

over forty Buzzards collected there on neighboring trees and the ground, all having come from the southwest, off over the meadow, appearing in sight and coming straight *up the wind*. The birds unearthed the carcass and held a great war-dance and pow-wow over it. At another time, in the pine timber along the north shore of my lake, I drove another skunk into a hole, by clubbing, and stopped the hole up with sticks; in a short time there were several Buzzards investigating the cause of the outbreak, from the trees about the spot.

A box which had been leaning up by the side of my poultry house was blown down, or tipped down by hens flying upon it, and a chicken crushed under it, of which I knew nothing; but noticing the Buzzards sitting about the place on the trees and fence, I wondered what attracted them there, and soon after, upon moving the box, I found the dead fowl beneath. There was no other carrion present, to my knowledge, at the time.

These facts, while all showing conclusively to my mind that Buzzards do find the location of at least some of their food supply by means of a sense of smell as keen as that of a fox, yet it does not preclude the possibility or the probability that they are often guided or aided in location by a sight as keen as the sense of smell seems to be.

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## NOTES ON THE BIRDS OF FORT KLAMATH, OREGON.

BY DR. J. C. MERRILL, U. S. A.

*With remarks on certain species by William Brewster.*

[Continued from p. 146.]

**Ceryle alcyon.** Common in summer, several remaining throughout the winter.

**Dryobates villosus harrisii.** This was the most common species of Woodpecker during autumn and winter, and at that season more often found among aspens than were the others. This is the only place in the West where I have found *harrisii* to be more abundant than *gairdneri*. About the middle of March and later, as the breeding season approached,



they became shy and restless, the males drumming loudly on the dead top of some lofty pine, but ceasing whenever they were approached.

[Seven specimens collected by Dr. Merrill, with a single exception, are typical examples of a Woodpecker which of late years has been very generally if not exclusively called *P. harrisi* but which Cabanis and Heine very properly separated from that form as long ago as 1863.\* Audubon's type specimens of *harrisi* came from the Columbia River, and both his plate and description show that they were decidedly brownish beneath. In the series furnished by my own collection, as well as that belonging to the National Museum, I find that all specimens from the Pacific Coast north of San Francisco to Puget Sound are similarly characterized. The depth and extent of the brownish varies, however, with different localities. The most extreme specimen—from Neah Bay, W. T.—has only the wing spots white, all the other light areas, both above and beneath, being smoky brown. Col. N. S. Goss, to whom I am indebted for this specimen, tells me that all the birds which he shot at Neah Bay were equally brown. Those which I have seen from Northern California, however, are somewhat lighter beneath, and the light space on the dorsum is usually pure white. Audubon's types, which were probably taken at some distance inland from the mouth of the Columbia, had the light stripes on the head as well as the middle of the back. Thus it is probable that the birds obtained by Col. Goss represent the extremes of the smoky Northwest Coast form, which to the southward and eastward shades insensibly into *hyloscopus*. In fact, one of Dr. Merrill's skins clearly proves such intergradation, for it has the breast decidedly brownish and the throat slightly so, while the abdomen, flanks, and light areas of the tail-feathers are essentially white.

*Picus hyloscopus* was based on the "*P. harrisi* from Southern California and New Mexico," which, the describers state, "differs from *harrisi* of the Columbia River Region in being smaller, and white instead of brownish, beneath." All the so-called Harris's Woodpeckers which I have seen from the interior of Western North America north of Mexico have the light areas, both above and beneath, essentially pure white, although the breast and tail-feathers are often superficially soiled or stained by contact with burnt trees or decayed wood. There is little variation among them excepting in size, those from the southern border averaging somewhat smaller than more northern ones. It is possible that, as material accumulates, it will be found necessary to separate this white-breasted Woodpecker into two forms, a large northern and a small southern one. For the present, however, they may be best treated as one, for which the name *hyloscopus* should be used.—W. B.]

*Dryobates pubescens gairdneri*. During my residence at Fort Klamath I paid especial attention to the Woodpeckers at all seasons, yet I saw but three specimens of this species; the dates were Nov. 17, April 28, and May 11.

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\* Mus. Hein., IV, p. 69.



