were then fed from the outside while the adult clung to the entrance. Sometimes, the adults would rest a few moments on a nearby branch. However, at other times, they flew back into the forest in search of food, making a curious bumblebeelike sound with their rounded wings. Feces were cleaned out of the nest by the adult birds.

At this time of the rearing, it seems that the parents do not have time to eat frequently. The stomachs of both adult birds were empty. An examination of the stomach contents of the nestlings showed fragments of plant-hoppers (Homoptera), cockroaches (Blattidae, Orthoptera), and larvae of Coleoptera.

The adults were collected by hand while they were feeding the nestlings. While skinning them, we noted that only the female had an incubation patch, thus suggesting that only the female bird takes part in the incubation.

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SYNCHRONOUS WING AND TAIL MOLT IN DIVING PETRELS

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There is little published evidence concerning the mode of wing and tail molt in diving petrels of the family Pelecanoididae because so few specimens have been collected during this pelagic phase of their life history. Murphy (Oceanic Birds of South America, 1936, p. 777) and the Stresemanns (J. Ornithol. 107:295, 1966) have suggested that they molt all the remiges synchronously. Murphy does not specify whether he examined molting museum specimens or merely made at-sea observations on live flightless Potoyuncos, *Pelecanoides garnotii.* The Stresemanns personally examined no diving petrel specimens in wing molt but cite a letter from Falla describing two *P. urinatrix* with primaries in synchronous molt found dead on New Zealand beaches. They infer that diving petrels molt all the primaries together as do the larger northern-hemisphere alcids, including the murrelets, *Endomychura,* and the Dovekie or Little Auk, *Plautus alle,* which is the morphological and ecological counterpart of the southern-hemisphere diving petrels. They present no data on the mode of tail molt in either diving petrels or alcids but found near-synchronous tail molt in the short-tailed fulmarine petrels of the genera *Daption, Thalassoica,* and *Pagodroma.*

Braulio Araya has sent me a single female *P. garnotii* in full wing and tail molt that he collected at sea, 1.5 nautical miles west of the Estación de Biologia Marina, Montemar (Valparaiso), Chile, 24 November 1964 (USNM 487565). All of the primaries and secondaries are just emerging from sheath and are still shorter than the new coverts on both upper and under surfaces of the wings. The rectrices are in near-synchronous molt; only one old feather remains (probably the 3rd from the outside on the left side) and most of the rest have just broken sheath. Both upper and under tail coverts are fresh and fully grown. No data on gonad size were recorded at the time of preparation, but Murphy (*op. cit.* p. 776–777) states that the species breeds throughout the year off Perú where he indicates that a complete molt takes place in the population from August through October. Presumably, however, molting birds such as the female from Chile could not have any nesting duties during the flightless period.

Storer (Proc. XII Intern. Ornithol. Congr. 1960, p. 696), in discussing diving birds in general and alcids in particular, maintains that the wings of flying birds that also use their wings in underwater propulsion "represent a 'compromise' adaptation, . . . selection favoring large wings for aerial flight and . . . small wings for underwater use." Because wing loading increases allometrically owing to the 2:3 exponential relationship between area and volume, larger birds must either fly faster or have proportionately larger wings than small birds. This probably imposes an evolutionary upper size limit on flying alcids that must also use the wing as an underwater paddle. As diving birds become smaller in the evolutionary sense, the relative difference between optimal wing area for flight and diving becomes less, and in small alcids the partly folded wing is more nearly optimal for underwater use. Although during simultaneous molt of the remiges "large alcids still use their wings effectively," Storer suggests that, in the smallest alcids, 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 *Cyclorrhynchus* 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.

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

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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 ¼, 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).

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CHANGING STATUS OF THE BRONZED COWBIRD IN ARIZONA

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A Bronzed Cowbird (*Tangavius 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.

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