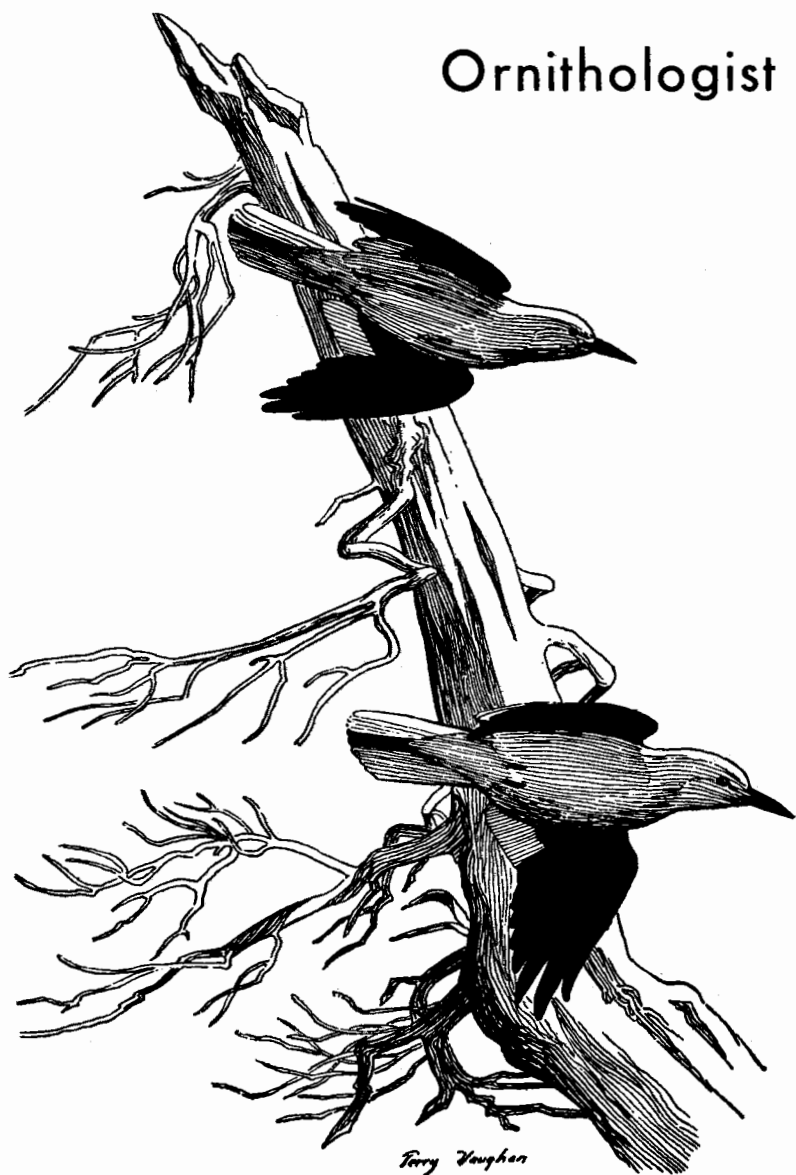


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HARLAN'S HAWK - A CHALLENGING TAXONOMIC AND FIELD PROBLEM^{1/}

Paul R. Julian

In the autumn of 1829, following his three-year stay in Europe, John J. Audubon returned to the Mississippi river country of Louisiana. In November, near St. Francisville, he collected a pair of very dark hawks which he described as a new species. He named it *Falco harlani*, honoring his friend and contemporary, Richard Harlan, the mammalogist. He figured the birds as Plate 86 of the Elephant Folio and titled it 'Black Warrior'.

Audubon tells about the event in the Ornithological Biographies in his characteristic breathless and ungrammatical style. "The hawks now before you were discovered near St. Francisville in Louisiana during my late sojourn in that state, and has bred in the neighborhood of the place where I procured them, for two seasons, although they always eluded my search, until at last, as I was crossing a large cotton field one afternoon I saw the female represented in the Plate standing perched on top of a high belted tree in an erect and commanding attitude."

Like several of Audubon's birds there is a complex and quite fascinating history surrounding his Black Warrior. I do not have space here to relate all that is known, but I will outline briefly a bit of the history of *Falco harlani*, now known as *Buteo harlani*, and append a few notes on plumage comparisons which may be of assistance in field observations.

A glance at Audubon's Plate should be sufficient to indicate to the modern reader that there must be some history attached to this species. His birds are portrayed as having darkish tails with eight very distinct lateral bands of black. What bird did Audubon collect and name *Falco harlani*? The birds figured in his Plate certainly do not resemble the Harlan's hawk of the 5th AOU checklist! And who was the first ornithologist to correctly describe the species as it is now accepted?

From a search of the early ornithological literature it appears that John Cassin (Baird, Cassin, and Lawrence, 1860) was the first to give a description of the adult *harlani* as we recognize it today. There is evidence, however, that Cassin's contemporaries, Baird, Lawrence, Coues, and

^{1/}Presented at the 4th Annual Convention of the Colorado Field Ornithologists, May 21-22, 1966, Boulder, Colorado.

Ridgway, were all concerned with this species. In particular, Lawrence had described the adult a few years earlier and gave the opinion that it was near enough Audubon's description to merit naming it as such.

Audubon's type specimens were apparently lost, a fact which has added to the confused history of this bird. The skins in the British Museum, which are supposed to be those donated by Audubon, are clearly not the birds depicted in Plate 86. Indeed, according to Sharpe (1874) the Museum skins are those of a description in accord with the modern adult *harlani*. Baird, Brewer, and Ridgway (1874) suggested that Audubon's specimens were immature birds, and unhesitatingly accepted the Black Warrior as an immature *harlani*.

