



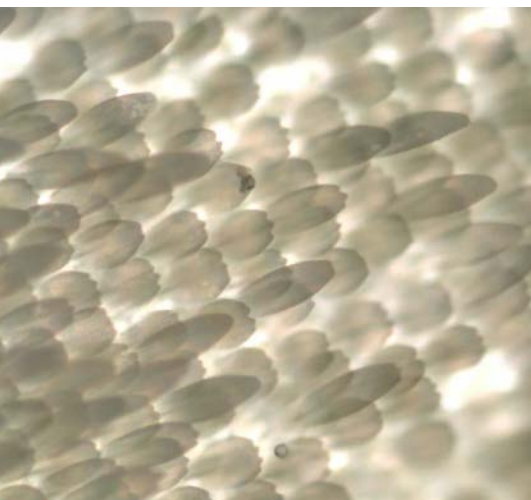
Small Copper / Common Copper



# What is butterfly?

**D**iurnal butterfly is a common name that refers to *Lepidoptera Rhopalocera*. The name comes from Latin nouns *lepis* (wing), *pteron* (scale), *rhopalus* (knobstick) and *ceros* (antenna). Therefore, the Lepidoptera

order includes insects with scales on their wings, and the Rhopalocera clade those insects that have antennae which are club shaped at their ends. This group of butterflies is called diurnal, as they are active during the day.



Scales. Photo: Elena Gallego Domínguez

Clubbed Antennae



Other lepidopterans are moths or nocturnal butterflies as they are mostly active during night. They are called Lepidoptera-heterocera because of *heteros* (different) and *ceros* (antenna), as their antennae are not club shaped as diurnal ones. Nevertheless, this is not the case of the Zygaenoidea superfamily, which are a controversial

kind of topic for scientists. They are also diurnal and have clubbed antennae, but some of their features make them fit in nocturnal group of moths and butterflies. Not long ago, these moths were considered to be Rhopalocera, but it seems that scientists have agreed recently on considering them Heterocera.



Different kinds of nocturnal butterflies' antennae: From left to right: filamentous, comb-like (photo: Raúl Toledo Sánchez) and feathered antennae.



## How can you make a difference between diurnal and nocturnal butterflies?

Beside the fact that they are active during the day and the shape of their antennae, the main feature which helps making a difference between diurnal and nocturnal butterflies is the position of their wings when they are still. Diurnal butterflies keep their wings in vertical position at right an-

gles to their body so the front of them can be seen. Nocturnal butterflies' wings are horizontal parallel to their body. They stretch backwards and cover the body and the hindwings, or make a cross with all the wings stretched out so the back of them could be seen.



Diurnal butterfly resting, with wings in vertical position at right angles to the body so the front part of them can be seen, and two nocturnal butterflies whose wings are in horizontal position parallel to their body so the back of the wings can be seen.



## Butterfly Life Cycle

As many other invertebrates, butterflies go through three different cycles before the adult stage. These are egg, caterpillar and chrysalis.

**Egg.** Butterflies' eggs can have different shapes, such as round, oval or flattened, and textures, like smooth, with vertical ribs, or rough. They are normally laid on the plants which caterpillars use as food or on stones, ground or grass. Nevertheless the first option is the most common, as butterflies carefully choose parts of foodplants, stems, leaves of flowers, where to lay their eggs alone or in groups. Caterpillars hatch out in few days, although some species' eggs hibernate over the winter so the incubation period is over after the cold months.



Different types of eggs: barre-shaped with vertical ribs (the Cabbage White), round (the Two-tailed Pasha), flattened and with rough surface (the Green Hairstreak). *Photo: Rafael Obregón Romero.*

**Caterpillar or Larva.** Some species caterpillars hatch just few days after the egg is laid, and their cycle is concluded in few weeks. Other species breed, eat a little and get in the state of dormancy during periods with reduced food availability, extreme weather conditions or winter. This phase is called *diapause*.



Recently hatched Cabbage White caterpillar.  
*Photo: Rafael Obregón Romero.*

After breeding, small caterpillars start eating. Some of them take the first bite of the eggs' hard shell called chorion, and then immediately start eating plants. The species can be polyphagous, in other words, they have host plants from different families; oligophagous, which feed on the same family plants, and monophagous, i.e. limited to feeding on just one species or genus as their source of food.





Caterpillars' only function is to eat. Therefore, they develop a strong jaw they use to chew parts of plants. They have three pairs of legs in the front part of their body, which they use to walk and to hold of a plant. Moreover, they have some 'false legs' called *prolegs*, which are placed along their body up to the anal end of the body. Their purpose is to help them keep a strong grip while eating, as a kind of suckers or small hooks. Some species have tentacles, which can be placed close to the head, or at the back part close to the tail

end of the body. These 'horns' are used for protecting against predators, as they emit chemicals or give fake impression of something threatening like a dangerous creature, or they act as information antennae which caterpillars use to look for food. They can be flattened, with small knobs similar to small warts, hair or spines, which are used to protect from predators.

