

Acacia spectabilis A. Cunn. ex Benth. (Mimosaceae), a new larval host plant for *Agrilus australasiae* Laporte & Gory (Coleoptera: Buprestidae) from Australia

With 1 Figure

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Abstract: A new larval host plant, *Acacia spectabilis* A. Cunn. ex Benth. (Mimosaceae), is recorded here for the Australian jewel beetle, *Agrilus australasiae* Laporte & Gory (Coleoptera: Buprestidae: Agrilinae). The known larval host plants for this species are all *Acacia* species, viz. *A. dealbata* Link., *A. pycnantha* Benth. and *A. sophorae* (Labill.) R. Br. and *A. spectabilis* A. Cunn. ex Benth. (Mimosaceae).

Zusammenfassung: *Acacia spectabilis* A. Cunn. ex Benth. (Mimosaceae) ist als neue Wirtspflanze für die Larven des australischen Prachtkäfers *Agrilus australasiae* Laporte & Gory (Coleoptera: Buprestidae: Agrilinae) festgestellt worden. Die bislang bekannten Wirtspflanzen der Larven dieser Käferart sind sämtlich *Acacia*-Arten, nämlich *A. dealbata* Link., *A. pycnantha* Benth., *A. sophorae* (Labill.) R. Br. und *A. spectabilis* A. Cunn. ex Benth. (Mimosaceae).

Introduction

The Grey-striped Agrilus, *Agrilus australasiae* Laporte & Gory (Coleoptera: Buprestidae: Agrilinae) (Fig. 1a), is a small, bronze-copper to brownish coloured beetle with white/cream stripes and other marks (aggregated setae) on the lateral margins of the body and appears to be restricted to eastern and southern Australia (HAWKESWOOD 1992; TURNER & HAWKESWOOD 1996). The biology and adult/larval food plants of this buprestid have been recently reviewed by HAWKESWOOD (1992) & TURNER & HAWKESWOOD (1996). Since then, field work by the first author has located exit holes in another *Acacia* species which match those of *A. australasiae* found in other *Acacia* species from which adults and larvae have been extracted. The discovery of these in a previously unrecorded plant host is described below.

Observations

On 29 December 1995, the first author examined stems of several 2–3 metre-tall shrubs of *Acacia spectabilis* A. Cunn. ex Benth. (Mimosaceae), which were growing on a dry, rocky hillside approx. 3.5 km west of Sofala, alongside the road to Hill End, New South Wales (c. 33° 05' E, 149° 40' E). A few scattered exit holes were observed on the stems of the *A. spectabilis*; each similar to each other and distinctive and appeared identical to those previously recorded on *Acacia dealbata* Link (TURNER & HAWKESWOOD 1996). Upon removal of the bark and dissection of one billet of *A. spectabilis*, a larval gallery (with pupal chamber) was observed which was identical in shape, although slightly smaller in size, to those of *Agrilus australasiae* L. & G., recorded in *A. dealbata* at Hill End, New South Wales, in the same region (TURNER & HAWKESWOOD 1996). The larval and pupal chambers from Sofala and Hill End are compared in Fig. 1. Only single exit holes were found on individual stems of *A. spectabilis* at the Sofala site, whereas at Hill End, several exit holes were found grouped together (as found in *Acacia sophorae* (Labill.) R. Br. by HAWKESWOOD 1992).

