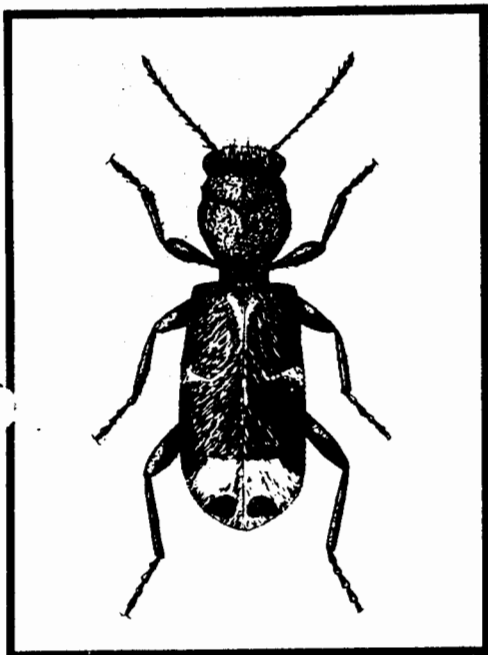


62

KEYS TO COMMON PARASITES AND PREDATORS OF THE MOUNTAIN PINE BEETLE

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Because they lack convenient reference material, investigators in the field often are handicapped in the identification of parasites and predators of the mountain pine beetle (*Dendroctonus ponderosae* Hopkins).

The keys presented here were developed to aid identification in the field of the most common and perhaps the most important parasites and predators of the mountain pine beetle in the lodgepole pine (*Pinus contorta* Douglas) forests of the Intermountain area. These keys are intended to be used primarily with the unaided eye; however, a 10X hand lens may be needed in a few cases. The only stages included in the keys are those that are parasitic or predaceous--the larvae and adults of *Enoclerus sphegeus* Fabricius and *Thanasimus undatulus* Say (Coleoptera: Cleridae); and the larvae of *Xylophagus* sp., *Medetera aldrichii* Wheeler, and *Lonchaea* sp. (Diptera: Xylophagidae, Dolichopodidae, and Lonchaeidae, respectively); *Coeloides dendroctoni* Cushman, *Dinotiscus (=Cecidostiba) burkei* (Crawford), and *Roptrocercus eccoptogastris* (Ratzburg) (Hymenoptera: Braconidae, Pteromalidae, and Torymidae, respectively).

KEY TO LARVA

1. Larva with legs.....2
 Larva without legs.....3
2. Epicranium with dorsal tubercle on each side (fig. 1A,1B)....*Enoclerus sphegeus*
 Epicranium without dorsal tubercles (fig. 2A,2B).....*Thanasimus undatulus*
3. Body slender and cylindrical with ventral pseudopodia.....4
 Body spindle shaped or crescent shaped without ventral pseudopodia.....6
4. Tentorial rods absent; first and second thoracic segments sclerotized dorsally; body and paired caudal protuberances with a number of long hairs (fig. 3).....*Xylophagus* sp.
 Tentorial rods present; body hairless.....5
5. Tentorial rods black; small, sclerotized plate on posterior region of head and anterior margin of prothorax (fig. 4).....*Medetera aldrichii*
 Tentorial rods brown, fused at two points and branching caudally; sclerotized plates absent (fig. 5).....*Lonchaea* sp.
6. Body spindle shaped, tapering to a slightly rounded cephalic end and to a sharp caudal end; midlateral swellings present in the first eight abdominal segments (fig. 6).....*Coeloides dendroctoni*
 Body crescent shaped with a rounded cephalic end and a sharply tapering caudal end; midlateral swellings absent; head with several small spines (fig. 7).....*Dinotiscus burkei*
 Body crescent shaped with a rounded cephalic end and a sharply tapering caudal end; midlateral swellings absent; head without spines (fig. 8).....*Roptrocercus eccoptogastris*

KEY TO ADULTS

1. Clerid beetle with black legs.....2
 Clerid beetle with brown legs.....3
2. Both elytra marked at midlength with a wide transverse band of white, each elytron with short, narrow posterior white stripe, apices black (fig. 9).....*Enoclerus sphegeus*
3. Both elytra marked at midlength with a narrow transverse band of white extending forward along the center, apices white or mostly so (fig. 10).....*Thanasimus undatulus*

