

SPENCER FULLERTON BAIRD,
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**A HISTORY OF NORTH
AMERICAN BIRDS,
LAND BIRDS. VOLUME
2**

Robert Ridgway

**A History of North American
Birds, Land Birds. Volume 2**

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Spencer Fullerton Baird A History of North American Birds / Land Birds – Volume 2

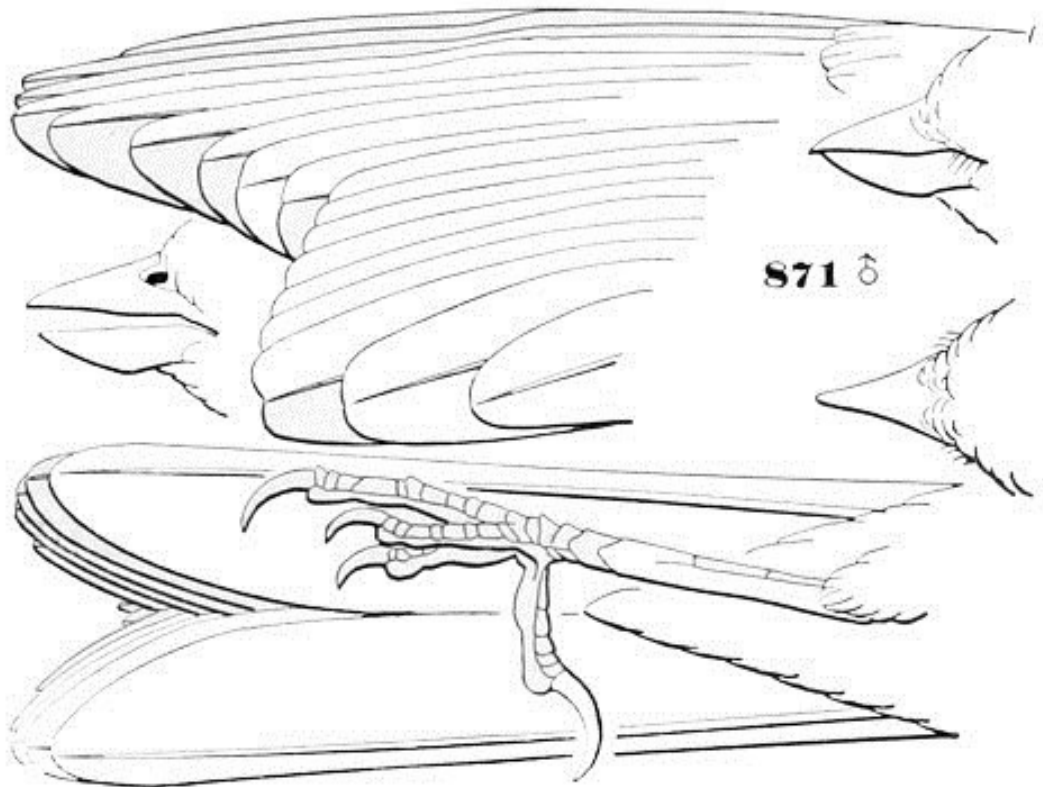
NORTH AMERICAN BIRDS

Family FRINGILLIDÆ.—The Finches. (*Continued.*)

Genus SPIZELLA, Bonap

Spizella, Bonap. Geog. and Comp. List, 1838. (Type, *Fringilla canadensis*, Lath.)

Spinites, Cabanis, Mus. Hein. 1851, 133. (Type, *Fringilla socialis*, Wils.)



Spizella monticola.

871 ♂

Gen. Char. Bill conical, the outlines slightly curved; the lower mandible decidedly larger than the upper; the commissure gently sinuated; the roof of the mouth not knobbed. Feet slender; tarsus rather longer than the middle toe; the hinder toe a little longer than the outer lateral, which slightly exceeds the inner; the outer claw reaching the base of the middle one, and half as long as its toe.

Claws moderately curved. Tertiaries and secondaries nearly equal; wing somewhat pointed, reaching not quite to the middle of the tail. First quill a little shorter than the second and equal to the fifth; third longest. Tail rather long, moderately forked, and divaricated at the tip; the feathers rather narrow. Back streaked; rump and beneath immaculate. Young streaked beneath.

This genus differs from *Zonotrichia* principally in the smaller size and longer and forked, instead of rounded tail.

Birds of the year of this genus are very difficult to distinguish, even by size, except in *monticola*. The more immature birds are also very closely related. In these the entire absence of streaks on a plumbeous head point to *atrigrularis*; the same character in a reddish cap, and a reddish upper mandible to *pusilla*; a dusky loreal spot with dark streaks and generally a rufous shade on top of head, to *socialis*. *S. breweri*, with a streaked head, lacks the dusky lore and chestnut shade of feathers. *S. pallida* generally has a median light stripe in the cap, and a dusky mandibular line.

Common Characters. Interscapular region with black streaks. Rump and lower parts without streaks (except in young). Wing with two narrow light bands (indistinct in *atrigrularis*).

A. Crown different from the sides of the head, a plain light superciliary stripe.

Young with crown and breast streaked.

a. Crown rufous and plain in adult; in young, grayish and with streaks.

I. Streak behind eye, and tinge on side of breast, rufous. Egg pale blue, or bluish-white, blotched with pale brown, or sprinkled with reddish

1. **S. monticola.** Crown bright rufous, undivided medially; a dusky spot on lore; wing-bands sharply defined, pure white. A black spot on breast; jugulum tinged with ashy. Bill black above, yellow below. Length, 6.25; wing, 3.00. *Hab.* Whole of North America; north of the United States only, in summer.

2. **S. pusilla.** Crown dull rufous, indistinctly divided medially; lores entirely whitish; wing-bands not sharply defined, pale brown. No black spot on breast; jugulum tinged with buff. Bill entirely light brownish-red.

Wing, 2.70; tail, 2.80; bill, from forehead, .37. *Hab.* Eastern Province United States ... var. *pusilla*.

“Similar, but colors clearer, and bill more robust.” *Hab.* Peten, Guatemala ... var. *pinetorum*.¹

II. Streak behind the eye blackish. No rufous tinge on side of breast. Egg deep blue, with black dots and streaks round larger end

3. **S. socialis.** Crown bright rufous, not distinctly divided, generally plain. Forehead black, divided medially with white. Streak of black on lore and behind eye. Rump pure bluish-ash. Bill blackish, lower mandible paler.

Auriculars deep ash, in strong contrast with pure white of the superciliary stripe and throat; breast without ashy tinge. Dorsal streaks broad. Wing, 2.80; tail, 2.30. *Hab.* Eastern Province of United States ... var. *socialis*.

¹ *Spizella pinetorum*, Salvin, Pr. Z. S. 1863, p. 189. (“Similis *S. pusillae*, ex Amer. Sept. et Mexico, sed coloribus clarioribus et rostro robustiore differt.”)

Auriculars lighter ash, less strongly contrasted with the white above and below; breast strongly tinged with ash. Dorsal streaks narrow. Wing, 3.00; tail, 2.90. *Hab.* Western Province of United States, and table-lands of Mexico ... var. *arizonæ*.

b. Crown light grayish-brown, with distinct black streaks; young differing in streaked. Egg deep blue, with black streaks and dots (precisely as in *socialis*).

4. **S. pallida.**

Crown divided medially by a distinct pale stripe; whitish superciliary stripe, and blackish post-ocular streak sharply defined. A dusky sub-maxillary streak. Nape ash in contrast with the crown and back. Wing, 2.50; tail, 2.40. *Hab.* Plains of United States, from the Saskatchewan southward ... var. *pallida*.

Crown without a distinct median stripe. Markings on side of head not sharply defined. No dusky sub-maxillary stripe, and nape scarcely different from crown and back. Wing, 2.50; tail, 2.60. *Hab.* Middle and western Provinces ... var. *breweri*.

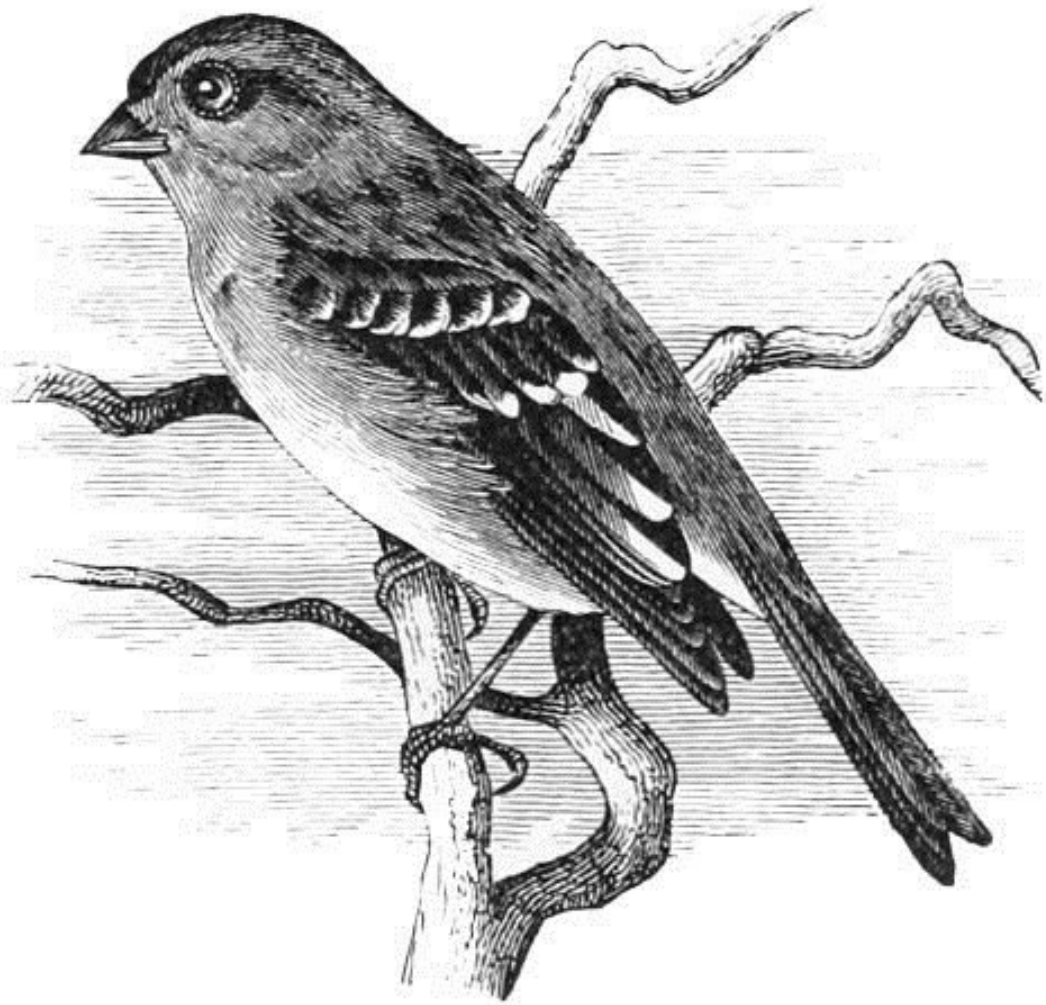
B. Crown not different from the sides of head; no light superciliary stripe.

5. **S. atrigularis.** Head and neck all round, and rump, uniform dark ash, gradually fading into white on the abdomen; wing-bands indistinct; bill light brownish-red. *Ad.* Lores, chin, and upper part of throat black. *Juv.* without black about the head. (Eggs unknown.) *Hab.* Adjacent portions of Mexico and southern Middle Province of United States (Fort Whipple, Arizona, Coues; Cape St. Lucas, Xantus).

Spizella monticola, Baird

TREE SPARROW

Fringilla monticola, Gm. Syst. Nat. I, 1788, 912. *Zonotrichia monticola*, Gray, Genera. *Spinetes monticolus*, Cabanis, Mus. Hein. 1851, 134. *Spizella monticola*, Baird, Birds N. Am. 1858, 472.—Coues, P. A. N. S. 1861, 224 (Labrador).—Cooper & Suckley, 203 (Washington Ter.).—Dall & Bannister, Tr. Ch. Ac. I, 1869, 285.—Cooper, Orn. Cal. 1, 206.—Samuels, 317. *Passer canadensis*, Brisson, Orn. III, 1760, 102. *Fringilla canadensis*, Lath. Index, I, 1790, 434.—Aud. Orn. Biog. II, 1834, 511; V, 504, pl. clxxxviii.—Max. Cab. Jour. VI, 1858, 280. *Emberiza canadensis*, Sw. F. B. Am. II, 1831, 252.—Aud. Syn. 1839.—Ib. Birds Am. III, 1841, 83, pl. clxvi. *Spizella canadensis*, Bon. List, 1838.—Ib. Conspectus, 1850, 480. *Fringilla arborea*, Wils. Am. Orn. II, 1810, 12, pl. xii, f. 3. *Moineau du Canada*, Buffon, Pl. Enl. 223, f. 2. “Mountain Finch,” Lath. Syn. II, I, 265.



Spizella monticola.

Sp. Char. Middle of back with the feathers dark brown centrally, then rufous, and edged with pale fulvous (sometimes with whitish). Hood and upper part of nape continuous chestnut; a line of the same from behind the eye, as well as a short maxillary stripe. Sides of head and neck ashy. A broad light superciliary band. Beneath whitish, tinged with fulvous; the throat with ashy; a small circular blotch of brownish in the middle of the upper part of the breast; the sides chestnut. Edges of tail-feathers, primary quills, and two bands across the tips of the secondaries, white. Tertiaries nearly black; edged externally with rufous, turning to white near the tips. Lower jaw yellow; upper black. Young bird streaked on throat and breast, as well as on crown. Length, 6.25 inches; wing, 3.00.

Hab. Eastern North America to the Missouri, north to Arctic Ocean; also on Pole Creek and Little Colorado River, New Mexico; Western Nevada.

This species varies in the amount of whitish edging to the quills and tail.

Habits. Essentially a northern bird, the Tree Sparrow breeds in high Arctic regions, only appearing in winter within the United States. It is then common as far south as Pennsylvania. A few winter in South Carolina.

It arrives on the Saskatchewan in the latter part of April, where it only makes a short halt, proceeding farther north to breed. Bischoff obtained a specimen at Sitka. Mr. Kennicott found its nest and eggs on the Yukon, and Mr. Dall obtained it at Nulato, and more sparingly below that point.

Mr. MacFarlane met with it breeding in large numbers at Fort Anderson. The nests were in various situations, the larger proportion on the ground, a few in bushes near the ground, and only one is mentioned as having been several feet above it. One was in the cleft of a low willow on the edge of a small lake; another, in a bush, was nearly four feet from the ground; and a third was in a clump of willows and fourteen inches above the ground. Nearly all the other nests mentioned were built directly upon the ground.

The nests were constructed of dry bark and grasses, loosely put together, and very warmly lined with feathers. On the ground they were usually concealed in a tuft of grass. In all instances the female alone was found on the nests, the male being very rarely seen in their vicinity. The usual number of eggs in a nest was four or five, occasionally six, and even seven.

Dr. Suckley obtained a single specimen at Fort Dalles, and Dr. Cooper saw a flock in September, 1863, and again in 1864 at the mouth of the Columbia. Lieutenant Bryan met with them among the Rocky Mountains in latitude 39°, in August. Mr. Ridgway found them very common during the winter in the interior.

Dr. Coues found this Sparrow common in all the wooded districts of Labrador. It was very tame and unsuspecting, showing no fear even when closely approached. I have never met with any, in summer, in any part of New Brunswick or Nova Scotia.

This Sparrow is occasionally abundant in Massachusetts early in October, but rarely appears in full numbers until November. Some remain in the gardens in and about Boston during the winter, and during November the marshes of Fresh Pond are filled with them, when their wailing autumnal chant is in marked contrast with the sweet and sprightly song with which they enliven the spring, just before they are about to depart for their summer homes. They remain until the latter part of April, and Mr. Allen has observed them at Springfield till about the first of May.

In regard to their song, Mr. William Brewster informs me that they usually commence singing about the 25th of March. Their song is a loud, clear, and powerful chant, starting with two high notes, then falling rapidly, and ending with a low, sweet warble. He has heard a few singing with their full vigor in November and December, but this is rare.

Dr. Coues found them not common in South Carolina, but Dr. Kennerly states that they were quite abundant in December on the Little Colorado, in New Mexico, feeding on the fruit of the wild grape and upon seeds.

During the love-season the Tree Sparrow is quite a fine musician, its song resembling that of the Canary, but finer, sweeter, and not so loud. In their migrations, Mr. Audubon states, a flock of twenty or more will perch upon the same tree, and join in a delightful chorus. Their flight is elevated and graceful, and in waving undulations. On opening the stomachs of those he shot at the Magdeleine Islands, Mr. Audubon found them containing minute shell-fish, coleopterous insects, hard seeds, berries, and grains of sand.

Nests obtained near Fort Anderson confirm the descriptions given by Mr. Hutchins, as observed in the settlement at Hudson's Bay. The eggs, which are much larger than those of the other species of *Spizella*, measure .85 by .65 of an inch. Their ground-color is a light green, over which the eggs are very generally freckled with minute markings of a foxy brown. These markings are distributed with great regularity, but so sparsely as to leave the ground distinctly visible.

Spizella pusilla, Bonap

FIELD SPARROW

Fringilla pusilla, Wilson, Am. Orn. II, 1810, 121, pl. xvi, f. 2.—Licht. Verzeich. Doubl. 1823, No. 252.—Aud. Orn. Biog. II, 1834, 299, pl. cxxxix. *Spizella pusilla*, Bonap. List, 1838.—Ib. Conspectus, 1850, 480.—Baird, Birds N. Am. 1858, 473.—Samuels, 319. *Emberiza pusilla*, Aud. Syn. 1839, 104.—Ib. Birds Am. III, 1841, 77, pl. clxiv. *Spinites pusillus*, Cab. Mus. Hein. 1851, 133. *Fringilla juncorum*, Nutt. Man. I, 1832, 499 (2d ed.,) 1840, 577 (supposed by him to be *Motacilla juncorum*, Gmelin, I, 952; *Sylvia juncorum*, Latham, Ind. II, 511; *Little Brown Sparrow*, Catesby, Car. I, 35).

Sp. Char. Bill red. Crown continuous rufous-red, with a faint indication of an ashy central stripe, and ashy nuchal collar. Back somewhat similar, with shaft-streaks of blackish. Sides of head and neck (including a superciliary stripe) ashy. Ear-coverts rufous. Beneath white, tinged with yellowish anteriorly. Tail-feathers and quills faintly edged with white. Two whitish bands across the wing-coverts. Autumnal specimens more rufous. Length about 5.75; wing, 2.34.

Hab. Eastern North America to the Missouri River; San Antonio, Texas in winter (Dresser, Ibis, 1865, 489).

This species is about the size of *S. socialis*, but is more rufous above; lacks the black forehead and eye stripe; has chestnut ears, instead of ash; has the bill red, instead of black; lacks the clear ash of the rump; has a longer tail, etc. It is more like *monticola*, but is much smaller; lacks the spot on the breast, and the predominance of white on the wings, etc. The young have the breast and sides streaked, and the crown slightly so.

Habits. The common Field Sparrow occupies a well-defined and somewhat compact area, being resident within the United States, and in its migrations not removing far from its summer abode. In the summer it breeds from Virginia to Maine, as far as the central and western portions. It is not found near Calais, but occurs and breeds near Norway, Oxford County. In the interior it is found still farther north, in Canada, Iowa, and Wisconsin, to the Red River settlements, where it was found breeding by Donald Gunn. At Hamilton, Ontario, Mr. McIlwraith states it to be a rather rare summer resident. It breeds in Southern Wisconsin and in Iowa, but is not abundant. It does not appear to have been found west of the Missouri Valley.

This Sparrow arrives in Massachusetts early in April, and is found almost exclusively in open pastures, old fields, and in clearings remote from villages. It is a shy, retiring bird, and seems to avoid the near presence of man. Wilson states that it has no song, nothing but a kind of chirruping, not much superior to the chirping of a cricket. But this is quite a mistake, as it is in reality a very varied and fine singer. Its notes are not very powerful, and cannot be heard any distance, but they are very pleasing, although little known or appreciated. It continues in full song until into July, when the second brood is about hatching, when its notes relax, but do not cease until just before its departure in September or early October.

Mr. D. D. Hughes, of Grand Rapids, Mich., in an interesting paper on the habits of this species, speaks of its beautiful tinkling song as one of its most marked features. To his ear it resembles the ringing of a tiny bell more nearly than anything else. In the early morning and at evening the fields ring with their plaintive and tender peals. It sings at all hours of the day, during the nesting-season, even in the noonday heat of summer, when most other birds are silent.

In Virginia these birds may be found throughout the year, though probably not the same birds in the same localities, some retiring farther south and others coming to take their places from the north. In winter they are found, in the greatest abundance in South Carolina and Georgia, occurring in large loose flocks, found chiefly along the roadsides and in old fields and pastures in the rural districts.

The Field Sparrow nests both on the ground and in low bushes, or among tangled clusters of vines. I have found their nests in all these situations, and have no doubt the nature of the surface may have something to do with the position. In high dry pastures, in sheltered situations, I have always found their nests on the ground. In the wet meadows and fields subject to a rise of water, as about the Potomac, near Washington, where these birds are very abundant, they almost invariably nest in bushes at a height of two or three feet.

Mr. Audubon says that during the winter these birds are quite common throughout Louisiana, and the country about the Mississippi, as far as Kentucky. They begin to depart from the South early in March, and move slowly northward as the season advances. He states that they begin to nest in May, and raise three broods in a season. This is not the case in New England, where they do not often have more than a single brood.

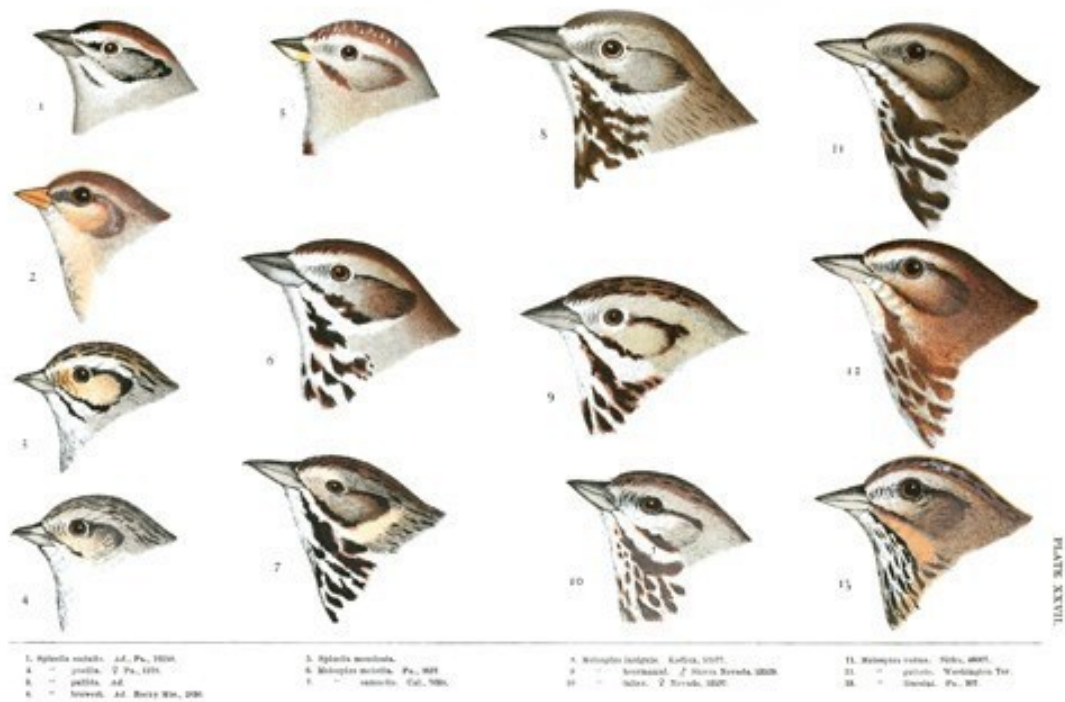
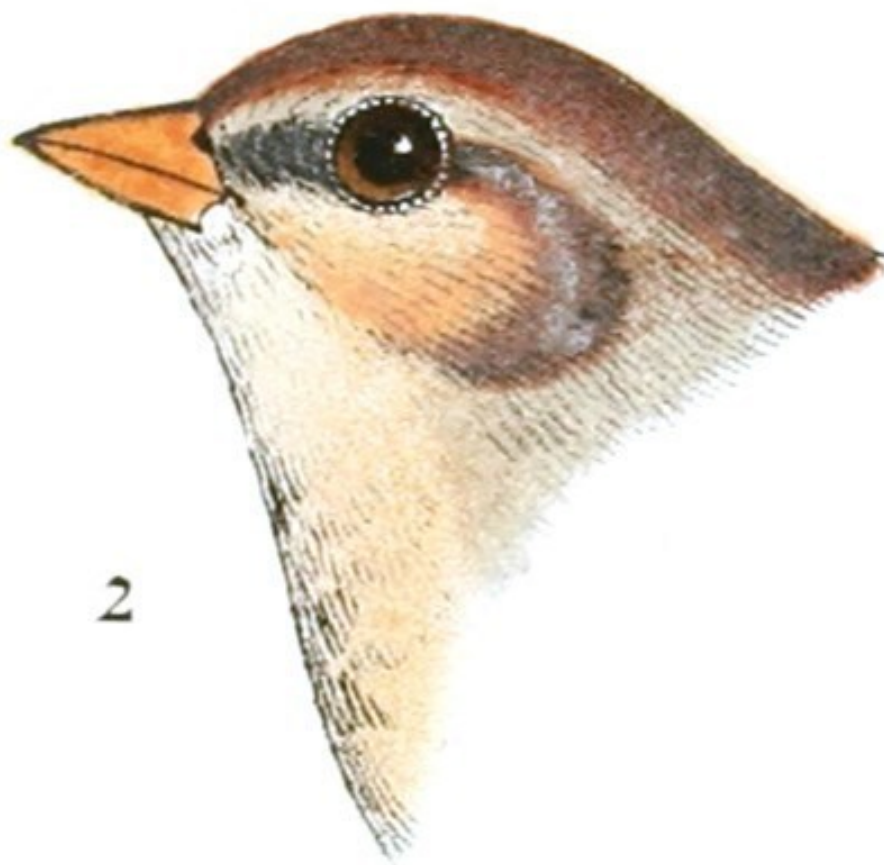


PLATE XXVII.



1. *Spizella socialis*, *Ad.*, Pa., 10150.



2. *Spizella pusilla*. ♀ Pa., 1378.



3. *Spizella pallida*. *Ad.*



4. *Spizella breweri*. *Ad.*, Rocky Mts., 2890.



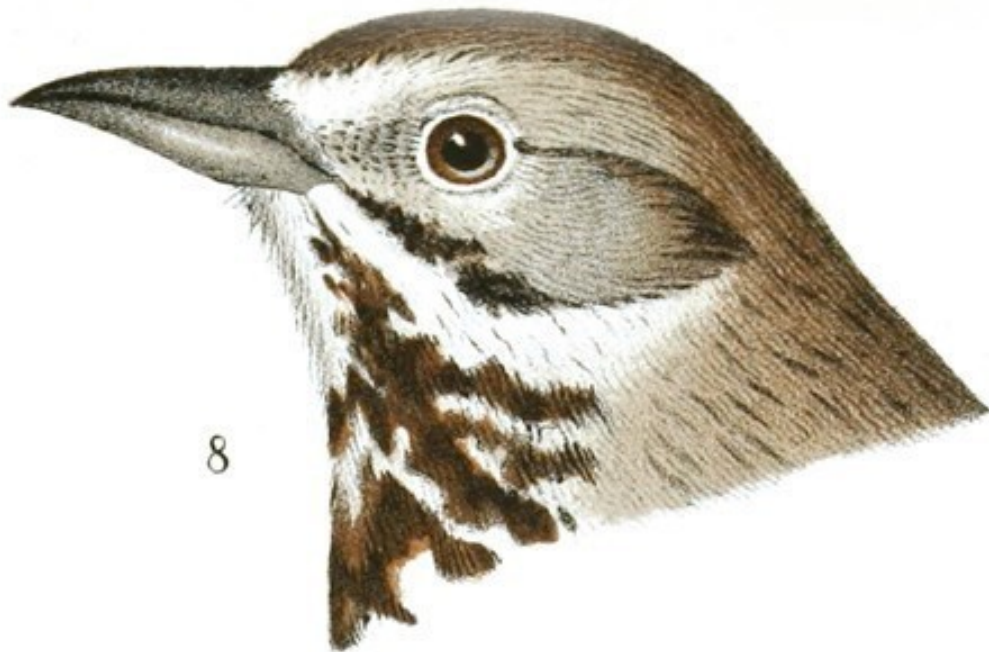
5. *Spizella monticola*.



6. *Melospiza melodia*,. Pa., 2637.



7. *Melospiza samuelis*. Cal., 7098.



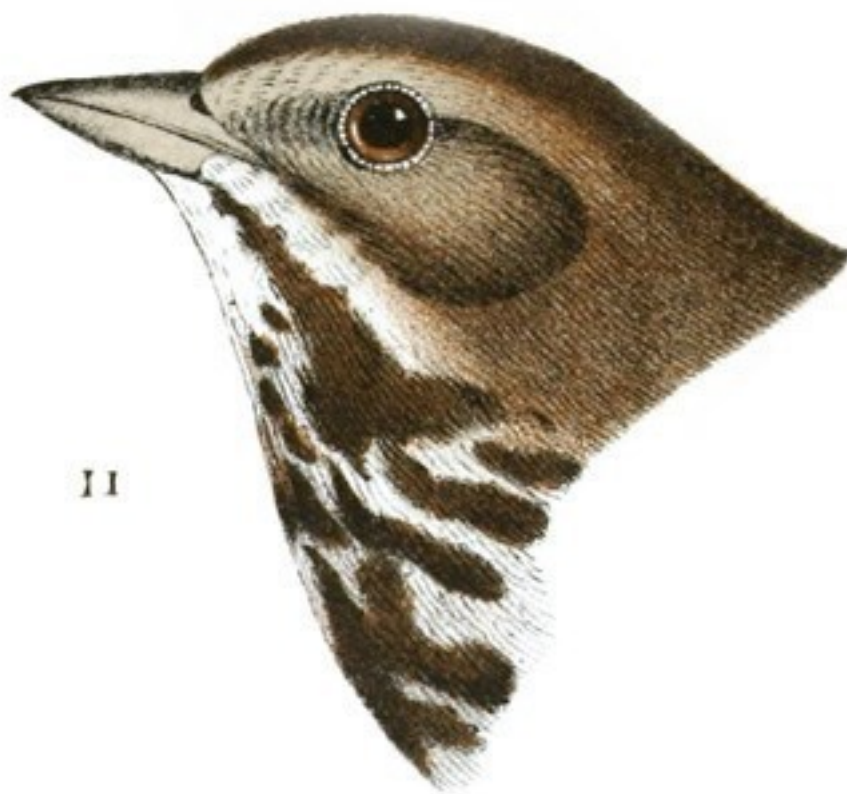
8. *Melospiza insignis*. Kodiak, 52477.



9. *Melospiza heermanni*. ♂ Sierra Nevada, 53529.



10. *Melospiza fallax*. ♀ Nevada, 53537.



11. *Melospiza rufina*. Sitka, 46007.



12. *Melospiza guttata*. Washington Ter.



13. *Melospiza lincolni*. Pa., 937.

Their nests are constructed in a manner very similar to those of the Chipping Sparrow, loosely made of a few stems of vegetables, grasses, and sedges, and lined with hair or fine rootlets. Those placed on the ground are larger and more bulky, and those wrought into the twigs of a bush are made with more care and neatness of interweaving. The eggs are usually five in number, of an oblong-oval shape. The ground is a whitish clay-color, marked more or less fully with blotches of a ferruginous-brown. In some these markings are few, and arranged only about the larger end. In others they are generally diffused, and impart a deep ferruginous color to the whole egg, and disguise or conceal the ground. They vary also in size,—in length from .70 to .63 of an inch, and in breadth from .52 to .50. Their usual size is .70 by .52.

Two nests of this bird taken in Lynn, Mass., by Mr. George O. Welch, are characteristic of their usual style in architecture. One of these has a diameter of four and a height of two and a half inches. Its base, as well as the great mass of its periphery, is made of a very loose intertwining of minute stems of vegetables and dry grasses. The ends of these project from the exterior of the nest at the upper rim, and present a very peculiar appearance, as of an enclosure of palisades. The interior is lined with horsehair. The other is made of similar materials, of a less rigid character and closer texture. Its rim presents the same peculiarities of projecting ends, arranged like a fence above the nest itself. Its dimensions also are about the same. It is, however, much more compactly constructed, with thicker walls and a less open network of dry grasses, and stiff wiry stems of dried plants intermixed with a few pine leaves. The whole is very carefully and warmly lined with horsehair and the softer fur of small quadrupeds. These nests contained, one three, and the other four eggs.

Spizella socialis, Bonap

CHIPPING SPARROW; CHIPPY

Fringilla socialis, Wilson, Am. Orn. II, 1810, 127, pl. xvi, f. 5.—Aud. Orn. Biog. II, 1834, 21; V, 517, pl. civ. *Spizella socialis*, Bon. List, 1838.—Ib. Conspectus, 1850, 480.—Baird, Birds N. Am. 1858, 473.—Cooper & Suckley, 203.—Samuels, 320. *Emberiza socialis*, Aud. Syn. 1839.—Ib. Birds Am. III, 1841, 80, pl. clxv. *Spinites socialis*, Cabanis, Mus. Hein. 1851, 133.

Sp. Char. Rump, back of neck, and sides of neck and head, ashy. Interscapular region with black streaks, margined with pale rufous. Crown continuous and uniform chestnut. Forehead black, separated in the middle by white. A white streak over the eye to nape, and a black one from the base of the bill through and behind the eye. Lores dusky. Under parts unspotted whitish, tinged with ashy on the sides and across the upper breast. Tail-feathers and primaries edged with paler, not white. Two narrow white bands across the wing-coverts. Bill black. Length, 5.75; wing, nearly 3.00; tail, 2.50 (or less).

Young. Immature birds and frequently the adult females with the cap streaked with blackish lines, the chestnut nearly or sometimes quite wanting. Birds of the year streaked beneath and on rump.

The color of bill varies; sometimes entirely black throughout, sometimes very light (but never reddish as in *S. pusilla*), with all intermediate stages. There is usually, however, a dusky tinge in the upper bill, wanting in *pusilla*, and the lores are almost always more or less dusky in all stages of plumage.

Hab. Eastern Province of North America; north to Great Slave Lake, and south to Orizaba, Eastern Mexico, where it is resident. Oaxaca (perhaps var. *arizonæ*), Jan. (Scl. 858, 304); Xalapa (Scl. 1859, 365); Cordova (Scl. 1856, 305); Cuba (Lawr. 1860, VII., 1269).

Habits. The common Chipping Sparrow, so familiar to all in the eastern portion of the United States, is not only one of the most abundant, but one of the most widely distributed of our North American birds. It is found from the Atlantic to the Pacific in its two races, and breeds from Georgia to the Arctic Circle. At different seasons of the year it is found in all portions of North America to Mexico. Along the Atlantic coast it nests at least as far north as New Brunswick and Nova Scotia; in the extreme northern portion of the latter Province I found it one of the most abundant birds.

The late Mr. Robert Kennicott met with them in considerable numbers at Fort Resolution, on Great Slave Lake, and there he obtained quite a number of their nests, all of which were in trees or bushes, from two to three feet above the ground. These were all met with between the 1st and the 26th of June. Mr. B. R. Ross also met with these birds in considerable numbers at Fort Simpson and at Fort Rae.

On the Pacific coast the Chipping Sparrow is stated by Dr. Cooper to be quite as abundant in the northern parts of California, and in Oregon and Washington Territory, as on the Atlantic coast. He found them wintering in the Colorado Valley in large numbers, but met with none about San Diego. They spend their summers in the northern part of California, building their nests, as with us, in the shrubbery of the gardens, and coming familiarly about the doorsteps to pick up crumbs. In autumn they collect in large flocks, and frequent the open fields and pastures. Dr. Cooper found them in flocks on Catalina Island in June, but could discover no nests. They were all old birds, and the conclusion was that they had delayed their more northern migrations.

Dr. Suckley found this species extremely abundant in the open districts on the Columbia River, as well as upon the gravelly prairies of the Puget Sound district. It is not named as having been met with by Mr. Dall or any of the Russian Telegraph party in Alaska.

It was found in abundance during the summer by Mr. Ridgway in all the wooded portions of the country of the Great Basin. He did not meet with any among the cottonwoods of the river-valleys, its favorite haunts appearing to be the cedars and the nut-pines of the mountains. In July and August, in such localities, on the East Humboldt Mountains, it was not only the most numerous species, but also very abundant, nesting in the trees. About the middle of August they congregated in large numbers, preparing for their departure.

At Sacramento it was also very abundant among the groves of small oaks. He could not observe the slightest difference in habits or notes between the eastern and the western specimens of this form. He found them breeding at Salt Lake City, June 19, the nest being in a scrub-oak, six feet from the ground.

In Arizona, Dr. Coues found the Chippy a very abundant summer resident, arriving the third week of March and remaining until the latter part of November. A few may spend the winter there. As described, it seems more gregarious than it is with us, arriving in the spring, and remaining for a month or more in large flocks of fifty or upwards. In New England they always come in pairs, and only assemble in flocks just on the eve of their departure. Mr. Dresser met with these Sparrows, and obtained specimens of them, near San Antonio, on the 10th of April. Dr. Heermann, in his Report upon the birds observed in Lieutenant Williamson's route between the 32d and 35th parallels, speaks of finding this species abundant.

Dr. Gerhardt found this Sparrow not uncommon in the northern portions of Georgia, where it is resident throughout the year, and where a few remain in the summer to breed. Dr. Coues also states that a limited number summer in the vicinity of Columbia, S. C., but that their number is insignificant compared with those wintering there between October and April. They collect in large flocks on their arrival, and remain in companies of hundreds or more.

Mr. Sumichrast states that it is a resident bird in the temperate region of Vera Cruz, Mexico, where it remains throughout the year, and breeds as freely and commonly as it does within the United States.

Although found throughout the country in greater or less numbers, they are noticeably not common in the more recent settlements of the West, as on the unsettled prairies of Illinois and Iowa. Mr. Allen found them quite rare in both States, excepting only about the older settlements. As early as the first week in April, 1868, I noticed these birds very common and familiar in the streets of St. Louis, especially so in the business part of that city, along the wharves and near the grain-stores, seeking their food on the ground with a confidence and fearlessness quite unusual to it in such situations.

The tameness and sociability of this bird surpass that of any of the birds I have ever met with in New England, and are only equalled by similar traits manifested by the Snowbird (*J. hyemalis*) in Pictou. Those that live about our dwellings in rural situations, and have been treated kindly, visit our doorsteps, and even enter the houses, with the greatest familiarity and trust. They will learn to distinguish their friends, alight at their feet, call for their accustomed food, and pick it up when thrown to them, without the slightest signs of fear. One pair which, summer after summer, had built their nest in a fir-tree near my door, became so accustomed to be fed that they would clamor for their food if they were any morning forgotten. One of these birds, the female, from coming down to the ground to be fed with crumbs, soon learned to take them on the flat branch of the fir near her nest, and at last to feed from my hand, and afterwards from that of other members of the family. Her mate, all the while, was comparatively shy and distrustful, and could not be induced to receive his food from us or to eat in our presence.

This Sparrow is also quite social, keeping on good terms and delighting to associate with other species. Since the introduction of the European House Sparrow into Boston, I have repeatedly noticed it associating with them in the most friendly relations, feeding with them, flying up with them when disturbed, and imitating all their movements.

The Chipping Sparrow has very slight claims to be regarded as one of our song-birds. Its note of complaint or uneasiness is a simple *chip*, and its song, at its best, is but a monotonous repetition of a single note, sounding like the rapid striking together of two small pebbles. In the bright days of June this unpretending ditty is kept up incessantly, hours at a time, with only rare intermissions.

The nest of this bird is always in trees or bushes. I have in no instance known of its being built on the ground. Even at the Arctic regions, where so many of our tree-builders vary from this custom to nest on the ground, no exceptional cases are reported in regard to it, all its nests being upon trees or in bushes. These are somewhat rudely built, often so loosely that they may readily be seen through. Externally they are made of coarse stems of grasses and vegetable branches, and lined with the hair of the larger animals.

These birds are devoted parents, and express great solicitude whenever their nests are approached or meddled with. They feed their young almost exclusively with the larvæ of insects, especially with young caterpillars. When in neighborhoods infested with the destructive canker-worm, they will feed their young with this pest in incredible numbers, and seek them from a considerable distance. Living in a district exempt from this scourge, yet but shortly removed from them, in the summer of 1869, I noticed one of these Sparrows with its mouth filled with something which inconvenienced it to carry. It alighted on the gravel walk to adjust its load, and passed on to its nest, leaving two canker-worms behind it, which, if not thus detected, would have introduced this nuisance into an orchard that had previously escaped, showing that though friends to those afflicted they are dangerous to their neighbors. This Sparrow is also the frequent nurse of the Cow Blackbird, rearing its young to the destruction of its own, and tending them with exemplary fidelity.

Their eggs, five in number, are of an oblong-oval shape, and vary greatly in size. They are of a bluish-green color, and are sparingly spotted about the larger end with markings of umber, purple, and dark blackish-brown, intermingled with lighter shadings of faint purple. The largest specimen I have ever noticed of this egg, found in the Capitol Grounds, Washington, measures .80 by .58 of an inch; and the smallest, from Varrell's Station, Ga., measures .60 by .50. Their average measurement is about .70 by .54. They are all much pointed at the smaller end.

***Spizella socialis*, var. *arizonæ*, Coues**

WESTERN CHIPPING SPARROW

Spizella socialis, var. *arizonæ*, Coues, P. A. N. S. 1866.—Cooper, Orn. Cal. 1, 207.

Sp. Char. Similar to *socialis*, but tail and wing longer, the bill narrower, and colors paler and grayer. Rufous of the crown lighter and less purplish, generally (always in specimens from southern Rocky Mountains) with fine black streaks on the posterior part. Ash of the cheeks paler, throwing the white of the superciliary stripe and throat into less contrast. Black streaks of the back narrower, and without the rufous along their edges, merely streaking a plain light brownish-gray ground-color. A strong ashy shade over the breast, not seen in *socialis*; wing-bands more purely white. Wing, 3.00; tail, 2.80; bill, .36 from forehead, by .18 deep. (40,813 ♂, April 24, Fort Whipple, Ariz., Dr. Coues.)

Hab. Western United States from Rocky Mountains to the Pacific; south in winter into Middle and Western Mexico.

All the specimens of a large series from Fort Whipple, Arizona, as well as most others from west of the Rocky Mountains to the Pacific coast, agree in the characters given above, as distinguished from eastern specimens of *socialis*. The variations with age and season are simple parallels of those in *socialis*.

Habits. The references in the preceding article to the Chipping Sparrow as occurring in the Middle and Western Provinces of the United States, are to be understood as applying to the present race.

Spizella pallida, Bonap

CLAY-COLORED SPARROW

Emberiza pallida, Sw. F. Bor.-Am. II, 1831, 251 (not of Audubon). *Spizella pallida*, Bonap. List, 1838.—Baird, Birds N. Am. 1858, 474. *Spinetes pallidus*, Cabanis, Mus. Hein. 1851, 133. *Emberiza shattucki*, Aud. Birds Am. VII, 1843, 347, pl. cccxciii. *Spizella shattucki*, Bonap. Conspectus, 1850, 480.

Sp. Char. Smaller than *S. socialis*. Back and sides of hind neck ashy. Prevailing color above pale brownish-yellow, with a tinge of grayish. The feathers of back and crown streaked conspicuously with blackish. Crown with a median pale ashy and a lateral or superciliary ashy-white stripe. Beneath whitish, tinged with brown on the breast and sides, and an indistinct narrow brown streak on the edge of the chin, cutting off a light stripe above it. Ear-coverts brownish-yellow, margined above and below by dark brown, making three dark stripes on the face. Bill reddish, dusky towards tip. Legs yellow. Length, 4.75; wing, 2.55.

Hab. Upper Missouri River and high central plains to the Saskatchewan country. Cape St. Lucas, Oaxaca, March (Sci. 1859, 379); Fort Mohave (Cooper, P. A. N. S. Cal. 1861, 122); San Antonio, Texas, spring (Dresser, Ibis, 1865, 489; common).

The ashy collar is quite conspicuous, and streaked above with brown. The rump is immaculate. The streaks on the feathers of the crown almost form continuous lines, about six in number. The brown line above the ear-coverts is a post-ocular one. That on the side of the chin forms the lower border of a white maxillary stripe which widens and curves around behind the ear-coverts, fading into the ashy of the neck. The wing-feathers are all margined with paler, and there is an indication of two light bands across the ends of the coverts.

The young of this species is thickly streaked beneath over the throat, breast, and belly, with brown, giving to it an entirely different appearance from the adult. The streaks in the upper parts, too, are darker and more conspicuous. The margins of the feathers are rather more rusty.

This species is readily distinguishable from the other American *Spizellas*, except *S. breweri* (which see), in the dark streaks and median ashy stripe on the crown, the paler tints, the dark line on the side of the chin, etc.

Habits. The Clay-colored Bunting was first discovered by Richardson, and described by Swainson, in the Fauna Bor.-Amer. The only statement made in regard to it is that it visited the Saskatchewan in considerable numbers, frequented the farm-yard at Carlton House, and was in all respects as familiar and confiding as the common House Sparrow of Europe.

