

## A Survey of the Leaf Beetles (*Coleoptera*: *Chrysomelidae*) from the Townsville district, northern Queensland, Australia

by

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*Abstract* - An annotated list of 56 species of leaf beetles (*Chrysomelidae*) (from 8 subfamilies and 30 genera) is provided, based on observations and collections throughout 1981 in the Townsville district, northern Queensland. The *Chrysomelidae* fauna consists mostly of tropical species with a few temperate elements. The diversity of leaf beetles is not correlated with plant diversity, i.e. there is a high diversity of leaf beetles but the habitat is depauperate in terms of plant species. A total of 23 plant species from 12 families were utilized as adult food resources by 46 of the 56 chrysomelid species recorded. Most of these host records are new and previously unpublished. The number of species encountered each month throughout the year appeared to be closely correlated with temperature and rainfall, i.e. the largest number of species were collected during the hottest and wettest times of the year (December to March).

*Riassunto* - È fornita una lista di 56 specie di *Chrysomelidae* appartenenti a 8 sottofamiglie e 30 generi, sulla base di osservazioni e raccolte effettuate durante il 1981 nel distretto di Townsville, Queensland settentrionale. Sono per la maggior parte specie tropicali con pochi elementi di clima temperato. Non vi è correlazione tra la grande varietà di crisomelidi e quella delle specie vegetali, ridotte numericamente: 23 appartenenti a 12 famiglie vengono utilizzate quale risorsa alimentare dagli adulti di 46 delle 56 specie di crisomelidi censite. Questi dati sulle piante ospiti sono per la maggior parte inediti. Il numero di specie raccolte in ciascun mese durante l'anno è risultato essere correlato con temperatura e piovosità, con un massimo durante il periodo più caldo e umido (dicembre-marzo).

### INTRODUCTION

In Australia, there have been very few published surveys on beetles (*Coleoptera*) of any one particular area, the notable exceptions being the work of HAWKESWOOD (1978) and WILLIAMS & WILLIAMS (1983) for *Buprestidae*, and WILLIAMS (1979) and WILLIAMS & WILLIAMS (1982, 1983a, 1983b, 1983c, 1984) for *Scarabaeidae*, which all stand as examples of intensive insect surveying. However, the Australian native *Chrysomelidae* fauna is poorly known and I am unaware of any published surveys dealing with this group. The beetle fauna of the Townsville area is also poorly known hence the undertaking of this present survey while living in Townsville during 1981.

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## CLIMATE

Townsville, the second largest city in Queensland, is situated approximately 1550 km by road north of Brisbane (19°15'S, 145°48'E). The area experiences a dry tropical climate with seasonal rainfall. At least 75-80% of the annual average rainfall of 1130 mm falls in the six warmer months of the year during October to March. Areas to the north of Townsville (e.g. Paluma) receive a more substantial rainfall, in excess of 1400 mm, while to the south (e.g. Bowen), only 860 mm per year is average (REID, 1975). The hottest months of the year are December and January, with July the coolest. Average daily maximum temperatures in summer range from 28 to 33°C, while minimum temperatures range from 22 to 24°C (REID, 1975).

## VEGETATION

The vegetation of the Townsville district has been adequately covered by ISBELL & MURTHA (1972) and only brief descriptions of the habitats where chrysome-lids were collected, or sought without success, will be outlined. The classification of vegetation types described below follows that of ISBELL & MURTHA (1972) and the codes used therein (e.g. 7n, 8o etc.).

The main vegetation of the Townsville district and within the vicinity of James Cook University (west of Townsville) consists of a mosaic of *Eucalyptus alba-E. drepanophylla* open woodland and *Melaleuca viridiflora* low open woodland (7n). These two communities normally occur as discrete units, although in many areas they form intricate mosaic patterns. Both ecosystems are common on the alluvial plains in the vicinity of Townsville (ISBELL & MURTHA, 1972). The shrub stratum of the *E. alba-E. drepanophylla* open woodland is usually absent or poorly represented, and the ground flora is dominated by grasses such as *Heteropogon contortus*, with *Themeda australis*, *Bothriochloa bladhii*, *Chrysopogon fallax* and *Chloris* spp. (all *Poaceae*) (fig. 6). *Maytenus cunninghamii* (*Celastraceae*) is the dominant shrub species in many of the areas investigated by the author. In some areas, introduced and native weeds have become established in the *E. alba-E. drepanophylla* woodland, e.g. *Sida cordifolia* (*Malvaceae*), *Stachytarpheta* sp. (*Verbenaceae*), *Evolvulus* sp. (*Convolvulaceae*) and *Passiflora foetida* (*Passifloraceae*). The establishment of weeds and grasses has been mainly due to frequent fires each summer.

The *Melaleuca viridiflora* low open woodland (8o) occurs on the alluvial plains in the vicinity of Townsville, where it may grade into low woodland (ISBELL & MURTHA, 1972). Although some areas are monospecific, there may be emergents of *Eucalyptus alba*, *E. drepanophylla* or *E. tessellaris* (*Myrtaceae*). The shrub layer is absent and the ground flora usually consists of *Themeda australis* with *Heteropogon contortus* (ISBELL & MURTHA, 1972).

A *Eucalyptus tessellaris-E. tereticornis-Melaleuca leucadendron-E. alba* woodland (5u) also occurs on alluvial delta plains to the immediate south-west of Townsville and in certain areas in between Townsville and Bowen. ISBELL & MURTHA (1972:21) noted that large areas of this ecosystem have been cleared and so consequently little is known of the original structure and floristics. The woodland community that remains shows considerable local variation in species abundance. *Euca-*



Fig. 1: *Cryptocephalus iridipennis* Chapuis (female) on a leaf of *Eucalyptus alba* Reinw. (Myrtaceae) (Photograph: T.J. Hawkeswood).

*lyptus polycarpa* is usually associated with the woodland and may be locally prominent while other tree species such as *Planchonia careya* (Lecythidaceae) and *Pandanus* sp. (Pandanaeae) are often co-dominants.

Vine thickets (2a) occur in deep gullies down the slopes of Mt. Stuart and in gullies of Herveys Range, west of Townsville. The species composition of vine thickets is usually diverse and variable depending on the locality. Some of the dominant plants noted by the author occurring in the vine thickets around Townsville include *Cochlospermum gilraevei* (Cochlospermaceae), *Pleiogynium cerasiferum* (Anacardiaceae), *Ficus opposita* (Moraceae), *Harpullia hillii* (Sapindaceae), *Ervatamia orientalis* (Apocynaceae), *Eugenia wilsonii* (Myrtaceae), *Cycas media* (Cycadaceae) and various vines and other plants.

