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.

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

The surface areas of the smaller species are about half (from less than ⅖ to ⅗) 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.

TABLE

HEARING RANGES FOR SEVERAL SPECIES OF BIRDS
(SUPPLEMENT TO TABLE 1, SCHWARTZKOPFF (1955b[1]))

Species	*Lower limit cs./sec.*	*Highest sensitivity cs./sec.*	*Upper limit cs./sec.*	*Method*	*Author*
Aythya valisineria	190	—	5,200	D	Edwards, 1943
Phasianus colchicus	250	—	10,500	D	Stewart, 1955
Columba livia	200	—	7,500	D	Brand and Kellogg, 1939a
	<300	1,000–4,000	—	C	Heise, 1953
Bubo virginianus	300	—	8,000	D	Edwards, 1943
Otocoris alpestris	350	—	7,600	D	Edwards, 1943
Sturnus vulgaris[2]	700	—	15,000	D	Brand and Kellogg, 1939a
	—	2,000	—	D	Trainer, 1946
Passer domesticus	675	—	11,500	D	Brand and Kellogg, 1939a
Serinus canarius	1,100	—	10,000	D	Brand and Kellogg, 1939b
Plectrophenax nivalis	400	—	7,200	D	Edwards, 1943

D = conditioning. C = cochlear potentials.

[1] In Table 1, Schwartzkopff (1955b), which is based on Tabelle 2 of Schwartzkopff's (1955a) German review, there is an error: the four cases in the column headed, Upper Limit, in which the symbol, < (less than), is used should have this symbol reversed to > (greater than).

[2] In Table 1, Schwartzkopff (1955b) the *Sturnus vulgaris* data were erroneously attributed to Granit (1941), who did not study this species.

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Hummingbird Feeding Preferences.—The pioneer research of Dr. Curt P. Richter of Johns Hopkins has shown that when experimental animals are offered a free choice of the elements of a diet they choose in accordance with their physiological needs and that when the needs are changed (as by an artificially produced diabetes, for example) the choices change, and that taste is the guide. In other words, what tastes best is actually best. With this in mind an experiment was set up to test the preferences of hummingbirds for the following sugars: sucrose, or common beet sugar; dextrose, or glucose; levulose, or fruit sugar; galactose, or milk sugar; maltose, or malt sugar; and saccharin, the substitute for sugar. These were made up into syrups using equal parts (by volume) of sugar and water, with the saccharin solution having a sweetness estimated to be equal to that of the sucrose solution. The experiment was made on August 15–29, 1957 at the Cherokee Ranch near Sedalia, Colorado, where a hummingbird feeding station has been maintained for a number of years.