The bird given by Mr. Audubon as the *pallida* has been made by Mr. Cassin a different species, *S. breweri*, and the species the former gives in his seventh volume of the Birds of America as *Emberiza shattucki* is really this species. It was found by Mr. Audubon's party to the Yellowstone quite abundant throughout the country bordering upon the Upper Missouri. It seemed to be particularly partial to the small valleys found, here and there, along the numerous ravines running from the interior and between

the hills. Its usual demeanor is said to greatly resemble that of the common Chipping Sparrow, and, like that bird, it has a very monotonous ditty, which it seems to delight to repeat constantly, while its mate is more usefully employed in the duties of incubation. When it was approached, it would dive and conceal itself amid the low bushes around, or would seek one of the large clusters of wild roses so abundant in that section. The nest of this species is mentioned as having been usually placed on a small horizontal branch seven or eight feet from the ground, and occasionally in the broken and hollow branches of trees. These nests are also stated to have been formed of slender grasses, but in so slight a manner as, with their circular lining of horse or cattle hair, to resemble as much as possible the nest of the common *socialis*. The eggs were five in number, and are described as being blue with reddish-brown spots. These birds were also met with at the Great Slave Lake region by Mr. Kennicott, in the same neighborhood by B. R. Ross and J. Lockhart, and in the Red River settlements by Mr. C. A. Hubbard and Mr. Donald Gunn.

Captain Blakiston noted the arrival of this bird at Fort Carlton on the 21st of May. He speaks of its note as very peculiar, resembling, though sharper than, the buzzing made by a fly in a paper box, or a faint imitation of the sound of a watchman's rattle. This song it utters perched on some young tree or bush, sometimes only once, at others three or four times in quick succession.

Their nests appear to have been in all instances placed in trees or in shrubs, generally in small spruces, two or three feet from the ground. In one instance it was in a clump of small bushes not more than six inches from the ground, and only a few rods from the buildings of Fort Resolution.

Both this species and the *S. breweri* were found by Lieutenant Couch at Tamaulipas in March, 1855. It does not appear to have been met with by any other of the exploring expeditions, but in 1864, for the first time, as Dr. Heermann states, to his knowledge, these birds were found quite plentiful near San Antonio, Texas, by Mr. Dresser. This was in April, in the fields near that town. They were associating with the *Melospiza lincolni* and other Sparrows. They remained about San Antonio until the middle of May, after which none were observed.

The eggs of this species are of a light blue, with a slight tinge of greenish, and are marked around the larger end with spots and blotches of a purplish-brown, rather finer, perhaps, than in the egg of *S. socialis*, though very similar to it. They average .70 of an inch in length, and vary in breadth from .50 to .52 of an inch.

Spizella pallida, var. breweri, Cassin

BREWER'S SPARROW

Emberiza pallida, Aud. Orn. Biog. V, 1839, 66, pl. cccxcviii, f. 2.—Ib. Synopsis, 1839.—Ib. Birds Am. III, 1841, 71, pl. clxi (not of Swainson, 1831).
Spizella breweri, Cassin, Pr. A. N. Sc. VIII, Feb. 1856, 40.—Baird, Birds N. Am. 1858, 475.—Cooper, Orn. Cal. 1, 209.

Sp. Char. Similar to *S. pallida*; the markings including the nuchal collar more obsolete; no distinct median and superciliary light stripes. The crown streaked with black. Some of the feathers on the sides with brown shafts. Length, 5 inches; wing, 2.50. Young streaked beneath, as in *pallida*.

Hab. Rocky Mountains of United States to the Pacific coast.

This race is very similar to the *S. pallida*, and requires close and critical comparison to separate it. The streaks on the back are narrower, and the central ashy and lateral whitish stripes of the crown are scarcely, if at all, appreciable. The clear unstreaked ash of the back of the neck, too, is mostly wanting. The feathers along the sides of the body, near the tibia, and occasionally elsewhere on the

sides, have brownish shafts, not found in the other. The differences are perhaps those of race, rather than of species, though they are very appreciable.

Habits. This species bears a very close resemblance to the *S. pallida* in its external appearance, but there are certain constant differences which, with the peculiarities of their distinctive distributions and habits, seem to establish their specific separation. The present bird is found from the Pacific coast to the Rocky Mountains, and from the northern portion of California to the Rio Grande and Mexico. Dr. Kennerly found it in February, 1854, throughout New Mexico, from the Rio Grande to the Great Colorado, along the different streams, where it was feeding upon the seeds of several kinds of weeds.

Dr. Heermann, while accompanying the surveying party of Lieutenant Williamson, between the 32d. and 35th parallels, found these Sparrows throughout his entire route, both in California and in Texas. On the passage from the Pimos villages to Tucson he observed large flocks gleaning their food among the bushes as they were moving southward. In the Tejon valley, during the fall season, he was constantly meeting them associated with large flocks of other species of Sparrows, congregated around the cultivated fields of the Indians, where they find a bountiful supply of seeds. For this purpose they pass the greater part of the time upon the ground.

Dr. Woodhouse also met with this Sparrow throughout New Mexico, wherever food and water were to be found in sufficient quantity to sustain life.

In Arizona, near Fort Whipple, Dr. Coues states that this bird is a rare summer resident. He characterizes it as a shy, retiring species, keeping mostly in thick brush near the ground.

Mr. Ridgway states that he found this interesting little Sparrow, while abundant in all fertile portions, almost exclusively an inhabitant of open situations, such as fields or bushy plains, among the artemesia especially, where it is most numerous. It frequents alike the valleys and the mountains. At Sacramento it was the most abundant Sparrow, frequenting the old fields. In this respect it very much resembles the eastern *Spizella pusilla*, from which, however, it is in many respects very different.

The song of Brewer's Sparrow, he adds, for sprightliness and vivacity is not excelled by any other of the North American Fringillidæ, being inferior only to that of the *Chondestes grammaca* in power and richness, and even excelling it in variety and compass. Its song, while possessing all the plaintiveness of tone so characteristic of the eastern Field Sparrow, unites to this quality a vivacity and variety fully equalling that of the finest Canary. This species is not resident, but arrives about the 9th of April. He found its nest and eggs in the Truckee Reservation, early in June. The nests were in sage-bushes about three feet from the ground.

Dr. Cooper found small flocks of this species at Fort Mohave, after March 20, frequenting grassy spots among the low bushes, and a month later they were singing, he adds, much like a Canary, but more faintly. They are presumed to remain in the valley all summer.

The eggs, four in number, are of a light bluish-green color, oblong in shape, more rounded at the smaller end than the eggs of the *socialis*, and the ground is more of a green than in those of *S. pallida*. They are marked and blotched in scattered markings of a golden-brown color. These blotches are larger and more conspicuous than in the eggs of the other species. They measure .70 by .51 of an inch.

Spizella atrigularis, Baird

BLACK-CHINNED SPARROW

Spinetes atrigularis, Cabanis, Mus. Hein. 1851, 133. *Spizella atrigularis*, Baird, Birds N. Am. 1858, 476, pl. lv, f. 1.—Ib. Mex. Bound. II, Birds, p. 16, pl. xvii, f. 1.—Cooper, Orn. Cal. 1, 210. *Struthus atrimentalis*, Couch, Pr. A. N. Sc. Phil. VII, April, 1854, 67.

Sp. Char. Tail elongated, deeply forked and divaricated. General color bluish-ash, paler beneath, and turning to white on the middle of the belly. Interscapular region yellowish-rusty, streaked with black. Forehead, loreal region, and side of head as far as eyes, chin, and upper part of throat black. Quills and tail-feathers very dark brown, edged with ashy. Edges of coverts like the back. No white bands on the wings. Bill red, feet dusky. Immature birds, and perhaps adult female, without any black on head. Length, 5.50; wing, 2.50; tail, 3.00.

Hab. Mexico, just south of the Rio Grande; Fort Whipple, Ariz. (Coues); Cape St. Lucas.

This species is about the size of *S. pusilla* and *S. socialis*, resembling the former most in its still longer tail. This is more deeply forked and divaricated, with broader feathers than in either. The wing is much rounded; the fourth quill longest; the first almost the shortest of the primaries.

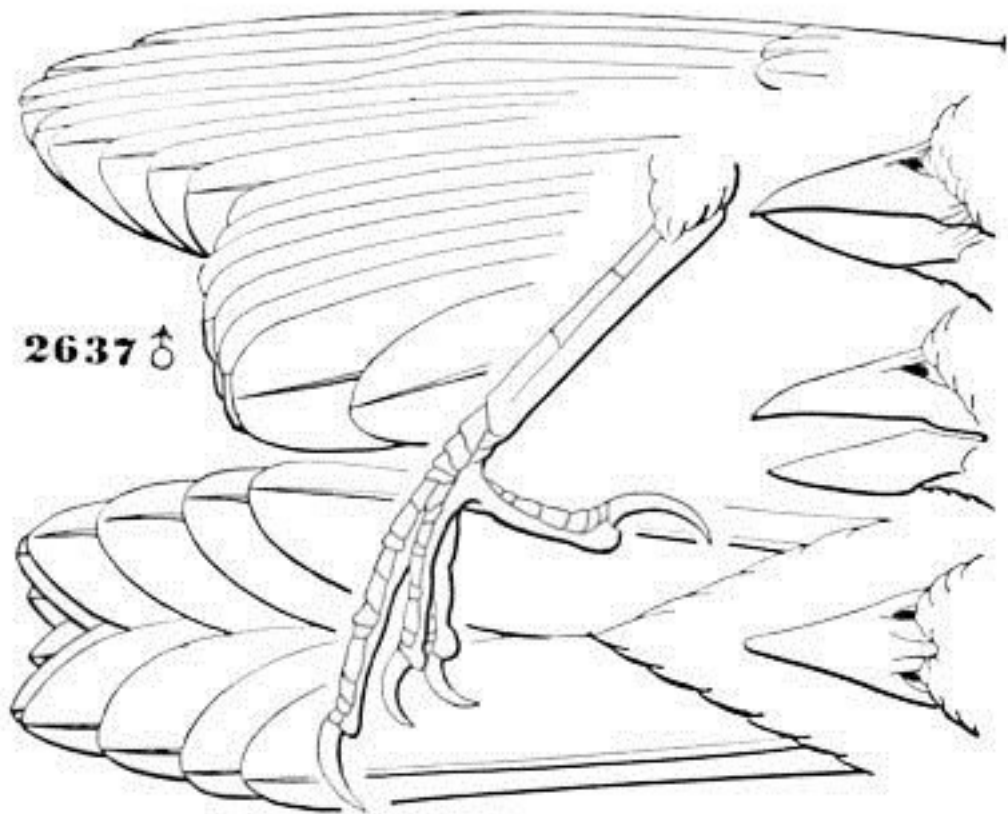
Habits. This species is a Mexican bird, found only within the limits of the United States along the borders. But little is known as to its history. It is supposed to be neither very abundant nor to have an extended area of distribution. It was met with by Dr. Coues in the neighborhood of Fort Whipple, Arizona, where it arrives in April and leaves again in October, collecting, before its departure, in small flocks. In the spring he states that it has a very sweet and melodious song, far surpassing in power and melody the notes of any other of this genus that he has ever heard.

Dr. Coues furnishes me with the following additional information in regard to this species: "This is not a common bird at Fort Whipple, and was only observed from April to October. It unquestionably breeds in that vicinity, as I shot very young birds, in August, wanting the distinctive head-markings of the adult. A pair noticed in early April were seemingly about breeding, as the male was in full song, and showed, on dissection, highly developed sexual organs. The song is very agreeable, not in the least recalling the monotonous ditty of the Chip Bird, or the rather weak performances of some other species of the genus. In the latter part of summer and early autumn the birds were generally seen in small troops, perhaps families, in weedy places, associating with the western variety of *Spizella socialis*, as well as with Goldfinches."

Lieutenant Couch met with individuals of this species at Agua Nueva, in Coahuila, Mexico, in May, 1853. They were found in small flocks among the mountains. Their nest and eggs are unknown.

Genus MELOSPIZA, Baird

Melospiza, Baird, Birds N. Am. 1868, 478. (Type, *Fringilla melodia*, Wils.)



Melospiza melodia.

2637 ♂

Gen. Char. Body stout. Bill conical, very obsolete notched, or smooth; somewhat compressed. Lower mandible not so deep as the upper. Commissure nearly straight. Gonys a little curved. Feet stout, not stretching beyond the tail; tarsus a little longer than the middle toe; outer toe a little longer than the inner; its claw not quite reaching to the base of the middle one. Hind toe appreciably longer than the middle one. Wings quite short and rounded, scarcely reaching beyond the base of the tail; the tertials considerably longer than the secondaries; the quills considerably graduated; the fourth longest; the first not longer than the tertials, and almost the shortest of the primaries. Tail moderately long, rather longer from coccyx than the wings, and considerably graduated; the feathers oval at the tips, and not stiffened. Crown and back similar in color, and streaked; beneath thickly streaked, except in *M. palustris*. Tail immaculate. Usually nest on ground; nests strongly woven of grasses and fibrous stems; eggs marked with rusty-brown and purple on a ground of a clay color.



Melospiza melodia.

This genus differs from *Zonotrichia* in the shorter, more graduated tail, rather longer hind toe, much more rounded wing, which is shorter; the tertiaries longer; the first quill almost the shortest, and not longer than the tertials. The under parts are spotted; the crown streaked, and like the back.

There are few species of American birds that have caused more perplexity to the ornithologist than the group of which *Melospiza melodia* is the type. Spread over the whole of North America, and familiar to every one, we find each region to possess a special form (to which a specific name has been given), and yet these passing into each other by such insensible gradations as to render it quite impossible to define them as species. Between *M. melodia* of the Atlantic States and *M. insignis* of Kodiak the difference seems wide; but the connecting links in the intermediate regions bridge this over so completely that, with a series of hundreds of specimens before us, we abandon the attempt at specific separation, and unite into one no less than eight species previously recognized.

Taking, then, the common Song Sparrow of the Eastern Atlantic States (*M. melodia*) as the starting-point, and proceeding westward, we find quite a decided difference (in a variety *fallax*) when we reach the Middle Province, or that of the Rocky Mountains. The general tints are paler, grayer, and less rusty; the superciliary stripe anteriorly more ashy; the bill, and especially the legs, more dusky, the latter not at all to be called yellow. The bill is perhaps smaller and, though sometimes equal to the average of eastern specimens, more slender in proportion. In some specimens (typical *fallax*) the streaks are uniform rufous without darker centres,—a feature I have not noticed in eastern *melodia*. Another stage (*heermanni*) is seen when we reach the Pacific coast of California, in a darker brown color (but not rufous). Here the bill is rather larger than in var. *fallax*, and the legs colored more like typical *melodia*. In fact, the bird is like *melodia*, but darker. The stripes on the back continue well defined and distinct. *M. samuelis* (= *gouldi*) may stand as a smaller race of this variety.

Proceeding northward along the Pacific coast, another form (var. *guttata*), peculiar to the coast of California, is met with towards and beyond the mouth of the Columbia (coming into Southern California in winter). This is darker in color, more rufous; the stripes quite indistinct above, in fact, more or less obsolete, and none, either above or below, with darker or blackish centres. The sides, crissum, and tibia are washed with ochraceous-brown, the latter perhaps darkest. The bill is proportionally longer and more slender. This race becomes still darker northward, until at Sitka (var. *rufina*) it shows no rufous tints, but a dusky olive-brown instead, including the streaks of the under parts. The markings of the head and back are appreciable, though not distinct. The size has become considerably larger than in eastern *melodia*, the average length of wing being 3.00, instead of 2.60.

The last extreme of difference from typical *melodia* of the east is seen in the variety *insignis* from Kodiak. Here the size is very large: length, 7.00; extent, 10.75; wing, 3.20. The bill is very long (.73 from forehead), the color still darker brown and more uniform above; the median light stripe of vertex scarcely appreciable in some specimens; the superciliary scarcely showing, except as a whitish spot anteriorly. The bill and feet have become almost black.

The following synopsis may serve as a means by which to distinguish the several races of this species, as also the two remaining positive species of the genus:—

Species and Varieties

A. Lower parts streaked.

1. **M. melodia.** White of the lower parts uninterrupted from the chin to the crissum; the streaks of the jugulum, etc., broad and cuneate.

a. Streaks, above and below, sharply defined, and distinctly black medially (except sometimes in winter plumage).

Ground-color above reddish-gray, the interscapulars with the whitish and black streaks about equal, and sharply contrasted. Rump with reddish streaks. Wing, 2.70; tail, 2.90; bill .36 from nostril, and .30 deep. *Hab.* Eastern Province of United States, to the Plains on the west, and the Rio Grande on the south ... var. *melodia*.²

Ground-color above ashy-gray, the interscapulars with the black streaks much broader than their rufous border, and the whitish edges not in strong contrast. Rump without streaks. Wing, 2.80; tail, 3.15; bill, .33 and .22. *Hab.* Middle Province of United States ... var. *fallax*.³

² *Winter plumage.* Rusty prevailing above, but hoary whitish edges to feathers still in strong contrast; streaks beneath with a rufous suffusion externally, but still with the black in excess.

³ *Winter plumage.* Gray above more olivaceous, the black streaks more subdued by a rufous suffusion; streaks beneath with the rufous predominating, sometimes without any black.

Ground-color above nearly pure gray, the interscapulars with the black streaks much broader than the rufous, and the edges of the feathers not appreciably paler. Rump without streaks. Wing, 2.80; tail, 2.85; bill, .32 by .27. *Hab.* California, except along the coast; Sierra Nevada ... var. *heermanni*.⁴

Ground-color above grayish-olive, the interscapulars with the black streaks much broader than their rufous border; edges of the feathers scarcely appreciably paler. Rump and tail-coverts, above and below, with distinct broad streaks of black. Wing, 2.40; tail, 2.50; bill, .37 and .24. *Hab.* Coast region of California ... var. *samuelis*.⁵

Ground-color above olive-rufous, the edges of the interscapulars, alone, ashy; dorsal black streaks very broad, without rufous border. Rump streaked with black. Wing, 2.60; tail, 2.85; bill, .34 and .25. *Hab.* Puebla, Mexico ... var. *mexicana*.⁶

b. Streaks, above and below, not sharply defined, and without black medially.

Above rufescent-olive, the darker shades castaneous; streaks beneath castaneous-rufous. Wing, 2.60; tail, 2.50; bill, .35 and .23. *Hab.* Pacific Province from British Columbia, southward ... var. *guttata*.

Above sepia-plumbeous, the darker shades fuliginous-sepia; streaks beneath fuliginous-sepia. Wing, 3.00; tail, 3.00; bill, .41 and .25. *Hab.* Pacific Province from British Columbia northward ... var. *rufina*.

Above plumbeous, the darker markings dull reddish-sepia in winter, clove-brown in summer; streaks beneath castaneous-rufous in winter, dull sepia in summer. Wing, 3.40; tail, 3.60; bill, .50 and .30. *Hab.* Pacific coast of Alaska (Kodiak, etc.) ... var. *insignis*.

2. **M. lincolni.** White of the lower parts interrupted by a broad pectoral band of buff; streaks on the jugulum, etc., narrow linear. A vertex and superciliary stripe of ashy; a maxillary one of buff. Wing, 2.60; tail, 2.40; bill, .30 and .25. *Hab.* Whole of North America; south, in winter, to Panama.

B. Lower parts without streaks (except in young.)

3. **M. palustris.** Jugulum and nape tinged with ashy; outer surface of wings bright castaneous, in strong contrast with the olivaceous of the back; dorsal streaks broad, black, without rufous externally; a superciliary and maxillary stripe of ashy. ♂. Crown uniform chestnut, forehead black. ♀. Crown similar, but divided by an indistinct ashy stripe, and more or less streaked with black (autumnal or winter ♂ similar). *Juv.* Head, back, and jugulum streaked with black on a yellowish-white ground; black prevailing on the crown. *Hab.* Eastern Province of North America.

⁴ *Winter plumage.* Above rusty-olive, with little or no ashy, the black streaks broad and distinct. Streaks beneath with the black and rusty in about equal amount.

⁵ In summer the streaks beneath are entirely intense black; in winter they have a slight rufous external suffusion.

⁶ *Melospiza melodia*, var. *mexicana*, Ridgway. Mexican Song Sparrow. ?? *Melospiza pectoralis*, von Müller. Sp. Char. (Type, 60,046, Puebla, Mexico, A. Boucard.) Similar to *M. melodia*, but ground-color above olive-brown; inner webs of interscapulars pale ashy, but not in strong contrast. Crown and wings rusty-brown, the former with broad black streaks, and divided by a just appreciable paler line; back with broad black streaks without any rufous suffusion. Superciliary stripe pure light ash, becoming white anterior to the eye; two broad, dark-brown stripes on side of head,—one from the eye back along upper edge of auriculars, the other back from the rictus, along their lower border. Lower parts pure white, the flanks and crissum distinctly ochraceous; markings beneath broad and heavy, entirely pure deep black; those on the jugulum deltoid, on the sides linear. Wing, 2.60; tail, 2.85; bill, .37 and .24; tarsus, .85; middle toe without claw, .68. This may possibly be the *M. pectoralis* of von Müller. The description cited above, however, does not agree with the specimen under consideration. The pectoral spots are expressly stated to be brown, not even a black shaft-streak being mentioned, whereas the pure black spots of the specimen before us render it peculiar in this respect, being, in fact, its chief characteristic.

Melospiza melodia, Baird

SONG SPARROW

Fringilla melodia, Wilson, Am. Orn. II, 1810, 125, pl. xvi, f. 4.—Licht. Verz. 1823, No. 249.—Aud. Orn. Biog. I, 1832, 126; V, 507, pl. 25.—Ib. Syn. 1839, 120.—Ib. Birds Am. III, 1841, 147, pl. clxxxix.—Max. Cab. J. VI, 1858, 275. *Zonotrichia melodia*, Bon. List, 1838.—Ib. Conspectus, 1850, 478. ? ? *Fringilla fasciata*, Gmelin, Syst. Nat. I, 1788, 922.—Nuttall, Man. I, (2d ed.,) 1840, 562. ? ? *Fringilla hyemalis*, Gmelin, Syst. Nat. I, 1788, 922. *Melospiza melodia*, Baird, Birds N. Am. 1858, 477.—Samuels, 321.

Sp. Char. General tint of upper parts rufous and distinctly streaked with rufous-brown, dark-brown, and ashy-gray. The crown is rufous, with a superciliary and median stripe of dull gray, the former lighter; nearly white anteriorly, where it sometimes has a faint shade of yellow, principally in autumn; each feather of the crown with a narrow streak of black forming about six narrow lines. Interscapulars black in the centre, then rufous, then pale grayish on the margin, these three colors on each feather very sharply contrasted. Rump grayer than upper tail-coverts, both with obsolete dark streaks. There is a whitish maxillary stripe, bordered above and below by one of dark rufous-brown, and with another from behind the eye. The under parts are white; the jugulum and sides of body streaked with clear dark-brown, sometimes with a rufous suffusion. On the middle of the breast these marks are rather aggregated so as to form a spot. No distinct white on tail or wings. Length of male, 6.50; wing, 2.58; tail, 3.00. Bill pale brown above; yellowish at base beneath. Legs yellowish.

Hab. Eastern United States to the high Central Plains.

Specimens vary somewhat in having the streaks across the breast more or less sparse, the spot more or less distinct. In autumn the colors are more blended, the light maxillary stripe tinged with yellowish, the edges of the dusky streaks strongly suffused with brownish-rufous.

The young bird has the upper parts paler, the streaks more distinct; the lines on the head scarcely appreciable. The under parts are yellowish; the streaks narrower and more sharply defined dark brown.

As already stated, this species varies more or less from the above description in different parts of North America, its typical races having received specific names, which it is necessary to retain for them as varieties.

Habits. The common Song Sparrow of eastern North America has an extended range of distribution, and is resident throughout the year in a large part of the area in which it breeds. It nests from about South Carolina north to the British Provinces of Nova Scotia and New Brunswick at the east, and to a not well-defined limit in British America. The most northern points to which it has been traced are the plains of the Saskatchewan and the southern shore of Lake Winnipeg, in which latter place Mr. Kennicott found it breeding. It is said by Dr. Coues to breed in South Carolina, and by Mr. Audubon in Louisiana, but I have never seen any of their eggs from any point south of Washington. In winter it is found from Massachusetts, where only a few are observed, to Florida. It is most abundant at this period in North and South Carolina. It is not mentioned in Dr. Gerhardt's list as being found in Northern Georgia at any season of the year. Mr. Ridgway informs me that it does not breed in Southern Illinois. Its song is not popularly known there, though he has occasionally heard it just before these Sparrows were leaving for the north. This species winters there in company with the *Z. albicollis* and *Z. leucophrys*, associating with the former, and inhabiting brush-heaps in the clearings.

To Massachusetts, where specimens have been taken in every month of the year, and where they have been heard to sing in January, they return in large numbers usually early in March, sometimes even in February. It is probable that these are but migrants, passing farther north, and that our summer visitants do not appear among us until the middle of April, or just as they are about to breed. They reach Maine from the 15th to the 25th, and breed there the middle of May. In Massachusetts they do not have eggs until the first week in May, except in very remarkable seasons, usually not until after the Bluebird has already hatched out her first brood, and a week later than the Robin.

The tide of returning emigration begins to set southward early in October. Collecting in small loose flocks, probably all of each group members of the same family, they slowly move towards the south. As one set passes on, another succeeds, until the latter part of November, when we no longer meet with flocks, but solitary individuals or groups of two or three. These are usually a larger and stouter race, and almost suggest a different species. They are often in song even into December. They apparently do not go far, and are the first to return. In early March they are in full song, and their notes seem louder, clearer, and more vibratory than those that come to us and remain to breed.

The Song Sparrow, as its name implies, is one of our most noted and conspicuous singers. It is at once our earliest and our latest, as also our most constant musician. Its song is somewhat brief, but is repeated at short intervals, almost throughout the days of spring and early summer. It somewhat resembles the opening notes of the Canary, and though less resonant and powerful, much surpasses them in sweetness and expression. Plain and homely as this bird is in its outward garb, its sweet song and its gentle confiding manners render it a welcome visitor to every garden, and around every rural home wherein such attractions can be appreciated. Whenever these birds are kindly treated they readily make friends, and are attracted to our doorsteps for the welcome crumbs that are thrown to them; and they will return, year after year, to the same locality, whenever thus encouraged.

The song of this Sparrow varies in different individuals, and often changes, in the same bird, in different parts of the year. It is even stated by an observing naturalist—Mr. Charles S. Paine, of Randolph, Vt.—that he has known the same bird to sing, in succession, nine entirely different sets of notes, usually uttering them one after the other, in the same order. This was noticed not merely once or during one season, but through three successive summers. The same bird returned each season to his grounds, and came each time provided with the same variety of airs.

Mr. Nuttall, who dwells with much force upon the beauty and earnestness of expression of the song of this species, has also noticed and remarked upon the power of individuals to vary their song, from time to time, with very agreeable effect, but no one has recorded so remarkable an instance as that thus carefully noted by Mr. Paine.

These birds are found in almost any cultivated locality where the grounds are sufficiently open. They prefer the edges of open fields, and those of meadows and low grounds, but are rarely found in woods or in thick bushes, except near their outer edges. They nest naturally on the ground, and in such situations a large majority build their nests. These are usually the younger birds. A portion, almost always birds of several summers, probably taught by sad experiences of the insecurity of the ground, build in bushes. A pair which had a nest in an adjoining field had been robbed, by a cat, of their young when just about to fly. After much lamentation, and an interval of a week, I found this same pair, which I easily recognized, building their nest among some vines near my house, some eight feet from the ground. They had abandoned my neighbor's grounds and taken refuge close to my house. This situation they resorted to afterwards for several successive summers, each season building two nests, never using the same nest a second time, although each time it was left as clean and in as good condition as when first made. Indeed, this species is remarkable for its cleanliness, both in its own person and in its care of nestlings and nests.

They feed their young chiefly with insects, especially small caterpillars; the destructive canker-worm is one of their favorite articles of food, also the larvæ of insects and the smaller moths. When crumbs of bread are given them, they are eagerly gathered and taken to their nests.

In the Middle States they are said to have three broods in a season. This may also be so in New England, but I have never known one pair to have more than two broods in the same summer, even when both had been successfully reared. Nests found after July have always been in cases where some accident had befallen the preceding brood.

The nest of the Song Sparrow, whether built on ground, bush, or tree, is always well and thoroughly made. Externally and at the base it consists of stout stems of grasses, fibrous twigs of plants, and small sticks and rootlets. These are strongly wrought together. Within is made a neat, well-woven basket of fine long stems of grasses, rarely anything else. On the ground they are usually concealed beneath a tuft of grass; sometimes they make a covered passage-way of several inches, leading to their nest. When built in a tree or shrub, the top is often sheltered by the branches or by dry leaves, forming a covering to the structure.

The eggs of the Song Sparrow are five in number, and have an average measurement of .82 by .60 of an inch. They have a ground of a clay-color or dirty white, and are spotted equally over the entire egg with blotches of a rusty-brown, intermingled with lighter shades of purple. In some these markings are so numerous and confluent as to entirely conceal the ground-color; in others they are irregularly diffused over different parts, leaving patches unmarked. Occasionally the eggs are unspotted, and are then not unlike those of *Leucosticte griseinucha*.

Melospiza melodia, var. fallax, Baird

WESTERN SONG SPARROW

Zonotrichia fallax, Baird, Pr. A. N. Sc. Ph. VII, June, 1854, 119 (Pueblo Creek, New Mexico). ? *Zonotrichia fasciata*, (Gm.) Gambel, J. A. N. Sc. Ph. 2d Series, I, 1847, 49. *Melospiza fallax*, Baird, Birds N. Am. 1858, 481, pl. xxvii, f. 2. —Kennerly, P. R. R. X, b. pl. xxvii, f. 2.—Cooper, Orn. Cal. 1, 215.

Sp. Char. Similar to var. *melodia*, but with the bill on the whole rather smaller, more slender, and darker. Legs quite dusky, not yellow. Entire plumage of a more grayish cast, including the whole superciliary stripe. The streaks on throat and jugulum in spring are almost black, as in *melodia*; in autumn more rufous; in all cases quite as sharply defined as in *melodia*. The bill is nearly black in spring.

Hab. Middle Province of United States, to the Sierra Nevada.

This race, intermediate between *melodia* and *heermanni* in habitat, is, however, hardly so in characters. The bill is more slender than in either, being much like that of *guttata*, and the tail is longer in proportion to the wing. In colors it is paler than either, the ground-cast above being nearly clear grayish: the streaks, both on the back and jugulum, are more sparse, as well as narrower; very frequently, in the winter plumage, those beneath lack the central black, being wholly rufous; such is the case with the type. In summer, however, they are frequently entirely black, the external rufous having entirely disappeared. As in *heermanni*, the rump is immaculate. The young bird differs as does the adult, though the resemblance to those of *melodia* and *heermanni* is more close than in the adult. The very narrow bill and long tail are the most characteristic features of form.

Habits. In habits and song, Dr. Cooper can find no appreciable differences between this variety and its nearest allies. He states that its nest, which he found in a willow thicket, was composed of bark and fine twigs and grass, and lined with hair. Its eggs he describes as bluish-white, blotched and streaked with reddish-brown, and as measuring .74 by .55 of an inch.

Dr. Coues found this species a common and permanent resident in Arizona, and he pronounces its habits, manners, and voice precisely like those of *M. melodia*. This species, he states, occurs

throughout New Mexico, Arizona, and a part of Southern California, and is particularly abundant in the valley of the Colorado.

Dr. Kennerly observed this species only along Pueblo Creek, in the month of January. It did not confine itself to the open valley, but was often seen among the thick bushes that margined the creek, far up into the Aztec Mountains, where the snow covered the ground. In its habits it resembled the *Poospiza belli*, being very restless and rapid in its motions, accompanying them with a short chirp, feeding upon the seeds of the weeds that remained uncovered by the snow. Its flight was also rapid and near the earth. The bird being very shy, Dr. Kennerly found it difficult to procure many specimens.

According to Mr. Ridgway, the Western Song Sparrow is one of the most abundant of the resident species inhabiting the fertile portions of the Great Basin. It principally occupies the willows along the streams, but is also found in *tulé* sloughs of the river valleys. From a long acquaintance with the Western Song Sparrows, Mr. Ridgway is fully convinced of the propriety of recognizing this as a distinct variety from the eastern *M. melodia*. In all respects, as to habits, especially in its familiarity, it replaces at the West the well-known Song Sparrow of the East. When first heard, the peculiar measure and delivery of its song at once attracts attention. The precision of style and method of utterance are quite distinct and constant peculiarities. The song, though as pleasing, is not so loud as that of the eastern Song Sparrow, while the measure is very different. He noted the syllables of its song, and found them quite uniform. He expresses the song thus: *Cha-cha-cha-cha-cha—wit'—tur'-r-r-r-r—tut*. The first six syllables as to accent are exactly alike, but with a considerable interval or pause between the first and second notes. The second to the fifth follow in rapid succession, each being uttered with deliberation and distinctness. Then comes a pause between the last “cha” and the “wit,” which is pronounced in a fine metallic tone with a rising inflection, then another pause, and a liquid trill with a falling inflection, the whole terminating abruptly with a very peculiar “tut,” in an entirely different key from the other notes.

The nests and eggs were found in the Wahsatch Mountains, June 23. The nests were generally among bushes, in willow thickets, along the streams, about a foot from the ground. One of these nests found in a clump of willows, about two feet from the ground and near a stream, is a compact, firmly built nest, in the shape of an inverted dome. It is two and a half inches in height, and about the same in diameter. Externally it is composed of a coarse framework of strips of willow bark firmly bound around. Within is a compactly woven inner nest, composed of straws, mingled and interwoven with horse-hairs. The cavity has a depth and diameter of two inches. The eggs, four in number, measure .85 by .63 of an inch. Their form is a rounded oval, distinctly pointed at one end. They have a greenish-white ground, marked and blotched with splashes of purplish and reddish brown.

Melospiza melodia, var. heermanni, Baird

HEERMANN'S SONG SPARROW

Melospiza heermanni, Baird, Birds N. Am., 1858, 478, pl. 70, f. 1.—Cooper, Orn. Cal. 1, 212.

Sp. Char. Somewhat like *melodia*, but darker. The streaks on the back and under parts blacker, broader, more distinct, and scarcely margined with reddish, except in winter plumage. The median stripe on vertex indistinct. General shade of coloration olivaceous-gray rather than rusty. Length, 6.40; wing, 2.56; tail, 3. Bill and legs in size and color most like *melodia*.

Hab. Southern California; eastern slope of Sierra Nevada (Carson City), and West Humboldt Mountains, Nev.; Ridgway.

Of the various races of *M. melodia*, this one approaches nearest the typical style of the Atlantic region; agreeing with it in thicker bill and shorter tail, as compared with the var. *fallax*, which occurs between them. It differs from the var. *melodia*, however, in a more grayish cast to the ground-color of the upper plumage, being olivaceous-gray, rather than reddish; the black dorsal streaks are very much broader than the rusty ones, instead of about equal to them in width, and the edges to the interscapular feathers are not appreciably paler than the prevailing shade, instead of being hoary whitish, in strong contrast. In spring the “bridle” on the side of the throat and the spots on the jugulum have the black of their central portion in excess of their external rufous suffusion; but in autumn the rusty rather predominates; at this season, too, the rusty tints above overspread the whole surface, but the black streaks are left sharply defined. At all seasons, the spots on the jugulum are broader and rather more numerous than in *melodia*. The young can scarcely be distinguished from those of *melodia*, but they have the dark streaks on the crown and upper tail-coverts considerably broader.

Habits. The California Song Sparrow has been named in honor of the late Dr. Heermann, who first obtained specimens of this bird in the Tejon Valley, and mistook them for the *Zonotrichia guttata* of Gambel (*M. rufina*), from which they were appreciably different. Whether a distinct species or only a local race, this bird takes the place and is the almost precise counterpart, in most essential respects, of the Song Sparrow of the East. The exact limits of its distribution, both in the migratory season and in that of reproduction, have hardly yet been ascertained. It has been found in California as far north as San Francisco, and to the south and southeast to San Diego and the Mohave River.

The California Song Sparrow is the characteristic *Melospiza* in all that portion of the State south of San Francisco. It is found, Dr. Cooper states, in every locality where there are thickets of low bushes and tall weeds, especially in the vicinity of water, and wherever unmolested it comes about the gardens and houses with all the familiarity of the common *melodia*. The ground, under the shade of plants or bushes, is their usual place of resort. There they diligently search for their food throughout the day, and rarely fly more than a few yards from the place, and remain about their chosen locality from one year's end to another, being everywhere a resident species. In the spring they are said to perch occasionally on some low bush or tree, and sing a lively and pleasant melody for an hour at a time. Each song, Dr. Cooper remarks, is a complete little stanza of a dozen notes, and is frequently varied or changed entirely for another of similar style, but quite distinct. Although no two birds of this species sing just alike, there is never any difficulty in distinguishing their songs when once heard. There is, he thinks, a similarity of tone and style in the songs of all the species of true *Melospiza*, which has led other observers to consider them as of only one species, when taken in connection with their other similarities in colors and habits.

Dr. Cooper found a nest, presumed to belong to this bird, at Santa Cruz, in June. It was built in a dense blackberry-bush, about three feet from the ground, constructed with a thick periphery and base of dry grasses and thin strips of bark, and lined with finer grasses. The eggs were of a smoky white, densely speckled with a dull brown. Although this bird was abundant around Santa Cruz, he was only able, after much searching, to find two of their nests. One was in a willow, close against the tree, and three feet from the ground, containing, on the 11th of May, four eggs partially hatched. This was built of coarse dry stems and leaves, lined with finer grasses and horse-hair. It was five inches in external diameter, and four high. The cavity was two and a half inches deep and two in diameter. These eggs had a ground of greenish-white, and were blotched and spotted with a purplish-brown, chiefly at the larger end. They were .82 by .62 of an inch in measurement. The ground-color was paler and the spots were darker than in eggs of *Z. gambeli*, the whole coloring much darker than in those of *M. fallax*. This nest was apparently an old one used for a second brood.

Another nest found as late as July 10, and doubtless a second brood, was in a thicket, six feet from the ground, and also contained four eggs. Dr. Cooper states that he has seen the newly fledged young by the 7th of May.

Dr. Heermann, in his account of this bird, which he supposed to be the *guttata* of Dr. Gambel, states that he found it abundant throughout the whole country over which he passed, and more especially so in the bushes bordering the streams, ponds, and marshes. Its notes, sweet, and few in number, resembled those of the common Song Sparrow. Its nests, usually built in thick tufts of bushes, were composed externally of grasses and lined with hair, and contained each four eggs, with a pale bluish-ash ground, thickly covered with dashes of burnt umber. Eggs of this species, from near Monterey, collected by Dr. Canfield, vary in measurement from .85 by .65 of an inch to .88 by .70, —larger than any eggs of *Melospiza melodia* that I have seen. Their ground-color is a light green. The blotches are large, distinct, and more or less confluent, and of a blended reddish and purplish brown. They are in some diffused over the entire egg, in others disposed around the larger end.

Melospiza melodia, var. samuelis, Baird

SAMUELS'S SONG SPARROW

Ammodromus samuelis, Baird, Pr. Boston Soc. N. H. VI, June, 1858, 381.—
Ib. Birds N. Am. 1858, 455, pl. lxxi, f. 1.—Cooper, Orn. Cal. 1, 191. *Melospiza gouldi*, Baird, Birds N. Am. 1858, 479.

Sp. Char. Somewhat like *Melospiza melodia*, but considerably smaller and darker. Bill slender and acute, the depth not more than half the culmen. Above streaked on the head, back, and rump with dark brown, the borders of the feathers paler, but without any rufous. Beneath pure white; the breast, with sides of throat and body, spotted and streaked with black, apparently farther back than on other species. Wings above nearly uniform dark brownish-rufous. Under tail-coverts yellowish-brown, conspicuously blotched with blackish. An ashy superciliary stripe, becoming nearly white to the bill, and a whitish maxillary one below which is a broad blackish stripe along the sides of neck; the crown with faint grayish median line. Length, 5 inches; wing, 2.20; tail, 2.35. Bill dusky; legs rather pale. Bill, .35 from nostril by .24 deep; tarsus, .71; middle toe without claw, .58. (5,553 ♂, Petaluma, Cal.)

Hab. Coast region of California, near San Francisco.

The above description is of a specimen in worn summer plumage, when the markings have not the sharp definition seen in the autumnal plumage. The autumnal plumage is as follows: Ground-color above grayish-olive, outer surface of wings, with the crown, more rufous; crown with narrow, and dorsal region with broad, stripes of black, the latter with scarcely a perceptible rufous suffusion; crown with a distinct median stripe of ashy. Streaks on jugulum, etc., broader than in the type, and with a slight rufous suffusion. Wing, 2.20; tail, 2.35; bill from nostril .31, its depth .22; tarsus .74; middle toe without claw, .60.

The type of *Melospiza gouldi* resembles the last, and differs only in having a more distinct rufous suffusion to the black markings; the measurements are as follows: Wing, 2.20; tail, 2.35; bill, .33 by .23; tarsus, .73; middle toe without claw, .59.

This is probably a dwarfed race of the common species, the very small size being its chief distinctive character. The colors are most nearly like those of *heermanni*, but are considerably darker, caused by an expansion of the black and contraction of the rufous markings. The pattern of coloration is precisely the same as in the other races. The present bird appears to be peculiar to the coast region of California, the only specimens in the collection being from the neighborhood of San Francisco.

Habits. Of the history, distribution, and general habits of this species, nothing is known. It was found at Petaluma, Cal., by Emanuel Samuels, and described in the Proceedings of the Boston

Society of Natural History in 1858. The following description of the nest and eggs of this bird, in the Smithsonian collection, has been kindly furnished me by Mr. Ridgway.

Nests elaborate and symmetrical, cup-shaped, composed of thin grass-stems, but externally chiefly of grass-blades and strips of thin inner bark. Diameter about 3.50 inches; internal diameter 2.00, and internal depth 1.50; external, 2.00. Egg measures .78 by .62; regularly ovate in shape; ground-color, greenish-white; this is thickly sprinkled with purplish and livid ashy-brown, the specks larger, and somewhat coalescent, around the larger circumference. (3553, San Francisco, Cal., J. Hepburn.)

Melospiza melodia, var. guttata, Baird

OREGON SONG SPARROW

Fringilla cinerea, (Gm.) Aud. Orn. Biog. V, 1839, 22, pl. cccxc.—Ib. Syn. 1839, 119.—Ib. Birds Am. III, 1841, 145, pl. clxxxvii. *Passerella cinerea*, Bp. List, 1839.—Ib. Conspectus, 1850, 477. *Fringilla (Passerella) guttata*, Nuttall, Man. I, (2d ed.,) 1840, 581. *Zonotrichia guttata*, Gambel, J. A. N. Sc. I, Dec. 1847, 50. *Melospiza rufina*, Baird, Birds N. Am. 1858, 480.—Cooper & Suckley, 204.—Dall & Bannister, Tr. Ch. Ac. I, 1859, 285.—Cooper, Orn. Cal. 1, 214.

Sp. Char. Bill slender. Similar in general appearance to *M. melodia*, but darker and much more rufous, and without any blackish-brown streaks, or grayish edges of the feathers; generally the colors more blended. General appearance above light rufous-brown, the interscapular region streaked very obsoletely with dark brownish-rufous, the feathers of the crown similar, with still darker obsolete central streaks. A superciliary and very indistinct median crown-stripe ashy. Under parts dull white, the breast and sides of throat and body broadly streaked with dark brownish-rufous; darker in the centre. A light maxillary stripe. Sides of the body and anal region tinged strongly with the colors of the rump. Under coverts brown. Length, 6.75; wing, 2.70; tail, 3.00. Legs rather darker than in *melodia*. Bill from nostril, .37; from forehead, .60.

Hab. Pacific coast of the United States to British Columbia.

A young bird from Napa Valley, Cal. (12,912, Colonel A. J. Grayson), probably referrible to this race, differs from the corresponding stage of *heermanni*, *fallax*, and *melodia* in the following respects: the ground-color above is much darker, being dull dingy-brown, and the dusky streaks broader; the white beneath has a strong yellowish tinge, and the pectoral streaks are very broad.

Habits. Dr. Cooper characterizes this species as the most northern and mountain-frequenting representative of the Song Sparrows, being a resident of the higher Sierra Nevada and on the borders of the evergreen forests towards the Columbia, and thence northward, where it is the only species of this genus, and where it is common down to the level of the sea. Specimens have been obtained at Marysville in the spring, by Mr. Gruber.

Dr. Cooper says that he has also met with this bird, and found it possessing habits and songs entirely similar to those of the eastern *M. melodia*, and resembling also those of the more southern *M. heermanni*. He was never able to meet with one of their nests, as, like other forest birds, they are more artful in concealing their treasures than birds that have become accustomed to the society and protection of man, and who, no longer wild, select gardens as the safest places in which to build. In the mild winters usual about the mouth of the Columbia, these birds do not evince any disposition to emigrate, but come familiarly around the houses for their food, when the snow has buried their usual supply.

Dr. Suckley remarks that this Finch is quite a common bird in the vicinity of Puget Sound, and that it is there resident throughout the year. He has found them in very different situations; some in thickets at the edges of prairies, others in stranded drift-logs on open salt marshes, as well as in swamps, and in the dense forests of the Douglass firs, peculiar to the northwest coast. Its voice, he adds, is, during the breeding-season, singularly sweet and melodious, surpassing that of the Meadow Lark in melody and tone, but unequal to it in force.

This species is stated to be a constant resident in the district wherein it is found, never ranging far from the thicket which contains its nest, or the house in the neighborhood of which it finds food and protection. Almost every winter morning, as well as during the summer, as Dr. Cooper states, its cheerful song may be heard from the garden or the fence, as if to repay those whose presence has protected it from its rapacious enemies. When unmolested, it becomes very familiar, and the old birds bring their young to the door to feed, as soon as they can leave their nest. Their song is said to so closely resemble that of the eastern bird, in melody and variety, that it is impossible either to tell which is the superior or to point out the differences. In wild districts it is always to be found near the sides of brooks, in thickets, from which it jealously drives off other birds, whether of its own or other species, as if it considered itself the proprietor. Its nest is built on the ground or in a low bush. Dr. Cooper has seen newly fledged young as early as May 6, at Olympia, though the rainy season was then hardly over.

