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New host plant records for some Australian Alticinae

(Coleoptera: Chrysomelidae)

By Trevor J. Hawkeswood & David G. Furth

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New host plant records, based on museum specimens and recent field collections of the authors, are recorded for 12 Australian species of Alticinae (Chrysomelidae): *Altica corusca* (Erichson), *Aphthona scutellata* (Baly), *Arsipoda concolor* (Blackburn), *Chaetocnema calida* (Blackburn), *Crepidodera indicica* Blackburn, *Halticorcus platycerii* Lea, *Licyllus splendidus* Jacoby, *Nisotra breveri* Baly, *Nonarthra australis* Baly, *Podagricra submetallica* (Blackburn), *Psylliodes* spec. near *P. scutellata* Waterhouse, and *Sphaeroderma* spec. Where applicable, any previously published biological data and host plants are listed and discussed.

Trevor J. Hawkeswood, 49 Venner Road, Annerley, 4103, Brisbane, Queensland, Australia.

David G. Furth, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138, U.S.A.

Introduction

Herbivorous insect groups in which all or some of the species feed on economically important plants are usually well documented in the literature. However, such economically important groups constitute a small percentage of herbivorous insects and, therefore, plant associations of relatively few insect herbivores are well known. Host plant relationships are not only of practical use in controlling pests of food and ornamental crops, but also of interest in studying all aspects of systematics, ecology, evolution, as well as biochemistry (including pharmacology) and biological control of weeds. Establishing reliable host plant associations is important and not difficult much of the time (cf. Furth 1985). Recording of host plant information from observation in the field, even if only superficial, is often the first step, but this should be followed by detailed careful field observation and/or captive testing of the herbivore with uneaten plant parts. However, most entomologists have not bothered to record the botanical details of their field collecting. This is quite apparent when scanning label data of specimens in large institutional collections. In order to get some hint of host plant associations it is often useful to record the unpublished records that do exist in collections. However, caution should be exercised in using this data because it often represents chance observations on relatively few specimens that usually have not gone through the close scrutiny or testing mentioned above. This is especially true for flea beetles (Alticinae) because they often occur in large population sizes and are easily disturbed by entomological collecting techniques (e.g. sweeping, beating, etc.) which initiates the quick escape tactic of jumping for which they are so well known. Thus, this scenario leaves beetles scattered on much of the surrounding vegetation but not actually feeding on it and certainly results in many mistaken host plant records. Therefore it is important to document the source of material from which plant associations are recorded, e.g. from field observations or testing, collection specimens, literature or personal communications. Below the authors document new host associations from specimens in collections as well as from field observations and testing. We have also quoted from the literature when appropriate in order to relate our discoveries to previously recorded apparent patterns. It should be noted that the reference quoted most frequently below (Jolivet

All beetle determinations were made or verified by the first author. The collection abbreviations are mentioned in the Acknowledgements. As implied above, many of the host plants recorded here from museum specimens provide evidence for future verification and testing. Almost all of the label data on museum specimens have not included the full scientific plant name, its author or family, but these have been determined as far as possible and included in the material section after the individual records. The taxonomy of the plant names is up-to-date but the acceptance of some names of economically important plants may vary from country to country.

Annotated list of species

Altica corusca (Erichson, 1842)

Material. 10, no locality, date or collector listed, "attacking geranium" (*Pelargonium* spec., Geraniaceae) (?) "and roses" (*Rosa* spec., Rosaceae) (QDPI); 9, no locality, date or collector listed, "destroying begonia" (*Begonia* spec., Begoniaceae) (QDPI); 6, Charleville, Queensland, 16 May 1946, collector not listed, "on roses and foliage" (*Rosa* spec., Rosaceae) (QDPI); 1, Biloela, Queensland, 27 Aug. 1974, H. Farmer, "on dwarf godetia" (*Clarkia* spec., most probably *Clarkia amoena* (Lehm.) Nelson & MacBride, Onagraceae) (QDPI).

