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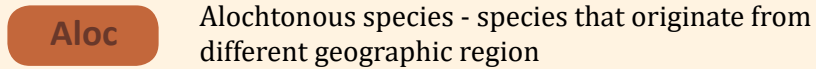
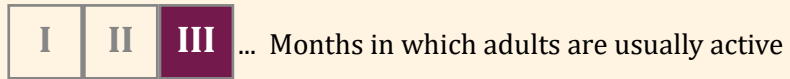
# Ladybirds of Europe

**Field guide**

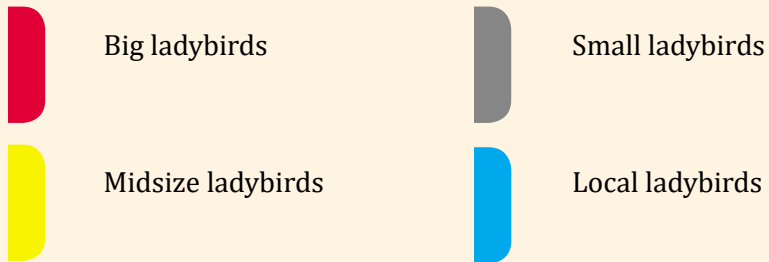


2022

## Symbols used



## Edge markings



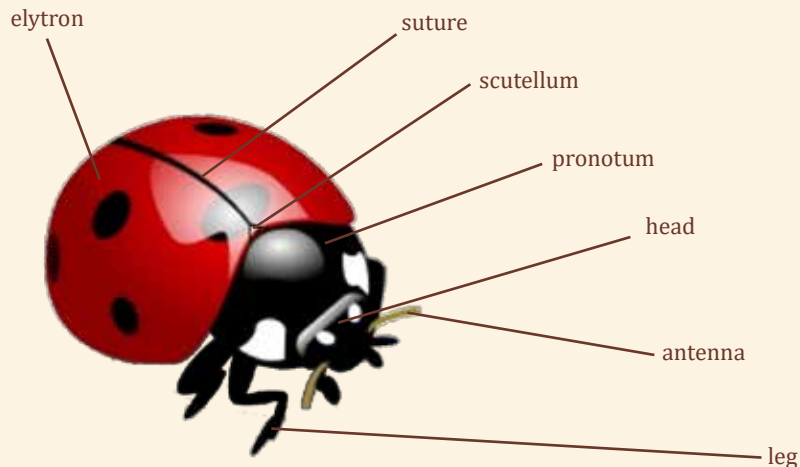
## Map explanation



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### Terms used:



- adelgids - small family of Hemiptera, closely related to aphids
- aphidophagous - feeding on aphids
- aphids - small sap sucking insects of superfamily Aphidoidea
- booklice - small insects feeding on algae and lichen of order Psocoptera
- coccids - see scale insects
- elytron (pl. elytra) - hardened forewing
- leaf beetles - insects from large family Chrysomelidae
- mildew - fungi growing like fine whitish fibres or flour-like dust on plant leaves
- ommatidium (pl. ommatidia) - optical unit forming a compound eye
- phytophagous - feeding on plants
- pronotum - upper (dorsal) plate of front thorax segment
- psyllids - jumping plant lice, small plant-feeding insects of family Psyllidae
- pygidium - hind segment of the body
- scale insects - are Hemiptera from suborder Sternorrhynca that form superfamily Coccoidea
- scutellum - small triangular plate behind the pronotum and between the forewing bases
- thermophilous - preferring warm habitats
- thrips - tiny (often smaller than 1 mm) insects, order Thysanoptera
- whiteflies - are Hemiptera from large family Aleyrodidae, feeding on underside of leaves

Length :width ratio		Length almost two widths <b>elongated</b>		Length much bigger than width <b>oval</b>		Length similar to width <b>rounded</b>
Height :length ratio		Length :height ≈ 2:1 <b>domed</b>		Length :height ≈ 2.5:1 <b>convex</b>		Length :height > 3:1 <b>flat</b>

# Big ladybirds

It is usually easy to recognize some ladybird species, but if you take all species into account, things become much more complicated. In order to make things easier to follow, here are all European species of ladybirds divided into three groups.

This is the first group that contain “big ladybirds”, those whose length is equal or more than 5 mm.



IP

# Harmonia Mulsant, 1846

There is one very good reason to start with this genus. Recognizing European ladybirds used to be much simpler before 1990s, when some countries started introduction of *Harmonia axyridis* for aphids biocontrol. Since then the species spread like forest fire throughout Europe and in many cases became the most common ladybird. Although, for this purpose, real problem is not its numerousness but its variability.

## *Harmonia axyridis* Pallas, 1773 – Asian harlequin ladybird

Previous keys that were based on colors and markings pretty much became obsolete with appearance of the species that may have different ground colors and different markings. It can be red, orange, yellow, black, with many spots or none at all. Here are some examples:



5.5-8 mm Aloc

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
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Of course, there are many more different forms. And they are mixed in a single location so you can encounter something like this.

MD

It would be nice to have one character for easy recognition of *H. axyridis*, but unfortunately things are not that simple. There are few details that usually help in distinguishing this species.

1. Size of 5 mm or more
2. Markings forming M shape (some call it W) on the pronotum. Black on white.
3. A small hump (keel) visible at hind side.
4. Black spots on ochre, orange or red elytra.



If all these characteristics are present, the specimen can be identified as *Harmonia axyridis*. If it's not the case, we must take much more complicated route, and check out all other big ladybirds, one by one, before we can confirm *H. axyridis*.



# Midsized ladybirds

This is quite heterogenous group that comprises what we call midsized ladybirds, i.e. medium sized insects with length mostly in the range from 3 to 5 mm. We can see them with naked eye and still pretty well see characteristic details needed for identification.



