

# Chrysomelidae of Hong Kong Part 1 Introduction and key to subfamilies

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## ABSTRACT

A key to the 13 subfamilies of Chrysomelidae occurring in Hong Kong and a photographic guide to each of these subfamilies is given. The aquatic subfamily Donaciinae is recorded in Hong Kong for the first time.

## Key words:

Chrysomelidae, Coleoptera, Hong Kong.

## INTRODUCTION

This is the first of a series of articles on the Chrysomelidae or leaf beetles of Hong Kong. Its main purpose is not only to enable entomologists to accurately identify species of this vast and variable family occurring in the Hong Kong SAR by the use of keys, but also for the more general reader to use as a quick photo guide, as all commonly found species will be illustrated in photographs. Part 3 of the series, on the subfamily Galerucinae, is also published in this issue of HKEB. Part 2 (subfamily Alticinae) has already been published (Aston, 2009).

The Chrysomelidae is an abundant and highly speciose group of phytophagous beetles, many of which are agricultural pests and have therefore been well studied. Members of this family can be identified by having the tarsi all apparently four-segmented (pseudotetramerous), antennae larger than palps, and elytra nearly always covering the abdomen, only occasionally exposing the pygidium. The Cerambycidae (longhorn beetles) are closely related to the Chrysomelidae and can be distinguished generally by being very elongate in shape, the head projecting and prominent, the eyes oblique and more or less divided and the antennae being quite rigid and perpendicular to the body. As a general rule, Chrysomelidae show none of these features. Another abundant group, the Curculionidea (weevils) are distinguished from leaf beetles by having one or more of the following features: a rostrum (or snout); elbowed antennae; body covered with scales.

Although there are 13 subfamilies of Chrysomelidae known from Hong Kong, it should be noted that these

are very variable in species representation. The Galerucinae, Alticinae and Eumolopinae are the largest and commonest groups, each with probably over 50 species, followed by the Cassidinae, Cryptocephalinae and Criocerinae each with about 20 species locally. The Hispinae, Chlamydinae, Clytrinae and Chrysomelinae are all quite scarce; it seems likely that these subfamilies are represented by less than ten or at most 15 species each. The Donaciinae, Lamprosominae and Sagrinae are all represented by single species, the first two being very scarce to rare.

## METHODS

Most of the material for this study came from the collection of the author and was made between 2004 and 2009. Although this collection is derived from locations throughout Hong Kong, there is a strong bias in this material towards Lantau Island. Additional material was viewed in AFCD's Tai Lung Farm Insect collection and a small collection on loan from Mr. Yiu Vor from his personal collection. Identification of species for most subfamilies was done using Gressitt and Kimoto 1963.

The structure of the key follows Jacoby (1908), who divided the Chrysomelidae into five divisions, Camptosomes, Eupodes, Cyclica, Trichostomes and Cryptostomes. As these divisions are occasionally referred to in modern publications I have included them here. The key to the Trichostomes and Cryptostomes was extracted from Maulik (1919 & 1926).

**KEY TO THE SUBFAMILIES OF CHRYSOMELIDAE KNOWN TO OCCUR IN HONG KONG**

1 Mouth placed anteriorly. Head porrect or vertical . . . . 3  
- Mouth not normal, small, hidden or nearly so (Figure 1).  
Maxillary palpi two-segmented. Head in front bent inwards  
( Division CRYPTOSTOMES) . . . . . 2

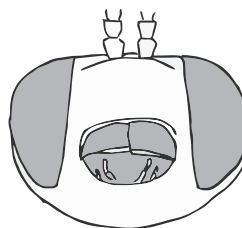


Figure 1. Ventral surface of head. Eyes and mouth shaded. Hispinae [Figure by Paul Aston]

2 (1) Rotundate or oval form with an explanate margin all round, so that when the insect is viewed from above and in repose the antennae and legs are not visible. Larvae generally surface feeders . . . . . **Cassidinae**  
- Normally elongate-oblong insects. Many species have long well developed pointy spines on body, though may be quite smooth and plain . . . . . **Hispinae**