Caterpillars grow little by little, but their skin does not so it has to be periodically moulted. This phenomena is called *ecdysis*.



Different caterpillars. Up: Monarch; down left corner: Marsh Fritillary; left down corner: Large White or Cabbage White (photo: Rafael Obregón Romero).



Monarch butterfly after having moulted skin, conserve some typical features such as tentacles.

Caterpillars have insatiable appetite. They sometimes even eat more than necessary and have to go on a diet before starting the stage of chrysalis.



**Chrysalis or Pupa.** When caterpillars reach their ideal size and find a perfect location, pupation process

starts. Their shape gets completely different, similar to a small closed sack, after only few hours or days.



Different stages during the pupation of a Monarch butterfly.

Caterpillars often pupate on places where they can stay in vertical position, for example, on tree trunks and branches, bushes or even walls, street lights or tubes at construction sites or buildings. They hold on with the back

part, and their head is hanging, or they take hold of the object with their head up, using the back part of their body, while the middle part is connected to the surface by a thin silk thread. Some kinds can pupate parallel to the



Hanging Marsh Fritillary Chrysalis on the left and attached Green-striped White on the right.  
Photo: Rafael Obregón Romero.



ground, between leaves, under stones or ground, and even in ants' nest.

The magical moment occurs during this stage. Inside of a chrysalis, after a complex biochemical process, the caterpillar's tissues are changed and it turns into an adult butterfly.

The chrysalis cycle can take several days or even months, as some species hibernate this way, and it becomes the most dangerous phase in their lives because they cannot escape to

protect themselves. When the moment is right, pupa's skin tears up and the adult butterfly comes out.

**Adult Butterfly or Moth.** When an adult butterfly emerges, it is wet and has wrinkled wings, which is why it immediately climbs to a protruding spot where it can get dry and pump liquid called hemolymph to its wings. This is when it also expels waste product generated during metamorphosis through anal zone.



Emerging of an adult Red Admiral. *Photo: Rafael Obregón Romero.*

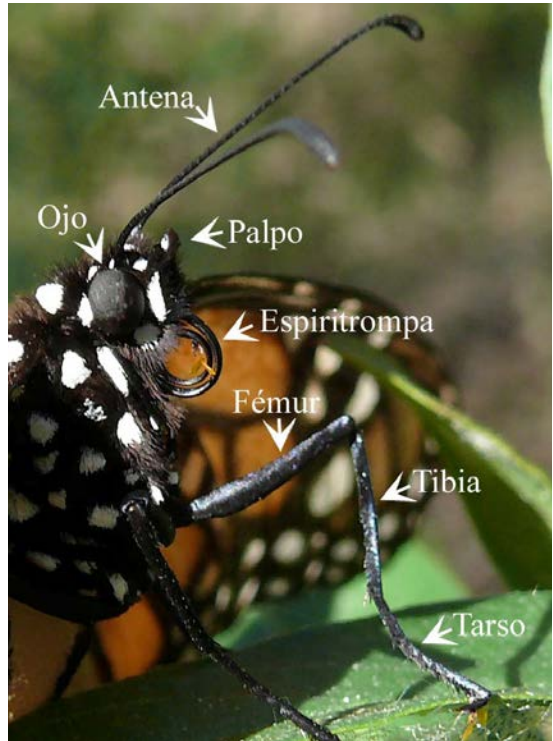
Very soon, little or nothing is left from what used to be a plant-eating caterpillar. The mouth on a caterpillar's head turns into a long proboscis used for sucking liquids. Butterflies or moths have two compound eyes, one on each side of the head, which serve to have a

panoramic view of their surroundings, but have no sharp vision as humans. Nevertheless, their eyes are sensitive to any sudden movement around them, which is why they fly away if there are in any kind of possible danger. Palpi and antennae are placed among the eyes, and



provide sense of touch and have chemosensory functions. Butterfly's head is normally covered in hair, which is actually modified scales. Their thorax, which is also hairy, has a rather hard shell which protects the vital organs.

