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THE PINK-SIDED JUNCO

By M. P. SKINNER

THE PINK-SIDED JUNCO (*Junco hyemalis mearnsi*) is the bird that is by far the most frequently met with in the forests of Yellowstone Park. Sometimes these Juncos are found where the trees stand thick and dark, but more often they are about the small openings that are scattered through the woods. Especially is this true of nesting sites, most that I have found having been situated in the open spaces. The Pink-sided Junco is pre-eminently a road-loving bird, being much more numerous along highways than in the unbroken forests; throughout a day's trip in summer these little birds are continually flying up from the road to the bordering pines. When they first come in the spring they frequent lower elevations, preferably the vicinity of scattered firs and cedars or at least brushy places. In summer they seek the Park plateau, up to the very tops of the highest mountains; late in September they have been found within a hundred feet of the summit of Mount Sheridan. They are found in the groves of white-bark pine (*Pinus albicaulis*) (on Mount Washburn and other high mountains) and limber pine (*Pinus flexilis*), in spruce and balsam, in fir and cedar, and at times in quaking asp, willows, birches, alders, and even sage brush. On the whole, the lodgepole forests seem the preferred habitat. On being alarmed they are quite apt to dart into some handy pile of brush. Juncos are seen on the beaches of the larger lakes, Yellowstone, Lewis and Shoshone, or in the alders along shore. During cold storms, they quickly find shelter under juniper shrubs, upturned tree roots, and over-hanging banks; or they come about barns and horses picketed in sheltered spots. Once I found them seeking night-roosts in lodgepole pines on a sheltered flat.

Frequenting, as they do, the Mammoth formation, especially early in the season, and being ground-loving birds anyway, it is not strange that they often seek shelter in the gas caves and fall victims there. Indeed, this species is the one that furnishes the most victims to the suffocating gas, and in former years large numbers were killed. A wire netting is now placed over the mouths of these caves and the destruction from this cause is much less. The Juncos are numerous about the geyser basins, but I do not think the hot water itself has any attraction for them; it may be that their food of vegetable and insect nature is stimulated thereby.

The Pink-sided Junco is our common breeding junco; others (as *montanus* and *connectens*) pass through on migration. Our Juncos are very quick, sprightly and restless in their ways, hopping about on the ground and keeping up an almost continual cheeping in loud tones, except when busy with parental duties or flitting through the pines with a flash of the white feathers in their tails. On the ground they move along with quick little jerks of the wings and tail at each hop. Sometimes they scuttle out of the road and under the nearby trees at one's approach. Usually, though, they are very tame and can be observed at close range, sometimes remaining unconcerned within ten feet of one. They even come hopping into our tents and they may stay for some time; at our camp at the Canyon, they were hopping contentedly about most of the time. They are quite fearless of the Red-tail and Swainson hawks, even when those big birds are screaming in the same tree within a few feet of them.

Pink-sided Juncos are very sociable little birds, associating in spring and fall with Mountain Chickadees, Nuthatches, Tree Sparrows, and with their cousins, the Intermediate Juncos, in the evergreens. At other times they may be seen with Pine Siskins, White-crowned Sparrows, Chipping Sparrows, Kinglets, Audubon Warblers and Townsend Solitaires. They are often with the Robins and Bluebirds, with Vesper Sparrows in spring on the sage flats, and even with Horned Larks and Leucostictes on the bare spots. In October they accompany many other species to the barns, for the oats that are dropped there. I have seen a Northern Shrike catch one or two during the spring before the shrikes go north. The Pink-sided Junco usually progresses by a series of short flights from tree to tree, or from bush to bush. The flight has a peculiar, halting catch to it, due, no doubt, to the short and fast moving wings.

These are enthusiastic little songsters from about April 14 to July 30, with the height of the song season about the first of May. They commence at an early hour, sometimes before 5 A. M. On cold, wet mornings they are the first species to start the chorus. The song is a tingling little warble uttered perhaps, from a quaking asp, eighteen feet or so from the ground, or from a lodgepole pine or a fir: *Ting'le, ting'le, ting'le*, rapidly repeated about six times. The singer perches like a song sparrow, with head thrown back and chest out, but keeping quite motionless. Rain does not stop their singing, but the songs go on as cheerily as ever. I have never observed them singing while in flight, but I have seen a bird begin singing just as soon as it alighted. They were singing at an altitude of 8500 feet on April 16, and at 8800 feet on June 11, where there was from one to three feet of snow all about. I have had them come about camp when I was cooking, especially in September and October, chirping most sociably. Such call-notes are usually low-pitched, but once at least, one came flying into a lodgepole pine under which I was packing, and made such a racket I thought it was a squirrel.

