



FIGURE 1. Localities of Hat Creek amber and other fossil sites mentioned in the text. 1, Hat Creek; 2 McAbee; 3, Princeton; 4, Nanaimo.

and Hymenoptera], Arachnida, Nematoda, and plants (Fig. 6). These include the oldest recorded fossils of terrestrial free-living nematodes. Ants (Hymenoptera: Formicidae) thus far identified in these deposits (both workers and alates) are extinct species of the genera *Technomyrmex* Mayr 1872 (Fig. 2), *Dolichoderus* Lund 1831, and *Leptothorax* Mayr 1855 (Fig. 4) (C. Baroni Urbani, personal communication).

Discussion

The present study provides evidence that *Agathis* survived the Cretaceous-Tertiary extinction event in the Northern Hemisphere and was a significant element in western North American forests in the Early Paleocene. There are no extant species of *Agathis* in the Northern Hemisphere; all are restricted to the Southern Hemisphere today (Whitmore 1980). The presence of *Agathis* in the Pacific Northwest during the early Tertiary is supported by araucarian megafossils: an extinct species of *Araucaria* Jussieu 1789 was described previously from the Middle Eocene McAbee Beds, not far from the Hat Creek coal locality in British Columbia (Verschoor 1974).

Other studies of fossil resins have indicated that *Agathis* was an important forest component in the Northern Hemisphere in the Mesozoic and that it produced all of the Cretaceous amber in western North America (Lambert *et al.* 1990, 1996). Megafossils of araucarians which could be *Agathis* or a closely related genus have also been reported from Cretaceous deposits in the Pacific Northwest. In a synopsis of the flora of the Upper Cretaceous Nanaimo Group of Vancouver Island, Bell (1957) described fossils (*Dammarites* Presl 1838) that resemble living *Agathis*. Other Pacific Northwest sites with araucarian megafossils include the Lower Cretaceous Spences Bridge Group of the Princeton area in British Columbia (Rice 1947).