

## Plant associations of Some Australian Jewel Beetles (Coleoptera: Buprestidae: Agrilinae)

G.A. Webb\*

Recent observations on the Adult and larval host plants for some species of the jewel beetle genera *Agrilus* Curtis, *Cisseis* Gory and Laporte, and *Ethon* Gory and Laporte are presented in Table 1. The following discussion reviews earlier literature on host plants for these species.

### Previous Observations and

### Discussions

#### Introduction

Jewel beetles fill two important ecological roles. As larvae (and as adults in some cases) they contribute to nutrient recycling through breakdown of timber and other vegetative matter, and as adults they are important pollen vectors. Despite their obvious ecological importance, very little is known of the adult and larval food plants of many Australian jewel beetles, particularly the smaller, less colourful species of the subfamily Agrilinae.

The tribe Agrilinae in Australia currently comprises 14 genera (Bellamy 1986). The largest genus, *Cisseis*, is known to use a wide variety of plant families but individual species may be associated with only single plant families and in some cases single plant species. The genera *Ethon* Gory and Laporte and *Agrilus* Curtis mostly use the three large Australian plant families Mimosaceae, Myrtaceae and Fabaceae. Few data are available for the remaining genera of Agrilinae.

#### *Agrilus*

##### *Agrilus australasiae* Laport and Gory

This species has been recorded feeding on the foliage of a number of *Acacia* spp. (Mimosaceae) (Froggatt 1902; Gurney 1910; Hawkeswood 1981; 1992; van den Berg 1982; Williams and Williams 1983). Both Froggatt (1927) and Tepper (1887) recorded *Acacia pycnantha* Benth. as a larval host of *A. australasiae* while

Volkovitsch and Hawkeswood (1990) reared adults from *Acacia sophorae* (Labill.) R.Br. Brooks (1965) recorded an adult *A. australasiae* on the foliage of *Allocasuarina littoralis* (Salisb.) L.A.S. Johnson (as *Casuarina suberosa* Otto and Dietr.) (Casuarinaceae) but did not state whether it was feeding on this plant.

Although *Acacia* spp. appear to be the primary hosts of *A. australasiae* and other *Agrilus* spp. (Hawkeswood and Peterson 1982; Williams 1985), Williams (1985) has reared *Agrilus deauratus* Macleay from species of Euphorbiaceae and Myrtaceae.

#### *Cisseis*

##### *Cisseis acuducta* Kirby

This species has been previously recorded on the flowers of *Leptospermum* spp. (Myrtaceae) (Webb 1986) and on the foliage of *Acacia longifolia* (Andr.) Willd., but mostly on the flowers and foliage of species of Fabaceae including *Dillwynia floribunda* Sm. and *Dillwynia retorta* (Wendl.) Druce (Hawkeswood 1978; Hawkeswood and Peterson 1982; Williams and Williams 1983). Froggatt (1892) reared *C. acuducta* (as *Ethon marmoreum* Laporte and Gory) from root galls on *Dillwynia retorta* (as *D. ericifolia* Smith).

##### *Cisseis viridiceps* Kerremans

A host plant had not previously been recorded for this species. Hawkeswood (1980) reported similar damage to the petals of *Patersonia occidentalis* R. Br. (Iridaceae) caused by *Ethon breve* Carter.

##### *Cisseis scabrosula* Kerremans

*C. scabrosula* has been recorded feeding on the foliage of a number of *Acacia* spp. (Hawkeswood 1981; Webb 1988; Williams and Williams 1983) and has been reared from the timber of *Acacia longifolia* (Froggatt 1895; van den Berg 1982; Webb 1988) and now from *Acacia floribunda* (Vent.) Willd. Williams and

\* Forestry Commission of New South Wales,  
P.O. Box 100, Beecroft, N.S.W., 2119.



**Table 1.** Adult and larval host plants of some jewel beetles (Agrilinae). Insect specimens are lodged in the collection of the Forestry Commission of N.S.W., Sydney.

