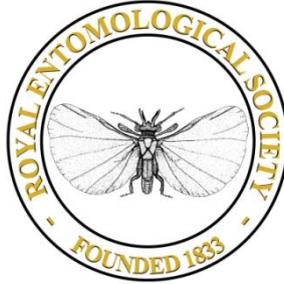


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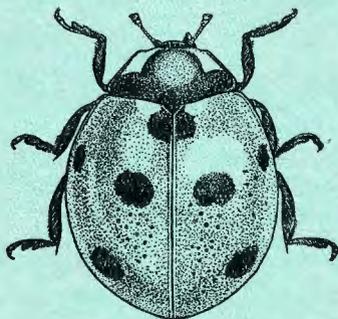
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# HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS



COLEOPTERA

COCCINELLIDAE & SPHINDIDAE

By

R. D. POPE

LONDON

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## HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS

The aim of this series of publications is to provide illustrated keys to the whole of the British Insects (in so far as this is possible), in ten volumes, as follows :

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The Society is indebted to the Royal Society for a grant towards the cost of initiating this series of *Handbooks*.

**A list of parts now available appears on the back cover**

# COLEOPTERA (COCCINELLIDAE)

By R. D. POPE

## INTRODUCTION.

THE World fauna of *Coccinellidae* includes over 3000 known species, of which only 42 occur in the British Isles. The larger and more common species (Ladybirds or Ladybeetles) are well known to entomologist and layman alike, but others, which are smaller, less conspicuous and more specialised in habitat are much more rarely seen.

## ADULT CHARACTERISTICS.

A diagnosis of the family *Coccinellidae* is as follows: Small, less than 10 mm. long; convex, oval or hemispherical as a rule, although distinctly oblong-oval in a few instances; head usually retracted into pronotum, the latter being transverse and emarginate anteriorly; body with or without pubescence; eyes large, coarsely or finely faceted, occasionally (*Chilocorus*, etc.) partially divided by laterally expanded genae; antennae inserted close to inner margins of eyes, of moderate length or short, terminating in a three-segmented club; mandibles with two (six in *Subcoccinella*) internal teeth on each; maxillary palpi four-segmented, terminal segment securiform or subsecuriform; prosternal process between anterior coxae often with longitudinal raised ridges laterally or with a longitudinal median groove; mesosternum short, often emarginate anteriorly to receive apex of prosternal process; metasternum long, usually with raised platelike areas behind midcoxae; abdomen with from five to seven ventrites, the first bearing in most species raised plates similar to those of metasternum (fig. 1); legs short, retractable beneath body, tarsi cryptotetramerous, segment 3 being very small and almost hidden within lobate second segment, tarsal claws simple, bifid or appendiculate.

## LIFE HISTORY.

The eggs vary in shape and colour between the species, often being spindle shaped. They are laid singly or in clusters or rows on various plants. First instar larvae emerging from the eggs can be distinguished from succeeding instars by the presence of cephalic egg-bursting spines. The typical *Coccinellid* larva bears a strong resemblance to a *Chrysomelid* larva. Other *Coccinellid* larvae, particularly those feeding on waxy scale insects, have a distinct covering of whitish wax, often tufted in appearance.

Pupation takes place on the spot where the larva has been feeding, the hind end of the larva being anchored to the plant tissue by a secretion.

From egg to adult the usual period of time taken is from 20-35 days, although considerable variation may occur due to unusual environmental conditions.

Van Emden (1949) discusses the taxonomy of Coccinellid larvae and provides keys for their identification. The colour of the larvae varies, but often they are bluish-grey with light-coloured spots. The head has three ocelli on either side. The legs are long and slender. The tergites are frequently tuberculate, but the abdomen is without chitinous projections. In the wax-covered species the tergal projections are absent.

A curious phenomenon common to the *Coccinellidae* is that of assembly. The adults are found during the winter months clustered together in large masses. There has been much speculation as to the reason for this, but no satisfactory answer is as yet forthcoming.