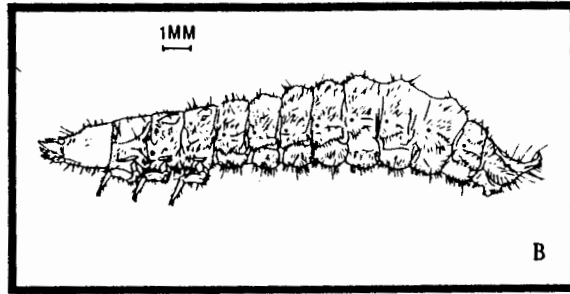
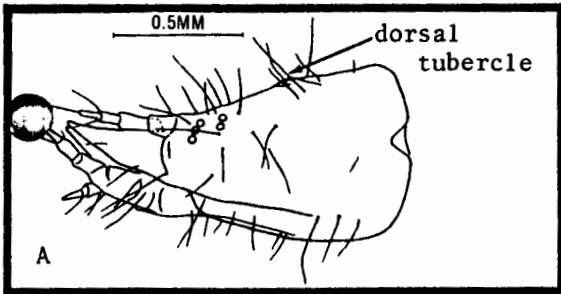


Figure 1.--*Enoclerus sphegeus*; lateral view of head (A) and larva (B).

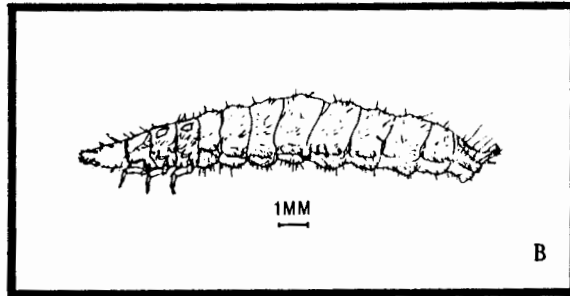
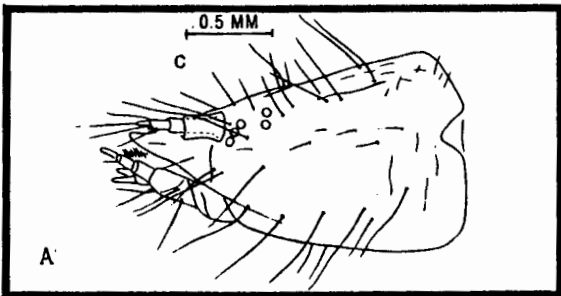


Figure 2.--*Thanasimus undatulus*; lateral view of head (A) and larva (B).

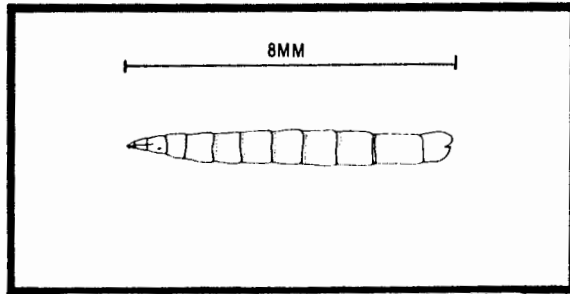
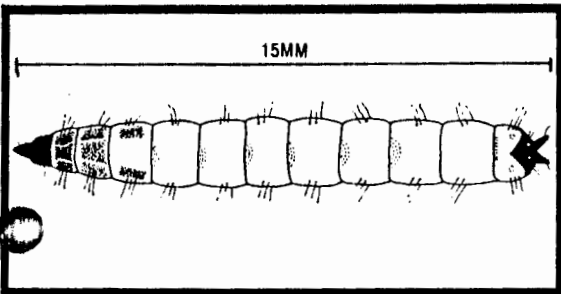


Figure 3.--*Xylophagus* sp.; dorsal view.

Figure 4.--*Medetera aldrichi*; lateral view.

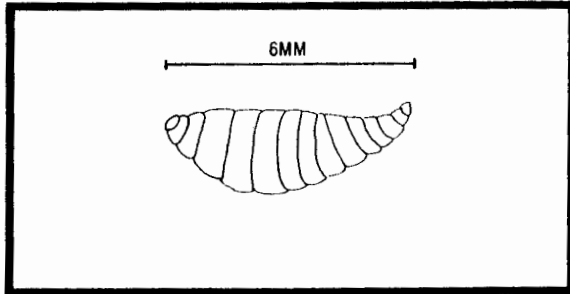
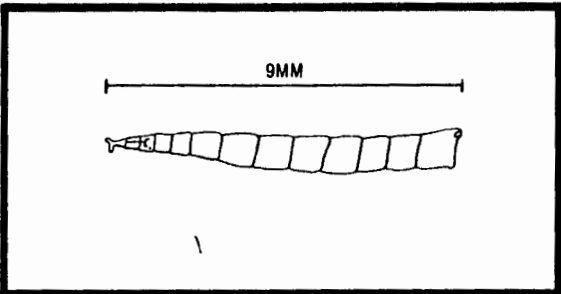


Figure 5.--*Lonchaea* sp.; lateral view.