In 1890, Ridgway suggested that *Buteo harlani* be suppressed and that the species be reduced to a race of the Red-tail hawk, (then) *Buteo borealis*, partly because the immatures of the two were apparently indistinguishable and because a number of puzzling specimens had been collected which suggested interbreeding between the two.

The early history of the Harlan's hawk was complicated by the fact that the entire *Buteo* family was confused, largely because the phenomenon of chromatism was not then understood. However, it is very curious, and not at all clear from the literature, how the early ornithologists were able to assign the adult *harlani* being collected to a species described by means of immature birds which so closely resembled another species.

The definitive, modern ornithological studies of Harlan's hawk added further to the confused history of this bird. H. S. Swarth published in 1926 an account of his studies of these hawks in northern British Columbia. He gave convincing evidence that the bird bred in a restricted region of that province, migrated through the prairie states, and wintered in the central U. S. For these reasons, he concluded that it was entitled to specific status, although he admitted that the problems of intergrades with the Red-tail were difficult ones.

One year later, the Canadian naturalist P. A. Taverner published a monograph concerned with the *Buteo borealis* (Red-tail) group. Taverner agreed with Swarth on the breeding and wintering range, thus making it evident that Audubon's statement that the birds had bred near St. Francisville must have been based on hearsay - a surmise already made by numerous authors. I might add here as an example of how involved and confused the history of this bird is, that the specimens described by Lawrence and

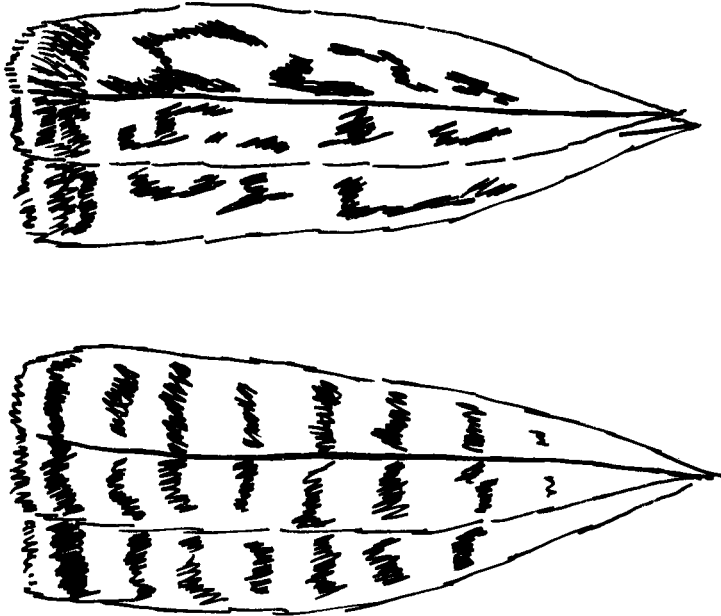
Cassin, which influenced them to associate the birds with Audubon's Black Warrior, were taken in California - a location not at all in accord with Swarth and Taverner's description of the bird's range.

After examining the Red-tailed group, particularly the geographical distribution of the breeding ranges, Taverner concluded that *harlani* was a local chromatic form of the western Red-tail and not a full species as Swarth had suggested. He described the western Red-tail as having 10 to 12 sharp, black lateral bands on the tail, a feature that others including Swarth felt was not diagnostic.

The disagreement existed until 1936 when Taverner published a re-examination of the Red-tailed group and concluded that the longitudinal markings (i.e. parallel to the feather shafts) were definite qualitative characteristics not dependent upon color phase. He concluded that the bird was, therefore, deserving of specific rank. In 1944, the AOU in its 19th supplement to the 4th checklist reinstated *Buteo harlani* on the authority of Taverner and of Peters who listed it as a full species in his Checklist of Birds of the World.

Field identification of the Harlan's hawk is made difficult because the lone diagnostic feature - the dark longitudinal mottling on the upper tail surface - is often hard to see and can be confused with dark markings on the tails of other Buteos. The standard field guides can be supplemented by consulting the black-and-white sketch of rectrices from *harlani* and *B. j. calurus* included with this article, and the excellent color plate by Poole in Birds of Colorado by Bailey and Niedrach. The latter shows, unlike Peterson and Eckelberry in the field guides, a faint reddish cast to the upper side of the rectrices. This reddish background is characteristic of all the skins of mature *harlani* specimens in the collection of the Denver Museum of Natural History, and of the majority of the skins figured in color by Taverner (1927).

An interesting and widely known color plate including *B. harlani* is that by Alan Brooks (e.g. in Roberts, 1936). The specimen portrayed by Brooks was collected when he accompanied Swarth to British Columbia on the expedition that discovered the breeding range of the bird. The inner rectrices show dark longitudinal streaks and the faint wash of cinnamon, but the outer rectrices exhibit distinct dark lateral bands. This skin, as well as others similar to it, was a source of controversy between Swarth and Taverner.



Pairs of rectrices from Harlan's hawk (above) and the Western Red-tailed hawk (bottom). The former depicts the longitudinal streaking characteristic of *harlani*, while the latter shows the lateral banding exhibited by some individuals of *B. jamaicensis calurus*. Drawing by the author.

For comprehensive plumage descriptions of the Buteos (of all the Accipitridae, for that matter) the reader is urged to consult Friedmann, 1950. The following summary of the descriptions of the rectrices of those species that might be confused with Harlan's hawk has been summarized from that source.