In the lower part of their body, there are three pairs of legs. In the case of the Nymphalidae family, the front legs are passive, normally folded and cannot be seen, while the central and front legs are shown. Butterfly's legs are composed by several parts such as the femur, the tibia and the tarsus. The wings, which are the most attractive part of the butterfly due to its colour and patterns, are attached on the front part of the thorax. They have plenty of veins, which are or named or numbered (*costa*, *radius*, *V1*, *v2*, *v3*), the same as the space between them (*discal area*, *s1a*, *s2b*, *s2*, ...). The wings are also divided in varied areas (*basal*, *discal*, *postdiscal*, and *submarginal*) and have margins: *costa* (the front margin), *termen* and *dorsum* (outer and inner margins of forewings and hindwings). Other parts of the wings are called *apex* at the edges of the wings. Some families, above all Hesperidae and the Lycaenidae (gossamer-winged butterflies), have hairs on the edges of the hindwings,



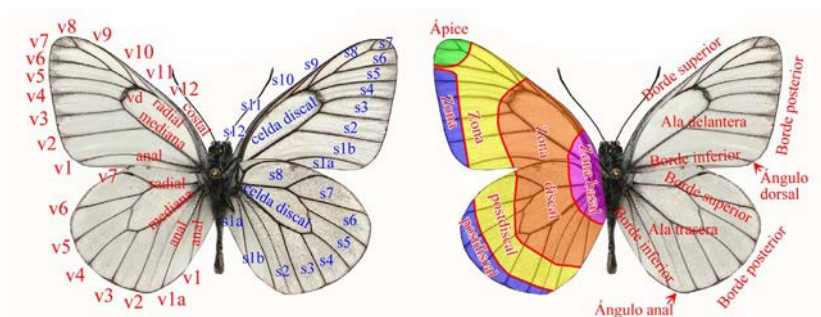
Parts of a butterfly's head and legs. The Monarch. Top to bottom: antenna, eye, palp, proboscis, femur, tibia, tarsus.

called *fimbriae*. Male butterflies have modified scales on their forewings, called *androconia*, which are sometimes darker and showier. The androconia's function is to emit pheromones in the air which attract female butterflies.

In this guide, we will use less specialized vocabulary in order to make the learning easier. Therefore, we will use the above terms such as *discal area*, *front margin* (*costa*), *outer* (instead of *termen*) and *inner margins* (instead of *dorsum*) of forewings and hindwings.

The abdomen is the softest part of the body where digestive system and





Names of the veins (v), spaces (s) and different parts of the wings. Left image, left wing, top to bottom: costa, radius, medius, anal, radius, medius, anal, anal. Right wing, top to bottom: discal area, discal area. Right image, left wing, left to right: apex (marked in green), postdiscal area (marked in blue), postdiscal area, basal area. Right wing, top to bottom: front margin, forewing, inner margin, inner angle (dorsum), front margin, hindwing, inner margin, anal angle. On the side: outer margins.

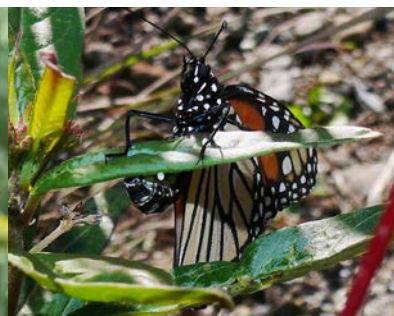
reproduction organs are. The female organ is thicker as there must be place for eggs.

The main function of an adult butterfly is reproduction and the conservation of

their species. Male butterflies and moths are usually first to born, few days before the females. The copulation between female and male butterfly starts rather soon after they come across each other.



Copulation between Essex Skippers.



Monarch laying eggs.

After the fertilization, female butterflies search for the place where to release and deposit eggs.

An adult butterfly can live from a few days to several months, and even a year as some species hibernate during this phase. Some species go far away in order to find their partner. Male butterflies sometimes also have to wait for

days before female butterflies emerge, so they need a lot of energy and mineral salt. They mainly sip flower nectar, but they also feed off decaying fruit and herbivores' and frugivores' (fruit eaters) excrement. Mineral salts can be found at different places, such as humid ground, human perspiration, and even in human and animal urine.



upper left corner: Cardinal eating nectar; the upper right corner: Two-tailed Pasha feeding on faeces composed of decaying fruit. Down: butterflies feeding on human perspiration (from left to right: Amanda's Blue and Southern Blue) and humid ground (Cardinal).

## Butterflies and their Environment

Butterflies are tightly connected to the vegetation. We can stand that wherever there are plants, there are butterflies. The more varied plant life is in an area, the more diverse are its butterfly species. Therefore, equatorial regions, which are the richest in vegetation, stand out for the biggest diversity of butterflies. The further we go from the Equator and the closer we are to the poles, the less varied is animal and plant life, until it completely disappears.