## ANNOTATED LIST

In the list provided below, the institutions/collections where my specimens are now deposited are as follows: ANIC = Australian National Insect Collection, Canberra; AM = Australian Museum, Sydney; NMV = National Museum of Victoria, Melbourne; QDF = Queensland Department of Forestry, Indooroopilly, Brisbane; TJH = author's collection.

In the material collected sections, the author's name is abbreviated as TJH; the names of all other collectors who accompanied me at various times are given in full. For each leaf beetle species, a simple abundance value was given, i.e. VC = > 20 specimens observed/collected each month; C = 10-20 specimens; F = > 3 < 10 specimens and R = ≤ 3 specimens. If populations of the species were usually widespread, a W is indicated and if localized, an L is designated.

Observations/collections were made for at least half a day for at least 5 days each month throughout 1981.

### SUBFAMILY SAGRINAE

#### 1. *Sagra papuana* (Jacoby) (R, L, Jan.)

Material: 1, Pallarenda, c. 8 km N of Townsville, 15 Jan. 1981, TJH & J. Moss, on tree trunk in relict vine forest (QDF).

The life-cycle and habits of this rare species are totally unknown but they are probably similar to related species from south-east Asia and elsewhere which are gallecolous in the stems of small, shrubby *Leguminosae* (JOLIVET, 1986).

### SUBFAMILY CRYPTOCEPHALINAE

#### 2. *Brachycaulus klugi* Saunders (R, L, Dec.)

Material: 1, JCU campus, 13 Dec. 1981, TJH, on *E. polycarpa* (TJH).

#### 3. *Cryptocephalus chrysomelinus* Chapuis (R, L, Dec.-Jan.)

Material: 2, JCU campus, Townsville, 22 Jan. 1981, TJH, resting on *Panicum* sp. (*Poaceae*) (TJH); 4, JCU campus, 4 Dec. 1981, TJH, captured in flight (QDF); 2, JCU campus, 13 Dec. 1981, TJH, on *Acacia holosericea* A. Cunn. ex G. Don. (*Mimosaceae*) (QDF).

An uncommon species which occasionally feeds on leaves of *A. holosericea* but is an active flier in hot, windy conditions and may be clinging to grass stalks or other plants.

#### 4. *Cryptocephalus conjugatus* Chapuis (R, L, Jan.-March)

Material: 1, JCU campus, 21 Jan. 1981, resting on *Panicum* sp. (*Poaceae*) (ANIC); 1, JCU campus, 25 Jan. 1981, TJH, resting on *Panicum* sp. (TJH); 1, Herveys Range, c. 38 km W of Townsville, 7 March 1981, TJH, in flight (TJH).

Another rare species which is a ready flier, often alighting on the tips of grass stalks. Although feeding by this chrysomelid (and *C. chrysomelinus*) upon the flowers/seeds of the grasses was not observed, it is possible that the grasses (viz. *Panicum* sp.), as well as *Acacia* leaves, are food plants of these *Cryptocephalus* beetles since extra-Australian *Cryptocephalinae* (and the related *Chytrinae*) are not selective in host plants and commonly feed on the pollen of *Poaceae* (*Gramineae*) as well as not-related plant families (P. Jolivet, 1988, pers. comm.).

#### 5. *Cryptocephalus eumolphus* Chapuis (C-VC, W, Nov.-Jan.)

Material: 1, JCU campus, 22 Jan. 1981, TJH (ANIC); 1, JCU campus, 11 Nov. 1981, TJH, in flight (QDF); 2, JCU campus, 30 Nov. 1981, TJH, on leaves of *Acacia holosericea* A. Cunn. ex G. Don. (TJH); 10, JCU campus, 1 Dec. 1981, TJH, on leaves of *Eucalyptus polycarpa* F. Muell. (*Myrtaceae*) (TJH); 1, 6 km N of Townsville, 30 Nov. 1981, TJH, in flight (TJH); 2, JCU campus, 30 Nov. 1981, TJH, on *A. holosericea* (TJH); 5, 16 km W of Townsville, 1 Dec. 1981, TJH, on *A. holosericea* (TJH); 4, 4 km S of Giru, 7 Dec. 1981, TJH, on *A. holosericea* (TJH); 3, Mt. Louisa, 13 Dec. 1981, TJH, on *Terminalia catappa* F. Muell. (*Combretaceae*) (QDF); 8, Mt. Louisa, 13 Dec. 1981, TJH, on leaves of *Eucalyptus torelliana* F. Muell. (QDF); 4, same data (TJH).

This is one of the most common chrysomelids in the Townsville area. Adults utilize at least three food plants from different families. Of the plant records noted above for this species, adult feed-



Fig. 2: *Calomela crassicornis* (Fabricius) (female) on a leaf of *Acacia aulacocarpa* A. Cunn. ex Benth. (Mimosaceae) (Photograph: T.J. Hawkeswood).

ing has not been observed on *E. torelliana*. Feeding on *A. holosericea*, *E. polycarpa*, and *T. catappa*, results in damage to the leaf margins only. Like most of the *Cryptocephalus* species from Townsville, adults are ready fliers.

#### 6. *Cryptocephalus gracilior* Chapuis (C-VC, W, Nov.-May)

Material: 9, JCU campus, 8 Feb. 1981, T. Helder & TJH (ANIC); 1, JCU campus, 2 April 1981, TJH, resting on leaves of *Melaleuca bracteata* F. Muell. (Myrtaceae) (QDF); 4, Townsville Common, 17 May 1981, TJH, on leaves of a *Eucalyptus* sapling (QDF); 1, JCU campus, 17 Nov. 1981, TJH, on leaves of *Acacia bidwillii* Benth. (QDF); 2, 10 km W of Townsville, 29 Nov. 1981, TJH, on leaves of *Eucalyptus drepanophylla* F. Muell. ex Benth. (TJH); 2, 6 km N of Townsville, 30 Nov. 1981, TJH, on *Melaleuca quinquenervia* F. Muell. (QDF); 6, same data, but on *E. tessellaris* F. Muell. (QDF); 1, 16 km SW of Townsville, 1 Dec. 1981, TJH, on leaves of *A. holosericea* A. Cunn. ex G. Don. (QDF); 3, 25 km N of Townsville, 2 Dec. 1981, TJH, on *A. holosericea* (QDF); 2, 4 km S of Giru, 7 Dec. 1981, TJH, on *A. holosericea* (QDF); 3, Mt. Louisa, 13 Dec. 1981, TJH, on *E. torelliana* F. Muell. (QDF).

*Cryptocephalus gracilior* has similar habits to those of *C. cumolphus*. Feeding by adults on young leaves of *A. holosericea*, *E. drepanophylla* and *E. tessellaris* have been observed. *Melaleuca bracteata*, *M. quinquenervia* and *A. bidwillii*, are not regarded as food plants in the Townsville area.

