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A Revised Age/Sex Key for Mourning Doves, with Comments on the Definition of Molt.—The current version of the key for ageing and sexing Mourning Doves (*Zenaidura macroura*) in the Bird Banding Manual (U.S. Fish and Wildlife Service and Canadian Wildlife Service 1977) contains ambiguities and inaccuracies which can cause both adult (AHY) and hatching-year (HY) Mourning Doves to be incorrectly aged. The problems lie with an ornithologically unorthodox use of the term “molt,” and assumption of no geographic variation in the timing of prebasic flight feather molt. These and other ambiguities are corrected below in a proposed revision of the key now appearing in the Bird Banding Manual.

Mourning Doves may be aged externally by 3 criteria. First, juvenal primary coverts have light or buffy edges (Pearson and Moore 1940). Second, the inner margins and tips of the outer juvenal primaries are smooth and light-colored, in contrast to the dark, frayed margins of adult primaries before the fall molt (Wight et al. 1967). If outer primaries have not yet been dropped, summer and fall HY birds can sometimes still be identified even without the distinctive primary coverts. The third ageing method depends upon the timing of prebasic flight feather molt. The fall molt of adult Mourning Doves is on a more or less fixed schedule, while the timing of molt in young birds is relative to their hatching date, which may be quite variable. Working in Missouri, Sadler et al. (1970) suggested that any Mourning Dove having dropped all of its primaries before 1 October is likely to be a HY bird.

The current Bird Banding Manual key uses each of these methods of ageing, including the date suggested by Sadler et al. (1970). Two fundamental errors are made in the use of the third criterion, timing of molt. These are discussed below.

The timing of molt is known to vary geographically in a number of species (e.g., Mewaldt and King 1978, Noskov 1975). For Mourning Doves, Haas and Amend (1979) have compared the timing of primary loss (as part of the prebasic molt) by North and South Carolina Mourning Dove populations to the timing of primary loss by Missouri populations (Sadler et al. 1970). They found that Carolina adults may complete primary loss significantly earlier than Missouri birds. The proposed revised key included here uses the dates of Haas and Amend (1979), minimizing the possibility of incorrectly ageing AHY birds as HY. Examination of the timing of primary loss at additional geographic sites would refine our ability to age birds by date of completion of primary loss.

The current key also errs in its use of the term “molt,” causing HY birds that are actively replacing their outer primaries to be incorrectly called AHY. In such cases neither of the first two ageing criteria can be used; both the primary coverts and the outer primaries have already been lost. Such birds can only be aged externally by the timing of the loss of their primaries. In Couplet 4 of the key in the Bird Banding Manual the bander is asked whether or not “primary molt is complete.” With one or more feathers on each wing still in sheath, I believe the answer of most banders would be that molt is not yet complete. This answer assigns an (incorrect) AHY age to such a bird, and directs the bander to the next couplet, for sexing according to color of crown, nape, throat, and breast.

The intention of Couplet 4 is to determine whether or not all of the primaries have been dropped, regardless of whether their replacement has been completed (M. K. Klimkiewicz, pers. comm.). A positive answer to a question based on primary loss, rather than “completed molt,” leads then to a couplet in which the bird is aged (correctly) according to the calendar date. Sadler et al. (1970 and pers. comm.) used “molt” to mean

feather loss only, as specified in the methods section of their paper. Unfortunately, their use is incorporated into the Mourning Dove key without clarification, leading some banders to age birds incorrectly.

The cause of the confusion is an ornithologically unorthodox use of the term "molt." In common use, this word may have 2 different meanings, indicating either loss alone, or both loss and replacement. However, virtually all ornithologists in this century (e.g., Dwight 1900, Humphrey and Parkes 1959, Palmer 1972, Terres 1980) use "molt" to indicate "not merely the loss, but also—and more importantly—the replacement of part of the integument" (Palmer 1972:69). In fact, the nomenclature of molts and plumages introduced by Humphrey and Parkes (1959) is based on the incoming feather generation, consistent with the fact that the incoming feathers push out the old ones and effect their loss. In technical literature, including ageing and sexing keys, this prevailing ornithological use should be followed, with the simple loss of feathers indicated by terms such as "dropped," "shed," or "lost."