Dark Forms

B. harlani--Tail grayish to umber, terminally washed with cinnamoneous in some specimens, longitudinally mottled with fuscous (black) and subterminally crossed by a fairly broad band of fuscous. The ground color of the tail may be dirty whitish, cinnamoneous, or ashy brown, and the amount and extent of the freckling is also variable.

B. jamaicensis calurus (western red-tail)--Rectrices orange-cinnamoneous to dark hazel, subterminally banded with fuscous, and often with some incomplete fuscous bars.

B. swainsoni--Rectrices mouse gray more or less tinged with brownish, tipped with grayish or buff-white, subterminally banded with broad dark-brownish gray, and barred narrowly.

B. lagopus (Amer. rough-leg)--Upper tail surface dark hair brown becoming whitish only on the basal third or less, tipped with whitish with a very broad subterminal blackish bar and anterior to this four narrow bands of same.

B. regalis (Ferruginous rough-leg)--Tail whitish to light gray, outer rectrices washed with clove brown.

Light Forms

B. harlani--Tail white with outer webs of feathers mottled, poorly defined subterminal band of dark brownish gray.

B. jamaicensis krideri (Krider's Red-tail)--Tail variable - pure white subterminally barred with fuscous and with several incomplete bars of same, or with single brown subterminal band, or pale brown tipped with white with subterminal band of darker brown.

Friedmann knows of no way of separating juvenals of *harlani* and *calurus* in any color phase.

Harlan's hawk is, thus, a challenging species. For the professional ornithologist and the taxonomist, Audubon's Black Warrior epitomizes the difficulties in the definition of a species, and today many ornithologists do not regard *B. harlani* as a valid species. For the amateur and field ornithologist, the confusing intergrades and the difficulties of observing the diagnostic features of the Harlan's hawk present a challenge. Sight records of this species should be listed with utmost care.

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RUFIOUS-SIDED TOWHEE RANGE IN COLORADO

George R. Shier

To those of us who live in the Front Range Foothills, the Rufous-sided Towhee is an abounding pleasure much of the year. In the brushy hogbacks and the lower portions of the foothill canyons, this towhee seems to occupy space at the rate of about one pair per five acres of brush during the nesting season, and at a much greater density when the young birds begin to wander about. From Colorado Springs to Fort Collins, the occupied range may average only two or three miles in width, except perhaps in the Black Forest area where it spreads out. This is borne out by the annual spring counts published in Colorado Bird Notes.

Several years ago, I realized that although I lived in the foothills amid the Rufous-sided Towhees, the situation changed abruptly to the east and west. My notes showed very few of this species elsewhere in the State. Spring counts in the eastern and western portions of the State included counts of none to one or two except at Durango, where a few were sometimes noted.

A note from Marjorie Lett, dated 11/24/64, listed only 6 towhees noted in the spring and one in the fall in the South Platte River bottoms near her home at Platteville, Colorado for the years 1953 through 1964; these were noted in only 3 of these 12 years. None of the 6 spring towhees were observed to be nesting. But a short distance to the west in the foothills, Rufous-sided Towhees were numerous.

Mrs. Gail Shickley sent to me notes from the Nebraska Bird Review XXIX: 2-22, contained in a report prepared by Lester L. Short, Jr. in 1961. He reported that the Arcticus race of the Rufous-sided Towhee is common in the underbrush along streams in western Nebraska, but that none were found up the Platte River into Colorado beyond Crook, Colorado. Mr. Short's report was based on Cornell field work in the Central Great Plains in 1955-57. His findings support Marjorie Lett's failure to find towhees further up the South Platte at Platteville.

Mrs. Lett also reported having seen 8 Rufous-sided Towhees at Holyoke, Colorado 4/25/53. Holyoke is on Frenchman Creek, a tributary of the Republican River. Spring counts also usually show one or two towhees at Bonny Lake on the South Fork of the Republican River. These two places are to the south and east of Crook, Colorado on

streams that rise far east of the foothills and presumably receive a few towhees from the east along the Republican River.

In southeastern Colorado, along the Arkansas River, spring counts have listed occasional towhees, but they seem rather rare. Mrs. Shier and I visited the Walsenburg-Trinidad area on April 17-18, 1964 and searched for towhees and found 2 at the foot of Raton Pass, but none at Lathrop State Park or up the Purgatoire River west of Trinidad. In 1966, we made a spring count at Lathrop State Park and found one Rufous-sided Towhee among 81 species there and near LaVeta. Col. and Mrs. Chas. Snyder on the same date made a count in the southwestern part of the San Luis Valley on the Conejos River and failed to find any Rufous-sided Towhees.

Further north in the San Luis Valley at Great Sand Dunes National Monument on June 7-8, 1965, Mrs. Shier and I found 2 Rufous-sided Towhees together in the brush and cottonwoods near the visitor center. Warren H. Hill, the Park Naturalist told us that the Rufous-sided Towhee is a regular summer resident and is presumed to nest in the park. We spent the next two days in the Big Springs area south of Sagauche Creek in the northeast part of the La Garita Mountains. This looked like suitable habitat, but we failed to find the towhee at elevations between 8500-9000 feet. The elevation at Sand Dunes is about 8000 feet and may be about the upper limit for nesting of Rufous-sided Towhees. Neidrach and Rockwell mention a nest at 7500 feet on Look-out Mountain in Birds of Denver and Mountain Parks, but the high density of nesting in the Front Range Foothills is below 7000 feet.

