

STATE OF STUDY OF COCCINELLIDAE IN FERGANA VALLEY

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Abstract: The article presents information about the state of the study of khankisi beetles in foreign countries, Central Asia and Uzbekistan, about the work of scientists who conducted research on this topic, as well as about the division of coccinellids into the following groups depending on their diet.

Key words: Cooccinellidae, Stethorus, kurbini, Linnaeus, konqizi, polyphagus, phyllophage, Neomyia, diapause, yceria worm, aphidophagus.

Enter. Cow beetles (Coleoptera, Cooccinellidae) are effective natural killers of most pests of agricultural crops and play an important role in biological control. These beetles were first recommended by the famous Swedish scientist Carl Linnaeus against plant lice [1].

And Darwin advised to use beetles to clean greenhouses from plant lice. In England, it has been proposed to distribute the pest control beetles in fields and greenhouses to control plant aphids [5].

In California, USA, the introduction of the *Rhodolia cardinalis* Muls beetle from Australia against the thorny Yceria worm caused a radical change in the biological defense of plants due to the high efficiency obtained from the use of the citrus plant pest, the ycerium Yceria worm [8]. .

After the *Rhodolia cardinalis* beetle was brought from Cairo in 1931 in the CIS and first bred in laboratory conditions at the Institute of Plant Protection, it was used against the hookworm in Sukhumi and its surroundings, and as a result, the pest lost its importance .

In world practice, *Rhodolia* and other species of beetles, including *Lindorus lophanthae* Blaisd; *Cryptogonus orbiculus* var. *nigripennis* Wse; *Orcus chalybeus* Boisid; Extensive research has been carried out in the field of introduction and acclimatization of effective beetles such as *Chilocorus perniciosus* Comst.12

In the second half of the 20th century, some practical work was done to use coccinellid beetles. In particular, the acclimatization of the Far Eastern species *Harmonia oxyridis* Pallas in the conditions of Uzbekistan was carried out by L.S. Ulyanova , but it was not completed. The implementation of such studies in the conditions of Karpatoldi partially gave positive results . Research in this field was also carried out in the conditions of Kazakhstan .

There has also been some major research into the distribution of coccinellid beetles in pest control, maintaining native species, and increasing their effectiveness.

Some species (*Harmonia axyridis* Pallas) are propagated in laboratory conditions, and the research conducted in the Primoree region in the fight against greenhouse pests is noteworthy.

Although the interest in coccinellids from a practical point of view was started by K. Linnaeus, the study of the fauna of this family was carried out a little later. Especially since the 20th century, interest in coccinellids has increased dramatically.

Initial data on coccinellids were listed by G. G. Yakobson [4], and later by F. G. Dobrzhansky [7]; N.P. Dyadechko [2]; A.I. Krilsov [9]; K.K.Fasulati, O.K.Gusev, G.I.Savoyskaya [6]; S. V. Sharova [10]; A.M. Mekhtiyev ; V.P. Semyanov [9]; It was reflected in the works of S.G. Bronstein , V.N. Kuznetsov [3].

In the second half of the 20th century, a lot of literature was published in the CIS and foreign countries, mainly on the biology, ecology, and ethology of coccinellids.

In Uzbekistan, a number of studies have been carried out on the beetles belonging to the Coccinellidae family. V. V. Yakhontov, Z. K. Adilov in the field of application of khanqizi beetles against pests of agricultural crops; it is possible to show the works of V. V. Yakhontov in terms of spreading them within the area, preserving local species and increasing their efficiency. R. A. Alimdzhanov on the significance of *Stethorus* species as a specialized group of mites; characteristics of certain coccinellid species wintering in places were recorded by V.V. Yakhontov, Z.K. Adilov, introduction and acclimatization were carried out by L.S. Ulyanova [7], V.V. Yakhontov and other scientists of our Republic. A number of scientific researches have been carried out in the regions of the Republic of Uzbekistan.

In particular, the biology, ecology, species composition, trophic relationships of some species of coccinellids of orchards of Karakalpakstan were studied by S.A. Mangutova [8,], the biology of coccinellids of apple trees of the Fergana valley, *Synharmonia songlobata* L. and *Adonia variegata* Goeze beetles, T. Vakhidov and the coccinellid fauna of the same valley, A.K. Mansurov, M.Kh. Akhmedov Karshi desert, the species composition and stationary distribution of coccinellids in the biocenoses of Jizzakh region, the importance of coccinellids in the ecology and economy of southern Uzbekistan, A.K. Mansurov, the importance of coccinellids in reducing the number of pests of grain fruit trees were studied by K.N.Muratov, K.N.Muratov, .

In determining the importance of coccinellids in the biological control of pests of agricultural crops, it is important to determine their trophic relationships and nutritional relationships.

According to the literature, coccinellids are divided into the following groups depending on their nutrition:

1. Herbivorous coccinellids are phytophages, in turn, they are divided into 3 subgroups:
 - a) phyllophages - feeding on the leaves of plants, partly on their stems and flowers;
 - b) polyphages - with the flowers of plants;
 - c) mycetophages - those that feed on fungi.
2. Predatory coccinellids, in turn, are divided into four groups:
 - a) aphidophages - feeding on plant lice;
 - b) coccidophages - feeding on mealybugs and mealworms;
 - c) myxoentomophages - feed on small worms and larvae of various insects;
 - g) acariphages - coccinellids that feed on spider mites.

Predatory coccinellid groups include some genera of the Coccinellini, Chilospini and Ssymnini tribes, including the aphidophagous group. The food associations of most aphidophagous coccinellid beetles are plant lice species of the Aphedidae family. For example, coccinellid genera *Anatis* and *Neomysia* of the family Lachnidae (genus *Cinara*) with plant lice, coccinellid species of the genus *Adalia* with plant lice of the family Adeligidae (genus *Adeliges*); *Synharmonia songlobata* L. feeds on plant lice of the family Pemphigidae (genus *Eriosoma*), etc.

Conclusion. According to the authors listed above, the main reason for the early migration of coccinellids to winter in mountainous areas is the lack of food in the second half of summer, including a sharp decrease in plant lice, etc. is considered

Winter diapause is characteristic of coccinellid beetles. It is characteristic that most species of coccinellids have the characteristic of many accumulations during the transition to such a diapause.

Summarizing the analysis of the literature, almost no scientific research on coccinellids has been carried out in the Fergana Valley until the selected research topic. Taking this into account, studying the biology of coccinellids, their ecology and economic significance in the Fergana Valley is one of the topical topics.

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