#### COLOUR VARIETIES.

Many Coccinellids show considerable variation of colour pattern between individuals. Perhaps the best example is *Adalia bipunctata* (Linnaeus). An extremely large number of variations have been described within this species. In the present publication no attempt has been made to list or arrange the varieties, and anyone wishing to acquire information on the subject is referred to the papers cited in the bibliography below and under genera. In some cases it seems almost certain that the colour variation is influenced by climatic conditions, but in many instances little is known.

#### NOTES ON THE KEYS.

The present keys have been made with as little use of colour as possible because of the variability of this character. In the few instances where colour pattern has been used its constancy has been checked by examination of a very long series of specimens.

Where a genus is represented in the British Isles by a single species, reference to that species is made in the key to genera and supplementary characters are appended to the couplet concerned. These genera are not mentioned later in the work where keys to species within genera are provided.

Often underside characters are more important and constant than those visible from above and the writer has not hesitated to make use of them. For this reason it is advisable to mount one specimen of a series on its back or, if only one is available, to mount it sideways.

#### DISTRIBUTION.

Unless the species is of rare occurrence or appears at present to be confined to a section of the British Isles no mention of localities has been made. Particular habitats have been mentioned where it is thought they may provide some guidance.

#### ACKNOWLEDGMENTS.

The keys have been constructed with the aid of works by Fowler and authors of keys to European Coleoptera, but considerable modifications have proved necessary and numerous additional characters have been inserted.

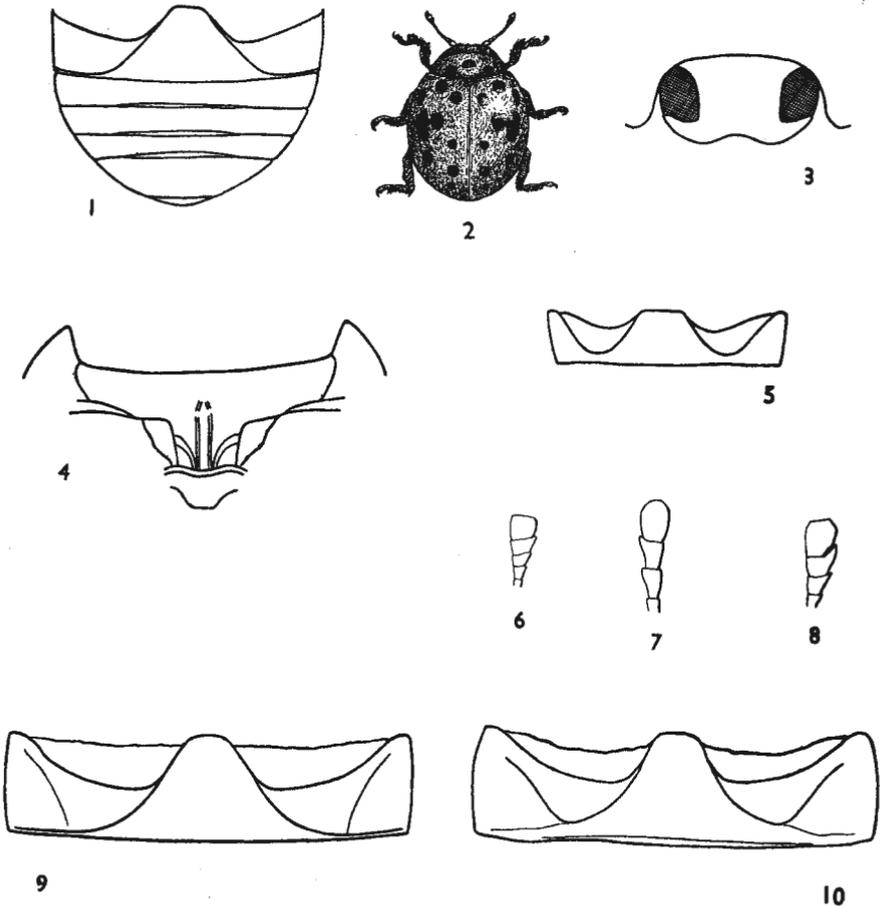
The author is indebted to members of the staff of the British Museum (Nat. Hist.), who have checked the working of the keys.

