

GENERAL NOTES

Survival of Mourning Doves Unaffected by Withdrawing Blood Samples—Birdbanders and game managers are often reluctant to allow public health officials or wildlife disease investigators to draw blood from birds under their jurisdiction. The main concern is that the bleeding procedure and associated handling will induce stress and trauma which might increase morbidity and mortality. It has been our experience that the degree of concern is inversely related to the size of the bird. In this report, we present observations on a free-flying Mourning Dove (*Zenaida macroura*) population which was subjected to periodic bleeding and banding as part of an arthropod-borne encephalitis surveillance program.

The doves were captured in modified Stoddard traps baited with cracked corn. Trapping was conducted on abandoned runways at Herndon Airport, Orlando, Florida. The traps were operated on a periodic basis from July 1968 through March 1976. Doves were captured during 40 months of this period with emphasis on the July to October interval each year. Between 50 and 100 birds, with emphasis on young-of-the-year, were bled and banded during each trapping session. A volume of 0.5 cc of blood was drawn from a wing vein of each bird using a disposable glass 0.5 cc syringe with a 25 gauge 1.6 cm needle. Pressure was applied to the site of venipuncture for about 10 seconds prior to each dove's release.

A total of 2,557 individual birds were bled and banded. Due to the frequency of trapping and the small number of birds handled during each trapping session, only 440 (17.2%) were recaptured. Birds captured more than once during a single trapping session were counted only once and not re-bled. Of the 440 doves, 353 (80.2%) were recaptured only once whereas multiple recaptures (2 to 6) were made on 87 (19.8%) birds. The median time of recapture whether single or multiple was 2 months, ranging from 1 to 43 months. In addition, 53 birds banded as juveniles and not recaptured, were harvested by hunters. The median time between bleeding and death was 7 months, ranging from 1 to 31 months. All of these birds, except two, were killed within 100 km of the banding site. The other two birds were shot in Illinois 13 months after banding and bleeding and in North Carolina 28 months after banding and bleeding.

The survival of birds that were banded and bled appears unaffected by the removal of 0.5 cc of blood. If it is assumed that the blood volume of a dove is, on the average, approximately 8% of the body weight (Raveling, *J. Wildl. Manage.*, **34**: 941, 1970), then 0.5 cc represents 6 to 10% of the total blood volume. Removal of this volume of blood did not appear to impair the flight capabilities of the doves, many of which were recaptured one or more times during the same trapping session. The time intervals between initial capture and recapture or harvesting by hunters further suggest that survival is unaffected by bleeding. While there was no control group of doves that were banded but not bled, the percentage of our band recoveries does not differ significantly (χ^2 , $P < .005$) with that reported from Florida (Winston, Florida Game and Fresh Water Fish Commission, Tech. Bull. 2, 1954) and South Dakota (Rice and Lovrien, *J. Wildl. Manage.*, **38**: 743, 1974). The percentage of our recaptures also compares favorably with that recorded by Winston. Therefore, we concluded that removal of 0.5 cc of blood from a wing vein of young and adult Mourning Doves apparently does not affect their survival based on recaptures and band returns.—WILLIAM J. BIGLER, GERALD L. HOFF, AND LYMAN A. SCRIBNER, *Health Program Office, Florida Department of Health and Rehabilitative Services, 1323 Winewood Blvd., Tallahassee, Fla. 32301 and Orange County Health Department, 832 W. Central Ave., Orlando, Fla. 32802.* Received 5 November 1976, accepted 5 January 1977.

Foot-quivering in a Foraging Hermit Thrush.—At 0930 on 20 March 1976, while walking through woods at Sapelo Island, Georgia, I stopped to watch a Hermit Thrush (*Catharus guttatus*) perched at eye level 4 m away. The thrush rested motionless except for an occasional raising of its tail. It suddenly flew to an adjacent shrub to eat several red berries. Then, after a pause in which it rested motionless, it flew to relatively open ground 5 m away, under a live oak (*Quercus virginiana*), and carpeted by the freshly shed leaves of the oak. As soon as the thrush landed, its legs and toes began vibrating with a coarse tremor