On the Western Slope of Colorado, reports of Rufous-sided Towhees are very scattered and irregular. Oppie Reames has reported a few on spring counts of 1959, 1962, and 1963 for a total of 9 birds as listed in Colorado Bird Notes. Homer Griffin reported two in the Paonia area, 5/21/55 in that year's spring count. James McCrum reported seeing one at the start of a raft trip down the Yampa River in late June, 1965. Mr. Hambly, Park Naturalist at Colorado National Monument, has the Rufous-sided Towhee on his checklist and had them present in April, 1965. A bit later on May 7 and May 10, Mrs. Shier and I were unable to find any towhees in the park or below it. However, on May 8, when taking a census on the Dolores River we found one west of Bedrock near the Utah border.

On June 3, 1966, we found two together above Janeway Forest Camp in Pitkin County in the Crystal River area. Henry Dowd reported from Montrose in April, 1964 that the Rufous-sided Towhee was very unusual in his area. He had heard a report of one about a year earlier.

These scattered reports from Colorado's western slope do not provide any clues as to whether the Rufous-sided Towhee has any regular nesting areas in that part of the State. Much more information is needed, not only here, but all through the State.

There are a number of banders in Colorado and those in the Front Range Foothills have banded some hundreds of towhees. My inquiries to date indicate that although some banded towhees have returned to the original banding stations, none have been reported from other banding stations or through bands found on dead birds. The wintering habits of our Front Range towhees are very obscure. A few are found to be present when the Annual Christmas census reports are compiled, but most birds seem to migrate. Christmas counts in New Mexico and western Texas do not show many towhees and other evidence seems to indicate that our birds do not migrate to that area or into Mexico. Christmas counts in Arkansas, E. Oklahoma, E. Texas and Louisiana do show large numbers of wintering towhees. A note in the excellent Birds of Louisiana states that some of the wintering birds are spotted like the western races and some like the eastern race. If our towhees do migrate to the southeast, it is not known whether they migrate in short hops along the river valleys or in long night flights.

SUMMARY OF COLORADO'S 1966 CHRISTMAS COUNTS

Species	Bldr	Deny	FtCo	IdSp	Lgmt	Love	Nunn	PiPk	RMNP	WeId	Total
Horned Grebe	1	-	-	-	1	-	-	-	-	-	2
Western Grebe	1	-	-	-	-	-	-	-	-	-	1
Pied-billed Grebe	3	5	-	-	-	-	-	-	-	1	9
Great Blue Heron	-	1	10	-	10	2	-	-	-	-	23
Whistling Swan	-	1	-	-	-	-	-	-	-	-	1
Canada Goose	1000	1044	5721	-	864	946	-	-	-	-	9575
Snow Goose	-	1	4	-	3	-	-	-	-	-	8
Mallard	8000	639	7060	1500	8456	4021	-	-	-	1500	31176
Gadwall	-	118	6	-	10	200	-	-	-	-	334
Pintail	24	27	251	-	-	550	-	-	-	-	852
Green-winged Teal	12	15	712	-	7	4	-	-	-	-	750
Blue-winged Teal	3	-	-	-	-	-	-	-	-	-	3
American Widgeon	26	244	139	-	25	70	-	-	-	-	504
Shoveler	-	15	15	-	150	30	-	-	-	-	210
Wood Duck	-	24	-	-	-	-	-	-	-	-	24
Redhead	-	15	3	-	18	1	-	-	-	-	37
Ring-necked Duck	4	60	-	-	150	-	-	-	-	-	214
Canvasback	-	53	-	-	-	-	-	-	-	-	53
Lesser Scaup	-	12	5	-	6	1	-	-	-	-	24
Common Goldeneye	5	165	24	-	5	264	-	-	29	-	492
Barrow's Goldeneye	-	-	-	-	4	-	-	-	3	-	7
Bufflehead	-	5	1	-	1	5	-	-	-	-	12
Oldsquaw	-	-	1	-	-	-	-	-	-	-	1
Ruddy Duck	-	3	-	-	2	-	-	-	-	-	5
Hooded Merganser	-	2	-	-	-	1	-	-	-	-	3
Common Merganser	55	154	63	-	220	91	-	-	19	-	602
Red-breasted Merganser	3	-	-	-	-	4	-	-	-	-	7
Turkey Vulture	2	-	-	-	-	-	-	-	-	-	2
Goshawk	-	-	-	1	1	-	-	-	-	1	3
Sharp-shinned Hawk	-	1	1	-	1	1	-	-	-	1	5
Cooper's Hawk	-	-	1	-	1	-	-	-	-	-	2
Red-tailed Hawk	4	9	-	-	10	4	-	-	3	-	30
Harlan's Hawk	-	1	2	-	1	2	-	-	-	-	6
Swainson's Hawk	1	-	-	-	-	-	-	-	-	-	1
Rough-legged Hawk	3	5	11	-	9	1	1	3	-	1	34
Ferruginous Hawk	-	-	-	-	1	1	-	-	-	-	2
Golden Eagle	2	3	5	-	3	2	2	2	1	1	21
Bald Eagle	-	1	1	-	2	2	-	-	-	-	6
Marsh Hawk	2	3	7	-	7	3	5	-	-	7	34
Prairie Falcon	1	2	2	-	-	-	-	-	-	3	8
Pigeon Hawk	-	-	-	-	1	1	-	-	-	-	2
Sparrow Hawk	4	9	12	-	10	9	-	-	-	1	45
Blue Grouse	-	-	-	-	-	-	-	2	-	-	2
White-tailed Ptarmigan	-	-	-	-	-	-	-	-	6	-	6
Ring-necked Pheasant	10	11	42	-	20	6	-	-	-	11	100
Virginia Rail	-	-	-	-	2	-	-	-	-	-	2
American Coot	-	328	4	-	1	4	-	-	-	-	337
Killdeer	10	16	26	-	42	19	-	-	-	3	116
Common Snipe	2	26	1	-	53	-	-	-	-	4	86
Herring Gull	6	8	5	-	2	20	-	-	-	-	41
Ring-billed Gull	4	330	117	-	8	60	-	-	-	-	619
Bonaparte's Gull	1	-	-	-	-	-	-	-	-	-	1
Mourning Dove	-	19	-	-	1	-	-	-	-	-	20
Screech Owl	2	1	-	-	1	-	-	-	-	-	4
Great Horned Owl	2	4	-	-	2	1	-	1	-	3	13
Long-eared Owl	-	-	-	-	5	-	-	-	-	4	9
Short-eared Owl	-	-	1	-	-	-	-	-	-	-	1
Belted Kingfisher	3	7	14	-	12	5	-	-	-	1	42
Red-shafted Flicker	75	70	81	-	131	69	-	7	3	14	450
Lewis' Woodpecker	-	-	1	-	8	-	-	-	-	-	9
Yellow-bellied Sapsucker	-	-	1	-	-	-	-	-	-	-	1
Hairy Woodpecker	12	6	5	6	13	6	-	7	3	1	59
Downy Woodpecker	10	10	15	2	18	18	-	4	-	-	77
North, 3-toed Woodpecker	-	-	-	-	-	-	-	1	-	-	1
Horned Lark	-	2	3	-	1288	1	1295	26	-	1575	4190
Gray Jay	-	-	-	16	-	-	-	12	5	-	33
Blue Jay	-	-	34	-	21	4	-	-	-	2	61
Steller's Jay	101	35	17	87	39	104	-	167	96	-	646
Scrub Jay	-	11	-	-	5	4	-	49	-	-	69
Black-billed Magpie	195	480	238	19	445	217	7	106	69	42	1818

