

ORDER LEPIDOPTERA - BUTTERFLIES

A species-rich order of insects that includes about 150,000 species with complete metamorphosis. They are different to all other insects because their wings are covered with scales. The scales have pigmentation in them or a special structure that allows them to reflect rays with a specific wavelength so that the entire wings or certain sections of the wings appear coloured and shiny, most often in blue or green tones (optical coloration). In some species, the wings or parts of them are not covered with scales and are translucent. The dimensions of the wings of the different species vary widely. Their size as well as their venation is of systematic significance. When indicating the size of the butterflies, it is not the length of the body that is used but the width of the wings spread. There are species where the wings in the females are reduced or completely absent.

The mouthparts of the imagoes are proboscises adapted to suck the fluids the imagoes feed on (most often nectar). The proboscis is rolled like a spiral under the head. When unfolded, its length exceeds the length of the body in some species. Only the most primitive forms have chewing mouthparts and feed on pollen. In others, the proboscis is missing.

Female butterflies usually lay their eggs on the plants that feed the caterpillars when hatched. Caterpillars have a distinct head with mouthparts adapted for piercing, 3 pairs of thoracic legs, and 10 abdominal segments with up to 5 pairs of prolegs. Most of the butterflies feed on the aboveground or underground parts of particular plants but the caterpillars of some species are predators. After 4 or 5 moultings, the caterpillar is converted into a pupa. Its case is dense. The antennae and legs of the future butterfly are visible on the surface of the pupa but are tightly attached to it and cannot be separated. Restricted movements can only be performed by the last abdominal segments. The pupa can be loose or enclosed in a pre-spun cocoon. After a certain amount of time, a butterfly encloses from the pupa. The caterpillars of some butterflies are pests of crops, fruit trees, forest plantations, stored food, textiles, etc.

Although butterflies are one of the most intensely studied groups of insects, their systematics is still insufficiently clarified. Today, they are not divided into diurnal and nocturnal butterflies or Micro- and Macrolidoptera as they used to be before. From all famous 124 families of butterflies, there are about 2,800 species of 70 families in our country.

Catocala elocata – **French red underwing**

The wingspan is 65 to 80 mm. The hindwings are red, with two black stripes, from where the name of the butterfly comes. The caterpillars feed on poplars and willows. The imagoes fly from July to October. They can be found in the lower parts along rivers, together with a few more similarly coloured species of the same genus, one of which with blue hindwings with black lines (*C. fraxini*, with a wingspan of 75 to 95 mm) and some smaller species with yellow hindwings.

Euplagia quadripunctaria – **Jersey tiger**

One of the large representatives of the owl moths in Bulgaria (with a wingspan of 45 to 65 mm). The forewings are dark brown, with large irregular-shape transverse white-yellow stripes; the hindwings are red, with small round and other irregular-shape dark-brown spots. They prefer karst areas with forests and meadows. The imagoes appear at the end of the summer and fly from August to September. They can be seen sucking nectar from the flowers of the Scotch thistle (*Carduus*), plume thistle (*Cirsium*), and agrimony (*Agrimonia*).

Agrius convolvuli- **Convolvulus hawk-moth**

These butterflies have massive fusiform bodies, threadlike hindwings, and long proboscises. Some suck nectar from flowers without landing on them but staying in front of them in the air, at the same place. They usually fly in the evening but some species fly during the day, too. The wingspan is 80 to 120 mm, the length of the proboscis reaches 100 mm. The wings of the butterfly are dusty grey and the body is pinkish red with black lines. The caterpillars feed on bindweed (*Convolvulus* genus). The butterflies fly from May to October and over big distances (often over 1,000 km).

Macroglossa stellatarium- **Hummingbird hawk-moth**

The wingspan is 40 to 50 mm. The forewings are grey-brown and the hindwings are orange. The butterflies fly during the day. They are widely spread on the territory of the municipality. They can also easily be seen in floral gardens in populated areas where they feed on the plants with deep, infundibular flowers like common soapwort and others. Their ability to suck nectar into a standing flight causes some people to mistake them for hummingbirds.

Saturnia pyri – **Giant peacock moth**

The wingspan is 100 to 140 mm. This is the largest butterfly in Europe. The butterflies fly in April and May. The caterpillars feed on the leaves of different fruit trees. In their last stage, they are yellow-green with light-blue warts, sharp bristles, and long fringes. Immediately before pupation, they become yellow-brown. They spin pear-shaped cocoons in which they pupate. The pupae overwinter, sometimes two or even three times, before the imago stage. Mediterranean species. They can be attracted by the light of a light bulb or one can watch them at rest during the day, if found.

Papilio machaon – **Old world swallowtail**

Large and attractive butterflies, with trailing edges of the hindwings, that fly from May to September. They can be found on the outskirts of forests, open spaces and lands and, often, in populated areas, roads, deserted lands, gardens, and often (especially the males) floating the ridges of hills. The caterpillars usually feed on different Umbelliferae and can often be seen on the leaves of dill, parsley, and carrot or hemlock. When disturbed, they extend, like a snail, orange skin "tentacles" at the back of their heads. They can be observed throughout the municipality.