**Xenopicus albolarvatus.** This interesting Woodpecker was first observed November 9; by December it had become rather abundant and so continued until the latter part of February, but after the middle of March none were seen. During the breeding season careful search failed to reveal its presence near the Fort, nor was it found in the higher mountains north of the valley in July and August. One would think that the peculiar coloration of the White-headed Woodpecker would make it very conspicuous and its detection an easy matter, but this is by no means the case, at least about Fort Klamath. On most of the pines in this vicinity there are many short stubs of small broken branches projecting an inch or two from the main trunk. When the sun is shining these projections are lighted up in such a manner as to appear quite white at a little distance, and they often cast a shadow exactly resembling the black body of the bird. In winter when a little snow has lodged on these stubs the resemblance is even greater, and almost daily I was misled by this deceptive appearance, either mistaking a stub for a bird or the reverse.

I have rarely heard this Woodpecker hammer, and even tapping is rather uncommon. So far as I have observed, and during the winter I watched it carefully, its principal supply of food is obtained in the bark, most of the pines having a very rough bark, scaly and deeply fissured. The bird uses its bill as a crowbar rather than as a hammer or chisel, *prying* off the successive scales and layers of bark in a very characteristic way. This explains the fact of its being such a quiet worker, and as would be expected it is most often seen near the base of the tree where the bark is thickest and roughest. It must destroy immense numbers of Scolytidæ, whose larvæ tunnel the bark so extensively, and of other insects that crawl beneath the scales of bark for shelter during winter. I have several times imitated the work of this bird by prying off the successive layers of bark, and have been astonished at the great number of insects, and especially of spiders, so exposed. As the result of this, and of its habit of so searching for food, the White-headed Woodpeckers killed here were loaded with fat to a degree I have never seen equalled in any land bird, and scarcely surpassed by some Sandpipers in autumn.

Though not shy, and with care generally approachable to within a short distance, it is watchful and suspicious, and seems to know very well what is going on even if it does not see fit to fly away, though it is more apt to do this than to dodge around the trunk. The flight is direct, and rather slow and heavy. Its skull is noticeably less hard and dense than that of *D. harrisi* or *P. arcticus*. During the winter it is silent, the only sound I have heard it make being a harsh screech when wounded.

[Dr. Merrill has called my attention to the following apparent inaccuracies in the description of this Woodpecker by our leading authorities. (1) The statement usually made without qualification that the entire head is white. In the series of twelve specimens before me (five from Fort Klamath, five from Blue Cañon, California, and two from San Bernardino, California) the crown and forehead are decidedly grayish, varying from smoky gray to drab gray in rather strong contrast with the



silvery white of the throat, jugulum, and sides of the head. Capt. Bendire in Birds S. E. Oregon\* says: "The white about the head is always soiled, becoming a light smoky gray." But as far as my series goes to show this gray is confined to the top of the head. Nor can I believe that it is a stain, for the top of the head is certainly not more exposed than are the jugulum and neck; moreover the gray is quite as deep in fresh-plumaged autumn birds as in those in worn breeding dress. Indeed among the specimens before me it is deepest in a young bird just from the nest. A more or less strong tinge of saffron or clay color often found on the nasal bristles and occasionally, also, on the forehead, may be, however, a true stain. Two of the females before me have the sides and posterior portion of crown barred faintly with dusky.

(2) Mr. Ridgway, in considering the generic characters of *Xenopicus*, has laid stress on "the fact that the tongue is scarcely extensile, its tip, when fully protruded, reaching only  $\frac{3}{4}$  of an inch beyond the end of the bill, just the same as in *Sphyrapicus thyroideus*, while in *Picus villosus harrisii* the protrusion amounts to  $2\frac{1}{2}$  inches, or  $1\frac{3}{4}$  inches more.†

In referring to this statement Dr. Merrill wrote me from Ft. Klamath under date of Jan. 6, 1887: "I have just killed a female *albolarvatus* and male *thyroideus*, and the following is the result of a careful examination and comparison. The tongue of *albolarvatus* extends exactly 1.30 inches beyond the tip of the bill, and this without any pulling but by gently drawing it to the full length. The tongue of my male *thyroideus* extends barely .20 of an inch." It is evident from this testimony that the character noted by Mr. Ridgway is too variable to be worth much.

(3) Mr. Ridgway says:‡ "Fourth and fifth quills equal and longest; tip of the first equidistant between sixth and seventh." In my series the first quill is always "spurious," never exceeding an inch in length. The second quill is sometimes scarcely longer than the eighth but is usually about intermediate between the seventh and eighth. In five specimens the fourth quill is longest; in four the fourth and fifth quills are about equal and longest. —W. B.]

