TABLE 1

Population	Wing length			Tail length			Bill length			Tarsus length		
	R.	M.	S.D.	R.	M.	S.D.	R.	M.	S.D.	R.	M.	S.D.
"A" (7)	126–135	130	—	57–64	61.4	—	17–21	19.2	—	26–30	27.6	—
"B" (18)	120–134	129	4.66	57–66	61.4	3.49	18–23	20.3	1.33	23–28	25.8	1.35
"C" (26)	121–132	126.9	2.89	56–64	59.1	2.11	18–21	19.6	.75	24–29	26.2	1.45
"D" (33)	116–125	119.8	2.91	53–61	55.7	2.27	16–20	17.8	.94	22–27	24.3	.95
"E" (32)	114–129	122.5	3.22	53–60	56.5	2.02	15–19	17.2	1.00	22–26	24.3	1.13

TABLE 1. Mensural data for the five populations of the *Charadrius hiaticula-semipalmatus* complex. The symbols used are: R = range of the measurements, M = the mean, and S.D. = the standard deviation. All measurements are in millimeters. The sample size is given in parentheses after the letter designating the population.

The Pleistocene history of the shorebirds has been recently reviewed by Larson (1957, Acta Vertebratica, 1: 1–84). Following his data, I have indicated the glaciated areas on the map and shown the divisions between the three main refuges for shorebirds—Europe, Siberia-Alaska, and eastern North America—by the heavy double lines. Larson postulates, and quite correctly I believe, that *hiaticula* was present in Europe during the last advance of the ice sheets and *semipalmatus* was present in eastern North America and possibly Alaska at this time. Whether any member of this complex was present in most of Siberia at this time is still a matter of question. The important fact is that the ice sheets formed first and melted last in western Europe and eastern North America, thereby separating *hiaticula* and *semipalmatus* longer in this region than in the Bering Straits. Thus it is possible that the two forms met and interbred at the Bering Straits long before their ranges overlapped on Baffin Island.

These are the facts of the past and present distribution and of the geographic variation of external features. No definite conclusion can be deduced from them; more field work and collecting must be done in the Bering Straits before we can reach a final answer. However, the available evidence argues more for interbreeding of *hiaticula* and *semipalmatus* in the Bering Straits than for a reproductive gap between the two forms. Thus, I would recommend that *hiaticula* and *semipalmatus* be considered members of a single species which exhibits circular overlap. I must emphasize that this is only a suggestion, not a final decision; we must maintain an open mind until conclusive evidence has been gathered.—WALTER J. BOCK, *Biological Laboratories, Harvard University, Cambridge 38, Mass.*

Estimating a Hummingbird Population.—Having had a hummingbird feeding station for a number of years in my own garden in Denver, Colorado, and another on the Cherokee Ranch, 25 miles south of Denver in rough pine and scrub-oak country, I have found it of interest to work out a method for estimating the number of birds coming to the feeders. The basic requirement is for a type of feeder which does not leak or drip and which excludes other birds, bees, wasps, and in fact all customers except hummingbirds. The feeder I now use meets these specifications. An accurate record can be kept of the output from such a

feeder and, if we have some idea of the consumption of syrup per bird per day, we can estimate the total number of customers.

Based on a number of experiments and observations over the years, I now use a syrup made of equal parts, by volume, of granulated sugar and tap water, and I figure the consumption per bird per day at one-eighth of an ounce of syrup. This figure is based on a single female Broad-tailed Hummingbird *(Selasphorus platycercus)* in my garden a few years back, plus a thirteen-day record for two young Broad-tails confined in the Bird House at the Denver Zoo. The average for the single female was 0.128 ounces of syrup per day and that for the two in the Bird House, 0.115 ounces per bird per day. Both figures are close to one-eighth ounce. This figure, I think, errs somewhat on the conservative side, that is, it gives a population figure under, rather than over, the actual. Using it I have had interesting results in the past three years.

In 1956 at the Cherokee Ranch station on July 24 a peak estimate of 166 birds was made. At this time the resident Broad-tails had young fully grown, or nearly so, and many migrating Rufous Hummingbirds *(Selasphorus rufus)* were present. At the peak in 1957 on August 10 no Rufous Hummingbirds were in the area and the total population was estimated at 37. What caused the great drop from the previous year was not apparent, but it was evidently not a strictly local matter as I had a number of reports from other places in Colorado where the experience was the same. In 1958 it was necessary to move the station about half a mile and in mid-June, before hatching time, the population using the feeders was figured at 25. The peak count, on August 9, was 33. Again no Rufous Hummingbirds appeared, though they were seen at various other places in this area.—WALKER VAN RIPER, *Denver Museum of Natural History, Denver, Colorado.*

A Chipping Sparrow nest in which eight eggs were laid and seven young reared.—On May 29, 1958, at 8:30 P.M. I found the nest of an Eastern Chipping Sparrow *(Spizella passerina passerina)* four feet, one inch from the ground in a small Norway spruce in the yard of our cottage one-half mile from the shores of Lake Michigan, in Section 7, Laketon Township, Muskegon County, Michigan. An incubating female flushed from the nest which contained seven eggs. I was very much surprised at the large set of eggs. The next morning, May 30, the nest contained, at 6:00 A.M., eight eggs. The eggs were of two different sizes in groups of four. Four measured 17.4 x 12.8, 17.4 x 12.6, 17.4 x 12.5 and 17.1 x 12.6 millimeters; the other four, 16.0 x 12.6, 16.5 x 13.4, 15.8 x 12.8 and 16.6 x 13.0 millimeters. The last set weighed 6.7 grams; the first set, 6.2 grams. The egg shapes of the two groups also differed some and the spots at the larger ends were blacker in the first set, dark gray in the second set with a few blackish spots. Four other Chipping Sparrow nests were found the same week-end, within 200 feet from the above nest. All of these were located in coniferous trees and in three the females were laying. The other had a full complement of four eggs. The final complements in all were four, as is usual for first sets here in Michigan. Second sets are sometimes four, sometimes three eggs.

On June 9, a female was incubating the eight eggs but on June 13, the nest contained seven young about two days old and one unhatched egg. The seven young were banded on June 15 and as I watched the nest, three adults fed the young. All three birds were in the tree above the nest with food at once and all fed the young in this nest. Two of the adults were banded. On June 21 all seven young left the nest.