Iphiclides podalirius – **Scarce swallowtail**

One of the largest and most widespread butterflies flying from mid-May to September. The trailing edges of the hindwings are very long. They can be found on the outskirts of forests, open spaces and lands and, often, near populated areas, roads, deserted lands, gardens, as the plants they feed on are fruit trees of the Rosaceae family, hawthorn, and blackthorn. When disturbed, the caterpillars extend, like a snail, orange skin "tentacles" at the back of their heads. In Europe, their number is decreasing; in our country, they are still frequent and even massive.

Zerynthia cerisy – **Eastern festoon**

The subspecies found in our country (*Z. cerisyferdinandi*) was reported from Shipka passage and is a Balkan endemic. The wings of these butterflies are yellowish-white to creamy, with numerous black spots and a black area at the edge of the wing; the hindwings are sprinkled

with red spots. They fly from early May to early July on the outskirts of forests, open spaces and, very often, near populated areas, roads, deserted lands, vineyards, as the plant they feed on (birthwort) is a weed. The butterflies fly relatively slowly and low above the ground, staying close to the plants. Balkan endemic; a species from the Red List of European Daytime Butterflies, IUCN, category NT (Near Threatened).

Zerynthia polyxena – **Southern festoon**

The wings are yellowish-white to creamy, with numerous black spots, some of them may have red dots. Along the edge, they have a strongly jagged black stripe with "teeth" running along the veins to the outer edge. The underside is similar but with orange-red lines in the black stripes around the edge. The butterflies fly from March to early June on the outskirts of woods, open spaces and, very often, in populated areas, roads, deserted lands, vineyards, as the plant they feed on (birthwort) is a weed.

Parnassius mnemosyne – **Clouded Apollo**

The wingspan is 45 to 60 mm; white, with four black spots on the forewings and blackened rear part of the hindwings. The wings have dark veins. Spread mostly in mountainous areas from 1,000 to 1,700 m, on the outskirts of deciduous, coniferous or mixed forests, open rocky or grassy areas where the plant the caterpillars feed on - *Corydalis bulbosa* s. cava (of the *Corydalis* genus) can be found. After fertilization, on the underside, at the end of the abdomen in the females, a whitish formation the shape of a boat (the so-called sphragis) is formed. The butterflies fly, according to the altitude, from mid-April to August.

Aporiocrataegi – **Black-veined white**

Large white butterflies with translucent wings and characteristic black veins. The wingspan is approx. 60 to 72 mm. The butterflies fly from May to July, in warm sunny bushy areas and, often, in cultural biotopes, especially orchards; deserted lands; they show a preference for outdoor terrains with Scotch thistle and plume thistle, on the flowers of which there are sometimes several individuals. The plant the caterpillars feed on is mainly blackthorn but also the remaining trees and shrubs: plum, pear, apple, and hawthorn. One of our relatively common species rarely develops in large numbers so does not cause serious damage.

Pieris brassicae – **Large white**

Large white butterflies (about 6 to 7 cm with wings spread). The wings are white, the forewings have a black cuneiform spot near the tip. The butterflies fly from March to October and have two or three generations. They are found in all sorts of open areas with presence of the plant they feed on, incl. at the outskirts of forests, meadows, deserted and agricultural land, settlements, and gardens. Food plants of the caterpillars are various species of the Cruciferae family and nasturtium. Although they are widespread in Bulgaria, they have comparatively small numbers and do not cause serious damage.

Pieris napi – **Green-veined white**

Whitish, relatively small (about 4 cm wide with wings spread) butterflies. The wings are white, the forewings have a greyish-black cuneiform spot near the tip; the veins on the underside of the hindwings are darkened (especially in the spring generation). The butterflies fly from March to October at the outskirts of forests, river valleys, fields, meadows, agricultural and deserted land. Food plants of the caterpillars are various species of

theCruciferae family. One of the most common species of ours;in themunicipality of Kyustendil, they can be seen almost everywhere outside the shady forests.

Leptidea sinapis – **Wood white**

Whitish, relatively small butterflies (up to 4 cm with wings spread). The wings are white, the forewings have a black spot near the tip. The butterflies fly from March to August-September and can be seenat the outskirts of forests, forest paths, and clearings. Food plants of the caterpillars are various types of peavines.They overwinter as pupae. One of the most common species of ours;in the municipality of Kyustendil, they can be seen almost everywhere but more often in the lower parts.

Anthocharis cardamines – **Orange tip**

Relatively large butterflies (up to 5 cm with wings spread) with white wings; the forewings have a black tip and a black spot, while in the males the tip of the wing is orange. The underside of the hindwings is greyish-green, with white spots. The butterfliesfly very early in the spring, from March to May, and in the high parts of the mountains until June-July. They inhabit open grasslands, outskirts of forests, forest paths, gardens, deserted lands, clearings, and mountain meadows up to the alpine zone. The caterpillars feed on various species of the Cruciferae family.