SUMMARY OF COLORADO'S 1966 CHRISTMAS COUNTS

Species	Bldr	Denv	FtCo	IdSp	Lgmt	Love	Nunn	PiPk	RMNP	Weid	Total
Common Raven	6	-	3	10	-	2	-	39	18	-	78
Common Crow	58	379	395	261	3	172	-	126	-	-	1394
Pinyon Jay	-	4	-	-	-	-	-	-	-	-	4
Clark's Nutcracker	1	-	-	8	-	-	-	12	6	-	27
Black-capped Chickadee	51	106	116	6	76	51	-	15	12	7	440
Mountain Chickadee	110	20	50	97	46	23	-	267	105	2	720
Common Bushtit	-	10	-	-	-	-	-	-	-	-	10
White-breasted Nuthatch	16	10	12	4	9	13	-	11	10	-	85
Red-breasted Nuthatch	6	1	3	2	1	6	-	1	4	-	24
Pygmy Nuthatch	30	5	3	-	-	2	-	45	96	-	181
Brown Creeper	5	4	-	2	1	12	-	8	1	-	33
Dipper	1	4	5	3	32	8	-	1	6	-	60
Winter Wren	-	-	-	-	1	-	-	-	-	-	1
Long-billed Marsh Wren	-	1	-	-	-	-	-	-	-	-	1
Canyon Wren	-	3	1	-	-	3	-	-	-	-	7
Rock Wren	-	1	-	-	-	-	-	-	-	-	1
Mockingbird	-	-	1	-	1	1	-	-	-	-	3
Robin	4	186	4	-	5	7	-	13	1	4	224
Varied Thrush	-	-	-	-	-	1	-	-	-	-	1
Townsend's Solitaire	16	68	5	29	1	3	-	30	23	-	175
Golden-crowned Kinglet	1	2	-	1	5	-	-	21	4	-	34
Ruby-crowned Kinglet	1	-	1	-	-	-	-	-	-	-	2
Water Pipit	-	-	-	1	-	-	-	-	-	-	1
Bohemian Waxwing	25	-	-	59	18	115	-	235	505	-	957
Cedar Waxwing	4	-	15	-	-	-	-	-	-	-	19
Northern Shrike	2	8	1	1	12	4	1	4	5	6	44
Starling	458	345	960	17	2386	728	46	99	-	435	5474
Pine Warbler	1	-	-	-	-	-	-	-	-	-	1
Myrtle Warbler	1	-	-	-	-	-	-	-	-	-	1
Audubon's Warbler	1	-	-	-	-	-	-	-	-	-	1
House Sparrow	219	322	600	127	1526	394	100	37	1	1585	4911
Western Meadowlark	117	68	69	-	283	54	1	-	-	84	676
Yellow-headed Blackbird	1	-	-	-	-	-	-	-	-	-	1
Red-winged Blackbird	755	321	5216	-	4506	105	-	12	-	2900	13815
Brewer's Blackbird	23	50	-	1	104	41	-	-	-	138	357
Brown-headed Cowbird	-	-	2	-	-	-	-	-	-	-	2
Evening Grosbeak	15	44	280	7	32	1	-	30	3	-	413
Cassin's Finch	63	58	38	14	49	12	-	36	-	-	270
House Finch	129	338	58	-	287	14	-	59	-	54	939
Pine Grosbeak	-	-	-	-	-	-	-	22	-	-	22
Gray-crowned Rosy Finch	-	5	54	412	-	-	-	45	250	-	766
Black Rosy Finch	-	-	-	2	-	-	-	8	1	-	11
Brown-capped Rosy Finch	-	1	-	102	-	-	-	12	-	-	115
Rosy Finch spp.	-	-	-	-	-	200	-	80	-	-	280
Common Redpoll	-	2	-	-	-	-	-	-	-	-	2
Pine Siskin	40	2	-	-	-	10	-	-	-	-	52
American Goldfinch	10	91	32	-	30	195	-	6	-	27	391
Lesser Goldfinch	25	-	-	-	-	-	-	-	-	-	25
Red Crossbill	-	-	7	-	-	-	-	-	4	-	11
Green-tailed Towhee	-	-	-	-	-	2	-	-	-	-	2
Rufous-sided Towhee	1	1	-	-	-	-	-	-	-	-	2
Savannah Sparrow	-	-	-	-	-	1	-	-	-	-	1
Vesper Sparrow	-	-	-	-	-	1	-	-	-	-	1
White-winged Junco	17	40	1	4	33	75	-	48	3	-	221
Slate-colored Junco	19	66	21	13	41	122	-	59	1	-	342
Oregon Junco	325	174	120	43	1119	518	-	460	29	45	2833
Gray-headed Junco	25	36	2	-	126	36	-	109	3	-	337
Junco spp.	40	-	-	-	-	-	-	147	-	-	187
Tree Sparrow	107	1202	254	-	789	84	-	6	-	72	2514
Chipping Sparrow	-	-	-	-	-	6	-	-	-	-	6
Brewer's Sparrow	-	-	-	-	-	2	-	-	-	-	2
Harris' Sparrow	-	8	1	-	7	-	-	-	-	-	16
White-crowned Sparrow	70	50	50	-	1274	8	-	5	-	21	1478
White-throated Sparrow	-	3	-	1	-	-	-	-	-	-	4
Fox Sparrow	1	-	-	-	1	-	-	-	-	-	2
Song Sparrow	29	124	17	-	110	27	1	11	-	35	374
Lapland Longspur	-	-	-	-	-	-	-	-	-	1	1
Total Species	76	86	77	32	82	79	10	46	34	36	135