Mr. Nuttall pronounces its song as sweeter and more varied in tone than that of the Song Sparrow. He heard their cheerful notes throughout the summer, and every fine day in winter until the month of November, particularly in the morning, their song was still continued. Their nests and eggs were not distinguishable from those of *F. melodia*. The nests were composed of dry grasses, lined with finer materials of the same, and occasionally with deer's hair. He states that they keep much in low ground and alluvial situations, amidst rank weeds, willows, and brambles, where they are frequently to be seen hopping about and searching after insects, in the manner of the Swamp Sparrow, which they so much resemble in their plumage. They are usually very solicitous for the safety of their young or for their nests and eggs, keeping up an incessant chirp. They raise several broods in a season, and are, like the Song Sparrow, also engaged nearly the whole of the summer in the cares of rearing their young.

Mr. Townsend met with this species through several hundred miles of the Platte country in great numbers, as well as on the banks of the Columbia, generally frequenting the low bushes of wormwood (*Artemisia*). It appeared also to be a very pugnacious species. Two of the males were often observed fighting in the air, the beaten party going off crestfallen, and the conqueror repairing to the nearest bush to celebrate his triumph by his lively and triumphant strains. He again met with these birds, though not in abundance, in June, 1825, at the mouth of the Lewis River, on the waters of the Columbia.

This Sparrow was also found very numerous at Sitka, by Mr. Bischoff, but no mention is made of its habits.

Melospiza melodia, var. rufina, Baird

RUSTY SONG SPARROW

Emberiza rufina, "Brandt, Desc. Av. Rossic. 1836, tab. ii, 5 (Sitka)," Bonaparte. *Passerella rufina*, Bonap. Consp. 1850, 477. (This may refer to *Passerella townsendi*, but is more probably the present bird.) *Melospiza cinerea*,

Finsch, Abh. Nat. III, 1872, 41 (Sitka). (Not *Fringilla c.* Gmel.) *M. guttata*, Finsch, Abh. Nat. III, 1872, 41 (Sitka). (Not *Fringilla g.* Nutt.)

Sp. Char. Resembling *M. guttata* in the undefined markings, slender bill, etc., but olivaceous-brownish instead of rufous above, the darker markings sepia-brown instead of castaneous. The white beneath much tinged with ashy; jugulum-spots blended, and of a sepia-brown tint. Wing, 3.00; tail, 3.00; bill .41 from nostril, and .25 deep at base.

Hab. Northwest coast, from British Columbia northward. (Sitka.)

The above characters are those of a large series of specimens from Sitka, and a few points along the coast to the southward and northward, and represent the average features of a race which is intermediate between *guttata* and *insignis*, in appearance as well as in habitat. Tracing this variety toward the Columbia River, it gradually passes into the former, and northward into the latter.

We have no distinctive information relative to the habits of this race.

Melospiza melodia, var. insignis, Baird

KODIAK SONG SPARROW

? *Fringilla cinerea*, Gmelin, I, 1788, 922 (based on Cinereous Finch, Lath. II, 274).—Penn. Arc. Zoöl. II, 68 (Unalashka). *Emberiza cinerea*, Bonap. Consp. 1850, 478. *Melospiza insignis*, Baird, Trans. Chicago Acad. I, ii, 1869, p. 319, pl. xxix, fig. 2.—Dall & Bannister, do. p. 285.—Finsch, Abh. Nat. III, 1872, 44 (Kodiak).

Sp. Char. *Summer plumage* (52,477 ♂, Kodiak, May 24, 1868). Above brownish-plumbeous, outer surface of wings somewhat more brown, the greater coverts slightly rufescent. Interscapulars with medial broad but obsolete streaks of sepia-brown; crown and upper tail-coverts with more sharply defined and narrower dusky shaft-streaks. Crown without medial light line. Beneath grayish-white, much obscured by brownish-plumbeous laterally. A whitish supraloral space, but no appreciable superciliary stripe; a whitish maxillary stripe; beneath it an irregular one of dusky sepia; irregular streaks of dark grizzly-sepia on breast and along sides, blended into a broad crescent across the jugulum. Wing, 3.30; tail, 3.50; bill, .48 from nostril, .28 deep at base, and .21 in the middle, the middle of the culmen being much depressed, its extremity rather abruptly decurved.

Autumnal plumage (60,162, Kodiak, received from Dr. J. F. Brandt). Differs very remarkably in appearance from the preceding. The pattern of coloration is everywhere plainly plotted, there being a distinct vertical and sharply defined superciliary stripe. Ground-color above ashy, somewhat overlaid by rusty, except on the sides of the neck. Whole crown, outer surface of wings, and dorsal streaks, rusty rufous; black streaks on crown and upper tail-coverts obsolete. Beneath pure white medially, the markings rusty rufous. Wing, 3.30; tail, 3.60; bill, .47 and .30.

Hab. Kodiak and Unalashka.

This race represents the extreme extent of variation in the species, and it would be difficult for a species to proceed farther from the normal standard; indeed, the present bird is so different even in form, especially of bill, from *melodia*, that, were it not for the perfect series connecting them, few naturalists would hesitate to place them in different genera.

Habits. No information has so far been published in reference to the nesting of this Sparrow, or of any peculiar habits.

Melospiza lincolni, Baird

LINCOLN'S FINCH

Fringilla lincolni, Aud. Orn. Biog. II, 1834, 539, pl. cxciiii.—Nutt. Man. I, (2d ed.,) 1840, 569. *Linaria lincolni*, Rich. List, 1837. *Passerculus lincolni*, Bonap. List, 1838. *Peuceea lincolni*, Aud. Synopsis, 1839, 113.—Ib. Birds Am. III, 1841, 116, pl. clxxvii.—Bonap. Consp. 1850, 481.—Ib. Comptes Rendus, XXVII, 1854, 920. *Melospiza lincolni*, Baird, Birds N. Am. 1858, 482.—Dall & Bannister, Tr. Ch. Ac. I, 1869, 285 (Alaska).—Cooper, Orn. Cal. 1, 216. *Passerculus zonarius*, (Bp.) Sclater, Pr. Zoöl. Soc. 1856, 305.

Sp. Char. General aspect above that of *M. melodia*, but paler and less reddish. Crown dull chestnut, with a median and lateral or superciliary ash-colored stripe; each feather above streaked centrally with black. Back with narrow streaks of black. Beneath white, with a maxillary stripe curving round behind the ear-coverts; a well-defined band across the breast, extending down the sides, and the under tail-coverts, of brownish-yellow. The maxillary stripe margined above and below with lines of black spots and a dusky line behind eye. The throat, upper part of breast, and sides of the body, with streaks of black, smallest in the middle of the former. The pectoral bands are sometimes paler. Bill above dusky; base of lower jaw and legs yellowish. Length, 5.60; wing, 2.60.

Hab. United States from Atlantic to Pacific, north to the Yukon River and the Mackenzie, and south through Mexico to Panama. Oaxaca (Scl. 1858, 303); Xalapa (Scl. 1859, 365); Guatemala (Scl. Ibis, I, 18); Vera Cruz, winter (Sum. M. B. S. I, 552).

There is little or no difference in specimens of this bird from the whole of its range, except that one from near Aspinwall is considerably smaller than usual, the streaks on the back narrower, and the color above more reddish. A young bird from Fort Simpson, on the Mackenzie, is much like the adult.

Habits. Lincoln's Finch was first met with by Mr. Audubon in Labrador, and named in honor of one of his companions, Mr. Thomas Lincoln, now residing at Dennysville, Maine, by whom the first specimen was procured. His attention was attracted to it by the sweet notes of its song, which, he states, surpass in vigor those of any of our American Sparrows with which he was acquainted. He describes this song as a compound of the notes of a Canary and a Woodlark of Europe. The bird was unusually wild, and was procured with great difficulty. Other specimens, afterwards obtained, did not exhibit the same degree of wildness, and they became more common as the party proceeded farther north. He did not meet with its nest.

He describes the habits of this species as resembling, in some respects, those of the Song Sparrow. It mounts, like that bird, on the topmost twig of some tall shrub to chant for whole hours at a time, or dives into the thickets and hops from branch to branch until it reaches the ground in search of those insects or berries on which it feeds. It moves swiftly away when it discovers an enemy, and, if forced to take to flight, flies low and rapidly to a considerable distance, jerking its tail as it proceeds, and throwing itself into the thickest bush it meets. Mr. Audubon found it mostly near streams, and always in the small valleys guarded from the prevalent cold winds of that country.

He also describes this species as eminently petulant and pugnacious. Two males would often pursue each other until the weaker was forced to abandon the valley, and seek refuge elsewhere. He seldom saw more than two or three pairs in a tract of several miles in extent. By the 4th of July the young had left their nests and were following their parents. As from that time the old birds ceased to sing, he inferred that they raised but one brood in a season. Before he left Labrador these birds had all disappeared.

Although first discovered on the coast of Labrador, subsequent explorations have shown this bird to be far more common at the West than it is at the East, where indeed it is exceedingly rare. Not a specimen, that I am aware of, has ever been found in Maine, although it probably does occasionally occur there; and only a very few isolated individuals had been taken in Massachusetts before the spring of 1872, when they were noticed by Mr. Brewster and Mr. Henshaw in considerable numbers. These birds, seven or eight in number, were shot, with two exceptions, in May, between the 14th and the 25th. Three were taken in Springfield by Mr. Allen, one in Newburyport by Mr. Hoxie, two in Hudson by Mr. Jillson, and two in Cambridge by Mr. Brewster. The latter were obtained, one in September and the other in October. In May, 1872, Mr. Brewster obtained six others. Mr. Allen had met with this Finch in Wayne County, N. Y., in May, where it was not uncommon, and in Northern Illinois, where it was quite numerous. A few have been taken near New York City, and in the neighborhood of Philadelphia, where they are regarded as very rare. Professor Baird, however, frequently met with them at Carlisle, Penn.

Farther west, from the Mississippi Valley to the Pacific, they are much more common. Mr. Ridgway states that they occasionally winter in Southern Illinois, where they frequent retired thickets near open fields. They have been found breeding near Racine, Wis., by Dr. Hoy, and have been met with also in Nebraska in considerable numbers; and, during the breeding-season, Mr. Audubon met with them on the Upper Missouri.

From March to May Mr. Dresser found these birds very abundant in the fields near the San Antonio River, and in some swampy grounds. They seemed to prefer that sort of locality, and the banks of the river, keeping among the flags and rushes. Their stomachs were found to contain small seeds. Mr. Lincecum also met with a few in Washington County of the same State.

It was not met with in Arizona by Dr. Coues, but Dr. Kennerly found it in the month of February from the Big Sandy to the Great Colorado River. It confined itself to the thick bushes along the streams, and when seen was generally busily hopping from twig to twig in search of food. When started up, its flight was very rapid and near the earth.

Dr. Heermann obtained this species, not unfrequently, both in Northern California and in the Tejon Valley. On all occasions he found it in company with flocks of Sparrows, composed of several species.

Lieutenant Couch took this species at Tamaulipas, Mexico, and at Brownsville, Southwestern Texas, in March. It has also been seen in May, at the Forks of the Saskatchewan, by Captain Blakiston.

Lincoln's Finch was met with by Mr. Ridgway in abundance only during its spring and fall migrations. Towards the last of April it was quite common in wet brushy places in the vicinity of Carson City. It was next observed in October among the willows bordering Deep Creek, in Northern Utah. In the weedy pastures in Parley's Park it was a common species, frequenting the resorts of the *Z. leucophrys*. A nest, with young, was discovered near the camp. It was embedded in the ground, beneath a bush. Its song he did not hear, only a single *chuck*, almost as loud as that of the *Passerella schistacea*.

Dr. Cooper reports this species as near San Diego about March 25. Large flocks were then passing northward. During the day they kept among the grass, and were rather shy and silent. They seemed to have a good deal of the habits of the *Passerculus*, and to differ much in their gregariousness, their migratory habits, and their general form, from the other *Melospizæ*. Dr. Cooper did not meet with any of these birds in the Colorado Valley, nor has he seen or heard of any having been found in California during the summer. The *M. lincolni* has been found breeding up to high Arctic latitudes. It was met with by Mr. Kennicott at Fort Simpson and at Fort Resolution. At the latter place its nests were found between the 2d and the 14th of June. They were also obtained in May, June, and July, at Fort Simpson, by Mr. B. R. Ross, and at Yukon River, Fort Rae, Nulato, and other localities in the extreme northern regions, by Messrs. Reid, Lockhart, Clarke, Kirkby, and Dall. On Mt. Lincoln, Colorado, above eight thousand feet, Mr. Allen found this Sparrow very numerous.

This Finch was found by Salvin about the reeds on the margin of Lake Dueñas, Guatemala, in February, but was not common. It is common, in the winter months, near Oaxaca, Mexico, where it was taken by Mr. Boucard.

Mr. Kennicott saw its nest June 14. This was on the ground, built in a bunch of grass in rather an open and dry place, and containing five eggs. The female permitted him to approach very close to her, until he finally caught her on the nest with his beating-net. Another nest was placed in a bunch of grass growing in the water of a small grassy pond. The nest contained four eggs and one young bird.

The nest and eggs of this species had been previously discovered by Dr. Hoy, near Racine. This is, I believe, the first instance in which it was identified by a naturalist, as also the most southern point at which it has ever been found. These eggs measure .74 by .60 of an inch. They have a pale greenish-white ground, and are thickly marked with dots and small blotches of a ferruginous-brown, often so numerous and confluent as to disguise and partially conceal the ground.

Melospiza palustris, Baird

SWAMP SPARROW

Fringilla palustris, Wilson, Am. Orn. III, 1811, 49, pl. xxii, f. 1.—Aud. Orn. Biog. I, 1831, 331; V, 508, pl. lxiv. *Fringilla (Spiza) palustris*, Bonap. Obs. Wilson, 1825, No. 105. *Passerculus palustris*, Bonap. List, 1838.—Ib. Conspectus, 1850, 481. *Ammodromus palustris*, Aud. Syn. 1839.—Ib. Birds Am. III, 1841, 110, pl. clxxv. *Melospiza palustris*, Baird, Birds N. Am. 1858, 483.—Samuels, 323. ? *Fringilla georgiana*, Lath. Index Orn. I, 1790, 460 (perhaps *Peucaea aestivalis*).—Licht. Verz. 1823, No. 251. *Fringilla (Ammodromus) georgiana*, Nutt. Man. I, (2d ed.,) 1840, 588.

Sp. Char. Middle of the crown uniform chestnut; forehead black; superciliary streak, sides of head and back, and sides of neck, ash. A brown stripe behind the eye. Back with broad streaks of black, which are edged with rusty yellow. Beneath whitish, tinged with ashy anteriorly, especially across the breast, and washed with yellowish-brown on the sides. A few obsolete streaks across the breast, which become distinct on its sides. Wings and tail strongly tinged with rufous; the tertials black, the rufous edgings changing abruptly to white towards the end. Length, 5.75; wing, 2.40.

Female with the crown scarcely reddish streaked with black, and divided by a light line. Young conspicuously streaked beneath the head, above nearly uniform blackish.

Hab. Eastern North America from the Atlantic to the Missouri; north to Fort Simpson.

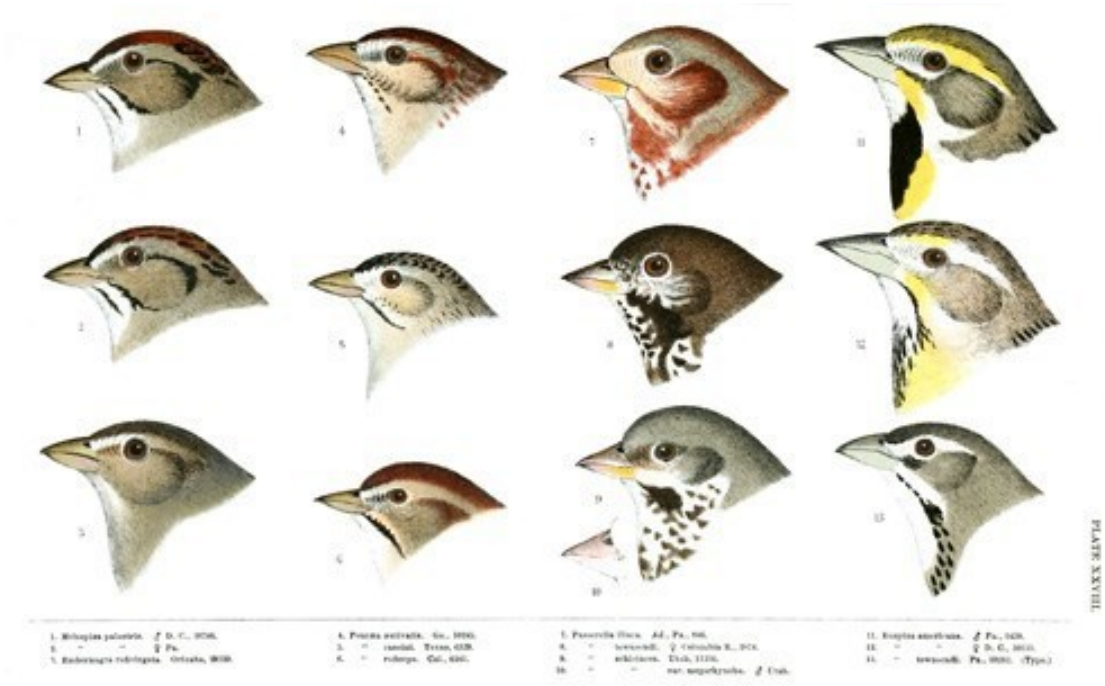
In autumn the male of this species has the feathers of the crown each with a black streak; and the centre of the crown with an indistinct light stripe, materially changing its appearance.

The forehead is usually more or less streaked with black.

In the uncertainty whether the *Fringilla georgiana* of Latham be not rather the *Peucaea aestivalis* than the Swamp Sparrow, I think it best to retain Wilson's name. It certainly applies as well to the latter, which has the black sub-maxillary streak, and the chin and throat more mouse-colored than in *palustris*.

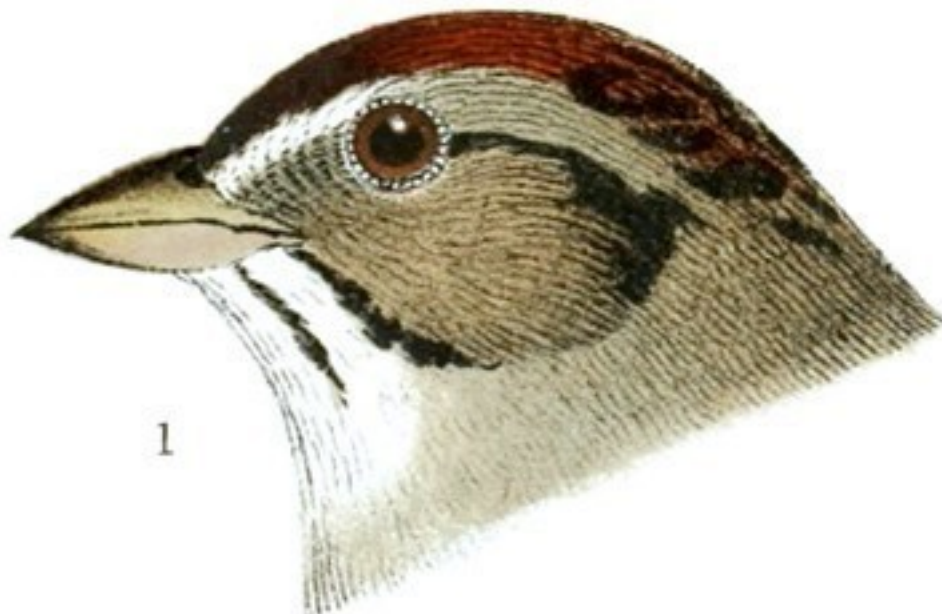
Habits. Owing to the residence of this species in localities not favoring frequent visits or careful explorations, and still more to its shy and retiring habits, our writers have not been generally well informed as to the history and general manners of this peculiar and interesting Sparrow. Its irregular distribution, its abundance only in certain and unusually restricted localities, its entire absence from all the surrounding neighborhood, and its secretiveness wherever found, have all combined to throw doubt and obscurity over its movements. Unless purposely looked for and perseveringly hunted up,

the Swamp Sparrow might exist in large numbers in one's immediate neighborhood and yet entirely escape notice. Even now its whole story is but imperfectly known, and more careful investigation into its distribution and general habits will doubtless clear up several obscure points in regard to its movements.



1. <i>Melospiza palustris</i> . ♂ D. C., 3876.	4. <i>Peucaea arctica</i> . ♂, 1899.	7. <i>Passerculus iliaca</i> . Ad. Pa., 98.	11. <i>Empidonax americanus</i> . ♂ Pa., 343.
2. " " ♀ Pa.	5. " " var. <i>canad.</i> Texas, 458.	8. " " <i>harrisi</i> . ♂ Maryland R., 191.	12. " " ♀ D. C., 3874.
3. <i>Endospiza rubrifrons</i> . Ontario, 918.	6. " " <i>reduga</i> . Cal., 455.	9. " " <i>schistaceus</i> . Utah, 1126.	13. " " <i>townsendi</i> . Pa., 993. (Type)
		10. " " <i>var. superciliosus</i> . ♂ Utah.	

PLATE XXVIII.



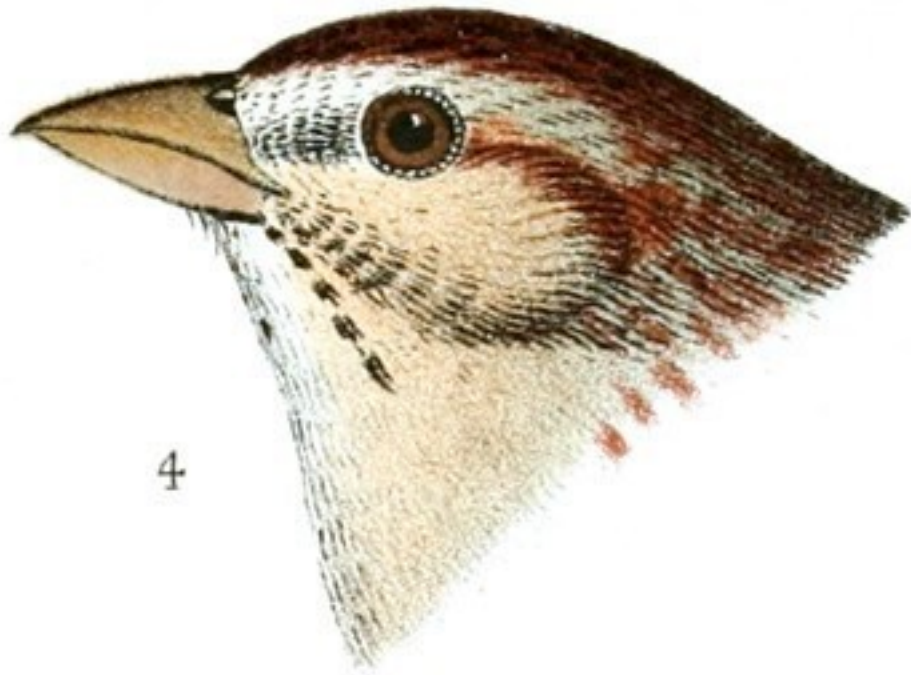
1. *Melospiza palustris*. ♂ D. C., 38746.



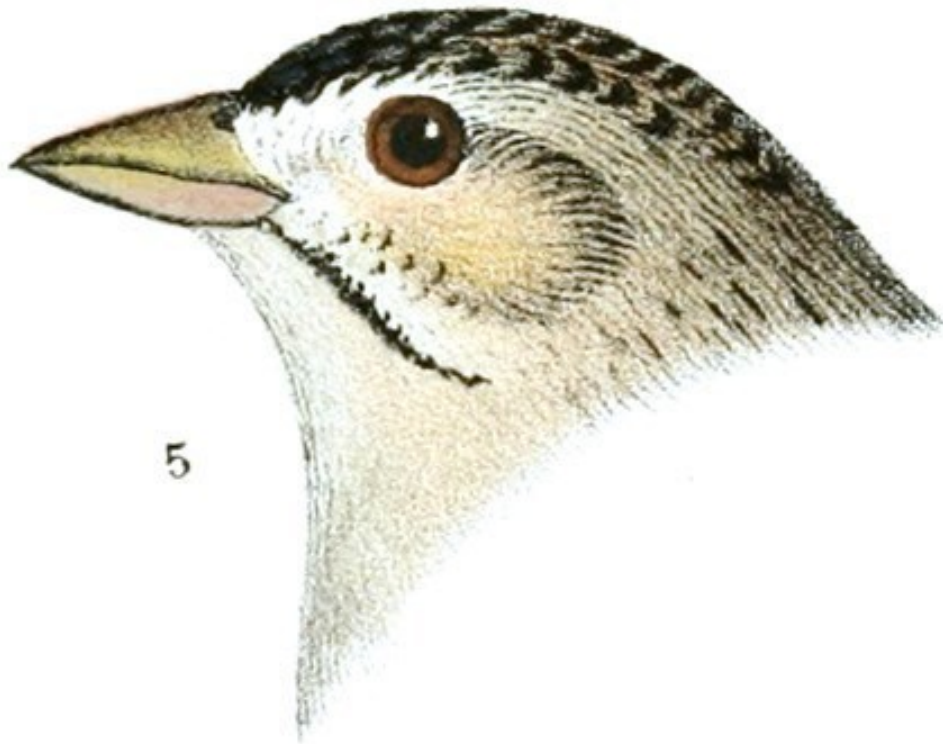
2. *Melospiza palustris*. ♀ Pa.



3. *Embernagra rufivirgata*. Orizaba, 29229.



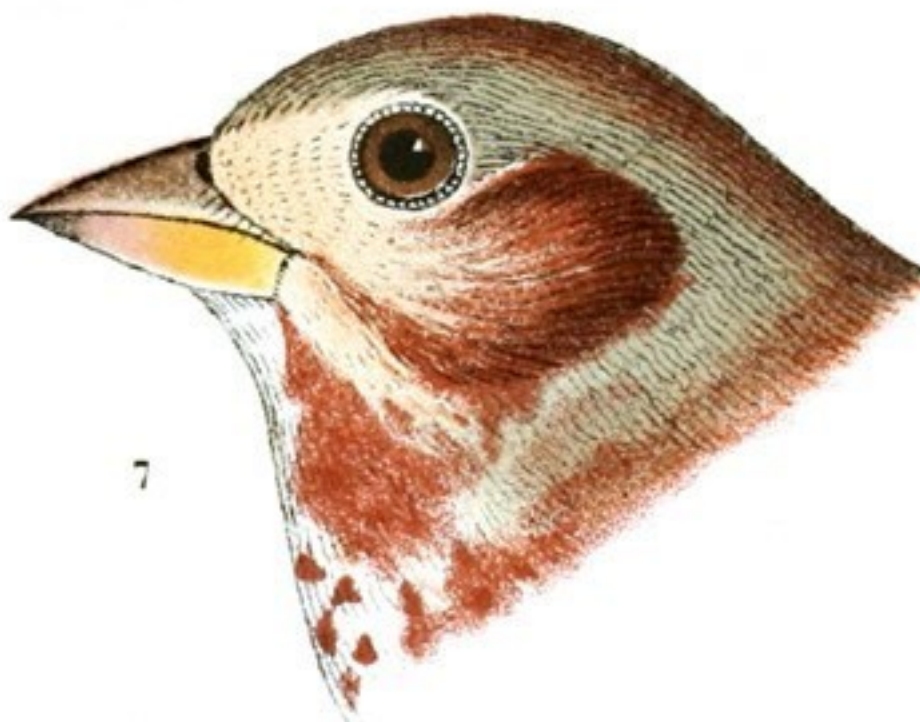
4. *Peucæa æstivalis*. Ga., 10245.



5. *Peucæa cassini*. Texas, 6329.



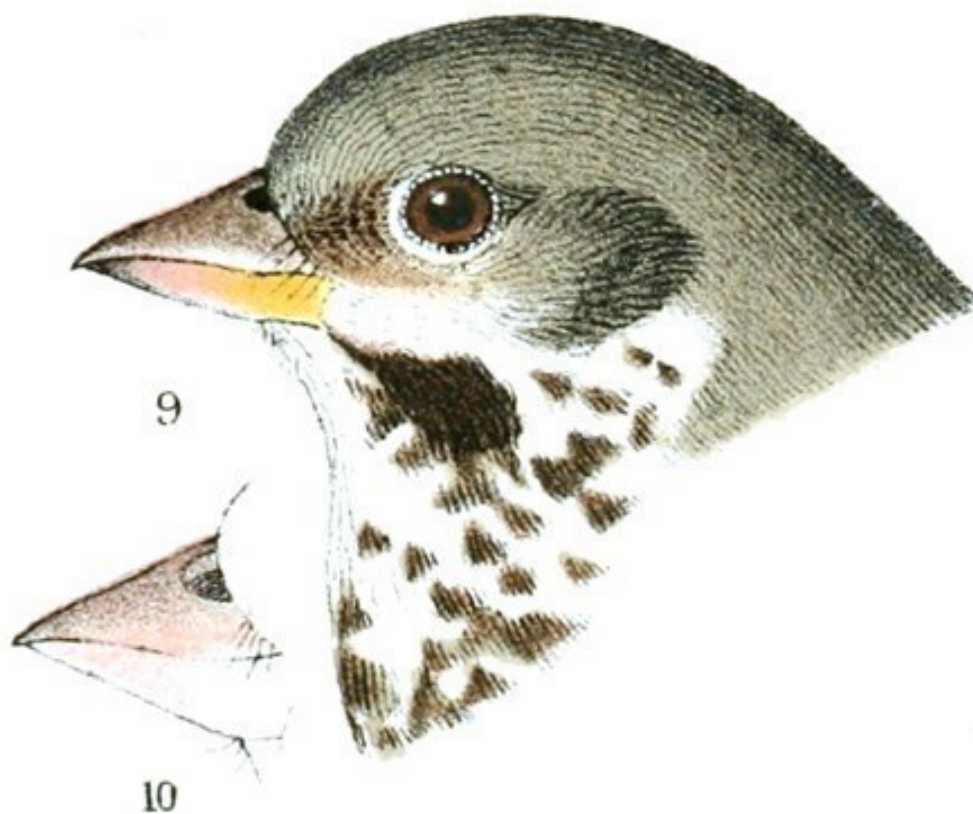
6. *Peucaea ruficeps*. Cal., 6241.



7. *Passerella iliaca*. Ad., Pa., 846.



8. *Passerella townsendi*. ♀ Columbia R., 2874.



9. *Passerella schistacea*. Utah, 11234.

10. *Passerella schistacea*. var. *megarhyncha*. ♂ Utah.



11

11. *Euspiza americana*. ♂ Pa., 1459.



12

12. *Euspiza americana*. ♀ D. C., 10133.



13. *Euspiza townsendi*. Pa., 10282. (Type.)

From what is now known, we gather that it occurs throughout the eastern portions of North America, from the Southern States, in which it passes the wintry months, to high northern latitudes, where some find their way in the breeding-season, extending as far to the west at least as the Missouri River region.

Three specimens were obtained at Fort Simpson, by Mr. Kennicott, in September, which indicates their probable summer presence in latitude 55°, and their near approach to the Pacific coast at the extreme northwestern portion of their distribution. Audubon also met with them in Newfoundland and in Labrador. They are known to breed as far to the south as Pennsylvania. They have been taken in the eastern portion of Nebraska, and breed in considerable numbers in Southern Wisconsin. Further investigations in regard to its distribution will probably show it to be a much more widely distributed as well as a more abundant bird than has been generally supposed.

Mr. Ridgway writes me that this bird winters in Southern Illinois, and remains there very late in the spring, but he thinks that none remain to breed.

Wilson states that it arrives in Pennsylvania early in April, where it frequents low grounds and river-courses, rears two and sometimes three broods in a season, and returns to the South as the cold weather commences. During the winter, he met with them in large numbers in the immense cypress swamps and extensive grassy flats of the Southern States, along the numerous rivers and rice plantations. These places abounded with their favorite seeds and other means of sustenance, and appeared to be their general places of resort at this season. From the river Trent, in North Carolina, to the Savannah River, and even farther south, Wilson found this species very numerous. They were not found in flocks, but skulked among the reeds and grass, were shy and timorous, and seemed more

attached to the water than any others of this family. In April large numbers pass through Pennsylvania northward. Only a few remain behind, and these frequent the swamps and the reedy borders of creeks and rivers. He found their nests built in the ground, in tussocks of rank grass, surrounded by water, with four eggs of a dirty-white ground, spotted with rufous. He has found them feeding their young as late as the 15th of August. Their food seemed to be principally grass-seeds, wild oats, and insects. He supposed them to have no song, and that their only note was a single *cheep* uttered in a somewhat hoarse tone. They flirt their tails as they fly, seldom or never take to trees, but run and skulk from one low bush to another.

Except in regard to their song, Wilson's account of their habits, so far as it goes, is quite accurate, although this bird really does have quite a respectable song, and one that improves as the season advances. At first it is only a succession or repetition of a few monotonous trilling notes, which might easily be mistaken for the song of the Field Sparrow, or even confounded with the feebler chant of the *socialis*, although not so varied as the former, and is much more sprightly and pleasing than the other. Still later its music improves, and more effort is made. Like the Song Sparrow, it mounts some low twig, expands its tail-feathers, and gives forth a very sprightly trill that echoes through the swampy thicket with an effect which, once noticed and identified with the performer, is not likely to be ever mistaken. Nuttall calls this song loud, sweet, and plaintive. It is to my ear more sprightly than pathetic, and has a peculiarly ventriquoistic effect, as if the performer were at a much greater distance than he really is.

Their food, when they first arrive, and that which they feed to their young, consists very largely of insects, principally coleopterous ones, with such few seeds as they can glean. After the breeding-season, when their young can take care of themselves, they eat almost exclusively the ripened seeds of the coarse water grasses and sedges. They are very devoted to their young, and often display great solicitude for their safety, even when able to take care of themselves, and often expose themselves to dangers they carefully avoid at other times, and are thus more easily procured. At all other times they are difficult to shoot, running, as they do, through the grass and tangled thickets, and rarely rising on the wing. They dive from thicket to thicket with great rapidity, and even when wounded have a wonderful power of running and hiding themselves.

Mr. Audubon met with them, during autumn and winter, among the flat sand-bars of the Mississippi, which are overgrown with rank grasses. Though not in flocks, their numbers were immense. They fed on grass-seeds and insects, often wading for the latter in shallow water in the manner of the *Tringidæ*, and when wounded and forced into the water swimming off to the nearest shelter. He also met with these birds abundantly dispersed in the swamps of Cuyaga Lake, as well as among those along the Illinois River in the summer, and in the winter up the Arkansas River.

Mr. Townsend observed these birds on the head-waters of the Upper Missouri, but did not meet with them beyond.

In Maine, Mr. Boardman gives it as a regular summer visitant at Calais, arriving there as early as March, becoming common in May, and breeding in that locality. Professor Verrill found it in Western Maine, a summer visitant and breeding, but did not regard it as common. From my own experience, in the neighborhood of Boston, I should have said the same as to its infrequency in Eastern Massachusetts, yet in certain localities it is a very abundant summer resident. Mr. William Brewster has found it breeding in large numbers in the marshes of Fresh Pond, where it arrives sometimes as early as the latter part of March, and where it remains until November. In the western part of the State it is more common as a migratory bird, and has not been found, in any numbers, stopping to breed. Mr. Allen never met with any later than May 25. They were observed to be in company with the Water Thrush, and to be in every way as aquatic in their habits. In the autumn he again met with it from the last of September through October, always in bushy marshes or wet places. Mr. McIlwraith states that in the vicinity of Hamilton, Ontario, it is a common summer resident, breeding there in

marshy situations. At Lake Koskonong, in Wisconsin, Mr. Kumlien has also met with these birds abundantly in suitable localities, and found their nests and eggs quite plentiful.

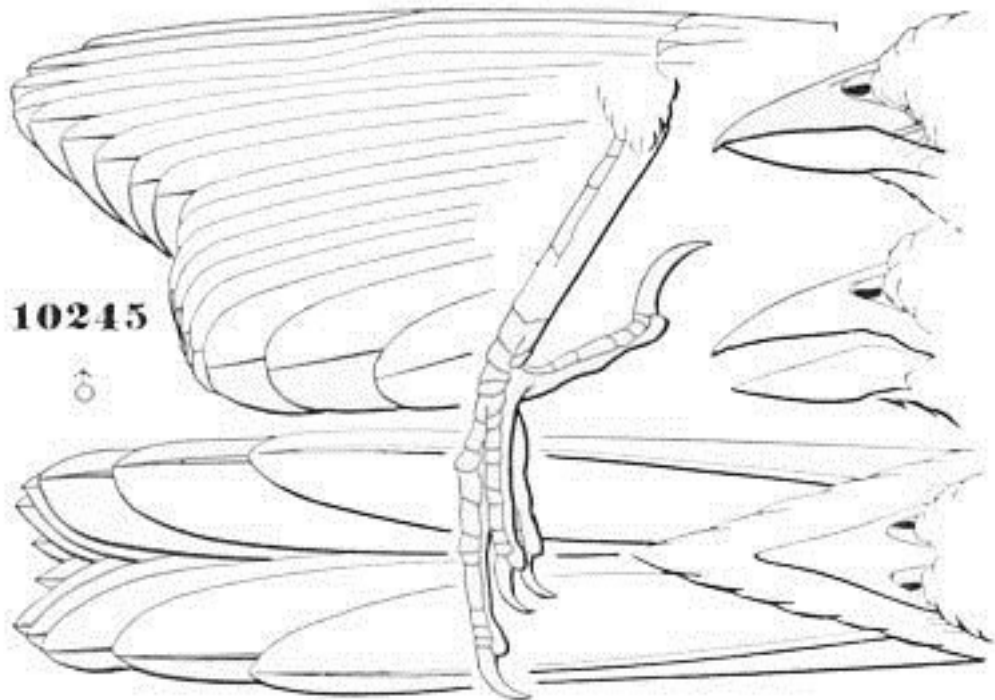
Mr. Ridgway has recently found this Sparrow to be a very abundant winter resident in Southern Illinois, where it inhabits swampy thickets, and where it remains until May, but is not known to breed there.

They always nest on the ground, usually in a depression sheltered by a tuft of grass. The nest is woven of fine grass-stems, but is smaller than the nest of *M. melodia*.

The eggs of this species, usually five in number, have an average measurement of .78 by .60 of an inch. Their ground-color is usually a light green, occasionally of a light clay, marked and blotched with reddish and purplish brown spots, varying in size and number, occasionally forming a confluent ring around the larger end.

Genus PEUCÆA, Audubon

Peucea, Aud. Synopsis, 1839. (Type, *Fringilla æstivalis*.) Sclater & Salvin, 1868, 322 (Synopsis.)



Peucea æstivalis.

10245 ♂

Gen. Char. Bill moderate. Upper outline and commissure decidedly curved. Legs and feet with the claws small; the tarsus about equal to the middle toe; the lateral toes equal, their claws falling considerably short of the middle one; the hind toe reaching about to the middle of the latter. The outstretched feet reach rather beyond the middle of the tail. The wing is very short, reaching only to the base of the tail; the longest tertials do not exceed the secondaries, while both are not much short of the primaries; the outer three or four quills are graduated. The tail is considerably longer than the wings; it is much graduated laterally; the feathers, though long, are peculiarly narrow, linear, and elliptically rounded at the ends.

Color beneath plain whitish or brownish, with a more or less distinct dusky line each side of the chin. Above with broad obsolete brown streaks or blotches. Crown uniform, or the feathers edged with lighter.

Species and Varieties

Common Characters. A light superciliary stripe, with a brownish one below it from the eye along upper edge of ear-coverts (not one along lower edge of ear-coverts, as in *Melospiza*). A narrow blackish “bridle” along side of throat (sometimes indistinct). Crown without a distinct median stripe, and lower parts without markings. Ground-color above ashy, sometimes of a brownish cast; dorsal region and nape with brown blotches, with or without dark centres. Crown blackish-brown streaked with ashy or plain rufous. Beneath plain brownish-white, lightest on the abdomen, darker across jugulum and along sides.

A. Crown plain rufous; interscapulars without distinct black centres, and tertials without whitish border. Blackish “bridle” conspicuous. Bend of wing edged with white.

1. P. ruficeps.

Above olivaceous-ash, interscapulars with broad streaks of dull rufous, the shafts scarcely blackish. Crown bright rufous. Wing, 2.40; tail, 2.70; bill, .29 from forehead, .20 deep; tarsus, .70; middle toe without claw, .55. *Hab.* California (and Mexico in winter?) ... var. *ruficeps*.

Darker, above brownish-plumbeous, dorsal streaks scarcely rufous, and with distinctly black shaft-streaks; crown darker rufous. Wing, 2.40; tail, 2.60; bill, .34 and .25; tarsus, .77; middle toe, .57. *Hab.* Mexico (Orizaba; Oaxaca), in summer ... var. *boucardi*.⁷

B. Crown streaked; interscapulars with distinct black centres; tertials sharply bordered terminally with paler. “Bridle” obsolete; bend of wing edged with yellowish.

2. P. æstivalis. Above uniformly marked with broad streaks or longitudinal blotches of deep rufous; black streaks confined to interscapulars and crown. Tail-feathers without darker shaft-stripe, and without indications of darker bars; the outer feathers without distinct white. Black marks on upper tail-coverts inconspicuous, longitudinal.

The bluish-ash, and chestnut-rufous streaks above sharply contrasted; black dorsal streaks broad. Wing, 2.45; tail, 2.65; bill, .30 and .30; tarsus, .73; middle toe, .60. *Hab.* Southern States from Florida and Georgia to Southern Illinois ... var. *æstivalis*.

The dull ash and light rufous streaks above not sharply defined; black dorsal streaks narrow. Wing, 2.65; tail, 3.00; bill, .32 and .25; tarsus, .80; middle toe, .63. *Hab.* Southern border of the Arizona region of Middle Province of United States ... var. *arizonæ*.

Markings badly defined as in the last, but the rufous streaks darker (in summer plumage almost entirely black), with more black on the crown. Wing, 2.55; tail, 2.65; bill, .32 and .25; tarsus, .80; middle toe, .60. *Hab.* Mexico (Orizaba; Mirador, Colima) ... var. *botterii*.⁸

⁷ *Zonotrichia boucardi*, Sclater, P. Z. S. 1867, 1, pl. I, La Puebla, Mex. (scarcely definable as distinct from *ruficeps*).

⁸ *Peucea botterii*, Sclater, Cat. Am. B. 1862, 116 (*Zonotrichia b.* P. Z. S. 1857, 214), Orizaba. *Coturniculus mexicana*, Lawr. Ann. N. Y. Lyc. VIII, 1867, 474 (Colima). This form can scarcely be defined separately from *æstivalis*. The type of *C. mexicanus*, Lawr., is

3. **P. cassini**. Above marked everywhere with broad short streaks of pale (not reddish) brown streaks, all black medially. Tail-feathers with distinct blackish shaft-stripe, throwing off narrow, obsolete bars toward the edge of the feathers. Outer tail-feathers distinctly tipped (broadly) and edged with dull white. Black marks on upper tail-coverts very large, transverse. Beneath nearly uniform dull white, scarcely darker along sides and across breast; flanks with broad streaks of blackish-brown. Wing, 2.55; tail, 2.80; bill, .28 and .23; tarsus, .68; middle toe, .55. *Hab.* Rio Grande, region (San Antonio and Laredo), north to Kansas (Allen).

Peucea aestivalis, Cabanis

BACHMAN'S SPARROW

Fringilla aestivalis, Licht. Verz. Doubl. 1823, 25, No. 254.—Bonap. Conspectus, 1850, 481. *Peucea aestivalis*, Cabanis, Mus. Hein. 1850, 132.—Baird, Birds N. Am. 1858, 484. *Fringilla bachmani*, Aud. Orn. Biog. II, 1834, 366, pl. clxv. *Ammodromus bachmani*, Bon. List, 1838. *Peucea bachmani*, Aud. Syn. 1839.—Ib. Birds Am. III, 1841, 113, pl. clxxvi.—Bon. Consp. 1850, 481 (type). *Fringilla aestiva*, Nutt. I, (2d ed.,) 1840, 568. “*Summer finch*, Latham, Synopsis, (2d ed.,) VI, 136.” Nuttall.

undistinguishable from Orizaba specimens. A specimen in the worn summer plumage (44,752♀, Mirador, July) differs in having the streaks above almost wholly black, with scarcely any rufous edge; the crown is almost uniformly blackish. The feathers are very much worn, however, and the specimen is without doubt referrible to *botteri*. The *Peucea notosticta* of Sclater (P. Z. S. 1868, 322) we have not seen; it appears to differ in some important respects from the forms diagnosed above, and may, possibly, be a good species. Its place in our system appears to be with section “A,” but it differs from *ruficeps* and *boucardi* in the median stripe on the crown, and the black streaks in the rufous of the lateral portion, the blacker streaks of the dorsal region, and some other less important points of coloration. The size appears to be larger than in any of the forms given in our synopsis (wing, 2.70; tail, 3.00). *Hab.* States of Puebla and Mexico, Mex.



Peucaea aestivalis.

Sp. Char. All the feathers of the upper parts rather dark brownish-red or chestnut, margined with bluish-ash, which almost forms a median stripe on the crown. Interscapular region and upper tail-coverts with the feathers becoming black in the centre. An indistinct ashy superciliary stripe. Under parts pale yellow-brownish, tinged with ashy on the sides, and with darker brownish across the upper part of the breast. A faint maxillary dusky line. Indistinct streaks of chestnut along the sides. Edge of wing yellow; lesser coverts tinged with greenish. Innermost secondaries abruptly margined with narrow whitish. Legs yellow. Bill above dusky, yellowish beneath. Outer tail-feathers obsoletely marked with a long blotch of paler at end. Female considerably smaller. Young with rounded dusky specks on the jugulum, which is more ochraceous. Length, 6.25; wing, 2.30; tail, 2.78.

Hab. Georgia; Florida; South Illinois, breeding (Ridgway). (Perhaps whole of Southern States from Florida to South Illinois.)