#### 7. *Cryptocephalus iridipennis* Chapuis (R, L, May-Jan.) Fig. 1

Material: 1, 21 Jan. 1981, TJH, in flight (ANIC); 2, 22 Jan. 1981, TJH, on *Panicum* grass (TJH); 1, 22 May 1981, TJH, on *Panicum* grass (TJH); 1, 28 Sept. 1981, TJH (TJH) (all material from JCU campus).

As in the case of *C. chrysomelinus* and *C. conjugatus*, feeding upon grass pollen/seeds by this species was not observed, but *Panicum* sp. is probably utilized by this beetle as an important food source (see notes under *C. conjugatus*). In the Mt. Spec-Running River area of north Queensland (c. 75 km NNW of Townsville), Brooks (1965: 29) recorded *Eucalyptus resinifera* Sm. (*Myrtaceae*) as a food plant for this beetle.

8. **Cryptocephalus purus** (Blackburn) (C-VC, W, Dec.-Mar.)

Material: 7, 25 km N of Townsville, 21 March 1981, TJH (TJH); 4, 20 km N of Townsville, 28 March 1981, TJH (TJH); 3, 25 km N of Townsville, 2 Dec. 1981, TJH (TJH); 15, 4 km S of Giru, 7 Dec. 1981, TJH (TJH); 9, JCU campus, 13 Dec. 1981, TJH (TJH) (all specimens on leaves of *Acacia holosericea* A. Cunn. ex G. Don.).

This species appears restricted to *A. holosericea* at Townsville where it feeds and mates on young leaves.

9. **Cryptocephalus scabrosus** Olivier (R, L, March)

Material: 1, Mt. Stuart, 5 March 1981, TJH, on leaves of *Eucalyptus polycarpa* F. Muell. (TJH).

10. **Cryptocephalus sculptus** Chapuis (R, L, Feb.)

Material: 2, Mt. Stuart, 21 Feb. 1981, T. Helder & TJH, on leaves of *Eucalyptus polycarpa* F. Muell. (TJH).

11. **Cryptocephalus trispilus** Chapuis (R, L, Dec.)

Material: 1, JCU campus, 13 Dec. 1981, TJH, on leaves of *E. polycarpa* (TJH); 1, Mt. Stuart, 21 Feb. 1981, on leaves of *E. polycarpa* (TJH).

12. **Cryptocephalus viridipennis** Chapuis (R, L, Dec.)

Material: 1, JCU campus, 13 Dec. 1981, TJH, on *A. holosericea* leaves (TJH).

13. **Cryptocephalus** sp. (VC, L, Jan.)

Material: 17, JCU campus, 25 Jan. 1981, TJH & T. Helder, on leaves of *Eucalyptus drepanophylla* (TJH).

14. **Ditropidus laminatus** Chapuis (F, L, March)

Material: 2, 20 km N of Townsville, 28 March 1981, TJH, on *Acacia holosericea* F. Muell. (TJH).

15. **Ditropidus** sp. near *D. maxillosa* Suffr. (F-C, L, Nov.)

Material: 9, JCU campus, 7-8 Nov. 1981, TJH, on *A. holosericea* (TJH).



Fig. 3: *Paropsis bovilli* Blackburn (female) on a leaf of *Eucalyptus polycarpa* F. Muell. (*Myrtaceae*) (Photograph: T.J. Hawkeswood).

16. **Ditropidus** sp. (R, L, Nov.)

Material: 2, JCU campus, 15 Nov. 1981, TJH, on *Eucalyptus drepanophylla* F. Muell. sapling (TJH).

SUBFAMILY *EUMOLPINAE*

17. **Cleorina purpurea** Lea (R, L, Oct.)

Material: 1, 10 km W of Paluma, Mt. Spec area, 75 km N of Townsville, 11 Oct. 1981, TJH, in flight (TJH). Food plant unknown.

18. **Colasposoma sellatum** Baly (R, L, Feb.)

Material: 2, JCU campus, 2 Feb. 1981, TJH, on leaves of *Ipomoea abrupta* R. Br. (QDF). A rare species collected only once on the leaves of *I. abrupta* (*Convolvulaceae*) with specimens of *Aspidomorpha maculatissima* Boheman. No feeding was observed. *I. abrupta* may prove to be a food plant of this species since all *Colasposoma* species are known to feed occasionally on *Ipomoea* spp. (P. Jolivet, 1988, pers. comm.).

19. **Geloptera miracula** Lea (F, L, March)

Material: 6, Herveys Range, 7 March 1981, TJH, on young leaves of *Eucalyptus* sp. (TJH).



Fig. 4: *Phyllocharis cyanipes* (Fabricius) (female) on a leaf of *Clerodendrum floribundum* R. Br. (Verbenaceae) (Photograph: T.I. Hawkeswood).

20. **Rhyparida limbatipennis** Jacoby (VC, W, Nov.-Feb.)

Material: 15, JCU campus, 30 Jan. 1981, TJH (TJH); 10, Lucinda, 20 km NE of Ingham, 29 Jan. 1981, amongst clustered leaves of *Casuarina equisetifolia* Linn. (*Casuarinaceae*) (ANIC); 17, JCU campus, 10 Feb. 1981, TJH (TJH); 5, JCU campus, 11 Nov. 1981, TJH (TJH) [all specimens from JCU campus were collected from leaves of non-flowering *Eucalyptus tessellaris* F. Muell. (*Myrtaceae*)].

Individuals of this taxon were found to swarm and feed extensively on leaves of *Eucalyptus tessellaris* and *Terminalia catappa* (*Combretaceae*) on the JCU campus. Both plants however, are not indigenous to this area of Townsville. At Lucinda, large numbers of adult beetles congregated amongst clusters of leaves of *C. equisetifolia*, although feeding did not occur. Other life-stages are unknown. Brooks (1965: 30) recorded an association with *Casuarina suberosa* Otto et Dietr. (now correctly known as *C. littoralis* Salisb.) (*Casuarinaceae*) from the Mt. Spec-Running River area of northern Queensland (c. 75 km NNW of Townsville) but did not specify whether the beetle fed on bark or leaves. Until further observations on feeding are presented, the records of *Casuarina* as potential food plants must be regarded with caution.

### SUBFAMILY CHRYSOMELINAE

21. **Augomela pretiosa** Baly (C-VC, W, Aug.-April)

Material: 17, JCU campus, 8 Feb. 1981, TJH (ANIC); 5, JCU campus, 31 March 1981, TJH (TJH); 1, near Tully, 25 April 1981, TJH, on *Acacia auilacocarpa* A. Cunn. ex Benth. (*Mimosaceae*) (TJH); 17, W of Herveys Range, c. 60 km W of Townsville, 9 Aug. 1981, TJH (TJH); 30, JCU campus, 16 Aug. 1981, TJH (TJH); 3, JCU campus, 15 Oct. 1981, TJH (TJH); 3, JCU campus, 25 Oct. 1981, TJH (TJH)



Fig. 5: *Aspidomorpha interrupta* (Fabricius) (female) on a leaf of *Ipomoea triloba* (L.) (*Convolvulaceae*) (Photograph: T.J. Hawkeswood).

