

To summarize: a group of 24 nest sites visited in 1935 has been revisited at intervals of about five years since then to determine the percent of these 24 nest sites which is occupied. The percent of occupied nest sites for the years on which visits were made is: 1935, 83; 1940, 46; 1946, 54; 1951, 67; 1956, 33 (or possibly as high as 50).—JOSEPH C. HOWELL, *Department of Zoology and Entomology, University of Tennessee.*

Nest of the Military Macaw in Durango.—The Military Macaw (*Ara militaris*) is a conspicuous inhabitant of the pine-oak forests of the Sierra Madre Occidental in the Mexican state of Durango. On July 2, 1957, Leslie C. Drew, John K. Greer and I were collecting in these mountains at a place approximately 8800 feet in elevation, located twenty-nine miles south and twenty-eight miles west of Vicente Guerrero. On an eastward-facing slope, we found three Mexicans engaged in felling a large, dead pine tree (*Pinus* sp., probably *montezumae*). These men, had located the nest of a pair of Military Macaws in a cavity in the tree and wished to obtain the young birds to sell. As the chopping continued, the parent birds, calling loudly, either flew up and down the canyon or perched in dead pines nearby. When the tree was felled, the cavity was found to contain two crushed, white eggs with embryos no more than 100 hours old.

The nest tree measured 80 feet high and 31 inches in diameter four and one-half feet above its base. The nest cavity was situated about 60 feet above the base at a place where the tree was 22 inches in diameter. The opening of the cavity measured 11 inches wide and 6½ inches high. The cavity was 29½ inches deep and 13 inches in diameter at the widest place. There were a few green feathers and coarse sawdust as nest material on the floor of the cavity. The hole, according to the men, had been excavated by the "pitorreal" (local name for the Imperial Woodpecker, *Campephilus imperialis*) and subsequently taken over by the macaws.

Macaws are widely sought by residents of the mountains, because they are marketable as pets. The woodcutters told us that nestling birds bring as much as 25 pesos from buyers in the mountains and as much as 60 pesos in the city of Durango. Financial assistance for the field trip on which these observations were made is acknowledged from the Michigan State University Development Fund—ROLLIN H. BAKER, *Michigan State University, East Lansing, Michigan.*

Why Two Breast-Bands on the Killdeer?—When renewing acquaintance with American birds last summer, I was puzzled by the fact that the Killdeer (*Charadrius vociferus*) possesses two black breast-bands, while many other species of the genus, like the Semipalmated Plover (*C. semipalmatus*), the Piping Plover (*C. melodus*), Wilson's Plover (*C. wilsonia*), the Ringed Plover (*C. hiaticula*) and the Little Ringed Plover (*C. dubius*) have only one.

On reflection, I concluded that this must be the effect of scale. The breast-bands (and other dark markings) of these plovers are clearly cryptic in function, serving primarily to break up the bird's outline and also to assimilate its pattern to that of the background. We can presume that the scale of the visual components of the background is approximately the same for all species (except perhaps for the more uniform background of *C. melodus* and perhaps other forms). Too great an increase in absolute size of ruptive markings would make for conspicuousness. If so, a large increase in size, as in the Killdeer, cannot be adaptively met by increasing the width of a single band, but only by replacing one band by two of approximately the same width.

The surface areas of these plovers will be roughly proportional to the square of the length. The following table, based on the "Handbook of British Birds" and Peter-

son's "Field Guide to the Birds", gives the average length and the proportionate surface area (computed by squaring the lengths) of the North American and European species with complete or almost complete breast-bands.

<i>Species</i>	<i>Length in inches</i>	<i>Proportionate surface</i>
<i>C. dubius</i>	6	36
<i>C. melodus</i>	7	49
<i>C. semipalmatus</i>	7¼	52
<i>C. hiaticula</i>	7½	56
<i>C. wilsonia</i>	7¾	60
<i>C. vociferus</i>	10	100

The surface areas of the smaller species are about half (from less than ⅔ to ¾) of that of the Killdeer. This fits in with the view that an approximate doubling of surface scale will necessitate a doubling of the number of breast-bands. It would be interesting to know whether there are any other cases of increase in number of ruptive-assimilative markings to meet increased absolute size.—JULIAN S. HUXLEY, F.R.S., 31 Pond Street, Hampstead, London, N. W. 3, England.

Ed. Note.—There are several species of *Charadrius*, much smaller than the Killdeer and about the size of *C. hiaticula* or *C. wilsonia*, which also have two complete breast-bands. For example, *C. falklandicus* of southern South America and *C. tricollaris* of Africa have two black or blackish bands, and *C. bicinctus* of Australia and New Zealand has a black and a chestnut band. In respect to these, Dr. Huxley points out (*in litt.*) that research on the comparative ecology of the various species of *Charadrius* is needed to test his stimulating suggestion.

Mourning Dove Growing a New Tail.—The note on a Black-capped Chickadee (*Parus atricapillus*) growing a new tail (A. A. Saunders, Auk, 73: 560, 1956) is interesting to compare with a similar case in the Mourning Dove (*Zenaidura macroura*). This dove lost its tail completely in the Henneys' banding trap at Garden City, Long Island, N. Y., on March 11, 1940. By March 27 it had a small but perfect new tail, on April 18 the new tail was about half grown, and on April 28 the tail was just appreciably shorter than full grown. Replacement of the dove's tail took something like 48 days, against 21 days for the chickadee's.—NELLA B. HENNEY AND J. T. NICHOLS, Garden City, N. Y.

Hearing Ranges for Several Species of Birds.—Schwartzkopff (1955a, 1956) has published reviews on hearing in birds with a table of the hearing ranges of sixteen species as reported in the literature. An abbreviated version of the review, including the table from the earlier paper, was published in English (1955b), but as printed (Auk, 1955: 341) the table contained certain errors. Prof. Schwartzkopff has given us permission to correct and supplement his table and to include published data as to six additional species.

The upper limit of hearing in birds has been determined with reasonable certainty for only fourteen species; in general it falls within the range of 12,000–20,000 cycles per second. Only Schwartzkopff (1955a), using the very sensitive electrophysiological methods, has reported responses above 20,000 c.p.s. The upper limit reported for man is also about 20,000 c.p.s.