Figure 6.--*Coeloides dendroctoni*; lateral view.

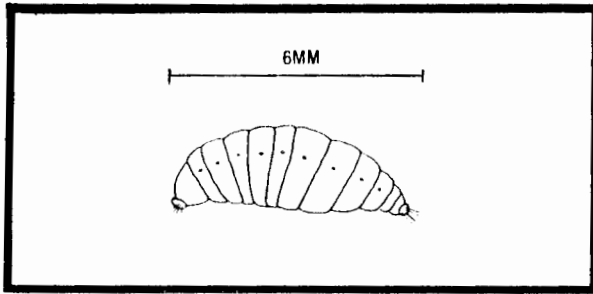


Figure 7.--*Dinotiscus burkei*;
lateral view.

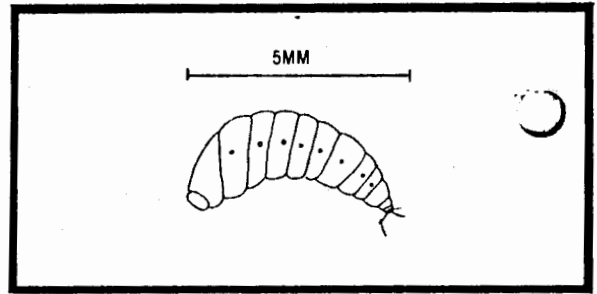


Figure 8.--*Roptrocerus eccoptogastri*;
lateral view.

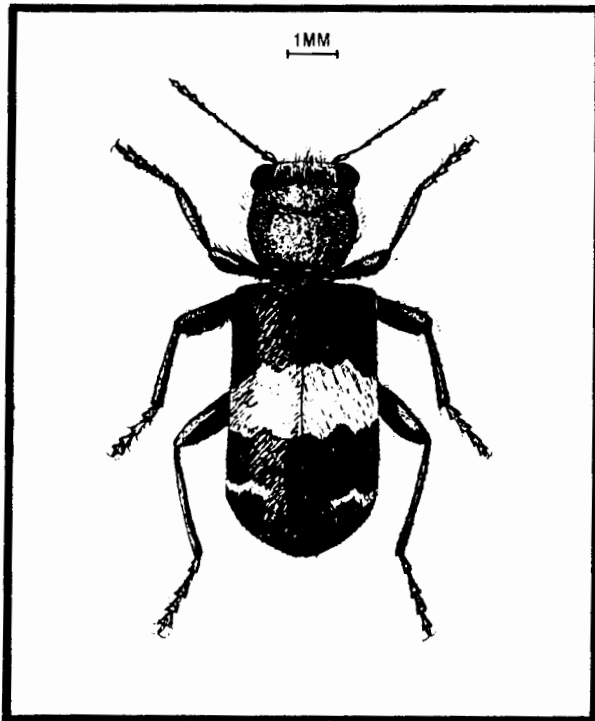


Figure 9.--*Enoclerus sphegeus*.

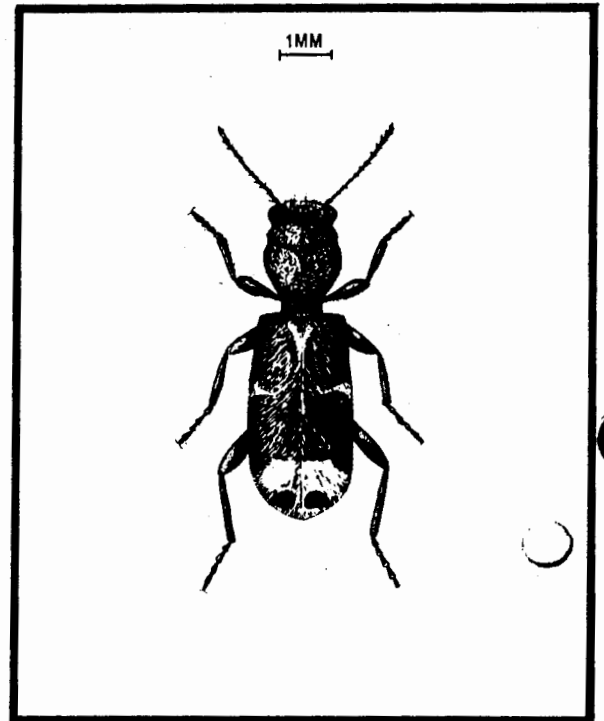


Figure 10.--*Thanasimus undatulus*.

ACKNOWLEDGMENTS

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