Vocabulary

A

Abdomen

The third of the three sections in which the body of insects is divided. It is positioned after the thorax, contains the reproductive system and most digestive organs.

Achene

Dry fruit containing a single seed that does not open when ripe. Examples: *chestnut, common dandelion*.

Aestivation (site of)

Location, shelter or hiding place where some animals spend the hottest summer periods slowing down their activities due to lack of water, due to high temperatures. This is the case of some reptiles and amphibians, which to protect themselves from drought, enter a state of inactivity similar to hibernation: they spend the hard period taking shelter in the old trees fallen to the ground and in the piles of wood.

Arachnida

Group of invertebrates characterized by a body divided into two sections: front and rear. Unlike insects, they have eight articulated legs, the head is fused with the thorax (with which it forms a "single piece") and do not have the antennae. Examples: *spiders, scorpions, mites*.

Asteraceae

Large family of perennial herbaceous plants with flower head inflorescence. Includes about 20,000 species, spread all over the world. Example: *daisy, chamomile, dandelion, sunflower*.

Auricular cavity

Empty opening of the ears of different animals.

Avifauna

The set of birds living in a specific area.

Beetle

Insect characterized by a particular hard and strong exoskeleton and 4 wings (two pair): fore and hind. The fore ones are hard and solid, have the function of "cases" and cover about the whole body; the hind ones are soft and membranous and in some species are atrophied. Examples: *ladybug, stag beetle, cockchafer, scarab*.

Bufotoxin

Toxic substance produced by toads as a defensive weapon against predators. It is produced by some very large venom glands on the sides of the head: the paratoid glands. When a badger, a polecat, a snake or another predator attacks the toad and bites it, the mucous membranes of its mouth come into contact with this substance: the predator will feel a burning so strong, that since then, will avoid it forever...

Bulbs

Group of plants characterized by the bulb, a large underground bud, round in shape and seeming a large gem, with a very short stem and covered with fleshy leaves, like scales. Examples: *garlic, onion, tulip, hyacinth*.

Carduus

Perennial herbaceous plant with an erect aspect. It belongs to the family of the Asteraceae, or Compositae, and is a close "relative" of the artichoke. There are many species, both wild and cultivated as vegetables.

Cuticle

Protective layer covering the body wall of invertebrate animals. It is produced by the epidermis and usually is composed of chitin, as in the Annelids and in the Arthropods, where it can reach significant thickness and texture and form a real external skeleton (exoskeleton).

Defensive mimicry

Strategy of some animals and plants, that for defensive purposes perfectly imitate colours, shapes, behaviour and appearance of both the environment and other similar or different species. The two main types of mimicry are:

• **Cryptic** mimicry (Crypsis): The animal takes on forms, colours and behaviours to make itself completely similar to the environment in which it lives. Examples: *chameleon, stick-insect, leaf-insect*.

• **Batesian** mimicry (due to the scientist **Henry W. Bates** who first described it): a harmless species imitates forms and colours of predatory, toxic or dangerous species. This is the case of the ***Sirphidae***, which emulate perfectly the shape, design and colours of the bees and of the wasps, so that the predators confuse them and see them as dangerous. However, despite their flashy appearance, they have no sting and no other defensive weapon.

Dermaptera

Insects characterized by elongated body and mouth of chewers. The forewings are small, the hindwings are instead enlarged. The abdomen ends with a pair of movable pliers, looking like a scissor. Example: *earwig*.

Dipteran

Insect characterized by only two wings, that is a pair. Examples: *fly, mosquito, horsefly*.

Dormancy

Period when a plant or an animal stops or slows down its vital functions. Example: the *bear* that goes into hibernation, the *trees* that lose its leaves

Ecological requirements

The set of characteristics of an environment necessary for the life of an animal or a plant to properly complete its life cycle (temperature, humidity, type of vegetation, availability of food and specific prey, etc.).

Eyespot (eye-like markings)

Roundish spots found on the wings of many *butterflies* and *moths*. They are due to the combination of contrasting colours and serve as a defensive weapon against predators.

Exoskeleton

Characteristic external skeleton of some invertebrates, especially the Arthropods (*insects, spiders, crustaceans, etc.*).

