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SEASONAL CHANGES IN THE POLYMORPHOUS
STRUCTURE OF TWO POPULATIONS OF
LAND MOLLUSKS *Bradybaena fruticum* (Müll)

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The boundaries of natural populations of polymorphous species may be determined by correlating the frequencies of occurrence for different phenotypes in the populations. By correlating the frequency of occurrence of "striped" and "unstriped" forms of *Bradybaena fruticum* it was established that bottom woodlands (on the left bank of the Kama River, Sarapul, Udmurtsk ASSR) are inhabited by two distinct populations of this species, occupying two regions which are not significantly isolated [Khokhutkin, 1971]. In estimating the stability of the apparent boundary it is of primary importance to take into account any possible seasonal variation in the polymorphous structure of these populations. For this reason, observations of seasonal changes in the ratio of the two species were conducted. Collection took place in quadrants with previously accepted enumeration at the beginning of June, July, and September, 1972.

The results of the count in the first region of the woods were: in the first quadrant 649, in the sixth 308, in the seventh 530, in the eleventh 135 specimens. In the second region of the woods 354 specimens were collected; in the transitional zone between the two regions 238 specimens. To estimate the reliability of the variance in the ratio of the two forms by month, the validity criterion t was used.

Let us first survey the changes in the polymorphous structure of the population inhabiting the first region of the woods. The quantity of organisms of the unstriped form in the first quadrant changed from 70.5% (June and July) to 73.0% (September), with $t = 0.46$. In the sixth quadrant the quantity of organisms of the unstriped form dropped from 86.7% (June) to 79.0 and 79.6% (July and September), with $t = 1.59$. In the seventh quadrant the quantity of organisms of the unstriped form increased from 75.2% (June and July) to 79.8% (September), with $t = 1.04$. All these variances are statistically unreliable.

Observations in the newly selected quadrant 11, located at the southern extremity of the first region of the woods, also indicated statistically significant ($t = 0.85$) variance of organisms of the striped form: from 82.4 to 88.1% (July and September).

In the second region of the woods, observations were conducted in the first quadrant. The variance in the ratio of frequencies of occurrence of the two forms from 90.2% in June to 86.8 and 88.3% in July and September is statistically insubstantial ($t = 0.47$). In the zone of intergradation, the unstriped form constituted 89.0% in the first two months and 94.6% in September ($t = 0.66$).

Thus, during the course of one vegetative season differences in the ratios of frequency of occurrence of the phenotypes were not observed within the same quadrants in various regions of the woods: the variances revealed do not exceed limits of the average values, characteristic of each population.

LITERATURE CITED

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