BREEDING BIRDS OF THE LYONS AREA ALONG THE ST. VRAIN CREEK
AND ADJACENT LOWLANDS - 1966

Margaret A. Whitney

This survey was made by Mr. and Mrs. Gilbert Whitney with the help of the Longmont Bird Club, in particular Mrs. Allegra Collister, who has done all of the bird banding mentioned in this paper.

Several mornings in June were spent hiking along the St. Vrain Creek from the bridge on highway 7 east of Lyons to the point on the South St. Vrain where the old highway joins the present highway 7 two miles south of Lyons. On the North St. Vrain the survey continued on the old highway 66 about one-fourth mile west of Lyons up to the Longmont Power Plant. A section of the creek between Meadow Park and the Old North Road was not surveyed this year.

Birds were counted by sight and also by sound when the author was sure of the bird call. The author did not assume a mate was present for every bird seen in a particular territory.

Because the St. Vrain Creek is a mountain stream and few marshy and no lake areas are present, few water birds were found. There were, however, four Mallard Ducks, three Spotted Sandpipers, and four Killdeer.

Hawks and related species were scarce. We saw them more regularly before and after the breeding season than during the survey. Two hawks were seen by Col. and Mrs. Snyder and May 29 and 30, a Red-tailed Hawk and a Swainson's. Perhaps these birds keep out of sight during the breeding season. A Turkey Vulture was soaring at Meadow Park, and smaller birds were harrassing it. In July the author saw a Golden Eagle. Only one Sparrow Hawk was counted.

Perhaps if the area were more protected, parts of the non-inhabited areas might show an increase in the game birds, such as partridges and pheasants. Mrs. Collister startled a hen Pheasant and four chicks on the Loukonen property.

Mourning Doves were congregated in the more populated or open areas where there were large trees and fields but not much undergrowth, particularly on the Todd property. No gulls were present until late summer. Although the Common Nighthawks were noted flying around the foothills in the evenings, the author saw only two of them flying over the creek one evening. No owls were found, though further

observation should reveal some. Great Horned Owls have been observed at other times of the year and have nested on the cliffs above Meadow Park.

White-throated Swifts were found at and near Meadow Park and on the North St. Vrain Creek. Some nest in the rocky cliffs in the park.

We saw Broad-tailed Hummingbirds frequently near a creekside home where they were attracted by feeders and flowers.

There were a representative number of Belted Kingfishers, five, and one nesting site is in a bank adjoining the Lyons cemetery several blocks from the creek. Mrs. Collister banded one kingfisher on the Hall property and received a cut finger for her success.

Woodpeckers were abundant where groves of cottonwoods were left unpruned. Lyons has a growing population of Lewis' Woodpeckers. One nest was sighted in a cottonwood tree and several birds seen. I have also seen them nesting in Ponderosa Pine tree holes in a gulch to the west of Blue Mountain Road. Red-shafted Flickers are plentiful and nest in the cottonwoods, in the foothills, and in holes in dirt banks. Downy Woodpeckers were also nesting in tree holes and were scattered throughout the area. Perhaps their territories cover a large area. Mrs. Collister saw one Red-headed Woodpecker on the C. C. Martin property. Though no Hairy Woodpeckers were found in the lowlands during the breeding season, they have been seen in small numbers other places in and near Lyons.

Two members of the flycatcher family were present. The Western Wood Pewee was very abundant, 44 being either heard or seen, and one was observed carrying nesting material to a dead tree limb on which they build their nests. A goodly number of Eastern Kingbirds, 11, was counted. They are known to nest in Lyons but no nests were found near the creek.