Fertilization

Fusion of two cells specialized for reproduction: the male and the female, called *gametes*. In other words, the encounter of *sperm* and *egg*, which creates a new individual.

Gestation

Interval between fertilization and birth, during which the embryo develops in the mother's body. In other words, the period when the mother brings the fetus into the uterus. *It is better known by the name of pregnancy* and its length differs depending on the species. Examples: 9 months for the *human*, about 2 months for *dogs* and *cats*, 15 months for the *giraffe*, about 3 and a half months for the *lion*. But the *elephant* holds the record: almost 2 years!

Gills

Breathing organs typical of several aquatic animals such as *fish, larvae of amphibians (tadpoles), molluscs, etc*. They usually have a lamellar structure: they are composed of many thin plates on whose walls take place the gaseous exchanges with the oxygen dissolved in the water.

Habitat

Set of environmental conditions in which an animal or plant species lives.

Hemiptera

Very large group of insects, which includes around 70,000 species all over the planet, of which about 7,000 live in Europe. They have highly varied shape and dimensions but are all characterized by a strong perforator-sucker mouthpiece, called stylet, specialized for sucking liquids of plants and animals. Examples: *aphid, scale insect, cicada, true bug, water scorpion, water stick-insect, etc*.

Hibernation

Strategy (process, ability) with which some animals spend the winter in a hidden state of life minimizing some vital functions (*breathing, heartbeat, body temperature, etc*.). They sleep deeply so as to minimise energy consumption.

Hooked beak

Beak bent at the tip, like a hook, and strongly curved. Examples: the *beak raptors*.

Hymenopteran

Insect characterized by four wings, that is two pairs. Many species live in society. Example: *bee, bumblebee, wasp, ant*.

I

Inflorescence

Group of flowers disposed so as to look like a single one. There are many types of inflorescence: *flower head, cluster, raceme, spike, etc*.

Infructescence

A cluster of many fruits so well linked that it looks like a single fruit. The totality of the fruits comes from an inflorescence. Compare a *cherry* with a *blackberry*: the *cherry* is a fruit; the *blackberry* is an infructescence.

Isopods

Very numerous groups of crustaceans that includes many terrestrial, marine and freshwater species. Usually, they have distinct sexes and *sexual dimorphism*: the male and the female are extremely different. The body is flat and protected by an external coating that looks like a long series of thin and framed plates. Most species have seven pairs of legs. Example: the *pill-bug*.

L

Lepidopteran

Fusion of two cells specialized for reproduction: the male and the female, called *gametes*. In other words, the encounter of *sperm* and *egg*, which creates a new individual.

Ligula (insects)

Part of the lower lip of some insects. Characteristic especially in *bees*, it is a kind of proboscis that the *bee* inserts in the calyx of the flower and uses to aspire and suck the nectar.

Livery

Mix and combination of colours that mainly characterize the plumage or hair of many animals. It may change depending on the season or other periods of life. Examples: *winter livery, summer livery, nuptial livery, etc*.

Lymph

Fluid that flows within the plants, as the blood flows into the human body. There are two types of *lymph*: the *raw* one and the *processed* one.

Metamorphosis

The series of changes in shape and structure with which many animals complete their larval stage and transform into adults. Example: from *caterpillar* to *butterfly*, from *tadpole* to *frog*.

Moulting

Periodic change of skin, feathers or other type of lining of the epidermis that happens in some animals such as *reptiles, birds, amphibians, insects, crustaceans, spiders, etc*. Moulting is very important in insects. The cuticle of the insects is constituted by chitin, is very hard and does not expand, avoiding the insect grow. In order to do it, the insect must therefore change the cuticle. The insect grows just through a definite number of moultings, varying depending on the species. At each of them the insect grows and becomes bigger, until it reaches the final size of the adult.

Mucosa

Membrane that works as the inner lining for some organs that communicate with the outside, kept constan- tly wet by the secretion (the mucus) of specific glands. Examples: mucous membranes of *nose, mouth, intestine, etc*.

