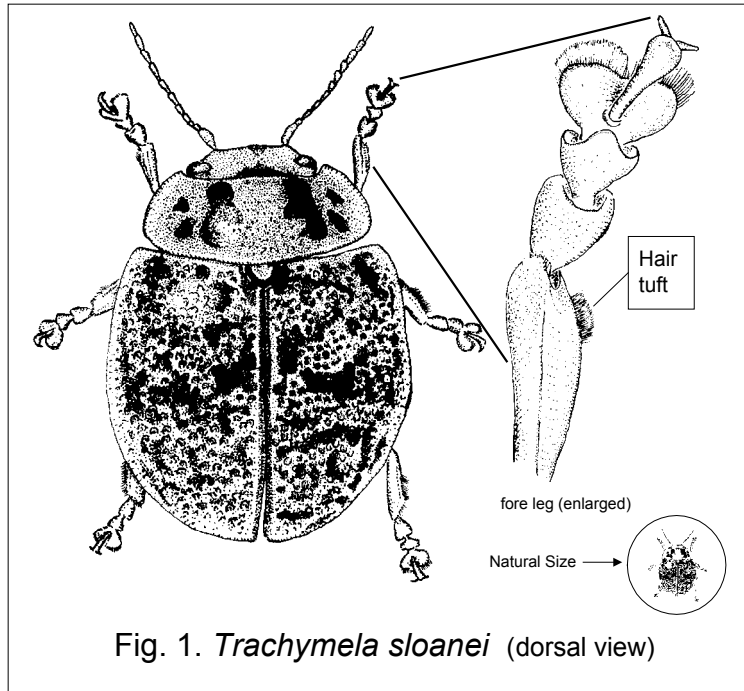


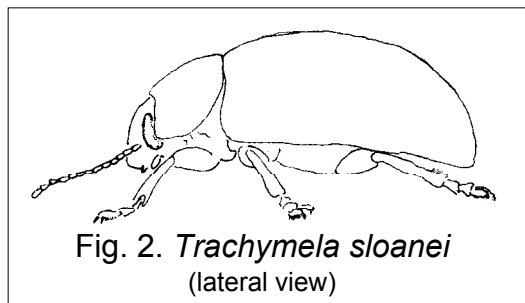
New Agricultural Pest for Southern California
Australian Tortoise Beetle, *Trachymela sloanei*



Introduction: In early February, 1998, Australian Tortoise Beetle (ATB), *Trachymela sloanei*, was detected for the first time in western Riverside County at a private residence containing acreage of Red gum eucalyptus (*Eucalyptus camaldulensis*). A specimen of the new beetle was noticed by the owner and taken to the Department of Entomology, University of California, Riverside, for identification. The find represents a new record not only for California but also for the New World.

Economic Importance: ATB is a chrysomelid (leaf-eating) beetle belonging to the Paropsina group

of the large subfamily Chrysomelinae. According to Lawrence and Britton (1991), certain species of *Trachymela* can be notorious defoliators of certain species of eucalyptus. In southern California, both adults and larvae of ATB are external feeders of Red gum eucalyptus. Feeding damage allows for easily recognizable evidence of ATB and it has recently been reported from many areas within the Los Angeles basin. Tribe and Cillé (1997) reported on the biology of a similar species, *T. tincticollis* in South Africa. This is an apparently rare species in Australia but it was detected in South Africa in the early 1980's. *Trachymela tincticollis* is known to attack at least 18 species of eucalyptus including the common bluegum, *Eucalyptus globulus*.



Distribution: ATB was originally described from Australia but it was later introduced to New Zealand where it spread 30-40 km over eight years (Tribe and Cillé 1997). Besides the initial findings of ATB in southwestern Riverside, ATB was discovered at two private residences in the Tustin area of Orange County in June (N. Nisson, D. Taylor, pers. comm.). Recently (June 1998) ATB has been found infesting eucalyptus all over the University of California campus at Riverside. The

species now occurs commonly from all over southern California wherever its host plants occur. Adult beetles readily fly and this should allow the species to disperse to other areas in southern California wherever its host occurs.