When the Juncos first arrive in the spring they appear at low elevations but soon move higher. Even so, they are often so early that they have to seek shelter about barns and other buildings. In March they are seen generally on the bare spots of ground under limber pines and Douglas firs. Sometimes they seek a roost under some convenient shed, and they even find their way into basements of houses, where they may be unable to find their way out again. The late storms of spring catch the Juncos, but they are adept at seeking shelter about the barns, under sheds, and in potato cellars; after the cold they are bright and lively, but not chirping much, and very busy hunting for possible

waste oats. At other times they take refuge in lodgepole pines under bunches of foliage covered by a canopy of snow, behind the snow caught on an overturned root, under firs, and even under sage bushes if nothing better offers. A little later a snow storm may drive them down from the mountains to the bare ground at lower levels. The middle of May finds these true mountaineers at 9000 feet altitude, and they are at timber line, 9500 feet, a month later. The first arrivals appear suddenly in March, and they gradually increase in number until June 1. A month later and until August 15, the number is increased again by the addition of young birds. Departure begins in September, with the bulk of the birds leaving between the 5th and the 30th. They are then in small flocks of four to eight birds; these small gatherings coalesce into flocks of sixty-five or more individuals in openings in the lodgepole forests where food is plentiful. Toward the end of September, those hardier birds that have still lingered move down to lower elevations about Tower Falls and Mammoth, and even into the sage-brush areas, although never far from the lowest firs and pines; and they may remain until the middle of October, or even November, before being driven out finally.

In the spring they pick up grain and weed seed on bare slopes, and come about barns with the Cassin Purple Finches for dropped oats, although they are more liable to do the latter in the fall. Once I noted a small group flitting about the top of a fir heavy with cones, but I thought they were catching insects rather than working on the cones. At one point near Mammoth there is a shallow stream of water trickling down from a hot spring above. Here the Juncos come to the little basins that catch this cooled water, to drink and bathe with Song Sparrows, Western Wood Pewees, and Rocky Mountain Nuthatches.

The Pink-sided Juncos begin pairing off early in May and by the 25th all are provided with partners. During this season, and also all through the summer, the male manages to show off his white tail feathers more, I believe, than at other seasons. Once I found a pair hopping about the roots of a half fallen, dead lodgepole pine on the bank of Cache Creek, as if looking for a nesting site, but I never had the chance to go back again to find out. On June 23 I found a nest, built of grasses and lined with finer material, placed seven feet from the ground on the back wall of a shallow formation cave at Mammoth, 6300 feet elevation. It held four buffy eggs blotched with brown. The mother was killed in a nearby gas vent soon after. On July 16, I found a nest beside the Grebe Lake trail, at 8000 feet altitude. It was under a little bunch of blueberries in the lodgepole forest, made of pine needles and vegetable stems, and contained four greenish eggs slightly speckled with brown. On the same day another nest was found on the edge of a rill of water just above Grebe Lake, at 8000 feet elevation. This was similar to the last described in every way except that this second nest was out in the open, under a tall cluster of lupines. On July 27 I found a nest under a tuft of partly dried grass on a low, dry meadow at 7700 feet altitude. It was well made of fine grasses and contained three greenish-white eggs marked with small brown spots, especially numerous at the larger end. The mother seemed timid and slow to return to her nest. The next morning I heard the male singing nearby.

On August 3, near Mariposa Lake at 8500 feet altitude, a female fluttered away, with pretended broken wing, from her nest in a hole in the ground under a bunch of lupines, about sixty feet from the nearest tree or shrub. The

hole was lined with vegetable fibers and contained three babies, just hatched and with eyes not yet opened. The next day I found them covered with a thin growth of long black down. The mother kept to the nest most of the time, but I observed the father hunting through the grass in the vicinity more than once. The babies remained in the nest about two weeks.

Young birds have been seen to fly as early as the end of June at the lower elevations; and as late as August 12 I have found them in the same stage at higher altitudes. I have not been able to determine whether the mountaineers are second broods or not. Regularly, as early as the middle of August, the Juncos are in small flocks.

Yellowstone Park, Wyoming, June 28, 1920.

THE FUNCTION OF POWDER DOWNS IN HERONS

By ALEXANDER WETMORE

WITH TWO PHOTOS

THE curious fluffy, greasy tracts of feathers found in patches on the breast and pelvic region in herons and occurring at random in various other groups of birds, even in the Passeriform order, have been the subject of considerable speculation and comment. Some time ago I had opportunity to study their development in the young of a few species of herons and from these observations was able to settle definitely their function so far as concerns this group of birds at least. Observations were made first while rearing a young Great Blue Heron (*Ardea h. treganzai*), and were checked and verified in the young of the Snowy Heron (*Egretta c. candidissima*), Black-crowned Night Heron (*Nycticorax n. naevius*), and Bittern (*Botaurus lentiginosus*). It is interesting to note that my findings verify a possible function of these tracts as suggested by Newton and Gadow (*Dictionary of Birds*, 1896, p. 654). In the young Great Blue Heron powder down tracts produced functional feathers soon after the contour and flight feathers had burst their sheaths and the bird began to preen and care for its plumage. The heron in question had been taken from the nest while still too young to know fear of man, and as I reared it by hand it became devoted to me, though fierce and truculent toward all others. As its plumage developed I noted that the bird constantly rubbed the bill in the powder downs, and on examination found that the heron was utilizing the greasy, powdery substance given off by the tracts to dress and oil the contour feathers. The bill was worked in among the powder downs until a small amount of the exuviae had gathered at the tips of the mandibles and then contour or wing feathers were pulled rapidly through the bill, anointing them with this oily substance. At once return was made to the powder downs after which other feathers were treated in turn until the whole of the body and wing plumage had been properly dressed. I had no difficulty in observing the process as, when permitted, the heron until practically grown delighted in standing upon my knee as I sat in a chair. I was able to place my fingers in