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THE STRUCTURE OF THE ECOTONAL COMPLEXES OF CARABID BEETLES (COLEOPTERA, CARABIDAE)

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The ecotonal complexes of carabid beetles have been studied in four different ecotones on the territory of the Berezinsky biosphere reserve by means of pitfall trapping.

It was found that the ecotonal complex may include four groups of carabid beetles:

1, 2 - species that live mainly in one of the bordering ecosystems;
3 - species that are common for both ecosystems;
4 - species that are found mainly in ecotone.

The percentage ratio of these groups is not constant. It differs in various types of ecotones. In some ecotones one or two of those groups may be absent.

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REPRODUCTIVE AND *K*-FACTOR LIFE TABLES OF THE STRAWBERRY BLOSSOM WEEVIL, *ANTHONOMUS RUBI* (HERBST) (COLEOPTERA: CURCULIONIDAE)

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Our studies in the population ecology of the strawberry blossom weevil (SBW) have been developed since 1977. 3 reproductive and 20 *k*-factor life tables of natural populations of SBW on strawberry were constructed. It was found that the rate of development and the rate of oviposition was greatest at 27°C, but fecundity - at 16°C. The net reproduction rate (R_o) at 16, 20 and 27°C was 22,2, 19,4 and 11,4 respectively. The approximate intrinsic rate of increase (r_m*) at optimal thermal conditions (16 and 20°C) was 0,08-0,09 per day. Its value depended greatly on mortality of individuals. In general, survival of males was greater than females.

In 85 % cases females put only one egg in a flower bud, in 13,5 % cases they put two eggs and in 1,5 % cases - three-five eggs in a bud. Some females did not cut buds with eggs and the offspring was doomed to be dead. There was some correlation between the number of double eggs and population density (r=0,634, n=17).

K-factor life table studies showed that survival from egg to adult emergence was very high (about 40-60 %), but total mortality from egg to new egg was typical for insects (95-99,5 %). At the egg stage the interruption of stereotype of females behaviour during oviposition was the main mortality factor (k=0,08-0,09). The larval and pupal mortality was mainly caused by parasitoids *Bracon intercessor* Nees, *Pteromalus (H.) grandis* Walker, *Trichomalus* sp., *Lestodiplosis* sp. and sometimes by invasion of bacteria *Pseudomonas* sp. We could not find proven method for predicting the success of natural agents. The recognition of the key factor (or factors) in autumn and winter was also an open question.

The reproductive strategy of SBW will be discussed.

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COMPARATIVE INVESTIGATIONS ON CARABID FAUNA IN A INTENSIVELY AND A EXTENSIVELY CULTIVATED VINEYARD

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1994 in a 0,5ha vineyard which hat been fallow for 2 years was ecological cultivation was established. During the time of establishment the effects on vegetation and fauna were investigated and compared with a intensively used and treated vineyard. Major attention was payed to the ground beetles (Coleoptera: Carabidae). 12 pitfall traps were emptied all the year round on both acreages. On the vineyard under ecological cultivation 43 species occured of which 9 were endangered and one species, (*Acupalpus interstitialis* Reitter) first time recorded for Germany. The intensively used vineyard was habitat to only 16 species.

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RELATIONSHIP BETWEEN NUTRITIONAL AND THERMAL REQUIREMENTS OF *Trichogramma pretiosum* RILEY, 1879, REARED ON DIFFERENT HOSTS.

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The biology of *Trichogramma pretiosum* was studied on *Anagasta kuehniella*, *Corcyra cephalonica* and *Sitotroga cerealella* at six constant temperatures (18, 20, 22, 25, 30 and 32°C), in order to determine the parasitoid thermal requirements when reared on these hosts. The thermal requiriments was calculated based on hyperbole method. The life cycle of this parasitoid increased as the temperature decrease in all hosts tested. The life cycle of *T. pretiosum* was shorter when reared on *A. kuehniella* than on *C. cephalonica* and *S. cerealella*. The thermal constant was higher when the parasitoid was reared on *C. cephalonica* (159,77 day-degree) and *S. cerealella* (156,26 day-degree) than on *A. kueniella* (129,39 day-degree). The lower temperature threshold was 10.05; 10.51 and 11.77°C when the parasitoid was reared on *C. cephalonica*, *S. cerealella* and *A. kueniella*, respectively.