*Picoides arcticus*. Rather common resident, but in the summer more frequently seen in the surrounding mountains than in the immediate vicinity of the Fort. Several nests were found early in July, but the young were fledged. The excavations were in dead young pines and not more than five or six feet from the ground, in the latter respect differing from those of the other Woodpeckers found here, all of which, so far as I have observed, make their holes at a greater height.

[Three specimens taken at Fort Klamath by Dr. Merrill differ appreciably from eastern birds in being larger, with longer and much narrower bills, and in having the nasal bristles nearly or quite black to their bases. Upon examining the series in the National Museum, however, I find that

\* Proc. Boston Soc. Nat. Hist., Vol. XIX, p. 129.

† Proc. Nat. Mus., Vol. III, p. 6.

‡ Birds N. A., Vol. II, p. 526.



out of eighteen western specimens (Montana, Nevada, Utah, California, Oregon, and Alaska) only three exhibit the peculiarities just mentioned, and these three are from Fort Klamath (Coll. Capt. Bendire). It is evident, therefore, that if the Klamath birds represent a distinct form, that form has a very limited distribution. Until this is better known it seems wisest to let the bird in question stand as *P. arcticus*.—W. B.]

**Sphyrapicus ruber.** Common summer visitor, arriving about the middle of April and frequenting groves of aspens, being rarely seen among pines. It is rather shy, and specimens were procured with some difficulty. The stomachs of several were examined and contained fragments of insects only. It is a rather noisy bird, and its snarling or whining note is often heard. In Baird, Brewer and Ridgway's *N. A. Birds*, Vol. II, p. 544, the bill of this species is said to be brownish wax color; in my fresh specimens it was bluish black.

[An adult female taken May 11 shows an apparent approach to *S. v. nuchalis* in having a well-marked red nuchal band separated from the red of the crown by a blackish bar about .10 of an inch wide. This specimen also has a good deal of black mixed with the red of the breast, and there is a white stripe extending back along the side of the head below the eye, as in *S. nuchalis*.—W. B.]

**Sphyrapicus thyroideus.** A not uncommon resident, but shy and very suspicious. A noticeable habit here is the frequency with which it works down as well as up a trunk, and when one dodges around a tree, in which, by the way, it is unpleasantly expert, it is as apt to reappear twenty feet below where it was last seen, as above. In searching for food it will often work up and down a favorite tree repeatedly. In all its movements it is quick and active, and gives one the impression of being thoroughly wide awake, which impression the would-be collector is speedily convinced is correct. This Woodpecker is a rather silent bird as to hammering, and is especially partial to young pines, with the soft inner bark of which, and fragments of insects, the stomachs of the adults are usually filled; but the young birds appear to feed exclusively upon insects during the autumn.

In preparing skins of this and the succeeding species, I have had no difficulty in drawing the skin of the neck over the skull. Two nests, found June 20 in large dead pines, were each at a height of about sixty feet; they were inaccessible, but contained young, apparently nearly fledged, to judge by the noise they made. Each nest I watched for some time; the males brought food about twice as often as did the females, and frequently removed the excrement of the young on leaving the nest, alighting on the nearest tree for a moment to drop it and to clean their bills; I did not see either of the females remove any excreta. About four feet above one of the holes was another occupied by a pair of Pygmy Nuthatches, but neither species paid any attention to the other when they happened to arrive with food at the same time.

**Melanerpes torquatus.** None were seen until the morning of May 2, when several were in and about the Fort, their very characteristic flight, notes, and habits at once betraying their arrival. Rather uncommon



during summer, nesting usually near the tops of tall dead pines, especially isolated ones, from which they can obtain a good view of passing insects, which they will often follow to a considerable distance. About the middle of August many arrive from the north and gather in large flocks, sometimes of one or two hundred. They now feed largely on grasshoppers, for which they search in fields and along roadsides, and at a little distance are easily mistaken for Blackbirds.

**Colaptes cafer.** Seen once or twice only during the winter. In April they pass north in great numbers, and many remain to breed. Migrants were first seen March 14, and were abundant on and after the 20th.

**Chordeiles virginianus.** First heard on May 30 before sunrise, and within a week were fairly abundant. By the middle of June they were very common, and so continued till autumn.