The four illustrations of whole insects and the frontispiece were drawn by Mrs. C. A. O'Brien.



- Upper surface pubescent .....6.
- 6 Anterior coxae large; prosternum in front of them very narrow and sharply declivous anteriorly so that the mouthparts touch the coxae when the head is inflexed; clypeus somewhat expanded in front of the antennal insertions, the latter being quite uncovered. (Black with a horseshoe-shaped mark on disc of elytra or yellow with a black patch on elytral disc surrounded by a lighter yellow band than the rest of the elytra. Length 1.2-1.4 mm.) *S. and M. England. Rare. In ivy*.....**Clitostethus arcuatus** (Rossi)
- Anterior coxae of normal size; prosternum in front of them not markedly declivous anteriorly; mouthparts unable to touch front coxae; clypeus not expanded in front of antennal insertions .....7.
- 7 Abdominal plates complete, i.e., forming a more or less semicircular, sharply raised platform on the first abdominal segment (fig. 5).....8.
- Abdominal plates with external part of border indistinguishable from the general level of the first abdominal segment.....9.
- 8 Prosternal carinae present; clypeus emarginate round antennal insertions  
**Pullus Mulsant** (p. 8)
- Prosternal carinae absent; clypeus not emarginate round antennal insertions. (Almost hemispherical; black except for labrum, antennae, tibiae, tarsi, and apices of anterior femora, which are usually yellow or brownish yellow; anterior margin of prosternum forwardly arcuate medially. Length 1-1.25 mm.) *S. and M. England* .....**Stethorus punctillum** Weise
- 9 Prosternal carinae present.....**Syemnus** Kugelann (p. 8)
- Prosternal carinae absent.....**Nephus** Mulsant (p. 9)
- 10 Upper surface glabrous; eyes finely faceted .....11.
- Upper surface pubescent; eyes coarsely faceted. (Anterior coxal cavities open behind.) *Generally found at the roots of grass, in moss or in reeds on marshes*.....26.
- 11 Elytra slightly sinuate in outline a little before middle; anterior median process of first abdominal segment narrow, arched at apex and bordered by a coarse, strongly raised ridge; pronotum broadest at or in front of middle.....12.
- Elytral outline rounded or slightly flattened in front of middle; anterior median process of first abdominal segment broader, more or less broadly rounded at apex and without a coarse marginal ridge; pronotum in most cases broadest behind the middle.....13.
- 12 Mesosternum truncate between midcoxae; abdominal plates plainly visible but incomplete; hind angles of pronotum somewhat produced; tarsal claws simple. (Oblong, not very convex; ground-colour usually yellow, pronotum with six black spots which may be confluent; elytra with a common black area around the scutellum and usually nine black spots on each. Length 3-4 mm.) *Usually in marshy areas*.....**Anisosticta 19-punctata** (Linnaeus)
- Mesosternum acuminate between midcoxae; abdominal plates very faintly marked or absent; hind pronotal angles quite rounded; tarsal claws bifid, the internal tooth much smaller than the external one; (Oblong, somewhat depressed; coloration normally with pronotum yellow laterally, black in the middle; elytra with orange ground on which there are 13 black spots, one scutellar and common to both elytra, the rest distributed 6 to each elytron; both the above colour patterns are very variable—numerous varieties have been figured by Mader (1926-1937). Length 4.5-7 mm.) *Usually in marshy areas*  
**Hippodamia 13-punctata** (Linnaeus)
- 13 Tarsal claws bifid, both teeth acute .....14.
- Tarsal claws appendiculate, shorter tooth truncate or rounded.....15.
- 14 Antennal club composed of elongate segments; abdominal plates incomplete externally, reaching almost to apex of first abdominal segment; prosternal process flat; larger species. (Colour predominantly testaceous; lateral pronotal margins broadly light yellow; disc usually with two longitudinal dark bands of varying width, one on either side of the middle; elytra with longitudinal lines and spots of a pale yellow colour as a rule. Length 6.5-8 mm.) *On or near fir trees*.....**Neomysia oblongoguttata** (Linnaeus)
- Segments of antennal club strongly transverse; abdominal plates complete externally, extending to about half the length of the first abdominal segment; prosternal process depressed toward apex; smaller species. (Oblong-oval; coloration of pronotum fairly constant, consisting of anterior and lateral margins whitish yellow, disc black except for a longitudinal median pale line extending from the centre to the anterior margin, and a round pale spot on either side of