Species	Location	Collector	Date	Adult Host Plant	Larval Host Plant	Comments
<i>Agrilus australasiae</i>	NSW, Bombala, Coolangubra SF	G.A. Webb	22 January 1984	<i>Acacia dealbata</i> Link (Mimosaceae)		Collected on intact foliage. Damage to adjacent foliage was evident.
<i>Cisseis acuducta</i>	NSW, Cowan	G.A. Webb	27 October 1982	<i>Dillwynia floribunda</i> Sm. (Fabaceae)		Collected on flowers.
	NSW, Cheero Point via Brooklyn	G.A. Webb	5 November 1982	<i>Dillwynia retorta</i> (Wendl.) Druce (Fabaceae)		Collected on flowers.
	NSW, Sydney, Caringbah	J.E. Kelly	22 November 1962	<i>Leptospermum</i> sp. (Myrtaceae)		Collected on flowers.
<i>Cisseis scabrosula</i>	NSW, Sydney, Cumberland SF	G.A. Webb	21 September 1983		<i>Acacia floribunda</i> (Vent.) Willd. (Mimosaceae)	Emerged from dead branch, 21 October 1983.
<i>Cisseis vindiceps</i>	NSW, Sydney, Darling Mills S.F.	G.A. Webb	23 November 1988	<i>Dillwynia retorta</i> (Wendl.) Druce (Fabaceae)		Feeding on flower petals producing small (ca. 1 mm diameter) round holes in the petals.
<i>Cisseis vicina</i>	NSW, Bombala, Cann Valley Hwy near Rockton	G.A. Webb	29 January 1985	<i>Leptospermum myrtifolium</i> Sieb. ex DC (Myrtaceae)		Collected on stem at dusk. Sheltering overnight with range of other insects.
<i>Ethon affine</i>	NSW, Cheero Point via Brooklyn	G.A. Webb	3-5 November 1982	<i>Pultenaea ferruginea</i> Rudge (Fabaceae)		Collected on flowers.
				<i>Pultenaea flexilis</i> Sm. (Fabaceae)		Collected on flowers.
				<i>Dillwynia retorta</i> (Wendl.) Druce (Fabaceae)		Collected on flowers.
	NSW, Sydney, Cowan	G.A. Webb	26-27 October 1982	<i>Pultenaea ferruginea</i> Rudge (Fabaceae)		Collected on flowers.
				<i>Dillwynia floribunda</i> Sm. (Fabaceae)		Collected on flowers.
	NSW, Sydney, Darling Mills SF	G.A. Webb	30 September 1988	<i>Phyllota grandiflora</i> Benth. (Fabaceae)		Collected on flowers.
	NSW, Sydney, Bobbin Head	A.B. Rose	No data specified	? <i>Cassinia longifolia</i> R. Br. (Asteraceae)		Collected "in cop." on "C. longifolia".
<i>Ethon fissiceps</i>	NSW, Sydney, Cowan	G.A. Webb	26-27 October 1982	<i>Dillwynia floribunda</i> Sm. (Fabaceae)		Collected on flowers.
<i>Ethon maculatum</i>	NSW, Grafton	F.S. Paul	10 October 1946	<i>Jacksonia</i> sp. (Fabaceae)		Collected on flowers.

Williams (1983) also recorded adult *C. scabrosula* on *Leptospermum flavescens* Sm. (Myrtaceae) and an unidentified *Casuarina* sp. (Casuarinaceae).

*Cisseis vicina* Kerremans

This species has been recorded from the flowers and foliage of a number of *Leptospermum* spp. (Myrtaceae) (Hawkeswood 1978, 1987, Williams and Williams 1983), but not previously from *Leptospermum myrtifolium* Sieb. ex DC. Williams and Williams (1983) also recorded *Leptomieria acida* R. Br. (Santalaceae) as an adult host plant.

