Aspects of the Ecology of *Trachymela catenata* Chapuis (Coleoptera : Chrysomelidae) in New Zealand.

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Abstract

A member of the *Eucalyptus* defoliating Australian tortoise beetles *Trachymela catenata* was recorded in New Zealand in December 1992. To date *Eucalyptus viminalis, E. macarthurii* and *E. macarthurii* x *botryoides* are known hosts. Investigations of a range of ecological parameters for *T. catenata* are presented in order to provide information with which to assess the potential status of this recent introduction. Life history as for all other paropsina comprises eggs, four larval instars, prepupa, pupa and adult. Adults overwinter and emerge during October to lay first generation eggs in November/December. An estimated generation time of 50 days means a second generation lays eggs during February, indicating a bivoltine life history. Females are as fecund as some other paropsines which erupt to pest levels in other countries. Larval mortality is highest during the first instar and 45.8% mortality occurred during pupation. Developmental thresholds and development times indicate that thermal requirements for completion of two generations will be met throughout most of New Zealand. Laboratory trials to determine female oviposition preference and larval performance on eight potential host eucalypts indicate *E. nitens* (an important commercial species) and *E. coccifera* to be equally as suitable hosts as those currently utilised. *Trachymela catenata* is therefore polyphagus and field monitoring of these two potential hosts is needed. The hymenopteran pteromalid egg parasitoid *Enoggera nassaui* was trialed in a study comparing parasitization of *T. catenata* eggs with those of *Paropsis charybdis,* a known host. The parasitoid had no apparent effect on *T. catenata* eggs and offers no potential control of *T. catenata* populations.

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" the field of forest entomology must in its very nature rest upon an ecological foundation"

Samuel A. Graham, 1956,

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