this line; elytral coloration red with a number of black patches varying both in shape and in number. Length 4-5 mm. See Mader (1926-37) for figures of named varieties, and also papers by G. B. C. Leman in *The Entomologist's Record*, 1921-1928.) *Near coast as a rule*.....**Adonia variegata** (Goeze)



FIGS. 1-10.—1, *Chilocorus bipustulatus* (L.), abdomen (ventral view). 2, *Subcoccinella 24-punctata* (L.). 3, *Chilocorus bipustulatus* (L.), head (from in front). 4, *Platynaspis luteorubra* (Goeze), prosternum. 5, *Pullus auritus* (Thunb.), first abdominal segment. 6, *Adalia 10-punctata* (L.), antennal club. 7, *Halyzia 16-guttata* (L.), antennal club. 8, *Calvia 14-guttata* (L.), antennal club. 9, *Coccinella 5-punctata* (L.), first abdominal segment. 10, *Adalia 10-punctata* (L.), first abdominal segment.

- 15 Scutellum very small, usually concealed beneath bases of elytra when the latter are closed; humeral calli on elytra scarcely discernible. (Hemispherical; underside except for epipleurae black; upper surface yellow with black patches, thorax with six, the inner four usually more or less confluent; elytra with eight on each, the three nearest the lateral borders usually confluent. Length 2-2.5 mm.) *Marshy areas generally*.....**Tythaspis 16-punctata** (Linnaeus)