*Cisseis* spp. do not appear to be host specific and have been recorded on hosts from a wide range of plant families

including Apiaceae, Casuarinaceae, Fabaceae, Mimosaceae, Myrtaceae, Proteaceae, Santalaceae and Xanthorrhoeaceae (Brooks 1948; 1965; Froggatt 1895; 1896; 1914; Gallard 1916; Gurney 1910; Hawkeswood 1978; 1981; 1987; Hawkeswood and Peterson 1982; Tepper 1887; van den Berg 1982; Webb 1986; 1988; Williams and Williams 1983). Most species have been found on *Acacia* spp. (Mimosaceae) and on various species of Myrtaceae and Fabaceae. As a number of species have been reared from *Acacia* spp. timber and adults are most often observed on the foliage of acacias it is probable that, as Hawkeswood and Peterson (1982) suggested, *Acacia* spp. are the primary hosts. A number of species have been recorded



on the flowers and foliage of species of Fabaceae but only *C. acuducta*, has been recorded using Fabaceae as a larval host (Froggatt 1892).

### *Ethon*

#### *Ethon affine* Laporte & Gory

Apart from the uncertain record of *E. affine* from *Cassinia longifolia* R. Br. (Asteraceae) above, this species is known only from species of Fabaceae and *Leptospermum* (Carter 1923; Froggatt 1892; Hawkeswood 1988; Hawkeswood and Peterson 1982; Williams and Williams 1983; this study), being collected from flowers, foliage and timber. *E. affine* has not previously been recorded from *Dillwynia retorta* and *Pultenaea flexilis* Sm. (Fabaceae).

#### *Ethon fissiceps* Kirby

The only known host for *E. fissiceps* is *Dillwynia floribunda* (Williams and Williams 1983; this study).

#### *Ethon maculatum* Blackburn

This species had not previously been recorded from *Jacksonia* spp. (Fabaceae). Froggatt (1892) reared *E. maculatum* from root galls on *Dillwynia retorta* (as *D. ericifolia*).

*Ethon* spp. are mostly associated with species of Fabaceae (Froggatt 1892; Tepper 1887; Williams and Williams 1983). However, Hawkeswood (1980) observed *E. breve* feeding on the petals of *Paterosonia occidentalis* (Iridaceae), and *Ethon bicolor* Laporte and Gory (Williams and Williams 1983), and unspecified *Ethon* spp. (Carter 1923) have been recorded on *Leptospermum* spp. Hawkeswood and Peterson (1982) suggested that this close association with Fabaceae represents a recent divergence from *Acacia* feeding *Cisseis*. While *Ethon* spp. are known to breed only in Fabaceae, the presence of adults on other plant families indicates that adults may be less discriminating in their choice of food.