[all specimens except for Tully record, on leaves of *Maytenus cunninghamii* (F. Muell.) Loes (*Celastraceae*)].

One of the most common and widespread chrysomelids in the Townsville area, adults of which occur throughout most of the year on the food plant. Larvae have been collected in January 1982, in association with the adults.

22. ***Calomela crassicornis*** (Fabricius) (R-F, W, Nov.-March) Fig. 2

Material: 4, Herveys Range, c. 35 km W of Townsville, 7 March 1981, TJH, on *Acacia aulacocarpa* A. Cunn. ex Benth. (QDF); 1, JCU campus, 8 March 1981, TJH, on leaves of *A. holosericea* A. Cunn. ex G. Don. (QDF); 1, 20 km N of Townsville, 28 March 1981, TJH, on *A. holosericea* (TJH); 2, 25 km W of Paluma, c. 75 km NNW of Townsville, 21 March 1981, TJH, on leaves of *A. leptostachya* Benth. (QDF); 5, Running River, c. 35 km W of Paluma, c. 85 km NNW of Townsville, 21 March 1981, TJH, on *A. aulacocarpa* (QDF); 3, 20 km W of Paluma, 24 Nov. 1981, TJH, on *A. leptostachya* (TJH); 2, 16 km SW of Townsville, 1 Dec. 1981, TJH, on *A. holosericea* (TJH); 1, Yorkeys Knob, 22 Dec. 1981, TJH, on *A. aulacocarpa* (QDF).

A widespread but uncommon species which utilizes three *Acacia* species as food plants in the Townsville area. SELMAN (1979) notes that little is known of the biology of *Calomela*, "though both adults and larvae can be found in very large numbers feeding on the foliage of wattles...". I have also collected *C. crassicornis* in the Blue Mountains and the Brisbane area, and adults have never been common and I have failed to procure either eggs, larvae or pupae. My records from *Acacia aulacocarpa*, *A. holosericea* and *A. leptostachya* are additional to the host *A. melanoxydon* recorded by SELMAN (1979). BROOKS (1965: 30) recorded *Acacia cincinnata* F. Muell. as a food plant for this beetle. Further notes on, and a colour illustration of the adult, of this species are provided in HAWKESWOOD (1987).

23. **Chalcolampra octodecimguttata** (Fabricius) (F-C, W, Feb.-March)

Material: 6, Magnetic Island, 14 March 1981, T. Helder (QDF); 9, Cardwell, 25 Dec. 1981, TJH, on beach, on unidentified purple-flowering plant (QDF).

24. **Lamprolina impressicollis** Baly (F-C, W, Feb.-April)

Material: 6, JCU campus, 8 Feb. 1981, TJH & T. Helder (ANIC); 1, Herveys Range, 14 Feb. 1981, TJH (TJH); 6, Herveys Range, c. 35 km W of Townsville, 12 April 1981, TJH (TJH); 5, same locality, 5 April 1981, TJH (TJH); 1, same locality, 29 April 1981, T. Helder (TJH) [all specimens collected from *Bursaria incana* R. Br. (*Pittosporaceae*)].

Adults are usually found resting on the stems amongst leaves of the host plant during the day. Feeding has not been observed. The early life stages and ecology of the species are unknown. Further biological observations on *Lamprolina* are recorded in HAWKESWOOD (1986, 1987).

25. **Paropsis aegrota** (Boisduval) (F-C, W, Mar.-April)

Material: 1, Mt. Stuart, 8 Mar., 15 Mar. 1981, TJH (QDF); 1, Mt. Stuart, 26 Mar. 1981, T. Helder (QDF). All specimens on leaves (resting and/or feeding) of *Eucalyptus polycarpa* F. Muell. This beetle is one of the most common *Paropsis* in the area.

26. **Paropsis aeraria** Chapuis (F, L, March)

Material: 7, Running River, c. 40 km W of Paluma, c. 85 km NW of Townsville, 21 Mar. 1981, TJH, on leaves of *Acacia aulacocarpa* A. Cunn. ex Benth. (QDF).

BROOKS (1965: 30) recorded *Acacia cincinnata* F. Muell. (*Mimosaceae*) as a food plant of this beetle [listed as *Dicranostern (sic) aeraria* Chap.].

27. **Paropsis beata** (Newman) (R, L, Jan.)

Material: 1, JCU, 15 Jan. 1981, TJH (TJH). Adult was feeding of leaves of *Eucalyptus alba* Reinw. sapling.

28. **Paropsis bovilli** Blackburn (F, L, Nov.) Fig. 3

Material: 2, JCU, 27 Nov. 1981, TJH, on *Eucalyptus polycarpa* F. Muell. (TJH); 1, JCU, 16 Nov. 1981, TJH, on *E. polycarpa* (TJH).

29. **Paropsis capitosa** Marsham (F, L, Nov.)

Material: 7, JCU, 16 Nov. 1981, TJH, on *Eucalyptus drepanophylla* F. Muell. ex Benth. (TJH); 1, 22 Nov. 1981, TJH, on *Eucalyptus alba* Reinw. (TJH).

30. **Paropsis octolineata** Gory (R-F, L, Feb.)

Material: 5, Mt. Stuart, 21 Feb. 1981, T. Helder & T.J.H., on leaves of *Eucalyptus polycarpa* F. Muell. (TJH). Only collected once during 1981.



Fig. 6: *Eucalyptus alba* - *E. drepanophylla* open woodland with grasses as ground cover on the James Cook University grounds, Townsville (Photograph: G. Heinsohn).

31. **Paropsis octomaculata** Marsham (R-F, W, Nov.-April)

Material: 1, JCU, 12 Feb. 1981, TJH, on *Eucalyptus polycarpa* F. Muell. sapling (QDF); 1, Herveys Range, c. 35 km W of Townsville, 7 Mar. 1981, TJH, on leaves of *Acacia aulacocarpa* A. Cunn. ex Benth. (QDF); 1, Herveys Range, 18 April 1981, T. Helder & T.J.H., on young *Tristania* plant (QDF); 1, JCU, 11 Nov. 1981, TJH, on *E. polycarpa* (QDF); 1, same data (TJH).

This species has been recorded previously feeding on the leaves of *Acacia mangium* Willd. (*Mimosaceae*) (Brooks, 1948: 7) and *Eucalyptus resinifera* Sm. (*Myrtaceae*) (Brooks, 1965: 29) from northern Queensland.