Swallows were numerous, especially Cliff Swallows. Many nests were discovered in the cliffs near the creek and under the highway 7 bridge east of Lyons. Over 300 birds were estimated flying under the bridge at the turnoff to the old North St. Vrain Road just west of Lyons. Violet-green Swallows were found in just one place--the old McConnell farm. They were in a wet meadow next to the creek where the driveway leads to a wooden bridge. Only six Barn Swallows were counted in June. The author received only a few mosquito bites during the whole survey and thinks that the flycatchers and swallows keep the insect population under

control. If a spraying program were started near the creek, the population of insect eating birds would undoubtedly dwindle due to lack of food and the poisonous effects of the spray.

Jays are not known nesters in the surveyed area. Mrs. Thielen saw a flock of about 20 Pinon Jays early in June, but the fact that they were still in a flock leads the author to believe they were not yet in their nesting area. Magpies were nesting in one area but were not numerous near the creek until late in the summer. Only one Crow was seen.

The Black-capped Chickadees were common but no nests were found. The wren family is well represented in Lyons. The ones found near the creek were the House Wren, Canyon Wren, and a Carolina Wren. Two broods of young House Wrens were seen. The Canyon Wren is a permanent resident in the steep stone cliffs, not only near the creek, but in the drier areas as well. The author heard and saw the Carolina Wren in late June, and Mrs. Collister banded it on July 14. We thought that it was nesting on the Wormwood property but we could not find the nest, and the bird became more elusive as time went on. The Rock Wren is a common nester of the rocky foothills but not found near the creek. In November of 1965 a Winter Wren was discovered on the Loukonen property but was no doubt a winter visitor. It has not been seen since.

One Dipper was observed on the North St. Vrain and had been seen by others who thought it was nesting nearby. In earlier years, one had nested under the power house of the Longmont Power Plant but was not there this year.

The author was pleased to find 10 Catbirds in the places where there was abundant undergrowth. Mrs. Collister banded four Veeries on the South St. Vrain, and one had a brood patch. Robins were prolific nesters, of course. A Wood Thrush was heard and glimpsed in Meadow Park by Mrs. Thielen and an out-of-state acquaintance familiar with Wood Thrushes. Later in the fall, Mrs. Collister banded a Wood Thrush at Lykin's Gulch south of Lyons. The Swainson's Thrush was probably a late migrant.

Starlings were not numerous. The House Sparrows were not common in the areas of natural growth but were found in the populated areas. Grackles were plentiful and gregarious. Young were already out when the survey was made. Perhaps, even though over 80 were counted, the fact that they breed early and leave the nesting area means that the species of birds which nest later in the year are not tor-

mented to extinction by Grackles. Six Brown-headed Cowbirds were counted.

The bird club found four Warbling Vireos on the Hall property early in June, but the author assumes these were not nesters at this elevation. Three Red-eyed Vireos were seen, and one banded had warty growths on its feet. A Solitary Vireo, listed by Snyders in late May, was probably a late migrant.

Warblers are at home along the creek. The ones which seem to be most closely associated with the running stream are the Yellow-breasted Chats, of which 22 were either seen or heard, and Redstarts, of which seven were counted. Ten Yellowthroats were found in the marshy areas. Yellow Warblers were so abundant the author could hardly tell when one bird quit singing and another began. One hundred and five were counted. One warbler identified and banded by Mrs. Collister was an accidental, a male Hooded Warbler. It was found late in July and was probably not a nester. Another warbler, the Virginia, nests in the drier foothills and was not seen near the creek.

The Brewer's Blackbirds, 37, were more numerous than the Red-winged, 14. Brewer's were found mostly in the wet fields on the Old South Road, and the Red-winged Blackbirds were found mainly in the cattails near the Lyons sewer plant.

Bullock's Orioles were common, many being found in areas where cattle or horses were kept. Two nests were found. Meadowlarks were not prevalent except in open fields near the creek.

The finch family is well represented. Though not many House Finches were counted near the creek in the areas of natural growth, they were abundant near some of the houses on the Old North Road and were probably attracted by bird feeders. Lesser Goldfinches were plentiful, 82 being either heard or seen. They are known nesters of this area but nest later in the summer. The American Goldfinches were still in flocks but were seen in pairs later in July on the Loukonen property. Lazuli Buntings were nesting near the creek, but they seem to be more common on the dry hillsides. Two hybrid Lazuli-Indigo Buntings were discovered and one was banded. Six Black-headed Grosbeaks were seen or heard. Though the author has observed them nesting another year, no nesting evidence was found this year. Evening Grosbeaks, six, were perched in a group in July but none were seen earlier. Several years ago these birds were abundant in the spring and were eating Chinese Elm fruits. One Rose-breasted

Grosbeak male was discovered by the author on July 30. It may have been a visitor, as one was also observed near Estes Park shortly before.

The only towhee known to nest here, the Rufous-sided Towhee, is abundant. While only ten were counted near the creek, they are more numerous on the surrounding foothills in summer. One finds them near the creek more in winter where their food is more easily found under the leaves, or when the foothills are excessively dry. Pine Siskins were very abundant this year. While some siskins may have nested in the foothills, they commonly nest in the mountains and the ones Snyders saw in May were probably migrants.

While the lowlands of the creek harbor several kinds of sparrows in the winter and during migration, only two kinds were seen during the survey: Lark Sparrows and one White-crowned Sparrow. The White-crowned Sparrow was no doubt a late migrant; the Lark Sparrow nests on the dry hillsides.

The purpose of this paper is to acquaint the landowners and other interested people with the large variety of birds found in the natural areas along the creek lowlands in the foothills where human population is growing so rapidly that natural growth is continually being torn out to make room for houses and industry. When the natural growth is removed, the birds and other wildlife that depend on the stream or on the natural growth die out, or move to other regions which may already have all the residents they can support. A few other less desirable species of birds move in, such as House Sparrows and Starlings. Lyons is fortunate to still enjoy a large variety of birds, but with the inevitable population growth that will occur, the variety and number of desirable birds will dwindle unless several small tracts representing the various ecological habitats are left in their natural state.