Mulching

Practice used by gardeners to prevent and oppose weeds without the need to use herbicides (very harmful to health) and to protect the roots from freeze and drought. The soil around the seedlings, is covered with natural materials (leaves, straw, compost, etc.): in this way, the weeds will not have enough light and space to grow.

N

Native — Animal or plant species originating in the area and country where it lives.

Nectar — Very sweet liquid produced by the flowers of many plants, of which many insects are greedy.

Nestling — Newly born or very young *bird* that has not yet left the nest, where the "parents" take care of it and feed it

Neuropterans — Insects characterized by elongated body, rather long antennae, chewer mouthparts and 4 membranous and transparent wings (2 pairs) that have so many veins to seem worked by a good craftsman. Their name comes from this characteristic. Examples: *lacewing, antilion*.

Nymph — Stage of development of some insects, in which the organs of the larva restructure to give origin to the adult insect.

P

Parasite — Living organism (maybe it's better to say living being?) that lives off other organisms, called *hosts*, causing them more or less serious injuries.

Passeriformes — Very large group of birds that includes many species spread throughout the world. Examples: *house sparrow, robin, great tit, blue tit*.

Phytophagous

Organism that feed on plants and their parts (leaves, fruits, branches, lymph, etc.) often causing damage to the plant itself. Example: *aphid, scale insect*.

Plant growth

Regular growth process of a plant organism. It is the phase that immediately follows the formation of the embryo: from this moment on, the plant begins to grow, starting the maturation of tissues and organs. Sometimes the term refers to the growth of sprouts and leaves, as opposed to the reproductive phases (flowering and fructification).

Pollen

Powder formed by the tiny fertile grains contained in some special organs of the flowers. It is the male part of the flower and plays a key role for the fecundation of the female part. The fecundation of the flowers is called *pollination*.

Proboscis

Mouthparts of the lepidopterans (*butterflies*). It has the shape of a furling spiral, a sort of "proboscis" that has the role of sucking the nectar from the flower.

Pseudanthium

Type of inflorescence composed of many thick and crowded flowers, disposed to look like a single flower. Examples: *daisy, chamomile, dandelion*.

Raceme

Type of compound inflorescence, where from an elongated or very elongated central axis, many small clustered inflorescences separate.

Rose hip

False fruit formed by a "container" that includes within it several fruits. It's oval or round, about the size of an olive and red. Example: *dog rose*.

S

Sexual dimorphism

The combination of one or more characteristics that allow us to identify the male and the female of the same species (*colours, shape, size, etc.*).

Spiracles

Parts of the respiratory apparatus of some aquatic insect larvae (Ephemeroptera, Odonata, Plecoptera), formed by filaments or leaf-shaped structures rich in tracheae. In other words, they are gills containing tracheae that receive oxygen through the organ linings.

Spp

Group of several species belonging to the genus preceding this abbreviation.

Swarming

Typical behaviour of some social insects (*bees, ants, termites, etc.*). A group of individuals (the swarm), led by the queen who heads the group, leaves the community of origin and moves to another place to found a new colony.

Sweat glands

Special organs that have the role of producing or transporting sweat. They are a part of the *exocrine glands* (that is, external secretion organs) and are usually found in the thickness of the skin.

T

To hibernate

Spend the winter period in a specific area.

Thorax

The second of the three segments into which the body of insects is divided. It is placed between the head and the abdomen and consists of three parts: the *prothorax*, the *mesothorax* and the *metathorax*.

Ultrasound

Very high frequency sound vibrations (above 20,000 hertz) and therefore not perceptible by the human ear.

Our hearing is able to detect only the sound vibrations between 20 and 20,000 hertz. *Dogs* and *cats* do better than us, but *bats* and *dolphins* can do even better, since they can also hear sounds with a frequency higher 20,000 hertz, better known as **ultrasound**.

Vein

Network of the veins (or nerves) of the insect wings, also called ribbing. The wings are therefore live organs equipped with real veins and ribs, where haemolymph, nerves and tracheae go through.

Vocal sac

Structure existing in several Anura amphibians, which has the function of producing and amplifying the singing of the males during the reproductive period. It is usually placed under the throat or at the sides of the head.