Colias croceus – **Clouded yellow**

Relatively large butterflies (up to 5 cm with wings spread), with a basic colour of the wings from deep yellow in the males to white in the females and a black edge along the end. They have several generations a year, from March to November. They inhabit open grasslands, outskirts of forests, forest paths, gardens, deserted lands, clearings and, mountain meadows up to the alpine zone. There is a tendency to migration. The caterpillars feed on various species of the Fabaceae family, mostly various clover and alfalfa species.

Colias caucasica – **Balkan clouded yellow**

Relatively large butterflies (up to 6 cm with wings spread), similar to the Clouded yellow but larger; the main colour of the upper side of the wings is orange-reddish. There is only one generation a year, from the end of June to the middle of August. They inhabit open grassy areas in the mountains around and above the upper border of the forest with abundance of the food plant (*Chamaecytisusabsinthioides*). A rare species, which in our country, apart from the Osogovo Mountain, is also found in the Rila Mountain and, in the past, was reported to have been found in the Western Rhodopes and Vitosha Mountain.

Gonepteryx rhamni– **Common brimstone**

Very characteristic butterflies, in which the wings are lemon-yellow, with a small orange spot in the middle. Their shape also resembles the top half of a lemon with the elongated tip of the forewing and the tooth at around the middle of the hindwing. The males are the colour of a ripe lemon and the females are much lighter, almost whitish. They can be seen at the outskirts of forests, river valleys, meadows with shrubs, mountain meadows, deserted lands near populated areas. Theyhave one generation a year, from June to September. The butterflies overwinter and appear very early in spring - in March or even February. The caterpillars feed on bushes of a species of the buckthorn genus. In SiniteKamaniNaturalPark, they predominantly inhabit the low-mountain zone.

Pontia edusa – **Eastern bath white**

Whitish butterflies, with the underside of their hindwings having a noticeable pattern. The butterflies fly from March to October and can be seen in open grassy areas, outskirts of forests, forest paths, gardens, deserted lands, clearings, and mountain meadows. Food plants of the caterpillars are various species of the Cruciferae family. Widespread and common on the territory of the municipality of Kyustendil.

Thecla betulae – **Brown hairstreak**

Comparatively small dark-brown butterflies with small tails at the end of the hindwings. The underside of the wings is orange-brown, with black and white lines forming cuneiform shapes. On the upper side of the forewings, the females have an orange reniform spot, while in the males the wings are single-coloured. The upper side of the wings can be rarely seen as they rest and suck salts with closed wings. A species that flies from the end of July to September, has one generation, and prefers deciduous forests and shrubs with open sunny places and plenty of the food plant - blackthorn (*Prunus spinosa*). The larvae are myrmecophilic.

Lycaena phlaeas – **Small copper**

Small butterflies, in which the upper side of the forewings is dark brown, with orange (varying in intensity and area - from dusting up to involvement of almost the entire wing) and black spots; the hindwings are dark brown, with a wavy orange stripe near the outer edge (submarginal). The underside of the forewings is grey-brown, with orange and black spots; the hindwings are grey-brown, with an orange-reddish line near the outer edge. The males have a distinct purple shade of the wings. The butterflies fly from March to October and have three generations. They can be found almost everywhere in open grassy and rocky places of all kinds: meadows, outskirts of woods and roads, deserted lands, parks, and gardens. Food plants are various types of dock.

Lycaena dispar – **Large copper**

Not very bright butterflies. The upper side of the wings is fiery red, with a thin black border along the outer edge and a small black spot around the middle (in the males) and an additional row to the outer edge (in the females). The butterflies fly from May to September-October. They can be found almost everywhere in open sunny places near lakes, brooks, ditches, and other wetlands up to 1,000 m above sea level, in the mountains along banks and wet meadows. Food plants are various types of dock. The species is included in Annexes II and IV of Habitats Directive 92/43 of the European Union in Annex II to the Berne Convention; a species protected by the Biodiversity Act of Bulgaria.

Lycaena tityrus – **Sooty copper**

Small butterflies (up to 3 cm with wings spread), in which the males are dark, brown, with no contrasting spots, and the females have orange-coloured forewings with clear spots and an orange line on the upper side of the hindwings. They inhabit meadows and pastures, banks of rivers, wet and flooded meadows; the caterpillars feed on sorrel. They overwinter as young caterpillars.

Satyrrium spini – **Blue spot hairstreak**

Small brownish butterflies with a small tail at the end of the hindwings. The upper side around the back end of the hindwings has separate orange spots (such may be missing) and the underside is greyish-brown, with black and white lines in the postdiscal zone and orange

spots at the rear along the wing edge, with a large blue spot under the tail. On the upper side of the forewings, near the top of the cell, the males have a brighter androconia spot, which sometimes can be seen from underneath. A species that flies from the end of May to the end of July, has one generation, and prefers warm and dry shrubs, grassy places and hills with bushes, outskirts of forests and slopes. The larvae feed on Jerusalem thorn (*Paliurus spinachristi*) and various species of buckthorn (*Rhamnusspp.*).