As it was mentioned above, butterflies depend on plants, so there

is to be familiar with plant life in order to be able to learn about butterflies. A quick look at the vegetation in an area, can tell us a lot about the butterflies which can be found there, and the opposite. A butterfly guide through some surroundings can help us find out about the plants which exist there. However, the fact that a foodplant can be found in an area, does not mean the butterfly species which on them live there as well. There are other factors which determine whether some butterflies live in an area, such as altitude, latitude and climate.



Butterflies play an important role wherever they live. As they eat plants, butterflies are at the beginning of the food chain, which means that caterpillars are rather significant in making plant life more varied and controlling dominant species. Adult butterflies are important for plants pollination.

Throughout all their life, during their caterpillar and adult phase, butterflies are one of the most important parts of the food chain.

Caterpillars serve as a food above all to birds, micro-mammals and other invertebrates, like beetles and wasps. Some wasp and fly species behave as parasites and lay eggs inside

Mallow Skipper caterpillar (up) and Cabbage White (down) with Braconidae parasitoid wasps.



Prey butterflies: The Southern Blue is preyed on by *Orthetrum trinacria* dragonfly; the Monarch is hunted by the mantis, *Phodromantis viridis*; the Spanish gatekeeper is preyed on by jumping spiders and the (Dark) Clouded Yellow by predatory flies.







of a caterpillar. Its larvae feed on butterfly caterpillars, by eating those tissues which have no vital functions so its host can continue eating and growing as well, and it even achieves the stage of a chrysalis. In the end, caterpillars die when pupae come out of its parasites, or adult parasites emerge from its chrysalis if it achieves to develop.

Adult butterflies are source of food for many animals. Among them we can find birds, such as a beet-eater that lives on flying insects, and varied invertebrates like spiders, predatory flies, mantidae and dragonflies.

In both of the above stages, some species fight against their predators

in different and rather intelligent ways. Plenty of caterpillars disguise, while others do exactly the opposite and show shiny colours and patterns. In the case of the Monarch, its colours warn predators about it being poisonous as it feeds on poisonous plants. The same happens with this species adult butterfly, which is also toxic, but mantidae and spiders can manage to feed on it. The Old World Swallowtail caterpillar and the rest of the family Papilionidae, take use of different strategy to escape from their predators. They spread a pungent odour through retractable tentacles, an organ called *osmeterium*, on their head. As for the adult butterfly, can



Different Defence Techniques From left to right and downwards: The Old World Swallowtail caterpillar showing its *osmeterium*. Photo: Rafael Obregón Romero. Rock Grayling imitating tree bark; Nettle-tree Butterfly, which looks like a dry leaf; Great Banded Grayling is threatening with its intimidating eye; Lang's Short-tailed Blue's fake eyes and antennae.





hide thanks to varied colours and designs on it. Among these butterflies there are some species which stand out from the rest, such as the Golden Skipper, which disguise in a way it cannot be seen in dry grass. The Rock Grayling and the Graying hide on the tree trunk as they look like a piece of bark. There are also the Nettle-tree Butterfly, which looks like a dry leaf and The Purple Hairstreak Butterfly, which is well concealed among holm oak leaves. Another way to hide is to look like something else, which is the case of the Nymphalidae family. The butterflies that belong to this family have a kind of 'frightening eye' close to the apex of the forewings, which looks threatening. Some Lycaenidae try to cheat on their predators thanks to the spots which look like eyes and tails close to the apex. They move their wings up and down in order to deceive their predators, which attack the part of their body which is not vital.

Nevertheless, butterflies are not only surrounded by danger. Some species, such as those which belong to the Lycaenidae family, are helped

by ants. Myrmecophily is the term applied to a symbiosis between ants and caterpillars, during which the former looks after the latter from its birth to the moment it turns into an adult butterfly. Ants make sure they protect caterpillars from predators and parasitoids, help them find food-plants, and even take them to the plant or to the ants' nest, where some species hibernate, pupate or turn into an adult butterflies. Caterpillars benefit a lot from ants, but what do ants get? The answer is a drop of sweet water from time to time. Due to their vegetarian diet, caterpillars must get rid of sugar which they cannot absorb through Newcomer gland on its back part. This juice is the reason for this interspecies association. Nevertheless, there situations when ants are deceived by a low number of butterfly species (from the genus *Maculinea* or *Phengaris*), and they get nothing in return for helping them. Caterpillars can emit sounds and pheromone, which are similar to those produced by a queen ant, in order to control the colonies and even feed on ants larvae.

*Lycaenidae caterpillars helped by ants. Photo: Rafael Obregón Romero.*





## Butteries and Humans

As we it was previously explained, diurnal butterflies may confront many hazardous situations. We could also see that they are also prepared to successfully manage those situations. Actually, butterflies and their attackers have evolved and still go through constant but balanced battles. However, their greatest enemy seem to be, no one else, but humans.