- Scutellum of normal size and triangular form; elytral humeral calli well-formed .....16.
- 16 Antennal club of transverse segments with obliquely truncate apical margins and a more compact appearance (fig. 6); colour pattern variable, usually black marks on a red or yellow ground, or black with red or yellow patches.....17.
- Antennal club looser, composed of elongate segments, or if the segments are transverse, then their apical margins are abruptly curved internally to embrace the succeeding segment (figs. 7 and 8) and the elytral colour pattern consists of 7 whitish spots on a testaceous ground on each.....19.
- 17 Prosternal carinae present; abdominal plates almost reaching the hind border of the first abdominal segment, incomplete externally but traversed by an oblique ridge (fig. 9).....**Coccinella** Linnaeus (p. 9)
- Prosternal carinae absent; abdominal plates occupying from two-thirds to three-fourths of the length of the first abdominal segment, secondarily complete by the strengthening of the oblique line and the partial obliteration of the hind border (fig. 10).....18.
- 18 Elytra quite smooth between punctures; smaller species.....**Adalia** Mulsant (p. 10)
- Elytra with fine microsculpture between punctures; larger species. (Metasternal epimera entirely yellow; anterior margin of mesosternum slightly emarginate medially; oval; ground coloration testaceous or yellow with a number of black marks on pronotum and elytra, varying in size and number on the latter, but more or less constant on the former (fig. 11). Length 6.5-7 mm.)  
**Harmonia 4-punctata** (Pontoppidan)
- 19 Sutural margins of elytra sinuate just before apices, the resulting gap filled by fringes of golden setae. (The largest species of the family in Britain; oval, not very convex; underside usually black except for the anterior hypomeral angles and the mesosternal epimera; coloration of pronotum only slightly variable (fig. 12); elytra variable in colour and marking; normal form with ground-colour red, lateral borders black; a common black scutellary spot and 7-9 black spots on each elytron, each spot often ringed with yellow; some or all of these patches may be absent, but the yellow colour usually persists and replaces the black. Length 7.5-9 mm.) *Generally under fir trees*
- Sutural elytral margins not sinuate before apices, not fringed with golden setae at this point; smaller, less than 7 mm. long as a rule.....20.
- 20 Pronotum with a transverse basal stria; abdominal segments unicolorous and usually lighter in colour than the metasternum; form more elongate (9 : 5); scarcely any elytral pattern present; pronotum almost invariably bearing an M-shaped brown or black mark medially (main coloration usually yellow). Length 3.5-5 mm. *Near fir trees as a rule*.....**Aphidecta obliterata** (Linnaeus)
- Pronotum without a transverse basal stria; abdominal segments either concolorous with metasternum or parti-coloured; less elongate (5 : 3 max.); pronotum without a distinct M-shaped mark; elytra usually with a distinct colour pattern .....21.
- 21 Mesosternum with anterior margin entire; elytral epipleurae very broad almost to apices where they are quite rapidly reduced in width; anterior pronotal margin evenly emarginate; larger species. (Oval; colour testaceous, pronotum with lateral margins broadly whitish, elytra usually with 8 whitish spots on each; legs yellowish-testaceous. Length 6.5-7 mm.).....**Halyzia 16-guttata** (Linnaeus)
- Anterior margin of mesosternum at least slightly emarginate medially; elytral epipleurae narrower, steadily reduced in width from a point near the apex of the metasternum to the apices; anterior pronotal margin truncate or sinuate medially; smaller species.....22.
- 22 Prosternal carinae absent.....23.
- Prosternal carinae present.....24.
- 23 Colour pattern of black markings on a yellow ground; abdominal plates incomplete externally, almost reaching apex of first segment. (Hemispherical; pronotum almost always with 5 separate black spots on a yellow ground, elytra with 11 black spots on each as a rule. Length 2-3 mm.).....**Thea 22-punctata** (Linnaeus)
- Colour pattern of yellowish-white markings on a testaceous ground; incomplete abdominal plates usually not extending for more than five-sixths the length of the first abdominal segment. (Hemispherical; pronotum with whitish antero- and postero-lateral marks, elytra with 6 large whitish marks (1, 2, 2, 1) on each. Length 3-4 mm.) .....**Vibidia 12-guttata** (Poda)



testaceous or testaceous with an oblique dark mark on each elytron. Length 2-2.5 mm. Hind wings frequently reduced and non-functional)

*Rhizobiellus<sup>1</sup> litura* (Linnaeus)

- Pronotum widest slightly in front of middle; without a transverse basal stria; some of elytral punctures arranged in longitudinal rows, the rest scattered; tarsal claws bifid; outline somewhat parallel-sided

*Coccidula* Kugelann (p. 11)

### Genus *Chilocorus* Leach.

#### KEY TO SPECIES.

- 1 Elytra with a large, roughly circular, palely testaceous spot on each, slightly in front of the midline; generally larger; head almost or quite smooth between punctures. (Hemispherical; sides of pronotum occasionally reddish; abdomen reddish as a rule. Length 3.5-4.5 mm.) *Usually on sallow*  
*renipustulatus* Rossi
- Elytra with a palely testaceous transverse band on each, sometimes interrupted, just anterior to the midline; generally smaller; head finely reticulate between punctures. (Suboval; underside usually black with sides and ultimate abdominal segment testaceous. Length 2.5-3.5 mm.) *In sandy places or on fir trees*  
*bipustulatus* (Linnaeus)