[Dr. Merrill's Klamath series includes six adults, two males and four females. These are certainly much nearer to *virginianus* than to either *henryi* or *sennetti*, although they average rather paler than eastern specimens. In one of the males the white on the wing involves the shaft and a portion of the outer web of the outer primary. In both males the white on the tail is continuous across both webs of all the feathers.—W. B.]

**Chætura vauxi.** During the early autumn of 1886 this species was very common, leisurely migrating in flocks of from fifty to one hundred or more, and keeping well out of gunshot.

In the following spring they were first seen May 6, when a flock of about twenty was observed flying low over a meadow, and one was shot; no note was heard and they soon disappeared. No others were noted until the 19th, when four were seen pursuing insects above the tops of the highest trees. After this they became quite common, and so remained during the summer. While collecting in the marsh on the third of June a cold wind from the mountains suddenly arose; following the insects in their lowered flight, many Cliff and Tree Swallows that had been flying at a height of several hundred feet came within easy range, and among them were a few Swifts, of which I shot six in as many minutes. Four of them were males and two females; the ovaries of the latter were scarcely enlarged, and they certainly would not have bred for a month; the salivary glands of both sexes were of equal size; the legs and feet were purplish, the irides brown.

While the flight of Vaux's Swift is usually higher than that of the eastern species, and it is generally more difficult to obtain, yet if their habits are closely studied it will be observed that there are times and places where they may be shot without especial difficulty. The height at which they fly depending on that of the insects upon which they feed, they may be most readily secured soon after sunrise; as the day grows warmer and the insects fly higher they follow them and are soon out of gunshot range for the rest of the day, unless a change in the weather should occur. Had I made a specialty of collecting these Swifts, I could readily have shot several dozen during the season.

As observed at Fort Klamath this bird is not at all crepuscular; the



notes differ somewhat from those of *pelagica*, though of the same character, and are less frequently uttered.

**Trochilus rufus.** Only two specimens observed during the spring and summer, a male taken May 17 and another seen May 22.

**Trochilus calliope.** First taken May 17. A few Hummers, apparently of this species, had been seen for ten days before this date, but they were not abundant until the 16th, after which the males were common about the blossoms of wild currant and gooseberry bushes. During the breeding season they are generally distributed, and are to be found in deep pine woods as well as in more open places, the constant sharp shrill notes of the males indicating their presence and abundance. When pairing soon after their arrival, and with less frequency during the period of incubation, the males have a habit of poising themselves for some seconds at a height of thirty or forty feet above the ground, and then dashing down nearly to the earth, rising as quickly to poise again, and repeating the manœuvre often; at such times their notes are particularly loud, and attract attention from a considerable distance.

A nest brought to me about the middle of July, and which the young had just left, was placed upon a dead flattened cone of *Pinus contorta*. It was composed of thin strips of a gray bark, with a few spiders' webs on the outside; the lining was similar, but with a few small tufts of a cottony blossom from some tree; the nest was just the color of the cone, and was admirably adapted to escape notice. Another nest containing two nearly fledged young was found at about the same time, but was quite unlike the one just described in construction and situation, being of the common Hummingbird type and saddled upon a dead willow twig. One of the young birds lived for about a week, becoming very tame and feeding greedily upon syrup.

Baird, Brewer and Ridgway in N. A. Birds (Vol. II, p. 445) assert that the folded wings reach beyond the tail; that the under mandible of the male is "yellow"; that the length of the male is 2.75. I examined eight males and one female. In none of them did the folded wings extend beyond the tail. The average length of the males was 3.20 inches, the extremes were 3.10 and 3.30. The length of the single female was 3.35. The males had the upper mandible dead black, the lower mandible light flesh color darkening towards the tip which was black; the feet dark flesh color, the irides brown.

**Tyrannus verticalis.** Three or four specimens were observed in the autumn of 1886. One specimen only seen in the spring, on May 4.

**Contopus borealis.** Breeds sparingly among the pines, and generally distributed, but nowhere common.

**Contopus richardsoni.** Very common summer visitor, arriving about May 25. In July, when the young have left the nest, the males are especially noisy, and their loud *twee* or *deer* note is heard till long after sunset. From published descriptions it would seem that this Pewee in the Rocky Mountain region usually builds its nest in an upright fork, much as Traill's Flycatcher does; while near the Pacific Coast the nest is



saddled on a horizontal limb, like that of the Wood Pewee, but is not covered with lichens. At Fort Klamath the nests are usually built on a horizontal pine branch, often at a considerable height; sometimes they are placed against upright twigs, at others merely saddled on the bare limb. Only one nest was found in an aspen tree. They averaged rather deeper than nests of *C. virens*, and were not coated with lichens. This species and *E. obscurus* were very abundant until August 17, and during that day also; but in the night there was a sharp frost, and the next day and thereafter none were seen.

