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Biological Characteristics of Some Widely Distributed Brotherhood Species in Fergana Valley

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Annotation: In this article highlights of biological characteristics of some widely distributed brotherhood species in Fergana valley.
Key words: Biological characteristics, brotherhood species, dragonflies.

Dragonflies (Odonata) belong to the family of insects. The length of the body is 1.4-120 mm, the wings reach up to 90 mm. Faceted eyes are mobile and occupy a large part of the head. His mustache is short and barely visible. The wings are thickly webbed. It differs from other insects by the presence of dorsoventral (directed from the back to the belly) wing muscles and a secondary attachment organ in males. There are about 4,500 (according to other sources, more than 3,000) species. It is distributed everywhere except the Arctic and arid regions. It is found mainly in tropical regions, near water bodies. Predatory adult dragonflies feed on insects. Catches its prey in the air. Larvae of large dragonflies can attack seals and fish fry. It evolves through semi-transformation. It germinates in the air. It lays its eggs at the bottom of the water or on aquatic plants. Larvae are predators, mouthparts have become a mask. Special external lesions (caudal lesions) or hindgut tumors (rectal lesions) breathe on the ground. It is divided into 3 subgroups: equal-winged, different-winged, and mixed-winged. The next group includes one genus that combines the characteristics of the two previous groups and is distributed in tropical regions. There are dozens of species of dragonflies in the territory of Uzbekistan. Dragonflies feed on winged insects, and their larvae feed on aquatic larvae of blood-sucking insects. Larvae of dragonflies are food for fish [1].

The general classification of the distribution of dragonflies is complicated due to their adaptive features. Many widespread and ecologically plastic species can live in different altitudinal regions due to their development in different places during the larval stage. It is usually found in the plains in the northern regions, and only in the mountains in the southern regions. Some species develop in plains and foothills and fly to high mountains during summer migrations. Some species of dragonflies make obligate latitudinal migrations, at which time they are found both in the plains and in the mountains [3].

Calopteryx splendens Harris, 1780

Among dragonflies, representatives of this species are distinguished not only by their elegant appearance, but also by their living conditions. A common species in Central Asia.

Calopteryx splendens can be found along slow-flowing rivers and streams. They mainly land on the leaves of plants, bushes and trees. They form micropopulations in these biotopes. These individuals develop without leaving their territories. Representatives of this species fly slowly, low, only near water. They are active during the day in sunny weather. Females lay their eggs on the submerged part of plants on the shores of water bodies.

The larva develops in medium shallow water bodies. As wild as his imagos. Larvae develop under water for 2 years, and in some unfavorable conditions up to 3 years. The environmental environment (temperature, humidity) has a great influence during the period of

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imago transformation. In our studies, *Calopteryx splendens* became an imago in the plains at the beginning of April, in the hills in the middle of April, and in the mountains at the end of April. Representatives of this species complete their flight period in the second half of October [6].

Calopteryx virgo Linnaeus, 1758

Representatives of this species, common in Central Asia, are distinguished by their elegance among dragonflies. *Calopteryx virgo* is found along slow-flowing rivers and streams. Like representatives of *Calopteryx splendens*, they mainly land on the leaves of plants, bushes and trees. They form micropopulations in these biotopes. During the years of research (2022-2023), it was found that groups consisting of 12-24 individuals were formed. These individuals develop without leaving their territories. Representatives of this species fly slowly, low, only near water. They are active during the day in sunny weather. The female individual lays her eggs on the submerged part of plants on the banks of water bodies.

The larva develops in medium shallow water bodies. As wild as his imagos. Larvae live and develop in fast-flowing ponds rich in algae for 2 years. The environmental environment (temperature, humidity) has a great influence during the period of imago transformation. In our studies, *Calopteryx virgo* became imago in early April in plain areas, mid-April in hilly areas, and late April in mountainous areas. Representatives of this species complete their flight period in the second half of October [4].

Ischnura elegans Vander Linden, 1820

Ischnura elegans is a common species in different vertical (geographical) regions of the Ferghana Valley, and plants growing around irrigation networks (waterworks, canals), stagnant water, lakes and streams and ponds. Among others, it was observed that it was scattered around the reed fields. It was also noted that it sexually matures in March, spawns and lays eggs in April-September. Flight of Ischnura elegans depends on temperature and humidity. They fly slowly, low and short in the morning and evening, and are active during lunch. Like all species of dragonflies, they spend their lives in predation. It hunts for prey mainly in the afternoon. The female individual lays eggs on the stems of plants near water [7].

Larvae develop in slow-flowing waters, lakes, shallow parts of streams (0.1-0.3 m). It is more resistant to water pollution than other species. Like all dragonflies, they feed on small aquatic insects. In our research, under favorable environmental conditions, *Ischnura elegans* became an imago in the plains at the end of March, at the beginning of April, in the hilly areas, in the middle of April, in the mountain areas, at the end of April. It completes its flight period in the second half of October in moderate climatic conditions [2].

Anax imperator Leach, 1815

In our studies, representatives of the species *Anax imperator* fly in the coastal areas of slow and fast flowing waters (watercourses, canals, etc.). Its wings are well developed, it can fly fast, high and long distances in search of prey. The flight of the *Anax imperator* type is resistant to temperature and humidity. They are active from morning to evening. Adult dragonflies are active predators, chasing prey in the air. It is also noted that it reaches sexual maturity in May and spawns and lays

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eggs in July. Females lay their eggs on aquatic plants. Like all species of dragonflies, they spend their lives in predation. They feed on a variety of flying insects, but their main food is mosquitoes [5].

The biological characteristics of common species in the odonotofauna of the Fergana Valley were studied on the example of the species *Calopteryx splendens, Calopteryx virgo, Sympecma fusca, Ischnura pumilio, Ischnura elegans, Anax imperator, Orthetrum sabina;*

it was observed that most common and ecologically plastic species can live in different altitude regions due to their development in different places during the larval period;

it was studied that some species develop in plains and foothills and fly to high mountains during seasonal migrations

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