Callophrys rubi – **Green hairstreak**

Small butterflies with a very small bulge at the end of the hindwings. The upper side of the wings is entirely dark brown; the underside is green, with a broken white line (often as single dots or missing altogether). On the upper side of the forewings (visible from beneath, too), near the top of the cell, the males have a lighter androconia spot. These are the structures in males formed by the so-called "androconial scales" playing a role in the detection of the sex. Well-adapted to a wide range of habitats: grassy places, woods, shrubs, deserted lands, rocky slopes. The larvae mainly feed on various legumes.

Iolana iolas – **Iolas blue**

Relatively large butterflies. The upper side of the wings in the males is sky blue, with a narrow black border along the outer edge; in the females, it is dark blue, with black veins and a broad black border covering the front and side edges and the tip of the wing. The underside of the wings is ash-grey to greyish-brown, with black dots and bluish dusting at the base of the hindwing. A warm-loving, predominantly Mediterranean, species, which prefers dry shrub places with presence of the food plant, stony slopes, sprawling forests and edge of forests, usually with a limestone base, which is relatively rare in Bulgaria. The larvae feed on bladder-senna (*Colutea arborescens*) and are myrmecophilic, associated with the erratic ant *Tapinoma erraticum*.

Leptotes pirithous – **Lang's short-tailed blue**

Small butterflies with fine tails on the hindwings. The upper side of the wings is bluish-brown; the underside is mosaic-coloured, with two eye-resembling spots at the base of the tail. A warm-loving, mostly Mediterranean, species, which migrates to the north (especially in autumn). They like dry warm places and are relatively rare in our country. The larvae feed on Cytisus and alfalfa.

Cupido alcetas – **Provençal short-tailed blue**

Very small butterflies (up to 2.5 cm). The upper side of the wings is bluish (in the males) or dark brown (in the females); the underside is greyish-blue, with small black dots, with the hindwings having very short tails. They can be seen from May to September in open spaces, river banks, woods, clearings, and meadows. The larvae feed on various species of the Fabaceae family: Anthyllis, peavines, vetch, and others. They can be found mainly in the low zone of the municipality of Kyustendil.

Cupido argiades – **Short-tailed blue**

Relatively small butterflies, often found in wet places: banks of brooks, streams, rivers, and lakes; outskirts of forests. The upper side of the wings in the males is blue, with a narrow black border along the edge and a very pale discoidal spot; in the females, the upper side is dark-brown and the underside is greyish-white, with black dots and a small tail, above which

there are two or three orange spots near the edge. The butterflies fly from April to August and have two generations a year.

Aricia agestis- **Brown argus**

Small brown "blues", in which the wings are chocolate-brown, with a series of orange spots near the edge. The butterflies fly from April to October at dry, grassy slopes, meadows overgrown with bushes, outskirts of forests, and clearings. Food plants of the larvae are various geraniums. The caterpillars are green, with a purple lateral and dark backline; they live in symbiosis with ants of the genera *Myrmica* and *Lasius*, who protect the butterflies and the butterflies feed them with sweet secretions produced by special glands. They overwinter as caterpillars and, in spring, pupate on the surface of the soil. The pupae are attached to the parts of ground plants.

Polyommatus icarus – **Common blue**

One of our most widespread butterflies, in which the upper side of the wings is sky-blue in the males and brown, with a series of orange spots, in the females. They can be seen from March to November in almost all habitat types, excluding thick-shady beech or coniferous forests, from sea level up to 1,700 m above sea level. Food plants of the larvae are various species of the Fabaceae family. The caterpillars are myrmecophilic and associated with ants of the genera *Lasius*, *Formica*, and *Myrmica*. They can be found throughout the municipality of Kyustendil.

Polyommatus (Lysandra) coridon – **Chalkhill blue**

Relatively large butterflies. The upper side of the wings in the males is light blue, with a broad black border along the outer edge and alternating black and white sectors along the forewing edge; the upper side in the females is similar but the basic colour is dark brown, with orange submarginal spots and a discoidal spot. The underside of the wings is greyish or grey-brown, with black dots and submarginal orange spots. A species that prefers dry and warm open grassy or rocky places with flowering vegetation on calcareous mountain slopes. The larvae are myrmecophilic and associated with various ants.

Polyommatus (Meleageria) daphnis – **Meleager's blue**

Relatively large butterflies. The upper side of the wings in the males is brilliant blue, with a black border along the outer edge and partially black veins; in the females, the upper side is from blue to dark brown, with a broad border and black veins. The underside of the wings is grey to brownish-grey, with black dots. A characteristic feature of the species is the jagged outer edge of the hindwings (especially in the females). A species that flies from June to August and prefers dry and warm open grassy or rocky places, bushes, calcareous mountain slopes. The larvae are myrmecophilic and associated with various ants.

