

Approaching stealthily a small, isolated pool a pair of Baldpates is very much surprised to be so rudely disturbed and starts off with exclamations of genuine disgust.

We leave the marsh and as we near the farm a fine old Marsh Hawk, with azure on his back and a ray of sunset scattered over the breast, is started from a fence post. Traversing a patch of high weeds we are greeted on all sides by farewells of a restless throng of Tree Sparrows, assembled here to fix the day or rather the night for the approaching departure. With the exception of the Red-wings all birds, which we have met to-day, are only transient guests, and another week or two will carry off the last of them to the northward. The scene will then be changed and will be very different from what we saw to-day, since other forms of life will take the places of the departed ones.



ON THE NESTING OF KRIDER'S HAWK (*BUTEO*  
*BOREALIS KRIDERI*) IN MINNESOTA. 4

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THE following notes are based upon three years' observations in a region quite unfavorable to the Red-tails (*Buteo borealis* group), wherein, nevertheless, though I have never seen a *borealis* proper, I have found *krideri* fairly abundant.

The center of this region lies in Steele County, some sixty miles north of the Iowa line. Northward it extends into Rice County, explored, partially, for fifteen miles. To the westward it extends sixty miles into Nicollet County through a well-wooded region, and is practically unexplored. To the east and south of the central point is no timber for miles at all suitable to Buteo-nine needs.

All this region was originally covered with heavy timber, even far back from the water courses; but the primeval trees are now confined to very small and isolated patches, or to a very few

scattered individuals on steep banks or in deep ravines, along the creeks and rivers. I am hence justified in considering this region unfavorable to the Buteos, yet I have found *B. borealis krideri* fairly abundant, while at no season of the year, though constantly on the watch, have I ever seen a typical *borealis*, or even a specimen that could be considered in the least degree equivocal.

To the southwest of the indicated section lies what may be termed the Heron Lake region. From Mankato, which lies in the timber belt above mentioned, for a distance southward of fourteen miles, I was surprised to find, in an exceptionally well-favored region, no Buteo nests whatever. At Lake Crystal (fourteen miles south of Mankato)—a wooded and watered oasis in the waste of surrounding prairie—I found two pairs of *krideri* breeding. In the vicinity of Heron Lake, a typical prairie region, fifty miles to the south of Lake Crystal and at distances of from one to ten miles from the lake, I have observed some half a dozen specimens of Krider's Hawk; but, in all this region, no examples of *borealis* have been noted. The specimens of *krideri* near Heron Lake undoubtedly breed in the sparse timber along the Des Moines River, whose nearest point to Heron Lake lies about twelve miles away.

At the central point of the Steele County region, four pairs of breeding birds were found; in Nicollet County, one; in Blue Earth County, at Lake Crystal, two. From all these, ten sets of eggs have been taken, eight of which are herein described. All of these nests have come under my personal observation.

SET I.—Owatonna, Rice County, Minn., May 2, 1892. Incubation, two-thirds. Locality, a short, deep, wooded ravine, field girt, one-fourth mile from river. Nest evidently second year in use; of sticks lined with bark strips, grass and adventitious feathers; not large, but deeply cupped, in triple crotch of elm, forty feet up, midway of the large branches. Two eggs: No. 1, rounded oval, 2.26 x 1.86; many very obscure livid patches; large, dull spots of cinnamon, dispersed; spots of darker capping the larger end; very *borealis* like. No. 2, oval, 2.43 x 1.85; a few vague hieroglyphic markings of dull cinnamon, forming a quasi ring at smaller end, thus resembling eggs of *B. swainsoni*. Both birds near nest. Female on nest, and fully identified. The male demonstrative, but shy.

On May 2, 1893, the birds were repairing the above nest, three weeks later than the previous year; but they were driven away or killed.

SET II.—Nicollet Lake, Nicollet County, Minn., May 11, 1892. Incubation, complete. One egg 'pipped,' the other half cast off. Chicks preserved in alcohol. Locality, a heavily wooded island. Nest in a great elm, nearly inaccessible, far out on horizontally spreading branches of a large main bough, at the very top; an old, broad and flat nest, roughly made of large sticks, with hollow, twelve inches in diameter. Lining, fibrous bark, twigs, feathers of small birds. Two eggs: No. 1, oval, 2.27 x 1.28; marbled, chiefly at smaller end, with dull lilac, over-laid with a few spots of dull cinnamon at point; a blotch and a few small spots of dark, dull cinnamon at larger end. No. 2, oval, 2.36 x 1.78; obscurely spotted, over entire surface, with lilac and dull cinnamon, heaviest at larger end, where, a single large, lunate, semi-encircling blotch. Both eggs very *lineatus* like. Female on nest. Both birds fully identified, as they slowly circled, close overhead, with loud and repeated screaming.

