

THE CASSIDINAE (COLEOPTERA: CHRYSOMELIDAE) OF ISRAEL

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ABSTRACT

Thirteen species of Cassidinae (Chrysomelidae) are reported from Israel. A key is provided to these and two additional species that are known from neighbouring countries and may eventually be found in Israel.

KEY WORDS: Chrysomelidae, Cassidinae, Israel, Mediterranean, key.

INTRODUCTION

The Cassidinae, or tortoise beetles, with over 3000 named species, comprise one of the largest subfamilies of the family Chrysomelidae. They are almost world-wide in distribution, but most species occur in the tropics, especially in South America. They are relatively scarce in certain temperate regions, and less than 100 species are recorded from the Palearctic Region.

The subfamily is characterized by a broad body, strongly explanate margins of the pronotum and elytra, and in most species by the head being completely hidden by the pronotum and invisible from above (Fig. 1). The larvae possess a caudal appendage to which are attached the successive molted skins and often the accumulated larval feces for camouflage.

Seven species of Cassidinae were recorded from Israel hitherto (Bodenheimer, 1937; Avidov and Harpaz, 1969; Gerling and Kugler, 1973). In recent years only four of them were confirmed, and six additional species were found. Two other species were recorded from adjacent countries (Spaeth and Reitter, 1926; Borowiec, 1986), and their occurrence in Israel is possible.

In Avidov and Harpaz's (1969) textbook on plant pests of Israel, two noxious species are mentioned: *Cassida palaestina* Reiche and Saulcy (Fig. 1), which feeds on artichoke, beet, safflower and spinach, and *C. vittata* Villers, which feeds on beet. The damage caused by these species, however, is negligible.

In the present paper we list the species known from Israel, with their distribution, host plants and collection months (in Roman numerals). A key to the species recorded from Israel and adjacent countries is given. The information is based primarily on specimens in the National Collection of Insects, Department of Zoology, Tel Aviv University and the Entomological Collection of the University of Wrocław. Taxonomic terminology follows Lopatin (1984).

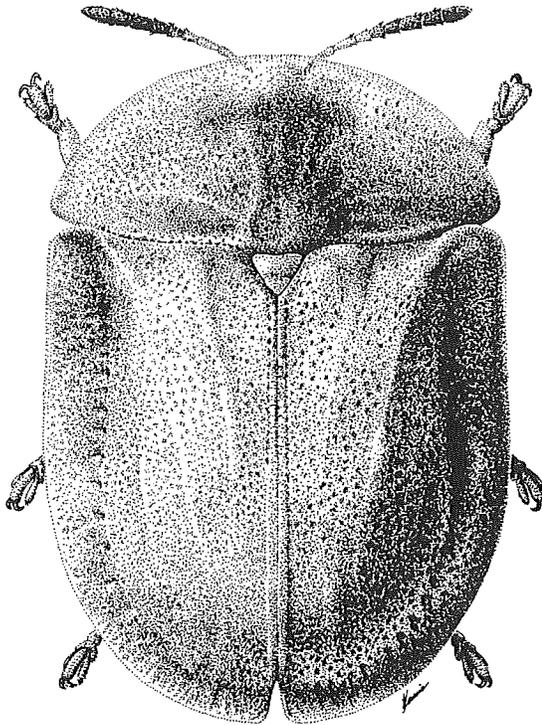


Fig. 1. *Cassida palaestina* Reiche and Saulcy, habitus.

KEY TO THE SPECIES

1. Fourth apparent tarsomere three times longer than third tarsomere. Elytra with three oblong costae and several transverse folds. *Macromonycha apicalis* (Gebler)
- Fourth apparent tarsomere short, not, or only slightly, longer than third segment. Elytron usually without costae and transverse folds 2
2. Explanate margin of elytron strongly declivous; elytron irregularly punctate. Body strongly convex, subcylindrical. Length less than 5 mm. Associated with plants growing in saline habitats 3
- Explanate margin of elytron moderately declivous to subhorizontal, mostly regularly punctate. Body moderately convex to depressed, occasionally subcylindrical; length usually more than 5 mm. Not associated with plants growing in saline habitats 6
3. Explanate margin of elytron very broad, about as wide as elytron. Elytron with distinct marginal interval in anterior third *Oxylepis deflexicollis* (Boheman)
- Explanate margin of elytron narrow, not wider than 1/3 width of elytron. Elytron without marginal interval. 4