Plebejus argus – **Silver-studded blue**

Widespread butterflies of ours, in which the upper side of the wings is sky-blue, with a broad black border in the males and brown, with a series of orange arched lines, in the females. The underside of the hindwings has a number of spots, some of which with a white border, and a stripe of triangular orange spots with large, shiny metal-blue spots at the base. They can be seen from May to August in open grassy areas, meadows, meadows with shrubs, outskirts of forests, grassy mountain slopes, and clearings. The caterpillars live in symbiosis with ants; the ants protect the butterflies and the butterflies feed them with sweet secretions produced by

special glands. They overwinter as eggs or caterpillars of different ages. They pupate in the nests of ants of the genera *Lasius* or *Formica*.

Celastrina argiolus – **Holly blue**

The upper side of the wings in the males is single-coloured, blue with a thin black border and no spots. In the females, it is blue, with a black front edge, a black tip, and a wide black line along the edge; the underside is blue-grey, with thin black patterns. The butterflies fly from March to September in open and bush-overgrown meadows, outskirts of forests, forest meadows in deciduous forests, grassy mountain slopes, and clearings. They use a wide range of food plants from various families and the caterpillars are associated with ants.

Scolitantides orion – **Chequered blue**

Small butterflies. The upper side of the wings in the males is blue, with a broad black border along the outer edge, including a wavy blue line and alternating black and white sectors along the edge of the wings; the upper side is similar in the females but the basic colour is dark brown, sometimes with bluish dust. The underside of the wings is whitish, with many large black dots and spots; the hindwings have a submarginal orange stripe. A species that flies from April to August, has two generations, and inhabits rocky slopes and dry grassy or bushy places, often devoid of any vegetation, except for the food plant - houseleek. The larvae are myrmecophilic and associated with various ants.

Araschnia levana - **Map**

What is interesting about these small butterflies is the significant colour difference between their spring and summer generations: it is so drastic that unacquainted observers would decide they are two different species. The upper side of the wings of the spring generation (flying from April to June) in both sexes is orange, with black spots and white lines and dots; along the edge of the hindwings, there is a series of violet-blue spots. The summer generation (flying from July to August) has black wings with white spots (on the forewings) or stripes (on the hindwings) and orange lines. They can be seen at the outskirts of deciduous forests, meadows with shrubs, river valleys, and open spaces; the caterpillars feed on various nettle species. In our country and on the Balkans, they are a typical example of invaders, occupying and displacing into new territories. The species was reported as new to the country in 1979 in northern Bulgaria. In 1983, the species was already identified in southern Bulgaria and, later, in Greece, the Republic of Macedonia, and European Turkey.

Aglais urticae – **Small tortoiseshell**

Relatively large butterflies in which the upper side of the wings is orange-red, with black and yellow spots and a black border with blue spots. The underside is dark brown, with a ochre-brown forewing; there is also a stripe of metal-bluish spots along the edges. There are two or three generations a year flying from May to October, overwintering as butterflies and, in the following spring, flying again in March-April. They can be seen at the outskirts of forests, open spaces and lands, often in and out of populated areas, roads, deserted lands, gardens. The caterpillars feed on nettles and this is where the name comes from.

Inachis io – **European peacock**

One of the most colourful Bulgarian butterflies, reaching up to 6-cm width of the wings. The upper side of the wings is our cherry-red, with a black front edge with white transversal

strokes at the base. From the front edge, a black cuneiform spot enters. The upper side of the wings has a large eyespot with a sour cherry-red core and ochre-yellow and blue to purple encirclement with white dots. They overwinter as butterflies and, therefore, can be observed almost all year round. The eggs are deposited in large groups (60-100) on the underside of the leaves of the food plant (nettles). In our country, they can be seen from sea level to Musala peak as the highest point.

Vanessa atalanta – **Red admiral**

Relatively large butterflies (up to 6.5 cm) that fly from June to October but overwinter as imagoes and fly again in early spring. The upper side of the forewings is black, with a bright orange-red line from the front edge to the back end. There are white spots in the field between it and the tip of the wing. The hindwings are the same colour as the forewings and, at the back end, they have a wide bright orange-red line with black spots inside and blue spots in the corner. They are spread everywhere; the caterpillars feed on nettles. The male patrol over a certain area, perching on the top leaves of low branches, fences, etc. and, when intruders appear, they immediately drive them away.

Vanessa cardui – **Painted lady**

Relatively large butterflies (up to 5.5 to 6 cm) that fly from May to November but overwinter as imagoes and fly again in early spring. The wings are ochre-brown, marbled with black patterns; the forewings have white spots to the tip and the hindwings have black dots in a transverse line around the centre. They are spread everywhere; the caterpillars feed on a significant number of plants from various families. The species is an active flyer and migrant. Often (almost every year), they migrate in significant numbers from North Africa, reaching almost the polar circle.

