

The Distribution, Reproduction and Importance of the Beetles in Nature

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Annotation. The article presents information on the biology and ecology of the khanqiz in the Bukhara region. It talks about the importance of species belonging to the Coccinidae family in nature and in farms.

Keywords: Biology, classic, parasite, pathogen, insect, weevil, entomophagous, seven-pointed, eleven-pointed, ladybird, larva, spider mite.

Relevance of the topic: in the 21st century, while science and technology are rapidly developing, people's demand for food and other resources is also increasing year by year. One of the main tasks of biological science is to provide people with natural food. Biological protection of human food resources in the broadest sense is the prevention of pests and diseases caused by pathogens harm reduction. In a narrow sense, the classical biological method means the use of living organisms: parasites, predators and pathogenic microorganisms in the fight against harmful organisms.

Coccinellids are derived from the Latin coccinus meaning "red". The name "Ladybird" originated in Britain, where the insect was known as "Our Lady's Bird" or Lady Beetle. Mary (Our Lady) often wore a red cloak in fairy tales, and the spots of the seven-pointed ladybird (most common in Europe) were said to symbolize her. Seven joys and seven sorrows. In the United States, the name was adapted to "ladybug". Common names in some other European languages have the same association; for example, the German name Marienkäfer translates to Marybeetle. Ladybugs, or Coccinellidae (lat. Coccinellidae) - a family of beetles. The body of these beetles is convex, round or oval in shape. It is very quickly noticeable due to the bright "warning" color, represented by various combinations of red, yellow, white and black colors, mainly with black spots on the background of the main light, less - on the contrary. When disturbed, the beetles secrete corrosive orange hemolymph droplets from their knee joints, making them inedible to most insectivorous vertebrates. Ladybugs and their larvae are predators that feed on aphids, mealybugs, and other small insects, and several species are herbivores. This family includes about 8000 species. They are distributed almost all over the world, except for Antarctica and permafrost zones. Coccinellids are often conspicuous yellow, orange, or red with small black spots. They also have wing covers, legs, heads and antennae are the main external organs. There is great variation in the color patterns of coccinellids. For example, Vibidia duodecimguttata, the twelve-spotted species, has flowing spots on a brown background. Small beetles with a body length of 0.8 (genus Carinodulinka) to 18 mm (genus Megalocaria). The body is oval or round-oval, strongly convex from above, practically hemispherical or ovoid. The lower part of the body is almost flat or slightly convex. In some groups of ladybugs, the body is oblong-oval, more or less flattened. The surface of the body is mostly hairless, hairless, rarely covered with small hairs. The head is short, small in size, can be elongated longitudinally or

transversely. The eyes are large, often with a groove on the front edge. Antennae vary in length, sometimes longer than the head, consist of 8-11 segments; It is attached to the sides of the front edge of the head and can be bent under the head. The end of the antenna is sharply expanded, forming a thickening - a club. The last of the antenna club and the shape of the last segments differs in different genera, which is taken into account when identifying species.

The structure of the mouth is a device of the rodent type. The upper jaws are massive, sickleshaped. Herbivorous species (subfamily Epilachinae) have a large number of teeth on their top. Carnivorous species and fungi- and pollen-feeding species (subfamily Coccinellinae) have two sharp teeth at the top of the upper jaws. The lower lip is elongated, rarely transverse. The prothorax consists of movable joints with the mesothorax, which in turn is immovably connected with the metathorax.

The edges of the pronotum can be demarcated: they have a side and are separated by a line falling from the disc - the edge. Ladybugs' elytra are rounded, rarely their outer edges are parallel to each other. Usually the elytra is narrowly bordered, in some genera (Halyzia) it is flattened. The lateral edge of the elytra is bent downward, partially covering the lateral parts of the mesothorax, metathorax and abdomen, and forms the epipleura (ventral curved edge of the elytra) separated from the rest of the elytra by a fold. Epipleura usually wide or narrow, in Hyperaspis with pits. In some species, the upper elytra has a transverse fold or a small slit along the suture. The shape and color of the elytra varies from species to species and is an important structural feature of individual taxa. The elytra is mainly distinguished by red, orange, yellow, brown, black or white spots, which are often combined with longitudinal or transverse lines and stripes, thus forming a variable pattern; red or.

There are also black elytra with yellow spots. Representatives of the family are widely polymorphic in the color of the elytra has variability. The wings themselves are elongated and wide. The type of venation is cantharoid: the main part of the M2 vein forms a recurrent vein. which joins the main stem in a hook-like bend. Some species of ladybugs have shortened wings. Abdomen ventrally almost completely straight, dorsally much straighter than elytron. The abdominal cavity consists of 10 tergites are, the first 5-6 of which are visible, membranous, the rest are chitinous. The genital opening opens between the 8th and 9th sternites. The sternite of the first abdominal segment is usually the widest and is called so. the femoral lines, which may be incomplete or complete, are bisected in a V shape. An important systematic feature (for example, for Scymnini) is the structure of male, sometimes female, genitals. Legs are always well developed. They are moderately long, densely covered with short hairs. Legs and hips are thin. Tarsi four-segmented or hidden four-segmented (they appear to be three-segmented because the third, very small, segment together with half of the fourth segment overlaps the twosegmented second segment only members of the tribe Lithophilini have clearly four-segmented legs. The last segment of the paw usually has 2 claws of different types have different structures in taxa.

Sexual dimorphism is weakly expressed. In most species there is a notch or pit on the apex of the 5th or 6th sternite in males, and a tubercle in females. Some species in males, the 1st segment of the front and middle tarsi is expanded. Sometimes females and males differ in the pattern on the pronotum. There are about 40 species of Soccinelid-Khonqizi beetles in the agricultural regions of Uzbekistan. We will conduct our observation activities in autumn 2021 and spring and summer 2022 in G`idhuvan, Shafirkon, Vobkent, Bukhara district, Jondor and Karakol districts of Bukhara region.

Was carried out. Our observations were based on information from the literature. The hen lays 20-25 orange eggs in one place and reproduces in this way. Its caterpillars live mainly in plants. Coccinellid larvae belong to the campodeoid type - they are mobile, have an elongated body and three pairs of long chest legs. The appearance of the larvae of representatives of the family is very diverse. Many the larvae of the palearctic species belong to the coccinelloid type, characterized by a spindle-shaped body, a large head and long legs.

The head of the larvae is round-rectangular, approximately the same width and length. Its sides are rounded or flat to one degree or another. There are antennae on the head. Two-segmented and single-segmented antennae are characteristic of specialized genera that feed on pseudocrits. Changes in the structure of the antennae are represented by combinations of different lengths of the basal and apical segments (Genus Hyperaspis, Nephus). Mandibles of larvae triangular or crescentic, exserted or weakly exserted. Mandibles are divided into 2 types according to their structure. The first - triangular shape with many teeth, without a mesh - is characteristic of species with a herbivorous lifestyle (Subcoccinella). The second type of mandibles is characteristic of Coccinellinae, they are crescent-shaped, with 1-2 sharp teeth on top, developed retina. Three simple eyes are located on the sides of the head. Abdomen 10-segmented, without caudal filaments at the end. The legs are long, more than the width of the body. The back has various structures, covered with armed hairs or white waxy filaments. The prothorax is much longer and narrower than the middle and metathorax. On the back of the prothorax there are 2 or 4, rarely 6 lobes - square, rounded square or elongated, arranged longitudinally. Segments on the back of the meso- and metathorax .There are 2 cracks, oval, oblong, rarely rounded, located along. On their outer edges, the tubes are covered with various barriers.

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