32. **Paropsis ornata** Marsham (R-F, L, Nov.-Dec.)

Material: 1, JCU, 29 Nov. 1981, TJH, on *Eucalyptus polycarpa* F. Muell. (TJH); 1, JCU, 20 Feb. 1981, TJH, on *E. polycarpa* (TJH); 1, JCU, 23 Nov. 1981, TJH, on *E. polycarpa* (TJH).

33. **Paropsis reticulata** Marsham (R-F, L, Feb.-Mar.)

Material: 4, JCU, 20 Feb. 1981, TJH, on *Eucalyptus alba* Reinw. sapling (TJH).

34. **Paropsis sexpustulata** Marsham (R, L, Mar.)

Material: 1, 25 km W of Paluma, 21 Mar. 1981, TJH, on young *Eucalyptus* sp. (TJH).

BROOKS (1965: 29) recorded *Eucalyptus resinifera* Sm. (*Myrtaceae*) as a food plant of this beetle (listed as *Paropsisterna sexpustulata* Marsh.).

35. **Paropsis variolosa** Marsham (R, L, Nov.)

Material: 2, JCU, 18 Nov. 1981, TJH, on *Eucalyptus polycarpa* F. Muell. sapling (TJH).  
BROOKS (1965: 29) recorded *Eucalyptus resinifera* Sm. as a food plant of this beetle.

36. **Paropsis** sp. (near *P. immaculata* Marsham) (F, L, Feb.-Mar.)

Material: 2, 30 km N of Townsville, 21 Mar. 1981, TJH, on *Acacia holosericea* A. Cunn. ex G. Don. leaves (TJH); 1, Herveys Range, 7 Mar. 1981, TJH, on *A. aulacocarpa* A. Cunn. ex Benth. leaves (TJH).

37. **Paropsis** sp. (F, L, Nov.-Dec.)

Material: 1, JCU, 16 Nov. 1981, TJH, on *Eucalyptus drepanophylla* F. Muell. ex Benth. sapling (TJH); 2, JCU, 1 Dec. 1981, TJH, on *E. polycarpa* F. Muell. sapling (TJH).

38. **Phyllocharis cyanipes** (Fabricius) (R-F, L, Jan.-Feb.) Fig. 4

Material: 2, JCU campus, 15 Feb. 1981, TJH (TJH); 2, JCU campus, 18 Feb. 1981, TJH (ANIC); 3, JCU campus, 21 Feb. 1981, TJH (QDF); 2, Pallarenda, 8 km N of Townsville, 10 Jan. 1982, TJH (TJH) [all specimens on leaves of *Clerodendrum floribundum* R. Br. (*Verbenaceae*)].

The type of this species, like that of *Aspidomorpha deusta* (Fabricius) and *A. interrupta* (Fabricius), was collected by Banks and Solander in 1770, probably from the Endeavour River near Cooktown (RADFORD, 1981). Such a beautiful species as *P. cyanipes* would have been an interesting discovery to these early botanists. Adults feed on fresh young leaves of non-flowering plants of *C. floribundum*. The early life-stages are unknown. The larvae and adults of all species of *Phyllocharis* feed on *Clerodendrum* (P. Jolivet, 1988, pers. comm.). Further data and a colour illustration of this species are provided in HAWKESWOOD (1987).

39. **Platymela stricticollis** Baly (F-C, W, Aug.-Dec.)

Material: 8, Townsville Common, 15 Aug. 1981, TJH (TJH); 1, Kissing Point, Townsville, 15 Aug. 1981, TJH (TJH); 5, Yorkeys Knob, N of Cairns, 22 Dec. 1981, TJH (TJH) [all specimens on young leaves of *Cupaniopsis anacardioides* (A. Rich.) Radlkf. (*Sapindaceae*)].

## SUBFAMILY GALERUCINAE

40. **Agelastica melanocephala** Baly (R, L, June)

Material: 1, Herveys Range, c. 40 km W of Townsville, 1 June 1981, T. Helder, amongst grass (TJH). Food plant unknown.

41. **Aulacophora abdominalis** (Fabricius) (F-C, W, Sept.-Oct.)

Material: 1, Townsville, 5 Sept. 1981, TJH, in garden (TJH); 9, Herveys Range, 40 km W of Townsville, 10 Oct. 1981, TJH, amongst weeds (QDF); 3, same data (TJH). Native food plant unknown; may feed on introduced pumpkin vines in residential areas.

42. **Oides tepperi** Blackburn (R, L, Feb.)

Material: 1, JCU campus, 2 Feb. 1981, TJH, in flight (QDF). Food plant unknown.

43. **Poneridia ficus** (Montr.) (F-C, W, March-April)

Material: 7, Herveys Range, 35 km W of Townsville, 7 March 1981, TJH (QDF); 1, same locality, 12 April 1981, TJH (TJH); 1, same locality, 29 April 1981, T. Helder (TJH) [all specimens collected from the leaves of *Ficus opposita* R. Br. (*Moraceae*)].

Adults feed on the mesophyll tissue of fresh, young leaves of the sand-paper fig, *F. opposita*. Other life stages have not been found.

## SUBFAMILY HALTICINAE

44. **Altica corusca** (Erichson) (C-VC, W, Nov.-June)

Material: 2, Townsville Common, 17 May 1981, TJH & T. Helder, on leaves of *Jussiaea suffruticosa* Linn. (*Onagraceae*) (TJH); 2, JCU campus, 28 Nov. 1981, TJH, in flight (TJH); 10, JCU campus, 1 Nov. 1981, TJH, on *J. suffruticosa* (TJH); 4, JCU campus, 10 June 1981, TJH, on *J. suffruticosa* (TJH).

One of the most common chrysomelids in the Townsville area, usually occurring wherever the food plant grows in wet swampy ground. Eggs are laid in clusters on the adaxial (upper) surface of healthy leaves. Adults do not chew leaves but feed on the petals and anthers of the open flowers. Larvae appear to feed on leaves only. Adults of *Altica corusca* have been reported feeding on *J. suffruticosa* in New Caledonia (SAMUELSON, 1973: 37-38) and in Fiji (BRYANT & GRESSITT, 1957: 77); in Fiji, adults have also been reported feeding on *J. villosa* L. and rice, *Oryza sativa* L. (*Poaceae*) (BRYANT & GRESSITT, 1957: 77) and on an unidentified species of *Piper* (*Piperaceae*) by SAMUELSON (1973: 38). VEITCH & GREENWOOD (1921: 511) noted that larvae of *A. corusca* (listed as *Haltica gravida* Blackburn) also fed on leaves of *J. suffruticosa* in Fiji.

45. **Aphthona scutellata** Baly (F, L, Nov.-Jan.)