Nymphalis polychloros – **Large tortoiseshell**

The upper side of the forewings is reddish-brown, with black border and black rounded spots, some of which are merged. The hindwings have a relatively small, tapered tail edge; the upper side in both sexes is the same as in the forewings, with a large black spot, and the back edge of the wing has a dark line with blue spots. The eggs are laid in large groups, ring-shaped on the branches at the base of the leaf buds of the food plant of the larvae (various tree and shrub species). Like in the other species of this group (Nymphalidae subfamily), butterflies overwinter and can be seen in large numbers in early spring.

Nymphalis antiopa – **Mourning cloak**

Large butterflies, in which the upper side of the wings is dark red-brown with yellow border (to whitish in the ones that have overwintered) along the edge, and a submarginal black stripe with blue dots. The underside is dark-brown to black, with a whitish border along the edge. They can be found in riparian forests with presence of the food plants (willows, poplars) and at their outskirts; in open spaces in forests; rocky gorges. The caterpillars feed on various species of willows and poplars. The butterflies fly from June to August and have one generation; they winter as imagoes and fly again in early spring - March / April.

Polygonia c-album - **Comma**

The wings are orange-brown with black spots and dots; the underside resembles a tree bark and, when perched, the butterflies become almost invisible. Around the middle, the underside

of the hindwings has a contrasting white painting resembling the Latin letter C, from where the Latin name of the species comes. They can be seen from May to October and overwinter as butterflies. As food plants, they use a considerable number of various families, including nettles, elm, hops, etc. They also have patrolling behaviour over a certain territory. One of our most common species.

Apaturairis – **Purple emperor**

Large butterflies in which the upper side of the wings is dark brown-purple, with white stripes and spots and one eyespot around the anal angle of the hindwings. In the males, the upper side of the wings has optical scales so that, in some light, they look brilliant purple-violet. The butterflies fly from June to August in old riparian forests with presence of the food plant (willows); deciduous forests with open sunspots and at their outskirts. The females spend most of their lives in the tree crowns, the males also spend most of their time at the top of the trees, protecting their territory from rivals, even though they sometimes descend to the ground. Unlike most butterflies, the Purple emperor does not feed on flowers but on honey dew, emitted from aphids, and on tree juices as well as on manure, urine, and animal carcasses.

Limenitis reducta – **Southern white admiral**

The upper side of the wings is blue-black; the forewings have a white spot and many other small white spots. Along the edge of the two pairs, they have a series of fine blue spots. In the middle of the hindwings, a relatively wide line passes, composed of white spots. They can be seen from May to October in dry and warm sunny and stony meadows with shrubs, outskirts of deciduous forests, river valleys, and clearings from sea level to about 1,600 m above sea level. They overwinter as young caterpillars on the food plant (various species of the genus *Lonicera*) in a cover made by them of folded and silk-threaded leaves.

Neptis sappho – **Pallas' sailer**

Relatively large butterflies in which the upper side of the wings (rounded forewings) is black, with white stripes and spots. The underside is similar but the basic colour is reddish-brown. They can be seen from May to August, have two generations, and inhabit wet deciduous forests with open sunny places and their outskirts as well as riparian forests and city parks. The caterpillars feed on various types of peavines; after the transfer of the black locust (*Robinia pseudoacacia*) and its cultivation in Europe, the species started to use it, too, which is why it has recently expanded its range.

Argynnis pandora – **Cardinal**

One of our largest diurnal butterflies, up to 7.5 cm with wings spread. The upper side of the wings is ochre, with black spots and black veins. Veins 1-3 at the base of the forewings are slightly but visibly thickened, with androconia structures in the males (formed by the so-called "sex scales"). These structures play a role in the detection of the sex. The underside of the hindwings is green, with pearl-white lines. The butterflies fly from May to October; the caterpillars feed on various types of violets.

Issoria lathonia – **Queen of Spain fritillary**

The upper side of the wings is ochre-yellow, with black spots and black veins; at the base, they have grey-green dust. The underside of the hindwings has large, bright, pearl spots and fine, brick-red eyespots with a white centre and a yellowish-white halo. The butterflies fly from March to October at the outskirts of forests, in open spaces in deciduous forests, meadows with shrubs and single trees, deserted lands, and gardens from sea level to the highest parts of the mountains. Food plants of the caterpillars are various varieties of violets.

Melitaea trivia – **Lesser spotted fritillary**

Relatively small butterflies (up to 4 cm) day. The wings are orange, with black spots and black veins. The butterflies fly from April to September and prefer drier biotopes. Food plants are various mullein species on the leaves of which eggs are deposited in groups. A species of Corine Biotopes and the IUCN Red List of European Day Butterflies, under the Least Concern / Near Threatened category.

