

Additional Information on the Red Crossbill Breeding in the Lower Piedmont of North Carolina in 1967

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The erratic wanderings of the Red Crossbill (*Loxia curvirostra*) are well documented (Griscom, 1937; Bent, 1968). Griscom emphasized the difficulty in determining racial identity of some individuals because of the complicated taxonomy; birds in the southern Appalachians posed a particular problem. Pearson, Brimley, and Brimley (1942) list two subspecies for North Carolina, *L. c. pusilla* and *L. c. bendirei*, the former considered to be the breeding bird in the Smoky Mountains, while the *A.O.U. Check-list* (1957) gives *L. c. minor* as the breeding race in this area.

From one to eight Red Crossbills were present in the vicinity of Raleigh, Wake County, N.C., from 12 March (Jones, Browne, and Lewis, 1967) to 6 May 1967 (Hader, 1969). On this latter date I collected three crossbills on the north shore of Lake Johnson on the southwest side of the city as they fed on cones of loblolly pine (*Pinus taeda*) at an estimated height of 21 m. The first published account of these birds that I collected was by Hader (*Ibid.*) in his annotated list of birds of Wake County. The specimens are now in the collection at the U.S. National Museum. The three birds were an adult male and female and a juvenile female. The gonads of the male were almost destroyed by shot pellets. The adult female was in breeding condition. Examination of the ovary after it had been preserved in 70% alcohol showed one ruptured follicle, and the three largest ova were 9.0, 4.7, and 2.6 mm. The juvenile showed practically no ossification in the parietals and frontals and the tips of the mandibles were barely crossed. The juvenile bird was probably still being fed by the parents, although this was not witnessed in the field. Harrison B. Tordoff examined the juvenile and estimated it to be about 5 weeks old. In view of the degree of bill development and age of the bird, it is believed to have hatched in the general vicinity of Lake Johnson, for it probably was too young to have moved in from a more distant location.

Measurements for the three specimens are given in Table 1. Allan R. Phillips examined the three specimens and identified them as *L. c. benti*. This form is currently the race recognized as breeding in the Rocky Mountains and western edge of the Great Plains (*A.O.U. Check-list*, 1957).

Although no nest was found, the breeding condition of the female and the presence of a juvenile with an uncrossed bill and skull not yet ossified constitute evidence of breeding in the general vicinity of Raleigh. This area, with elevations ranging from 98 to 152 m above mean sea level, is in the lower piedmont. The coastal plain lies 48 km (30 miles) E and 16 km (10 miles) S. The nearest known breeding crossbills are in the Great Smoky Mountains National Park (Stupka, 1938), 402 km (250 miles) W. Johnston (1963) and others watched a female, accompanied by a male, carrying nesting materials on two occasions near Highlands, Macon County, on 27 July 1963, but did not locate the nest. More recently, LeGrand (1971) noted birds in northern Wake County on 23 and 30 May 1970 and at William B. Umstead State Park 3.7 km NW of Raleigh as late as 17 June in 1970. He suspected but found no actual evidence of breeding in that area. Also in 1970, Carter (1971) had crossbills in the central Carolina Sandhills in the upper coastal plain as late as 2 June, but no breeding activity was noted.

This report is the third record strongly indicating the breeding of Red Crossbills in North Carolina, although through the years there have been numerous sightings throughout the spring, summer, and early fall. An actual nest of this species has not yet

TABLE 1. Measurements of three specimens of the Red Crossbill collected near Raleigh, N.C., in 1967 (weigh in g, other measurements in mm).

Specimen	Weight	Wing	Tail	Tarsus	Bill		
					Length	Depth	*Width
Adult male USNM 565199	36.1	93.5	57.0	16.3	17.9	10.2	U 8.2 L 10.9
Adult female USNM 565197	38.1	89.5	51.5	16.0	17.3	9.9	U 8.0 L 10.0
Juvenile female USNM 565198	36.1	87.0	51.0	15.2	12.8	8.5	U 7.7 L 7.3

*Measurements taken at base of bill. U = upper mandible, L = lower mandible.

been found in the state. Breeding in central Wake County probably represents an isolated case of breeding displacement rather than a range extension.

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Fledgling Red Crossbills at Newfound Gap

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On Monday, 14 June 1965, Beth Lacy, 3129 McClure Lane, Knoxville, Tennessee 37920, and I spent the day in the vicinity of Clingman's Dome, Indian Gap, and