There are many civilizations that lived in the area that belongs to the Province of Málaga in the last two thousand years. Each of them left their trail in the landscape and vegetation. Since the Roman rule, the environment has been transformed according to humans' needs. In the last two hundred years, trees have been cut for the sake of coal, iron and steel industry or for

creating pasture. There is also to add the effects of forest fires, rivers channelling, new residential areas, big infrastructures, polluting, the use of herbicides and insecticides, etc. All these actions caused the decline of butterfly population and led to the extinction of some local species or their migrations.

Luckily, there are still places in this province where butterfly species are at least varied if not numerous. The Tejeda and Almijara Mountains, The Arco Calizo Central, and some other mountain ranges in the north of the province, as well as the Serranía de Ronda, Alcornocales, the Bermeja, Blanca, Alpujata and Mijas Mountains, are rich in lepidopterans, which used to live all over the province.

## The gear used for studying butterflies

There are not many things you need to observe and study diurnal butterflies. It is enough to be willing to go out to watch them. Nevertheless, you should ask for a better experience. Binoculars are rather helpful for observing butterflies when they stop to rest or eat. Lens of magnification from x8 to x10 are recommended, as well as the observation from as short

distance as possible. Another useful gear is a digital camera (the greatest the optical zoom the better), which can capture macro so you could be only few centimetres away from the insect. For more detailed studies, butterflies are taken to laboratories to be closely observed. It is necessary to be authorized by the Andalusian Environmental Department for that



purpose. The capture of butterflies is forbidden no matter it is brief and butterflies are observed and released, or permanent (until their death) if you do not have required licence for such actions. The gear which is used for butterfly hunting is a butterfly net. It consists of a handle, telescopic if possible, a rim and netting made of a fine and soft fabric which will not

hurt butterflies when they are caught. Once the butterfly is captured it can be watched in different ways. It can be observed inside of the net while it is kept still or you can carefully take it by its thorax, avoiding the wings. Special bottles for insect observation can be bought, but the drawback is that butterflies beat against its walls and can get hurt.

## Where and when can you see butterflies?

Butterflies can be seen everywhere throughout the year. However, you should mind certain information in order to save time and effort.

As mentioned above, butterflies are closely attached to their foodplants, so their presence depend on whether they can supply themselves with food or not. Another important factor is the weather. Butterflies need warm weather to make their circulatory system work, so they do not fly around when it is cloudy, rainy or windy. These conditions make the search more difficult. There is to choose sunny days, ideally, from the end of winter to the beginning of summer.

Butterflies are more probable to be found in places with lush vegetation, such as forests and scrubland, high mountains, rivers and streams or similar areas which are humid in summer. In dense forests, there is

to look for bright areas as butterflies cannot be seen in shady dark zones. They are more probable to be still in the morning when you can take pictures of them. The hotter it is the more active they are, as they stop only to drink on flowers, so it becomes much more difficult to take photos, of them although this is the best occasion for spotting and counting species.

When you see a butterfly which is standing still, you should approach it slowly and gently, avoiding fast and sudden movements because, even though they cannot see well, they can sense movement and they fly away from any possible danger.

If you are looking for specific species, there is to study them before the observation and find out more about them, as well as their foodplants, habitats, when they fly, how they are distributed, etc.



## Diurnal Butterflies in the Province of Málaga

Spain is the third best country in Europe in the case of butterfly species diversity due to its location and geological history. Some African species can be found due to its proximity. At the western border, you can as well find European and Eurasian species. Some ancient species from the last ice-age can be seen in high mountains. Many of these species are evolving into new species because of living isolated and being endemic to a limited area.

As for Málaga, a guide 'Atlas de distribución de las mariposas diurnas de la provincia de Málaga' [The Atlas of Diurnal Butterfly Distribution in the Province of Málaga], which was published at the end of 2015, includes 110 different species. This number contains a high percentage of Andalusian (75%) and Spanish (48%) butterflies. We are talking about rather

great diversity, considering that this is the smallest Andalusian province, which is surrounded by 2000-metres tall mountains in the south of the Iberian Peninsula close to the sea shore, so some Eurasian species that cannot bear continental climate do not fit there.

Málaga has several endemic species, as well as those which can only be found on this peninsula, such as the Panoptes Blue, the Mother-of-pearl Blue and the Spanish Argus. *Iberian and Maghrebi endemic species of Lorquin's Blue and Amanda's Blue* The Andalusian Anomalous Blue is another endemic gem that can be exclusively seen in the Baetic System in Málaga, where it was discovered and became important for science, some other Andalusian cities, such as Granada, Almería and Jaén, as well as in Murcia and Albacete.

The Andalusian Anomalous Blue, endemic species which can solely be found in Málaga, Granada, Almería, Jaén, Albacete and Murcia.