Comments. Hawkeswood (1988: 105) noted that this species was one of the most common chrysomelids in the Townsville area, north-eastern Queensland, where it usually occurred wherever the food plant, *Jussiaea suffruticosa* L. (Onagraceae) grew in wet swampy ground. Eggs are laid in clusters on the adaxial (upper) surface of healthy leaves; adults did not chew the leaves of the host plant in the Townsville area, but fed solely on the petals and the anthers of the open flowers, while the larvae appeared to feed on the leaves only (Hawkeswood, 1988: 105).

The new records presented above are, unfortunately, not specific enough because they do not provide clear details on the precise feeding relationship, i.e. whether or not the beetles fed on the flowers only, the leaves only, or both, but since *A. corusca* adults are known to be floral predators (Hawkeswood 1988), it is probable that the flowers of *Rosa*, *Pelargonium*, *Begonia* and *Clarkia*, were the vegetative structures that were predominately attacked by the beetles. Since *Clarkia* is in the same family as *Jussiaea*, it would be reasonable to regard the feeding damage as similar to that on *Jussiaea*. All of the newly recorded hosts are introduced plants (i.e. non-native) to Australia and it would be interesting to determine whether *A. corusca* adults are restricted to the flowers on these hosts or whether leaves are consumed as well. Since introduced plants from unrelated families have been recorded as purported hosts of *A. corusca*, it may be polyphagous on a wide range of plant families; however, this should be tested. As a whole, the genus *Altica* has been recorded from a variety of plant families, but the most numerous hosts are genera from the families Onagraceae, Lythraceae, Haloragidaceae, Rosaceae, Tropaceae and Vitaceae (Furth 1981, Jolivet 1991: 39). Adults of *A. corusca* have also been reported feeding on *J. suffruticosa* in New Caledonia (Samuelson 1973: 37-38) and in Fiji (Bryant and Gressitt 1957: 77); in Fiji, adults have also been reported feeding on *J. villosa* L. and rice, *Oryza sativa* L. (Poaceae) by Bryant and Gressitt (1957: 77) and on an unidentified species of *Piper* (Pieraceae) by Samuelson (1973: 38). Veitch and Greenwood (1921: 511) noted that larvae of *A. corusca* (cited as *Haltica gravis* Blackburn) also fed on leaves of *J. suffruticosa* in Fiji. Clearly, this is an interesting species which should be better studied further.

Aphthona scutellata (Baly, 1877)

Material. 16, Charters Towers, Queensland, 20 July 1930, collector not cited, "on citrus" (*Citrus* spec., Rutaceae) (QDPI); 18, Charters Towers, Queensland, 5 June 1947, collector not cited, "on citrus" (*Citrus* spec., Rutaceae) (QDPI); 4, Bibbohra (west of Cairns), Queensland, 20 June 1947, collector not cited, "on maize" (*Zea mays* L., Poaceae) (QDPI).

Comments. Hawkeswood (1988: 105) recorded this species feeding on the leaves of *Crotalaria pallida* Aiton (Fabaceae) and on pumpkin vines (*Cucurbita pepo* L., Cucurbitaceae) in the Townsville area, north-

Table 1. Summary of the host plants and reference sources for the species of Alticinae listed in this paper. (An asterisk in front of a plant species indicates an introduced, non-native plant; a question mark indicates a doubtful record which needs confirmation).