### References

- Bellamy, C.L. (1986). The higher classification of Australian Buprestidae, with the description of a new genus and species (Coleoptera). *Australian Journal of Zoology* 34: 583-600.
- Brooks J.G. (1948). Some north Queensland Coleoptera and their food plants. *North Queensland Naturalist* 15: 26-29.
- Brooks J.G. (1965). North Queensland Coleoptera - their food and host plants. *North Queensland Naturalist* 32: 29-30.
- Carter H.J. (1923). Revision of the genera *Ethon*, *Cisseus* and their allies (Buprestidae). *Proceedings of the Linnean Society of N.S.W.* 48: 159-176.
- Froggatt W.W. (1892). Gall-making buprestids. *Proceedings of the Linnean Society of N.S.W.* 7: 323-326.
- Froggatt W.W. (1895). On the life-histories of Australian Coleoptera. Part 3. *Proceedings of the Linnean Society of N.S.W.* 10: 325-336.
- Froggatt W.W. (1896). The entomology of the grass-trees (*Xanthorrhoea*). *Proceedings of the Linnean Society of N.S.W.* 21: 74-87.
- Froggatt W.W. (1902). Insects of wattle trees. *Agricultural Gazette of N.S.W.* 13: 701-720.
- Froggatt W.W. (1914). Insects associated with *Angophora cordifolia*. *Australian Naturalist* 3: 18-20.
- Froggatt W.W. (1927). 'Forest Insects and Timber Borers'. (Government Printer, Sydney.)
- Gallard L. (1916). List of insects associated with *Acacia decurrens*. *Australian Naturalist* 3: 112-114.
- Gurney W.B. (1910). A study of wattle trees (*Acacia*) and a list of insects of wattle trees. *Australian Naturalists* 2: 56-59.
- Hawkeswood T.J. (1978). Observations on some Buprestidae (Coleoptera) from the Blue Mountains, N.S.W. *Australian Zoology* 19: 257-275.
- Hawkeswood T.J. (1980). An adult food plant of *Ethon breve* (Coleoptera: Buprestidae). *West Australian Naturalist* 14: 198.
- Hawkeswood T.J. (1981). Observations on two sympatric species of Buprestidae (Coleoptera) from sand dunes on the north coast of New South Wales. *The Victorian Naturalist* 98: 146-151.
- Hawkeswood T.J. (1987). Pollination of *Leptospermum flavescens* Sm. (Myrtaceae) by beetles (Coleoptera) in the Blue Mountains, New South Wales, Australia. *Giornale Italiana Entomologia* 3: 261-269.
- Hawkeswood T.J. (1988). A review of larval host records for twelve Australian Buprestidae (Coleoptera). *Giornale Italiana Entomologia* 4: 81-88.
- Hawkeswood T.J. (1992). Review of the biology and host plants of the Australian jewel beetle *Agilus australasiae* Laporte and Gory (Coleoptera: Buprestidae). *Spixiana* 15: 81-87.
- Hawkeswood T.J. and M. Petersen (1982). A review of larval host records for Australian jewel beetles (Coleoptera: Buprestidae). *The Victorian Naturalist* 99: 240-251.
- Tepper J.G.O. (1887). 'Common Native Insects of South Australia. A Popular Guide to South Australian Entomology. Part 1. Coleoptera or Beetles'. (E.S. Wigg and Son: Adelaide.)
- van den Berg M.A. (1982). Coleoptera attacking *Acacia dealbata* Link., *Acacia decurrens* Willd., *Acacia longifolia* (Andr.) Willd., *Acacia mearnsii* De Wild. and *Acacia melanoxylon* R. Br. in Australia. *Phytophylactica* 14: 51-55.
- Volkovitch and Hawkeswood T.J. (1990). The larvae of *Agilus australasiae* Laporte and Gory and *Ethon affine* Laporte and Gory (Insecta: Coleoptera: Buprestidae). *Spixiana* 13: 43-59.
- Webb G.A. (1986). Flower-visiting beetles of some New South Wales Leptospermoidea. *The Victorian Naturalist* 103: 170-174.
- Webb G.A. (1988). Some foliage insects of *Racosperma longifolia* (Andr.) L. Pedley (Mimosaceae) in New South Wales. *The Victorian Naturalist* 105: 88-91.
- Williams G.A. (1985). New larval host plants for some Australian Buprestidae and Cerambycidae (Coleoptera). *Australian Entomologica Magazine* 12: 41-46.
- Williams, G.A. and T.W. Williams (1983). A list of the Buprestidae (Coleoptera) of the Sydney basin, New South Wales, with adult food plant records and biological notes on food plant associations. *Australian Entomologica Magazine* 9: 81-93.



Webb, Garry A. 1993. "Plant associations of some Australian jewel beetles (Coleoptera: Buprestidae: Agrilinae)." *The Victorian Naturalist* 110, 160–162.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/123653>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/271531>

**Holding Institution**

Field Naturalists Club of Victoria

**Sponsored by**

Atlas of Living Australia

**Copyright & Reuse**

Copyright Status: Permissions to digitize granted by rights holder.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.