### Genus *Pullus* Mulsant.

#### KEY TO SPECIES.

- 1 Abdominal plates occupying at least five-sixths the length of the first abdominal segment; punctures on metasternum coarse and separated by much less than their own diameter anteromedially; elytra rounded, entirely black, or black with a testaceous apical band.....2
- Abdominal plates occupying about three-fourths the length of the first abdominal segment; metasternal punctures fine, separated by more than their own diameter anteromedially; elytra more or less straight sided for their anterior half, largely or wholly testaceous.....3
- 2 Elytra with a broad apical testaceous band; anterior angles of pronotum moderately sharp (fig. 16); prosternal carinae convergent anteriorly. (Oval; pronotum with anterior and side margins reddish yellow in male, less broadly so in female; legs usually entirely yellow. Length 1.3-1.5 mm.).....*haemorrhoidalis* (Herbst)
- Elytra only very narrowly testaceous at apices, if at all; anterior angles of pronotum somewhat rounded (fig. 17); prosternal carinae not convergent anteriorly. (Slightly more broadly oval than *haemorrhoidalis*; head, anterior angles and lateral margins of pronotum reddish in male, similar in female except for base of head; legs usually darker in the latter sex. Length 1.5-1.6 mm.)  
*auritus* (Thunberg)
- 3 Larger and more elongate; elytral punctures very uneven in diameter, separation very variable, intervals rugulose; pubescence longer, of irregularly directed setae. Length 1.3-1.5 mm. *Usually in marshy places*.....*suturalis* (Thunberg)
- Smaller and less elongate; elytral punctures more or less even in diameter, intervals plane and more than the diameter of punctures; pubescence shorter, its direction forming a pattern. Length usually less than 1.3 mm. *Usually in marshy places*  
*limbatus* Stephens

### Genus *Scymnus* Kugelann.

#### KEY TO SPECIES.

- 1 Metasternum without a distinct longitudinal median sulcus. (Lower half of head and anterior angles of pronotum reddish in male, head black in female; tibiae usually testaceous, femora, especially the hind ones, darker; elytra unicolorous black, irregularly punctured. Length 1.8 mm., width 1.2-1.3 mm.)  
*rubromaculatus* (Goeze)
- Metasternum with a distinct longitudinal median sulcus and more closely punctured.....2

<sup>1</sup> Oke (1951) has proposed this name for *Rhizobius* Agassiz nec Burmeister.

- 2 Elytra with scattered large punctures on disc as well as small ones; pronotal punctures separated by less than their own diameter, especially mediobasally; head, and sometimes anterior part of pronotum testaceous in male although pitchy black in female; prosternal carinae well marked to within a very short distance from the anterior border of the prosternum. (Tibiae testaceous or rufous; elytra usually with one anterolateral testaceous mark on each, but there may be a posteromedian mark on each as well, or no marks at all.) *S. and M. England* ..... **frontalis** (Fabricius)
- Elytral punctures of one size; pronotal punctures separated by more than their own diameter as a rule; head, pronotum and elytra unicolorous pitchy black in both sexes; prosternal carinae often evanescent towards anterior margin of prosternum. (Tibiae black to pitchy; length 1.75-2 mm.) (fig. 18). *On Scotch fir nigrinus* Kugelann

### Genus *Nephus* Mulsant.

#### KEY TO SPECIES.

- 1 Reflexed lateral borders of both elytra visible when viewed from above; elytra with humeral calli well marked. (Elytra usually with two light patches on each which may or may not be confluent).....2.
- Reflexed lateral elytral borders not visible when viewed from above; elytra with humeral calli feebly indicated. (Coloration very variable, commonly with each elytron having a longitudinal median light patch; length 1-1.3 mm.)  
**redtenbacheri** Mulsant
- 2 Elytral punctures irregular, usually separated by their own diameter or more, finer than in *limonii* Donisthorpe; discontinuity of outline of pronotum and elytra more marked (fig. 19); elytra black with usually two testaceous spots on each Length 1.5-1.75 mm. *Kent and Suffolk, rare*.....4-**maculatus** (Herbst)
- Elytral punctures of two distinct sizes, frequently separated by less than one diameter; discontinuity of outline of pronotum and elytra less marked (fig. 20); elytra black with a longitudinal dumbbell-shaped mark on each; length 2.1 mm. *Kent, I.O.W., Wales. On Statice limonium*.....**limonii** Donisthorpe

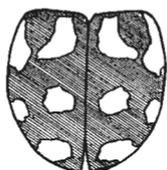
### Genus *Coccinella* Linnaeus.

For notes on colour varieties see L. Mader (1926-37), also G. B. C. Leman in *The Entomologists' Record* 1919, 1928, 1929.

