

ble information on the subject in hand, which I shall always mention in connection with his name.

Finally, all the species recorded in the succeeding papers have actually been obtained by either Mr. Brown or myself, and though a number met with by other workers in the same field have escaped our united efforts, the list will be found to embrace several birds not before recorded from Arizona.

(To be continued.)

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## THE RED CROSSBILL (*LOXIA CURVIROSTRA STRICKLANDI*) IN KANSAS.

BY L. L. DYCHE.

WHILE walking along one of the streets near the State University, Lawrence, Kans., on November 1, 1885, I observed a flock of about twenty plump little birds, about the size of English Sparrows. They were hopping about the road, apparently picking up particles of food. Occasionally they would utter a few chirps and fly to a low tree just over the fence, but only to return and alight in the road again. Some of the birds were red, with dark wings, others were of a gray color showing yellowish green blotches. At that moment, while I stood gazing under the influence of the electrical shock of ornithological pleasure produced by my rare discovery, two gentlemen happened to be passing on their way to church. I pressed them hard with the scientific importance of the situation, and insisted on their watching the birds while I rushed for my gun. I returned in less than five minutes and found the men diligently watching some Sparrows in an old tree near by. I mourned this grievous mishap until November 5, when, during a drizzling rain storm from the northeast, I again observed the birds, apparently the same flock, in the top of a tall tree near the University campus. I was so fortunate this time as to secure four good specimens, two males and two females.

HABITS OF THE BIRDS.—The birds remained in this vicinity (apparently within a mile or two of the University grounds) until

January 26, 1886, at which date I saw them for the last time, just at sunrise, sitting on the top of a tree. Notwithstanding the fact that January, 1886, was the coldest month (mean temp.  $14.32^{\circ}$ ) recorded by Professor Snow, who has kept a record for nineteen years, the birds might be seen almost every day feeding on the hemp stalks near the University. During stormy weather they would take shelter in the cultivated evergreens which stood in neighboring yards. At such times it was possible to approach within a few feet of them, and when disturbed they would only fly to the next tree. When the weather was pleasant, and when they were not feeding on the hemp stalks, the birds would spend most of their time flying from the high trees of one grove to those of another. At night they would roost in the evergreens, apparently preferring the pines. I never saw the birds on the ground but once, and that was when I found them in the road. They remained with us almost three months, during which time I collected forty specimens, twenty males and twenty females. The specimens are in the University Museum. All the birds were dissected and carefully examined in order that their food habits might be accurately ascertained; but not a trace of any kind of food except hemp seed was found in the entire forty specimens.

**RARITY OF THE BIRDS IN THE STATE.**—Although the Crossbills have been common in this locality during the past three months, the species has never been reported, before this winter, as taken in this State. Mr. V. L. Kellogg reports taking a pair December 23, out of a flock of about a dozen, at Emporia, seventy-five miles southwest of Lawrence. Professor D. E. Lantz reports taking two November 21, at Manhattan, about a hundred miles west. On December 25 I saw a small flock thirty miles west, on the Wakarusa, which I think were of the same species.

**IDENTITY OF THE SPECIES.**—I have not hesitated to call the birds *stricklandi*, because I think the measurements, particularly those of the length of the bill and its depth at base, prove the birds to be the Mexican form beyond all doubt.

Believing that the measurements of such a large number of specimens from one locality will be of interest to ornithologists for comparison, etc., I give the following carefully prepared list of the forty specimens, representing an equal number of males and females:

	Length.	Alar Extent.	Wing.	Bill to Base.	Depth of Bill at Base.	Upper Mandible Turns to the	Sex.
	6.55	10.75	3.55	.75	.42	Right.	♂
	6.40	10.95	3.60	.72	.40	Right.	♂
	6.75	11.75	3.75	.82	.45	Left.	♂
	7.00	11.25	3.63	.76	.45	Right.	♂
	7.00	11.30	3.75	.79	.46	Right.	♂
	6.70	11.00	3.65	.71	.44	Left.	♂
	6.30	10.70	3.58	.71	.43	Right.	♂
	7.00	11.50	3.75	.76	.43	Right.	♂
	6.30	10.80	3.45	.70	.43	Right.	♂
	6.56	11.37	3.79	.77	.46	Left.	♂
	6.88	11.10	3.75	.78	.48	Right.	♂
	6.60	11.20	3.75	.82	.43	Right.	♂
	6.50	11.00	3.60	.75	.44	Left.	♂
	6.70	11.00	3.65	.75	.41	Left.	♂
	6.70	11.70	3.80	.78	.47	Left.	♂
	7.10	11.55	3.75	.78	.47	Left.	♂
	6.83	10.75	3.60	.76	.48	Left.	♂
	6.50	10.75	3.60	.83	.48	Right.	♂
	6.42	10.85	3.50	.75	.40	Right.	♂
	7.00	11.28	3.65	.83	.47	Right.	♂
	6.55	10.25	3.35	.70	.39	Left.	♂
	5.90	10.00	3.28	.65	.42	Right.	♂
	6.55	10.45	3.47	.73	.45	Left.	♂
	6.90	10.75	3.50	.71	.42	Right.	♂
	6.50	10.94	3.52	.77	.44	Left.	♂
	6.95	11.95	3.50	.77	.42	Left.	♂
	6.60	10.50	3.50	.74	.45	Left.	♂
	6.25	10.60	3.45	.66	.40	Right.	♂
	6.35	10.85	3.53	.78	.46	Left.	♂
	6.45	10.62	3.40	.66	.44	Left.	♂
	6.60	11.62	3.40	.72	.42	Right.	♂
	6.00	10.75	3.56	.73	.45	Left.	♂
	6.25	10.50	3.50	.72	.37	Left.	♂
	6.50	10.70	3.50	.76	.44	Right.	♂
	6.12	10.45	3.50	.73	.42	Right.	♂
	6.75	10.75	3.50	.77	.47	Left.	♂
	6.55	10.85	3.50	.76	.43	Left.	♂
	6.53	11.10	3.53	.78	.47	Right.	♂
	6.10	10.50	3.38	.66	.42	Right.	♂
	6.34	10.65	3.42	.70	.43	Left.	♂
Average. }	6.689	11.127	3.657	.766	.445	Right, 20	♂
	6.437	10.739	3.464	.725	.430	Left, 20	

[Mr. Dyche has very kindly sent me for examination twenty-nine of the Crossbills above referred to. They are essentially similar to Colorado specimens and considerably smaller than *stricklandi* as represented in Southern Arizona. There can be little doubt that they came into Kansas from the westward, probably from the Rocky Mountains north of the New Mexico line. Under Mr. Ridgway's recent arrangement\* they would be

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referred to *L. c. bendirei*, but this proposed race was rejected by the A. O. U. Committee in drafting the Check List, and, I believe, wisely.

North American Red Crossbills from whatever locality vary excessively in size as well as color. The largest birds occur in Southern Arizona and Mexico, but in a series of twenty specimens from the former region I find a number which are smaller in every respect than the largest Colorado examples, and several which are also smaller than our largest New England birds.

I have recently examined upwards of one hundred of the latter taken in Northern New England at the height of their breeding season (February). All were shot by the same collector in the course of two or three days and in the same locality. The diversity in general size, size and shape of bill, and color, which they present is enough to convince any one that these characters are subject to a wide range of variation and are not dependent, except within broad limits, on geographical considerations. Three or four of the largest birds are larger, in every way, than the small extremes among the Arizona specimens; many would come within the limits of size established by Mr. Ridgway for *bendirei*; while the remainder would be referable to *minor* (= *americana*), the smallest of the three forms. Between the largest and smallest birds there is a perfect connecting series. There is great diversity in respect to the size and shape of the bill. The mandibles are short and heavy in some specimens, long and slender in others. In some the upper and lower mandibles are nearly equal in thickness (a character ascribed to *stricklandi*), in the majority the upper mandible is much the heavier of the two.

Mr. Ridgway gives *bendirei* as occurring in winter, in Massachusetts *Minor* associates with it at all seasons and both breed together in the same woods in Northern New England. Is it possible to separate them into two races under such conditions? I believe not, for it seems obvious that the variations just referred to are either purely individual or dependent on age—it matters little which in the present connection. Nevertheless, upon dividing all the material before me into two series, one of eastern, the other of western birds, I find that the latter *average* considerably larger, with relatively as well as actually stouter bills. There seems to be a reasonably constant difference in color, also, the western females being grayer with less and duller green or yellowish on the back, breast and rump, the males of a deeper, richer red than the eastern birds.

A consistent and satisfactory arrangement, as it seems to me, would be to refer all eastern birds to *minor* (= *americana*), all western ones to *stricklandi*. In any case Mr. Dyche's specimens, as well as all that I have seen from Colorado, are apparently much nearer related to the *stricklandi* of Southern Arizona than they are to the Crossbill of our eastern coniferous forests.—WILLIAM BREWSTER.]