Species	Host plant	Host family	Reference
<i>Altica cornusca</i> Erichson	* <i>Jussiaea suffruticosa</i> L.	Onagraceae	Veitch & Greenwood (1921), Samuelson (1973), Hawkeswood (1988)
	* <i>Jussiaea villosa</i> L.	Onagraceae	Bryant & Gressitt (1957)
	* <i>Oryza sativa</i> L.	Poaceae	Bryant & Gressitt (1957)
	<i>Piper</i> spec.	Piperaceae	Samuelson (1973)
	* <i>Pelargonium</i> spec. (?)	Geraniaceae	This paper
	* <i>Rosa</i> spec.	Rosaceae	This paper
	* <i>Begonia</i> spec.	Begoniaceae	This paper
	* <i>Clarkia amoenia</i> (Lehm.) Nelson & MacBride	Onagraceae	This paper
<i>Aphthona scutellata</i> Baly	<i>Crotalaria pallida</i> Aiton	Fabaceae	Hawkeswood (1988)
	* <i>Cucurbita pepo</i> L.	Cucurbitaceae	Hawkeswood (1988)
	* <i>Citrus</i> spec. (?)	Rutaceae	This paper
	* <i>Zea mays</i> L. (?)	Poaceae	This paper
<i>Arsipoda concolor</i> (Blackburn)	<i>Juncus usitatus</i> L.A.S. Johnson	Cyperaceae	This paper
<i>Chaetocnema calida</i> (Blackburn)	* <i>Zea mays</i> L.	Poaceae	This paper
	* <i>Cynodon dactylon</i> L.	Poaceae	This paper
	<i>Duboisia</i> spec.	Solanaceae	This paper
	* <i>Ipomoea cairica</i> (L.) Sweet	Convolvulaceae	This paper
<i>Crepidodera indicica</i> Blackburn	* <i>Melia azedarach</i> L.	Meliaceae	This paper
<i>Halticorcus platycerii</i> Lea	<i>Platycerium superbum</i> Jonch & Hennipim	Polypodiaceae	Froggatt (1917)
<i>Lycillus splendidus</i> Jacoby	* <i>Solanum tuberosum</i> L.	Solanaceae	This paper
<i>Nisotra breweri</i> Baly	<i>Sida cordifolia</i> L.	Malvaceae	Hawkeswood (1988)
	* <i>Gossypium hirsutum</i> L.	Malvaceae	This paper
<i>Nonarthra australis</i> Baly	<i>Macadamia integrifolia</i> Maiden et Betche	Proteaceae	This paper
<i>Podagrica submetallica</i> (Blackburn)	<i>Abutilon</i> spec.	Malvaceae	Turner (1934)
	<i>Sida cordifolia</i> L.	Malvaceae	Hawkeswood (1988)
	<i>Sida rhombifolia</i> L.	Malvaceae	This paper
	* <i>Gossypium hirsutum</i> L.	Malvaceae	This paper
	* <i>Hibiscus cannabinus</i> L.	Malvaceae	This paper
	* <i>Hibiscus heterophyllus</i> Vent.	Malvaceae	This paper
	<i>Duboisia leichhardtii</i> (F. Muell.) F. Muell.	Solanaceae	This paper
	* <i>Solanum mauritianum</i> Scop.	Solanaceae	This paper
	* <i>Leucaena</i> spec.	Caesalpiniaceae	This paper
	* <i>Zea mays</i> L. (?)	Poaceae	This paper
<i>Psylliodes</i> spec. near <i>P. scutellata</i> Waterhouse	* <i>Hibiscus cannabinus</i> L.	Malvaceae	This paper
	* <i>Lycopersicon esculentum</i> Miller	Solanaceae	This paper
	* <i>Solanum tuberosum</i> L.	Solanaceae	This paper
	* <i>Solanum americanum</i> Miller	Solanaceae	This paper
	* <i>Datura</i> spec.	Solanaceae	This paper
	<i>Duboisia</i> spec.	Solanaceae	This paper
	* <i>Gossypium hirsutum</i> L. (?)	Malvaceae	This paper
<i>Sphaeroderma</i> spec.	* <i>Helianthus annuus</i> L.	Asteraceae	This paper
	* <i>Xanthium pungens</i> Wallr. (or * <i>X. chinense</i> Miller)	Asteraceae	This paper

Arsipoda concolor (Blackburn, 1896)

Material. 8, Nimbin, New South Wales, 19 Oct. 1991, T. J. Hawkeswood, on flowers of *Juncus usitatus* L. A. S. Johnson (Cyperaceae) (MCZ).