Euphydryas aurinia – **Marsh fritillary**

Relatively large butterflies. The upper side of the wings is orange, orange-yellow, whitish and creamy, with black veins and transverse lines so that a mesh pattern is obtained; the submarginal stripe has a number of black dots and the hindwings have white to creamy-white (sometimes darkened) half-moon spots at the end. The butterflies fly from April to July in wet grassy places with flowering vegetation and shrubs; open spaces in forests and at their outskirts; shores of ponds - lakes and rivers. The species is listed in Appendix II of the Berne Convention (CITES) and in the Red Book of European Day Butterflies (Vulnerable category).

Melanargia galathea – **Marbled white**

Relatively large butterflies, up to 5 cm with wings spread. The upper side of the wings is matte brown-black, with a white spot at the base and many other white spots. The underside of the forewings has the same colour and pattern as the upper side, with one or two top eyespots; the hindwings have five eyespots near the edge. The butterflies fly from May to September in any habitat type. Food plants of the larvae are various wheat grasses. Widespread on the territory of the country and the municipality of Kyustendil.

Chazara briseis - **Hermit**

Large butterflies. The upper side of the wings is dark brown to black, with creamy-white stripe and 1 (in the males) or 2 (in the females) eyespots on the forewings, and an androconia (sex) spot in the males. The underside of the forewings is similar but a bit more colourful; the hindwings are almost single-coloured beige-brown in the females, while in the males there is also a darker, interrupted in the middle, discal band. The butterflies fly from June to September

in dry warm and sunny open grassy or rocky places, sometimes with bushes. The caterpillars feed on a variety of wheat grasses.

Brintesia circe – **Great banded grayling**

One of our largest butterflies, up to 7.2 cm with wings spread. The upper side of the forewings is black, with a white line of separate spots. The top spot has an entirely black eyespot inside. The upper side of the hindwings is like in the forewings but the spots are fused and the line is wide. On the underside, the hindwings have two white transverse lines. The butterflies fly from June to September in dry, warm, and sunny open grassy habitats with shrubs and single trees and at the outskirts of forests. In the caterpillar, the last segment is divided into two small tail edges; food plants are various wheat grasses.

Hipparchia fagi – **Woodland grayling**

Large butterflies. The upper side of the wings is dark brown to black, with broad white stripes in the postdiscal zone and 1 or 2 eyespots; the underside is similar; the hindwings are marbled. Sexual dimorphism: the upper side of the forewings in the males has an androconia (sex) spot; in the females, the white stripe in front of the eyespot deviates obliquely to the edge of the forewing (bone vein). The butterflies fly from June to August in grassy places with bushes or rare trees; levelled forests and their outskirts, and forest cuttings; they often rest on the ground or on the trunks of trees. The caterpillars feed on a variety of wheat grasses.

Arethusana arethusana – **False grayling**

The upper side of the wings is brown-black, with an orange line consisting of separate spots. The top spot has an entirely black eyespot inside. The butterflies fly from mid-July to September in dry, warm, and sunny open rocky and grassy habitats. Food plants of the larvae are various wheat grasses, *Bromus* for example. In recent years, there has been an increase in its range and an increase in its size.

Coenonympha arcania – **Pearly heath**

Comparatively small butterflies in which the upper side of the forewings is orange, with a wide dark brown border; the hindwings are brownish. The underside of the forewings is orange-brown, with a small eyespot around the top; the underside of the hindwings is greyish-brown, with larger eyespots and an irregular-shape white stripe on the inside; both wings have submarginal silver stripes. The butterflies fly from June to August in grassy places with bushes and flowering vegetation; at the outskirts of forests, forest cuttings, and meadows. Food plants of the larvae are various wheat grasses.

Coenonympha glycerion – **Chestnut heath**

Relatively small butterflies, up to 3.5 cm with wings spread. The upper side of the forewings is orange-brown, with black veins; the underside of the hindwings has an orange-grey base,

white spots, and submarginal eyespots. The end part is orange, surrounded by a thin stripe of metallic glitter. The butterflies fly from June to August in dry or damp grassy meadows, meadows with shrubs, outskirts of forests, clearings, and forest meadows. Food plants of the larvae are various wheat grasses.

Aphantopus hyperantus - **Ringlet**

Comparatively large butterfly in which the upper side of the wings is dark brown, with or without eyespots. The underside is slightly brighter in both sexes with such eyespots. The butterflies can be seen from June to August in grassy places overgrown with bushes, at the outskirts of forests, and forest meadows from sea level to about 1,600 m above sea level. They prefer shady places and can be seen very often.

Maniola jurtina – **Meadow brown**

The upper side of the forewings in the males is monochromatic brown, with a wide, black, longitudinal androconia spot around the middle and a small eyespot with a white centre and orange halo. These structures (formed by the so-called "sex scales") play a role in the detection of the sex. The female butterfly is the basic colour of the male butterfly but with orange-ochre coloration and a bigger spot on the tip. The butterflies fly from May to September in any grassy habitats and meadows with single trees and shrubs. Food plants of the larvae are various wheat grasses.