PROPOSED REVISED AGEING AND SEXING KEY FOR MOURNING DOVES

- 1A. One or more primary coverts with white to buff edging See 5
- 1B. No primary coverts with white to buff edgings See 2
 - 2A. Summer/Fall primary loss complete (replacement may be in process or completed) See 3
 - 2B. Some (or all) outer primaries have not yet been dropped (as part of summer/fall molt) See 4
- 3A. May 15–August 31 HY (See 7)
- 3B. September 1–Dec. 31 U (see 7)
- 3C. January 1–May 14 AHY (see 7)
 - 4A. Outermost primaries, not yet dropped, have smooth light-colored inner edges and tips See 5
 - 4B. Outermost primaries, not yet dropped, have dark frayed inner margins and tips AHY (see 7)
- 5A. Latest primary (P) dropped on or before the following date: none, Jan. 29; P1, Feb. 1; P2, Feb. 5; P3, Feb. 14; P4, Feb. 23; P5, Mar. 4; P6, Mar. 13; P7, Mar. 26; P8, Apr. 12; and P9, May 7 SY (see 6)
- 5B. Latest primary dropped after corresponding date in 5A HY (see 6)
 - 6A. HY/SY with latest primary dropped 0–7 Unknown sex
 - 6B. HY/SY with latest primary dropped 8–10 See 7
- 7A. Crown and nape blue or blue-gray and breast and throat clearly washed with pink or rose Male
- 7B. Crown and nape brown or grayish-brown and breast and throat tan Female
- 7C. Not as above (5% to 20% will be intermediate between 7A and 7B depending upon age, time of year, and experience of bander) Unknown sex

ACKNOWLEDGMENTS

I gratefully acknowledge comments on drafts of this manuscript made by Jeffrey Cherry, John Farrand, Jr., Jerry Jackson and, especially, Roy Tomlinson. Correspondence with K. C. Sadler and M. K. Klimkiewicz has also been helpful.

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An Inexpensive Bird Enclosure.—In bird damage research and other ornithological studies, it is often important to exclude birds from an area to assess their effects on crops or insect populations (e.g., Sloan and Coppel 1968, Dolbeer and Woronecki 1979, Holmes et al. 1979). Conversely, one may want to enclose birds in a given location to monitor their behavior or food preferences. In addition, plant breeders often must protect experimental plots from birds to accurately determine crop or seed production rates. This note describes an enclosure design useful for all these purposes. We developed it to assess the effects of Red-winged Blackbird (*Agelaius phoeniceus*) predation on insect populations in cornfields. Other enclosure designs (e.g., Mitterling 1966, Campbell et al. 1981) are more expensive and require more time for construction.

The following materials are needed for one 6.1 × 9.14 × 2.4–3.6 m enclosure. The dimensions of the enclosure could be easily modified. Enclosures up to twice the size described are possible with this design. Approximate 1983 prices are shown in parentheses.

- (1) a 15.2 × 10 m (50 × 30') section of Toron crop protection netting® [J. A. Cissel Company, Inc., P.O. Box 339, Farmingdale, NJ 07727 (\$35)] The mesh size which we used was 2.2 cm square. A larger mesh would probably not exclude warblers and other small birds.
- (2) 6 furring strips (rough-cut lumber: 4 strips 3.05 m long and 2 strips 4.27 m long (\$7–9).
- (3) 12 "one inch" fence staples (\$1).
- (4) 60 m of #18 nylon twine (\$2–4).
- (5) 4 tent stakes (\$2–4); wood wedges can be substituted.

The total cost of materials was \$48–54. A small step ladder, post-hole digger, tape measure, 2 m "hoisting stick," and a hammer are also needed during construction.

Before beginning field construction, the net and furring strips should be pre-cut to the desired specifications. Two fence staples should be placed about 3 cm from one end of each furring strip (one on each side, half way into the wood). It is helpful if the approximate locations where the 4 corner posts (the shorter furring strips) will support the net are marked on the net with flagging tape. The pre-cut net can be conveniently transported in a burlap sack.

At the enclosure site, the locations of the furring strips should be carefully measured and marked. The 2 longer strips should be centered in the middle of the area (see Fig. 1A). Use the post-hole digger to set one end of each strip about .5 m into the ground. Do not put the end with the staples in the hole. Tightly repack the soil around the strips. When all the posts have been set, place the netting along the long dimension of the