Comments. Adults of this species, which measure 4.5-5.0 mm long and vary from metallic blue to bluish-gold, with golden reflections, were relatively common on several plants of *Juncus usitatus*, which were growing in a low-lying, swampy area, in blackish-brown clayey soil adjacent to a cleared paddock on private property. The beetles were active either mating or feeding on the pollen (and other floral structures less commonly) from the small, open flowers of the sedge. Examination of other herbs, weeds and small trees in the immediate area revealed that adults were not utilizing any of them as food at the time. The possibility of this being pre-host plant season attraction/feeding on pollen as observed in some other alticine genera (Furth, unpublished) must be further investigated.

The biology and host plants of Australian *Arsipoda* are poorly known. Froggatt (1907: 204) very briefly noted that *Arsipoda macleayi* Baly ate "vine" leaves (possibly *Vitis vinifera* L., Vitaceae) in the Gosford area, New South Wales, but this record is vague and needs confirmation. Hawkeswood (1988: 105) recorded *Heterodendrum oleifolium* Desf. var. *microcalyx* (Radlkf.) Domin (Sapindaceae) as a host plant for an unidentified *Arsipoda* species from the Townsville area, north-eastern Queensland. The present record represents the first published adult food plant record for *A. concolor* and the first record of a beetle feeding on *J. usitatus*. Samuelson (1989: 408-410) recorded five other species of *Arsipoda* from New Caledonia feeding on pollen of Proteaceae, Aquifoliaceae, Winteraceae and Anacardiaceae. Jolivet (1991: 54) noted that *Arsipoda* was found in Australia and Indonesia where the host plants are known to be various genera from the families Poaceae, Verbenaceae, Proteaceae, Moraceae, Epacridaceae, Euphorbiaceae, Cunoniaceae, Myrtaceae, Rosaceae, Vitaceae and Convolvulaceae; however, some of these may be chance records. Therefore, the above record adds another genus and family to the known hosts of *Arsipoda*.

Chaetocnema calida (Blackburn, 1896)

Material. 2, Claire, Queensland, 18 March 1953, L.R. (?), "on maize" (*Zea mays* L., Poaceae) (QDPI); 3, Mt. Isa, Queensland, Jan. 1958, H. J. Lavery, on *Cynodon dactylon* L. (Poaceae) (QDPI); 8, Crowsthorpe, Queensland, 8 July 1970, J. Armstrong, "eating leaves of *Duboisia* spec." (Solanaceae) (QDPI); 4, Burleigh Heads, Queensland, 23 April 1973, P. Allsopp, "on *Ipomoea* spec." (Convolvulaceae) (QDPI); 56, Hastings Point, New South Wales, 18 Sept. 1992, D. G. Furth, on *Ipomoea cairica* (L.) Sweet (Convolvulaceae) (MCZ); 11, Hastings Point, New South Wales, 27 Oct. 1992, T. J. Hawkeswood, on *I. cairica* (Convolvulaceae) (MCZ).

Comments. The data presented above suggests that this small, brassy to coppery species, may be polyphagous on Solanaceae, Poaceae and Convolvulaceae. Adults are particularly common in north-eastern New South Wales during the warmer months of the year (August to March) on the foliage of *Ipomoea cairica* (L.) Sweet (Convolvulaceae), a common climbing weed of disturbed places. The adults feeding results in characteristic patterns on the leaves. Flowers, which are also present on the vines during the warmer months, do not appear to be attacked by the beetles. Mating occurs during the day on both sides of the leaves and resting may also occur on petioles near the main stems. These records appear to be the first published information on the host plants and behaviour of this beetle. Specimens apparently belonging to *C. calida* have also been observed on *Sorghum* (Poaceae) in Papua New Guinea during 1983 (P. Jolivet, pers. comm.). The only other host record for an Australian *Chaetocnema* is that of Van den Berg (1982: 52, 53) who noted that adults of an unidentified species of *Chaetocnema* fed on the leaves and flowers of *Acacia dealbata* Link and *A. mearnsii* De Wild (Mimosaceae) in eastern Australia. Jolivet (1991: 57-58) listed a large number of plant genera and families on which the cosmopolitan *Chaetocnema* has been recorded, including the three families which *C. calida* utilize.

