adapted for walking and climbing on vegetation. The head and pronotum are relatively narrow compared to the **elytra** (hardened wings), whereas the pronotum is slightly narrower than the base of the elytra and smoothly rounded.

### Biology

There are twenty-eight known species of comb-clawed beetles in the Americas, ranging from Canada to Guatemala. Thirteen of them inhabit the United States; most are found in the east-central region, with only a few restricted to western states.

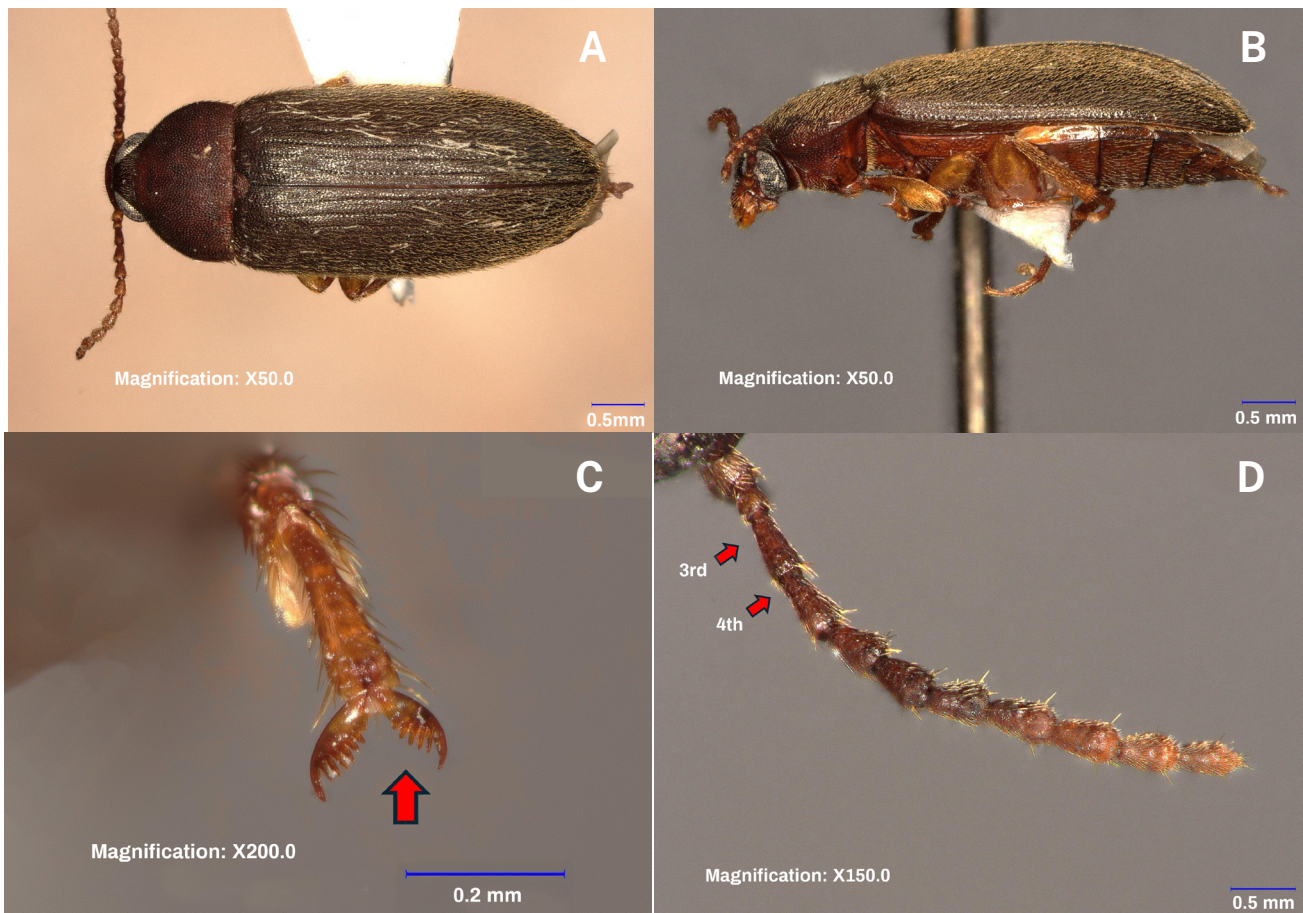
*I. comstocki* occurs in western Canada and the western United States (Arizona, California, Idaho, Nevada, Oregon, Utah,

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**Figure 1.** Overview of *Isomira comstocki*. Dorsal view (A), lateral view (B), pectinate (comb) tarsal claw (C), and antennal segments (D).

