

from Bechuanaland for *M. fringillaris* Auct. nec *Alauda fringillaris* Sundev., which belongs to the genus *Botha* and represents apparently a species distinct from any in the group. A further account of the collection in the Stockholm Museum will be found in Lönnberg's article, in 'The Auk' for October 1926.—W. S.

Rowan on Photoperiodism and Migrations.—This important paper¹ as explained by its author deals with the factors which cause birds to migrate at definite seasons—not with the origin, significance or purpose of migration. Changes in food supply, weather conditions, temperature, etc. cannot be regarded as immediate stimuli to migration but may affect it to a greater or less extent in different species. These factors are too variable in character to be the stimuli of migration which is markedly regular.

What we must look for to explain it is a stable influence as regular as the migration itself. This the author suggests is to be found in, (1) an internal physiological *impelling* factor supplied by the reproductive organs when in a particular state of development and activity, and (2) an environmental *controlling* factor provided by the varying day lengths, increasingly longer in spring and shorter in autumn, corresponding to the time of migration.

By increasing the day length by use of artificial light Juncos kept in outdoor cages in Alberta with a temperature descending at times to 52 below zero developed their gonads prematurely while Juncos kept in cages subjected only to the light received from the sun failed to develop in this respect beyond the winter minimum. Juncos exposed to the extra amount of light also departed at once when liberated, while those kept under normal conditions at this station, far north of their winter habitat until the regular winter minimum of gonad development and then liberated under varying weather conditions, showed no inclination to migrate at all.

Much interesting discussion and details of the experiments leading up to the author's conclusions are presented and should be read by those interested in migration.

The more extended claims of the influence of light on migration as advanced by several writers are considered in detail.

Prof. Rowan is to be congratulated upon a valuable contribution to a subject even yet but little understood, especially in connection with the ingenious experimental method that he has applied to it.—W. S.

Recent Publications by Kuroda.—Dr. Nagamichi Kuroda has recently published a handsome little volume² on the 'Birds of Fujiyama' in which 148 species are listed with lengthy annotations. There are many text-figures of mounted birds, skins and nests from photographs and two color plates of birds, one of eggs and a map of the famous mountain. Un-

¹ On Photoperiodism, Reproductive Periodicity and the Annual Migrations of Birds and Certain Fishes. By William Rowan. Proc. Bost. Soc. Nat. Hist., Vol. 38, No. 6, pp. 147-189. December, 1926.

² Birds of Fujiyama. By Nagamichi Kuroda, Dr. Sc. 1926. pp. 1-237 + 1-10.