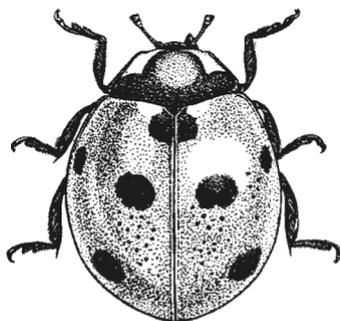
#### KEY TO SPECIES.

- 1 Mesosternal epimera white or yellow; scutellary elytral black spot round or transverse.....2.
- Mesosternal epimera black or fuscous; scutellary elytral black spot usually markedly elongate. (Oval; pronotum black with anterior angles whitish yellow; colour of elytra very variable, extremes are a plain reddish yellow without any black spots and entirely black except for a narrow apicolateral band on each. Basic pattern on elytra is of 5 spots on each (1, 2, 2) and a shared sutural spot. Legs black. Length 3-4 mm.) *Chiefly on heather*.....**hieroglyphica** Linnaeus
- 2 Anterior angles of pronotum acute; elytral surface not or extremely faintly reticulate between punctures; metasternal epimera entirely black; male with sixth abdominal segment truncate at apex or with foveae.....3.
- Anterior angles of pronotum broadly rounded; elytra obviously reticulate between punctures; metasternal epimera white or yellow at apices; male with sixth abdominal segment devoid of any impression. (Very similar in form to a large specimen of *7-punctata* Linnaeus (see below); colour pattern variable, up to 4 black spots on each elytron and a shared scutellary spot; the two spots near the humeral calli of the elytra may be absent and frequently the patches are confluent. Length 5.5-7.5 mm.) *Associated with Formica rufa* L.  
**divaricata** Olivier
- 3 Prosternal carinae parallel-sided or slightly divergent anteriorly; more rounded in form (5:4); punctures on head between eyes separated by their own diameter or less. (Elytra with less than 11 spots, usually not more than 7. This character is only of value when elytral spots are discrete).....4.

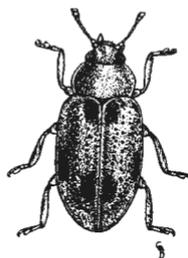
- Prosternal carinae convergent anteriorly; more elongate in form (6 : 4); punctures on head separated by much more than their own diameter except toward vertex. (Normal elytral pattern of 5 black spots (1, 2, 2) each with a reddish-orange ground and a shared scutellary mark. Transverse or longitudinal confluence may occur between two or more of these spots or one or more may be absent. Length 3.5-4.5 mm.) *Usually near salt marshes*.....11-punctata Linnaeus
- 4 Hypomera with white patch in anterior angles extending as far back as white patch in anterior pronotal angles; male with the sixth abdominal segment showing a deep circular fovea; (Very shortly oval; pronotum black with white patch in anterior angles; elytra red with a common scutellary black spot and normally two spots on each elytron, one large median, and one smaller and posterolateral. There is occasionally a further spot on each elytron in front of the midline but near the lateral margins. Length 3.5-4.5 mm.)  
5-punctata Linnaeus (fig. 9)



21



22



23

FIGS. 21-23.—21, *Adalia*  $\times$  *biabilis* Marr., elytral pattern. 22, *Coccinella* 7-punctata L. 23, *Coccidula* *scutellata* (Herbst).

- White hypomeral patch much less extensive than white patch in anterior angles of pronotum; male with the sixth abdominal segment truncate and having a transverse fovea. (Shortly oval; pronotum black with white patch in anterior angles; normal elytral pattern of three black patches on each elytron and a common scutellary patch. Many varieties from completely red to an all black elytral colour (see Mader, 1926-37) have been described. Length 5.5-7.5 mm.) (fig. 22).....7-punctata Linnaeus

### Genus *Adalia* Mulsant.

For colour varieties see L. Mader (1926-37), also G. B. C. Leman in *The Entomologists' Record*, 1919 and 1930.