3 (1) Antennae not widely separated at base, generally closely approximate; elytra more or less soft in texture. (Division TRICHOSTOMES) . . . . . 4  
Antennae widely separated at base; elytra of hard texture . . . . . 5

4 (3) Live specimens never jump. If hind legs thickened, corresponding tibiae are long. Anterior coxae conically prominent at apex. . . . . **Galerucinae**  
- Live specimens almost always jump to evade capture. Hind femora much thickened; invariably thicker than in the two anterior pairs of legs. Anterior coxae not conically prominent at apex. Hind tibiae short in most species . . . **Alticinae**

5 (3) Pygidium not exposed. Intermediate ventral segments not medially constricted . . . . 9  
- Pygidium usually exposed. Intermediate ventral segments constricted as in Figure 2. (Division CAMPTOSOMES) . . . . . 6

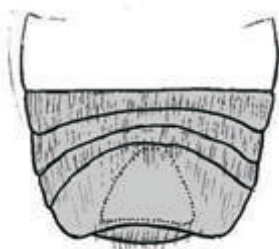


Figure 2. Ventral surface of abdomen of *Cryptocephalus tri-fasciatus* Fabricius 1787 showing the constricted intermediate ventral segments in Camptosomes. [Figure by Paul Aston]

6 (5) Antennae long and generally filiform, never serrate, sometimes shorter with terminal joints thickened . . . . . **Cryptocephalinae**  
- Antennae short, the joints serrate . . . . . 7

7 (6) Thorax with grooves on the flanks for antennae; elytra tuberculate . . . . . **Chlamydiae**  
- Thorax without grooves on the flanks; elytra not tuberculate. Posterior femora without teeth; claw joint normal. Last joint of maxillary palpi more or less truncate . . . . . **Clytrinae**

8 (5) Thorax without distinct lateral margins, head produced, eyes prominent. Prosternum exceedingly narrow (Division EUPODES). . . . . 9  
- Thorax with distinct lateral margins (rarely without), head not produced, eyes not prominent. Prosternum broad (Division CYCLICA) . . . . . 11

9 (8) Antennae not separated by entire front of head . . . . . **Donaciinae**  
- Antennae separated by entire front of head . . . . . 10

10 (9) Posterior femora very strongly incrassate; large sized insects of brilliant metallic coloration. . . . . **Sagrinae**  
- Posterior femora only slightly incrassate; much smaller insects, less brilliant, rarely metallic. . . . . **Criocerinae**

11 (8) Last joint of tarsi deeply bi-lobed . . . . . 12  
- Last joint of tarsi not bi-lobed; entire, front coxae transverse . . . . . **Chrysomelinae**

12 (11) Thorax as wide as elytra at base. Legs compressed; abdomen grooved for reception of legs. . **Lamprosominae**  
- Thorax generally narrower than elytra at base. Legs not compressed; abdomen not grooved for reception of legs . . . . . **Eumolopinae**

## REFERENCES

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## Quick photographic guide to the subfamilies of Chrysomelidae recorded in Hong Kong

## Cassidinae



*Aspidomorpha miliaris*  
Fabricius 1775

## Hispininae



*Dactylispa pungens*  
(Boheman), 1859

## Cryptocephalinae



*Cryptocephalus trifasciatus*  
Fabricius, 1787

## Galerucinae



*Hoplosomoides costata*  
(Baly 1878)

## Alticinae



*Nonarthra variabilis*  
baly 1862

## Chlamydinae



*Chlamisus maculiceps*  
Gressitt 1942

## Clytrinae



*Smaragdina aurita*  
(Linnaeus, 1767)

## Donaciinae



*Donacia lenzi*  
Schonfeldt, 1888

## Sagrinae



*Sagra femorata purpurea*  
Lichtenstein

**Criocerinae**



*Lilioceris egena*  
(Weise, 1922)

**Lamprosominae**



*Oomorphoides pallidicornis*  
Gressitt and Kimoto 1961

**Eumolopinae**



*Platycorynus undatua*  
(Olivier, 1791)

**Chrysomelinae**



*Chrysomela octodecimguttata*  
(Fabricius 1775)