GENERAL NOTES

Correction for band loss.—The hypothesis that mortality rate of adult birds is approximately constant with age (Nice, 1937; Kraak et al., 1940; Lack, 1943a, b) has, over the last 25 years, steadily transmuted into an axiom of avian ecology. Several studies on mammals have reported similar mortality patterns but these appear to be by-products of invalid analysis or of dubious data (Caughley, 1966). Consequently, the constant rate of adult mortality for birds might bear closer examination in case it is also artifactual.

As loss of bands is usually a major problem in bird studies (Lovell, 1948; Blake, 1951; Hickey, 1952; Rowley, 1966; Fordham 1967), this source of bias on mortality statistics has been examined to provide a correction factor. Band loss will become less frequent when monel metal finally replaces aluminum alloy in the construction of bands, but in the meantime almost all published mortality statistics of birds must be considered biased to some degree. Correction factors should be applied to them before they can be accepted as giving realistic trends of mortality with age.

Farner (1949) suggested that the proportion of double-banded birds losing one band would provide an index of band loss. His index is here elaborated into a direct estimate of the rate at which bands are lost. For the purpose of calculating correction factors, birds in a fledgling cohort must be banded on both legs with distinctive bands, perhaps anodized, but which do not differ structurally from those used in routine single-banding. After t years an observed sample including birds of this cohort will contain D birds still double-banded, S birds retaining only one of the two original bands, L birds that have lost both bands, and a remainder that is not part of the originally double-banded cohort. Only birds in the D and S sub-samples can be recognised as such. It follows from binomial theory that the number of birds in this sample that have lost both bands after t years (L_t) is given by

$$L_t = S_t^2/4D_t$$

and that the probability (P_t) that a fledgling originally banded with only one band will have lost that band by age t is

$$P_t = S_t/ (2D_t + S_t).$$

Having solved P_t, survival records of birds originally single-banded can be corrected for band loss. If the apparent sampled number of birds single-banded as fledglings has dropped to n_t after t years, then the true number N_t can be estimated from

$$N_t = n_t / (1-P_t),$$

a correction becoming increasingly important with age. For full correction of a survivorship schedule, P_t must be calculated for each meaningful value of t, or at least for sufficient such that the trend of P on t allows extrapolation.

This correction provides a close approximation, not a complete solution. The inexactness stems from the underlying assumption that loss of one band is independent of the loss of the other. It is abstracted slightly from nature.

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Sparrow hawk predation on a meadowlark.—On January 8, 1971,while trapping Sparrow Hawks (*Falco sparverius*) northeast of Lafayette, Boulder County, Colorado, I flushed a male Sparrow Hawk which had just struck down a Western Meadowlark (*Sturnella neglecta*). When flushed, the falcon released the meadowlark, which flew approximately ten yards before it was again knocked to the ground by the falcon. Upon turning the car around and returning to the site of the attack, the Sparrow Hawk was observed picking at the meadowlark. The stopped car caused the Sparrow Hawk to flush again. On attempting to fly, the falcon had difficulty getting off the ground and one foot was still clutching the prey. It could not be determined if the Sparrow Hawk was attempting to carry the bird or merely had been unable to release its "locked grip"—a phenomenon common among many of the raptors I have worked with.

When the Sparrow Hawk finally flushed, it flew to a perch seventy-five yards away. The car was moved to a point several hundred yards away and the falcon was observed for fifteen minutes. At no time did the Sparrow Hawk show any interest in returning to its prey. My previous trapping experience with these falcons has shown that they usually will return to the prey.

After observing the Sparrow Hawk and seeing no sign of interest, I drove by and threw a balchatri trap somewhat modified from the trap described by Berger and Mueller (1958, *Ring*, **17**: 86-88). The falcon made a quick response to the trap which was baited with a black laboratory mouse, and was caught on the second pass. Weight of the Sparrow Hawk was 104.2 grams.

On returning to the meadowlark, I found it still alive and capable of short flights. Failure to interrupt the falcon would surely have resulted in a kill. There was considerable bleeding and feather loss around the base of the meadowlark's skull, the usual location of a Sparrow Hawk's killing bite. The meadowlark was weighed and recorded at 87.5 grams. John B. May (1935. *"The Hawks of North America"*) lists the Western Meadowlark as one of the largest birds taken by Sparrow Hawks. A. K. Fisher (1893. *"The Hawks and Owls of the United States"*) also lists the meadowlark as a prey item.

A note by Donald Lamore (1956, *Wilson Bull.*, **68**: 154) offers a list of other avian prey of the Sparrow Hawk with average weights for each. This observation offers further evidence of the relatively large prey items occasionally taken by the Sparrow Hawk.—Bruce R. Wolhuter, 5109 Williams Fork Trail, Apt. 110, Boulder, Colo. 80301.

Recovery of a five-year-old Ovenbird.—On 30 September 1970, a banded (67-00436) adult female Ovenbird (*Seiurus aurocapillus*) was found dead after hitting the newly-erected WDBO-TV tower near Bithlo, Orange Co., Florida. The specimen was among 149 Ovenbirds collected that day. She was very fat and weighed 24.0 g. Her ovary measured 4.8 mm. The Ovenbird was banded near Ft. Meade, Maryland, by Chandler S. Robbins. It was one of four immatures and two adults banded on 2 September 1965. The specimen was taken in a mist net and did not repeat later at any subsequent time. At the time of being banded, the immature (incomplete ossified skull) was a transient with a fat class of 2 (on a scale of 3) and weighed 25.4 g. Undoubtedly, the immature was undergoing her first fall migration. From the banding date to the recovery date, the Ovenbird was 5 years and 28 days old. The specimen is preserved as a study skin in the Bird Collection at Florida Technological University.

We thank Mr Chandler S. Robbins for giving us additional information on the Ovenbird.—Walter Kingsley Taylor and Bruce H. Anderson, Department of Biology, Florida Technological University, Orlando, Florida 32816.