These birds bred, the following year, in the same locality, and the female, I believe, was taken with her eggs.

SET III.—Owatonna, Rice County, Minn., May 3, 1893. Incubation, advanced. Locality, the side of a long, deep ravine, one-fourth mile from river, one-half mile from nest I. Nest, in small basswood, midway up, in triple vertical crotch, thirty feet from ground; a slight, new nest of small sticks, bark-fiber, and a very little grass. One egg (incubated); elongate oval, 2.50 x 1.84; everywhere obscurely marbled and blotched with exceedingly pale lilac and cinnamon, heavier near and at the larger end. Female on nest. Fortunately secured, winged by a long high shot. Made little resistance when taken alive. Characterized as follows: Length, 21.75 inches; wing, 16; extent, 50. Iris dark hazel; cere plumbeous yellow. Upper parts throughout slightly blanché. Tail very pale red, subterminally and narrowly brown, white-tipped. Upper breast with a patch of chestnut brown on each side at bend of wing (precisely like the markings of a young Black Tern, though of relatively less area). Entire under parts otherwise perfectly white, save for an obsolescent transverse band of blackish brown (consisting of very narrow shaft-lines) between breast and belly; feathers on sides, under the wings, barred with fulvous.

At ordinary gun-range, this bird like all others observed, appeared underneath to be perfectly white.

On April 22, 1894, a pair of birds were at the above described nest and very uneasy. No repairs on nest, which was not visited by me later.

SET IV.—Owatonna, Rice County, Minn., May 3, 1893. Incubation, far advanced. Locality, the very steep, deep, and heavily wooded bank of river, fringing a cultivated plateau. One mile from nest III. A flat, old nest, far out, nearly over the water, on leaning branch of rock maple, sixty feet up. Large sticks. Lining, soft fibrous bark and grass. Female on nest; when the latter was discovered flew away, showing characteristic markings, but made no outcry, and did not return. Three eggs: No. 1, ovate,  $2.50 \times 1.89$  (cracked and addled); largely unmarked; pale cinnamon blotch at smaller end; a cap of similar blotches at apex, over-laid by a very few dark cinnamon spots. No. 2, rounded ovate,  $2.45 \times 1.87$ ; everywhere, but chiefly at the apex, very delicately marbled with an admixture of pale cinnamon and lilac, beautifully veined with deeper lilac; scattered lilac blotches at smaller end. No. 3, much rounded, ovate,  $2.48 \times 1.98$ ; largely unmarked, apex capped with blotches of cinnamon lilac which are over-laid with three or four daubs of bright, dark cinnamon. This set thus like eggs of *B. lineatus*. The above nest was unoccupied April 22, 1894.

SET V.—May 6, 1894, Owatonna, Minn. Incubation, three-fourths. Locality, a hillside, on a wild 'quarter section' of timber land three miles east of the river; dense undergrowths of hazel, cherry, and poplar; scattered primeval white and black oaks. Nest, two-thirds the distance up a small black oak-tree, at base of small branches, close to trunk. The original nest had blown or settled outward, and the '94 nest was built on its upper edge, thirty-five feet from ground, of sticks, lined with poplar bark, grass and corn-shucks. Three eggs: No. 1, ovate,  $2.49 \times 1.87$ ; white, a circle of longitudinal pale cinnamon streaks about larger end, over-laid with a few darker blotches. Scattered spots over the rest of the surface. No. 2, size, shape, color, quite like the above, save that the streaks center at the apex. No. 3, distinctly pyriform,  $2.50 \times 1.90$ . Whole surface spattered obscurely, and apex crowned, with spots of cinnamon.

A second nest appears to have been built in 1893 by these birds, in a white oak forty rods away, in a valley near the margin of the woodland. This nest was first seen from the highway in March, 1894.

SET VI.—On April 22 following, the above site was revisited. Nest V was unoccupied, but the female *krideri* was found on the nest above indicated, a slight structure, but little more than half the distance up a rather small, primeval white oak, close to the trunk. The deep hollow was lined with corn-strippings. Distance, fifty feet up. Two eggs: No. 1, remarkably like No. 3 of the preceding,  $2.50 \times 1.87$ ; rather pear-

shaped than pyriform; the cinnamon spots a little larger and more scattered, thickest, however, at apex. No. 2, attenuate oval,  $2.50 \times 1.77$ ; scattered spots and scrawls of cinnamon over the entire surface, with a delicate marbled circlet about the smaller end, where, also, a few bright spots.