NORTH ROCK CREEK NESTING AREA

George R. Shier

The Forest Service has set aside a 640-acre tract in the Arapaho National Forest as a special bird-nesting area. The tract runs along both sides of North Rock Creek between the Gore Range Trail and the Gore Range-Eagle's Nest Wild Area. The area is reached from State Highway 9, by a Forest Service road starting from the west side of the highway opposite the entrance to the Blue River Campground. This would be about 8 miles north of the Dillon Dam on the Blue River. The Blue River Campground is the nearest developed campground to the nesting area. However, camping is permitted at undeveloped sites near the nesting area for those who do not require improvements. The Forest Service road leading to the area is narrow and steep in places, but is passable for cars with reasonable clearances below.

The area begins at the Gore Range Trail, where an extensive meadow of willow, birch, and grass extends westward for over half a mile, on both sides of the creek. The meadow is bordered on the south by a spruce forest extending steeply upward. On the north it is bordered first by lodgepole pine forest and then by aspen. To the west, the creek descends through a damp swampy forest of large spruce. Many flowering plants abound, as well as the usual shrubs found at an elevation of 9500 feet.

The varied habitat provides for the needs of more than 60 species of birds recorded over a period of six summers. Insects and small mammals abound, along with garter and other small snakes. Beavers provide numerous meadow ponds suitable for mallards and sandpipers. It is possible to see more than 30 species of birds during a short stay in the meadow and along its fringes. Another 30 species or more come and go from the nearby ridges but are not always to be found. None of the species are rare in Colorado, but it is exceptional to be able to find so many species in one mountain location.

Near the upper end of the meadow, a side road leads down to an unoccupied cabin left from a time when an ore mill was in operation. This side road offers the best entrance to the meadow.

The Forest Service plans to construct a parking area and then block random traffic into the meadows. Mining, timbering, grazing, and camping will be eliminated from the

area or greatly restricted so as to preserve the habitat. Fishing will be permitted in the beaver ponds and creek, at least for the present. Big game hunting will also be allowed during the fall season. Elimination of timber cutting and camping should protect the area for the present, but if traffic increases in the area, summer supervision might be desirable to protect the vegetation. The Forest Service normally would not provide such supervision, and it probably will be up to those interested in bird protection to provide supervision if and when needed. It is hoped that people interested in birds will enjoy the area, and that during their visits, they will cooperate with the birds to maintain it as a sanctuary. The Colorado Field Ornithologists is a logical organization to help the Forest Service in this project.

Editor's Note: The Rock Creek Bird Nesting Area was formally established as a Management Unit of the Arapaho National Forest in May, 1965. This action was the direct result of efforts by George Shier and Lynn Willcockson. George Lafferty, Forest Supervisor, and Ralph Johnson, District Ranger, took the necessary action for the Forest Service.

FIELD NOTES

Four interesting sight observations were recorded in the Fort Collins area. The following species were recorded:

Mourning Dove-- A flock of 59 individuals was observed January 7 two miles northeast of Fort Collins. Occasionally this species is seen during the winter months, but not in such large numbers. Carroll Littlefield

Carolina Wren-- This bird was seen and heard singing for two weeks in a brushy area within the city limits during mid-January. It is believed to be the first Fort Collins record. Stan Wellso

Brown Thrasher-- A single bird was observed in the same area as the Mourning Doves. This appears to be the first winter record for Fort Collins. Carroll Littlefield

Oldsquaw-- A male in winter plumage was observed October 22 southwest of Fort Collins in a water-filled gravel pit. It was probably the same bird later identified on Seaman Reservoir northwest of Fort Collins on the Christmas Count. Goran Blomberg

BOOK REVIEWS

Birds of North America: A Guide to Field Identification by Chandler S. Robbins, Bertel Bruun, and Herbert S. Zim. Illustrations by Arthur Singer. Golden Press, Inc., N. Y. 340 pp. \$2.95 with flexible plastic cover; \$4.95 cloth.

Birds of North America is an outstanding contribution to the field identification of birds. The reason, of course, is that this book was prepared by an outstanding group of professionals representing various supporting disciplines. They are researchers, educators, and illustrators, in addition to being excellent ornithologists. They approached the identification of birds with the thoroughness of chess players. They have presented as many useful ideas and techniques as any birdwatcher--ardent beginner or experienced ornithologist--has any right to expect in a compact field manual.

The book has several strong points that deserve mention. First, all descriptive text, on left-hand pages, faces the appropriate illustrations on right-hand pages. No need to fumble extra pages on a cold morning! The illustrations themselves are excellent and realistic. Birds are pictured loosely in life-like poses on natural vegetation, now crowded. Small "extra" sketches depict characteristic flight or behavior. Silhouettes across the top of many pages characterize similar families and species--the brief glimpse we so often see. Plates showing the heads of warblers, and heads and wings of sparrows, simplify identifications in these sometimes-difficult groups.

The small range maps (located near the margin with the text) are necessarily very general, but they do help you decide if you are "in the right ballpark", for winter or summer range! And finally, a new approach to presenting bird calls, the sonagram. At first, these audio-spectrograms appear totally confusing. A little study of the explanatory text, however, and practice with them against calls you already know well, will give you another most helpful tool for field identification.

Birds of North America is especially appropriate in Colorado, since it includes both eastern and western species. Birds once thought restricted to areas east of the 100th meridian are now turning up here with increasing frequency. The book is certainly a most complete, excellent--and welcome--field guide! --R. H. Hamre

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