Material. 13, Imbil, Queensland, 20 Dec. 1937, A. R. B(rimblecombe), "eating white cedar" (*Melia azedarach* L., Meliaceae) (QDPI).

Comments. This appears to be the first published host record for the species. The record probably refers to the beetle feeding on the leaves of *M. azedarach*. Jolivet (1991: 55) noted that *Crepidodera* have been recorded previously from Salicaceae, Ulmaceae, Rosaceae, Aceraceae, Caprifoliaceae, Betulaceae and Ericaceae, so Meliaceae is a new record.

Halticorcus platycerii Lea, 1917

Material. 9, Brisbane, Queensland, 28 Nov. 1955, E.M.E., "on staghorn" (*Platycerium* spec., Polypodiaceae) (QDPI); 2, Toowoomba, Queensland, 7 Feb. 1957, Hooper, "eating staghorns" (*Platycerium* spec., Polypodiaceae) (QDPI); 1, Nambour, Queensland, 22 Feb. 1962, H.G.G., "attacking orchid and elkhorn" (QDPI); 2, Nambour, Queensland, 21 Sept. 1970, D.S.(?), "ex stag and elkhorn ferns" (*Platycerium* spp., Polypodiaceae) (QDPI); 1, Brisbane, Queensland, 16 Nov. 1973, D. Hockings, "causing windowing on elkhorns and staghorns" (QDPI); 7, Camp Hill (Brisbane), Queensland, 16 Nov. 1987, J. F. Donaldson, "eating leaves of elkhorn" (*Platycerium* spec., Polypodiaceae) (QDPI).

Comments. Froggatt (1917: 893) recorded that larvae and adults of this species fed on the foliage of the staghorn fern, *Platycerium superbum* Jonch. & Hennipim (Polypodiaceae) (cited as *Platycerium grande*) in the Sydney area, New South Wales. Froggatt (1917) also noted that the beetles laid their eggs upon the base of the fronds and the slender reddish-yellow larvae with blackish heads and legs, crawl over the surface of the stout fronds and gnaw regular oval-shaped furrows in the leaf tissues. The new data provided above is not specific but at least shows that *H. platycerii* is widespread in south-eastern Queensland from where it has not been recorded previously and that it also attacks *Platycerium* ferns and possibly some orchids. The close association with these epiphytic ferns indicates that the beetle originated from rainforests but whether it is native to coastal eastern Queensland or whether it has been introduced there with cultivated ferns from New South Wales (or both), remains to be determined.

Licyllus splendidus Jacoby, 1885

Material. 1, Evelyn (Station ?), Queensland, 10 April 1930, collector not cited, "on potato" (*Solanum tuberosum* L., Solanaceae) (QDPI).

Comments. Tillyard (1926: 236) briefly noted that this species riddled the leaves of native species of *Solanum* (Solanaceae) but provided no other details. This new record is more specific and supports Tillyard's comments. Jolivet (1991: 32) noted that *Licyllus* are found on *Solanum* species in New Guinea, New Caledonia and Australia.

Nisotra breweri Baly, 1877

Material. 16, Biloela, Queensland, 9 Dec. 1973, D. Vae (?) (writing obscure), "on cotton" (*Gossypium hirsutum* L., Malvaceae) (QDPI).

Comments. Brooks (1948: 7) noted that this species fed on a *Dendrobium* spec. (Orchidaceae) in northern Queensland, but did not provide any specific details. Hawkeswood (1988: 107) noted that adults fed on the leaves of *Sida cordifolia* L. (Malvaceae) in north-eastern Queensland, resulting in the skeletonization of the leaves, but they did not appear to feed on the flowers of *Sida*. Jolivet (1991: 56-57) noted that the genus *Nisotra* mainly attack genera of Malvaceae, Bombacaceae, Tiliaceae and Sterculiaceae, and regarded the record of *Dendrobium* as an incidental one, probably not representing a true host/food plant.

Material. 1, Beerwah, Queensland, 28 Sept. 1966, D.A.T. (?), "on flowers of *M. integrifolia*" (*Macadamia integrifolia* Maiden et Betche, Proteaceae) (QDPI).