Pyronia tithonus - **Gatekeeper**

The upper side of the forewings in both sexes is bright orange, with a dark brown to black line on the front edge, top, and outer edge. The upper side has a large black eyespot, with one or two small white heart-shaped spots inside. The males have an oblique, black, dissected androconia spot. These structures (formed by the so-called "sex scales") play a role in the detection of the sex. The upper side of the hindwings in both sexes is predominantly orange; the underside has tiny white dot-like spots with a brown halo. The butterflies fly from July to October in warm and sunny grassy meadows, meadows with shrubs, outskirts of forests, clearings, and forest meadows. Food plants of the larvae are various wheat grasses.

Pararge aegeria – **Speckled wood**

The wings are greyish-brown, with yellowish to ochre spots and a little black eyespot with a white dot inside. The butterflies fly from March to September and are one of the few species inhabiting shady deciduous and coniferous forests and their outskirts. They usually patrol on sun-lit branches in the shade of the forest. Food plants of the larvae are various wheat grasses.

Lasiommata megera – **Wall brown**

The upper side of the wings is orange, with black lines. The main part is dark brown. The males have a black oblique androconial line. The tip spot is black, with a white dot inside and

only one, significantly smaller, accompanying eyespot, resembling a satellite around a planet. The underside of the hindwings is dark brown, with black jagged stripes and eyespots. The butterflies fly from April to September in dry and warm grassy, rocky, and stony places. Food plants of the larvae are various wheat grasses.

Kirinia roxelana (Cramer, 1777) – **Lattice brown**

Large butterflies, up to 6 cm with wings spread. The upper side of the forewings is brown-black, with orange-ochre edges, black veins, and a small, black, top eyespot with an ochre halo. The underside of the hindwings is single-coloured, grey-brown, with black irregular-shape stripes and distinct eyespots. The butterflies fly from April to September in dry and warm rocky places: forest meadows, outskirts of forests, meadows with shrubs. Most of the time, they keep to the shady tree trunks, especially in the hottest part of the day. The eggs are laid in cracks in the bark of trees, in well-shaded places. The head of the caterpillar has two lateral ridges that continue like small horns; the caterpillar uses various wheat grasses as food.

Carcharodus alceae – **Mallow skipper**

Small butterflies, up to 3 cm wide with wings spread. The upper side of the wings is dark brown to rusty brown, with lighter veins and lightnings. On the underside, the wings are brownish-green, also with spots. The butterflies fly from April to October in grassy and bushy meadows, at the outskirts of forests and populated areas, clearings, and near roads where the food plant grows abundantly. The caterpillars pupate in rolled leaves of the food plant (various types of Malva and marshmallow).

Spialia orbifer – **Orbed red-underwing skipper**

Small butterflies, up to 3 cm wide with wings spread. The upper side of the wings is dark brown, with white spots and dots. On the underside, the wings are olive-green to golden-red. The butterflies fly from April to August in dry and warm grassy places, at the outskirts of forests, sunny rocky mountain slopes, clearings, arable and deserted lands. The caterpillars live and feed, at first, on the flowers and, later, on the leaves of the food plant - small burnet - and pupate in rolled leaves of the food plant.

Carterocephalus palaemon – **Chequered skipper**

Small dark brown butterflies, the upper side of the forewings is golden-yellow, with angular spots; on the hindwings, the spots are oval. On the underside, the forewings are golden, with black spots, forming irregular-shape stripes; the hindwings are golden, with lighter oval spots with black borders. The clubs of the antennae on the underside in the males are entirely yellow-orange; in the females, they are black, only the top is yellow-orange. The butterflies fly from May to June in wet grassy areas with flowering plants and single bushes, incl. forest meadows, outskirts of forests, clearings; this is a highly moisture-loving species. The caterpillars live and feed on a variety of wheat grasses.

Pyrgus sidae – **Yellow-banded skipper**

Small dark-brown butterflies, the upper side of the wings is dotted, with a number of relatively large white spots; the hindwings have a stripe of light spots in the middle and a row of triangular submarginal spots. The underside of the hindwings is white, with two distinct yellow-orange stripes. The butterflies fly from May to July in grassy and stony areas with flowering plants; meadows in sparse forests and their outskirts; and thin bushes. The caterpillars feed on *Potentilla*.

Hesperia comma – **Silver-spotted skipper**

Small butterflies in which the upper side of the wings is ochre-orange, with a wide black marginal border, black veins, and a black tip, dotted with yellowish spots. The males have a wide black androconia groove in the middle of the wing. On the underside, the wings are ochre-yellow, with a greyish-green admixture; the forewings have whitish spots like in the upper side; the hindwings have silver discal and postdiscal spots. The butterflies fly from July to September in open low-grass areas with flowering plants and abundance of *Festuca*. The caterpillars live and feed on a variety of wheat grasses.



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