Specimens from Southern Illinois (Wabash Co., July, 1871; coll. of R. Ridgway) are similar to Florida examples.

Habits. Bachman's Finch has only been known, until very recently, as a species of a very restricted range, and confined within the limits of the States of South Carolina, Georgia, and Florida. Our principal, and for some time our only, knowledge of its habits was derived from the account furnished by Rev. Dr. Bachman to Mr. Audubon. That observing naturalist first met with it in the month of April, 1832, near Parker's Ferry, on the Edisto River, in South Carolina. Dr. Henry Bryant afterwards met with this species at Indian River, in Florida, where he obtained specimens of its nests and eggs. Dr. Alexander Gerhardt also found these Sparrows common at Varnell's Station, in the northern part of Georgia. Professor Joseph Leconte has taken it near Savannah, and Mr. W. L. Jones has also obtained several specimens in Liberty County, in the same State.

After meeting with this species on the Edisto, Dr. Bachman ascertained, upon searching for them in the vicinity of Charlestown, that they breed in small numbers on the pine barrens, about six miles north of that city. He was of the opinion that it is by no means so rare in that State as has

been supposed, but that it is more often heard than seen. When he first heard it, the notes so closely resembled those of the Towhee Bunting that for a while he mistook them for those of that bird. Their greater softness and some slight variations at last induced him to suspect that the bird was something different, and led him to go in pursuit. After that it was quite a common thing for him to hear as many as five or six in the course of a morning's ride, but he found it almost impossible to get even a sight of the bird. This is owing, not so much to its being so wild, as to the habit it has of darting from the tall pine-trees, on which it usually sits to warble out its melodious notes, and concealing itself in the tall broom-grass that is almost invariably found in the places it frequents. As soon as it alights it runs off, in the manner of a mouse, and hides itself in the grass, and it is extremely difficult to get a sight of it afterwards.

It was supposed by Dr. Bachman—correctly, as it has been ascertained—to breed on the ground, where it is always to be found when it is not singing. He never met with its nest. In June, 1853, he observed two pairs of these birds, each having four young. They were pretty well fledged, and were following their parents along the low scrub-oaks of the pine lands.

Dr. Bachman regarded this bird as decidedly the finest songster of the Sparrow family with which he was acquainted. Its notes are described as very loud for the size of the bird, and capable of being heard at a considerable distance in the pine woods where it occurs, and where at that season it is the only singer.

He also states that, by the middle of November, they have all disappeared, probably migrating farther south. It is quite probable that they do not go beyond the limits of the United States, and that some remain in South Carolina during the whole of winter, as on the 6th of February, the coldest part of the year, Dr. Bachman found one of them in the long grass near Charleston.

Mr. Audubon says that on his return from Florida, in June, 1832, travelling through both the Carolinas, he observed many of these Finches on the sides of the roads cut through the pine woods of South Carolina. They filled the air with their melodies. He traced them as far as the boundary line of North Carolina, but saw none within the limits of that State. They were particularly abundant about the Great Santee River.

This Finch, hitherto assumed to be an exclusively southeastern species, has recently been detected by Mr. Ridgway in Southern Illinois, where it is a summer resident, and where it breeds, but is not abundant. It inhabits old fields, where, perched upon a fence-stake or an old dead tree, it is described as chanting a very delightful song. It was first taken on the 12th of July, 1871, on the road about half-way between Mount Carmel and Olney. The bird was then seen on a fence, and its unfamiliar appearance and fine song at once attracted his notice as he was riding by. As several were heard singing in the same neighborhood, it seemed common in that locality, and as a young bird was taken in its first plumage there is no doubt that it is a regular summer visitant of Southern Illinois, and breeds there. Mr. Ridgway speaks of its song as one of the finest he has ever heard, most resembling the sweet chant of the Field Sparrow, but is stronger, and varied by a clear, high, and very musical strain. He describes its song as resembling the syllables *théééééé-til-lūt, lūt-lūt*, the first being a very fine trill pitched in a very high musical key, the last syllable abrupt and metallic in tone.

The food of this species, Dr. Bachman states, consists of the seeds of grasses, and also of coleopterous insects, as well as of a variety of the small berries so abundant in that part of the country. He speaks of its flight as swift, direct, and somewhat protracted, and adds that it is often out of sight before it alights.

Dr. Coues did not meet with this Sparrow in South Carolina, but he was informed by Professor Leconte that it occurs about Columbia and elsewhere in the State, frequenting open pine woods and old dry fields.

Dr. Bryant met with its nest in Florida, April 20. It was similar, in construction, to that of the Savannah Sparrow, and contained five eggs. It was the only Sparrow found by him in the pine barrens near Enterprise, and was only seen occasionally, when it was a very difficult bird to shoot,

as it runs round in the grass more like a mouse than a bird, and will not fly until almost trodden on, then moving only a few feet at a time.

The nests of this bird, found by Dr. Bryant in Florida and by Dr. Gerhardt in Northern Georgia, were all placed upon the ground and concealed in tufts of thick grass, and constructed entirely of coarse wiry grasses, with no other lining than this material. The eggs, four in number, are of a pure, almost brilliant white, of a rounded oval shape, and measure .74 by .60 of an inch.

***Peucaea aestivalis* var. *arizonae*, Ridgway**

ARIZONA SPARROW

Peucaea cassini, Baird, Birds N. Am. 1858, 486. (Los Nogales specimen.)

Sp. Char. (6,327 ♂, Los Nogales, Northern Sonora, June, C. B. Kennerly.) Similar to *P. aestivalis*, but paler; wings and tail longer. Above light chestnut, all the feathers margined and tipped with bluish-gray, but the reddish prevailing. Interscapular and crown feathers with a narrow streak of black, those on crown indistinct. Beneath dull white, tinged with ashy-ochraceous across the breast and along the sides; crissum pale ochraceous. An obsolete light superciliary, and narrow dusky maxillary stripe. Bend of wing yellow; lesser coverts tinged with greenish-yellow. Length, 6 inches; wing, 2.65; tail, 3.00; bill, .32 from nostril, .25 deep at base; tarsus, .80; middle toe, .63.

Hab. Los Nogales, Sonora, and Southern Arizona.

This race has a considerable resemblance to *P. aestivalis*, but differs in some appreciable points. The brown of the upper parts is paler, and the ashy edging to the feathers appears rather less extensive. The dark brown blotches on the back are of greater extent, the black streaks on the back confined to a mere streak along the shaft. There is less of an olive tinge across the breast.

The proportions of the present race differ more from those of *aestivalis* than do the colors, the bill being more slender, and the wings and tail considerably longer.

The resemblance to *P. botterii* (= *aestivalis*, var. *botterii*) of Sclater, from Middle Mexico (Orizaba, Colima, etc.), is very close; the difference being greater in the proportions than in the colors, the latter having a shorter wing and tail, with thicker bill, as in var. *aestivalis*. In *botterii* there is rather a predominance of the black over the rufous in the streaks above.

Habits. This, in its general habits, nesting, eggs, etc., probably resembles the variety *aestivalis*.

***Peucaea cassini*, Baird**

CASSIN'S SPARROW

Zonotrichia cassini, Woodhouse, Pr. A. N. Sc. Ph. VI, April, 1852, 60 (San Antonio). *Passerculus cassini*, Woodhouse, Sitgreaves's Rep. Zuñi and Colorado, 1853, 85; Birds, pl. iv. *Peucaea cassini*, Baird, Birds N. Am. 1858, 485, pl. iv, f. 2. —Heermann, X, c, p. 12, pl. iv, f. 2.—Cooper, Orn. Cal. 1, 219 (not from Cal.).

Sp. Char. (6,329 ♂, Texas; compared with type of species.) Ground-color of upper parts grayish-ash; the middle portion of each feather dull brown, in the form of a blotch, and with a black shaft-streak, the latter becoming modified on scapulars, rump, and upper tail-coverts, into transverse spots, those on the upper tail-coverts being large and conspicuous, and in the form of crescentic spots, the terminal margin of the feathers being lighter ashy in sharp contrast. Middle tail-feathers

clear ashy, with a sharply defined shaft-streak of blackish, throwing off obsolete, narrow, transverse bars toward the edge; rest of tail clear dusky-brown, the lateral feather with whole outer web, and margin of the inner, dull white, all, except the intermediate, with a large, abruptly defined, terminal space of dilute brown (decreasing in size from the outer), the margin whitish. Upper secondaries broadly and sharply margined along both edges with dull ashy-white, the enclosed portion being clear dusky brown, intensified where adjoining the whitish. A very obsolete superciliary stripe of ashy, becoming whitish over the lore; auriculars more dingy, but without distinct stripe along upper edge. An uninterrupted but indistinct "bridle" along sides of throat. Lower parts dull white, without any ochraceous, but with a very faint ashy tinge over the jugulum; flanks with broad, somewhat blended streaks of mixed brownish and dusky. Bend of wing edged with light yellow. Wing, 2.55; tail, 2.80; bill, .28 from nostril and .23 deep; tarsus, .68; middle toe, .55.

Young. (45,277, Laredo, Texas, June 28.) Very similar, but with a few drop-shaped streaks of dark brown on the jugulum and along sides. The feathers above have a more appreciable terminal border of buff.

Hab. Rio Grande region of Southern Middle Province; Kansas, breeding (Allen). San Antonio, Texas, summer (Dresser, Ibis, 1865, 489; eggs); ? Orizaba, temp. reg. (Sum. M. B. S. I, 551).

In the Birds of North America, the specimen characterized on p. 637 of the present work as *æstivalis*, var. *arizonæ*, was referred to *P. cassini*, those specimens which are here retained as such being considered as in quite immature plumage. A more recent examination of additional material, however, has compelled us to change our view. In consequence of the similarity of the specimen in question to *æstivalis*, as noted in the article referred to above, the general acceptance of the name *cassini* has been that of a term designating a variety of the common species; but we have as the result of the investigation in question found it necessary to retain under the head of "*cassini*" only the typical specimens from the Rio Grande region, and refer the supposed aberrant specimen to *æstivalis*. In this Los Nogales specimen we find existing such differences in proportions and colors as are sufficient to warrant our bestowing upon it a new name, and establishing it as the Middle Province race of *æstivalis*, in this way connecting the South Atlantic and Mexican races (var. *æstivalis* and var. *botterii*) by a more similar form than the *P. cassini*, which must be set apart as an independent form,—in all probability a good species. Several facts are favorable to this view. First, we have of the *P. cassini* specimens which are beyond question in perfect adult plumage, and others which are undoubtedly immature; they differ from each other only in such respects as would be expected, and agree substantially in other characters, by which they are distinguished from the different styles of *æstivalis*. Secondly, the region to be filled by a peculiar race of *æstivalis* is represented by the var. *arizonæ*, which is undoubtedly referable to that species; thus we have in one province these two different forms, which therefore are probably distinct.

The present bird is hardly less distinct from the races of *æstivalis* than is *ruficeps*; and we would be as willing to consider all the definable forms presented in the synopsis as varieties of a single species, as to refer the present bird to *æstivalis*.

Habits. This Finch, in its general appearance, as well as in respect to habits, nesting, and eggs, is quite similar to Bachman's Finch. It was first met with by Dr. Woodhouse, in the expedition to the Zuñi River, when he found it in Western Texas. He shot it on the prairies near San Antonio, on the 25th of April, 1851, mistaking it for *Passerculus savanna*, which, in its habits, it seemed to him very much to resemble, but upon examination it was found to be totally distinct.

Dr. Heermann afterwards, being at Comanche Springs in Texas, had his attention attracted by the new note of a bird unfamiliar to him. It was found, after some observation, to proceed from this species. He describes it as rising with a tremulous motion of its wings some twenty feet or more, and then descending again, in the same manner, to within a few yards of the spot whence it started, and as accompanying its entire flight with a lengthened and pleasing song. The country in that neighborhood is very barren, covered with low stunted bushes, in which the bird takes refuge on being alarmed,

gliding rapidly through the grass and shrubbery, and very adroitly and effectually evading its pursuer. He observed them during four or five days of the journey of his party, and after that saw no more of them. They seemed, at the time, to be migrating, though their continued and oft-repeated song also showed that they were not far from readiness for the duties of incubation.

The *Peucaea cassini* is said, by Mr. Sumichrast, to be a resident species in the valley of Orizaba, in the State of Vera Cruz, Mexico, and to be generally distributed throughout the temperate region of that district. It is very probable, however, that he has in view the Mexican race of *P. aestivalis* (var. *botteri*), and not the present species.

Mr. J. A. Allen, who considers this bird only a western form of *P. aestivalis*, mentions (Am. Naturalist, May, 1872) finding it quite frequently near the streams in Western Kansas, where its sweetly modulated song greets the ear with the first break of dawn, and is again heard at night till the last trace of twilight has disappeared. Mr. Allen also states, in a letter, that this bird was “tolerably common along the streams near Fort Hays, but very retiring, singing mostly after nightfall and before sunrise, during the morning twilight. When singing, it had the habit of rising into the air. I shot three one morning thus singing, when it was so dark I could not find the birds. The one I obtained does not differ appreciably from specimens from Mr. Cassin’s collection, labelled by him *Peucaea cassini*, collected in Texas.”

Mr. Ridgway regards this record of the manners of this bird, while singing, as indicating a specific difference from *P. aestivalis*. The latter, in Southern Illinois, has never been heard by him to sing at night, or in the morning, nor even on the wing; but in broad midday, in the hottest days of June, July, and August, he often heard them singing vigorously and sweetly, as they perched upon a fence or a dead tree in a field, exactly after the manner of our common *Spizella pusilla*.

Among Dr. Heermann’s notes, quoted by Mr. Dresser, is one containing the statement that he found this species not rare on the prairies near the Medina River, in Texas, where it breeds. Mr. Dresser also states that when at Howard’s Rancho, early in May, he found this bird by no means uncommon. He confirms Dr. Heermann’s account, that it is easily distinguished as it rises in the air, from a bush, with a peculiar fluttering motion of the wings, at the same time singing, and then suddenly dropping into the bushes again. He adds that, in his absence, Dr. Heermann procured the eggs of this species on the Medina, and while he was himself travelling in July towards Laredo, he found a nest which he was fully confident belonged to this bird. It was placed in a low bush not above a foot from the ground, and in its construction resembled that of the *Poospiza bilineata*. The eggs were three in number, pure white, closely agreeing with those taken by Dr. Heermann, and larger and more elongated than those of the *bilineata*.

An egg of this species, taken in Texas by Dr. H. R. Storer, the identification of which, however, was incomplete, is more oblong than the eggs of *P. aestivalis*, and smaller, measuring .72 by .58 of an inch. It is pure white also.

Peucaea ruficeps, Baird

RUFOUS-CROWNED SPARROW

Ammodromus ruficeps, Cassin, Pr. A. N. Sc. VI, Oct. 1852, 184 (California).—
Ib. Illust. I, V, 1854, 135, pl. xx. *Peucaea ruficeps*, Baird, Birds N. Am. 1858, 486.
—Cooper, Orn. Cal. 1, 1870, 218.

Sp. Char. Above brownish-ashy. The crown and nape uniform brownish-chestnut, the interscapular region and neck with the feathers of this color, except around the margins. A superciliary ashly stripe, whiter at the base of the bill. Beneath pale yellowish-brown, or brownish-yellow, darker

and more ashy across the breast and on the sides of body; middle of belly and chin lighter; the latter with a well-marked line of black on each side. Edge of wing white. Under tail-coverts more rufous. Legs yellow. Length, 5.50; wing, 2.35; tail, 2.85.

Hab. Coast of California, to Mexico; ? Oaxaca, March (Scl. 1859, 380); ? Vera Cruz, temperate region; resident (Sum. M. B. S. I, 552).

This plainly colored species has the bill rather slender; tail rather long, and considerably rounded; the outer feathers .40 of an inch shorter than the middle; the feathers soft, and rounded at the tip. The wing is short; the primaries not much longer than the tertials; the second, third, fourth, and fifth nearly equal; the first scarcely longer than the secondaries.

There is a blackish tinge on the forehead, separated by a short central line of white, as in *Spizella socialis*. The eyelids are whitish, and there is a short black line immediately over the upper lid. There is a faint chestnut streak back of the eye. The chestnut of the nape is somewhat interrupted by pale edgings. The blotches on the back melt almost insensibly into the colors of the margins of the feathers. The outer edges of the secondaries and tertials, and the outer surface of the tail, are yellowish-rusty.

This bird is similar in general appearance to the *P. æstivalis*, but has the head above more continuous chestnut; the black cheek-stripe more distinct, and the edge of wing whitish, not yellow, the bill more slender. A Mexican specimen has a stouter bill.

The *P. boucardi* of Sclater (= *ruficeps*, var. *boucardi*; see table, p. 634), from Mexico, is exceedingly similar, it being very difficult to present the differences in a diagnosis. This trouble is partly the result of the insufficient series at our command, for there are such different combinations of colors, according to the season, that it is almost impossible to select the average characters of two definable forms.

Habits. This species was first described, in 1852, by Mr. Cassin, from a specimen obtained in California by Dr. Heermann. Very little is known as to its history, and it appears to have been generally overlooked by naturalists who have studied the ornithology of that State. The extent of its distribution or of its numbers remains unknown,—a circumstance due undoubtedly to the nature of the country which it frequents.

Dr. Heermann states that in the fall of 1851 he shot on the Cosumnes River a single specimen of this bird from among a large flock of Sparrows of various kinds. In the spring of the following year, among the mountains, near the Calaveras River, he found it quite abundant. It was then flying in pairs, engaged in picking grass-seed from the ground, and when started it never extended its flight beyond a few yards. Its notes, in their character, reminded him of the ditty of our common little Chipping Sparrow (*Spizella socialis*). He obtained several specimens. Its flight seemed feeble, and when raised from the ground, from which it would not start until almost trodden on, it would fly but a short distance, and almost immediately drop again into the grass.

Dr. Cooper has only met with this species on Catalina Island, in June, where a few kept about the low bushes, feeding on the ground. They were very difficult even to get a sight of. He heard them sing a few musical notes, that reminded him of those of the *Cyanospizæ*. They flew only a short distance, and in their habits reminded him of the *Melospizæ*. Their favorite places of resort he supposes to be pine woods, as in the eastern species.

The fact that this species has been found by Mr. Sumichrast to be a permanent resident throughout all the temperate regions of Vera Cruz is a very interesting one, and is suggestive of different manners and habits from those supposed to belong to it as a bird allied with the *Ammodrami*. They are abundant, and breed there, as in the United States, but nothing is given throwing any positive light upon their general habits.

Genus EMBERNAGRA, Lesson

Embernagra, Lesson, Traité d'Ornith., 1831 (Agassiz). (Type, *Saltator viridis*, Vieillot.)

Gen. Char. Bill conical, elongated, compressed; the upper outline considerably curved, the lower straight; the commissure slightly concave, and faintly notched at the end. Tarsi lengthened; considerably longer than the middle toe. Outer toe a little longer than the inner, not reaching quite to the base of the middle claw. Hind toe about as long as the middle without its claw. Wings very short, and much rounded; the tertials nearly equal to the primaries; the secondaries a little shorter; the outer four primaries much graduated, even the second shorter than any other quill. The tail is moderate, about as long as the wings, much graduated; the feathers rather narrow, linear, and elliptically rounded at the end; the outer webs more than usually broad in proportion to the inner, being more than one third as wide. The upper parts are olive-green, the under whitish.

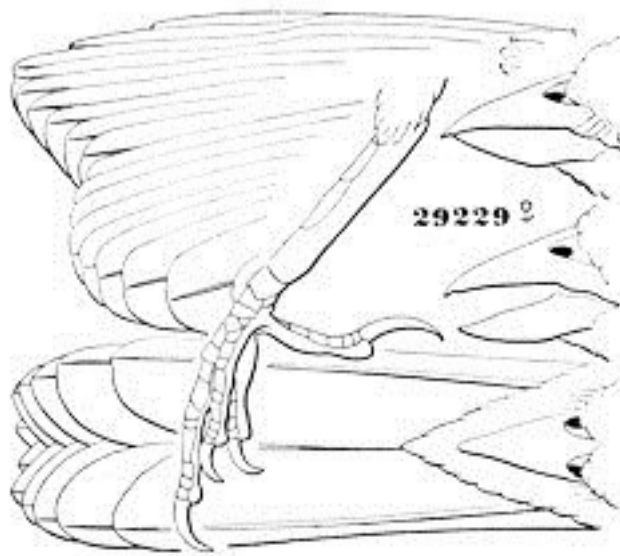
The position of this genus is a matter of considerable uncertainty. On some accounts it would be better placed among the *Spizinae*.

There are numerous tropical species of this genus; none of them are nearly allied, however, to the single North American species.

Embernagra rufivirgata, Lawrence

TEXAS SPARROW

Embernagra rufivirgata, Lawrence, Ann. N. Y. Lyc. V, May, 1851, 112, pl. v, f. 2 (Texas).—Sclater, Pr. Zoöl. Soc. 1856, 306.—Baird, Birds N. Am. 1858, 487, pl. lv. f. 2.—Ib. Mex. Bound. II, Birds, 16, pl. xvii, f. 2. *Zonotrichia plebeja*, Licht. Bon. Comptes Rend. 43, 1856, 413.



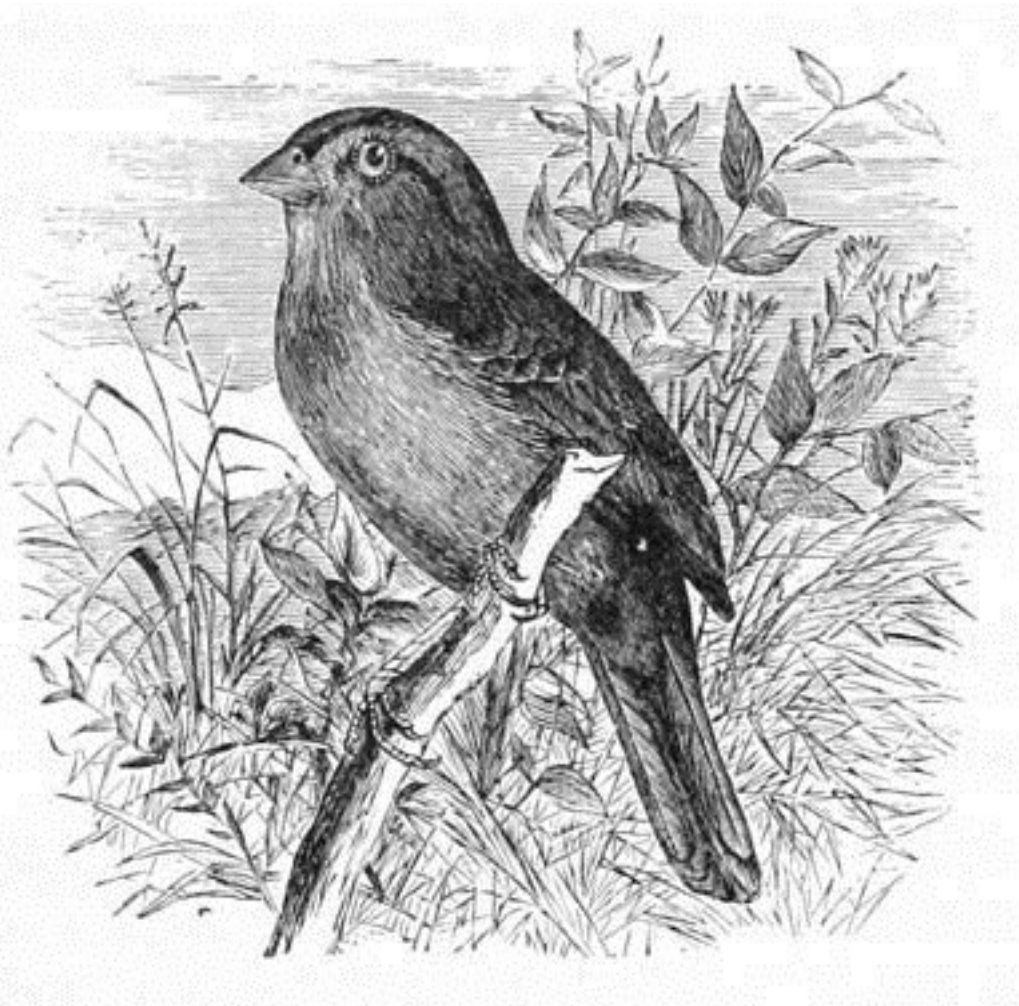
Embernagra rufivirgata, Lawr.
29229 ♀

Sp. Char. Above uniform olivaceous-green. A stripe on each side of the head, and one behind the eye, dull brownish-rufous, an ashy superciliary stripe whiter anteriorly. Under parts brownish-white, tinged with yellowish posteriorly, and with olivaceous on the sides; white in the middle of the belly. Edge of wing, under coverts, and axillaries bright yellow. Young with the head-stripes obsolete. Length, 5.50; wing, 2.60; tail, 2.70.

Hab. Valley of the Rio Grande, and probably of Gila, southward; Mazatlan, Mexico. Oaxaca, April (Scl. 1859, 380); Cordova; Vera Cruz, temperate and hot regions, breeding (Sum. M. B. S. I, 551); Yucatan (Lawr. IX, 201).

In this species the bill is rather long; the wings are very short, and much rounded; the tertials equal to the primaries; the secondaries rather shorter; the first quill is .65 of an inch shorter than the seventh, which is longest. The tail is short; the lateral feathers much graduated; the outer half an inch shorter than the middle.

All the Mexican specimens before us have the bill stouter than those from the Rio Grande of Texas, the stripes on the head apparently better defined. The back is darker olive; the flanks brighter olive-green, not olive-gray, the wings are apparently shorter. The series is not sufficiently perfect to show other differences, if any exist.



Embernagra rufivirgata.

Habits. In regard to the habits and distribution of this species we are entirely without any information, other than that it has been met with in the valley of the Rio Grande, and at various places in Mexico. Specimens were obtained at New Leon, Mexico, by Lieutenant Couch, and at Ringgold

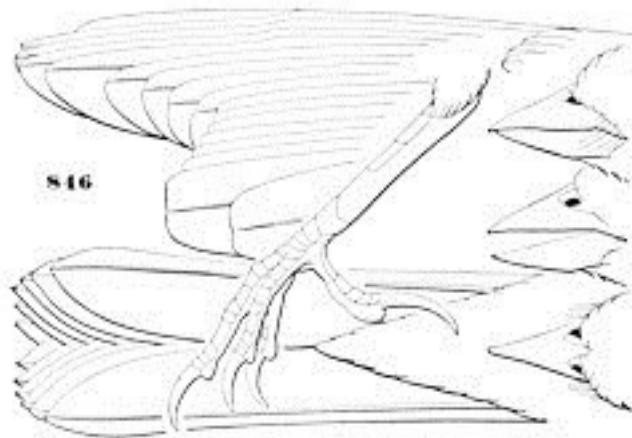
Barracks, in Texas, by Mr. J. H. Clark. The season when these birds were met with is not indicated by him.

It is stated by Mr. Sumichrast that this species is found throughout both the temperate and the hot districts of the State of Vera Cruz, Mexico. He also mentions that he has found this bird in localities quite remote from each other, and belonging both to the hot and to the temperate regions. In the latter it is found to the height of at least four thousand feet.

This species was met with by Mr. Boucard, during the winter months, at Plaza Vicente, in the hot lowlands of the State of Oaxaca, Mexico.

Subfamily PASSERELLINÆ

Char. Toes and claws very stout; the lateral claws reaching beyond the middle of the middle one; all very slightly curved.



Passerella iliaca.

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Bill conical, the outlines straight; both mandibles equal; wings long, longer than the even tail or slightly rounded, reaching nearly to the middle of its exposed portion. Hind claw longer than its digit; the toe nearly as long as the middle toe; tarsus longer than the middle toe. Brown above, either uniformly so or faintly streaked; triangular spots below.

This section embraces a single North American genus, chiefly characterized by the remarkable elongation of the lateral claws, as well as by the peculiar shape and large size of all the claws; the lateral, especially, are so much lengthened as to extend nearly as far as the middle. The only approach to this, as far as I recollect, among United States *Conirostres*, is in *Pipilo megalonyx*, and *Xanthocephalus icterocephalus*.

Genus PASSERELLA, Swainson

Passerella, Swainson, Class. Birds, II, 1837, 288. (Type, *Fringilla iliaca*, Merrem.)

Gen. Char. Body stout. Bill conical, not notched, the outlines straight; the two jaws of equal depth; roof of upper mandible deeply excavated, and vaulted; not knobbed. Tarsus scarcely longer than the middle toe; outer toe little longer than the inner, its claw reaching to the middle of the central one. Hind toe about equal to the inner lateral; the claws all long, and moderately curved only; the

posterior rather longer than the middle, and equal to its toe. Wings long, pointed, reaching to the middle of the tail; the tertials scarcely longer than secondaries; second and third quills longest; first equal to the fifth. Tail very nearly even, scarcely longer than the wing. Inner claw contained scarcely one and a half times in its toe proper.

Color. Rufous or slaty; obsoletely streaked or uniform above; thickly spotted with triangular blotches beneath.

Species and Varieties

Common Characters. Ground-color above, slaty-ash, or sepia; wings, upper tail-coverts, and tail more rufescent. Beneath, pure white, with numerous triangular spots over breast and throat, streaks along sides, and a triangular blotch on side of throat, of the same color as the wings. The pectoral spots aggregated on the middle of the breast.

A. Hind claw not longer than its digit. Back with broad streaks of dark rufous.

1. **P. iliaca.** Ground-color above ash (more or less overlaid in winter with a rufous wash); wings, dorsal spots, upper tail-coverts, tail, auriculars, and markings of lower parts, bright reddish-rufous. Wing, 3.50; tail, 2.90; tarsus, .87; middle toe, without claw, .67; hind claw, .35. *Hab.* Eastern Province of North America.

B. Hind claw much longer than its digit. Back without streaks.

2. **P. townsendi.**

Head and neck above with back, scapulars, and rump, rich sepia-brown, almost uniform with wings and tail. Belly thickly spotted; tibiae deep brown; supraloral space not whitish. Wing, 3.05; tail, 2.85; tarsus, .80; middle toe, .62; hind claw, .43. *Hab.* Pacific Province of North America, from Kodiak south to Fort Tejon, Cal. (in winter) ... var. *townsendi*.

Head and neck above, with back, scapulars, and rump, slaty-ash, in strong contrast with the rufescent-brown of wings and tail. Belly with only minute specks, or immaculate; tibiae grayish; supraloral space distinctly white. Spots beneath clove-brown.

Bill, .34 from nostril, by .25 deep at base; wing, 3.30; tail, 3.50; tarsus, .85; middle toe, .60; hind claw, .45. *Hab.* Middle Province of United States ... var. *schistacea*.

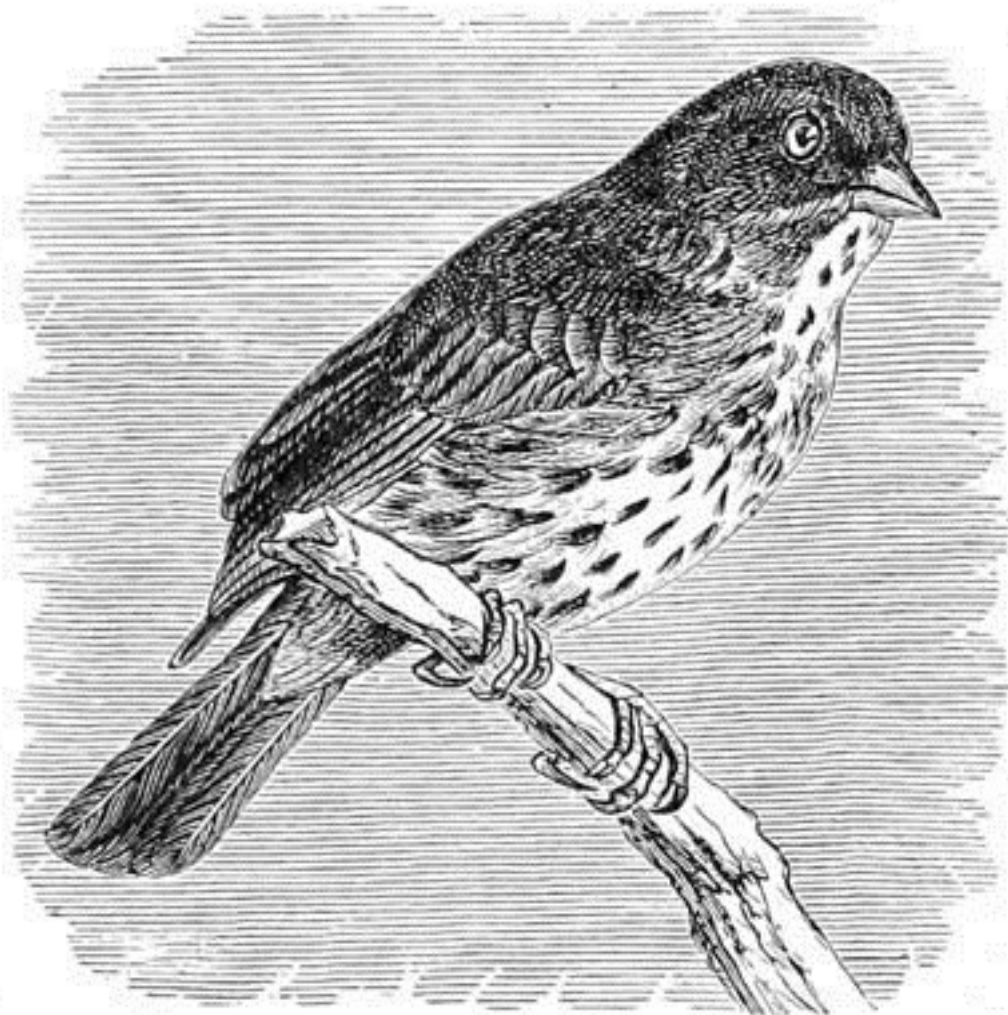
Bill, .35 from nostril and .47 deep; wing, 3.30; tail, 3.50; tarsus, .83; middle toe, .63; hind claw, .50. *Hab.* Sierra Nevada, from Fort Tejon, north to Carson City, Nev ... var. *megarhynchus*.

No great violence would be done by considering all the above forms as races of one species, the characters separating *iliaca* from the rest being of no great importance. However, in the large series examined, there is no specimen of *iliaca* at all aberrant, and none approach in the slightest degree to any of the other forms. There can be no doubt whatever of the specific identity of the three forms presented under section "B," as is plainly shown by specimens of intermediate characters. These western forms are parallels of the western race of *Melospiza*; *schistacea* representing *M. fallax*, *megarhynchus* the *M. heermanni*, and *townsendi* the *M. guttata* or *rufina*.

Passerella iliaca, Swainson

FOX-COLORED SPARROW

Fringilla iliaca, Merrem. "Beitr. zur besond. Gesch. der Vögel, II, 1786-87, 40, pl. x."—Gm. Syst. Nat. I, 1788, 923.—Aud. Orn. Biog. II, 1834, 58; V, 512, pl. cviii.—Ib. Syn. 1839.—Ib. Birds Am. III, 1841, 139, pl. clxxxvi. *Passerella iliaca*, Sw. Birds, II, 1837, 288.—Bon. List, 1838.—Ib. Conspectus, 1850, 477.—Baird, Birds N. Am. 1858, 488.—Dall & Bannister, Tr. Ch. Ac. I, 1869, 285.—Samuels, 325. *Fringilla rufa*, Wilson, Am. Orn. III, 1811, 53, pl. xxiv, f. 4.—Licht. Verz. 1823, No. 248. *Fringilla ferruginea*, Wilson, Catalogue, VI, 1812.—Hall's ed. Wilson, II, 255. "*Emberiza pratensis*, Vieill.," Gray.



Passerella townsendi.

Sp. Char. General aspect of upper parts foxy-red, the ground-color and the sides of neck being ashy; the interscapular feathers each with a large blotch of fox-red; this color glossing the top of head

and nape; sometimes faintly, sometimes more distinctly; the rump unmarked; the upper coverts and surface of the tail continuous fox-red. Two narrow white bands on the wing. Beneath, with under tail-coverts and axillars, clear white, the sides of head and of throat, the jugulum, breast, and sides of body, conspicuously and sharply blotched with fox-red; more triangular across breast, more linear and darker on sides. Sometimes the entire head above is continuously reddish. First quill rather less than fifth. Hind toe about equal to its claw. Length, 7.50; wing, 3.50; tail, 2.90; tarsus, .87; middle toe, without claw, .67; hind claw, .35.

Hab. Eastern North America to the Mississippi, to the north along valley of the Mackenzie, almost or quite to the Arctic coast, and down the valley of the Yukon to the Pacific. Breeds throughout the interior of British America.

In summer, the ash is more predominant above; in winter, it is overlaid more or less by a wash of rufous, as described above.

The young plumage we have not seen. The *P. obscura*, Verrill,⁹ may be referrible to it.

Habits. The Fox-colored Sparrow, in its seasons of migrations, is a very common bird throughout the United States east of the Mississippi River. It has not been ascertained to breed in any part of the United States, though it may do so in Northeastern Maine. Mr. Boardman has not met with it near Calais, nor did I see nor could I hear of it in any part of Nova Scotia or New Brunswick that I visited. In passing north, these birds begin their northern movements in the middle of March, and from that time to the last of April they are gradually approaching their summer quarters. Their first appearance near Boston is about the 15th of March, and they linger in that vicinity, or successive parties appear, until about the 20th of April. The last comers are usually in song. On their return, the middle or last of October, they pass rapidly, and usually make no stay. In Southwestern Texas these birds were not observed by Mr. Dresser, nor in Arizona by Dr. Coues, but in the Indian Territory Dr. Woodhouse found them very abundant on the approach of winter. Dr. Coues speaks of them as common in South Carolina from November to April, but less numerous than most of the Sparrows.

In the vicinity of Washington this bird is found from October to April. I have met with small groups of them through all the winter months among the fallen leaves in retired corners of the Capitol grounds, where they were busily engaged, in the manner of a *Pipilo*, in scratching in the earth for their food. At those periods when the ground was open, their habits were eminently similar to those of the gallinaceous birds. In March and April they were in company with the White-throated Sparrows, but passed north at least a month earlier.

During their stay in the United States these birds keep in small distinctive flocks, never mingling, though often in the same places, with other species. They are found in the edges of thickets

⁹ *Passerella obscura*, Verrill, Pr. Bost. N. H. Soc. IX, Dec. 1862, 143 (Anticosti). (Type in Museum Comp. Zoöl., Cambridge.) "Size somewhat smaller than that of *P. iliaca*. Legs and wings a little shorter in proportion. Claws less elongated. Bill somewhat shorter, thicker, and less acute. Color above rufous-brown, becoming bright rufous on the rump and exposed portion of the tail, but a shade darker than in *P. iliaca*; head uniform brown, with a slight tinge of ash; feathers of the back centred with a streak of darker brown. Wings nearly the same color as the back, with no white bands; outer webs of the quills rufous, inner webs dark brown; secondary coverts rufous, with dark brown centres; primary coverts uniform brown. Beneath dull white, with the throat and breast thickly covered with elongated triangular spots and streaks of dark reddish-brown; sides streaked with rufous-brown; middle of abdomen with a few small triangular spots of dark brown; under tail-coverts brownish-white, with a few small spots of bright rufous; tibiae dark brown. The auriculars are tinged with reddish-brown. Bristles at the base of the bill are numerous, extending over the nostrils. Tail rather long, broad, and nearly even. Third quill longest; second and fourth equal, and but slightly shorter; first intermediate between the fifth and sixth, and one fourth of an inch shorter than the third. "Length, 6.75; extent of wings, 10.75; wing, 3.35; tarsus, 1 inch. "This species differs greatly in color from *P. iliaca*. It is darker in all parts; the feathers of the back are rufous-brown, centred with darker, instead of ash centred with brownish-red; the two white bands on the wing are wanting; the breast and throat are thickly streaked with elongated spots of dark reddish-brown, while in *P. iliaca* the spots are less numerous, shorter and broader, and bright rufous, and the central part of the throat is nearly free from spots; the under tail-coverts are brownish-white, with rufous spots, instead of nearly pure white." There are some features in this bird, as described by Mr. Verrill, which seem to characterize it as different from *P. iliaca*, although it is barely possible that it is this bird in immature dress. The streaked back at once separates it from all our species excepting *iliaca*. Nothing is said of its habits. One specimen was killed in Anticosti, July 1; the other, August 8. The true *iliaca* was found on the island, which fact renders it still more probable that this is its young.

and in moist woods. They are usually silent, and only occasionally utter a call-note, low and soft. In the spring the male becomes quite musical, and is one of our sweetest and most remarkable singers. His voice is loud, clear, and melodious; his notes full, rich, and varied; and his song is unequalled by any of this family that I have ever heard. They soon become reconciled to confinement and quite tame, and sing a good part of the year if care is taken in regard to their food. If allowed to eat to excess, they become very fat and heavy, and lose their song.

Dr. Coues did not meet with these birds in Labrador, but Mr. Audubon found them there and in Newfoundland in large numbers; and, according to the observations of Sir John Richardson, they breed in the wooded districts of the fur countries, up to the 68th parallel of latitude.

These birds were also found abundantly at Fort Simpson and Great Slave Lake by Mr. Robert Kennicott and Mr. B. R. Ross; at Fort Anderson, Anderson River, Swan River, and in various journeys, by Mr. R. MacFarlane; at Fort Resolution, Fort Good Hope, La Pierre House, and Fort Yukon, by Mr. Lockhart; at Peel's River, by Mr. J. Flett; at St. Michael's, by Mr. H. M. Bannister; and at Nulato, by Mr. W. H. Dall. They were observed at Fort Simpson as early as May 17, and by Mr. Kennicott as late as September 17. Mr. Dall states that at Nulato he found this Sparrow in abundance. It arrived there from the 10th to the 15th of May. It breeds there, and its eggs were obtained on the Yukon River. In the month of August in 1867 and of July in 1868 it was abundant at the mouth of the Yukon and at St. Michael's. One was also shot at Unalaklik. The birds seemed to prefer thickets to the more open country. Mr. Bannister did not find it abundant. He shot only one specimen during the season, in an alder thicket near the fort; and Mr. Pease, who was familiar with the species, only saw a single individual.

According to the reports of both Mr. MacFarlane and Mr. Kennicott, the nest of this species was found both on the ground and in trees. In one instance it was in a tree about eight feet from the ground, and in its structure was said to be similar to the nests of *Turdus aliciae*. They were nearly all found after the middle of June, a few as early as the 7th. One was found on the ground at the foot of a tuft of dwarf willows, which helped to conceal it from view. This was composed of coarse hay, lined with some of a finer quality, a few deer-hairs, and a small quantity of fresh and growing moss, intermingled together. In speaking of this nest Mr. MacFarlane states that all the nests of this Sparrow he had previously met with had been built in the midst of branches of pine or spruce trees, and had been similar to those of the *T. aliciae*, which, in this instance, it did not resemble. He adds that this species, though not numerous, extended quite to the borders of the wooded country, to the north and northwest of Fort Anderson. Afterwards he observed several other nests on the ground, all of which were similar to the last, and it is by no means impossible that in certain instances these birds may have occupied old nests of the *T. aliciae*, and used them for purposes of incubation. Richardson states that its nests are constructed in a low bush, and are made of dry grass, hair, and feathers. He states that the eggs are five in number, of a pale mountain-green tint, and marbled with irregular spots of brown.

Mr. Audubon, who found several of the nests of this bird in Labrador, near the coast, describes them as large for the size of the bird, and as usually placed on the ground among moss or tall grass near the stem of a creeping fir, the branches of which usually conceal it from view. Its exterior is loosely formed of dry grasses and moss, with a carefully disposed inner layer of fine grasses, circularly arranged. The lining consists of very delicate fibrous roots, with feathers of different kinds of water-fowl. In one instance he noted the down of the eider-duck. He found their eggs from the middle of June to the 5th of July. When their nest was approached, the female affected lameness, and employed all the usual arts to decoy the intruder away. They raised but one brood in a season, and about the first of September left Labrador for the south in small flocks, made up of members of one family.

Their eggs measure from .92 to an inch in length, and .70 in breadth. They are oblong in shape. Their ground-color is a light bluish-white, thickly spotted with a rusty-brown, often so fully as to conceal the ground.

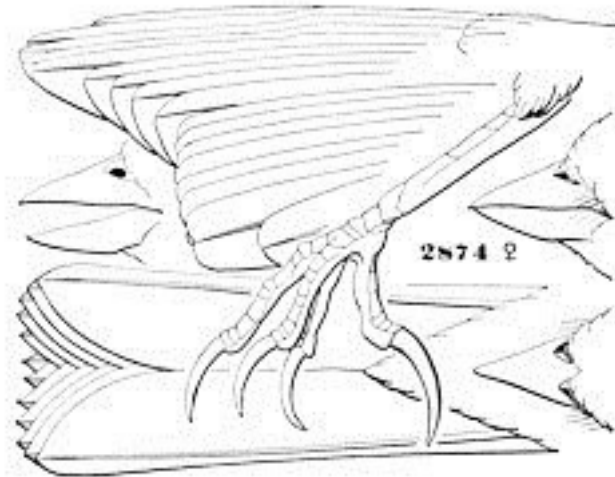
Passerella townsendi, Nuttall

TOWNSEND'S SPARROW

? *Emberiza unalaschkensis*, Gmel. II, 1788, 875 (based on *Aonalaschka Bunting*, Lath. II, 202, 48; *Unalaschka B.*, Pennant, 52). *Passerella u.* Finsch, Abh. Nat. III, 1872, 53 (Alaska). *Fringilla townsendi*, Aud. Orn. Biog. V, 1839, 236, pl. ccccxxiv, f. 7.—Ib. Syn. 1839.—Ib. Birds Am. III, 1841, 43, pl. clxxxvii. *Fringilla (Passerella) townsendi*, Nutt. Man. I, (2d ed.,) 1840, 533. *Passerella townsendi*, Bon. Conspectus, 1850, 477.—Baird, Birds N. Am. 1858, 489.—Cooper & Suckley, 204.—Dall & Bannister, Tr. Ch. Ac. I, 1869, 285. *Fringilla meruloides*, Vig. Zoöl. Blossom (Monterey, Cal.), 1839, 19. ? *Emberiza (Zonotrichia) rufina*, Kittlitz, Denkw. 1858, 200. (He compares it with *P. iliaca*, but says it is darker. Sitka.)