Comments. This appears to be the first published host record for an Australian *Nonarthra* species. Jolivet (1991: 64) noted that the families Anacardiaceae, Solanaceae, Chenopodiaceae, Rosaceae, Rutaceae, Compositae (Asteraceae) and Papaveraceae had been recorded as hosts for extra-Australian species of *Nonarthra*. Therefore, the new record above adds another plant family to the known list of hosts for *Nonarthra*. Specimens apparently belonging to *N. australis* have been observed on *Solanum dulcamara* L. (Solanaceae) in Papua New Guinea during 1983 (P. Jolivet, pers. comm.). Samuelson (1989: 407-408) recorded four species of *Nonarthra* feeding on pollen [Canonaceae, Asteraceae (Compositae), etc.] in New Guinea, China, Taiwan, India and Japan. *N. cyaneum* Baly has been observed feeding on pollen of Salicaceae, Rosaceae, etc. in Japan (Furth, unpublished).

Podagrica (= Nisotra) submetallica (Blackburn, 1894)

Material. 1, Gayndah, Queensland, 18 Dec. 1940, collector not cited, "on cotton" (*Gossypium hirsutum* L., Malvaceae) (QDPI); 1, Speedwell, Queensland, 10 Oct. 1971, D.S. (?), "on *D. leichhardtii*" (*Duboisia leichhardtii*) (F. Muell.) F. Muell., Solanaceae) (QDPI); 1, Eidsvold, Queensland, 24 Sept. 1974, collector not cited, "from *H. heterophyllus*" (*Hibiscus heterophyllus* Vent., Malvaceae) (QDPI); 1, South Johnstone (River), via Innisfail, Queensland, 17 Nov. 1975, D. J. Rogers, "on kenaf" (*Hibiscus cannabinus* L., Malvaceae) (QDPI); 1, Ayr, Queensland, 15 April 1985, I. Kay, "on kenaf" (*H. cannabinus* L., Malvaceae) (QDPI); 1, Brandon, Queensland, 29 Nov. 1985, I. Kay, "on kenaf" (*H. cannabinus* L., Malvaceae) (QDPI); 1, Moore's Creek, Rockhampton, Queensland, 7 Oct. 1986, R. J. Elder, "on *Leucaena*" (Caesalpinaceae) (QDPI); 5, Nimbin, New South Wales, 12 Dec. 1991, T. J. Hawkeswood, feeding on the leaves of *Solanum mauritanium* Scop. (Solanaceae) (MCZ); ca. 70, Gympie (47 km N), Queensland, 27 Sept. 1992, D. G. Furth, on leaves of *Sida rhombifolia* L. (Malvaceae); ca. 50, Gin Gin (50 km N), Queensland, 27 Sept. 1992, D. G. Furth, on leaves of *Sida rhombifolia* L.

Comments. Froggatt (1907: 204) briefly noted that this species (cited as *Nisotra submetallica*) fed on "mint" leaves (presumably *Mentha* spec., Lamiaceae) but provided no other details. Turner (1934: 2) briefly noted this species (also cited as *Nisotra submetallica*) fed as adults on the flowers of *Abutilon* spec. (Malvaceae) on Masthead Island, off the Queensland coast. Hawkeswood (1988: 107) recorded adults feeding on the petals and pollen from open flowers of *Sida cordifolia* L. (Malvaceae) in north-eastern Queensland. The present data suggests that *P. submetallica* is closely associated with Malvaceae and possibly Solanaceae. Jolivet (1991: 56-57) noted that various genera of Malvaceae were the preferred hosts of *Nisotra* but did not list Solanaceae which may be a secondary host plant family for the Australian *P. submetallica*. Jolivet (1991) regarded the record of *Mentha* spec. as a host by Froggatt (1907) as a record of an accidental occurrence, but since no other data have been forthcoming, this record needs confirmation.

