flock drank two and one half gallons of water from a container in my garden. It was a common happening to see limbs of trees bending under the weight of the birds, and to see them perched on television antennas. On April 30 and later, they were noted chasing one another through the tree-tops, perhaps evidence of courtship. Their principal food seemed to be the green seeds of Siberian elm, and the buds of cottonwoods. They also ate the buds from my cherry trees.

These large numbers were especially notable in view of the fact that up to this time there were only two published records of the occurrence in New Mexico (F. M. Bailey, 1928. Birds of New Mexico, pp. 591–592; and P. R. Snider *et al.*, Audubon Field Notes, **13**: 236, 1959), in which but 23 and 26 individuals were seen, respectively. I understand that during the winter of 1958–59 a great flight of Bohemian Waxwings occurred into many parts of the western United States where they are not usually seen.—JENS KNUDSEN JENSEN, *133 Mesa Verde Street, Santa Fe, New Mexico.*

Northern Birds from a Florida Indian Midden.—Remains of an unusual number of northern birds are contained in midden material submitted for identification by Ripley P. Bullen of the Florida State Museum. The site, Green Mound midden, is located eight miles southeast of Daytona Beach, Florida. It is underlain by dune sands and is composed of about 65 percent oyster shells, 25 percent coquina shells, and 10 percent clam shells. Excavations were made by Mr. Bullen and Frederick W. Sleight of the Central Florida Museum, in collaboration with the William L. Bryant Foundation. The tested portion of the midden was twenty-five feet high. The dates used here are estimates made by Mr. Bullen based on partial returns of radio-carbon determinations. Archaeologically the midden represents both the St. Johns I and St. Johns II periods. Mr. Bullen estimated that the age of the bottom of the mound was A.D. 500, and that of the top to be A.D. 1200.

The birds identified to the species level are as follows:

Gavia immer. Common Loon—Six elements representing both St. Johns I and St. Johns II periods.

Morus bassanus. Gannet.—One incomplete left tarsometatarsus, St. Johns II.

Phalacrocorax auritus. Double-crested Cormorant.—Six elements representing both periods.

Branta bernicla. Brant.—One left carpometacarpus, St. Johns II.

Cathartes aura. Turkey Vulture.—One partial right ulna, St. Johns II.

Larus marinus. Great Black-backed Gull.—Two partial left humeri, one incomplete right humerus, and one incomplete right ulna, representing at least three individuals from St. Johns II.

Larus argentatus. Herring Gull.—Eleven elements representing both periods.

Larus atricilla. Laughing Gull.—One left tibia, St. Johns II.

Alca torda. Razorbill.—One left ulna, St. Johns II.

Three of the species identified are northern forms, rare or unrecorded in Florida today. *Branta bernicla* winters accidentally in the state. *Larus marinus* is a rare winter straggler. *Alca torda* has been reported as far south as South Carolina, but this is the first record of this species in Florida. The other species identified are common in Florida today either as permanent residents or as winter visitants.

It is interesting to note that the three northern species were all from early

deposits of the St. Johns II period, and date approximately A.D. 850-900. The presence of these species suggests that the climate was colder at that time.

I am indebted to Dr. Pierce Brodkorb for the use of his skeleton collection, and for checking my identification of these bones.—J. HILL HAMON, *Department of Biology, University of Florida, Gainesville, Florida.*

Effects of High Air Temperature on the Bill and Claw Keratin Structures of the Tree Sparrow.—During studies on the energy balance of Tree Sparrows (*Spizella arborea*), captive birds subjected to high air temperature developed abnormalities in the bill and middle claw.

Six birds, four males and two females, trapped on February 5, 1958, near Urbana, Illinois, were immediately confined in experimental cages measuring

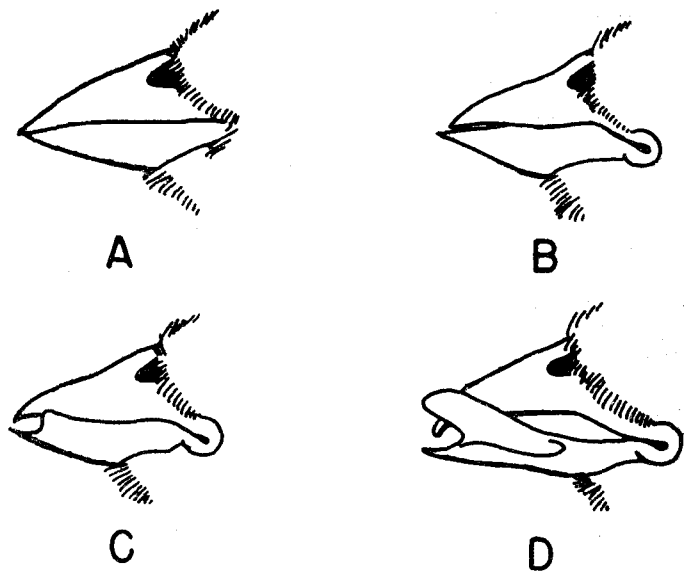

FIGURE 1. Stages in the development of bill deformities of Tree Sparrows at constant air temperatures above 35°C. A. Normal bill. B. After 27 days. C. After 37 days. D. After 44 days.

5 x 10 x 10 inches high, subjected to light at 10-hours photoperiod and air temperature of 10°C (50°F). On February 12, the temperature was raised to 30°C (86°F), on March 10 to 35°C (95°F), and on March 18 to 39°C (102.2°F). By March 21, one bird's lower mandible extended beyond the maxilla and small upward growths had appeared on each side of the mandible. All birds were then shifted back to 37°C (98.6°F), and the photoperiod was raised to 15 hours. On March 31, three of the six birds had mandibular growths. On April 2, all birds were placed at 39.5°C (103.1°F). By April 4, three had noticeable mandibular projections, two showed the elongated mandible, but the sixth did not develop a defect until April 7.

Stages in the development of this defect are shown in Fig. 1. The maximum growth, stage D, has two lateral mandibular projections that point forward and