REMARKS ON ALLEN'S RULE

By Charles H. Blake

To begin with, I commend Selden Spencer on giving both the means and standard deviations of his two chickadee samples (EBBA News 32:167). This enabled me to show that, in fact, there is no statistical difference between the mean wing lengths using the t-test and no statistical difference between the two standard deviations using the Chi-square test.

I think most of us now forget that in spite of the fact that Joel Asaph Allen was a fine ornithologist, he was primarily a mammalogist. It seems quite reasonable to suppose that short ears, snouts, and legs in mamals would decrease the heat loss since these parts have considerable circulation and, in the case of the first two, both thin skin and short hair. However, the situation is very different in birds. The part of the wing that we measure consists almost entirely of feathers which have no circulation. No one has ever measured the length or the area of the fleshy parts of wings to relate their size to Allen's Rule. Similarly, the beak and the exposed tarsi and toes have very little circulation, as compared with the corresponding parts in mammals. A number of years ago Dr. Charles P. Lyman pointed out that birds fall into two physiological groups; those with warm feet, such as the chicken; and those with cold feet, such as the gulls. The significant point here is that this difference depends on the temperatures at which the nerves in the exposed portions cease to perate. I do not have the exact figures, but certainly below about 40^{o} the nerves in a chicken's leg or a mammaliam leg cease conducting whereas in the cold-footed birds the nerves continue to conduct down to temperatures below freezing.

Box 613, Hillsborough, N. C. 27278

A STATISTICAL NOTE ON COMPARING VARIATION IN WING-LENGTH

By Jack P. Hailman

Spencer (EBBA News, 32: 167-169, 1969) concluded that one population of chickadees was more variable in wing-lenth than another on the basis of differences in standard deviations (hereafter "SD"). There is a difficulty of interpretation with such comparisons that is worthy of attention, since it applies widely. The SD is a measure of the "absolute" variation, and as such it increases linearly with the value of the mean in most naturally occurring variables. Therefore, if two means are equal and the SD's differ, one can conclude that there is a difference in variability between the two populations; likewise when the larger SD is coupled with the larger mean alone, and not represent a greater relative variability.

Taxonomists, recognizing this problem in most linear measurements of animals, quite commonly adjust the variability measure by dividing by the

mean ($\bar{x}$). This statistic is called the coefficient of variation (CV) when multiplied by 100 and expressed in percent:

$$CV = 100\ SD/\ \bar{x}$$

Using the means and SD's provided by Spencer, I calculate the Vermont chickadees to have a CV of 4.28% and the New York birds 4.39%. Therefore, analysis further supports Spencer's conclusion that the New York data are more variable (although it should be noted that this difference could easily be due to the fact that different banders measured the birds in the two locations, and thus the variation may not be in the birds themselves).

Department of Zoology, University of Wisconsin, Madison, Wis. 53706

NEW BOOK ON AGE & SEX DETERMINATION

As first announced in the last issue of EBBA News, "A Bird Bander's Guide to Determination of Age and Sex of Selected Species" by Merrill Wood may be obtained for $3.00 (Penna. residents add 18¢ sales tax) from Box 6000, University Park, Pa. 16802. Checks should be made payable to the Pennsylvania State University.

KALBFLEISCH FIELD RESEARCH STATION - SUMMER 1970

The American Museum of Natural History, with support from the National Science Foundation, will consider applications from college undergraduates for participation in a program of ornithological research at the Kalbfleisch Field Research Station in Huntington, Long Island, N.Y., during the summer of 1970.

Applicants must be proficient in the field identification of the land birds of New York. The research program provides training in censusing breeding birds, mist netting, banding, aging and sexing birds through surgery, sound recording and playback techniques, preparation of museum specimens, etc. Students are in residence for twelve weeks and receive a stipend of $720. Applications must be filed not later than March 1, 1970. Write to Dr. Wesley E. Lanyon, Dept. of Ornithology, American Museum of Natural History, New York, N.Y. 10024.