## The Great Málaga Path and its Butterflies

This circular path, which goes along rather great part of the Province of Málaga, is long-distance path marked with GR. Its stages embrace diverse kinds of landscape, which, of course, shelter many different species of butterflies.

The butterflies that can be seen along the Great Málaga Path (GMP) have not been studied in detail yet, so there is to wait for a catalogue which includes more species and their range that this book.

Up to the present, 84 from 110 species which live in Málaga can be spotted along the GMP: Twenty-one of

the rest of them are probably near the path as well, although they have not been found yet, but they have been seen nearby in similar habitats. They are more likely to be found along the stages which go through the mountains or forests. Remaining five species can hardly be living close to the path as they look for ecological conditions which do not exist around this path.

The following chart includes the list of the above species and the likelihood of their existence along of the GMP: P - present, pp - probably present; np - not present.

Common Name	Latin Name	Status
Spanish Festoon	<i>Zerynthia rumina</i> (Linnaeus, 1758)	P
Old World Swallowtail / Common Yellow Swallowtail	<i>Papilio machaon</i> (Linnaeus, 1758)	P
Scarce Swallowtail	<i>Iphiclides podalirius</i> (Linnaeus, 1758)	P
Dingy Skipper	<i>Erynnis tages</i> (Linnaeus, 1758)	pp
Mallow Skipper	<i>Carcharodus alceae</i> (Esper, 1780)	P
False Mallow Skipper	<i>Carcharodus tripolinus</i> (Verity, 1925)	pp
Marbled Skipper	<i>Carcharodus lavatherae</i> (Esper, 1783)	pp
Southern Marbled Skipper	<i>Carcharodus baeticus</i> (Rambur, 1839)	P
Tufted Skipper	<i>Carcharodus flocciferus</i> (Zeller, 1847)	pp
Red-underwing Skipper	<i>Spialia sertorius</i> (Hoffmansegg, 1804)	P
Polvillo dorado (Spanish common name)	<i>Sloperia proto</i> (Ochsenheimer, 1808)	P
Rosy Grizzled Skipper	<i>Pyrgus onopordi</i> (Rambur, 1839)	P
Essex Skipper	<i>Thymelicus sylvestris</i> (Ochsenheimer, 1808)	P
Small Skipper	<i>Thymelicus lineola</i> (Poda, 1761)	P
Lulworth Skipper	<i>Thymelicus acteon</i> (Rottemburg, 1775)	P



Common Name	Latin Name	Status
Silver-spotted Skipper,	<i>Hesperia comma</i> (Linnaeus, 1758)	pp
Large Skipper	<i>Ochlodes sylvanus</i> (Esper, 1777)	P
Dingy Swift / Mediterranean Skipper	<i>Gegenes nostrodamus</i> (Fabricius, 1793)	P
Borbo Skipper	<i>Borbo borbonica</i> (Boisduval, 1833)	pp
Wood White	<i>Leptidea sinapis</i> (Linnaeus, 1758)	P
Brimstone	<i>Gonepteryx rhamni</i> (Linnaeus, 1758)	P
Cleopatra	<i>Gonepteryx cleopatra</i> (Linnaeus, 1767)	P
Berger's Clouded Yellow	<i>Colias alfariensis</i> Ribbe, 1905	pp
Dark Clouded Yellow / Common Clouded Yellow	<i>Colias crocea</i> (Geoffroy, 1785)	P
Orange-tip	<i>Anthocharis cardamines</i> (Linnaeus, 1758)	pp
Provence Orange Tip	<i>Anthocharis euphenoides</i> (Staudinger, 1869)	P
Sooty Orange Tip	<i>Zegris eupheme</i> (Esper, 1804)	pp
Portuguese Dappled White	<i>Euchloe tagis</i> (Hübner, 1804)	P
Western Dappled White	<i>Euchloe crameri</i> (Butler, 1869)	P
Green-striped White	<i>Euchloe belemia</i> (Esper, 1800)	P
Black-veined White	<i>Aporia crataegi</i> (Linnaeus, 1758)	P
Large White / Cabbage Butterfly / Cabbage White	<i>Pieris brassicae</i> (Linnaeus, 1758)	P
Small White / Small Cabbage White	<i>Pieris rapae</i> (Linnaeus, 1758)	P
Southern Small White.	<i>Pieris mannii</i> (Mayer, 1851)	P
Green-veined White	<i>Pieris napi</i> (Linnaeus, 1758)	pp
Bath White	<i>Pontia daplidice</i> (Linnaeus, 1758)	P
Desert Orange Tip / Small Orange Tip	<i>Colotis evagore</i> (Klug, 1829)	P
Small Copper / Common Copper	<i>Lycaena phlaeas</i> (Linnaeus, 1760)	P
Purple-shot Copper	<i>Lycaena alciphron</i> (Rottemburg, 1775)	P
Purple Hairstreak	<i>Favonius quercus</i> (Linnaeus, 1758)	P
Spanish Purple Hairstreak,	<i>Laeosopis roboris</i> (Esper, 1793)	pp
Provence Hairstreak / Cardenillo	<i>Tomares ballus</i> (Fabricius, 1787)	P
Green Hairstreak	<i>Callophrys rubi</i> (Linnaeus, 1758)	P
Chapman's Green Hairstreak	<i>Callophrys avis</i> (Chapman, 1909)	P
Blue Spot Hairstreak	<i>Satyrrium spini</i> (Fabricius, 1787)	P
False Ilex Hairstreak	<i>Satyrrium esculi</i> (Hübner, 1804)	P
Pea Blue / Long-tailed Blue	<i>Lampides boeticus</i> (Linnaeus, 1767)	P