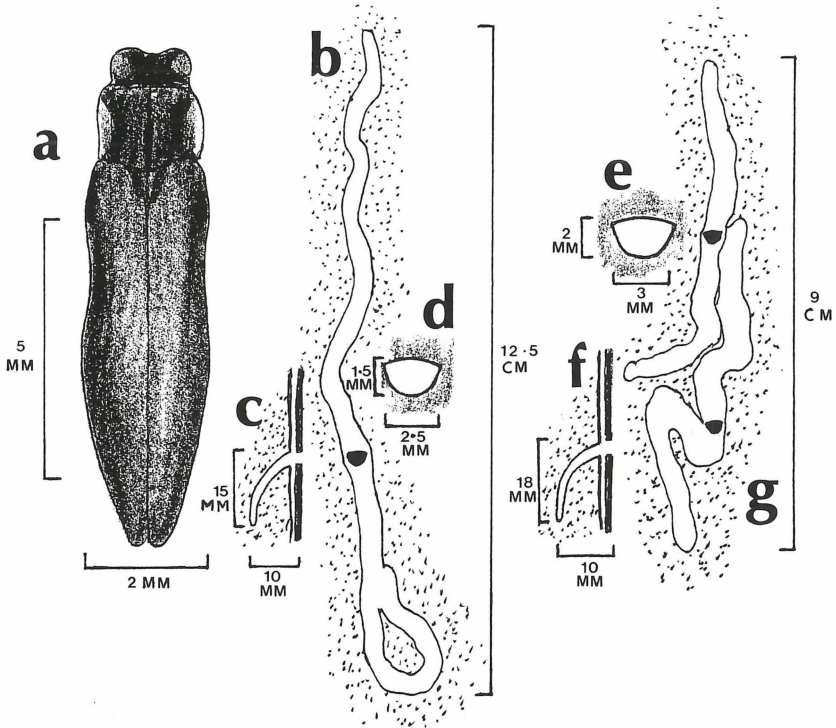


Fig. 1. *Agrilus australasiae* Laporte & Gory. a: Adult male (dorsal habitus); b: Larval gallery in wood of *Acacia spectabilis* showing position of exit hole; c: Pupal chamber (lateral view) in wood of *A. spectabilis*; d: Exit hole from *A. spectabilis*; e: Exit hole from *Acacia dealbata*; f: Pupal chamber (lateral view) in wood of *A. dealbata*; g: Larval galleries in wood of *A. dealbata* showing position of exit holes. (Illustration: J. R. TURNER)

Discussion

Although no adults, larvae or pupae were obtained from the material of *A. spectabilis*, it appears likely that the larval galleries and exit holes belong to those of *A. australasiae*. This *Agrilus* species is the only one of the genus known from the area (Turner, unpub. data), where adults are known to feed on foliage of *A. dealbata* during summer (TURNER & HAWKESWOOD 1996).

The general biology and larval host plants of *A. australasiae* are relatively well known now (VOLKOVITSH & HAWKESWOOD 1990; HAWKESWOOD 1992; TURNER & HAWKESWOOD 1996). Both adults and larvae are closely associated with native *Acacia* species throughout its distribution in eastern and southern Australia. The species is thus monophagous at the plant genus level, but below this, *A. australasiae* displays no preference for any particular species or biotype of *Acacia*. *Acacia dealbata* and *A. spectabilis* are bipinnate-leaved species, while the other two known larval hosts, *A. pycnantha* and *A. sophorae*, are phyllodinous-leaved species. Since *A. australasiae* has such a wide distribution, it is most likely that many other *Acacia* species are utilised as food/larval hosts by this buprestid, but these will only be discovered with further field research.

Acacia spectabilis, commonly known as the Pilliga wattle or glory wattle, is a shrub growing to about 4 metres in height, with glaucous stems and branchlets; the leaves are bipinnate and the flowers are arranged in heads of 15–20 flowers in long racemes in the upper axils, or rarely in terminal panicles; the species is common in some parts of eastern New South Wales and south-eastern Queensland, often growing in woodlands in sandy soils. *Acacia spectabilis* has not been recorded previously as a larval host for any Australian buprestid. In fact, the insect associations

of this wattle species have not been investigated to any large degree, with only odd records scattered throughout the literature of insect species associated with the leaves or wood.

The authors have almost doubled the known number of larval hosts of Australian Buprestidae over the past 5 years or so, which indicates the poor knowledge that we still have of the basic biology of these Coleoptera. With ever-increasing habitat destruction over the entire continent, mostly as a result of human greed for economic gain, it is probable that many buprestid species and their plant hosts will become extinct before entomologists and naturalists are able to obtain adequate funding for more detailed researches on the biology and habits of these ecologically important Coleoptera. However, the data that are available, although meagre at present, will become increasingly important over time as these habitats vanish from the face of the Australian continent and observations on ecology, hosts and behaviour can no longer be undertaken. Such basic data will also be instrumental in assisting reconstruction and functioning of man-made ecosystems "after the holocaust" and greatly aid in the preservation of existing natural environments.

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