Comments: Entomologists in South Africa do have a Pteromalid (small parasitic wasp) which parasitizes this species and the similar *Trachymela tincticollis*. Tribe and Cillé (1997) report that the importation of this egg parasite, *Enoggera reticulata* from Southwest Australia into Cape Town in 1986 resulted in a 96% parasitism rate within a year.

During the day adults of ATB are found in numbers under eucalyptus bark. Colonies most frequently occur 20-25 feet above the ground. Loose bark can be pried off the tree using a large stick and the sluggish adults can then be examined and collected. Further observations of ATB in the University of California Riverside quarantine facility revealed this species to feed at night.

Researchers at UCR have been in contact with fellow entomologists in South Africa and in the spring of 1999 imported a parasitic wasp (*Enoggera reticulata*) which researchers hope will be successful in controlling ATB in southern California. As of this writing, the parasitic wasp has been reared through 15 generations in the quarantine facility at the University of California at Riverside, initial releases were made at Perris and Ontario, California (see Millar *et al.* 2000 for more information).

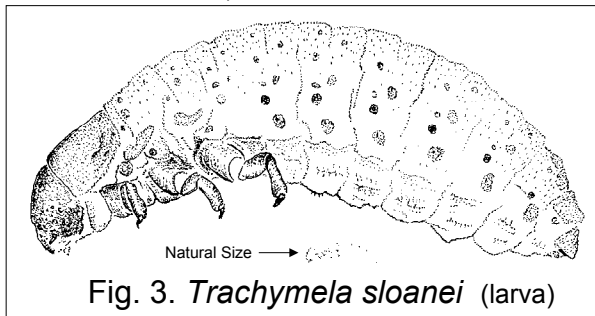


Fig. 3. *Trachymela sloanei* (larva)

ventrally with a fine thick set of blond bristles. The gray brown, caterpillar-like larvae (Fig. 3) possess varying sizes of sclerotized bumps along the body. Three small pairs of legs are on the thorax.

Life History: Nothing has been recorded for ATB but the following statistics abstracted from Tribe and Cillé (1997) for the closely related *T. tincticollis* probably mirror the developmental biology for ATB. Like other Coleoptera, ATB undergoes complete metamorphosis. Females lay an average of 10 eggs per clutch and single females can lay upwards of over 3000 eggs during her adult lifetime (about 270 days). Eggs are laid in crevices or fissures in or under bark. There are four larval instars with a total duration from egg to prepupa of about 22 days. Pupation occurs in the duff and litter or soil around the base of the host tree and adults emerge at about 35 days after oviposition.



Fig. 4. Australian tortoise beetle adult on ground

Identification: ATB is a member of the "Tortoise" leaf beetle group about 6-7 mm, is brown with darker mottled spots, and is about the size of a large ladybird beetle (Fig. 1, 4). The adult is hemispherical and is flattened underneath (Fig. 2). The legs are unique in possessing a thick tuft of fine hair on the outer distal margin of the tibia (Fig. 1, inset). The tarsomeres are strongly bilobed and covered

Acknowledgements: Thanks are due to Chris Campbell, UCR for sharing information and literature on this species, to Gene Drake, CDFA for his help in allowing me to see this species in the field, and to Dave Taylor and Nick Nisson of Tustin for sharing their Orange County records with me.

References:

- Lawrence, J. F. & E.B. Britton. 1991. Coleoptera *in*: CSIRO. The insects of Australia, 2ed ed. Cornell Univ. Press.
- Millar, Jocelyn G., Timothy D. Paine, & Mark Hoddle. Biological control of a newly introduced pest, the Eucalyptus tortoise beetle, *Trachymela sloanei*. Slosson Report 1999-2000. Available from: <<http://slosson.ucdavis.edu/pdf/99-00/Millar99.pdf>>.
- Tribe, G.D. & J.J. Cillé. 1997. Biology of the Australian tortoise beetle, *Trachymela tincticollis* Blackburn (Chrysomelidae: Chrysomelinae: Paropsini) a defoliator of Eucalyptus in South Africa. African Entomology 5(1): 109-123