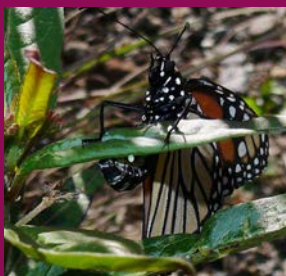


Common Name	Latin Name	Status
Geranium Bronze	<i>Cacyreus marshalli</i> (Butler, 1898)	P
Lang's Short-tailed Blue / Common Zebra Blue	<i>Leptotes pirithous</i> (Linnaeus, 1767)	P
Common Tiger Blue	<i>Tarucus theophrastus</i> (Fabricius, 1793)	pp
Dark Grass Blue / African Grass Blue,	<i>Zizeeria knysna</i> (Trimen, 1862)	P
Lorquin's Blue	<i>Cupido lorquini</i> (Herrich-Schäffer, 1850)	P
The Holly Blue	<i>Celastrina argiolus</i> (Linnaeus, 1758)	P
Panoptes Blue	<i>Scolitantides panoptes</i> (Hübner, 1813)	P
False Baton Blue	<i>Scolitantides abencerragus</i> (Pierret, 1837)	P
Green Underside Blue	<i>Glaucopsyche alexis</i> (Poda, 1761)	pp
Black Eyed Blue	<i>Glaucopsyche melanops</i> (Boisduval, 1828)	P
Southern Blue	<i>Polyommatus celina</i> (Austaut, 1879)	P
Mother-of-pearl Blue	<i>Polyommatus nivescens</i> (Keferstein, 1851)	P
Chapman's Blue	<i>Polyommatus thersites</i> (Cantener, 1835)	P
Andalusian Anomalous Blue	<i>Polyommatus violetae</i> (Gómez Butillo, Expósito & Martínez 1979)	P
Escher's Blue	<i>Polyommatus escheri</i> (Hübner, 1823)	P
Spanish Chalk-hill Blue	<i>Polyommatus albicans</i> (Gerhard, 1851)	P
Adonis Blue	<i>Polyommatus bellargus</i> (Rottemburg, 1775)	P
Spanish Argus	<i>Aricia morronensis</i> (Ribbe 1910)	np
Southern Brown Argus	<i>Aricia cramera</i> (Eschscholtz, 1821)	P
Mountain Argus	<i>Aricia montensis</i> (Verity, 1928)	pp
Geranium Argus	<i>Eumedonia eumedon</i> (Esper, 1780)	np
Silver-studded Blue	<i>Plebejus argus</i> (Linnaeus, 1758)	pp
Nettle Tree Butterfly	<i>Libythea celtis</i> (Laicharting, 1782)	P
Monarch	<i>Danaus plexippus</i> (Linnaeus, 1758)	P
Plain Tiger	<i>Danaus chrysippus</i> (Linnaeus, 1758)	pp
Large Wall Brown	<i>Lasiommata maera</i> (Linnaeus, 1758)	P
Wall Brown	<i>Lasiommata megera</i> (Linnaeus, 1767)	P
Speckled Wood	<i>Pararge aegeria</i> (Linnaeus, 1758)	P
Dusky Heath	<i>Coenonympha dorus</i> (Esper, 1782)	P
Small Heath	<i>Coenonympha pamphilus</i> (Linnaeus, 1758)	P
Meadow Brown	<i>Maniola jurtina</i> (Linnaeus, 1758)	P