**Empidonax pusillus.** Arrived about the last of May, and soon became abundant. Its favorite haunts, and to which it seems to be strictly limited, are the young willows growing along most of the streams, just such places as I have observed *E. traillii* to frequent in the East, and which species it greatly resembles in its habits and mode of nesting.

**Empidonax hammondi.** A male obtained May 12 and another August 16. No nests were found nor were any specimens taken during the breeding season, and I am inclined to believe that Hammond's Flycatcher occurs in this vicinity as a migrant only. Early in July, while in the mountains north of the valley and at a height of about five thousand feet, a pair of Empidonaces were observed that were certainly neither *pusillus* nor *obscurus*. They may have been *hammondi*, but I think they were probably *difficilis*. Unfortunately they were so shy that I was unable to shoot either of them.

**Empidonax obscurus.** A very common summer visitor, arriving somewhat earlier than does *E. pusillus*. During the breeding season Wright's Flycatcher is usually found in groves of aspens in company with the Warbling Vireo; also among pines with Cassin's Vireo and Richardson's Pewee. The nests are most frequently built in young aspens at an average height of about six feet. They resemble nests of the Yellow Warbler which are found in the same localities, but all the nests of this Flycatcher that I have found in aspens at Fort Klamath were built against the main trunk, while all of the Warbler were on branches and generally higher from the ground. The nests are composed externally of strips of light gray bark of about the same color as the bark of the aspens, and partly on this account, partly because they are against the trunk of the tree, they are apt to escape notice unless a careful search is made. The lining is sometimes a smooth felted mass of fur and horse hairs, at others feathers are used, and the nests are generally more deeply cupped than is usual with this group. Pairs that are found among the pines usually place their nests in an upright form of a manzanita or buckbrush bush that grow abundantly in such localities. They are more bulky, as a rule, and not so neatly made as when built in aspens, but in other respects are similar. The eggs are dull buffy white; seven sets of twenty-seven eggs average  $.68 \times .53$ , the extremes of the sets being  $.65 \times .50$  and  $.72 \times .57$ .

[A young male with stub tail, and wings only about two-thirds grown, taken July 13, differs from adults only in having the top and sides of head decidedly grayer, the wing-bands lighter and more buffy, and the under-



parts, especially the breast and flanks, strongly buffy. The adults collected by Dr. Merrill show a wide range of variation in size and color and some of them resemble *E. hammondi* very closely.—W. B.]

**Otocoris alpestris strigata.** Rather rare in winter, a few coming about the houses and stables during the deep snow in February. In the latter part of March many were found in a wet meadow (but which later in the season is dry) bordering the marsh. Here there are many little ridges rising a foot or two above the general level and but a few feet in width; the tops were, however, dry and in many places bare; to these the Larks were closely confined, each pair having its own limited range. On April 23rd and 25th they were mostly paired, and fifteen specimens were taken, ten males and five females; the testicles of the males were very large, but dissection of the females showed that they would not have laid for about a month. At this time, and for several weeks, the males are in full song, which is most often heard about sunrise and sunset, and is uttered as they perch in their peculiarly erect attitude on a stone or cow 'chip.' Often they rise high in the air, sometimes quite out of sight, and fly in circles for many minutes; when so doing their song is repeated more frequently than when on the ground, perhaps four or five times a minute, and at these moments they poise with set wings and are almost motionless. The height at which they fly is so great that often they may be seen to poise, and then to resume their circling flight before any note reaches the observer.

Of two females taken May 23, one contained an egg almost ready for extrusion, the other had very recently deposited her eggs and was sitting. Many pairs were observed, but for some days no nest was found. The male, who is constantly on the watch, seems to call the female off the nest when an intruder is still at a distance; several times I saw one approaching her mate, shaking her feathers and having evidently just left the eggs, but my efforts to flush one off the nest were fruitless though I made three visits to this locality before sunrise on cold windy mornings in hopes that at such a time they would sit close. In this respect these birds differ, at least in this locality, from the *arenicola* form, many of whose nests I have found in Montana.