Sp. Char. Above very dark olive-brown, with a tinge of rufous, the color continuous and uniform throughout, without any trace of blotches or spots; the upper tail-coverts and outer edges of the wing and tail feathers rather lighter and brighter. The under parts white, but thickly covered with approximating triangular blotches colored like the back, sparsest on the middle of the body and on the throat; the spots on the belly smaller. Side almost continuously like the back; tibiae and under tail-coverts similar, the latter edged with paler. Axillars brown; paler on edges. Claws all very large and long; the hinder claw longer than its toe. First and sixth quills about equal. Length, about 7 inches; wing, about 3.00.

Hab. Pacific coast of United States, as far south as Sacramento, and Fort Tejon? north to Kodiak (and Unalaschka?).



Passerella townsendi.

2874 ♀

This species differs a good deal in form from *P. iliaca*. The claws are much larger and stouter, the wing a good deal shorter and more rounded. The differences in color are very appreciable, the tints being dark sepia-brown instead of red, and perfectly uniform above, not spotted; the under parts much more thickly spotted.

Specimens from Alaska show a tendency to longer and perhaps more slender bills. Some are rather more rufous-brown than the type; others have a faint tinge of ashy anteriorly, although scarcely appreciable. This is especially noticeable in some skins from Fort Tejon, they being almost exactly intermediate between *townsendi* and *schistacea*, or *megarhynchus*.

Young birds are not materially different from the adult, except in having the white of under parts replaced by pale rusty; the back is rather duller in color, but without spots or stripes of any kind. No. 46,620 from British Columbia has the bill much stouter than in the average.

It is by no means certain, however probable, that this bird is the *E. unalaschkensis* of Gmelin, an important objection being its absence so far in collections received by the Smithsonian Institution from that island. We therefore leave the question open for the present.

Habits. The history of this western analogue of the Fox-colored Sparrow is still quite imperfectly known. It was first obtained in Oregon by Mr. Townsend, on the 15th of February. He describes it as a very active and a very shy bird, keeping constantly among the low bushes of wormwood, and on the ground in their vicinity. It was partially gregarious, six or eight being usually seen together. Its call-note was a short, sharp, quick chirp, and it also had occasionally a low weak warble.

Dr. Gambel, referring probably to its occurrence in winter in California, speaks of this bird as an abundant resident in that State, which is not correct, it being only a winter visitant, and not abundant south of San Francisco. He describes its habits as very different from those of any other Sparrow, and more like those of a Thrush. It is said to keep in retired bushy places, or in underwood, and was scarcely ever seen except on the ground, and then would scarcely ever be discovered but for the noise it made in scratching among the leaves. It was silent and unsuspecting, and he rarely heard it utter even its occasional chirp.

Dr. Cooper states that he found this Sparrow only a winter resident in Washington Territory, where, in company with other Sparrows, it kept constantly on the ground, frequenting the thickets and scratching among the fallen leaves for its food. It was most common in the interior, but in very cold weather sought the coast, in company with the Snowbird and other species. He observed a few lingering about the Straits of Fuca until April. After that he saw no more of them until their return southward in October. During their winter residence Dr. Cooper never heard them sing. Dr. Suckley found them rather abundant near Fort Steilacoom, though not so common as the *Melospiza rufina*, which they greatly resembled in habits and in general appearance.

Dr. Heermann describes them as abundant and migratory in California, visiting that State only in winter. He speaks of them as of a solitary and quiet nature, resorting to the thickets and underwood for its food, turning over the leaves and scratching up the ground in the manner of the Brown Thrush, occasionally hopping backwards as if to ascertain the results of its labors.

Dr. Cooper, in his Report on the Birds of California, reaffirms that this bird is only a winter visitant to the lower country near the Columbia, but also conjectures that it spends the summer in the Cascade Mountains, between April and October. Specimens have been obtained near San Francisco in winter. It seemed to him to be both a shy and a silent bird, frequenting only woods or thick bushes, and while there constantly scratching among the fallen leaves, and feeding both on seeds and insects. He has seen either this bird or the *P. megarhynchus* as far south as San Diego in winter. He has also noticed its arrival near San Francisco as early as October 20.

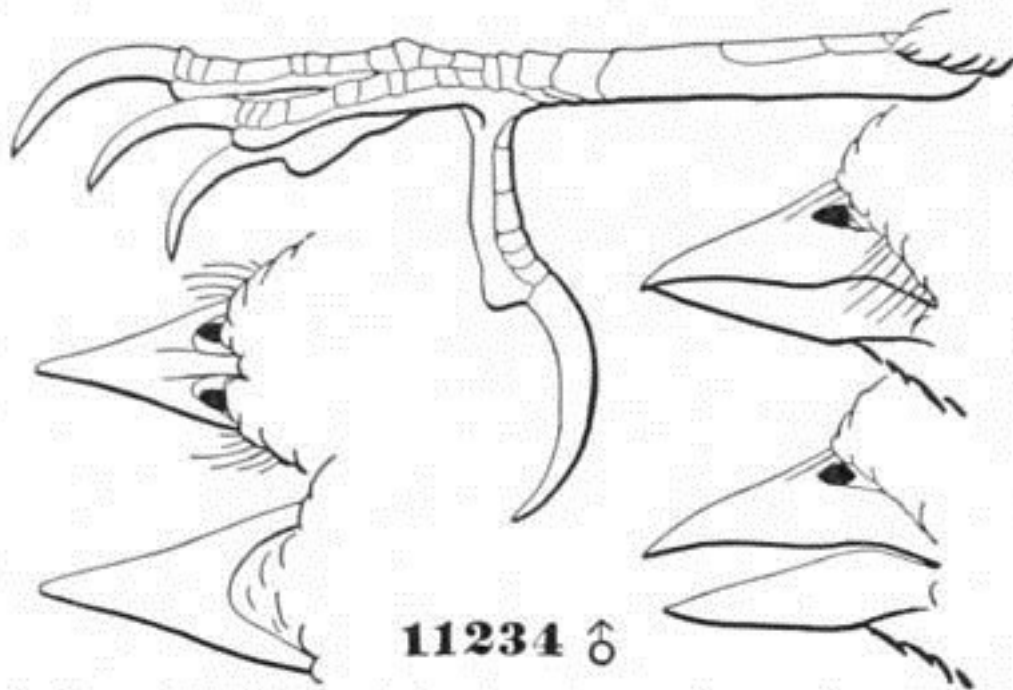
On the Spokane Plains, in British Columbia, Mr. J. K. Lord first met with this species. They were there not uncommon in dark swampy places east of the Cascades. These birds he found remarkable for their singular habit of scratching dead leaves or decayed material of any sort with their feet, exactly as do barn-door fowls,—sending the dirt right, left, and behind. It picks up seeds, insects, larvæ, or anything eatable that it thus digs out, and then proceeds to scratch for more. The long and unusually strong claws with which this bird is provided seem particularly well adapted for these habits,

so unusual in a Sparrow. At almost any time, by waiting a few moments, one may be pretty sure to hear the scratching of several of these birds from under the tangle of fallen timber.

Several specimens were obtained in Sitka by Bischoff and others, but without any record of their habits.

***Passerella townsendi*, var. *schistacea*, Baird**

Passerella schistacea, Baird, Birds N. Am. 1858, 490, pl. lxxix, f. 3.



11234 ♂

Sp. Char. Bill slender, the length being .34 from nostril, the depth .25; the upper mandible much swollen at the base; the under yellow. Above and on the sides uniform slate-gray; the upper surface of wings, tail-feathers, and upper coverts dark brownish-rufous; ear-coverts streaked with white. Beneath pure white, with broad triangular arrow-shaped and well-defined spots of slate-gray like the back everywhere, except along the middle of the belly; not numerous on the throat. A hoary spot at the base of the bill above the loreal region; axillars nearly white. Length, 6.80; wing, 3.30; tail, 3.50.

Hab. Head-waters of Platte and middle region of United States to Fort Tejon and to Fort Crook, California.

This species is readily distinguished from *P. iliaca* by the slaty back and spots on the breast, the absence of streaks above, and the longer claws. From *townsendi* it differs in having the head, back, sides, and spots beneath slate-colored, instead of dark reddish-brown. The spotting beneath is much more sparse, the spots smaller, more triangular, and confined to the terminal portion of the feathers, instead of frequently involving the entire outer edge. The axillars are paler. The wings and tail are the same in both species.

The young bird is quite similar; but the spots beneath are badly defined, more numerous, and longitudinal rather than triangular.

There can be little doubt, however, that this bird is a geographical race of *P. townsendi*.

Habits. For all that we know in regard to the habits and general distribution of this species, we are indebted to the observations of Mr. Ridgway, who met with it while accompanying Mr. Clarence King's geological survey. It was first obtained in July, 1856, by Lieutenant F. T. Bryan, on the Platte River, and others were afterwards collected at Fort Tejon by Mr. Xantus.

Mr. Ridgway found the Slate-colored Sparrow at Carson City, during its spring migrations northward, in the early part of March. At this time it was seen only among the willows along the Carson River, and was by no means common. It had the habit of scratching among the dead leaves, on the ground in the thickets, precisely after the manner of the eastern *P. iliaca*. In the following September he again found it among the thickets in the Upper Humboldt Valley. In Parley's Park, among the Wahsatch Mountains, he found it a very plentiful species in June, nesting among the willows and other shrubbery along the streams. There it was always found in company with the *M. fallax*, which in song it greatly resembles, though its other notes are quite distinct, the ordinary one being a sharp *chuck*. The nest of the two species, he adds, were also so much alike in manner of construction and situation, and the eggs so similar, that it required a careful observation to identify a nest when one was found.

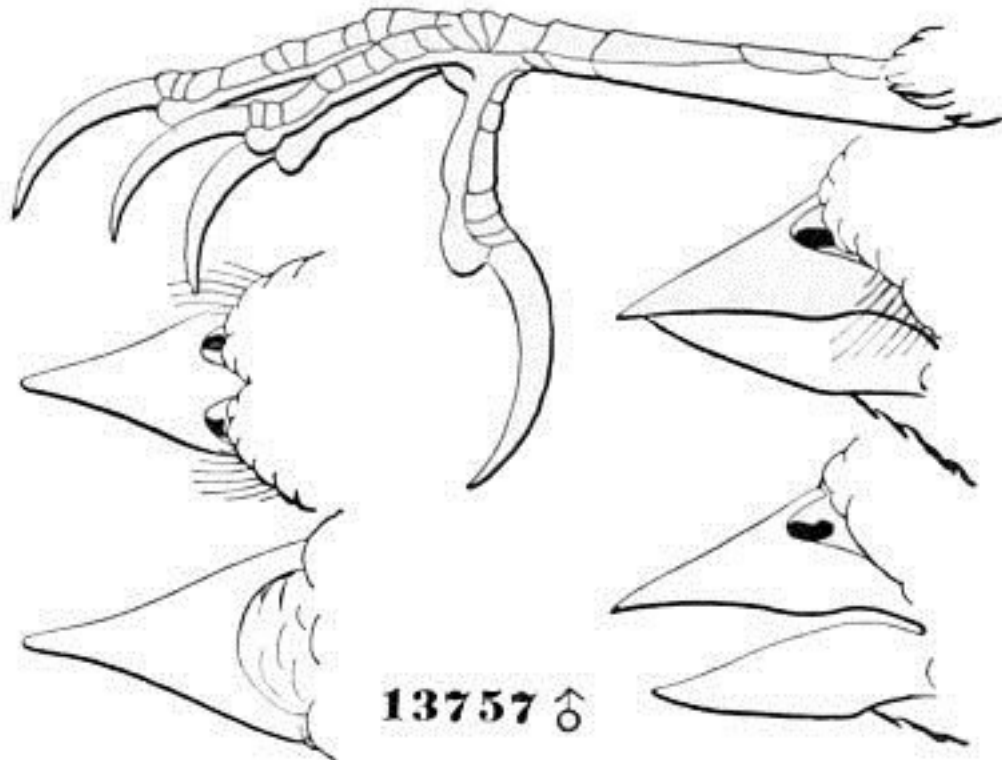
The eggs from one nest of the *Passerella schistacea* measure .90 by .70 of an inch, have a ground of a light mountain-green, and are profusely spotted with blotches of a rufous-brown, generally diffused over the entire egg.

Another nest of this species, obtained in Parley's Park, in the Wahsatch Mountains, by Mr. Ridgway, June 23, 1869, was built in a clump of willows, about two feet from the ground. The nest is two inches in height, two and a half in diameter, cavity one and a half deep, with a diameter of two. It is composed externally of coarse decayed water-grass, is lined with fine hair and finer material like the outside. The eggs, four in number, are .80 by .67 of an inch, of a very rounded oval shape, the ground-color of a pale green, blotched and marked chiefly at the larger end with brown spots of a wine-colored hue.

***Passerella townsendi*, var. *megarhynchus*, Baird**

THICK-BILLED SPARROW

Passerella schistacea, Baird, Birds N. Am. 1858, p. 490 (in part; Ft. Tejon specimens). *Passerella megarhynchus*, Baird, Birds N. Am. 1858, p. 925 (Appendix).—Cooper, Orn. Cal. I, 222. *Passerella schistacea*, var. *megarhynchus*, Ridgway, Rept. Geol. Expl. 40th Par.



13757 ♂

Sp. Char. Similar to var. *schistacea* in colors, size, and general proportions; but bill enormously thick, its depth being very much greater than the distance from nostril to tip, instead of much less; color of lower mandible rosy milk-white, instead of maize-yellow. Bill, .35 from nostril, .47 deep; wing, 3.30; tail, 3.50; tarsus, .83; middle toe without claw, .63; hind claw, .50.

Hab. Sierra Nevada, from Fort Tejon north to 40° latitude (Carson City, Nevada, breeding, Ridgway).

This very remarkable variety of *P. townsendi* is quite local in its distribution, having been observed only in the Sierra Nevada region, as above indicated. The first specimens were brought from Fort Tejon by Mr. J. Xantus, but at what season they were found there is not indicated on the labels. Recently, specimens were procured by Mr. Ridgway at Carson City, Nev., in April, they having arrived there about the 20th of April, frequenting the ravines of the Sierra near the snow. At the same place the var. *schistacea* was found earlier in the spring, but among the willows along the streams in the valleys, and not met with in the mountains; and all the individuals had passed northward before those of *megarhynchus* arrived.

In this restricted distribution the present bird is a companion of the *Melospiza melodia*, var. *heermanni*, and the characteristics of form are the same in both as compared with their Middle Province and Northern representatives; while they both differ from the latter (*townsendi* of *Passerella*, and *rufina* of *Melospiza*) in purer, lighter, and less brown colors.

Habits. Dr. Cooper met with several individuals of this bird towards the summits of the Sierra Nevada, in September, 1863, but was unable to preserve any of them. So far as he was able to observe them, they had no song, and their habits were generally similar to those of the *P. townsendi*.

The Thick-billed Sparrow was found by Mr. Ridgway as a very common bird among the alder swamps in the ravines of the eastern slope of the Sierra Nevada during the summer. Near Carson City, April 25, in a swampy thicket near the streams in the level slopes, he heard, for the first time, its beautiful song, and killed a specimen in the midst of its utterance of what, he adds, was one of

the most exquisitely rich utterances he ever heard. This song, he states, resembles, in richness and volume, that of the Louisiana Water Thrush (*Seiurus ludovicianus*), qualities in which that bird is hardly equalled by any other North American bird. They were singing in all parts of that swampy thicket, and up the ravines as far as the snow. From the nature of the place and the character of their song, they were at first supposed to be the Water Thrush, until specimens of these exquisite songsters were secured. He regards this bird as second to none of our singers belonging to this family and though in variety, sprightliness, and continuity, and also in passionate emotional character, its song is not equal to that of the *Chondestes grammaca*, yet it is far superior in power and richness of tone. Mr. Ridgway regards this bird as easily distinguishable from the *P. schistacea*, of which, however, it is only a variety. There is a total discrepancy in its notes, and while neither species is resident in the latitude of Carson City, through which both kinds pass in their migrations, the *P. schistacea* lingers in the spring only a short time, soon passing to the northward, while the *P. megarhynchus* arrives later and remains through the summer. The former makes its temporary abode among the willows along the river, while the latter breeds in the shrubbery of the mountain ravines.

Subfamily SPIZINÆ

Char. Bill variable, always large, much arched, and with the culmen considerably curved; sometimes of enormous size, and with a greater development backward of the lower jaw, which is always appreciably, sometimes considerably, broader behind than the upper jaw at its base; nostrils exposed. Tail rather variable. Bill generally black, light blue, or red. Wings shorter than in the first group. Gape almost always much more strongly bristled. Few of the species sparrow-like or plain in their appearance; usually blue, red, or black and white; except in one or two instances the sexes very different in color.

The preceding diagnosis is intended to embrace the brightly colored passerine birds of North America, different in general appearance from the common Sparrows. It is difficult to draw the line with perfect strictness, so as to separate the species from those of the preceding group, but the bill is always more curved, as well as larger, and the colors are brighter. They resemble quite closely, at a superficial glance, the *Coccothraustinae*, but may be readily distinguished by absence of the projecting tufts surrounding the base of the upper mandible, shorter, more rounded wings, and longer tarsi.

The genera may be most conveniently arranged as follows:—

A. Wings decidedly longer than the tail. Eggs plain blue or white, unspotted.

a. Feet very stout, reaching nearly to the end of the tail. Species terrestrial.

Calamospiza. Bill moderate, the commissure with a deep angle posteriorly and prominent lobe behind it; anteriorly nearly straight; commissure of lower mandible with a prominent angle. Outer toe longer than the inner, both nearly as long as the posterior. Outer four primaries about equal, and abruptly longer than the rest. Tertiaries nearly equal to primaries. Tail-feathers broad at tips. Color: black with white spot on wing in ♂, brownish streaks in ♀. Nest on or near ground; eggs plain pale blue.

Euspiza. Bill weaker, the commissure with a more shallow angle, and much less prominent situation behind it; anteriorly distinctly sinuated. Outer toe shorter than inner, both much shorter than the posterior one. First primary longest, the rest successively shorter. Tertiaries but little longer than secondaries. Tail-feathers attenuated at tips. Color: back brown streaked with black; throat white; jugulum yellow or ashy; with or without black spot on fore neck. A yellow or white superciliary stripe. Nest on or near ground; eggs plain pale blue.

b. Feet weaker, scarcely reaching beyond lower tail-coverts; species arboreal.

a. Size large (wing more than 3.50 inches)

Hedymeles. Upper mandible much swollen laterally. Colors: no blue; upper parts conspicuously different from the lower. Wings and tail with white patches; axillars and lining of wing yellow or red. Female streaked. Nest in a tree or bush; eggs greenish, thickly spotted.

Guiraca. Upper mandible flat laterally. Colors: ♂ deep blue, with two rufous bands on wings; no white patches on wings or tail; axillars and lining of wing blue; ♀ olive-brown without streaks. Nest in a bush; eggs plain bluish-white.

b. Size very small (wing less than 3.00 inches)

Cyanospiza. Similar in form to *Guiraca*, but culmen more curved, mandible more shallow, the angle and sinuations of the commissure less conspicuous. Color: ♂ more or less blue, without any bands on wing (except in *C. amaena* in which they are white); ♀ olive-brown. Nest in a bush; eggs plain bluish-white (except in *C. ciris*, in which they have reddish spots).

B. Wing and tail about equal. The smallest of American *Conirostres*. Nest in bushes. Eggs white, spotted.

Spermophila. Bill very short and broad, scarcely longer than high, not compressed; culmen greatly curved. Color: chiefly black and white, or brown and gray.

Phonipara. Bill more triangular, decidedly longer than deep, much compressed; culmen only slightly curved, or perfectly straight. Colors: dull olive-green and blackish, with or without yellow about the head.

C. Wing much shorter than the tail.

a. Head crested. Prevailing color red. Bill red or whitish.

Pyrrhuloxia. Bill pyrrhuline, very short, and with the culmen greatly convex; shorter than high. Hind claw less than its digit; not much larger than the middle anterior one. Tarsus equal to the middle toe. Nest in bush or low tree; eggs white, spotted with lilac and olive.

Cardinalis. Bill coccothraustine, very large; culmen very slightly convex. Wings more rounded. Feet as in the last, except that the tarsus is longer than the middle toe. Nest in bush or low tree; eggs white, spotted with lilac and olive.

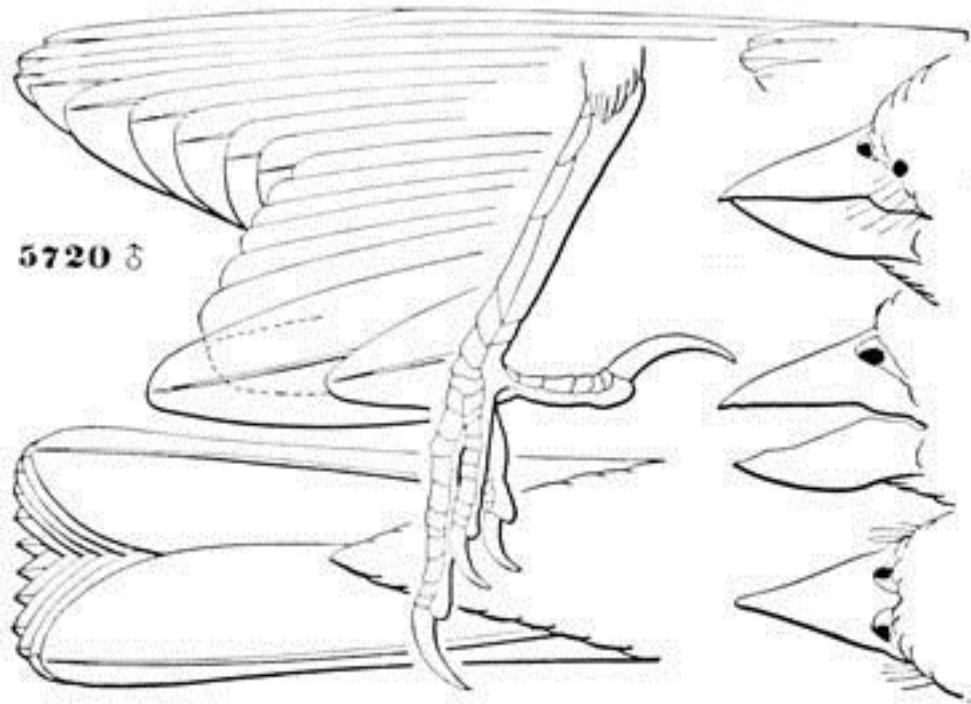
b. Head not crested. Colors black, brown, or olive, without red. Bill dusky, or bluish.

Pipilo. Bill moderate; culmen and commissure curved. Hind claw very large and strong; longer than its digit. Tarsus less than the middle toe. Nest on ground or in low bush; eggs white sprinkled with red, or pale blue with black dots and lines round larger end.

Genus CALAMOSPIZA, Bonap

Calamospiza, Bonap. List, 1838. (Type, *Fringilla bicolor*, Towns.)

Corydalina, Audubon, Synopsis, 1839. (Same type.)



Calamospiza bicolor.

5720 ♂

Gen. Char. Bill rather large, much swollen at the base; the culmen broad, gently but decidedly curved; the gonys nearly straight; the commissure much angulated near the base, then slightly sinuated; lower mandible nearly as deep as the upper, the margins much inflected, and shutting under the upper mandible. Nostrils small, strictly basal. Rictus quite stiffly bristly. Legs large and stout. Tarsi a little longer than the middle toe; outer toe rather longer than the inner, and reaching to the concealed base of the middle claw; hind toe reaching to the base of the middle claw; hind claw about as long as its toe. Claws all strong, compressed, and considerably curved. Wings long and pointed; the first four nearly equal, and abruptly longest; the tertials much elongated, as long as the primaries. Tail a little shorter than the wings, slightly graduated; the feathers rather narrow and obliquely oval, rounded at the end.

Color. *Male*, black, with white on the wings. *Female*, brown above, beneath white, with streaks.

PLATE XXIX.



1. <i>Pooecetes gramineus</i> . D. C., 10147.	6. <i>Cyanospiza parellina</i> . ♂ N. Leon, Mex., 4074.	12. <i>Cyanospiza cyanea</i> . ♀ Nevada, 55351.
2. <i>Calamospiza bicolor</i> . ♂ Neb., 5730.	7. " <i>ciris</i> . ♂ Texas, 6771.	13. " <i>cyanea</i> . ♂ Pa., 5645.
3. " " ♀ N. Mex., 6306.	8. " " ♀.	14. " " ♀ Ga., 32425.
4. <i>Galraea caerulea</i> . ♂ Florida., 6499.	9. " <i>versicolor</i> . ♂ N. Leon, Mex., 4075.	15. <i>Phainopara zena</i> . ♂ Bahamas.
5. " " ♀ Cal.	10. " " ♀ C. St. Lucas, 12984.	16. " " ♀ "
	11. " <i>amona</i> . ♂ Ft. Union, Dak., 1898.	17. <i>Spermophila moreletii</i> . ♂ Costa Rica, 30514.

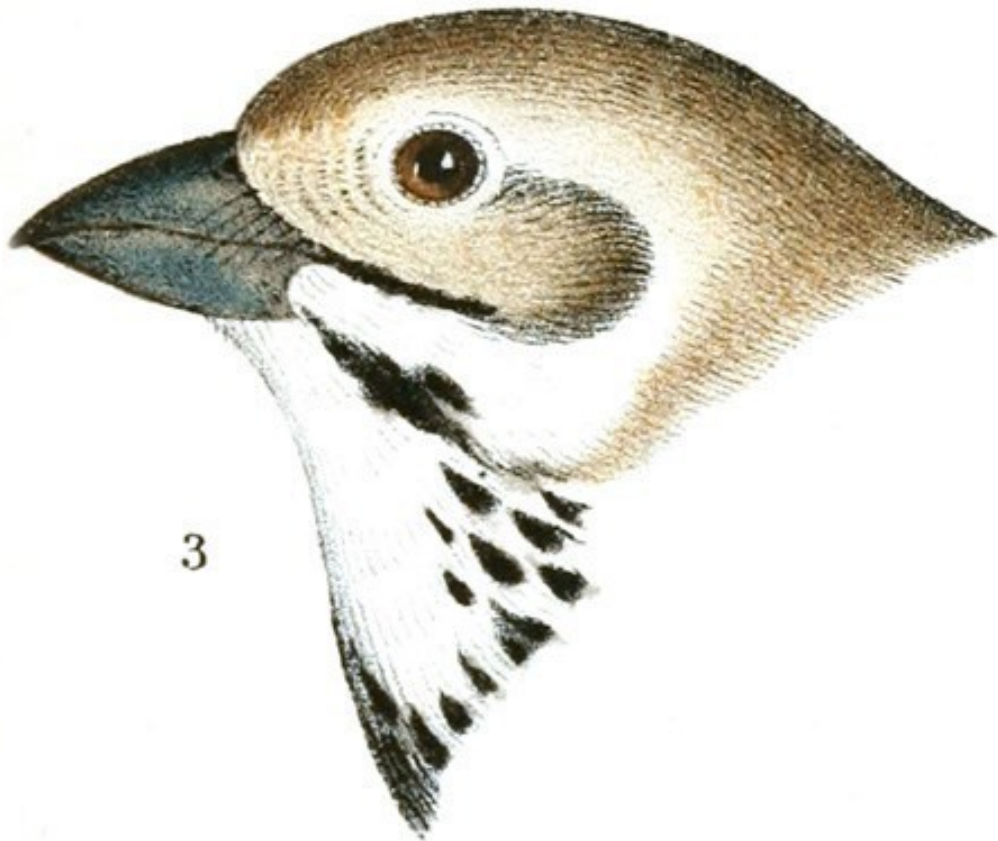
PLATE XXIX.



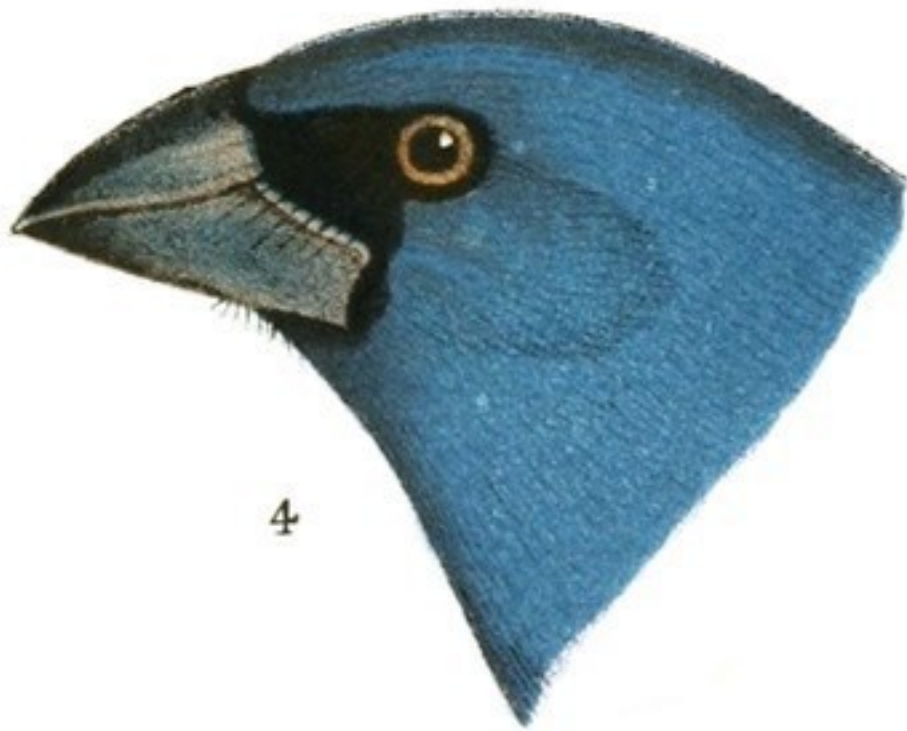
1. *Pooecætes gramineus*. D. C., 10147.



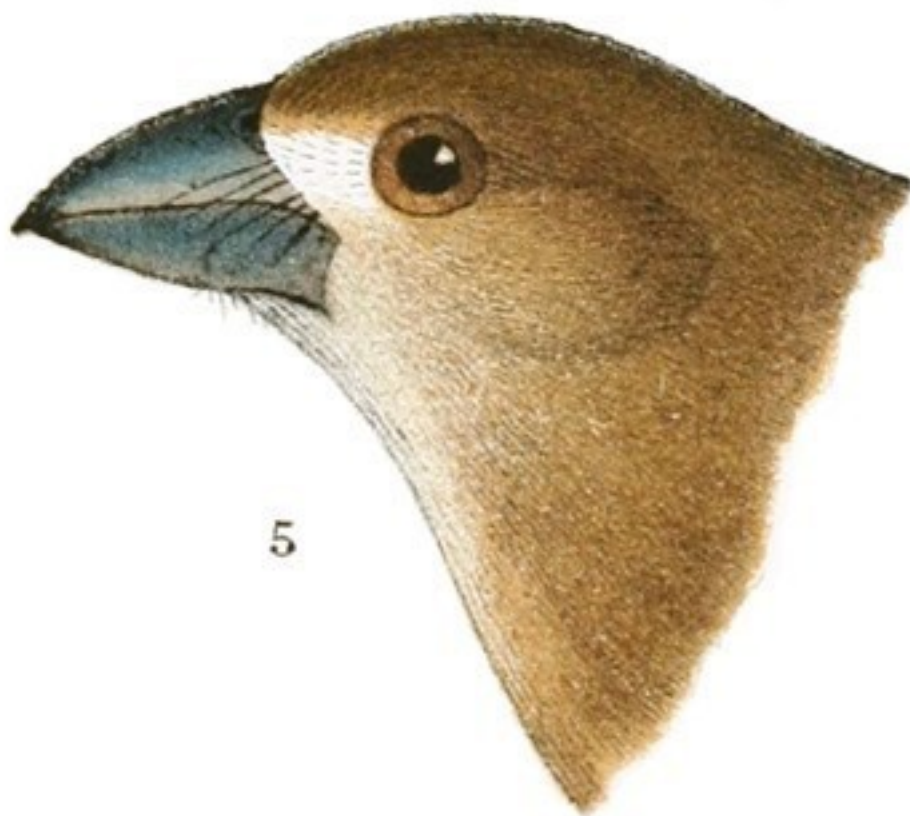
2. *Calamospiza bicolor*. ♂ Neb., 5720.



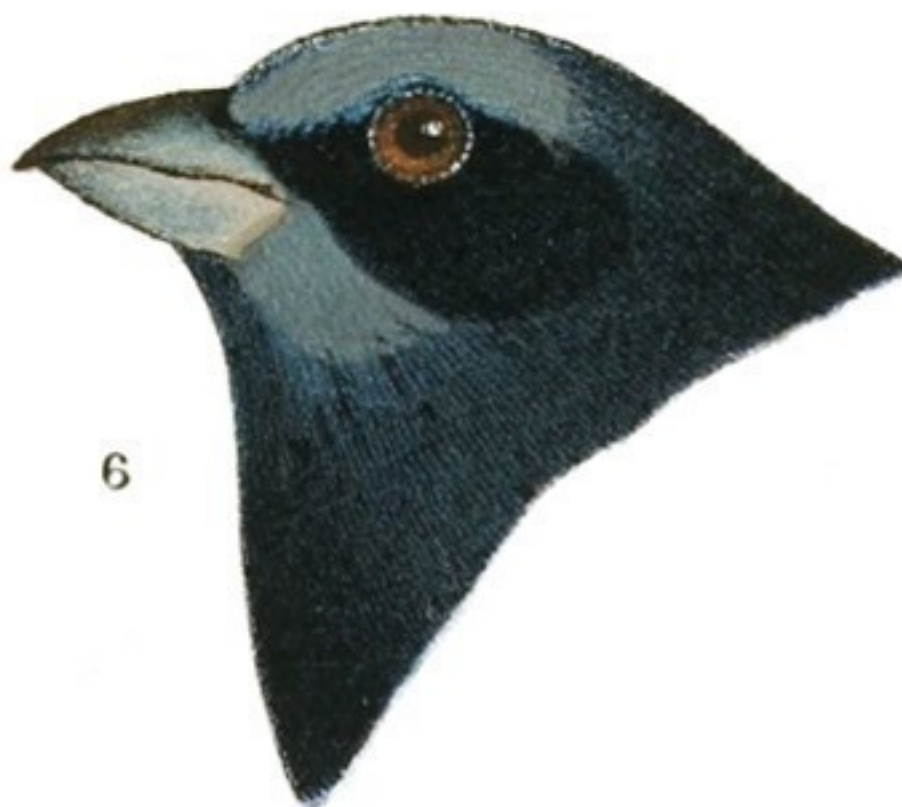
3. *Calamospiza bicolor*. ♀ N. Mex., 6306.



4. *Guiraca cærulea*. ♂ Philada., 6480.



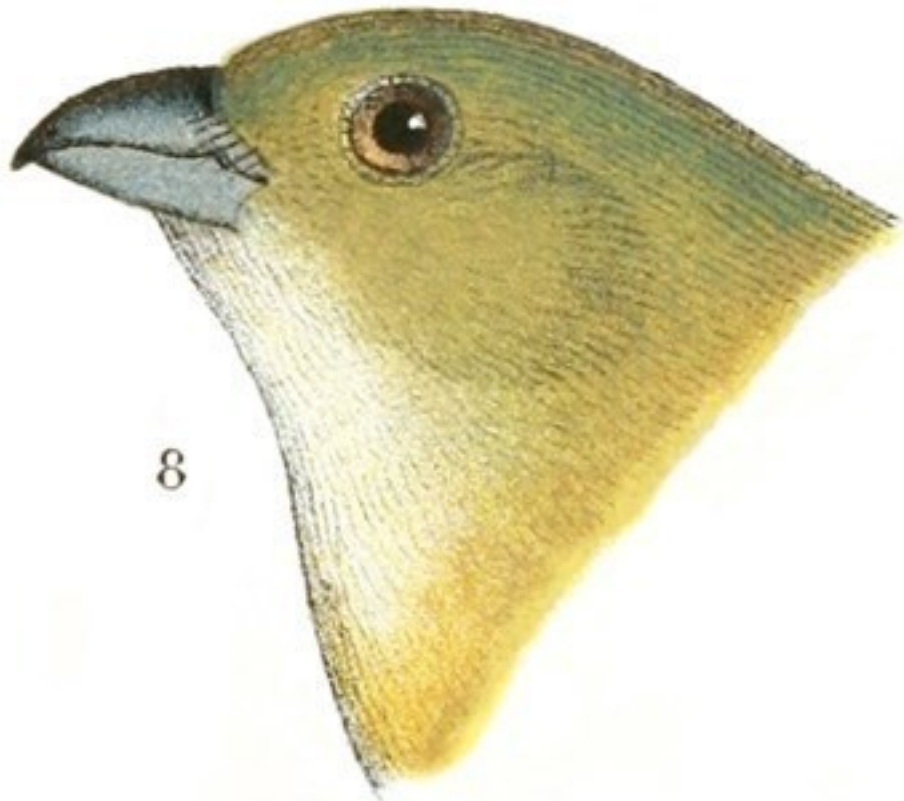
5. *Guiraca caerulea*. ♀ Cal.



6. *Cyanospiza parellina*. ♂ N. Leon, Mex., 4074.



7. *Cyanospiza ciris*. ♂ Texas, 6271.

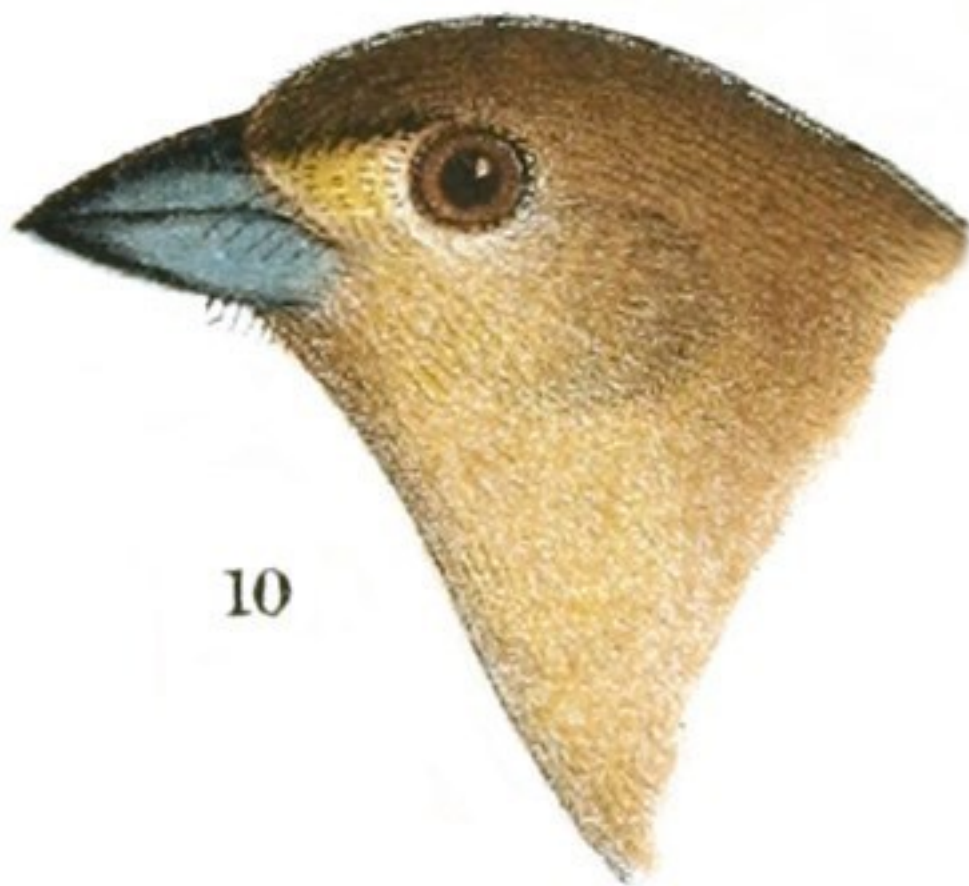


8. *Cyanospiza ciris*. ♀.



9

9. *Cyanospiza versicolor*. ♂ N. Leon, Mex., 4075.



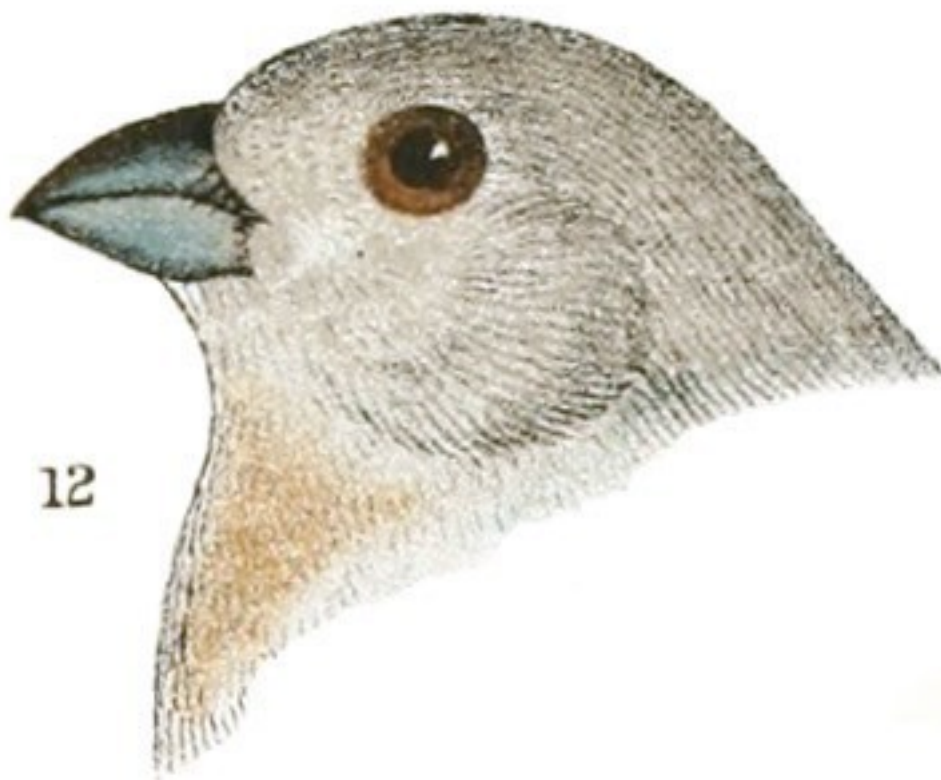
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10. *Cyanospiza versicolor*. ♀ C. St. Lucas, 12984.



11

11. *Cyanospiza amoena*. ♂ Ft. Union, Dak., 1898.

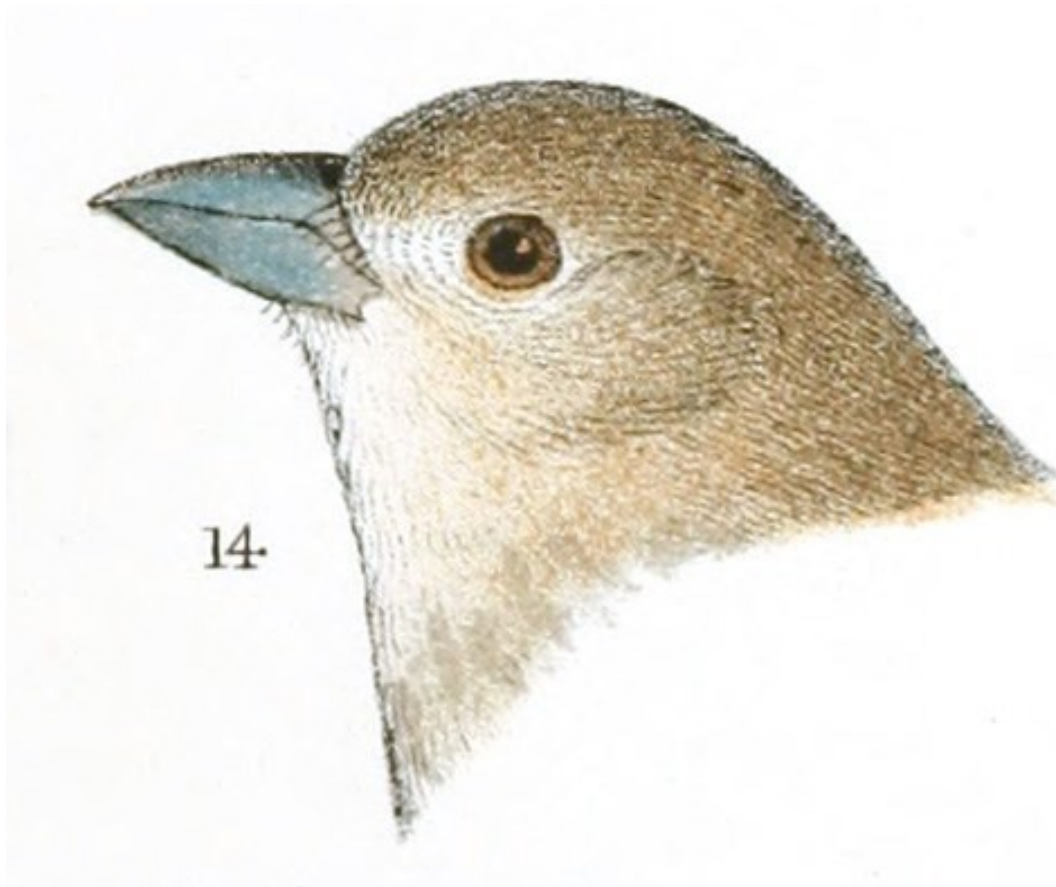


12

12. *Cyanospiza amoena*. ♀ Nevada, 53551.



13. *Cyanospiza cyanea*. ♂ Pa., 2645.



14. *Cyanospiza cyanea*. ♀ Ga., 32426.



