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*Wm Alexander*

# ABSTRACTS

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205. CAUSES OF THE DECREASE IN SPECIES NUMBERS WITH ALTITUDE.  
Gordon Alexander, University of Colorado.

Numbers of species in most taxa decrease with increasing altitude, species of Colorado Orthoptera decreasing markedly. This decrease is much greater when we consider resident species alone than when we add the accidentals; hence, numerous additional species would occur as residents at higher altitudes if able to complete their life cycles. The decrease in numbers of species of Orthoptera is relatively much greater than the decrease in numbers of species of flowering plants, suggesting that the decrease in orthopteran species is not due primarily to a reduction in the number of biotic niches. Species of Orthoptera have relatively larger populations at higher than at lower altitudes, too, suggesting that the decrease in species numbers cannot be due primarily to a reduced primary productivity during the growing season. Various factors are involved in the altitudinal gradient in species diversity, but seasonal life history studies of Orthoptera indicate that, for them, the major ones are related to climate, more specifically the differences in adaptability of different species to the progressively shorter growing season at higher altitudes.