Common Name	Latin Name	Status
Gatekeeper /Hedge Brown	<i>Pyronia tithonus</i> (Linnaeus, 1771)	P
Southern Gatekeeper	<i>Pyronia cecilia</i> (Vallantin, 1894)	P
Spanish Gatekeeper	<i>Pyronia bathseba</i> (Fabricius, 1793)	P
Dusky Meadow Brown	<i>Hyponephele lycaon</i> (Kühn, 1774)	P
Oriental Meadow Brown	<i>Hyponephele lupinus</i> (Costa, 1836)	pp
Iberian Marbled White	<i>Melanargia lachesis</i> (Hübner, 1790)	P
Western Marbled White	<i>Melanargia occitanica</i> (Esper, 1793)	P
Spanish Marbled White	<i>Melanargia ines</i> (Hoffmannsegg, 1804)	P
Rock Grayling	<i>Hipparchia alcyone</i> (Linnaeus, 1764)	P
Graying	<i>Hipparchia semele</i> (Linnaeus, 1758)	P
Tree Grayling	<i>Hipparchia statilinus</i> (Hufnagel, 1766)	P
Striped Grayling	<i>Hipparchia fidia</i> (Linnaeus, 1767)	P
Hermit	<i>Chazara briseis</i> (Linnaeus, 1764)	P
Black Satyr	<i>Satyrus actaea</i> (Esper, 1781)	np
Great Banded Grayling	<i>Kanetisa circe</i> (Fabricius, 1775)	np
Two-tailed Pasha	<i>Charaxes jasius</i> (Linnaeus, 1767)	P
Red Admiral	<i>Vanessa atalanta</i> (Linnaeus, 1758)	P
Painted Lady	<i>Vanessa cardui</i> (Linnaeus, 1758)	P
Large Tortoiseshell / Blackleg Tortoiseshell	<i>Nymphalis polychloros</i> (Linnaeus, 1758)	P
Small Tortoiseshell	<i>Aglais urticae</i> (Linnaeus, 1758)	pp
Comma	<i>Polygonia c- album</i> (Linnaeus, 1758)	P
Marsh Fritillary	<i>Euphydryas aurinia</i> (Rottemburg, 1775)	P
Dientes gualdos (common name in Spanish)	<i>Euphydryas desfontainii</i> (Godart, 1819)	P
Spotted Fritillary	<i>Melitaea didyma</i> (Esper, 1778)	pp
Knapweed Fritillary	<i>Melitaea phoebe</i> (Goeze, 1779)	P
Aetherie Fritillary	<i>Melitaea aetherie</i> (Hübner, 1826)	pp
Meadow Fritillary	<i>Melitaea parthenoides</i> (Keferstein, 1851)	np
Provencal Fritillary	<i>Melitaea deione</i> (Geyer, 1832)	P
Queen of Spain Fritillary	<i>Issoria lathonia</i> (Linnaeus, 1758)	P
Cardial	<i>Argynnis pandora</i> (Denis & Schiffermüller, 1775)	P
Niobe Fritillary	<i>Argynnis niobe</i> (Linnaeus, 1758)	P
High Brown Fritillary	<i>Argynnis adippe</i> (Denis & Schiffermüller, 1775)	pp







# Descriptive Catalogue





Queen of Spain Fritillary





# Identification guide to the diurnal butterflies along the Great Málaga Path

Butterfly and moth identification is more complex than simple observation and visual comparison between butterflies and their photos in the guide. There is to learn about the period when they can be seen, about their habitat, altitude and distribution. The things become more complicated when a butterfly which is being observed is isolated or the key details for its identification cannot be seen. This is why all the

features and the rest of the conditions for observation must match those presented in this guide in order to confirm the species' name. Nevertheless, there might be cases which overstep the line, as everything is possible in nature. In order to clear up doubts about species from this guide, or any other observed butterfly which photo has been taken, write to the following email address: [conocenaturaeco@gmail.com](mailto:conocenaturaeco@gmail.com).

Every species file card has several sections, which give detailed information about the butterfly in question, such as

- **Its common and scientific name**, the name of the author who first mentioned the species in a scientific publication as well as the year when it was done..
- **Description**. The main features of the butterfly when it closes and opens its wings.
- **Key for Visual Identification**. Places where species can be found, as well as what they have to look like are pointed out by short descriptions and photos.
- **Similar Species**. Main differences that exist between similar species are presented together with their photos.
- **Biology and Habitat**. In this section, the information about the place, foodplants, altitude and any other data related to the butterfly's habitat is summed up. Flight times are also explained. The best time for watching is marked with striking colours, while dim colours are used for periods when the probability to see the butterfly is lower. Rare, scarce or rather unknown species are shown in bright colours.
- **Distribution along the Great Málaga Path**. In this section you can see where a particular species of butterflies can be found along the path, or where it might appear even though it has not been seen yet. There is also data related to other conditions of the species, such as whether it is endemic and at what level, if it is endangered or protected by the current law.