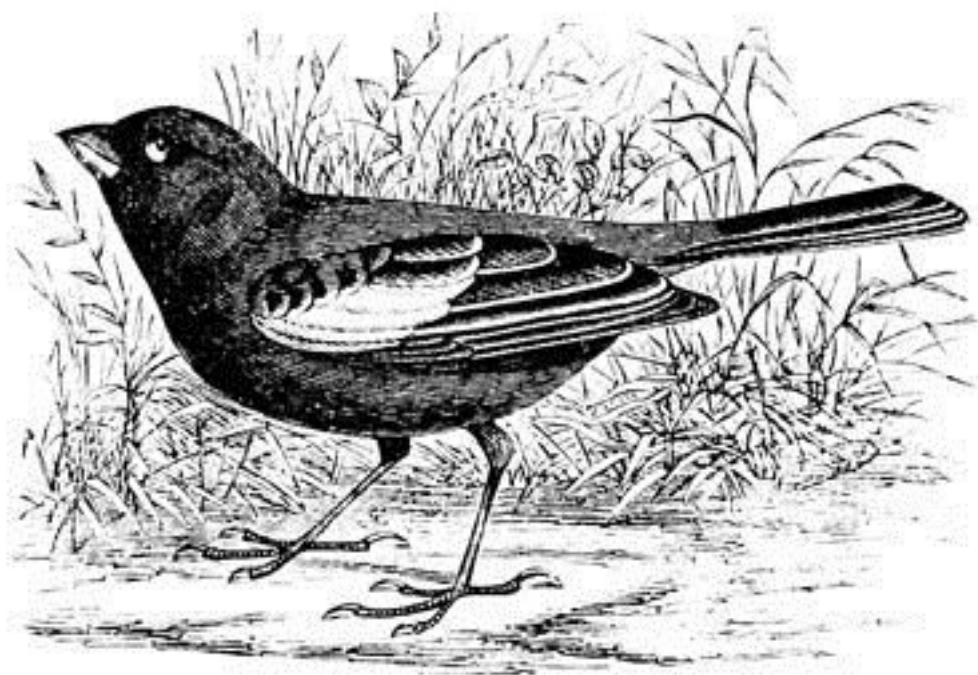
15. *Phonipara zena*. ♂ Bahamas.



16. *Phonipara zena*. ♀ Bahamas.



17. *Spermophila moreleti*. ♂ Costa Rica, 30524.



Calamospiza bicolor.

This genus is well characterized by the large swollen bill, with its curved culmen; the large strong feet and claws; the long wings, a little longer than the tail, and with the tertials as long as the primaries; the first four quills about equal, and abruptly longest; the tail short and graduated.

The only group of North American *Spizellinae*, with the tertials equal to the primaries in the closed wing, is *Passerculus*. This, however, has a differently formed bill, weaker feet, the inner primaries longer and more regularly graduated, the tail-feathers more acute and shorter, and the plumage streaked brownish and white instead of black.

Calamospiza bicolor, Bonap

LARK BUNTING; WHITE-WINGED BLACKBIRD

Fringilla bicolor, Townsend, J. A. N. Sc. Ph. VII, 1837, 189.—Ib. Narrative, 1839, 346.—Aud. Orn. Biog. V, 1839, 19, pl. cccxc. *Calamospiza bicolor*, Bonap. List, 1838.—Ib. Conspectus, 1850, 475.—Baird, Birds N. Am. 1858, 492.—Heerm. X, c, 15. *Corydalina bicolor*, Aud. Synopsis, 1839, 130.—Ib. Birds Am. III, 1841, 195, pl. cci.—Max. Cab. J. VI, 1858, 347.—Cooper, Orn. Cal. 1, 225. *Dolichonyx bicolor*, Nuttall, Manual, I, (2d ed.,) 1840, 203.

Sp. Char. *Male* entirely black; a broad band on the wing (covering the whole of the greater coverts), with the outer edges of the quills and tail-feathers, white. Length, about 6.50; wing, 3.50; tail, 3.20; tarsus, 1.00; bill above, .60.

Female pale brown, streaked with darker above; beneath white, spotted and streaked rather sparsely with black on the breast and sides. Throat nearly immaculate. A maxillary stripe of black, bordered above by white. Region around the eye, a faint stripe above it, and an obscure crescent back of the ear-coverts, whitish. A broad fulvous white band across the ends of the greater wing-coverts; edge of wing white. Tail-feathers with a white spot at the end of the inner web.

Young. Similar to the female; a faint buff tinge prevalent beneath, where the streaks are narrower; dark streaks above broader, the feathers bordered with buffy-white.

Hab. High Central Plains to the Rocky Mountains; southwesterly to Valley of Mimbres and Sonora; San Antonio, Texas, winter (Dresser, Ibis, 1865, 490). Fort Whipple, Arizona (Coues, P. A. N. S. 1866, 84). Parley's Park, Utah (Ridgway).

Habits. This peculiar species, known by some writers as the Lark Bunting, and by others as the White-winged Blackbird, was first described by Townsend in 1837. He met with it when, in company with Mr. Nuttall, he made his western tour across the continent, on the 24th of May, soon after crossing the north branch of the Platte River. The latter writer regarded it as closely allied to the Bobolink, and described it as a *Dolichonyx*. He describes the birds as gregarious, consorting with the Cowbirds, and, at the time he met with them, uttering most delightful songs. Towards evening they sometimes saw these birds in all directions around them, on the hilly grounds, rising at intervals to some height, hovering and flapping their wings, and, at the same time, giving forth a song which Mr. Nuttall describes as being something like *weet-weet-wt-wt-wt*, notes that were between the hurried warble of the Bobolink and the melody of a Skylark. It is, he says, one of the sweetest songsters of the prairies, is tame and unsuspecting, and the whole employment of the little band seemed to be an ardent emulation of song.

It feeds on the ground, and, as stated by Mr. Townsend, may be seen in flocks of from sixty to a hundred together. It was, so far as their observations went, found inhabiting exclusively the wide

grassy plains of the Platte. They did not see it to the west of the Black Hills, or the first range of the Rocky Mountains.

To Mr. Nuttall's account Mr. Townsend adds that this bird is strictly gregarious, that it feeds on the ground, around which it runs in the manner of the Grass Finch, to which, in its habits, it seems to be somewhat allied. Mr. Townsend adds that, as their caravan moved along, large flocks of these birds, sometimes to the number of sixty or a hundred individuals, were started from the ground, and the piebald appearance of the males and females promiscuously intermingled presented a very striking and by no means unpleasing effect. While the flock was engaged in feeding, some of the males were observed to rise suddenly to considerable height in the air, and, poising themselves over their companions with their wings in constant and rapid motion, continued nearly stationary. In this situation they poured forth a number of very lively and sweetly modulated notes, and, at the expiration of about a minute, descended to the ground and moved about as before. Mr. Townsend also states that he met with none of these birds west of the Black Hills.

Mr. Ridgway also mentions that though he found these birds very abundant on the plains east of the Black Hills, he met with only a single specimen to the westward of that range. This was at Parley's Park, among the Wahsatch Mountains.

Dr. Gambel, in his paper on the Birds of California, states that he met with small flocks of this handsome species in the bushy plains, and along the margins of streams, during the winter months. And Dr. Heermann states that he also found this species numerous in California, New Mexico, and Texas. Arriving in the last-named State in May, he found this species there already mated, and about to commence the duties of incubation.

Mr. Dresser found these birds common near San Antonio during the winter. In December he noticed several flocks near Eagle Pass. They frequented the roads, seeking the horse-dung. They were quite shy, and when disturbed the whole flock would go off together, uttering a low and melodious whistle. In May and June several were still about near Howard's Rancho, and on his return from Houston, in June, he succeeded in shooting one in its full summer plumage, when its specific name is peculiarly appropriate. He does not, however, think that, as a general thing, any of them remain about San Antonio to breed.

They breed in great numbers on the plains of Wyoming Territory, and probably also in Colorado, Montana, and Dakota. The Smithsonian collection embraces specimens obtained in July from the Yellowstone, from Platte River, Pole Creek, the Black Hills, and Bridger's Pass, indicating that they breed in these localities; also specimens from Texas, New Mexico, Sonora, and Espia, in Mexico, but none from California.

Dr. Kennerly, who met with these birds both in Sonora and at Espia, on the Mexican Boundary Survey, states that he observed them in the valley of the river early in the morning, in very large flocks. During the greater part of the day they feed on the hills among the bushes. When on the wing they keep very close together, so that a single discharge of shot would sometimes bring down twenty or thirty. Mr. J. H. Clark, on the same survey, also states that he sometimes found them occurring in flocks of hundreds. The greatest numbers were seen near Presidio del Norte. Great varieties of plumage were observed in the same flock. The food seemed to be seeds almost exclusively. They were very simultaneous in all their movements. Stragglers were never observed remaining behind after the flock had started. They are, he states, the most absolutely gregarious birds he has ever met with.

Dr. Coues, who regarded this bird as one highly characteristic of the prairie fauna, writes me that he met with it in great numbers in Kansas, soon after leaving Fort Riley, and saw it every day until he reached the Raton Mountains in New Mexico. "For two or three days, in fact, from Fort Larned to the mountains," he writes, "I scarcely saw anything else. This was the first week in June, and most of the birds seemed to be paired and nesting, though occasionally a dozen or more were seen together, flocking like the Blackbirds that they strongly recall. They were in full song, and proved delightful vocalists. Sometimes they warble from some spray or low bush offering a stand a little above the level

flower-beds of the prairie, but oftener they mount straight up, hovering high in the air on tremulous wings, pouring forth their melodious strains until, seemingly exhausted, they sink back to the ground. At such times it is interesting to watch two rival males, each straining every nerve to mount higher than the other, and sing more acceptably to its mate hidden in the verdure below. This habit of rising on the wing to sing, so famed in the case of the Skylark, seems not confined to particular species, but to be a forced practice of a number of different birds residing in open level regions, that do not afford the elevated perches usually chosen by woodland songsters for their performances. The ordinary flight of this species is altogether of a different character, being a low gliding motion, overtopping the weeds and bushes. That the birds were nesting at this time is rendered still more probable by the fact that the males noticed as we passed along were out of all proportion, in numbers, to the females seen. They were very heedless of approach, and any number could have been readily destroyed. I never saw any at Fort Whipple, or elsewhere in Arizona, though Dr. Heermann says that they are abundant in the southern portions of the Territory, and specimens are recorded from Lower California.”

Mr. Allen found the Lark Bunting one of the few birds that seemed strictly confined to the arid plains near Fort Hays, in Kansas. He met with it in great abundance, but only on the high ridges and dry plateaus, where they seemed to live in colonies. He describes them as very wary, and very tenacious of life, often flying long distances, even after having been mortally wounded. They seemed to delight to fly in strong winds, when most other birds kept in shelter. They sing while on the wing, hovering in the wind and shaking the tail and legs after the well-known manner of the Yellow-breasted Chat. Its song seemed to him to strongly resemble that of the Chat, with which, at such times, its whole demeanor strikingly accorded.

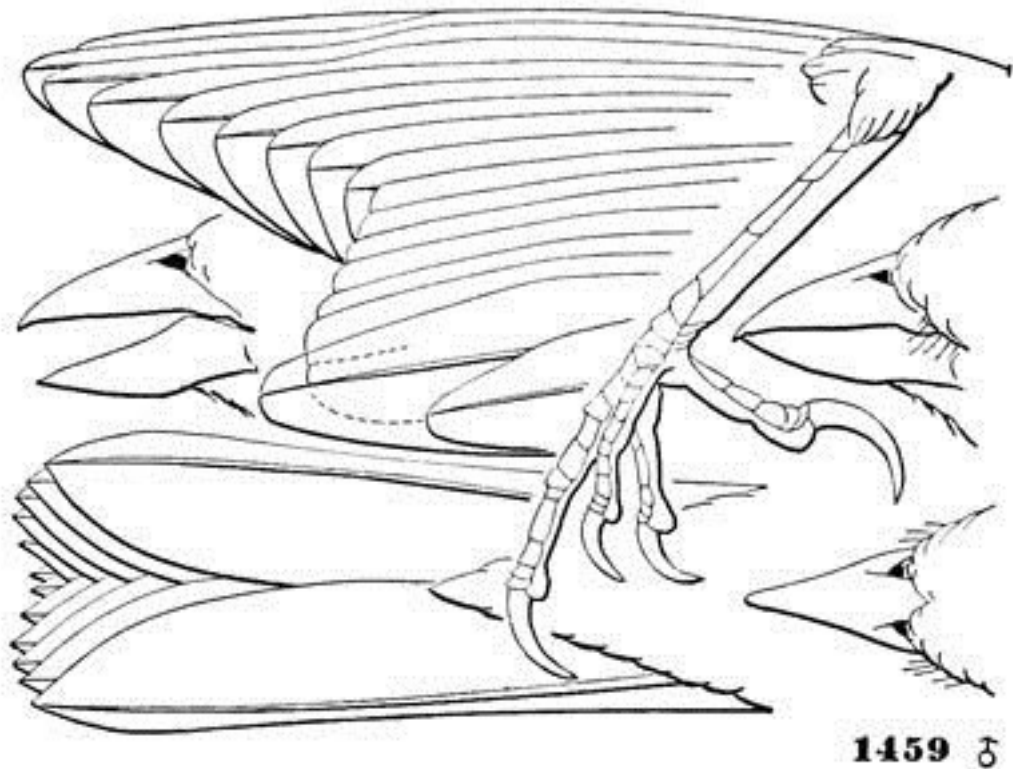
Dr. Heermann, in his Report on the birds collected in the survey on the 32d parallel, states that he first observed these birds on approaching the Pimos villages. They were associated with large flocks of Sparrows, gleaning grain and grass-seed upon the ground. When started up they flew but a short distance before they resumed their occupation. After crossing the San Pedro he again found them in large flocks. At Fort Fillmore, in Mesilla Valley, it was also quite common and associated with the Cowbird and Blackbird, searching for grain among the stable offals. He again met with them in Texas, in the month of April, most of them still retaining their winter coat. He describes the tremulous fluttering motion of the wings with which the male accompanies its song while on the wing as very much after the manner of the Bobolink, and he speaks of their song as a disconnected but not an unmusical chant. He found their nests on the ground, made of fine grasses, lined with hair, and in one instance he found the eggs spotted with faint red dashes.

At Gilmer, in Wyoming Territory, their nests were found by Mr. Durkee built on the ground, and composed of dry grasses very loosely arranged. The eggs, four or five in number, are of a uniform and beautiful light shade of blue, similar to those of the *Euspiza americana*. They measure .90 by .70 of an inch, are of a rounded-oval shape, and, so far as I have observed, are entirely unspotted, although eggs with a few reddish blotches are said to have been met with.

Genus EUSPIZA, Bonap

Euspiza, Bonap. List, 1838. (Type, *Emberiza americana*, Gmelin.)

Euspina, Cabanis, Mus. Hein. 1851, 133. (Same type.)



Euspiza americana, Bonap.

1459 ♂

Gen. Char. Bill large and strong, swollen, and without any ridges; the lower mandible nearly as high as the upper; as broad at the base as the length of the gonyx, and considerably broader than the upper mandible; the edges much inflexed, and shutting much within the upper mandible; the commissure considerably angulated at the base, then decidedly sinuated. The tarsus barely equal to the middle toe; the lateral toes nearly equal, not reaching to the base of the middle claw; the hind toe about equal to the middle one without its claw. The wings long and acute, reaching nearly to the middle of the tail; the tertials decidedly longer than the secondaries, but much shorter than the primaries; first quill longest, the others regularly graduated. Tail considerably shorter than the wings, though moderately long; nearly even, although slightly emarginate; the outer feathers scarcely shorter. Middle of back only striped; beneath without streaks.

This genus comes nearer to *Calamospiza*, but has shorter tertials, more slender bill, weaker and more curved claws, etc.

Species

***E. americana*.** Top and sides of head light slate; forehead tinged with greenish-yellow. A superciliary stripe, a maxillary spot, sides of breast, and middle line of breast and belly, yellow. Chin white, throat black, shoulders chestnut. Female with the black of the throat replaced by a crescent of spots. *Hab.* Eastern Province of United States; south to New Grenada.

***E. townsendi*.** Body throughout (including the jugulum), dark ash, tinged with brownish on the back and wings. Superciliary and maxillary stripe, chin, throat, and middle of belly, white. A maxillary line and a pectoral crescent of black spots. No chestnut shoulders. *Hab.* Chester Co., Pennsylvania.

Euspiza americana, Bonap

BLACK-THROATED BUNTING

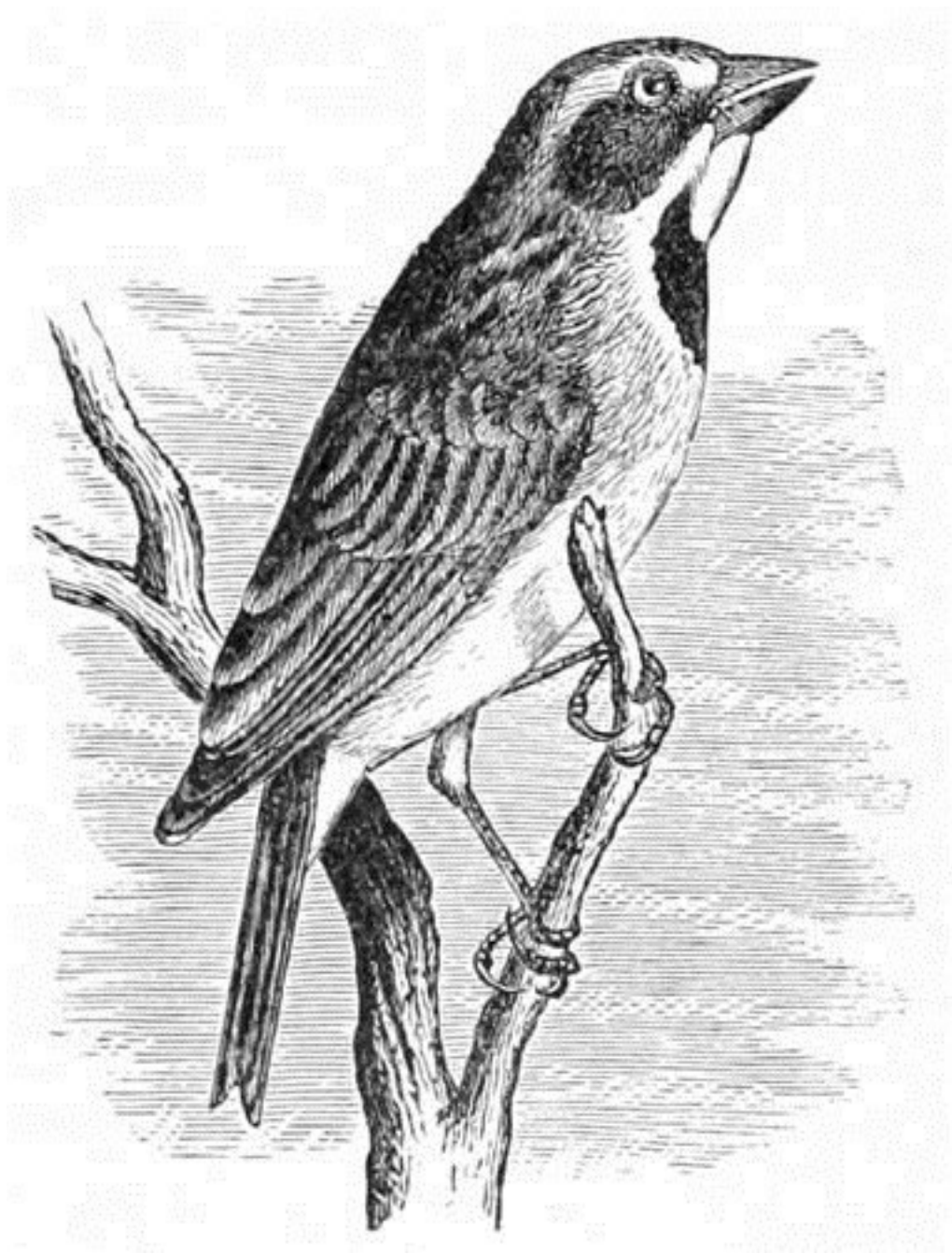
Emberiza americana, Gmelin, Syst. Nat. I, 1788, 872.—Wilson, Am. Orn. III, 1811, 86, pl. iii, f. 2.—Aud. Orn. Biog. IV, 1838, 579, pl. ccclxxxiv.—Ib. Syn. 1839, 101.—Ib. Birds Am. III, 1841, 58, pl. clvi.—Max. Cab. J. VI, 1858, 341. *Fringilla (Spiza) americana*, Bonap. Obs. Wils. 1825, No. 85. *Euspiza americana*, Bonap. List, 1838 (type).—Ib. Conspectus, 1850, 469.—Baird, Birds N. Am. 1858, 494.—Samuels, 327. *Euspina americana*, Cabanis, Mus. Hein. 1851, 133 (type). *Fringilla flavicollis*, Gmelin, Syst. Nat. I, 926. “*Emberiza mexicana*, Latham,” Syn. I, 1790, 412 (Gray). *Passerina nigricollis*, Vieillot. *Yellow-throated Finch*, Pennant, Arc. Zoöl. II, 374.

Sp. Char. *Male*. Sides of the head and sides and back of the neck ash; crown tinged with yellowish-green and faintly streaked with dusky. A superciliary and short maxillary line, middle of the breast, axillaries, and edge of the wing yellow. Chin, loreal region, patch on side of throat, belly, and under tail-coverts white. A black patch on the throat diminishing to the breast, and ending in a spot on the upper part of the belly. Wing-coverts chestnut. Interscapular region streaked with black; rest of back immaculate. Length, about 6.70; wing, 3.50.

Female with the markings less distinctly indicated; the black of the breast replaced by a black maxillary line and a streaked collar in the yellow of the upper part of the breast.

Hab. United States from the Atlantic to the border of the high Central Plains, south to Panama and New Granada. Xalapa (Scl. 1857, 205); Guatemala (Scl. Ibis, I, 18); Turbo, N. G. (Cassin, P. A. N. S. 1860, 140); Panama (Lawr. VII, 1861, 298); Nicaragua, Graytown (Lawr. VIII, 181); Veragua (Salv. 1867, 142); Costa Rica (Lawr. IX, 103); Vera Cruz, winter (Sum. M. B. S. I, 552).

Among adult males, scarcely two individuals exactly alike can be found. In some the black of the throat is continued in blotches down the middle of the breast, while in others it is restricted to a spot immediately under the head. These variations are not at all dependent upon any difference of habitat, for specimens from remote regions from each other may be found as nearly alike as any from the same locality. Some specimens from Central America are more deeply colored than North American ones, owing, no doubt, to the freshness of the plumage.



Euspiza americana.

Habits. The history of the Black-throated Bunting has, until very recently, been much obscured by incorrect observations and wrong descriptions. Evidently this bird has been more or less confounded with one or two other species entirely different from it. Thus Wilson, Audubon, and Nuttall, in speaking of its nest and eggs, give descriptions applicable to *Coturniculus passerinus* or to *C. henslowi*, but which are wholly wrong as applied to those of this bird. Nuttall, whose observations of North American birds were largely made in Massachusetts, speaks of this bird being quite common in that State, where it is certainly very rare, and describes, as its song, notes that have no resemblance to those of this Bunting, but which are a very exact description of the musical performances of the Yellow-winged Sparrow.

It is found in the eastern portion of North America, from the base of the Black Hills to the Atlantic States, and from Massachusetts to South Carolina. I am not aware that on the Atlantic it has

ever been traced farther south than that State, but farther west it is found as far at least as Southwestern Texas. During winter it is found in Central America, and in Colombia, South America.

In Massachusetts it is extremely rare. Mr. Hopkins found it breeding in Williamstown, and sent me its eggs. I have also met with its nest and eggs, in a low meadow near the sea, in Hingham. In both of these instances the nest was on the ground. A specimen was shot in Newton by Mr. John Thaxter, June 26, 1857, that had all the appearance of being then in the process of incubation. Throughout Pennsylvania, and in the vicinity of Washington, these birds are quite common.

Wilson states that they are very common in the vicinity of Philadelphia, where they make their appearance in the middle of May, and where they seem to prefer level fields covered with rye-grass, clover, or timothy. They are described as more conspicuous for the quantity than for the quality of their song. This consists of three notes, sounding like *chip-chip-chē-chē-chē*. Of this unmusical ditty they are by no means parsimonious, and for nearly three months after their first arrival, every level field of grain or grass resounds with their quaint serenade. In their shape and manners, Wilson states, they bear a close resemblance to the *Emberiza citrinella* of Europe. They become silent by September, and in the course of that month depart for the southwest. It is a rare bird in South Carolina, but is very abundant in Texas, where it is also resident, and undoubtedly breeds. Audubon states that he was surprised to see how numerous they were in every open piece of ground throughout that State, especially those covered with tufts of grass. They are, he states, not so common in Ohio, and quite rare in Kentucky. They are especially abundant in the open lands of Indiana, Illinois, Wisconsin, Iowa, Missouri, Kansas, and Nebraska; and they have been found breeding as far to the west as Wyoming Territory, near to the base of the eastern range of the Rocky Mountains. Mr. Allen found this species one of the most abundant birds of Western Iowa, characterizing it as eminently a prairie species, and one of the few inhabitants of the wide open stretches.

Mr. Dresser found, early in May, numbers of these birds in the mesquite thickets near the San Antonio and Medina Rivers, and, as he found them equally numerous there in July, he naturally infers that they breed in that neighborhood. Dr. Heermann obtained some eggs which he had no doubt belonged to this species, though he was unable to secure the parent.

It has also been found in Western Texas and in the Indian Territory by Mr. J. H. Clark, in Texas by Dr. Lincecum, at the Kiowa agency by Dr. Palmer, and on the Yellowstone by Dr. Hayden.

This bird is not gregarious, always moving in pairs, and although, as they are preparing for their migrations, they congregate in particular localities, they always keep somewhat apart in family groups, and do not mingle promiscuously as do many others of this family. They are, at all times, unsuspecting and easily approached, and when fired at will often return to the same field from which they were startled. They are very partial to certain localities, and are rarely to be met with in sandy regions.

Mr. Audubon states that the notes of this species very closely resemble those of the *Emberiza miliaria* of Europe. Its unmusical notes are almost continuously repeated from sunrise to sunset. When the female is startled from her nest she creeps quietly away through the grass, and then hides herself, making no complaint, and not showing herself even if her treasures are taken from her. Their nests are constructed of coarse grasses and stems, lined with finer and similar materials. They are, in certain localities, placed on the ground, but more frequently, in many parts of the country, they are built in positions above the ground. This is almost invariably the case where they nest among the tall coarse grasses of the prairies. My attention was first called to this peculiarity by Dr. J. W. Velie, then of Rock Island, Ill. He informed me that in no instance had he found the nest of this species on the ground, but always raised a few inches above it. It was usually constructed of the tops of the red-top grasses, worked in among a bunch of thick grass, so as to make the nest quite firm. The meadows in which Dr. Velie found these nests were quite dry, so that there was no necessity for their thus building clear from the ground in order to escape being wet. I was afterwards informed by the late Mr. Robert Kennicott that his experience in regard to the nests of these birds had been invariably the same. Dr. P. R. Hoy, of Racine, is confident that these birds in Wisconsin never nest on the ground, or else

very rarely, as he has never noticed their doing so. He writes that during one season he visited and made notes of nineteen different nests. Ten of these were built in gooseberry-bushes, four on thorn-bushes, three among blackberry-brambles, one on a raspberry-bush, and one on a wild rose. None were within a foot of the ground, and some were six feet from it. They have two broods in a season.

On the other hand, Mr. Ridgway informs me that in Southern Illinois the nest of this species is always placed on the ground, usually in a meadow, and that he has never found its nest placed anywhere else than on the ground, in a tuft of grass or clover. Professor Baird has had a similar experience in Pennsylvania. Mr. B. F. Goss found them nesting both in bushes and on the ground at Neosho Falls, Kansas.

The eggs of this species are of a uniform light blue color, similar in shade to the eggs of the common Bluebird, as also to those of the *Calamospiza bicolor*. They vary considerably in size, the smallest measuring .80 of an inch in length by .60 in breadth, while the larger and more common size is .90 by .70 of an inch.

Euspiza townsendi, Bonap

TOWNSEND'S BUNTING

Emberiza townsendi, Aud. Orn. Biog. II, 1834, 183; V, 90, pl. cccc.—Ib. Syn. 1839.—Ib. Birds Am. III, 1841, 62, pl. clvii.—Nuttall, Man. I, (2d ed.,) 1840, 528.
Euspiza townsendi, Bon. List, 1838.—Baird, Birds N. Am. 1858, 495.

Sp. Char. *Male*. Upper parts, head and neck all round, sides of body and forepart of breast, slate-blue; the back and upper surface of wings tinged with yellowish-brown; the interscapular region streaked with black. A superciliary and maxillary line, chin and throat, and central line of under parts from the breast to crissum, white; the edge of the wing, and a gloss on the breast and middle of belly, yellow. A black spotted line from the lower corner of the lower mandible down the side of the throat, connecting with a crescent of streaks in the upper edge of the slate portion of the breast. Length, 5.75; wing, 2.86; tail, 2.56.

Hab. Chester County, Penn. But one specimen known (in the Mus. Smith.).

It is still a question whether this is a distinct species, or only a variety of *E. americana*. There is, however, little ground for the last supposition, although its rarity is a mystery.

The original type specimen of this species, collected by Dr. J. K. Townsend, still continues to be the only one known, and has been presented by its owner, Dr. E. Michener, to the Smithsonian Institution.

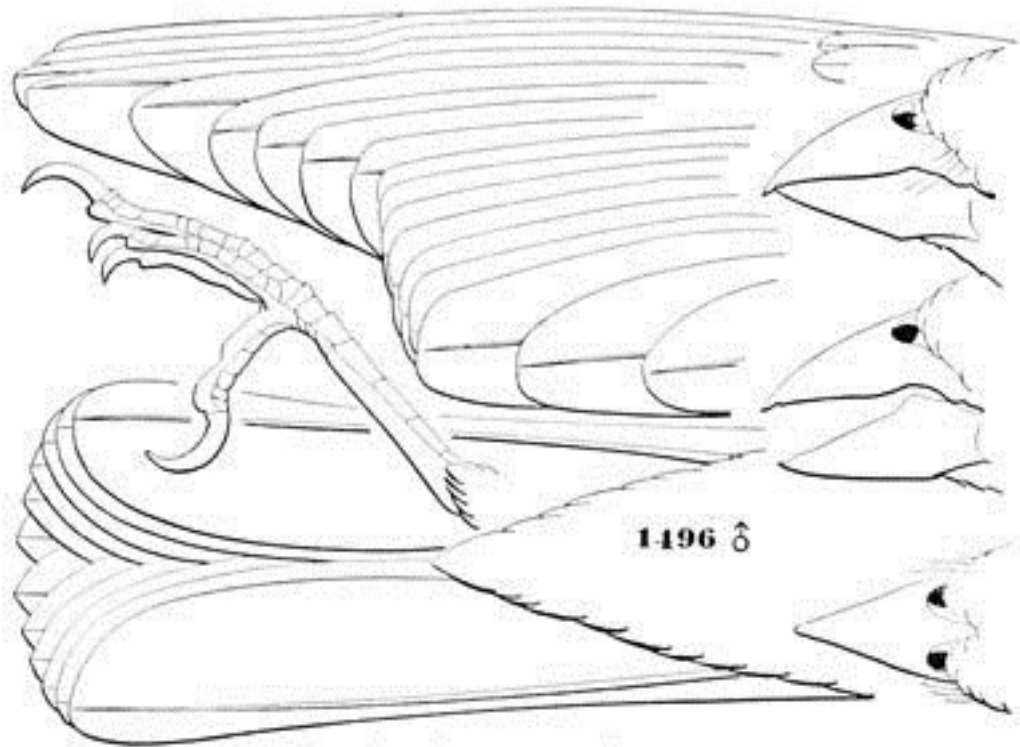
Habits. Only a single specimen of this apparently well-marked species has been observed, and nothing is known as to its history. The bird was shot by Mr. J. K. Townsend, in an old field grown up with cedar-bushes, near New Garden, Chester Co. Penn., May 11, 1833.

Genus HEDYMELES, Cabanis

? *Goniaphea*, Bowd. "Excurs. in Madeira, 1825," Agassiz. (Type, *Loxia ludoviciana*, according to Gray.)

Habia, Reichenb. Av. Syst. Nat. 1850, pl. xxviii. (Type, *L. ludoviciana*; not *Habia* of Lesson, 1831).

Hedymeles, Cabanis, Mus. Hein. 1851, 153. (Same type.)



Hedymeles melanocephalus.

1496 ♂

Gen. Char. Bill very large, much swollen; lower mandible scarcely deeper than the upper; feet almost coccothraustine, tarsi and toes very short, the claws strong and much curved, though blunt. First four primaries longest, and nearly equal, abruptly longer than the fifth. Tail broad, perfectly square. *Colors:* Black, white, and red, or black, cinnamon, yellow, and white, on the male; the females brownish, streaked, with the axillars and lining of the wing yellow.

There seems to be abundant reason for separating this genus from *Guiraca*; the latter is, in reality, much more nearly related to *Cyanospiza*, it being impossible to define the dividing line between them.

Species and Varieties

Common Characters. ♂. Head and upper parts (except rump) deep black. Two broad bands across coverts, a large patch on base of primaries, and terminal half of inner webs of tail-feathers, pure white. Breast carmine or cinnamon; axillars and lining of wing carmine or gamboge. ♀. Black replaced by ochraceous-brown; other parts more streaked.

H. ludovicianus. Rump and lower parts white; lining of wing, and patch on breast, rosy carmine. No nuchal collar. *Female.* Lining of wing saffron-yellow; breast with numerous streaks. *Hab.* Eastern Province of North America, south, in winter, to Ecuador.

H. melanocephalus. Rump and lower parts cinnamon-rufous; lining of wing and middle of abdomen gamboge-yellow. A nuchal collar of rufous. *Female.* Lining of wing lemon-yellow; breast without streaks; abdomen tinged with lemon-yellow.

Crown continuous black. No post-ocular rufous stripe. *Hab.* Mountains of Mexico, and Central Rocky Mountains of United States ... var. *melanocephalus.*

Crown divided by a longitudinal rufous stripe; a distinct post-ocular stripe of the same. *Hab.* Western Province of United States, south, in winter, to Colima ...
var. capitalis.

Hedymeles ludovicianus, Swainson

ROSE-BREASTED GROSBEAK

Loxia ludoviciana, Linn. Syst. Nat. I, 1766, 306.—Wilson, Am. Orn. >II, 1810, 135, pl. xvii, f. 2. *Guiraca ludoviciana*, Swainson, Phil. Mag. I, 1827, 438.—Bonap. List, 1838.—Ib. Consp. 1850, 501.—Baird, Birds N. Am. 1858, 497.—Samuels, 328. *Fringilla ludoviciana*, Aud. Orn. Biog. II, 1834, 166; V, 513, pl. cxxvii. *Pyrrhula ludoviciana*, Sab. Zoöl. App. Franklin's Narr. *Coccothraustes ludoviciana*, Rich. List, Pr. Br. Ass. 1837. *Coccororus ludovicianus*, Aud. Syn. 1839, 133.—Ib. Birds Am. III, 1841, 209, pl. 205.—Max. Cab. J. VI, 1858, 267. “*Goniaphea ludoviciana*, Bowdich.” *Hedymeles ludoviciana*, Cabanis, Mus. Hein. 1851, 153. *Fringilla punicea*, Gmelin, Syst. Nat. I, 1788, 921 (male). *Loxia obscura*, Gmelin, I, 1788, 862. *Loxia rosea*, Wilson, Am. Orn. pl. xvii, f. 2. *Coccothraustes rubricollis*, Vieillot, Galerie des Ois. I, 1824, 67, pl. lviii.

Sp. Char. Upper parts generally, with head and neck all round, glossy black. A broad crescent across the upper part of the breast, extending narrowly down to the belly, axillaries, and under wing-coverts, carmine. Rest of under parts, rump and upper tail-coverts, middle wing-coverts, spots on the tertiaries and inner great wing-coverts, basal half of primaries and secondaries, and a large patch on the ends of the inner webs of the outer three tail-feathers, pure white. Length, 8.50 inches; wing, 4.15.

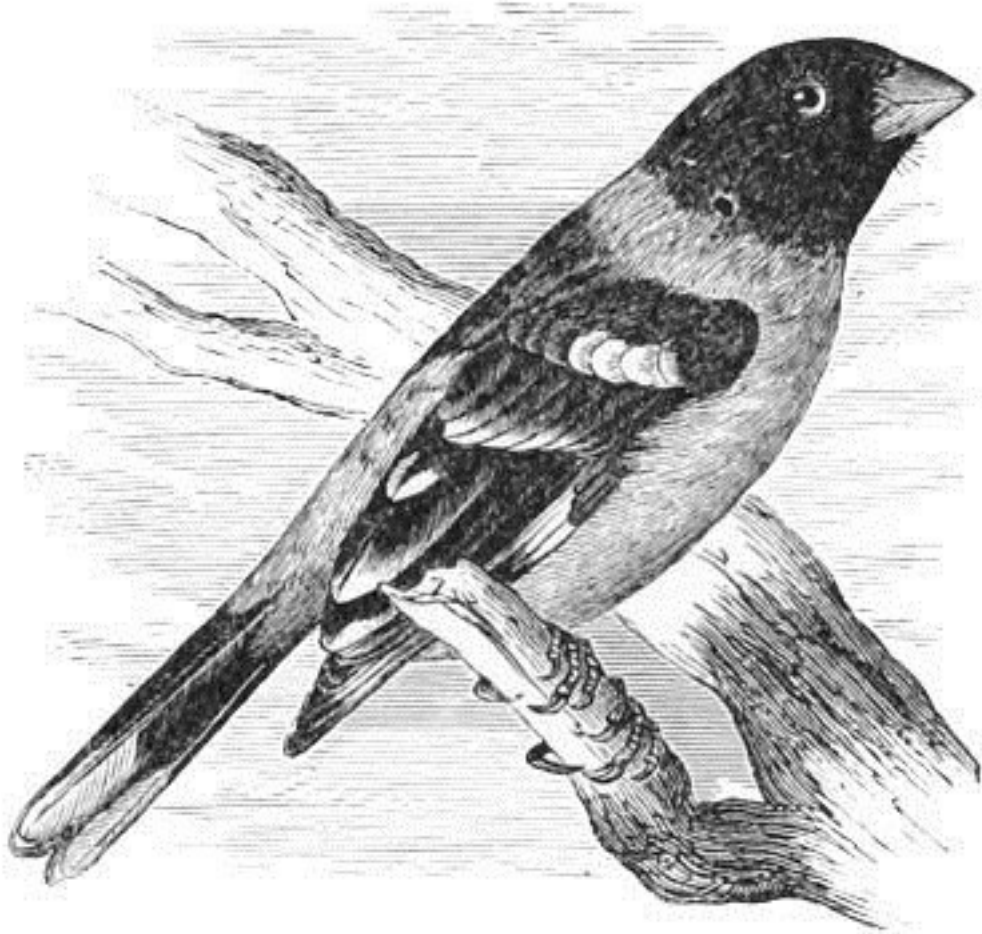
Female without the white of quills, tail, and rump, and without any black or red. Above yellowish-brown streaked with darker; head with a central stripe above, and a superciliary on each side, white. Beneath dirty white, streaked with brown on the breast and sides. Under wing-coverts and axillars saffron-yellow.

In the male the black feathers of the back and sides of the neck have a subterminal white bar. There are a few black spots on the sides of the breast just below the red.

The young male of the year is like the female, except in having the axillaries, under wing-coverts, and a trace of a patch on the breast, light rose-red.

The depth of the carmine tint on the under parts varies a good deal in different specimens, but it is always of the same rosy hue.

Hab. Eastern United States to the Missouri plains; south to Ecuador. Honduras (Moore, P. Z. S. 1859, 58); Xalapa (Scl. 1859, 365); Bogota (Scl. 1855, 154); Cordova (Scl. 1856, 301); Guatemala (Scl. Ibis, I, 17); Cuba (Cab. J. VI, 9); Ecuador (Scl. 1860, 298); Costa Rica (Cab. J. 61, 71); (Lawr. IX, 102); Panama (Lawr. VII, 1861, 297); Vera Cruz, winter (Sum. M. B. S. I, 552); Yucatan (Lawr. Ann. IX, 210).



Hedymeles melanocephalus.

Habits. The Rose-breasted Grosbeak, during the summer months, appears to have a widely extended area of distribution, though nowhere a very abundant species, and one of somewhat irregular occurrence. It is found as far to the east as Nova Scotia, to the north as Selkirk Settlement and the valley of the Saskatchewan, and to the west as Nebraska. It winters in great numbers in Guatemala. In the last-named country, while abundant in the Vera Paz, it was not found at Dueñas, but was a common cage-bird in the city of Guatemala. It was also found common at Herradura, in Colombia, South America, by Mr. C. W. Wyatt.

This bird was noticed on a single occasion near San Antonio by Mr. Dresser, but was not observed by Dr. Woodhouse in Texas, or in the Indian Territory. Sumichrast did not meet with it in Vera Cruz. At St. Stephens, N. B., Mr. Boardman found this species a regular summer visitant, but rare, nor did Mr. Verrill find it common in the western part of Maine. In Massachusetts this bird becomes more common, but is nowhere very abundant. It has been met with in various places in the eastern part of the State, but rarely, and only in restricted localities. In the western part of the State it is more numerous, as well as throughout the whole of the Connecticut Valley. At Springfield, Mr. Allen notes it as a summer visitant, breeding in the open woods, but not abundant. He is of the opinion that during the past twenty-five years this bird has increased in numbers in all parts of the State. Mr. Allen found this bird quite common in Southern Indiana, in Northern Illinois, and in Western Iowa, where he found it frequent in the groves along the streams. Dr. Coues mentions it as rare and only migratory in South Carolina. Mr. McIlwraith gives it as a summer resident in the vicinity of Hamilton, Canada, where it is very generally distributed throughout the open woods, arriving there

the second week in May. It is also found throughout Vermont, in favorable situations in open woods, on the borders of streams. It is not uncommon in the vicinity of Randolph, where it regularly breeds.

Wilson, who enjoyed but few opportunities of studying the habits of this species, states that it eagerly feeds on the ripe fruit of the sour gum-tree. He was also aware of its fine song, its value as a caged bird, and that it frequently sings during the night.

Sir John Richardson met with a single specimen of this bird near the Saskatchewan during his first expedition with Sir John Franklin, but did not afterwards meet with it. He states that it frequents the deep recesses of the forests, and there sings a clear, mellow, and harmonious song.

Nuttall appears to have seen little or nothing of this bird, except in confinement. He describes it as thriving very well in a cage, and as a melodious and indefatigable warbler, frequently passing the greater part of the night in singing, with great variety of tones. It is said, while thus earnestly engaged, to mount on tiptoe, as if seemingly in an ecstasy of enthusiasm and delight at the unrivalled harmony of its own voice. These notes, he adds, are wholly warbled, now loud and clear, now with a querulous and now with a sprightly air, and finally lower and more pathetic. In Mr. Nuttall's opinion it has no superior in song, except the Mocking-Bird.

Mr. Say met with these birds in the spring, on the banks of the Missouri, and afterwards, on the 5th of August, at Pembina in the 49th degree of latitude.

This bird arrives in Eastern Massachusetts about the 15th of May, and leaves in September. It nests during the first week in June.

Mr. Audubon states that he has frequently observed this species, early in the month of March, in the lower parts of Louisiana, making its way eastward, and has noticed the same circumstance both at Henderson, Ky., and at Cincinnati, O. At this period it passes at a considerable height in the air. He never saw it in the maritime parts of Georgia or Carolina, but they have been procured in the mountainous parts of those States. On the banks of the Schuylkill, early in May, he has observed this bird feeding on the tender buds of the trees. When in Texas, in 1837, Mr. Audubon also found it very abundant in April.

Dr. Bachman, quoted by Audubon, states that, having slightly wounded a beautiful male of this species, he kept it three years in confinement. It very soon became quite tame, fed, in an open room, on moistened bread. It was at once reconciled to live in a cage, and fed readily on various kinds of food, but preferred Indian meal and hemp-seed. It was also very fond of insects, and ate grasshoppers and crickets with peculiar relish. It watched the flies with great apparent interest, and often snatched at and secured the wasps that ventured within its cage. During bright moonshiny nights it sang sweetly, but not loudly, remaining in the same position on its perch. When it sang in the daytime it was in the habit of vibrating its wings, in the manner of the Mocking-Bird. It was a lively and a gentle companion for three years, but suffered from cold in severe wintry weather, and finally died from this cause. It would frequently escape from its cage, and never exhibited the least desire to leave him, but always returned to the house at night. It sang about eight weeks, and the rest of the year had only a faint *chuck*.



2. *Hedymeles melanocephalus*. ♀ Dakota, 1868.



3. *Pyrrhuloxia sinuata*. ♂ Texas, 3670.



4. *Hedymeles ludovicianus*. ♂ Iowa, 34206.



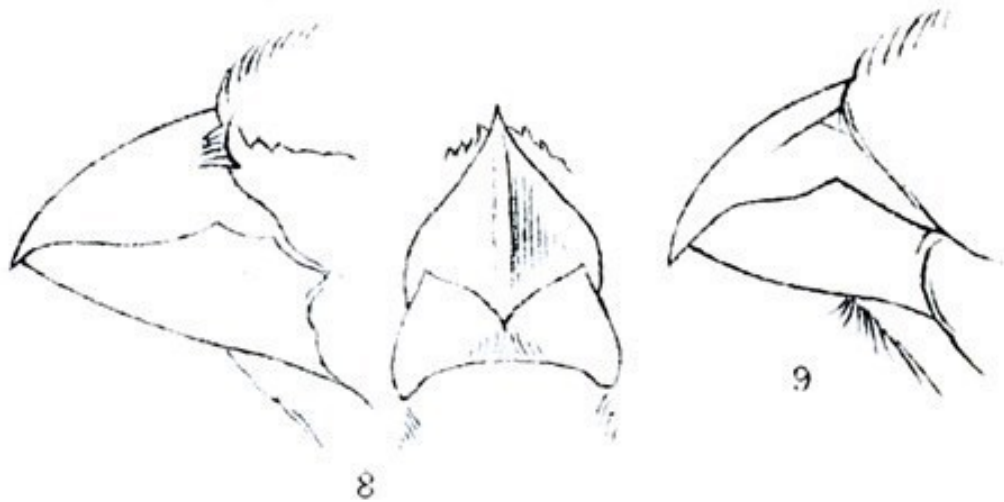
5. *Hedymeles ludovicianus*. ♀ Pa., 2425.



