

nesting, the fossil evidence of these species tells little about contemporary conditions. There is nothing in this avifauna to contradict the nature of the landscape, vegetation, and climate as postulated by Hibbard (1955. *Univ. Mich., Contrib. Mus. Paleo.*, 12: 203-204). The abundance of duck remains is further indication of marshes and marsh-edged streams and pools. Even as a migrant the presence of a Wood Duck suggests that there were probably at least patches of woods along the lowland streams. The records of pelican and goose point to the existence of fairly large, shallow lakes. Hibbard's suggestion of mixed grasses on some valley walls and on some uplands is supported by the owl remains.—PETER STETTENHEIM, *Museum of Zoology, University of Michigan, Ann Arbor, Michigan, December 3, 1957.*

**New records of the Nashville Warbler in Colorado.**—The Nashville Warbler (*Vermivora ruficapilla*) is comparatively rare in Colorado. According to Dr. Alfred M. Bailey (pers. comm., November 7, 1957), "There are three specimens taken in the state, including one from Mesa Verde, and several sight records, the most recent being from Colorado Springs, May 19, this year."

To these records we wish to add the following: In August, 1954 (exact date not available), a single bird was observed by a biology class under the direction of Daniel, in a shrubby area near the mouth of the Conejos River Canyon, Conejos County, about 20 miles north of the New Mexico border. On November 1, 1957, an individual flew into the window at the home of Mr. and Mrs. Robert Armagast of Alamosa, Alamosa County, Colorado. It was released on November 2, apparently unharmed.

Both of these locations are in the San Luis Valley which is a high (7500 feet), large, flat, intermontane basin on the eastern slope of the Rocky Mountains.—JOSEPH C. DANIEL, JR., ROBERT M. ARMAGAST, AND JULIA W. ARMAGAST, *Adams State College, Alamosa, Colorado, January 21, 1958.*

**Notes on pre-copulatory display in the Starling.**—In a recent paper on the breeding biology of the Starling (*Sturnus vulgaris*), Kessel (1957. *Amer. Midl. Nat.*, 58:257-331) brings together some of the European literature on the sexual displays concerned with pair formation and copulation. The following two observations from the field, however, are presented to point out elements of pre-copulatory display which are not included in Kessel's paper. The first observation was made on April 22, 1956, on the grounds of Harvard University, Cambridge, Massachusetts. A Starling, hereafter called "A," was perched in a tree when first seen, but immediately flew down to Starling "B," perched on a lower limb in the same tree. Bird A alighted on the right side of B, and mutual bill rubbing took place. Both birds assumed a sitting position with the axes of their bodies at about a 45° angle with the limb, and rubbed their bills together in a motion resembling bill wiping on a limb, with the exception that it was slightly slower. Then A mounted B for a brief interval, flying up to a higher limb immediately afterwards. Shortly after, B flew to a limb about six feet lower, and both birds began to preen vigorously. Bill wiping against the limb was prominent in the comfort movements. Then A flew down to the side of B again, and mutual billing took place. A mounted B in the same manner as before, after which both birds sat quietly side by side. The entire sequence lasted about two minutes, and was performed in complete silence, as far as I was able to detect.

This observation points to two exceptions and an addition to Kessel's descriptions. She notes that the female "always" pecks the male in the neck just prior to his mounting, and that a second mating never follows the original one (although she acknowledges that it may happen rarely). Moreover, "courtship-billing" as described here is not mentioned