Though within a limited area the Larks were very common, and the nesting site of each pair could easily be located within a few yards, it was only after many hours of very thorough and careful search and watching that on May 30 a female was seen to leave her completed nest. On June 4 this contained two eggs but was deserted, a horse having stepped on one edge and crushed it down, but fortunately without breaking the eggs. These measure .79 × .61 and .81 × .62, and bear a general resemblance to eggs of the other forms of this species, but having none of these at hand for comparison as this is written I will not describe them at length here. I believe these are the only eggs of *strigata* as yet collected, and the second set found.\* This nest was placed at the base of, and partially

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\* See Auk, Vol. III, p. 166.



under, a raised clod of earth; a low weed concealed it from above, and it was admirably hidden; the rim was flush with the surface of the ground, and in composition and construction it was like Montana nests of *arenicola*, but was perhaps rather deeper than the average of these.

On June 17 another nest was found after much search in the meadow in front of the Fort; \* it was placed under a weed growing on a wide, but low mound, deeply sunken in the earth, and contained three young about five days old, which were covered with a brownish yellow down. Four days later I again visited this nest, but one of the young had disappeared; the feathers of the remaining two were quite well developed and were blackish, widely edged with white, and as these colors were about equal in extent the young presented a peculiar marbled appearance; on the crown the light tips to the feathers were triangular in shape. On June 25 these young had abandoned the nest, but after some search I found one of them on bare ground about one hundred yards away. On July 1 I shot both parents and the other young, a male, now about nineteen days old and fully grown, flying as well as its parents. It is of interest to note that this female contained two eggs, one of which was almost ready for extrusion, and she had apparently just laid an egg.

There seems to be a good deal of uncertainty as to the number of eggs usually laid by the Shore Lark. Though unable to look the matter up thoroughly as I write this, it may be noted that Baird, Brewer and Ridgway merely quote Audubon's statement that four or five eggs are laid; that Dr. Coues, in 'Birds of the North West' and 'Birds of the Colorado Valley,' says nothing as to the number; in the latest edition of the 'Key,' that four or five are laid; and that Mr. Ridgway in his 'Manual' says three to five. My own experience, mostly with the *arenicola* form in Montana, is that three eggs constitute a full set though four are not infrequently found.

[*Young, first plumage* (♂ Fort Klamath, July 1, 1887, J. C. Merrill, M. D. No. 695). Above brownish black, the exposed surface of the closed wings bright hair-brown; entire upper surface conspicuously variegated with white or soiled white markings, those of the nape fine flecks, of the top of head sharply defined deltoid spots, of the back, scapulars, wing-coverts, and rump broad terminal bars; wing quills tipped with white and bordered along the outer webs with sandy buff; tail with the middle pair of feathers sandy brown, the others dull black, all the tail-feathers tipped and edged outwardly with white, this edging broadest, embracing most of the outer edge, on the outer pair of feathers; underparts soiled white, the cheeks and jugulum flecked with dusky, the breast and sides obscurely spotted with dull black, the remaining under surface immaculate. Dr. Merrill's series includes eight specimens in unmixed first plumage; of them, two are essentially similar to the bird just described and with it are easily separable from the corresponding stage of *O. a. praticola*

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\* The parents were one of the few pairs that were observed in the valley in dry open ground; but only in the colony near the marsh above referred to, and which a circle of about a mile in diameter would enclose, were the Larks at all common.



by the much more numerous and conspicuous white markings of the upper parts as well as by the whiter, less spotted underparts; from that of *arenicola*, *chrysolæma*, and *rubeus* by the much darker ground color above and the almost total absence of buffy or cinnamon tints either above or beneath; of the remaining five, four have the upper parts, especially the wings and tail, strongly tinged with dull cinnamon; three specimens approach dark examples of young *arenicola*. The eighth Klamath bird is plain dull seal brown above with but few and faint light markings. It is in worn and probably faded plumage. In the large series of adults collected by Dr. Merrill I find a good deal of variation with respect to the sharpness of the dark streaking above as well as the depth and extent of the vinaceous tints; only a few birds are as heavily streaked as Mr. Henshaw's description indicates, and but two have any yellow on the breast, while none show any yellow on the underparts posterior to the breast. A female taken Feb. 27, however, has the entire underparts (excepting, of course, the black cravat) pale primrose yellow. There are two similar examples in a series of some forty specimens collected at Klamath in September and October, as well as several with decided yellow breasts.—W.B.]