4. Frons and clypeus with coarse, fairly dense punctation. Pronotum with well-developed, fairly dense punctation on disk and coarse punctation fusing into oblong furrows laterally *Ischyronota desertorum* (Gebler)
 — Frons and clypeus impunctate. Deep oblong furrows on pronotum absent laterally 5
5. Punctures on lateral part of pronotal disc dense, partly coalescent, punctation appears rugose (recorded from Jordan) *Ischyronota brisouti* ssp. *jordanensis* Borowiec
 — Punctures on lateral part of pronotal disc moderately dense, not coalescent, with distinct intervals, punctation not rugose *Ischyronota elevata* (Reitter)
6. Antennomere 2 slightly shorter than 3. Venter of pronotum with deep antennal grooves. Body broadly oval, strongly convex. 7
 — Antennomere 2 longer than 3. Venter of pronotum without antennal grooves. Body rounded or ovate, moderately convex 8
7. Basal margin of elytron moderately sinuate, with fine crenulation, humerus moderately protruding anterad *Hypocassida subferruginea* (Schrank)
 — Basal margin of elytron distinctly sinuate with large crenulation, humerus strongly protruding anterad *Hypocassida meridionalis* (Suffrian)
8. Tarsal claws with basal tooth 9
 — Tarsal claws without basal tooth 10
9. Elytron with interrupted rows of punctation. Body dorsally green, matte; legs yellow (recorded from Syria) *Cassida viridis* Linnaeus
 — Elytron with regular rows of punctation. Body dorsally brown-green, legs ferrugineous *Cassida brevis* (Weise)
10. Elytron broad, explanate margin subhorizontal. Length more than 6 mm 11
 — Elytron narrow, explanate margin moderately declivous. Length less than 5.5 mm 13
11. Interspaces on elytron with short whitish hairs. Body dorsally green; antenna and legs yellow, sometimes only femoral bases blackish; several small light-red spots along suture *Cassida pannonica* Suffrian
 — Interspaces on elytron without short whitish hairs. Body dorsally green or yellow, or with small brown spot at suture behind scutellum 12
12. Antennal tip and basal half of femora black *Cassida rubiginosa* Müller
 — Antenna and femora yellow *Cassida palaestina* Reiche and Saulcy
13. Body subcylindrical with distinct postscutellar angulation. Clypeus, thorax and abdomen yellow *Cassida pellegrini* (Marseul)
 — Body subcylindrical with no postscutellar angulation. Clypeus, thorax and abdomen mostly or completely black 14

14. Femora yellow; sometimes narrowly darkened at base. Pronotum slightly glossy, with obtuse angles *Cassida vittata* Villers
 — Femora black on basal half. Pronotum matte, with rounded angles
 *Cassida nobilis* Linnaeus

ENUMERATION OF THE SPECIES

(Species new to the Israeli fauna are marked by an asterisk)

1. *Cassida brevis* (Weise, 1884)

DISTRIBUTION: Eastern Mediterranean, including Israel (Bodenheimer, 1937), northern Afghanistan, Turkmenistan.

ISRAEL: Judean Hills (Jerusalem). vii.

HOST PLANTS: Unknown, probably beet.

*2. *Cassida nobilis* Linnaeus, 1758

DISTRIBUTION: Throughout the Palearctic region.

ISRAEL: Lower Galilee, Jordan Valley, Central and Southern Coastal Plain, Judean Foothills. iv–vii.

HOST PLANTS: *Chenopodium* spp., *Atriplex* spp. (Chenopodiaceae); *Silene* spp. (Cariophyllaceae).

3. *Cassida palaestina* Reiche and Saulcy, 1858

DISTRIBUTION: Near East, Armenia, central Asia, Israel (Bodenheimer, 1937; Avidov and Harpaz, 1969).

ISRAEL: Upper and Lower Galilee, Golan Heights, Mount Hermon, Mount Carmel, Northern, Central and Southern Coastal Plain, Judean Foothills, Judean Hills, Yizre'el Valley, Jordan Valley. i–vi.

