XII Международный симпозиум по энтомофауне Средней Европы

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KIEV'88

Киев, 25·30 сентября 1988 г.

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XII INTERNATIONALES SYMPOSIUM
ÜBER ENTOMOFAUNISTIK
MITTELEUROPA
VERHANDLUNGEN

Kiew, 25. - 30. September 1988.

XII МЕЖДУНАРОДНЫЙ СИМПОЗИУМ ПО ЭНТОМОФАУНЕ СРЕДНЕЙ ЕВРОПЫ

МАТЕРИАЛЫ

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В сборнике представлены материалы международного симпозиума по энтомофауне Средней Европы, посвященные фундаментальным вопросам систематики, фаунистики, экологии различных групп насекомых Средней Европы. Глубоко проанализированы проблемы использования энтомофагов в интегрированных и биологических мероприятиях по защите сельскохозяйственных культур и лесных насаждений. Освещены вопросы изменений энтомофаунистических комплексов под влиянием хозяйственной деятельности человека.

Для энтомологов, фаунистов и систематиков, специалистов по защите растений, работников природоохранных организаций.

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Киев, 25-30 сентября 1988 года

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XII. INTERNATIONALES SYMPOSIUM FÜR DIE
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USE OF COCCINELLIDAE IN BIOLOGICAL CONTROL OF PLANT PESTS

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Recently the Coccinellidae are widely utilized for biological control of pests of cultivated plants. The main ways of practical use of coccinellids are the introduction and acclimatization, beetle collection in areas of mass gatherings on hibernation places, season colonization, use of lady beetles in greenhouses, conservation of local species of Coccinellidae and increase in their effectiveness.

Studies on the coccinellid introduction are extensively carried out in our country and all over the world. Serious advances in utilization of Coccinellidae for the control of pests are obtaines with acclimatization of adventitious species. Out of 225 cases of biological pest control, known in the world practice of biomethod by means of introduced entomophages, the Coccinellidae were used in 51 of them (DeBach, 1964). In the Soviet Union studies on acclimatization of lady beetles are carried out in the Georgian laboratory of the biological method for the control of quarantine pests of the Agriculture Ministry USSR (Batumi). About 20 species of Coccinellidae were introduced into Adjaria. However, the following species acclimatized in warm climate of the Black Sea coast of Caucasus: Rodolia cardinalis Muls., Chilocorus bijugus Sh., Serangium perceseto-sum Sicard. and Lindorus lophantae Blaisd. These coccinelids successfully suppress the number of some quarantine species of armored scales and citrus whitefly.

The introduction of Coccinellidae is accomplished in our country in connection with various climatic conditions. Experiments on acclimatization of some Far East species of Coccinellidae were carried out in the Ukraine, Caucasus and Kazakhstan. In 1981 we came to carry out experiments on introduction and acclimatization of the Far East and Viet-Nam Coccinellidae in Transcaucasus for biological control of quarantine and especially dangerous pests of plants. The following species were introduced from the Far East into Georgia: Chilocorus kuwanae Silv., Ch. inornatus Ws., Ch. rubidus Hope, Serangium lygaeum Khnz.,

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Pseudoscymnus hareja Ws., Harmonia axyridis Pall. and Aiolocaria mirabilis Motsch. It seems to be premature to speak of results of the Coccinellidae introduction. It is established that Sakhalin Ch. kuwanae hibernates and reproduces under conditions of Adjaria thus testifying to possibility of its acclimatization.

Micraspis discolor F., the effective entomophage of aphids which are the serious pests of fruit and citrus crops was imported into Viet-Nam and Adjaria. Experiments on acclimatization of the Viet-Namese lady beetles for the control of aphids Toxoptera auranti Boyer. de Fons and Aphis spiraecola Patch. on citrus plants were proved to be promising.

Use of Coccinellidae in the protected ground is perspective but connected with a number of difficulties. Relative to a high migratory activity of beetles the effectiveness of their releases is low. Releases of Coccinellidae larvae are the most effective but their utilization is hindered by an absence of available ways of mass reproduction. In our country studies on the control of aphids Cycloneda limbifera Casey, Lemnia biplagiata Swartz and Harmonia demidiata Fabr. are conducted in the protected ground. Positive results were obtained.

Experiments were carried out on the use of the Far East Harmonia axyridis Pall. in greenhouses for the control of aphids on cucumbers. Lady beetles collected in gatherings on hibernation grounds were released into greenhouses. However, the efficiency of such releases is very low because the hibernated lady beetles possess a high migratory activity and tend to leave the greenhouses. Use of Coccinellidae in greenhouses could be successful if the species utilized is an element of the greenhouse agrobiocenosis and reproduces independently during the vegetation season without additional releases.

For season releases of Coccinellidae the mass rearing is carried out in laboratories. Recently, methods of mass reproduction of coccinellids - coccidophages were developed on the natural and artificial feed. Procedures for industrial breeding of Cryptolaemus montrouzieri Muls., Lindorus lophanthae Blais and Nephus reunioni Fursch. were improved. Season releases of Cryptolaemus montrouzieri Muls. are carried out annually in the Black Sea coast of Caucasus. The seasonal colonization of Coccinellidae is perspective, however, its use is still restricted due to difficult rearing of larvae and beetles.

Natural mass gatherings of Coccinellidae are of great economic value as the original natural stocks of entomophages. Col-

lections of lady beetles in such gatherings are carried out for the biological control of plant pests. That is why it is necessary to protect the places of Coccinellidae winter gatherings from destructions.

Conservation of the local coccinellid species and increase in their useful role is promising. Owing to a sharp decrease in the number of predatory lady beetles, caused by a mass use of pesticides, the methods of conservation and involving of Coccinellidae into agrocenoses are developed. The integrated system of plant protection is directed to conservation and activization in the activity of natural entomophage populations and closely connected with the problems of nature protection.

One of the important factors for conservation of the number in coccinellids and increase in their effectiveness is the protection of places of mass hibernations. The sowing of nectariferous plants and conservation of unploughed border of roads where entomophages accumulate from the early spring and then migrate to fields favours the involvement of Coccinellidae into agrocenoses. A partial or full annulment of chemical treatment as well as a wide application of biological preparations is also conducive to conservation of entomophages. The useful lady beetles are killed because of lack of knowledge and therefore it is necessary to popularize the information about use of coccinellids and their role in regulation of the number of pests.

ENTOMOLOGICAL RESERVES AS RESERVATIONS OF USEFUL ENTOMOFAUNA

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Kiev Pedagogical Institute named after M.Gorky.

The problem of preserving healthy areals while protecting plants from the vermin resulted in urgent need of intensification of the activity of natural entomophages population as one of the mechanisms regulating the numbers of the vermin. The protection and magnification of useful entomofauna (carnivorous and pollinating species) seems to greatly provided under widely ploughed up soils by means of creating entomological reserves

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ПО ЭНТОМОФАУНЕ СРЕДНЕЙ ЕВРОПЫ

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