***Pica pica hudsonica*.** Common in winter in and about the Fort, being attracted by the abundance of food. They visit the stables, yards, hen-coops, and 'dump pile,' and are interested observers when a steer is butchered. During the deep snow in February they passed much of their time perched on the backs of the mules and horses. Late in March they began to leave for their nesting places, a favorite one being along the shore of Klamath Lake at Modoc Point. Here there is a dense growth of willows and plum brush extending for several miles, but usually only a few feet or yards in width. The stage road runs by the side of, and sometimes through, this strip, and on either side the nests, new and old, may be seen by dozens. A few pairs build along Wood River and other streams in the valley near the Fort, and among willows growing in the marsh. The nests are too well known to need description here; the eggs, from five to seven or eight in number, rarely nine, are placed either upon the bare mud bottom or upon a few fibrous rootlets that serve as an apology for a lining over the mud. The first set of eggs was taken at Modoc Point on April 8.

***Cyanocitta stelleri*.** Common resident, and especially numerous about the Fort. Found to be rather scarce in the mountains in July and August, and rarely seen above sixty-five hundred feet.

[Two specimens, both adults, collected by Dr. Merrill, agree closely with some of the Crested Jays taken at Fort Walla Walla by Capt. Bendire,\* having the general coloring of the head, neck, and back nearly, if not quite, as blackish as in true *stelleri*, but showing fully as much blue streaking on the forehead as in *frontalis*. They are evidently intermediates nearest *stelleri*.—W. B.]

***Perisoreus obscurus*.** None were noticed about the Fort during the winter, though they are known to occur there sometimes at that season.

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\*Bull. N. O. C., Vol. VII, No. 4, p. 229.



In July and August I found this Jay abundant in the mountains north of the valley, roaming in families among the higher fir woods to which they were closely limited.

*Corvus corax sinuatus*. Common in winter, especially about the lake and marsh, fish and an occasional dead horse or steer supplying their food. They breed in the surrounding mountains.

*Corvus americanus hesperis*. Rather common in winter and in early spring. Rare in summer, but a pair or two breed among willows in the marsh, and in July a few were observed near the edges of Klamath Marsh.

*Picicorvus columbianus*. The movements of Clarke's Crow are uncertain, depending largely on the supply of pine cones. During my residence at Fort Klamath it was quite scarce, not more than six or eight having been seen in the immediate vicinity. In July and August it was common about Crater Lake and among the mountains north of the valley, where its summer range extends considerably lower than that of the Oregon Jay.

*Cyanocephalus cyanocephalus*. A large flock of these Jays passed most of the winter within a few miles of the Fort, and were especially noted by the settlers, as the birds were new to most of them and were said to be very rare visitants. They were noisy, and at once attracted attention as they moved rapidly through the pines, and once visited the Fort in their wanderings. This flock was last seen about March 20, though I heard a single bird in pine woods near Williamson's River on May 21.

*Xanthocephalus xanthocephalus*. Breeds abundantly in the marsh among the tules, where fresh eggs were taken from the latter part of May till July. Whatever may be the case elsewhere, in this vicinity the males do not desert their mates during incubation, as has been stated to be their habit.

*Agelaius phoeniceus*. Very common in the marsh by the latter part of March. Nests found May 27 contained half-grown young. None were found in the willows that the birds frequent, but all were placed in tussocks of grass and composed almost entirely of the dead grass of the tussock, the blades being woven so as to form the nest, but still attached by the roots; the new grass growing up partially concealing the nest. Some of them may have belonged to the next species; it was difficult to identify the eggs positively, as the birds were constantly rising, and before I could see whether any particular one had been feeding or had just left its nest, and shoot it, it had joined and become lost in the noisy throng that was circling about.

*Agelaius tricolor*. A few seen among the common Redwings, the white band on the wings of the males being conspicuous, and readily distinguishing them, when flying, from that species.

*Sturnella magna neglecta*. Common during summer, arriving March 22, and becoming numerous three days later.

*Icterus bullocki*. Breeds sparingly at Modoc Point, and more commonly near Linkville. Not observed in the immediate vicinity of the Fort.

*Scolecophagus cyanocephalus*. Common in summer, and a few pass the winter. Here the nests are almost always placed on the ground.

(To be continued.)





Brewster, William. 1888. "Notes on the Birds of Fort Klamath, Oregon (Continued)." *The Auk* 5, 251–262. <https://doi.org/10.2307/4067312>.

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