6. *Cardinalis virginianus*. ♀ Texas, 4022.



7. *Cardinalis virginianus*. ♂ S. Ill., 58586.



8. *Cardinalis coccyneus*. ♂ 29702.

9. *Cardinalis phoeniceus*.



10. *Cardinalis igneus*. ♂ Cape St. Lucas, 49757.

This Grosbeak builds in low trees on the edge of woods, frequently in small groves on the banks of streams. Their nests are coarsely built, with a base composed of waste stubble, fragments of leaves, and stems of plants. These are intermingled with and strengthened by twigs and coarser stems. They have a diameter of eight inches, and a height of three and a half. The upper portion of the nest is usually composed of dry *usnea* mosses, mingled with a few twigs, and lined with finer twigs. Its cavity is three inches in diameter and one in depth, being quite shallow for so large a nest.

The eggs bear some resemblance to those of the *Pyrangæ*, but are usually much larger, though they vary greatly in size. Their ground-color is usually a light but well-marked shade of verdigris-green, varying occasionally to a greenish-white, and are marked, more or less, over their entire surface, with blotches of reddish-brown. They vary in length from 1.05 to .90 of an inch, and from .78 to .60.

During incubation, and in the presence of its mate, this Grosbeak is a persistent and enthusiastic singer, and, at times, carries his love of song so far as to betray his nest. This is more especially so when he relieves his mate, takes her place on the nest, and then, apparently oblivious of the danger of lifting up his voice in song when upon so responsible a duty, attracts, by his melody, the oölogist to his treasures.

Dr. Hoy, of Racine, supplies some interesting information in regard to the habits and nesting of this species. On the 15th of June, within six miles of that city, he found seven nests, all within a space of not over five acres, and he was assured that each year they resort to the same locality and nest thus socially. Six of these nests were in thorn-trees, all were within six to ten feet from the ground, and all were in the central portion of the top. Three of the four parent birds sitting on the nests were males, and this he was told was usually the case. When a nest was disturbed, all the neighboring Grosbeaks gathered around and appeared equally interested. Both nest and eggs so closely resemble those of the Tanagers that it is difficult to distinguish them. Their position is, however, usually different, the Grosbeaks generally nesting in the central portion of a small tree, the Tanagers' being placed on a horizontal limb.

Hedymeles melanocephalus, Swainson

BLACK-HEADED GROSBEAK

Guiraca melanocephala, Sw. Syn. Mex. Birds Philos. Mag. I, 1827, 438.—Bon. List, 1838.—Ib. Consp. 1850, 502.—Baird, Birds N. Am. 1858, 498.—Cooper & Suckley, 206. *Coccothraustes melanocephala*, Rich. List, Pr. Br. Ass. for 1836, 1837. *Fringilla melanocephala*, Aud. Orn. Biog. IV, 1838, 519, pl. cclxxiii. *Coccororus melanocephalus*, Aud. Synopsis, 1839, 133.—Ib. Birds Am. III, 1841, 214, pl. 206.—Heerm. X, S, 51 (nest).—Cooper, Orn. Cal. I, 228. *Goniaphea melanocephala*, Sclater? *Hedymeles melanocephala*, Cabanis, Mus. Hein. 1851, 153. *Fringilla xanthomaschalis*, Wagler, Isis, 1831, 525. *Pitylus guttatus*, Lesson, Rev. Zoöl. II, 1839, 102. ? *Guiraca tricolor*, Lesson, Rev. Zoöl. II, 1839, 102.

Sp. Char. *Male*. Head above and on the sides, with chin, back, wings, and tail, black. A well-marked collar on the hind neck all round (and in var. *capitalis* a more or less distinct median stripe on crown, and one behind the eye), edges of interscapular feathers, rump, and under parts generally pale brownish-orange, almost light cinnamon. Middle of belly, axillaries, and under wing-coverts, yellow. Belly just anterior to the anus, under tail-coverts, a large blotch at the end of the inner webs of first and second tail-feathers, a band across the middle and greater wing-coverts, some spots on the ends of the tertiaries, the basal portions of all the quills, and the outer three primaries near the tips, white. Length nearly 8 inches; wing, 4.25; tail, 3.50.

Female has the chin, sides of throat, and superciliary stripe white; the black markings replaced by olivaceous-brown; the cinnamon markings paler, and almost white; the white of wings more restricted; that of tail wanting. Usually there are few or no streaks beneath as in *ludovicianus* (faint ones on flanks); in young males, however, they are more appreciable. The lemon or gamboge yellow

axillars and under coverts in all ages and stages separate this species from *H. ludovicianus*, the female and young of which have those regions of a saffron or fulvous yellow.

Hab. High Central Plains from Yellowstone to the Pacific. Table-lands of Mexico. Xalapa (Scl. 1859, 365); Orizaba (Scl. 1857, 213); Vera Cruz, Alpine and plateau, breeding (Sum. M. B. S. I, 551).

This bird, in its range of habitat, appears to be represented by two varieties, which, however, run into each other, so that it is often difficult to determine to which variety specimens from intermediate regions should be referred.

Taking the series from Eastern Mexico (Orizaba and Mirador) and northward along the Rocky Mountains of the United States, we find the black of the head continuous, sharply defined by a gently curved outline behind, and without a trace of either the vertex or post-ocular stripes. This is the true *melanocephalus*, as restricted, and may be regarded as the Rocky Mountain form. The most western specimen is 11,241, from Fort Bridger; the most northern (19,355), from Stinking River, Northern Wyoming. All specimens from the Pacific coast eastward to the western base of the Rocky Mountains, including Cape St. Lucas and Western Mexico south to Colima, differ from the Rocky Mountain series in having the posterior outline of the black hood ragged, and irregularly indented by the rufous of the nape, which always extends in a quite broad stripe toward the eye, along the side of the occiput, and quite frequently forms a conspicuous median vertex stripe, though the latter feature is sometimes not distinct. These differences are observable only in the males, and, although apparently slight, are yet sufficiently constant to justify distinguishing them as races. The Rocky Mountain form being the true *melanocephalus*, the name *capitalis* is proposed for the western one.

Habits. This bird occurs from the high Central Plains to the Pacific, and from the northern portions of Washington Territory to the table-lands of Mexico. Mr. Ridgway found this species abundant, during the summer months, in all the fertile wooded districts along the entire route of the survey. At Sacramento it was common in the willow copses, and was observed in the greatest numbers, in May, in the rich valley of the Truckee, in company with Bullock's Oriole, the Louisiana Tanager, and other species, feeding upon the buds of the "grease-wood." It principally inhabits the willows along the rivers, and the shrubbery skirting the streams of the mountain cañons. In its manners and notes Mr. Ridgway regards this bird as an exact counterpart of the eastern species, the *Hedymeles ludovicianus*, its song being by no means superior. The peculiar and very odd *click* of the *ludovicianus* is said to be equally characteristic of this bird. Mr. Ridgway met with its nests in willows, about ten feet from the ground. He had evidence that the male bird assists the female in the duties of incubation.

This bird, though a common summer resident in the Great Salt Lake Valley, had all migrated, according to Mr. Allen, by the 1st of September. It is well known there as the Peabird, from its fondness for green peas, of which it is very destructive.

According to Dr. Cooper, this Grosbeak arrives in California, near San Diego, about April 12. It is numerous during the summer throughout the mountains both of the coast and of the Sierra Nevada, and extends its migrations at least as far as Puget Sound. It is often kept in confinement on account of its loud, sweet song. In the Coast Mountains, in May, its music is said to be delightful, the males vying with each other from the tops of the trees, and making the hills fairly ring with their melody.

Dr. Cooper found a nest of this bird, May 12, at the eastern base of the Coast Range. It was built in a low horizontal branch of an alder, and consisted of a few sticks and weeds, very loosely put together, with a lining of grass and roots. The eggs, three in number, he describes as of a pale bluish-white ground, thickly spotted with brown, more densely near the larger end. Their size he gives as .95 by .70 of an inch.

Dr. Cooper also states that they frequent the ground in search of food, but also live much on trees, feeding on their buds. They are not gregarious, assembling only in family groups in the fall. They do not fly high, nor do they make any noise in flying.

He has observed these birds at Santa Cruz April 12, or as early as he saw them at San Diego, three hundred and fifty miles farther south, and has found a young bird fledged as early as May 23.

Dr. Coues speaks of this bird as an abundant summer resident of Arizona, where it arrives by the first of May, and remains until the latter part of September. He speaks of it as frequenting the thick brush of the ravines and the cottonwood and willow copses of the river-bottoms. Its call-note resembles that of *Lophortyx gambeli*. Its song, he says, is superb,—a powerful, but melodious succession of clear, rich, rolling notes, reminding one somewhat of the *Icterus baltimore*.

Dr. Suckley speaks of this bird being sparingly found in the vicinity of Fort Steilacoom, Puget Sound, where he obtained two specimens.

Dr. Heermann speaks of the song of this bird as clear and musical, and as very closely resembling that of our *Turdus migratorius*. He describes its nests as formed with very little care, of twigs loosely thrown together, and lined with roots, placed in the branches of bushes. The eggs, four in number, he describes as of a greenish-blue ground, marked with irregular spots of umber-brown, varying in intensity of shade.

The song of the western species is described by Mr. Nuttall as fully equal, if not superior, to that of the Rose-breasted. He met with it on the central table-lands of the Rocky Mountains, along the upper branches of the Colorado River, where he found it frequenting the thick groves of the streams, and where, throughout its dense forests, the powerful song and the inimitable voice of this “most delightful Finch” cheered that naturalist amidst the wildest desolation of that “forest primeval,” where this superb vocalist made the woods echo and re-echo to its untiring song. These notes, greatly resembling those of its eastern relative, may be heard from early dawn almost even to the close of the following night. These are described as loud, varied, high-toned, and melodious, rising and falling with the sweetest cadence, fascinating the listener most powerfully with sensations of a pleasing sadness, its closing note seeming like a shrill cry of appealing distress, and then sinking faintly on the ear. It is described as very shy and retiring in its habits, and can be but very rarely observed closely while thus engaged in song. On these occasions the bird is said to sit up conspicuously on a lofty bough, near the summit of the tree, his throat swelling with the excitement, and seeming to take a great delight in the sound of his own music.

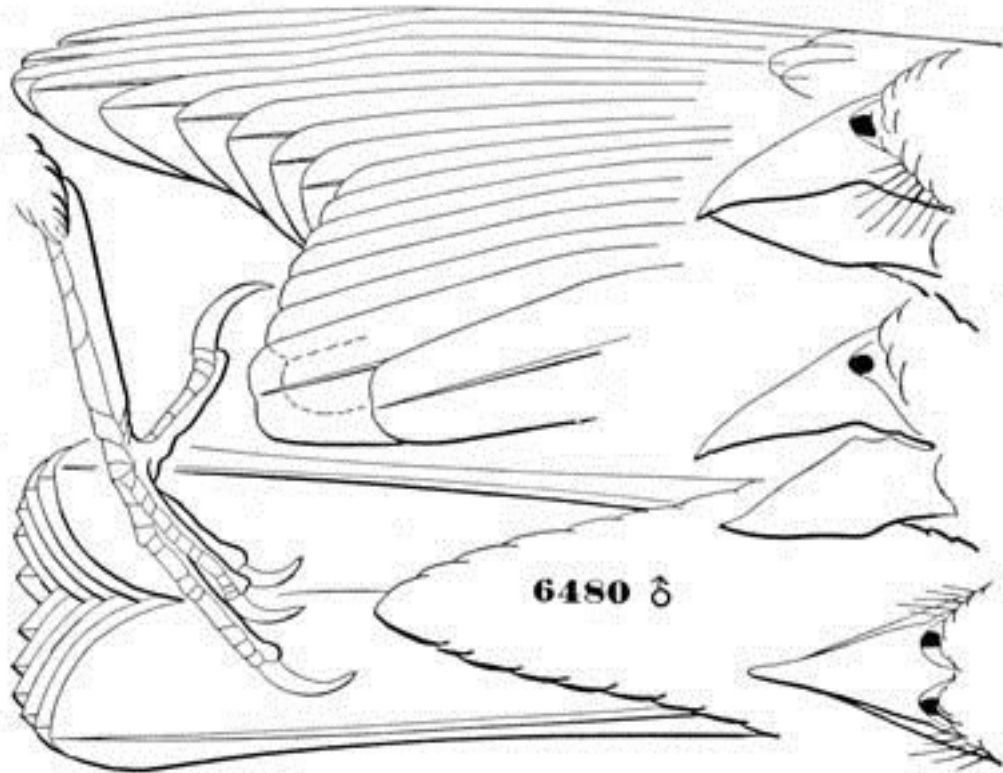
Mr. Sumichrast found this bird on the Plateau of Mexico, and also in the alpine regions of Vera Cruz. It was found to the height of 8,300 feet, and never lower than 4,000.

The eggs of this species are of an oblong-oval shape, one end but slightly more rounded than the other, and measure 1.10 of an inch in length by .65 in breadth. They have a bluish-green ground, blotched and splashed with markings of a rusty-brown, for the most part more numerous about the larger end.

Genus GUIRACA, Swainson

Guiraca, Swainson, Zoöl. Jour. III, Nov. 1827, 350. (Type, *Loxia caerulea*, L.)

Coccyborus, Swainson, Class. Birds, II, 1837, 277. (Same type.)



Guiraca caerulea.

6480 ♂

Gen. Char. Bill very large, nearly as high as long; the culmen slightly curved, with a rather sharp ridge; the commissure conspicuously angulated just below the nostril, the posterior leg of the angle nearly as long as the anterior, both nearly straight. Lower jaw deeper than the upper, and extending much behind the forehead; the width greater than the length of the gonys, considerably wider than the upper jaw. A prominent knob in the roof of the mouth. Tarsi shorter than the middle toe; the outer toe a little longer, reaching not quite to the base of the middle claw; hind toe rather longer than to this base. Wings long, reaching the middle of the tail; the secondaries and tertiaries nearly equal; the second quill longest; the first less than the fourth. Tail very nearly even, shorter than the wings.

The single North American species of this genus has no near relative in tropical America; indeed, no other species at present known can be said to be strictly congeneric.

In all essential details of external structure, and in every respect as to habits and nidification, the type of the genus (*G. caerulea*) is much more like the species of *Cyanospiza* than those of *Hedymeles*, with which latter it has usually been included.

Guiraca caerulea, Swainson

BLUE GROSBEAK

Loxia caerulea, Linn. Syst. Nat. I, 1766, 306.—Wilson, Am. Orn. III, 1811, 78, pl. xxiv, f. 6.—? Wagler, Isis, 1831, 525. *Guiraca caerulea*, Swainson, Birds Mex. in Phil. Mag. I, 1827, 438.—Baird, Birds N. Am. 1858, 499.—Cooper, Orn. Cal. 1, 230. *Fringilla caerulea*, Aud. Orn. Biog. II, 1834, 140; V, 508, pl. cxxii. *Coccyborus*

cæruleus, Sw. Birds II, 1837, 277.—Aud. Syn. 1839.—Ib. Birds Am. III, 1841, 204, pl. cciv.—Cabanis, Mus. Hein. 1851, 152.—Finsch, Abh. Nat. Brem. 1870, 339 (Mazatlan). *Cyanoloxia cærulea*, Bp. Conspectus, 1850, 502. *Goniaphæa cærulea*, Bp. *Blue Grosbeak*, Pennant, Arc. Zoöl. II, 1785, 351.



Guiraca cærulea.

Sp. Char. Brilliant blue; darker across the middle of the back. Space around base of the bill and lores, with tail-feathers, black. Two bands on the wing across the tips of the middle and secondary coverts, with outer edges of tertiaries, reddish-brown, or perhaps chestnut. Feathers on the posterior portion of the under surface tipped narrowly with grayish-white. Length, 7.25; wing, 3.50; tail, 2.80.

Female yellowish-brown above, brownish-yellow beneath; darkest across the breast. Wing-coverts and tertials broadly edged with brownish-yellow. Sometimes a faint trace of blue on the tail. The young resembles the female.

Hab. More southern United States from Atlantic to Pacific, south to Costa Rica. Xalapa (Scl. 1859, 365); Oaxaca (Scl. 1859, 378); Cordova (Scl. 1856, 301); Cuba (Cab. J. IV, 9); Vera Paz (Salvin, Ibis, III, 352); Costa Rica (Lawr. IX, 102); Vera Cruz, winter (Sum. M. B. S. I, 552); Yucatan (Lawr. IX, 200).

The species described as *Cyanospiza parellina* in the Birds of North America, but which so far has not been actually detected north of Mexico, is a miniature *Guiraca*, more related, however, to the *G. concreta* than to *cærulea*. It is easily distinguished from the latter by more lobed bill, darker back and under parts, absence of rufous wing-bands, and inferior size. Length, 5 inches; wing, 2.50.

Males from the Pacific coast region (California, Colima, etc.) have tails considerably longer than eastern specimens, while those from California are of a much lighter and less purplish blue, the difference being much the same as between *Sialia sialis* and *S. azurea*.

Autumnal and winter males have the feathers generally, especially on the back and breast, tipped with light brown, obscuring somewhat the blue, though producing a beautiful appearance.

Habits. The Blue Grosbeak, though more a bird of the Southern States, is also one both of an extended and of an irregular distribution. It was even met with one year in the vicinity of Calais, Me., although none have been known to occur in any part of the country between that point and New York City. It is found from the Atlantic to the Pacific coast.

The extent to which it is distributed throughout California is inferred, rather than known. Dr. Cooper noticed one at Fort Mohave, May 6, and afterwards saw many more frequenting the trees and bushes along the river, and singing a lively song, which he compares with that of the *Carpodacus frontalis*. He also saw them at Los Angeles and at Santa Barbara, and states that they were found at Pit River, in the extreme northeastern part of the State, by Dr. Newberry. They were observed to frequent the banks of streams crossing the great interior plains and deserts, where there was little vegetation except a few bushes.

The Blue Grosbeak was only met with by Mr. Ridgway and his party at Sacramento. It does not occur—or, if so, it was not seen—in the interior so far to the north as the route of Mr. King's survey. At Sacramento it was found frequenting the same localities as the *Cyanospiza amæna*, and appeared to be characteristic of the cottonwood copses. Their nests were found between the 18th and the 29th of June, and were all in similar situations. These were built in small cottonwood-trees, on the edge of the copse, and were all about six feet from the ground.

Mr. John Burroughs, in one of his charming popular essays¹⁰ on the general habits of our birds, refers to their occasional preference, in sites for their nests, of the borders of frequented roadsides, and mentions finding a nest of the Blue Grosbeak among the trees that line one of the main streets and fashionable drives leading out of Washington City, less than half a mile from the boundary. There, he states, this bird, which, according to Audubon's observations, is shy and recluse, affecting remote marshes and the borders of large ponds of stagnant water, had placed its nest in the lowest twig of the lowest branch of a large sycamore immediately over a great thoroughfare, and so near the ground that a person standing in a cart or sitting on a horse could have reached it with his hand. The nest was composed mainly of fragments of newspaper and stalks of grass, and though so low, was remarkably well concealed by one of the peculiar clusters of twigs and leaves which characterize this tree. The nest contained young when he discovered it, and though the parent birds were much annoyed by his loitering about beneath the tree, they paid but little attention to the stream of vehicles that was constantly passing. It was a source of wonder to him when the birds could have built it, as they are so much shyer when building than at other times. They must have worked mostly in the early morning, when they could have the place all to themselves. The same observer also noticed another pair of Blue Grosbeaks that had built their nest in a graveyard within the city limits. This was placed in a low bush, and the male continued to sing at intervals till the young were ready to fly. The song of this bird he describes as a rapid, intricate warble, like that of the Indigo Bird, though stronger and louder. Indeed, these two birds so much resemble each other in color, form, voice, manner, and general habits, that, were it not for the difference in size,—the Grosbeak being nearly as large again as the Indigo Bird,—he thinks it would be a hard matter to tell them apart. The females of both birds are clad in the same reddish-brown suits, as are also the young during the first season.

The nest of this species has also been found built in a tree within the grounds of the Smithsonian Institution, Washington.

¹⁰ Atlantic Monthly, XXIII, p. 707.

The only time I ever met with this species was at Carlisle, Penn., in June, 1843. The previous month Professor Baird had found its nest in a low tree, in open ground, and we found these birds still frequenting the same grounds, where we found another nest containing three eggs. It was in a low thorn-tree on the edge of a wood, but standing out in open ground. The nest was about five feet from the ground.

The Smithsonian specimens are from Carlisle, Penn., obtained in April, May, and August; from Georgia, Texas, New Mexico, Nebraska, Mexico, etc. Mr. Lawrence enumerates this among the birds found near New York City. Mr. Dresser found it common near Matamoras in July and August. It was breeding there, though, owing to the lateness of the season, he was unable to procure any of its eggs. Dr. Coues speaks of it as generally distributed in Arizona, but nowhere very common. A single specimen was taken near Fort Whipple, August 10. Turnbull regarded it as a rare straggler to the southern counties of Pennsylvania and New Jersey, arriving there in the middle of May. Dr. Woodhouse found it common in the Indian Territory and Texas. Lieutenant Couch mentions seeing this bird first near Monterey, the male always preceding the female. He speaks of them as exceedingly tame. Mr. J. H. Clark states that this bird was not often seen, and, when observed, was generally solitary, preferring the dark ravines and the cañons on the mountain-sides. It is not mentioned by Sumichrast as a bird of Vera Cruz, but was found during the winter months at Oaxaca, Mexico, by Mr. Boucard.

Mr. O. Salvin states (Ibis, III, p. 352) that he found this species, though not of very common occurrence, pretty generally distributed, in winter, throughout Vera Paz. He met with it on the Plains of Salamà, and all the collections from the warmer districts to the northward of Coban contained specimens. It was found by Mr. George H. White near Mexico.

Wilson speaks of this bird as retired and solitary, and also as a scarce species, and as having but few notes, its most common one being a loud *chuck*. He was, however, aware that at times they have a few low sweet-toned notes. He mentions their being kept in Charleston in cages, but as seldom singing in confinement. He fed a caged bird of this species on Indian corn, which it easily broke with its powerful bill; also on hemp-seed, millet, and berries. He speaks of them as timid, watchful, silent, and active.

Mr. Audubon was, apparently, somewhat at fault in regard to the peculiarities of this species. His accounts of the eggs of the *Pyrranga aestiva* are entirely inapplicable to that species, and, so far as I know, apply to no other bird than the Blue Grosbeak, to which they exactly correspond. He makes no mention and gives no description of the eggs of the latter. His statements as to the nest appear to be correct.

Dr. Bachman kept several of these birds in an aviary; two of these mated, took possession of the nest of a Cardinal Grosbeak, which they drove off, and laid two eggs that were unfortunately destroyed. In the aviary these birds were silent. Mr. Audubon kept one, in confinement, with him in Edinburgh. It had been raised from the nest. This bird frequently sang in the night, and before dawn. It was extremely tame, coming out or going into its cage at pleasure, perching on the head-dress of Mrs. Audubon, or on the heads of other members of the family, alighting on the table and feeding on almost anything given to it. If a gold or silver coin was thrown upon the table he would go to it, take it up in his bill, and apparently toss it about with pleasure. After bathing he would go to the fire and perch on the fender to dry himself. He would attack other birds, if put into the cage with him. In feeding he sometimes held his food in his claws like a Hawk.

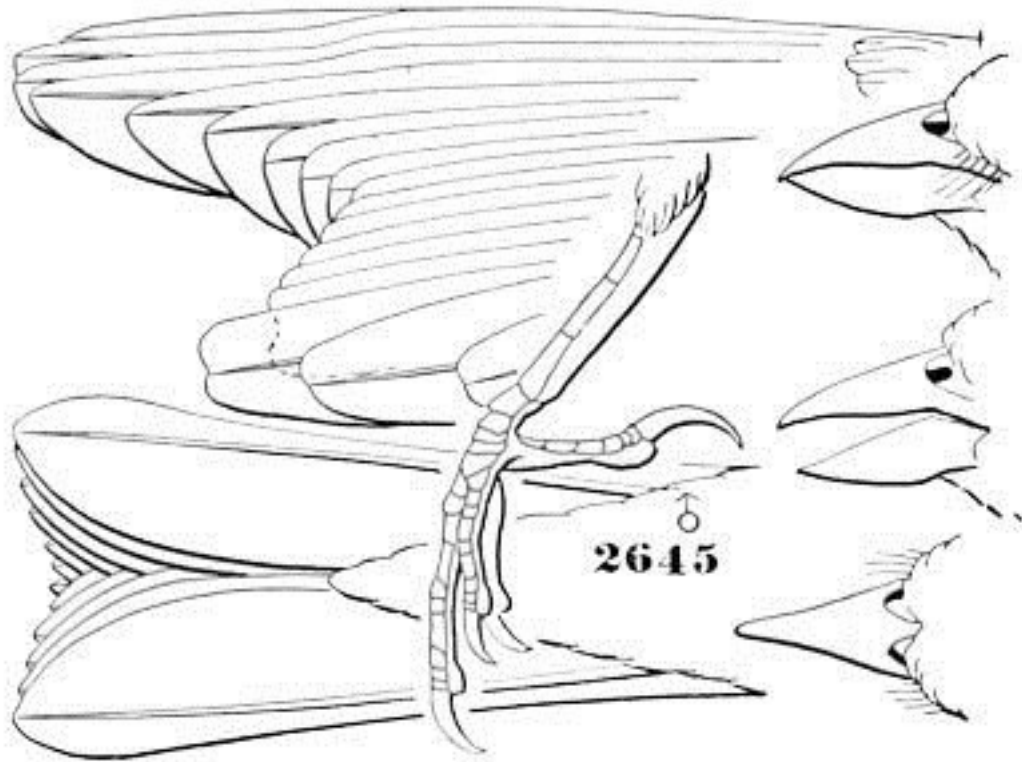
The eggs of this bird are of a uniform light-blue color, and most resemble those of the *Sialia arctica*, but are larger and of a lighter color. Their color is quite fugitive, and readily fades into a dull white upon even a slight exposure to light. They are of an oval shape, equally rounded at either end, and measure .98 of an inch in length by .65 in breadth.

Genus CYANOSPIZA, Baird

Passerina, Vieillot, Analyse, 1816. Not of Linnæus, used in Botany.

Spiza, Bonaparte, Synopsis, 1828. Not of 1825.

Cyanospiza, Baird. (Type, *Tanagra cyanea*, L.)



Cyanospiza amœna.

2645 ♂

Gen. Char. Bill deep at the base, compressed; the upper outline considerably curved; the commissure rather concave, with an obtuse, shallow lobe in the middle. Gonys slightly curved. Feet moderate; tarsus about equal to middle toe; the outer lateral toe barely longer than the inner, its claw falling short of the base of the middle; hind toe about equal to the middle without claw. Claws all much curved, acute. Wings long and pointed, reaching nearly to the middle of the tail; the second and third quills longest. Tail appreciably shorter than the wings; rather narrow, very nearly even.

The species of this genus are all of very small size and of showy plumage, usually blue, red, or green, in well-defined areas. The females plain olivaceous or brownish; paler beneath.

Species

A. Head all round uniform blue; eyelids not different, commissure distinctly sinuated.

a. Lower parts blue; no white bands on wing.

1. **C. cyanea.** Entirely deep ultramarine-blue, more purplish on the head, somewhat greenish posteriorly. *Female* dull umber above, grayish-white beneath, the

breast with obsolete darker streaks. *Hab.* Eastern Province of United States, south, in winter, to Panama.

b. Lower parts white, the breast rufous. One broad and distinct, and a narrower, more obsolete white band on the wing.

2. **C. *amœna*.** Head and neck, all round, and rump, bright greenish-blue; back, wings, and tail more dusky; a narrow white collar between rufous of the breast and blue of the throat. *Female* grayish-brown above, the rump tinged with blue. Beneath dull whitish, the breast and jugulum more buffy. *Hab.* Western Province of United States.

B. Head party-colored; eyelids different from adjoining portions. Commissure hardly appreciably sinuated, or even concave.

a. Back and breast similar in color. Upper mandible much less deep than lower, the commissure concave.

3. **C. *versicolor*.** Back and breast dark wine-purple, occiput and throat claret-red, forehead and rump purplish-blue. Eyelids purplish-red. *Female* fulvous-gray above, uniform pale fulvous below. *Hab.* Northern Mexico, and adjacent borders of United States; Cape St. Lucas.

b. Back and breast very different in color. Upper mandible scarcely less deep than the lower, the commissure straight, or slightly sinuated.

4. **C. *ciris*.** Lower parts vermilion-red. Back green, crown blue; rump dull red; eyelids red. *Female* dull green above, light olivaceous-yellow below. *Hab.* Gulf States of United States, and whole of Middle America.

5. **C. *leclancheri*.**¹¹ Lower parts gamboge-yellow. Back blue, crown green, rump blue; eyelids yellow. *Female* not seen. *Hab.* Southern Mexico.

Cyanospiza cyanea, Baird

INDIGO BIRD

Tanagra cyanea, Linn. Syst. Nat. I, 1766, 315. *Emberiza cyanea*, Gm. Syst. Nat. I, 1788, 876. *Fringilla cyanea*, Wilson, I, 1810, 100, pl. vi, f. 5.—Aud. Orn. Biog. I, 1832, 377; V, 503, pl. lxxiv. *Passerina cyanea*, Vieill. Dict. *Spiza cyanea*, Bon. List, 1838.—Ib. Consp. 1850, 474.—Aud. Syn. 1839, 109.—Ib. Birds Am. III, 1841, 96, pl. clxx. *Cyanospiza cyanea*, Baird, Birds N. Am. 1858, 505.—Samuels, 330. ? *Emberiza cyanella*, Gm. I, 1788, 887. ? *Emberiza cœrulea*, Gm. Syst. Nat. I, 1788, 876. *Indigo Bunting*, and *Blue Bunting*, Pennant and Latham.

Sp. Char. *Male*. Blue, tinged with ultramarine on the head, throat, and middle of breast; elsewhere with verdigris-green. Lores and anterior angle of chin velvet-black. Wing-feathers brown, edged externally with dull bluish-brown. *Female*. Brown above; whitish, obscurely streaked or blotched with brownish-yellow, beneath; tinged with blue on shoulders, edges of larger feathers, and on rump. Immature males similar, variously blotched with blue. Very young birds streaked beneath. Length, about 5.75 inches; wing, nearly 3.00.

¹¹ *Cyanospiza leclancheri*. *Spiza leclancheri*, Lafr. Mag. Zoöl. 1841, pl. xxii.—Less. R. Z. 1842, 74.

Hab. Eastern United States to the Missouri; south to Guatemala. Oaxaca (Scl. 1859, 379); Cordova (Scl. 1856, 304); Guatemala (Scl. Ibis, I. 17); Cuba (Cab. J. IV, 8); Costa Rica (Cab. Jour. 1861, 4; Lawr. IX, 103); Vera Cruz, winter (Sum. M. B. S. I, 552).

In this species, which may be considered the type of the genus, the tail is slightly emarginate; the second quill is longest, the first shorter than the fourth.

Habits. The common Indigo Bird of the Eastern States is found in nearly uniform and tolerable abundance in various parts of the United States, from the valley of the Missouri to the Atlantic, and from Florida to New Brunswick. It is a summer visitant, but rare, in Eastern Maine, but is common in the western part of the State, where it arrives early in May, and where it breeds. Mr. Allen speaks of it as not very common in the vicinity of Springfield, Mass., arriving there about the middle of May, and breeding in gardens, orchards, and the edges of woods, and making its nests in bushes. It leaves there about the middle of September.

In the eastern part of the State it is very unequally distributed. In certain localities it has not been met with, but in other favorite places it seems to be quite common, and to be on the increase. In the gardens of Brookline and Roxbury they are comparatively quite abundant. Mr. Maynard gives May 10 as the earliest date of their coming. He also states that in the autumn they are found in flocks, and frequent roadsides, high sandy fields, and rocky pastures, which I have never noticed. According to Dr. Coues, it is common and breeds as far south as Columbia, S. C., and, according to Mr. McIlwraith, it is a common summer resident in the neighborhood of Hamilton, Canada West. Specimens have been procured as far west as Fort Riley in Kansas. It passes the winter in Guatemala, where it is quite abundant, though a very large proportion of specimens received from there, in collections, are immature birds. It was not found in Vera Cruz by Mr. Sumichrast, nor is it given by Mr. Allen as found by him in Western Iowa, while it was common both in Northern Illinois and in Indiana. It was, however, found by Mr. Allen, in Kansas, in considerable numbers, near Leavenworth, in the spring of 1871. It was not met with by Mr. Dresser in Southwestern Texas, though Dr. Woodhouse found it quite common in the prairies of that State, where its pleasant song was heard in the timber on their edges, or in the thickets on the borders of the streams in the Indian Territory, where it was quite abundant. It was not observed on the Mexican Boundary Survey.

These birds were found, by Mr. Boucard, abundant throughout the State of Oaxaca, Mexico, having been taken both among the mountains near Totontepec, and among the hot lowlands near Plaza Vicente.

According to Wilson, this bird is not noticed in Pennsylvania much, if any, earlier than its first appearance in New England, and it leaves at about the same time. He observed it in great abundance both in South Carolina and Georgia.

In manners it is active and sprightly, and its song is vigorous and pleasant. It is considered a better singer than either the *ciris* or the *amaena*. It usually stations itself, in singing, on some high position, the top of a tree or of a chimney, where it chants its peculiar and charming song for quite a space of time. Its song consists of a repetition of short notes, at first loud and rapid, but gradually less frequent, and becoming less and less distinct. It sings with equal animation both in May and July, and its song may be occasionally heard even into August, and not less during the noonday heat of summer than in the cool of the morning. Nuttall describes its animated song as a lively strain, composed of a repetition of short notes. The most common of its vocal expressions sounds like *tshe-tshe-tshe*, repeated several times. While the female is engaged in the cares of incubation, or just as the brood has appeared, the song of the male is said to be much shortened. In the village of Cambridge, Nuttall observed one of this species regularly chanting its song from the point of a forked lightning-rod, on a very tall house.

The Indigo Bird usually builds its nest in the centre of a low thick bush. The first nest I ever met with was built in a thick sumach that had grown up at the bottom of a deep excavation, some fifteen feet below the surface, and but two feet above the base of the shrub. This same nest was occupied five

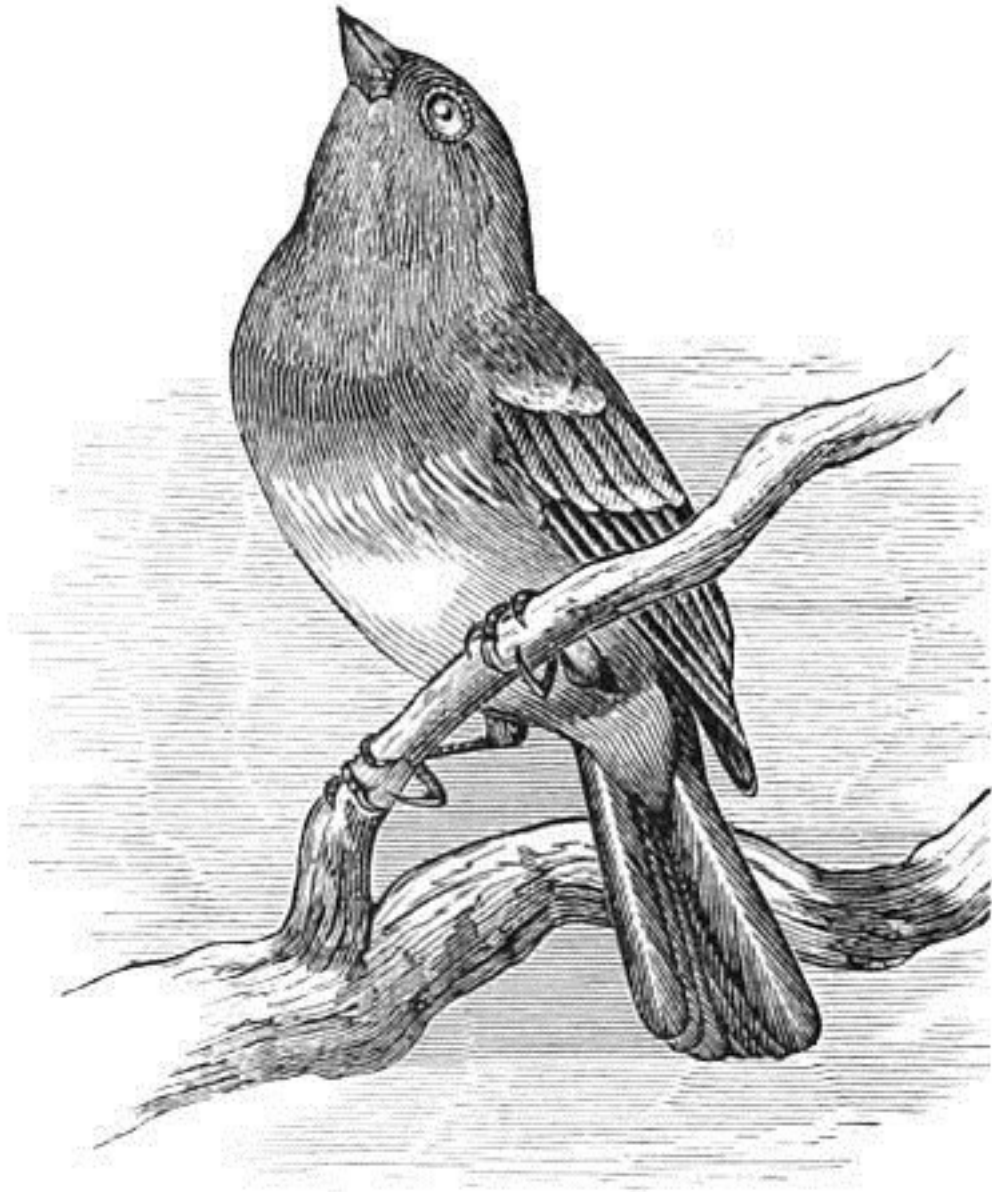
successive summers. It was almost wholly built of matting that the birds had evidently taken from the ties of our grapevines. Each year the nest was repaired with the same material. Once only they had two broods in one season. The second brood was not hatched out until September, and the family was not ready to migrate until after nearly all its kindred had assembled and gone. This nest, though principally made of bare matting, was very neatly and thoroughly lined with hair. Other nests are made of coarse grasses and sedges, and all are usually lined in a similar manner.

Audubon and Wilson describe the eggs of this bird as blue, with purplish spots at the larger end. All that I have ever seen are white, with a slight tinge of greenish or blue, and unspotted. I have never been able to meet with a spotted egg of this bird, the identification of which was beyond suspicion. They are of a rounded-oval shape, one side is only a little more pointed than the other. They measure .75 of an inch in length by .58 in breadth. They resemble the eggs of *C. amæna*, but are smaller, and are not so deeply tinged with blue.

Cyanospiza amæna, Baird

LAZULI FINCH

Emberiza amæna, Say, Long's Exped. II, 1823, 47. *Fringilla (Spiza) amæna*, Bonap. Am. Orn. I, 1825, 61, pl. vi, f. 5. *Fringilla amæna*, Aud. Orn. Biog. V, 1839, 64, 230, pls. cccxcviii and ccccxxiv. *Spiza amæna*, Bonap. List, 1838.—Aud. Syn. 1839, 109.—Ib. Birds Am. III, 1841, 100, pl. clxxi.—Max. Cab. Jour. VI, 1858, 283.—Heerm. X, s, 46. *Cyanospiza amæna*, Baird, Birds N. Am. 1858, 504.—Cooper & Suckley, 205.—Cooper, Orn. Cal. 1, 233.



Cyanospiza amœna.

Sp. Char. *Male*. Upper parts generally, with the head and neck all round, greenish-blue; the interscapular region darker. Upper part of breast pale brownish-chestnut extending along the sides and separated from the blue of the throat by a faint white crescent; rest of under parts and axillars white. A white patch on the middle wing-coverts, and an obscurely indicated white band across the ends of the greater coverts. Loral region black. Length, about 5.50; wing, 3.90; tail, 2.60.

Female. Brown above, tinged with blue on rump and tail; whitish beneath, tinged with buff on the breast and throat; faint white bands on wings.

Hab. High Central Plains to the Pacific.

This species is about the size of *C. cyanea*; the bill exactly similar. The females of the two species are scarcely distinguishable, except by the faint traces of one or two white bands on the wings in *amœna*. Sometimes both the throat and the upper part of the breast are tinged with pale brownish-buff.

Habits. The Lazuli Finch was first obtained by Mr. Say, who met with it in Long's expedition. It was observed, though rarely, along the banks of the Arkansas River during the summer months, as far as the base of the Rocky Mountains. It was said to frequent the bushy valleys, keeping much in the grass, after its food, and seldom alighting on either trees or shrubs.

Townsend, who found this rather a common bird on the Columbia, regarded it as shy and retiring in its habits, the female being very rarely seen. It possesses lively and pleasing powers of song, which it pours forth from the upper branches of low trees. Its nests were usually found placed in willows along the margins of streams, and were composed of small sticks, fine grasses, and buffalo-hair.

Mr. Nuttall found the nest of this bird fastened between the stem and two branches of a large fern. It was funnel-shaped, being six inches in height and three in breadth.

This bird possibly occurs quite rarely, as far east as the Mississippi, as I have what is said to be its egg taken from a nest near St. Louis. It only becomes abundant on the plains. Mr. Ridgway found it very generally distributed throughout his route, inhabiting all the bushy localities in the fertile districts. He regarded it as, in nearly every respect, the exact counterpart of the eastern *C. cyanea*. The notes of the two birds are so exactly the same that their song would be undistinguishable but for the fact that in the *amaena* it is appreciably weaker. He found their nests usually in the low limbs of trees, near their extremity, and only a few feet from the ground. Mr. J. A. Allen found this species common in Colorado, more so among the foot-hills than on the plains, but does not appear to have met with it in Kansas.

This species, Mr. Lord states, visits Vancouver Island and British Columbia early in the summer, arriving at the island in May, and rather later east of the Cascades. The song of the male is said to be feeble, and only now and then indulged in, as if to cheer his more sombre partner during incubation. The nest, he adds, is round and open at the top, composed of various materials worked together, lined with hair, and placed in a low bush, usually by the side of a stream.

The Lazuli Finch was met with in large numbers, and many of their nests procured, by Mr. Xantus, in the neighborhood of Ft. Tejon, California. Indeed, it is a very abundant species generally on the Pacific coast, and is found at least as far north as Puget Sound, during the summer. It arrives at San Diego, according to Dr. Cooper, about April 22, and remains there until October. A male bird, kept in a cage over winter, was found to retain its blue plumage. It is a favorite cage-bird in California, where it is absurdly known as the Indigo Bird. During the summer months, according to Dr. Cooper, there is hardly a grove in the more open portions of the State uninhabited by one or more pairs of this beautiful species. Although the female is very shy and difficult to obtain, except on the nest, the male is not timid, and frequently sings his lively notes from the top of some bush or tree, continuing musical in all weathers and throughout the summer. He describes its song as unvaried, as rather monotonous, and closely resembling that of *C. cyanea*.

Their nest, he adds, is usually built in a bush, not more than three or four feet from the ground, formed of fibrous roots, strips of bark, and grass, with a lining of vegetable down or hair, and securely bound to the surrounding branches. The eggs, five in number, he describes as white, faintly tinged with blue. At Santa Barbara he found them freshly laid May 6.

These birds are never gregarious, though the males come in considerable flocks in the spring, several days before the females. They travel at night, arriving at Santa Cruz about April 12. A nest found by Dr. Cooper, May 7, in a low bush close to a public road, was about three feet from the ground. It was very strongly built, supported by a triple fork of the branch, and was composed of blades of grass firmly interwoven, and lined with horsehair and cobwebs. It measured three inches in height and three and three fourths in width. The cavity was two inches deep and one and three fourths wide.

In Arizona Dr. Coues found this bird a summer resident, but not abundant.

At Puget Sound this bird arrives about May 15. Dr. Suckley states that in Oregon it was observed returning from the south, in large flocks, in one instance of several hundred individuals.

The eggs of the Lazuli, when fresh, are of a light blue, which on the least exposure soon fades into a bluish-white. They are almost exactly oval in shape, and measure .75 by .60 of an inch. One end is somewhat more rounded, but the difference is slight.

Cyanospiza versicolor, Baird

VARIED BUNTING

Spiza versicolor, Bon. Pr. Zoöl. Soc. 1837, 120.—Ib. *Conspectus Av.* 1850, 475.—Cab. Mus. Hein. 1851, 148. *Carduelis luxuosus*, Lesson, Rev. Zoöl. 1839, 41. *Cyanospiza versicolor*, Baird, Birds N. Am. 1858, 503, pl. lvi, f. 2.—Cooper, Orn. Cal. 1, 234.

Sp. Char. Posterior half of hood, with throat, dark brownish-red; interscapular region similar, but darker. Forepart of hood, lesser wing-coverts, back of the neck, and rump, purplish-blue; the latter purest blue; the belly reddish-purple, in places tinged with blue, more obscure posteriorly. Feathers of wing and tail dark-brown, edged with dull bluish. Loral region and narrow frontal band black. Feathers on side of rump white at base. Length, 5.50; wing, 2.75; tail, 2.38.

Female. Yellowish-brown; paler beneath, and lightest behind. No white on wing. Tail with a bluish gloss.

Hab. Northern Mexico, and Cape St. Lucas. Xalapa (Scl. 1859, 365); Oaxaca (Scl. 1859, 379); Orizaba (Scl. 1857, 214); (Sum. M. B. S. I, 551; breeding); Guatemala (Scl. Ibis, I, 17).