Material: 2, Townsville, 29 May 1981, TJH, in backyard on pumpkin vines (TJH); 2, JCU campus, 1 Nov. 1981, TJH, feeding on leaves of *Crotalaria pallida* Ait. (*Fabaceae*) (TJH).

The food plants of the genus *Aphthona* are poorly known, but the adults of one exotic species, *A. veitchi* Bryant, from Fiji, is known to feed on *Euphorbia chamissonis* Boiss (*Euphorbiaceae*) (BRYANT & GRESSITT, 1957: 75).

46. **Arsipoda** sp. (F, L, Nov.)

Material: 2, JCU campus, 15 Nov. 1981, TJH & M.J. Fisher-White, on leaves of *Heterodendrum oleifolium* Desf. var. *microcalyx* (Radlkf.) Domin (*Sapindaceae*) (TJH).

47. **Longitarsus victoriensis** Blackburn (F-C, L, Oct.-Jan.)

Material: 8, JCU campus, 3 Oct. 1981, TJH (TJH); 4, JCU campus, 1 Nov. 1981, TJH (TJH) [all specimens were feeding on leaves of *Crotalaria pallida* Ait. (*Fabaceae*)].

*Crotalaria* is the food plant of several *Longitarsus* spp. from Mauritius to south-east Asia (P. Jolivet, 1988, pers. comm.).

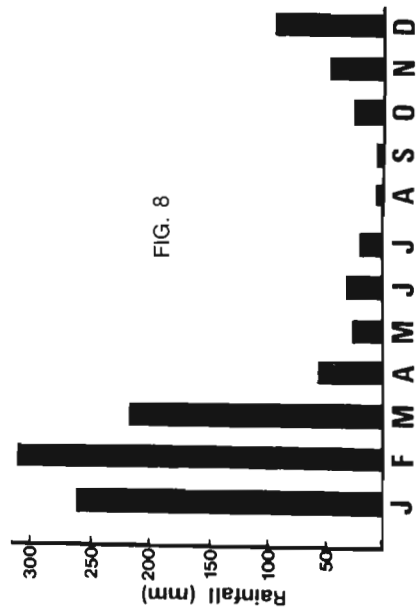
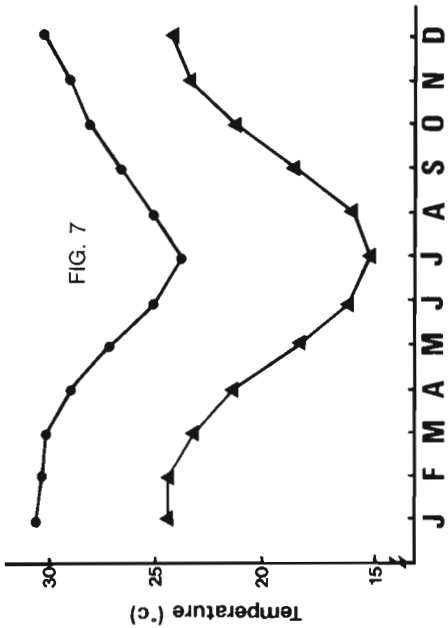
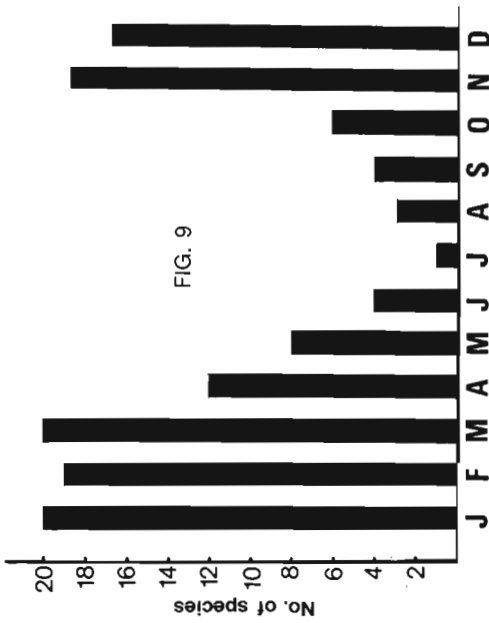


Fig. 7: Average maximum (circles) and average minimum (triangles) monthly temperatures for Townsville (from REID, 1975). Fig. 8: Mean monthly rainfall (mm) for Townsville (from REID, 1975). Fig. 9: Number of species of *Chrysomelidae* collected each month during 1981 in the Townsville area, north Queensland.

48. **Nisotra breweri** Baly (C, L, Jan.)

Material: 15, JCU campus, 30 Jan. 1981, TJH, on leaves of *Sida cordifolia* Linn. (*Malvaceae*) (ANIC).

I have collected this species only once in the Townsville area. Examination throughout Jan. 1982 on the University grounds and elsewhere failed to provide more material. Feeding by adults results in holes or skeletonization of the leaf. Brooks (1948: 7) recorded an unidentified *Dendrobium* sp. (*Orchidaceae*) as a food plant for this beetle but this record needs further verification.

49. **Podagrica submetallica** (Blackburn) (C, L, May)

Material: 7, JCU campus, 22 May 1981, TJH (TJH).

Adults were observed feeding on the petals and pollen from open flowers of *Sida cordifolia* Linn. (*Malvaceae*).

50. **Sphaeroderma** sp. (C, L, April)

Material: 11, Herveys Range, c. 40 km W of Townsville, 12 April 1981, TJH (TJH). The food plant is unknown, although other *Sphaeroderma* spp. are known to feed on *Compositae* (*Asteraceae*) including *Wedelia* spp. in the Pacific (P. Jolivet, 1988, pers. comm.). The larva of one exotic species, *Sphaeroderma wedeliae* Gressitt, has been recorded mining the leaves of *Wedelia biflora* DC. (*Asteraceae*) (SAMUELSON, 1973: 64) and adults have been collected from the same host (GRESSITT, 1955: 38; SAMUELSON, 1967: 148).

### SUBFAMILY HISPINAE

51. **Hispellinus** (= **Monochirus**) **multispinosus** (Germar) (R, L, Nov.-Jan.)

Material: 1, JCU, 29 Nov. 1981, TJH, amongst grass (TJH); 2, Townsville, 20 Dec. 1981, TJH, amongst grass (TJH).

52. **Uroplata girardi** (Pic) (F, W, March-April)

Material: 2, Mt. Spec National Park, 21 March 1981, TJH, on leaves of *Lantana camara* Linn. (*Verbenaceae*) (QDF); 3, Herveys Range, 35 km W of Townsville, 12 April 1981, TJH, on *L. camara* (QDF).

This is one of the introduced lantana beetles from South America. Due to its low population density in the Townsville area, its effect on destroying lantana here appears to be negligible.