Psylliodes spec. near *P. scutellata* Waterhouse, 1838

Material. 3, Clare, Queensland, 18 March 1953, L. R., "on maize" (*Zea mays* L., Poaceae) (QDPI); 1, Brandon, Queensland, 17 March 1956, I. Kay, "on kenaf" (*Hibiscus cannabinus* L., Malvaceae) (QDPI); 3, Rita Island (?), Queensland, 11 April 1957, G. W. S. "damaging tomatoes" (*Lycopersicon esculentum* Miller, Solanaceae) (QDPI); 2, Yeppoon, Queensland, 8 June 1961, T. Passlow, "on tomato seedlings" (*L. esculentum* Miller, Solanaceae) (QDPI); 20, Ayr, Queensland, 20 June 1962, W.A.S., "bred from larvae in potato stems" (*Solanum tuberosum* L., Solanaceae) (QDPI); 2, Cleveland, Queensland, 4 March 1964, W.A.S. (?), "adults damaging leaves of tomato" (*Lycopersicon esculentum* Miller, Solanaceae) (QDPI); 1, Sunnybank, Queensland, 1 Dec. 1971, P. Alsopp, "on *Datura* sp." (Solanaceae) (QDPI); 2, Warnuran (?), Queensland (?), 7. Sept. 1972, D. S. (?), "on potato" (*Solanum tuberosum* L., Solanaceae) (QDPI); 5, Deception Bay, Queensland, Dec. 1978, R. Greber, "on *Solanum nodifolium*" (Solanaceae) (QDPI) (this record is misspelt and should be *Solanum nodiflorum* Jacq. but this is a synonym of *Solanum americanum* Miller, according to Purdie et al., 1982: 95); 3, Kingaroy, Queensland, 19 May 1982, J. Wessells, "on potato foliage" (*Solanum tuberosum* L., Solanaceae) (QDPI); 3, Clare, Queensland, 2 Dec. 1986, J. D. Brown, "on kenaf leaf" (*Hibiscus cannabinus* L., Malvaceae) (QDPI); 2, Kingaroy, Queensland, 14 July 1990, D. D. R. (?), "on corkwood" (*Duboisia* spec., Solanaceae) (QDPI); 1, Monto, Queensland, 9 April 1991, M. McColl (?), "on *Datura* spec." (Solanaceae) (QDPI).

Comments. Although the taxonomic status of this species is uncertain at this stage, it would appear that it is widespread in Queensland and may be polyphagous on the Paceae, Malvaceae and Solanaceae; although the first two families may be chance records and should be confirmed in the field. All these families are recorded as hosts of *Psylliodes species* (Jolivet, 1991; 63); however, Solanaceae and Brassicaceae are known to be the most commonly utilized.

Sphaeroderma spec.

Material. 18, Gayndah, Queensland, Dec. 1940, A. May, "on cotton" (*Gossypium hirsutum* L., Malvaceae) (QPD1); 5, Emerald, Queensland, 11 Feb. 1972, E. Uridge, "on sunflower" (*Helianthus annuus* L., Asteraceae) (QPD1); 7, Cedar Creek, Emerald, Queensland, 16 March 1973, A. J. Elder, "skeletonizing sunflower leaves" (*Helianthus annuus* L., Asteraceae) (QPD1); 2, Gindie (?), Queensland (?), 1 April 1982, D. M. (?), "shothole damage to sun flower" (*Helianthus annuus* L., Asteraceae) (QPD1); 18, Muckadilla, Queensland, 27 March 1973, A. B. Tiller, "eating seeds of noogoora burr" (*Xanthium pungens* Wallr., or *X. chinense* Miller, Asteraceae) (QPD1).

Comments. This unidentified but distinctive species from Queensland appears to attack mainly plants from the Asteraceae, which is consistent with the findings of Jolivet (1991: 62) who noted that *Sphaeroderma* usually feed on Compositae (Asteraceae) and Ranunculaceae. There appear to be no other published biological details available on the biology of Australian *Sphaeroderma* species.

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Artikel/Article: [New host plant records for some Australian Alticinae \(Coleoptera: Chrysomelidae\) 43-49](#)