#### KEY TO SPECIES.

The abdominal plates of this genus are derived from the form seen in *Propylea* (fig. 13), with an oblique line bisecting them, and the hind margin beyond the point where it is met by the former almost obliterated.

- 1 Mesosternal epimera black (or concolorous with the rest of the pectus); anterior margin of mesosternum between coxae entire; external border of abdominal plates not, or scarcely, sinuate.....2.

- Mesosternal epimera yellow, at least in part, in contrast with the rest of the pectus; anterior margin of mesosternum between coxae slightly emarginate; external borders of abdominal plates sinuate. (Almost hemispherical; coloration and pattern of elytra variable; typically each elytron is red or yellowish red with 5 black spots (1, 3, 2) and a common scutellary spot, but all variations from completely red to completely black elytra are known, including varieties where the colour pattern is of testaceous and yellow. Length 3-4 mm.) *Casp. yellow*  
**10-punctata** (Linnaeus)
- 2 Head between eyes always with a median pale area; prosternum entirely rugose except for a narrow anterior marginal area. (Hemispherical; elytra yellow with black markings which are partly arranged in the form of a cross, the rest forming a black lateral border and scattered black spots. Length 3.5-4 mm.)  
**conglomerata** (Linnaeus) v. **bothnica** (Paykull)
- Head between eyes if parti-coloured, then with a pale yellow area on either side of a median dark portion; prosternum with a smooth anteromedian area extending for some distance between anterior coxae. (Oval; pronotum and elytra both variable in colour from all yellow to all black. Length 3-4 mm.)  
**bipunctata** (Linnaeus)

Marriner (1926) records a viable hybrid between *bipunctata* (Linnaeus) (♀) and *10-punctata* (Linnaeus) (♂). The hybrid seems to vary somewhat in colouring and external morphology, but runs to *10-punctata* (Linnaeus) in the above key. The original description is appended. Elytral configuration (fig. 21).

"Varies from oval convex to hemispherical, thorax black, sometimes light at the anterior angles or margins, sometimes spotted. Elytra finely punctured, the transverse fold of *variabilis* (*10-punctata*) sometimes present, often absent. Legs either black or yellow, underside dark, often black. Elytra with 5 yellowish (varying to very reddish-yellow) spots, as in diagram, on black, dark brown, or yellowish-brown ground. Spots vary in size but the shape of the two lunar spots is an unvarying characteristic. Occasionally the two apical spots joined at apex."

### Genus *Coccidula* Kugelann.

#### KEY TO SPECIES.

- 1 Elytra unicolorous, or having at the most a small dark patch at each shoulder; abdominal plates smaller. Length 2.5-3 mm. .... *rufa* (Herbst)
- Each elytron with two black patches and a common scutellary triangular black mark; abdominal plates larger. Length 2.5-3 mm. (fig. 23) *S. and M. England*  
**scutellata** (Herbst)

### SPHINDIDAE.

The author proposes to follow Kuhn (1912, *Illust. Best. tab. Kaf. Deutsch.*: 546) and Crowson (1952, *Ent. mon. Mag.* 88:122) in treating the family *Aspidiphoridae* as being included within the limits of *Sphindidae*.

The family *Sphindidae* therefore contains two genera of occurrence in the British Isles, each possessing one British species.

#### HABITS.

Both species are recorded as feeding exclusively on Mycetozoa growing on old tree-stumps, etc. They may also be found in moss. Neither species is of common occurrence.

#### KEY TO GENERA AND SPECIES.

- 1 Oblong; anterior coxal cavities closed or almost closed posteriorly; intercoxal process of first abdominal segment narrowly rounded apically; hind pronotal margin truncate. Length 1.7-2 mm. *S. England and Yorkshire*  
**Sphindus dubius** Gyllenhal
- Rounded; anterior coxal cavities broadly open behind; intercoxal process of first abdominal segment broad, truncate apically; hind pronotal margin strongly produced medially, sinuate laterally. Length 1-1.3 mm. *S. England*  
**Aspidiphorus orbiculatus** Gyllenhal

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