### SUBFAMILY CASSIDINAE

53. **Aspidomorpha deusta** (Fabricius) (VC, W, Jan.-May)

Material: 11, between Pallarenda and Townsville, 23 Jan. 1981, TJH (TJH); 2, Pallarenda, 30 Jan. 1981, TJH (TJH); 1, Pallarenda, 20 Feb. 1981, TJH (TJH); 4, 1 km S of Port Douglas, 24 May 1981, TJH (TJH); 13, Brampton Beach near Tully, 28 May 1981, TJH (TJH) [all specimens collected on leaves of *Ipomoea pes-caprae* Roth. (*Convolvulaceae*)].

This is one of the first insects described from Australia, the type being collected by Banks and Solander, presumably from the Endeavour River at Cooktown (RADFORD, 1981). They probably collected the species from *I. pes-caprae* which is widely and commonly distributed on north Queensland sand dunes. All life stages appear to be restricted to leaves of *I. pes-caprae* at Townsville, Tully and

Port Douglas. Feeding by larvae and adults results in minor damage to leaves, often causing a shot-hole effect similar to that of the related species *A. maculatissima* Boheman on *I. abrupta* R. Br. (HAWKESWOOD, 1982). No other chrysomelids or other beetles appear to utilize the plant for food at Townsville. Further notes on the biology of this species and a colour illustration of the adult *A. deusta* are provided in HAWKESWOOD (1987). *Ipomoea pes-caprae* is a common food plant of adult and larval *Cassidinae* on the beaches in the Pacific and Far-East (P. Jolivet, 1988, pers. comm.).

54. *Aspidomorpha interrupta* (Fabricius) (R, W, Nov.-May) Fig. 5

Material: 1, Mt. Elliot, c. 15 km S of Townsville, 11 May 1981, T. Helder, on *Ipomoea triloba* (Linn.) (TJH); 2, 10 km W of Townsville, 29 Nov. 1981, TJH & P. Singh, amongst *Panicum* grass (*Poaceae*) (TJH); 1, 6 km N of Townsville, 30 Nov. 1981, TJH (TJH); 1, Mt. Louisa, Townsville, 13 Dec. 1981, TJH & A. Taplin, amongst *Themeda* and *Bothriochloa* grass (TJH).

A rare and poorly known species, which probably feeds on leaves of *I. triloba* at Townsville, although the early life stages have not been collected, while the behaviour and feeding biology are unknown. Adults are ready fliers, often alighting on vegetation, not regarded by the author as food plants, such as grasses (noted above), a common component of the Townsville vegetation. EVANS (1985) reported *A. interrupta* on *Glycine max* L. (*Fabaceae: Leguminosae*) but this is not a food plant, only an incidental record (P. Jolivet, 1988, pers. comm.).

55. *Aspidomorpha maculatissima* Boheman (F, L, Jan.-April)

The life history, general biology and distribution of this species have been described by HAWKESWOOD (1982). Since completion and publication of that manuscript, further material has been brought to my attention: Queensland: 2, Port Denison (Bowen), K36417 (AM); 2, Cairns, Jan. 1948 (NMV); 2, Clump Point (c. 15 km NE of Tully, 17°42'S, 146°07'E) (NMV); 3, Proserpine (20°24'S, 148°33'E) (NMV); 8, North Qld. (NMV). Northern Territory: 4, Melville Island (NMV); 3, Darwin (NMV); 7, King River (c. 14°40'S, 132°00'E) (NMV); 3, Northern Territory (NMV).

In the Townsville area, *A. maculatissima* is restricted to *Ipomoea abrupta* R. Br. (*Convolvulaceae*) (HAWKESWOOD, 1982); colour illustrations of the pupae and adult are provided in HAWKESWOOD (1987).

56. *Metriona holmgreni* (Boheman) (F-VC, W, May-Nov.)

Material: 12, Townsville Common, 17 May 1981, on leaves of *Ipomoea triloba* (Linn.) (*Convolvulaceae*) (TJH); 2, Townsville Common, 15 Aug. 1981, TJH, in curled leaves of *Cupaniopsis anacardioides* (A. Rich.) Radlkf. (*Sapindaceae*) (TJH); 6, Mt. Louisa, Townsville, 23 Oct. 1981, A. Taplin, on leaves of *I. batatas* Poir. (QDF); 3, Mt. Louisa, Townsville, 28 Oct. 1981, TJH, in flight (QDF); 3, 10 km W of Townsville, 29 Nov. 1981, TJH, on leaves of *Panicum* sp. (*Poaceae*) (TJH); 3, 10 km W of Townsville, 29 Nov. 1981, TJH & P. Singh, on *Panicum* grass (QDF); 3, Pallarenda, 6 km N of Townsville, 30 Nov. 1981, TJH, flying around passionfruit vines, *Passiflora foetida* R. Br. (*Passifloraceae*) (QDF); 2, 6 km N of Townsville, 30 Nov. 1981, TJH (QDF).

Although widespread, this species is apparently short-lived and the early life stages have not been collected. Since the early life stages of all known cassidine beetles occur on the same plant as the adults (P. Jolivet, 1988, pers. comm.), it is most likely that, with further examination of *Ipomoea* plants in the Townsville area, the eggs, larvae and pupae of *M. holmgreni* will be revealed. Adults appear to utilize *I. triloba* and *I. batatas* as food plants in the Townsville area, and are active fliers, often found alighting amongst grass or flying amongst weeds and other vegetation near the host plants. The specimens obtained from curled leaves of *C. anacardioides* were probably overwintering and did not utilize this plant for food. Dr. P. Jolivet (1988, pers. comm.) is of the opinion that the Australian genus *Metriona* is different from the neotropical *Metriona* so that the placement of *holmgreni* in this genus appears to be tentative at this stage. A colour illustration of this species as well as further notes on its biology are provided in HAWKESWOOD (1987).

Table 1: List of food plants and the number of leaf beetle species and the representative genera found feeding on leaves/stems/flowers during 1981 at Townsville, north-eastern Queensland. \* This is the unidentified *Ipomoea* species noted in HAWKESWOOD (1982).

