

adjoining area whenever that area assumes conditions favorable for the support of an increased population. The return of spring causes the favorable conditions in the north, and the spring migration is the evidence of the overflow. The approach of winter influences life in the same manner, but the overflow, or migration is in the opposite direction.

Mr. Allen has very aptly applied the saying that "Nature abhors a vacuum," and suggests that migration is the only manner in which a zoölogical vacuum, in a country whose life-supporting capacity is a regularly fluctuating quantity, can be filled by non-hibernating animals.

That this view is correct, I do not think can be doubted, but there is another factor in the case that does not seem to have been generally perceived,—a fact that strengthens the foregoing reasoning manifold. True, Mr. Newton, in his 'Dictionary of Birds' has suggested it, but without apparently perceiving what a powerful factor it must prove in the case. I refer to the effect of the large increase of life in the breeding season, in an already thickly populated country, such as the southern stations must be just previous to the spring migration, coincident with the opening up for settlement of a vast adjoining and practically unoccupied territory, by the seasonal recession of the winter ice cap. Under the "Law of Malthus" we find a country to the south of us, populated to its fullest extent during the winter. Spring comes, and nearly every pair of birds has a nest full of young, requiring great quantities of food. The food demand must be increased to many times what it was before. There would, of course, be an increase in this food supply, due to the influence of spring, but it would not be in proportion to the demand. This inadequacy of the food supply is brought home to us very clearly if we reflect upon the fact that it takes the whole northern hemisphere to support the species in the summer that all through the winter were confined to a very limited territory: and that even then, during the time of greatest dispersal and food supply, the competition is always keen. Considering, then, that this great increase in population happens contemporaneously with an equal growth of the food producing territory due to the return of spring, it does not seem at all wonderful that the birds should migrate to utilize a