Washington, and Wyoming). Its biology remains insufficiently studied. These beetles are typically associated with forest edges, woodlands, and flowering vegetation. Adults are often observed on flowers, particularly in late spring through summer, where they likely feed on pollen and nectar as their food sources. Larval habits are poorly documented but may include feeding on decaying organic matter or plant roots.

Adults typically lay eggs near or within soil or leaf litter, where larvae likely feed. Pupation also occurs in the soil, like many beetle species. Adults emerge in spring or early summer and remain active throughout the warmer months, typically completing one generation per year.

## Damage

Currently, *I. comstocki* is not considered a major agricultural pest and there are no documented reports of economic damage to crops. However, homeowners

have reported them to be a pest of peaches and berries in the Treasure Valley in southwest Idaho.

During mid-July, the adult beetles feed on ripe peaches (cultivars ‘Redhaven’ and ‘Glohaven’), damaging some or all fruits on affected trees. Peach damage intensifies when adults aggregate in large numbers (Figures 2A–2B). The beetles appear to find refuge among the peach clusters while feeding on the basal portion of the fruits and these conditions facilitate adult mating. Similarly, adults may damage ripe blackberries and raspberries, particularly under conditions of inadequate thinning and infrequent harvesting. Damage caused by larval stages has not been documented yet.

## Monitoring

Monitor during warm months — primarily June and July, when adults are active. Conduct regular inspections of fruit trees, paying close attention to undeveloped fruit and areas where damage occurred the previous year, because these sites may be prone to reinfestation.



**Figure 2.** Damage of *Isomira comstocki* to a ripe peach (A) and an aggregation of adults feeding and mating on the fruit (B).

Visual inspection of fruits and leaves is currently the most effective method. Yellow sticky cards might be useful tools to detect early flying adults during June. No established economic threshold currently exists, since the beetle is not recognized as a major agricultural pest.

## Management

### Primary Tactics

Given that *I. comstocki* is not considered a major pest, there is no recommendation for treatment on any crop thus far. The most effective tactics are physical and cultural management.

#### Physical

Remove adults manually from fruits if populations are high in small orchards or home gardens.

#### Cultural

- **Soil Health:** Maintain healthy soil and plant vigor to mitigate stress to the host plant.
- **Thinning:** The best time for thinning peach fruit in Idaho is May, after the flowers bloom and after

the last frost, when young fruits are between the size of a dime and a quarter. Thinning at this stage not only ensures that any remaining fruit receives adequate nutrients and grows to an optimal size but also prevents massive aggregations of comb-clawed beetles in the fruit clusters.

- **Optimal Spacing:** Maintain a final spacing of 4–6 inches between remaining fruits along the branch to ensure adequate resources and optimal fruit development.
- **Timely Harvesting:** Managing harvesting time is essential to reduce the risk of attacks from comb-clawed beetles. Harvest peaches, blackberries, and raspberries before they overripe to avoid attracting comb-clawed beetles and other scavenger/opportunistic insects (e.g., earwigs, wasps, and potentially other darkling beetle species). During the single-harvest window, pick raspberries and blackberries just before they fully ripen and for everbearing species pick fruit every 2–4 days, with daily harvests recommended during peak ripening in July and August.

## Biological

Predators and natural enemies of comb-clawed beetles are not well studied. No specific biological control agents are documented for comb-clawed beetles. Avoiding the use of broad-spectrum insecticides helps to maintain natural enemies that contribute to pest suppression.

## Chemical

- No insecticides are currently labeled for this pest on peaches or berries. Therefore, any applications are off-label, illegal, and can harm pollinators and beneficials.
- Using broad-spectrum insecticides to control comb-clawed beetles is not recommended.
- Because these beetles typically aggregate between the peach clusters, foliar applications are unlikely to be effective, particularly if fruit thinning has not been performed.

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## Caution: Read Pesticide Labels

Pesticide labels override other recommendations.

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ALWAYS read and follow the instructions printed on the pesticide label. The pesticide recommendations in this UI webpage do not substitute for instructions on the label. Pesticide laws and labels change frequently and may have changed since this publication was written. Some pesticides may have been withdrawn or had certain uses prohibited. Use pesticides with care. Do not use a pesticide unless the specific plant, animal, or other application site is specifically listed on the label. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

**Trade Names** — To simplify information, trade names have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

**Groundwater** — To protect groundwater, when there is a choice of pesticides, the applicator should use the product least likely to leach.