

effectively," Storer suggests that, in the smallest alcid, further reduction in wing area "might prove too great for effective use underwater." He cites this as the adaptive significance of gradual molt of the remiges in *Aethia* (*Ptychorhamphus* and *Cyclorhynchus* also have gradual remige molt according to the Stresemanns).

In diving petrels, large alcids, murrelets, and the Dovekie, wing area may be reduced to near the loading limit for dynamic flight, but the limit is probably critical only during takeoff when the birds seem to expend great energy in order to attain flight speed. Two large alcid species plotted by Greenewalt (Smithson. Misc. Coll. 144(2), 1962, fig. 2) have much lower relative wing areas than other bird species of similar body weight; the Puffin, *Fratercula arctica*, and Dovekie in the same graph also have relatively low wing areas. Any further reduction in wing area or weakening of the supporting surface through gradual molt of the remiges might make these diving birds flightless. The Stresemanns believe that they are flightless for a much shorter period with synchronous wing molt than they would be if they underwent a gradual molt. I agree with this interpretation of the adaptive significance for synchronous remige molt in both families. Furthermore, based on my at-sea observations, I believe that Murphy's assumption that diving petrels are dependent on their powers of flight

only for reaching the breeding burrows is erroneous. I frequently observed individuals of *P. garnotii* off northern Chile and *P. magellani* and *P. urinatrix* in southern Chilean and Argentine waters in flight, and apparently not always just to escape the ships I was aboard. Birds up to 500 yards or more away took off and flew low over the waves. Some dropped into a dive after flying less than 50 yards, but others continued in the air for a minute or two. Although no fish or sharks were seen nearby, they might have disturbed the birds and yet escaped my notice in rough water. Submarine predators may have played a major role in the evolution of synchronous wing and tail molt in diving petrels.

*P. garnotii* is about the same size as the Dovekie, murrelets, and large auklets, but the smaller diving petrels such as *P. urinatrix* are nearer the small auklets in size. It is unclear why the smaller diving petrels and alcids should differ in mode of wing molt. Two basic questions about wing molt in diving birds suggested by this discussion may best be answered during field studies: (1) observations will show whether the smallest alcids can really fly during gradual wing molt, and (2) experimental clipping of one or more primaries will reveal whether diving petrels and larger alcids would be flightless during gradual wing molt.

Accepted for publication 18 April 1967.

## HORNED LARK AND BLACK-BILLED MAGPIE FROM THE PLEISTOCENE OF NEBRASKA

JAMES TATE, JR., and LARRY D. MARTIN

University of Nebraska State Museum  
Lincoln, Nebraska 68508

The study collections of the University of Nebraska State Museum contain several fossils from the Late Pleistocene (Wisconsin) loess deposits of Nebraska. A complete account of the stratigraphy of these deposits is given by C. Bertrand Schultz and Thompson M. Stout (Amer. J. Sci. 243:231, 1945). In these collections are some bird bones and partial skeletons, two of which are reported here.

University of Nebraska State Museum specimen (UNSM) 30143 is a partial mandible of a Horned Lark (*Eremophila alpestris*) from Wiggin's (Smith) Canyon, in sec. 5, T. 10 N, R. 25 W, Dawson County, Nebraska. The specimen is most similar to a male specimen of *E. a. alpestris*. The other specimen (UNSM 20025) consists of the pelvis, parts of both tibiae, both tarsometatarsi, and one phalanx of the Black-billed Magpie (*Pica pica*), from Midway Canyon, in the SW  $\frac{1}{4}$ , sec. 6, T. 9 N, R. 24 W, Dawson County, Nebraska. Both of these species are presently permanent residents in the grasslands of western Nebraska.

Other fossil animal remains that were collected from Wiggin's Canyon include *Citellus richardsoni*, *Geomys bursarius*, *Microtus ochrogaster*, *Sigmodon hispidus*, and unidentified amphibians and snakes.

*Citellus richardsoni* is now restricted to the southern panhandle of Nebraska, whereas the Cotton Rat (*Sigmodon hispidus*) is known from only a single locality in southeastern Nebraska (Jones, Univ. of Kansas Publ. 16:127, 212, 1964).

Accepted for publication 23 May 1967.

## CHANGING STATUS OF THE BRONZED COWBIRD IN ARIZONA

R. ROY JOHNSON

Department of Biology  
University of Texas at El Paso  
El Paso, Texas 79999

and

BERNARD ROER

Roer Bird Farm, 6553 N. 27th Avenue  
Phoenix, Arizona 85017

A Bronzed Cowbird (*Tangavivus aeneus*; RRJ no. 1037; immature male?) taken in Phoenix, Arizona, is the first reported winter specimen north of Tucson. There are occasional winter sight records of this species for central Arizona, including several of our own (see Phillips, Marshall, and Monson, *The Birds of Arizona*, 1964:174). The A.O.U. Check-list of North American Birds (1957:542) lists the Bronzed Cowbird as wintering "north, rarely, to southern Arizona (Tucson)." During the seven years between the publication of the Check-list and *The Birds of Arizona* (Phillips, Marshall, and Monson, *op. cit.*) this species became a regular but uncommon wintering bird in Tucson.

In addition to extension of winter range, the breeding range of the Bronzed Cowbird has enlarged in the northern sector. Although there were sight records from the lower Colorado River as early as 1950 (Phillips, Marshall, and Monson, *op. cit.*) and a specimen was taken there in 1955 (Monson, *Condor* 60:191, 1958), the first substantial indication of breeding there was not published until 1966 (McCaskie, Stallcup, and DeBenedictis, *Condor* 68:596, 1966). In addition, the species has also increased in numbers within its previously known range at Phoenix (authors' records), Tucson (Johnson's records), Globe (L. L. Hargrave, personal communication), and other localities in Arizona.

Accepted for publication 28 March 1967.