HOST PLANTS: *Carthamus tinctorius* L. (safflower), *Cynara scolymus* L. (artichoke), *Silibum marianum* (L.) Gaertner (Asteraceae), *Beta vulgaris* L. (beet), *Atriplex* spp. (Chenopodiaceae).

*4. *Cassida pannonica* Suffrian, 1884

DISTRIBUTION: Central and eastern Europe, Russia (western Siberia), east Mediterranean.

ISRAEL: Upper Galilee, Mount Carmel, Yizre'el Valley. iii–xii.

HOST PLANTS: *Carduus* spp, *Centaurea* spp. and *Cirsium* spp. (Asteraceae).

*5. *Cassida pellegrini* (Marseul, 1868)

DISTRIBUTION: A rare species hitherto known only from Lebanon and Cyprus.

ISRAEL: Mount Carmel, Judean Foothills, Northern Negev. v–vii.

HOST PLANTS: *Lycium schweinfurthii* Dammer (Solanaceae).

6. *Cassida rubiginosa* Müller, 1776

DISTRIBUTION: Throughout the Palearctic, including Israel (Bodenheimer, 1937).

ISRAEL: Upper and Lower Galilee, Mount Carmel, Central Coastal Plain. ii–xii.

HOST PLANTS: *Carduus* spp., *Cirsium* spp., *Centaurea* spp. (Asteraceae).

7. *Cassida vittata* Villers, 1789

DISTRIBUTION: Throughout the Palearctic, including Israel (Avidov and Harpaz, 1969).

ISRAEL: Yizre'el Valley, Northern, Central and Southern Coastal Plain, Jordan Valley, Judean Hills, Dead Sea Area. ii–xi.

HOST PLANTS: *Atriplex* spp., *Chenopodium* spp., *Beta* spp., *Salicornia* spp., (Chenopodiaceae); adults recorded also from *Silene* spp., *Spergula* spp. (Caryophyllaceae).

*8. *Hypocassida meridionalis* (Suffrian, 1884)

DISTRIBUTION: East Mediterranean.

ISRAEL: Upper and Lower Galilee, Golan Heights, Samaria, Northern, Central and Southern Coastal Plain, Yizre'el Valley, Jordan Valley, Judean Desert, Northern Negev. ii–vi.

HOST PLANTS: *Convolvulus* spp. (Convolvulaceae).

9. *Hypocassida subferruginea* (Schrank, 1776)

DISTRIBUTION: Throughout the Palearctic, including Israel (Bodenheimer, 1937; Gerling and Kugler, 1973).

ISRAEL: Upper and Lower Galilee, Mount Carmel, Northern and Central Coastal Plain, Jordan Valley, Yizre'el Valley, Northern Negev. i–vi.

HOST PLANTS: *Convolvulus* spp. (Convolvulaceae).

*10. *Ischyronota elevata* (Reitter, 1890)

DISTRIBUTION: Turkey, Armenia, Israel, central Asia, Iran.

ISRAEL: Dead Sea Area, Southern Negev. vi.

HOST PLANTS: *Holothamnus* spp., *Halocnemum strobilaceum* (Pallas) MB., *Salsola* spp., *Suaeda* spp. (Chenopodiaceae).

*11. *Ischyronota desertorum* (Gebler, 1833)

DISTRIBUTION: Southern Europe, eastern Caucasus (Georgia), central Asia, China, East Mediterranean, Egypt (Alfieri, 1976), Israel.

ISRAEL: Dead Sea Area (En Gedi). v.

HOST PLANTS: Saltworts (*Salicornia* spp.) (Lopatin, 1984).

12. *Macromonycha apicalis* (Gebler, 1845)

DISTRIBUTION: Turkey, Armenia, Israel (Bodenheimer, 1937), central Asia.

ISRAEL: Not found since Bodenheimer's (1937) record.

HOST PLANTS: Brassicaceae (Lopatin, 1984).

13. *Oxylepis deflexicollis* (Boheman, 1862)

DISTRIBUTION: Mediterranean, including Egypt (Alfieri, 1976) and Israel.

ISRAEL: Central Negev (Har Ramon). vii.

HOST PLANTS: *Salicornia* spp. (Chenopodiaceae).

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