IP

## *Adalia* Mulsant, 1846

The genus has only few species in Europe, but quite widespread and common ones. Body oval and convex.

### *Adalia bipunctata* (Linnaeus, 1758) - 2-spot ladybird

There are two white spots between the eyes like genus *Coccinella*, but with different pronotum. This smaller ladybird has many different forms, mostly the following three: red one with two central black spots, or black one with 4 or 6 red spots. The red form has white M on pronotum, black forms black pronotum with white on the margins. The species was common and often commercially used to suppress aphids, but declined severely around 2010 after invasion of *H. axyridis*



to Europe. Prefers deciduous trees and tall herbs such as thistle. Overwinters under bark or inside buildings.



3.5-5.5 mm



ON

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
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# Small ladybirds

There is no doubt this is the most complicated of the three groups we have established. Being small, these ladybirds are often overlooked, so there are less records and less knowledge on their biology. A magnifying glass is often inadequate to observe identification characters and microscope must be used for examination. Anyway, this is an attempt to present what is known of these tiny creatures, mostly smaller than 3 mm. The main distinction can be done between the smooth shiny genus *Tytthaspis*, and all others that are hairy.



GSM

## *Tytthaspis* Crotch, 1874

Although taxonomically belonging to the true large and moderate-sized ladybirds, the species of this genus are smaller than 3 mm. The body shape is similar to *Hyperaspis* species – wide oval and strongly convex, but scutellum is very small. They are polyphagous, feeding on small arthropods, pollen and fungal spores.

These are the only non-hairy ladybirds in this group (under 3 mm).

If Olda finds aggregation photo it comes on this page.

### *Tytthaspis phalerata* (Costa, 1849)

Groundcolor of the body is cream or light yellow, pronotum with three pairs of black spots, elytra together with five longitudinal stripes. Much rarer than its congener, *T. sedecimpunctata*.



2.5-3 mm



SC

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
---	----	-----	----	---	----	-----	------	----	---	----	-----

***Scymniscus splendidulus* (Stenius, 1952)**

Body oval, slightly convex. Black, with narrow anterior margin of pronotum and hind margin of elytra lighter. Second half of elytra with pair of large reddish-brown spots extending from half almost to tip. Described from Morocco, in Italy known as *S. demarzoi* Canepari, 2000.



1.6-2 mm

***Scymniscus tristriculus* (Weise, 1929)**

Body oval, elytra at base wider than pronotum. Completely dark brown to black, legs reddish, fine hairs whirling in several directions.



1.1-1.5 mm

***Scymnus* Kugelann, 1794**

The genus includes small species with body oval to broadly oval, variably convex, hairy. Hairs are white or yellow, in the hind third of elytra they are directed obliquely from the suture, in the rest of elytra either directed parallel to suture or whirling in various directions. They are predators of coccids and aphids. They are closely related and similar to genera *Nephus* and *Scymniscus*. Hairs on either flat (see *S. apetzii*), or erect like in genus *Nephus*, e.g. in subgenus *Mimopullus* (*S. fennicus*, *S. flagellisiphonatus*, *S. fulvicollis*, *S. marinus*, *S. pharaonis* and *S. sacium*).

***Scymnus abietis* (Paykull, 1798)**

Body oval, convex, yellow brown; hairs fine, directed mostly parallel to suture. From lowlands to mountains on conifers and deciduous trees, feeding on aphids and scale coccids. Both adults and larvae overwinter and activate from early spring. Moderately common. Similar to *S. impexus* and *S. silesiacus*.



2.2-3 mm





## *Microserangium* Miyatake, 1961

Body very small, rounded, domed, with head drawn into prothorax, like in *Serangium*, but mandible reduced with erect apical tooth. Elytra black or dark red. Pronotum with sparse hairs, elytra smooth, shiny, with few hairs on side margins. Short antennae with a large club. Femora short, broad, flat. Oriental distribution. Sometimes called *Serangiella* Chapin, 1940.

### *Microserangium* sp.

Species observed in 2012 in Portugal, in the canopy of citrus, not exactly identified.



1.1-1.5 mm

Aloc



Chinese

## Local ladybirds

These ladybirds obviously should belong to one of previous three groups, but have one thing in common. They are limited to distant places, so there is no chance you can encounter them close to place where you live, providing you don't live in Caucasus or some far away island. But if you find a ladybird during your visit to one of those places, you should check this chapter first. Description of species provided. For general characteristics of a genus take a look at appropriate previous chapter.



AC

## Madeira

### *Adalia testudinea* (Wollaston, 1858)

Body oval, moderately convex. Pronotum dark brown with creamy margins or light cream with dark brown diffuse spots. Elytra black with five pairs of creamy spots of irregular shape, fusing along the side margins or creamy with diffuse brown areas. On hibiscus. Previously reported also from the Canary Islands. This species has not been seen for a long time and its distribution and validity are questionable.



DB



4.5-5 mm



## *Madeirodula* Szawaryn, Větrovec and Tomaszewska, 2020

The most recently discovered genus of ladybirds in Europe, only found as two specimens of a single species in northern Madeira.

### *Madeirodula atlantica* Szawaryn, Větrovec and Tomaszewska, 2020

Body elongated oval, very flat, covered with hairs of two sizes. Eyes large, antennae with distinct club. Color chestnut brown, legs and mouthparts more pale. Found on reed *Arundo donax*.



Jaroslav Větrovec

1.8 mm

### *Scymnus epistemoides* Wollaston, 1864

Body elliptical (widest at beginning of elytra), entirely black brown, including sides of pronotum. Antennae and legs yellow-brown. Hairs grey, fine. Wings are missing. Single specimen collected at Porto Santo near Madeira.



ON

1.6 mm