Species of plant	No. of beetle species	Genera
<b>CELASTRACEAE</b>		
<i>Maytenus cunninghamii</i> (F. Muell.) Loes	1	<i>Augomela</i>
<b>COMBRETACEAE</b>		
<i>Terminalia catappa</i> F. Muell.	2	<i>Cryptocephalus</i> , <i>Rhyparida</i>
<b>CONVOLVULACEAE</b>		
<i>Ipomoea abrupta</i> R. Br.	1	<i>Aspidomorpha</i>
<i>Ipomoea batatas</i> Poir.	1	<i>Metriona</i>
<i>Ipomoea pescaprae</i> Roth.	1	<i>Aspidomorpha</i>
<i>Ipomoea triloba</i> L.*	2	<i>Aspidomorpha</i> , <i>Metriona</i>
<i>Ipomoea velutina</i> R. Br.	1	<i>Aspidomorpha</i>
<b>FABACEAE</b>		
<i>Crotalaria pallida</i> Aiton	2	<i>Aphthona</i> , <i>Longitarsus</i>
<b>MALVACEAE</b>		
<i>Sida cordifolia</i> L.	2	<i>Nisotra</i> , <i>Podagricae</i>
<b>MIMOSACEAE</b>		
<i>Acacia aulacocarpa</i> A. Cunn. ex Benth.	5	<i>Augomela</i> , <i>Calomela</i> , <i>Paropsis</i>
<i>Acacia holosericea</i> A. Cunn. ex G. Don.	8	<i>Calomela</i> , <i>Cryptocephalus</i> , <i>Ditropidus</i>
<i>Acacia leptostachya</i> Benth.	1	<i>Calomela</i>
<b>MORACEAE</b>		
<i>Ficus opposita</i> R. Br.	1	<i>Poneridia</i>
<b>MYRTACEAE</b>		
<i>Eucalyptus alba</i> Reinw.	3	<i>Paropsis</i>
<i>Eucalyptus drepanophylla</i> F. Muell. ex Benth.	5	<i>Cryptocephalus</i> , <i>Ditropidus</i> , <i>Paropsis</i>
<i>Eucalyptus polycarpa</i> F. Muell.	12	<i>Brachycaulus</i> , <i>Cryptocephalus</i> , <i>Paropsis</i>
<i>Eucalyptus tessellaris</i> F. Muell.	2	<i>Cryptocephalus</i> , <i>Rhyparida</i>
<b>ONAGRACEAE</b>		
<i>Jussiaea suffruticosa</i> L.	1	<i>Altica</i>
<b>PITTIOSPORACEAE</b>		
<i>Bursaria incana</i> R. Br.	1	<i>Lamprolina</i>
<b>SAPINDACEAE</b>		
<i>Cupaniopsis anacardioides</i> (A. Rich.) Radlkf.	1	<i>Platymela</i>
<i>Heterodendrum oleifolium</i> Desf. var. <i>microcalyx</i> (Radlkf.) Domin	1	<i>Arsipoda</i>
<b>VERBENACEAE</b>		
<i>Clerodendrum floribundum</i> R. Br.	1	<i>Phyllocharis</i>
<i>Lantana camara</i> L.	1	<i>Uroplata</i>

## DISCUSSION

The observations and list provided here indicate that despite not being diverse botanically (say in relation to the plant diversity of southern Australian heathlands or sclerophyll forests), the Townsville area supports a diverse array of *Chrysomelidae*. Of the 23 identified food plants, *Acacia* (*Mimosaceae*) and *Eucalyptus* (*Myrtaceae*) are the most important in terms of leaf beetle species (table 1). The most important *Acacia* species are *A. holosericea*, which supports 8 species from the genera *Calomela*, *Cryptocephalus* and *Ditropidus*, and *A. aulacocarpa* with 5 species from the genera *Augomela*, *Calomela* and *Paropsis* (table 1). All of the dominant species of *Eucalyptus* in the Townsville area were found to support chrysomelids (table 1), the most important being *E. polycarpa*, which supported 12 species from the genera *Brachycaulus*, *Cryptocephalus* and *Paropsis*. Most chrysomelids were found to be host-specific to only one plant species, e.g. *Aspidomorpha deusta* on *Ipomoea pescaprae*, *Altica corusca* on *Jussiaea suffruticosa* and *Poneridia ficus* on *Ficus opposita*, and were not observed either resting or feeding on other plants. The adults of most species fed on leaves and/or stems of their hosts. Only two species were observed feeding on flowers – *Altica corusca* on *Jussiaea suffruticosa* and *Podagrica submetallica* on *Sida cordifolia* – adults of these did not feed on leaves. Food plants were not found for 10 species: *Agelastica melanocephala*, *Aulacophora abdominalis*, *Cleorina purpurea*, *Colasposoma sellatum*, *Cryptocephalus conjugatus*, *C. iridipennis*, *Monochirus multispinosus*, *Oides tepperi*, *Sagra papuana* and *Sphaeroderma* species.

Comparison of fig. 9 showing the number of chrysomelid species encountered each month with the mean monthly temperatures (fig. 7) and mean monthly rainfall (fig. 8) clearly shows that the largest number of species present as adults correlates with peak rainfall and temperatures during the summer months of November to March, and there is a marked decline in the number of species with changing climatic conditions during June to September. It is evident that the emergence and presence of adult chrysomelids is strongly correlated with climatic conditions which favour new and sustained growth of their food plants during summer.

The majority of species from Townsville are entirely tropical in distribution and not found outside north Queensland (HAWKESWOOD, 1982, unpub. data). However, at least one species, *Altica corusca* (Erichson), is a widely distributed extra-Australian species in the Pacific, having been recorded from New Caledonia, New Hebrides, Fiji, Tonga, Hawaii and the Solomon Islands (SAMUELSON, 1973: 37, 154). In addition, at least 7 of the genera recorded from Townsville are also extra-Australian, i.e. *Altica* (noted above and in the list of species), *Aphthona*, a poorly known genus which occurs throughout the Pacific region (BRYANT & GRESSITT, 1957: 75-76; SAMUELSON, 1973: 150), *Arsipoda*, which also occurs in Papua New Guinea and New Caledonia (SAMUELSON, 1973: 149, 156), *Aspidomorpha*, which occurs throughout the tropical and subtropical regions of Africa (e.g. MUIR & SHARP, 1904), South America and south-east Asia (e.g. STANEK, 1972), *Longitarsus*, in south-east Asia and New Zealand (SAMUELSON, 1973: 151), *Sagra*, which is well developed in south-east Asia, Madagascar and South America (e.g. JOLIVET, 1986: 109) and the poorly known genus *Sphaeroderma*, which is also reported from the Solomons and other areas of the Pacific (SAMUELSON, 1973: 151). Only a few species of *Chrysomelidae* recorded here

from the Townsville area are known to occur in southern temperate Australia, viz. *Paropsis aegrota*, *P. beata* and *P. bovilli* (HAWKESWOOD, 1982, pers. obs.). Some species are also found in subtropical north-eastern New South Wales, viz. *Cryptocephalus eumolphus*, *Metriciona holmgreni* and *Poneridia ficus* (HAWKESWOOD, 1982-88, pers. obs.).

The Townsville district supports an interesting and diverse leaf beetle fauna deserving of further study, since of the tropical species, only the life cycle and biology of *Aspidomorpha maculatissima* Boheman has been described in detail (HAWKESWOOD, 1982).

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