The kinship between this and the preceding set is very evident. The female remained near the nest, but her mate was for some time invisible. A large blackish hawk (Western Rough-leg?) circling high above, long watched the female, whose mate, as typically colored as herself, presently appeared.

SET VII.—Taken for me at Lake Crystal, Minn., April 30, 1894, in a dense wood bordering a lake. Nest in a fairly large black walnut (a tree quite rare in Minnesota) not half way up, close to the trunk, not large, of coarse sticks, lined with bark-shreds and other fine substances. Identification well established. Incubation, none. Two eggs: No. 1, rounded, ovate,  $2.47 \times 1.88$ ; white, with a few faint, livid and ferruginous markings. A spirally streaked cap of cinnamon-lilac at small end, the streaks not meeting at point. No. 2, nearly sub-spherical,  $2.47 \times 1.90$ . Blotches of lilac tinted with cinnamon, massed at apex. A few scattered spots of the same on remainder of the surface. Thus an exquisitely marked and colored set, the eggs very strikingly unlike.

SET VIII.—On the fifth of May, 1894, I explored the timbered country between Minneopa, near Mankato, and Lake Crystal. Though the region was highly favorable, not a single Buteo nest was found. Reaching the lake at nightfall, I passed rapidly through the singularly venerable belt of ancient, gnarled white oaks bordering the lake, and, just before dark, I stood in an open spot two miles from nest VII, at the base of a great isolated white oak, "feathered to the toes," in which, near the top, in a nearly vertical main branch, was a very large nest. After a half dozen raps with my spur, a hawk reluctantly spread her wings and sailed into the darkness. Identification was impossible. A ridiculously easy climb of seventy-five feet, without spurs, revealed, to my chagrin, but a single egg lying in the large nest-hollow, which was lined with bark-strips and a single corn-cob. On the edge of the nest lay the head and shoulders of a striped gopher. The egg proved fresh. June 9, the nest was revisited at daybreak. The female very reluctantly left the nest, and was clearly seen. Both birds moved noisily about. The nest, recently decked with leafy twigs and flecked with down, con-

tained two eggs. The three eggs taken are treated, arbitrarily, as one set.

Three eggs: No. 1 [May 5], fresh, small, ovate,  $2.32 \times 1.82$ ; white, with bluish tinge. Beautifully painted here and there, chiefly at apex, with small blotches of vinaceous cinnamon, the only egg thus colored and marked in the whole series. No. 2 [June 9], incubation nearly complete. Rounded ovate,  $2.33 \times 1.87$ ; spotted and specked, mostly near apex, with purplish cinnamon, thus intermediate between 1 and 3. No. 3, nearly oval,  $2.34 \times 1.82$ ; specks of cinnamon everywhere; at small end a circlet of stippled and marbled cinnamon blotches.

The nest containing these eggs had been occupied for years. It is situated within forty rods of a farm-house. A number of times, I am told, one bird of the pair has been shot, the remaining bird persistently remating and returning. The eggs were taken in 1892 and in 1893. The tenacity of the birds to this particular nest cannot be attributed to lack of eligible sites.

While loath to generalize, especially on mooted points, I am yet very sure that the eggs in the series just considered much more closely resemble in their markings the eggs of *B. lineatus* than they do those of *B. borealis* proper. As to characteristic traits and habits, I have observed nothing whatever to differentiate Krider's Hawk from the species to which it is allied.

I must mention that a careful collector sent me, in 1893, from Nicollet Lake, he having taken previously a set of Krider's Hawk with parent bird, a set of the eggs of typical *borealis*. These eggs are characteristic of the species, and radically unlike any eggs in my series of Krider's Hawk, except one egg of set I. A nest of Buteos,—not *surely borealis*, and certainly not *swainsoni*,—was taken this season near the city of St. Paul. I am confident that these eggs will prove next season to have been those of Krider's Hawk. I am also confident that a more critical search for and study of the Minnesota Buteos will greatly extend the known breeding range of Krider's Hawk, many 'Red-tail' eggs taken in this and adjoining States being, very likely, referable to the subspecies. I shall be very grateful to any collectors in Minnesota, the Dakotas and Manitoba, who may be kind enough, now or hereafter, to send me their notes on *B. borealis*, and any thoroughly sifted and reliable information as to the occurrence and breeding of Krider's Hawk in their vicinity.