The bill is stouter and more swollen to the end, and the mandible is much more curved than that of *C. cyanea*; and its perfectly concave commissure, without any shallow lobe in the middle, and the much more arched ridge, would almost separate the two generically. The wing is shorter and more rounded, the fourth quill longest, then the third, second, and fifth. The first is only a little longer than the seventh. The tail is decidedly rounded; rather more so than in *C. cyanea*.

The female is very similar to those of *C. amæna* and *cyanea*. The former has whitish bands on the wing; the latter differs in shape of bill, and has the first quill but little less than the second, or longest; not shorter than the sixth. In 34,033 ♂, Cape St. Lucas (June 26), the colors are much brighter than in any other of the collection. The whole occiput is bright scarlet, and the forehead nearly pure light blue, neither having scarcely a tinge of purple.

Autumnal and winter males have the bright tints very slightly obscured by grayish-brown tips to the feathers, especially on the back. The female in autumn is much more brown above and more rusty beneath than in spring.

Habits. This beautiful species has only doubtful claims to a place in our fauna. It is a Mexican species, and may occasionally cross into our territory. It was met with at Boquillo, in the Mexican State of New Leon, by Lieutenant Couch. It was procured in Guatemala by Dr. Van Patten and by Salvin, and is given by Bonaparte as from Peru. It is also found at Cape St. Lucas, where it is not rare, and where it breeds.

This bird is also found at Orizaba, according to Sumichrast, but is quite rare in the State of Vera Cruz. Its common name is *Prusiano*. Its geographical distribution he was not able satisfactorily to ascertain.

Among the memoranda of Mr. Xantus made at Cape St. Lucas, we find the following in connection with this species: 517, nest and three eggs of *Cyanospiza versicolor*; obtained May 5 on a

myrtle hanging down from very high perpendicular bluffs, off the Trajoles, at Cape St. Lucas. 1535, nest and eggs of the same found on a vine ten feet high.

Specimens of this species were taken by Mr. Boucard at Oaxaca, Mexico, during the winter months.

Cyanospiza ciris, Baird

NONPAREIL; PAINTED BUNTING

Emberiza ciris, Linn. Kong. Sv. Vet. Akad. Hand. 1750, 278; tab. vii, f. 1. —Ib. Syst. Nat. I, 1766, 313.—Wilson, Am. Orn. III, 1811, 68, pl. xxiv, f. 1, 2. *Passerina ciris*, Vieillot, Gal. Ois. I, 1824, 81, pl. lxvi. *Fringilla ciris*, Aud. Orn. Biog. I, 1832, 279; V, 517, pl. liii. *Spiza ciris*, Bon. List, 1838.—Ib. Conspectus, 1850, 476.—Aud. Syn. 1839, 108.—Ib. Birds Am. III, 1841, 93, pl. clxix. *Cyanospiza ciris*, Baird, Birds N. Am. 1858, 503.—Ib. Mex. Bound. II, Birds, 17, pl. xviii, f. 2.—Heerm. X, c, p. 14. ? *Fringilla mariposa*, Scopoli, Annals Hist. Nat. I, 1769, 151. *Painted Finch*, Catesby, Pennant.

Sp. Char. *Male*. Head and neck all round ultramarine-blue, excepting a narrow stripe from the chin to the breast, which, with the under parts generally, the eyelids, and the rump (which is tinged with purplish), are vermilion-red. Edges of chin, loreal region, greater wing-coverts, inner tertiary, and interscapular region, green; the middle of the latter glossed with yellow. Tail-feathers, lesser wing-coverts, and outer webs of quills, purplish-blue. Length, about 5.50 inches; wing, 2.70.

Female. Clear dark green above; yellowish beneath. *Young*, like female.

Hab. South Atlantic and Gulf States to the Pecos River, Texas; south into Middle America to Panama; S. Illinois (Ridgway); Honduras (Scl. 1858, 358); Oaxaca (Scl. 1859, 379); Cordova (Scl. 1856, 304); Guatemala (Scl. Ibis, I, 17); Honduras (Scl. II, 10); Cuba (Cab. J. IV, 8); Veragua (Salv. 1867, 142); Costa Rica (Lawr. IX, 102); Vera Cruz, winter (Sum. M. B. S. I, 552); Yucatan (Lawr. IX, 200).

Tail very slightly emarginated and rounded; second, third, and fourth quills equal; first rather shorter than the fifth.

The female is readily distinguishable from that of *C. cyanea* by the green instead of dull brown of the back, and the yellow of the under parts.

Specimens of this species from all parts of its range appear to be quite identical.

Habits. The Nonpareil or Painted Bunting of the Southern and Southeastern States has a somewhat restricted distribution, not being found any farther to the north on the Atlantic Coast than South Carolina and Georgia, and probably only in the more southern portions of those States. It has been traced as far to the west as Texas. It was also met with at Monterey, Mexico, by Lieutenant Couch, and in winter by Mr. Boucard, at Plaza Vicente, Oaxaca.

Mr. Dresser found it very common both at Matamoras and at San Antonio, breeding in both places. Dr. Coues did not meet with it in Columbia, S. C., and considers it as confined to the low country, and as rare even there. It breeds about the city of Charleston, S. C., from which neighborhood I have received its eggs in considerable numbers, from Dr. Bachman. It is also found in the lower counties of Georgia, and breeds in the vicinity of Savannah. It was not met with by Dr. Gerhardt in the northern portion of that State. Dr. Woodhouse found it quite abundant in all parts of Texas, where he tells us the sweet warblings of this beautiful and active little Finch added much to the pleasures of his trip across the prairies. Its favorite places of resort appeared to be small thickets, and when singing it selected the highest branches of a bush.

In the Report on the birds of the Mexican Boundary Survey, Lieutenant Couch met with this species among the low hedges in the suburbs of Pesqueria Grande. Mr. J. H. Clark observed that the individuals of this species diminished as they proceeded westward. The male was almost always seen alone, flying a long distance for so small a bird. Their nests, he adds, were built of very fine grass, in low bushes, and resting in the crotch of the twigs. Males were never seen about the nest, but the females were so gentle as to allow themselves to be taken off the nest, which was deliberately done on more than one occasion.

Dr. Kennerly reports having often listened to the melodious warblings of this beautiful Finch in the vicinity of San Antonio, Texas, where he found it very abundant among the thick mesquite-bushes, in the month of July. It was deservedly a great favorite there, both on account of the beauty of its plumage and its notes.

Wilson found this bird one of the most numerous summer birds of Lower Louisiana, where it was universally known among the French inhabitants as *Le Pape*. Its gay dress and its docility of manners procured it many admirers. Wilson also states that he met with these birds in the low countries of all the Southern States, in the vicinity of the sea and along the borders of the large rivers, particularly among the rice plantations. He states that a few were seen near the coast in North Carolina, but they were more numerous in South Carolina, and still more so in Georgia, especially the lower parts. At Natchez, on the Mississippi, they were comparatively scarce, but below Baton Rouge, on the levee, they appeared in great numbers. Around New Orleans they were warbling from almost every fence. Their notes very much resemble those of the Indigo Bird, but lack their energy, and are more feeble and concise.

Wilson met with these birds very generally in the houses of the French inhabitants of New Orleans. In the aviary of a wealthy French planter near Bayou Fourche, he found two pairs of these birds so far reconciled to their confinement as to have nests and hatch out their eggs. Wilson was of the opinion that with the pains given to the Canary these birds would breed with equal facility. Six of them, caught only a few days before his departure, were taken with him by sea. They soon became reconciled to their cage, and sang with great sprightliness. They were very fond of flies, and watched with great eagerness as the passengers caught them for their benefit, assembling in the front of the cage and stretching their heads through the wires to receive them.

These birds, he states, arrive in Louisiana from the South about the middle of April, and build early in May. They reach Savannah about the 20th of April. Their nests are usually fixed in orange hedges or in the lower branches of the trees. He often found them in common bramble and blackberry bushes. They are formed exteriorly of dry grass intermingled with the silk of caterpillars, with hair and fine rootlets. Some nests had eggs as late as the 25th of June, which were probably a second brood. The food of this bird consists of rice, insects, and various kinds of seeds. They also feed on the seeds of ripe figs.

A single specimen of this species was detected by Mr. Ridgway in Southern Illinois between Olney and Mount Carmel, on the 10th of June. It is therefore presumed to be a rare summer resident in that locality.

The Nonpareil is possessed of a very pugnacious disposition, and, according to Mr. Audubon, the bird-dealers of New Orleans take advantage of this peculiarity in a very ingenious manner to trap them. A male bird is stuffed and set up in an attitude of defence on the platform of a trap-cage. The first male bird of this species that notices it is sure to make an attack upon it, and is at once trapped. So pertinacious are they that even when thus imprisoned the captive repeats its attack upon its supposed rival. They feed almost immediately upon being caught, and usually thrive in confinement, Audubon mentioning one that had been caged for ten years.

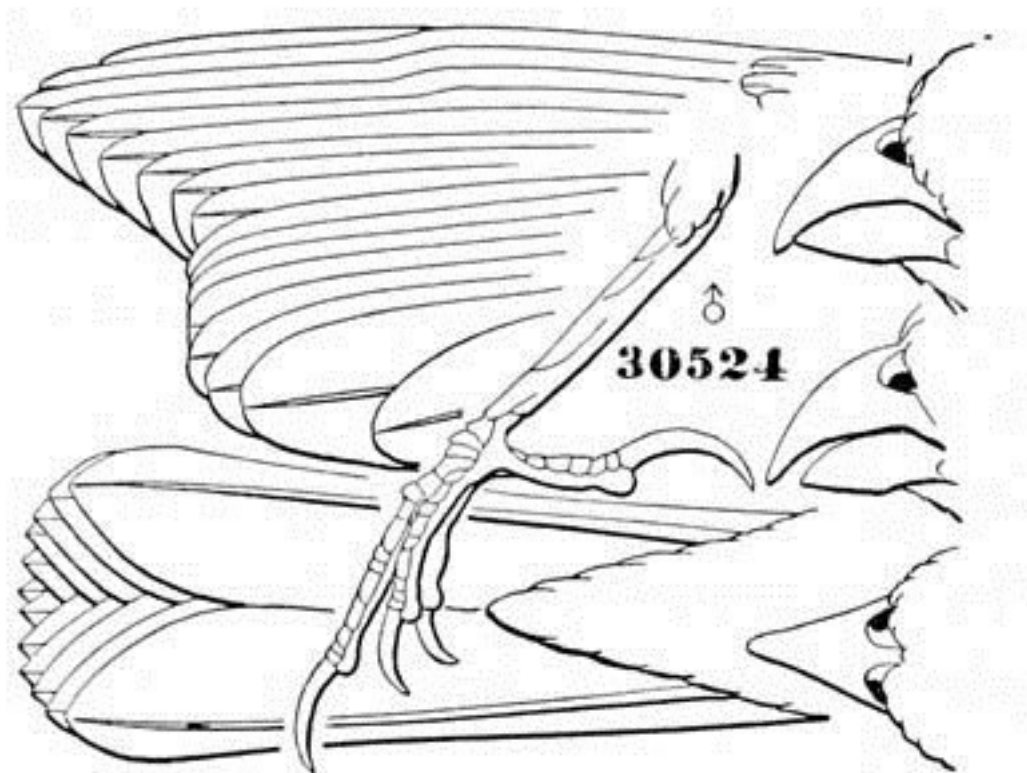
This bird is very easily made to breed in confinement. Dr. Bachman has had a single pair thus raise three broods in a season.

The eggs of this species measure .80 by .65 of an inch, and do not at all resemble the eggs of the *cyanea* or *amaena*. They have a dull or pearly-white ground, and are very characteristically marked with blotches and dots of purplish and reddish brown.

Genus SPERMOPHILA, Swainson

Spermophila, Swainson, Zoöl. Jour. III, Nov. 1827, 348. (Type, *Pyrrhula falcirostris*, Temm. Sufficiently distinct from *Spermophilus*, F. Cuv. 1822.)

Sporophila, Cabanis, Mus. Hein. 1851, 148. (Type, *Fringilla hypoleuca*, Licht.)



Spermophila moreleti.

30524 ♂

Gen. Char. Bill very short and very much curved, as in *Pyrrhula*, almost as deep as long; the commissure concave, abruptly bent towards the end. Tarsus about equal to middle toe; inner toe rather the longer (?), reaching about to the base of the middle one; hind toe to the middle of this claw. Wings short, reaching over the posterior third of the exposed part of the tail; the tertiaries gradually longer than the secondaries, neither much shorter than the primaries, which are graduated, and but little different in length, the first shorter than the sixth, the second and fourth equal. The tail is about as long as the wings, rounded, all the feathers slightly graduated, rather sharply acuminate and decidedly mucronate. Smallest of American passerine birds.

The essential characters of this genus are the small, very convex bill, as high as long; the short broad wings, with the quills differing little in length, the outer ones graduated; the tail as long as the wings, widened towards the end, and slightly graduated, with the acuminate and mucronate tip to the feathers.

Many species of the genus occur in Middle and South America, although none not readily distinguishable from the single North American one.

Spermophila moreleti, Pucheran

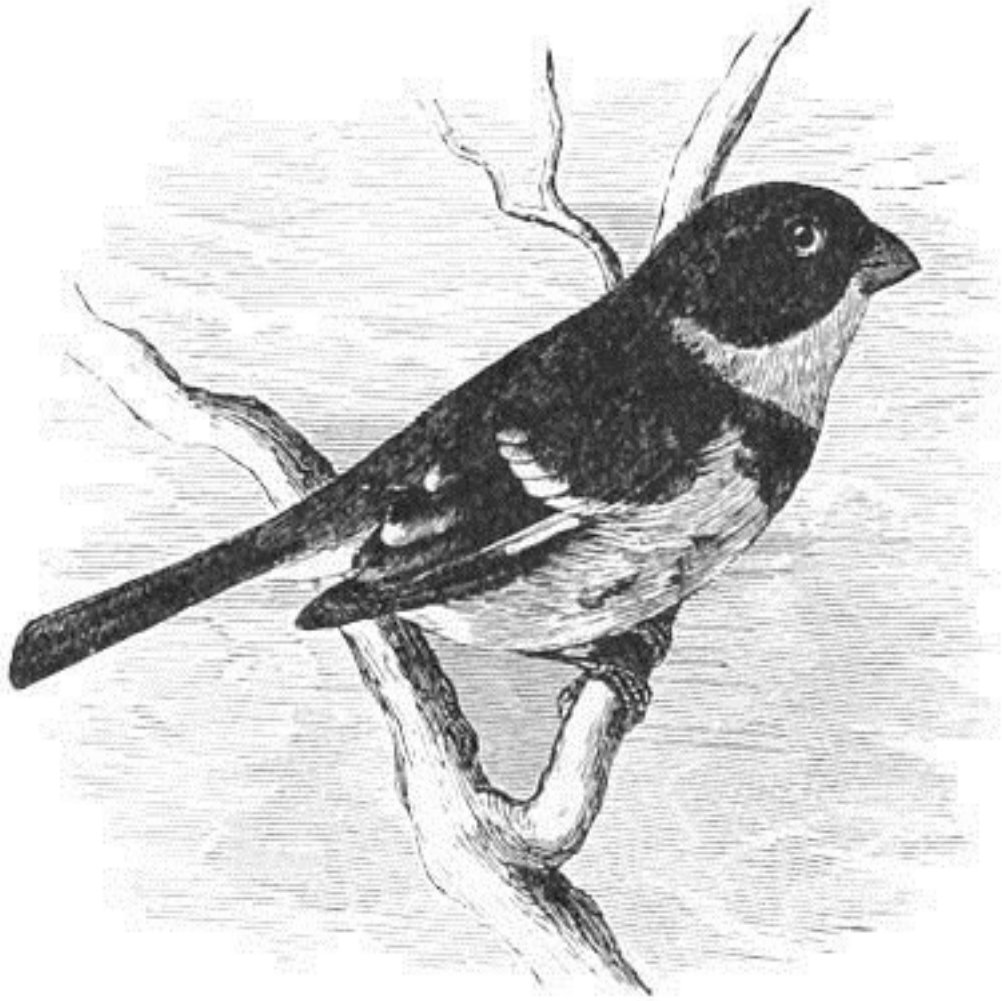
LITTLE SEED-EATER

Spermophila moreleti, (Pucheran,) Bonap. Conspectus, 1850, 497.—Sclater, Pr. Zoöl. Soc. 1856, 302.—Baird, Birds N. Am. 1858, 506, pl. liv, f. 2, 3.—Ib. Mex. Bound. II, Birds, 17, pl. xvi, f. 2, 3. *Sporophila moreleti*, Cab. Mus. Hein. 1851, 150.—Ib. Journ. für. Orn. IX, 1861, 4 (with synonymy). *Spermophila albigularis*, (Spix,) Lawrence, Ann. N. Y. Lyceum, V, Sept. 1851, 124 (Texas. Not of Spix).

Sp. Char. The top and sides of the head, back of the neck, a broad band across the upper part of the breast extending all round, the middle of the back, the wings and tail, with the posterior upper coverts, black. The chin, upper throat and neck all round, but interrupted behind, the rump, with the remaining under and lateral portions of the body, white; the latter tinged with brownish-yellow. Two bands on the wing, across the greater and middle coverts, with the concealed bases of all the quills, also white. Length, about 4 inches; wing, 2.05; tail, 1.90.

Female. Dull yellow; olivaceous above, brownish-yellow beneath. Wings and tail somewhat as in the male.

Hab. Rio Grande of Texas; south to Costa Rica. Xalapa (Scl. 1859, 365); Oaxaca (Scl. 1859, 378); Cordova (Scl. 1856, 302); Guatemala (Scl. Ibis, I, 17; Salv. Ibis, I, 468; nest); Costa Rica (Cab. J. 1861, 4); Vera Cruz, winter, alpine region, breeding (Sum. M. B. S. I, 551).



Spermophila moreleti.

The specimen upon which the preceding description of the male has been based is the only one in full plumage we have seen, and was kindly lent by Mr. P. L. Sclater. It was collected in Honduras. Some of the feathers of the back have grayish tips. The specimen described by Mr. Lawrence as *S. albigularis*, though male, is, in most respects, like the female, except that the wings and tail are darker, the color of the upper part grayer, and the interscapular feathers blotched with black. The black of the head is strongly indicated, the feathers, however, all with gray margins. In this and another, a little further advanced, from San Diego, Mexico, (4096,) there is a very faint indication of the black pectoral band, and there is no trace of the whitish of the rump.

Habits. This pretty little tropical form of Sparrow can only rest a claim to be included in our fauna by its occasional presence on the Rio Grande in Texas. It is found throughout Mexico and Central America.

Mr. Sumichrast found it throughout the State of Vera Cruz, except only in the elevated or alpine regions. Its common name was *Frailecito*. It was abundant throughout the hot and the temperate regions as well as the plateau.

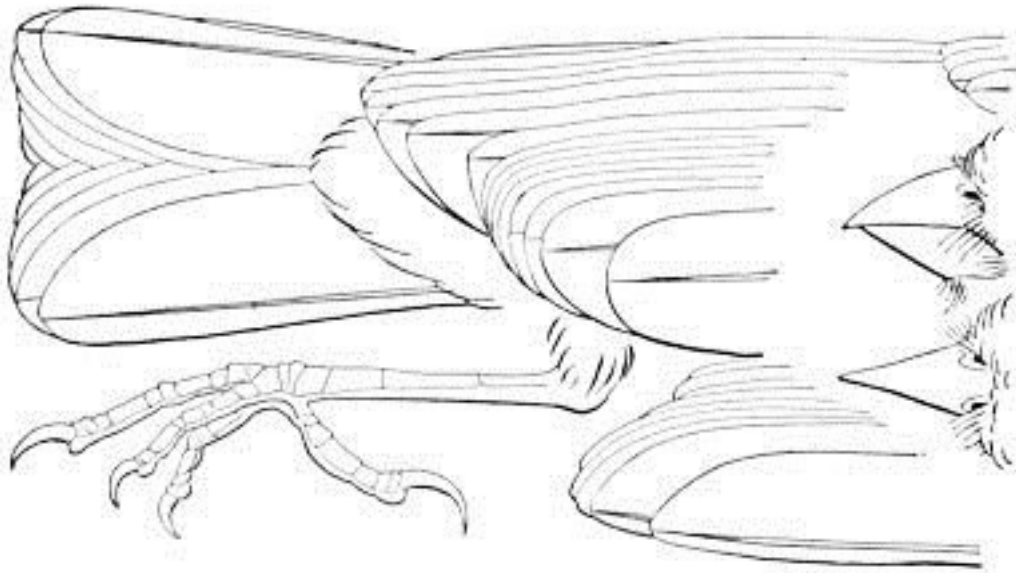
This species was first met with near the Lake of Peten, in Guatemala, by M. Morelet, and was described from his specimens in the Paris Museum by Prince Bonaparte. Mr. Salvin found it a not uncommon species about Dueñas, where it is generally to be found amongst the tall weeds on the edge of the lake. It was also found at Belize. From a letter of Mr. Salvin, published in the *Ibis* of 1859 (p. 468), we quote the following in reference to the nest of this species, which is all the

information we have in relation to this diminutive Sparrow: “A day or two ago I found two nests of *Spermophila moreleti*, and took one rotten dried-up egg from one with a young one in it. Nothing could be more different than this nest and that of *S. bicolor*, so well described by Mr. Newton. That of *S. moreleti*, instead of the loose domed structure of *S. bicolor*, with a large side-entrance, composed entirely of one material, is one of the neatest nests you ever saw,—a beautiful, open, transparent nest, composed of fine roots and fibres, and lined with horsehair. It is not placed resting on a branch, but is suspended like a Reed Warbler’s (*Salicaria arundinacea*), by several small twigs. The eggs, too, differ materially.” Mr. Salvin gives no description of these eggs.

This bird was found a resident during the winter months, and in May also, at Plaza Vicente, in the State of Oaxaca, Mexico. This is in the low or hot lands of that region.

Genus PHONIPARA, Bonap

Phonipara, Bonaparte, 1850. (Type, *Loxia canora*, Gm.)



Phonipara zena.

Gen. Char. Size very small. Wing considerably longer than the tail, but much rounded; third or fourth quill longest; first about equal to seventh. Tail very slightly rounded, the feathers broad. Bill very short and deep, but the depth through the base less than the culmen; culmen but slightly, or not appreciably, curved; bill much compressed. Feet stout; tarsi longer than the middle toe; outer toe longer than the inner, its claw just reaching the base of the middle claw; hind toe with the claw very large, and strongly curved. Among the least of American *Fringillidæ*.

The introduction of this genus into the North American fauna is the result of Mr. Maynard’s indefatigable labors in the exploration of Florida. The species are principally West Indian, a single race alone belonging to the continental portion of Middle America.

Species and Varieties

Common Characters. Sexes very different. Above olive-green, beneath blackish or whitish. ♂. Head and breast black, the former with or without yellow patches. ♀ with the yellow and black indicated only, or wanting. Length, about 4.00.

A. Head without any yellow.

1. **P. zena.** Culmen decidedly curved. Above dull grayish olive-green. ♂. Head and lower parts, especially anteriorly, dull black, mixed with whitish posteriorly. ♀. Head and beneath ashy. Wing, about 2.00; tail, 1.75. *Hab.* West Indies (Cuba, Hayti, Porto Rico, St. Bartholomew, Jamaica, etc.); also Key West, Florida (Maynard).

B. Head with yellow patches.

2. **P. pusilla.** Culmen perfectly straight. Above rather bright olive-green. ♂, a supraloral stripe, a patch on chin, and upper part of throat, with edge of wing, bright yellow; forehead, lores, and jugulum black. ♀ with the black and yellow only indicated, or wanting.

Whole crown, cheeks, breast, and upper part of abdomen black. *Hab.* Middle America, from Mirador to Panama, and southward ... var. *pusilla*.¹²

Only isolated spots, covering forehead, lore, and base of lower jaw, and patch on jugulum, black. *Hab.* West Indies. (Porto Rico, Hayti, Jamaica, Cuba, etc.) ... var. *olivacea*.¹³

3. **P. canora.**¹⁴ Culmen decidedly curved. Above bright olive-green; beneath pale ashy, whitish on anal region. A bright yellow broad crescent across the lower part of the throat, curving upward and forward, behind and over the auriculars, to above the eye. ♂. Lores, auriculars, and chin, and a band across the jugulum, black. ♀. Chin, etc., chestnut-brown; no black on jugulum. *Hab.* Cuba.

Phonipara zena, Bryant

THE BLACK-FACED FINCH

Fringilla zena, Linn. Syst. Nat. I, (ed. 10,) 1758, 183 (based on *Passer bicolor bahamensis*, Catesby, Carol. I, tab. 37, Bahamas).—Bryant, Pr. Bost. Soc. N. H. X, 1865, 254. *Fringilla bicolor*, Linn. Syst. Nat. I, (ed. 12,) 1766, 324 (same original as *zena*). *Spermophila bicolor*, Gosse (Jamaica). *Phonipara bicolor*, Newton (St. Croix). ? *Tiaris omissa*, Jardine, Ann. Nat. Hist. 1847, 332 (Tobago). *Phonipara omissa*, Sclater. *Phonipara marchi*, Baird, Pr. A. N. Sc. Phila. Nov. 1863, 297 (Jamaica). *Fringilla zena*, var. *marchi*, Bryant, Pr. Bost. Soc. 1867, 43. *Fringilla (Phonipara) zena*, var. *portoricensis*, Bryant, Pr. Bost. Soc. X, 1865, 254 (Porto Rico).

Sp. Char. *Male adult* (627, Bryant coll.; Inagua). Above dull olive-green, the head and lower parts black, the two colors blending insensibly into each other; feathers of the middle of the abdomen and crissum edged with whitish. Wing, 2.10; tail, 1.80, culmen, .35; tarsus, .63; middle toe, .50.

Female adult (983, Bryant coll.; Inagua). Above dull olive-green, beneath ashy, whitish on the abdomen and crissum; no black. Wing, 2.10.

Male juv. (981, Bryant coll.; Inagua). Like the adult female, but the head anteriorly, the chin, throat, and jugulum medially, black. Wing, 2.05.

Hab. West Indies (Bahamas; Jamaica, Porto Rico; St. Croix, Tobago?).

¹² *Tiaris pusilla*, Swainson, Phil. Mag. I, 1827, 438. *Phonipara pusilla*, Sclater, P. Z. S. 1855, 159.

¹³ *Emberiza olivacea*, Gmelin, Syst. Nat. I, 309. *Phonipara olivacea*, Sclater, P. Z. S. 1855, 159.

¹⁴ *Loxia canora*, Gmelin, Syst. Nat. I, 858. *Phonipara canora*, Bonap.

Quite a large series of this species from the various West Indian Islands show a considerable variation in the amount of black in male birds; nothing characteristic of the different islands, however, for, in specimens from each, individuals are to be found agreeing in every respect with the stages described above.

Habits. The Black-faced Finch of Jamaica and other West India Islands claims a place in the fauna of the United States as an occasional visitant of Florida; of how common occurrence on that peninsula we cannot determine. It was taken there in the spring of 1871 by Mr. Maynard, and is possibly an accidental rather than a regular visitant. It is found in many of the West India Islands, though being resident in their several places of abode, they naturally exhibit certain characteristics as of distinct races. The eggs of the St. Croix bird differ considerably from those of the Jamaica one.

The Messrs. Newton, in their account of the birds of St. Croix, mention this bird as having a Bunting-like song, heard always very early in the morning. It is said to frequent the curing-houses, hopping on the uncovered sugar-hogsheads, and making a plentiful meal therefrom. It is very sociable, and feeds in small flocks, mostly on the ground among the guinea-grass. The crops of those dissected were usually found to contain small seeds. They build domed nests in low bushes, thickets of bamboo, or among creepers against the side of a house, seldom more than four feet from the ground, composed entirely of dry grass, the interior being lined with finer materials of the same. The opening is on one side, and is large for the size of the nest. They breed from the middle of May to the end of July. The eggs are white, spotted with red, especially at the larger end. The usual number of eggs is three, very rarely four. Their measurement is .65 by .50 of an inch.

In Jamaica Mr. March speaks of it as the most common of the Grass Finches, of which there are three other species, and as nesting at all seasons of the year in low trees and bushes. Near homesteads, in building their domed nests, they make use of shreds, scraps of cloth, bits of cotton, and other trash. Their eggs, he says, are three and sometimes even six in number; and he mentions their varying both as to dimensions and coloring, which may explain the difference between the eggs from St. Croix and Jamaica. Those from the latter place measure .72 by .50 of an inch, and the markings are more of a brown than a red color.

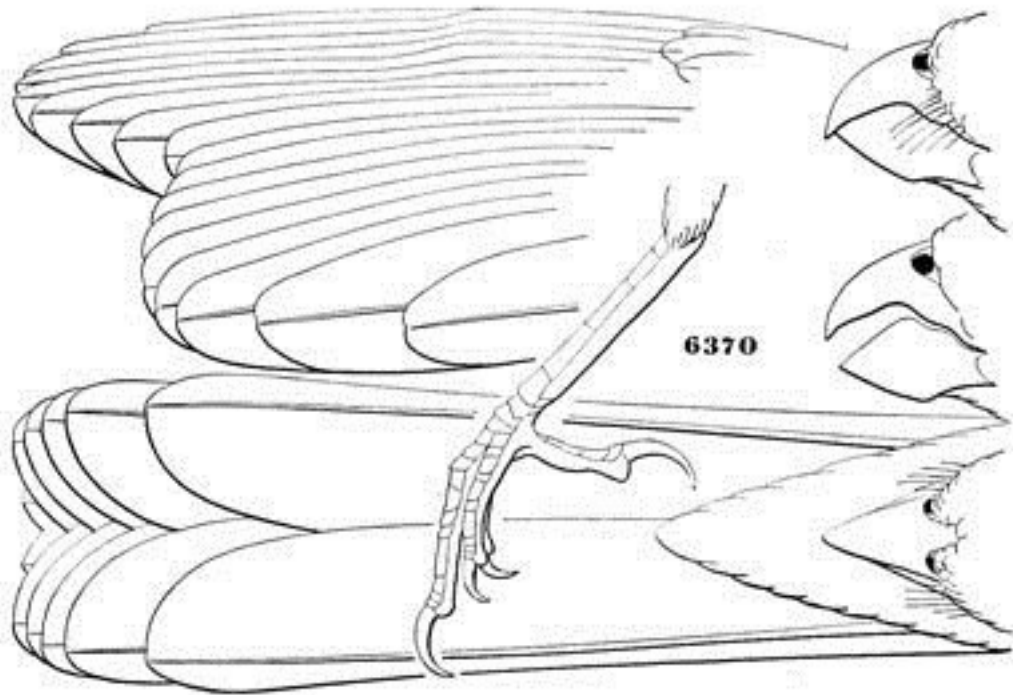
Mr. Hill adds that the Grass Finch very frequently selects a shrub on which the wasps have built, fixing the entrance close to their cells.

Mr. Gosse states that the only note of this species is a single harsh guttural squeak, difficult either to imitate or to describe.

Genus PYRRHULOXIA, Bonap

Pyrrhuloxia, Bonaparte, *Conspectus*, 1850, 500. (Type, *Cardinalis sinuatus*, Bon.)

Gen. Char. The bill is very short and much curved, the culmen forming an arc of a circle of 60 degrees or more, and ending at a right angle with the straight gonys; the commissure abruptly much angulated anterior to the nostrils in its middle point; the lower jaw very much wider than the upper, and wider than the gonys is long; anterior portion of commissure straight. Tarsus longer than middle toe; outer lateral toes longer, not reaching the base of the middle; wing considerably rounded, first quill longer than secondaries. Tail much longer than the wing, graduated; the feathers broad, truncate. Head crested.



Pyrrhuloxia sinuata.

6370

Color. Gray, with red feathers and patches.

The essential character of this genus lies in the greatly curved, very short, and broad bill, something like that of *Pyrrhula*. In other respects like *Cardinalis*, but with less graduated wing, and longer and broader tail.

Pyrrhuloxia sinuata, Bonap

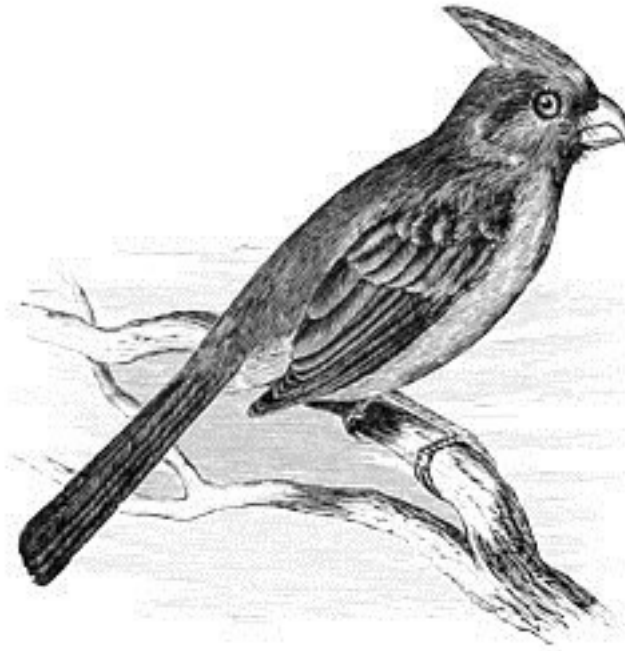
TEXAS CARDINAL

Cardinalis sinuatus, Bp. Pr. Zoöl. Soc. Lond. V, 1837, 111 (Mexico).—
Lawrence, Ann. N. Y. Lyc. V, 1851, 116.—Cassin, Illust. I, VII, 1854, 204, pl.
xxxiii. *Pyrrhuloxia sinuata*, Bon. Consp. 1850, 500.—Baird, Birds N. Am. 1858,
508.—Heerm. X, c. 16.—Cooper, Orn. Cal. I, 236.

Sp. Char. Head with an elongated, pointed crest, springing from the crown. Upper parts generally pale ashy-brown; hood, sides of neck, and under parts of body, rather paler. Long crest-feathers, bill all round including lores and encircling the eye, wing and tail, dark crimson. Chin and upper part of throat, breast, and median line of the belly, under tail-coverts, tibia, edge and inner coverts of the wings, bright carmine-red. Bill yellowish. Length, about 8.50; wing, 3.75; tail, 4.50.

Female similar, with the under part brownish-yellow; middle of belly and throat only tinged with red.

Hab. Valley of the Rio Grande of Texas and westward; Cape St. Lucas; Mazatlan, Mexico.



Pyrrhuloxia sinuata.

The wing is considerably rounded, the fourth and fifth quills longest; the first as long as the secondaries, the second longer than the seventh. The tail is long, graduated on the sides, the outer about half an inch shorter than the middle. The feathers are very broad to the end and obliquely truncate. They are rather broader than in *Cardinalis virginianus*. The crest is narrower and longer, and confined to the middle of the crown; it extends back about 1.80 inches from the base of the bill.

The carmine of the breast is somewhat hidden by grayish tips to the feathers; that of the throat is streaked a little with darker. The exposed surfaces of the wing-coverts and of secondaries and tertials are like the back. The tail-feathers are tipped with brownish.

Specimens from Cape St. Lucas are very much smaller than any others, measuring only, wing, 3.30; tail, 3.80. The crest is dull carmine, instead of dark wine-purple; the red tinge on wing and tail much fainter, and the sides, as well as the gray tints everywhere, more brownish; there is none of that dark burnt-carmine tint to the red of lores and cheeks observable in all the Texas specimens. No. 49,758, Camp Grant, Arizona, is like the Cape St. Lucas birds in colors, except that the crest is dusky, but the proportions are those of the Rio Grande series.

Habits. The Texan Cardinal was originally described as a bird of Mexico by Prince Charles Lucien Bonaparte in the Proceedings of the Zoölogical Society of London. It has since been ascertained to inhabit the southern central portions of our country, its range of extension northerly bringing it within the limits of the United States. In Texas, on the Rio Grande, it is resident throughout the year, or of but limited migration in the coldest weather. It was not observed by Dr. Coues in Arizona, but is said to occur in the southern portion of that Territory. It was found breeding at Cape St. Lucas by Mr. Xantus. It is not named by Sumichrast among the birds of Vera Cruz.

Its habits are said to be of the same general character with those of our common Cardinal.

The specimens from which this bird was first described were procured in the vicinity of the city of Mexico. The first obtained within the limits of the United States were observed by Captain McCown of the U. S. Army, at Ringgold Barracks, in Texas. Since then it has been procured by several of the naturalists accompanying the government expeditions. It was obtained in New Leon, Mexico, by Lieutenant Couch; in Texas, by Major Emory; in Texas and at El Paso, by Lieutenant Parke.

When first seen, in March, in the State of Tamaulipas, by Lieutenant Couch, it was in flocks, very shy and difficult of approach. It did not occur much in open fields, but seemed to prefer the vicinity of fences and bushes. It was often seen in company with the common Cardinal.

Dr. Kennerly found this bird quite abundant in the vicinity of El Paso, but did not observe it elsewhere. It kept generally in flocks of from three to six, frequenting the hedges and fruit-trees in the vicinity of houses. It became very restless when approached, flying from branch to branch and from tree to tree, uttering its peculiar note with great vehemence.

Dr. Heermann met with the first specimen of this bird in a dry cañon, a little to the east of the crossing of San Pedro River. It was perched on a bush, seemed wearied and lost, and was probably a wanderer. No more were seen until he reached El Paso. There he found it everywhere among the hedges and trees, and continued to meet with it occasionally on his road, until his party left civilization behind. It erects its crest as it moves actively about in search of food, and utters at intervals a clear, plaintive whistle, varied by a few detached notes.

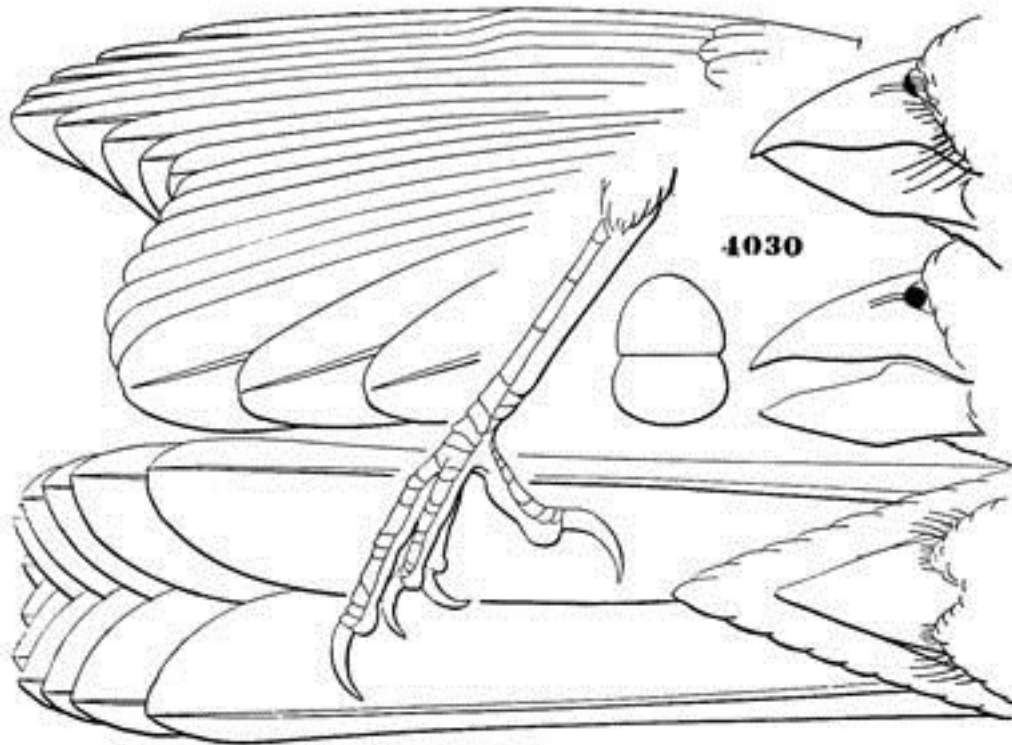
Mr. Dresser considers this species rather a straggler from Mexico than as a Texan bird. Near Eagle Pass and Piedras Negras he found it abundant, but it became scarce as soon as he travelled a few miles into Texas. He saw none north or east of the Leona. He was told that quantities breed near Eagle Pass, and he saw not a few in cages that had been reared from the nest. He found it a shy bird, and difficult to shoot. When followed, it flies about uneasily, perching on the top of some high bush, and erecting its long crest, uttering a clear, plaintive whistle. Sometimes it would take to the thick brushwood and creep through the bushes so that it was impossible to get a shot at it. On the Lower Rio Grande it was of uncommon occurrence. He noticed a single pair near Matamoras in August, 1864.

Captain McCown, in his account of this species, published by Cassin, writes that, so far as seen on the Rio Grande, this handsome species appeared to have a strong partiality for damp and bushy woods. So far as he observed, it never ventured far from the river. He was under the impression that this bird remains in Texas all the year, having met with it so late in the fall and again so early in the spring, that, if not constantly resident, its migrations must be very limited. He describes it as a gay, sprightly bird, generally seen in company with others of the same species, frequently erecting its crest and calling to its mate or comrades. It is rather shy, and not easily approached. In its voice and general habits it appeared to him very similar to the common species.

The eggs of this species are of an oval shape, one end being only a little less rounded than the other. Their average measurement is one inch in length by .80 in breadth. Their ground-color is a dull chalky-white, over which are distributed well-defined blotches of a light umber-brown, and also a number of indistinct markings of purple. The spots are pretty uniform in these colors, but vary greatly in size and distribution. In some eggs they largely consist of fine dots, in others they are in bold blotches. In some the brown is more confluent and the effect that of a deeper shade.

Genus CARDINALIS, Bonap

Cardinalis, Bonaparte, Saggio di una distribuzione metod. dei Animagli Vertebrati, 1831 (Agassiz). (Type, *Loxia cardinalis*, Linn.)



Cardinalis virginianus.

4030

Gen. Char. Bill enormously large; culmen very slightly curved, commissure sinuated; lower jaw broader than the length of the gonys, considerably wider than the upper jaw, about as deep as the latter. Tarsi longer than middle toe; outer toe rather the longer, reaching a little beyond the base of the middle one; hind toe not so long. Wings moderate, reaching over the basal third of the exposed part of the tail. Four outer quills graduated; the first equal to the secondaries. Tail long, decidedly longer than the wings, considerably graduated; feathers broad, truncated a little obliquely at the end, the corners rounded. Colors red. Head crested.

The essential characters of this genus are the crested head; very large and thick bill extending far back on the forehead, and only moderately curved above; tarsus longer than middle toe; much graduated wings, the first primary equal to the secondary quills; the long tail exceeding the wings, broad and much graduated at the end.

Of this genus, only two species are known, one of them being exclusively South American, the other belonging to North America, but in different regions modified into representative races. They may be defined as follows.

Species and Varieties

Common Characters. *Male*. Bright vermilion-red, more dusky purplish on upper surface; feathers adjoining base of bill black for greater or less extent. *Female*. Above olivaceous, the wings, tail, and crest reddish; beneath olivaceous-whitish, slightly tinged on jugulum with red.

C. virginianus. Culmen nearly straight; commissure with a slight lobe; upper mandible as deep as the lower, perfectly smooth. Bill red. Black patch covering whole throat, its posterior outline convex. *Female*. Lining of wing deep vermilion. Olivaceous-gray above, the wings and tail strongly tinged with red; crest only dull

red, without darker shaft-streaks. Beneath wholly light ochraceous. No black around bill.

A. Crest-feathers soft, blended. Rump not lighter red than back.

a. Black of the lores passing broadly across forehead. Crest brownish-red. Bill moderate.

Culmen, .75; gonys, .41; depth of bill, .54. Feathers of dorsal region broadly margined with grayish. Wing, 4.05; tail, 4.50; crest, 1.80. *Hab.* Eastern Province of United States, south of 40°. Bermudas ... var. *virginianus*.

b. Black of the lores not meeting across forehead; crest pure vermilion. Bill robust.

Culmen, .84; gonys, .47; depth of bill, .70. Feathers of dorsal region without grayish borders; red beneath more intense; wing, 3.60; tail, 4.20; crest, 2.00. *Hab.* Eastern Mexico (Mirador; Yucatan; “Honduras”) ... var. *coccineus*.¹⁵

Culmen, .82; gonys, .47; depth of bill, .65. Feathers of dorsal region with distinct gray borders; red beneath lighter. Wing, 4.00; tail, 5.00; crest, 2.00. *Hab.* Cape St. Lucas, and Arizona; Tres Marias Islands. (Perhaps all of Western Mexico, north of the Rio Grande de Santiago.) ... var. *igneus*.

B. Crest-feathers stiff, compact. Rump decidedly lighter red than the back.

Culmen, .75; gonys, .41; depth of bill, .57. Dorsal feathers without grayish margins; red as in the last. Wing, 3.40; tail, 3.80; crest, 2.00. *Hab.* Western Mexico; Colima. “Acapulco et Realejo.” ... var. *carneus*.¹⁶

C. phœniceus.¹⁷ Culmen much arched; commissure arched; upper mandible not as deep as lower, and with grooves forward from the nostril, parallel with the curve of the culmen. Bill whitish-brown. Black patch restricted to the chin, its posterior outline deeply concave.

Crest-feathers stiff and compact. No black above, or on lores; crest pure vermilion; rump light vermilion, much lighter than the back, which is without gray edges to feathers. Culmen, .75; gonys, .39; height of bill, .67; wing, 3.50; tail, 3.90; crest, 2.20. *Female.* Lining of wing buff; above ashy-olivaceous, becoming pure ash on head and neck, except their under side. Crest-feathers vermilion with black shafts; no red tinge on wings, and only a slight tinge of it on tail. Forepart of cheeks and middle of throat white; rest of lower part deep ochraceous. Black around bill as in the male. *Hab.* Northern South America; Venezuela; New Granada.

¹⁵ *Cardinalis virginianus*, var. *coccineus*, Ridgway.

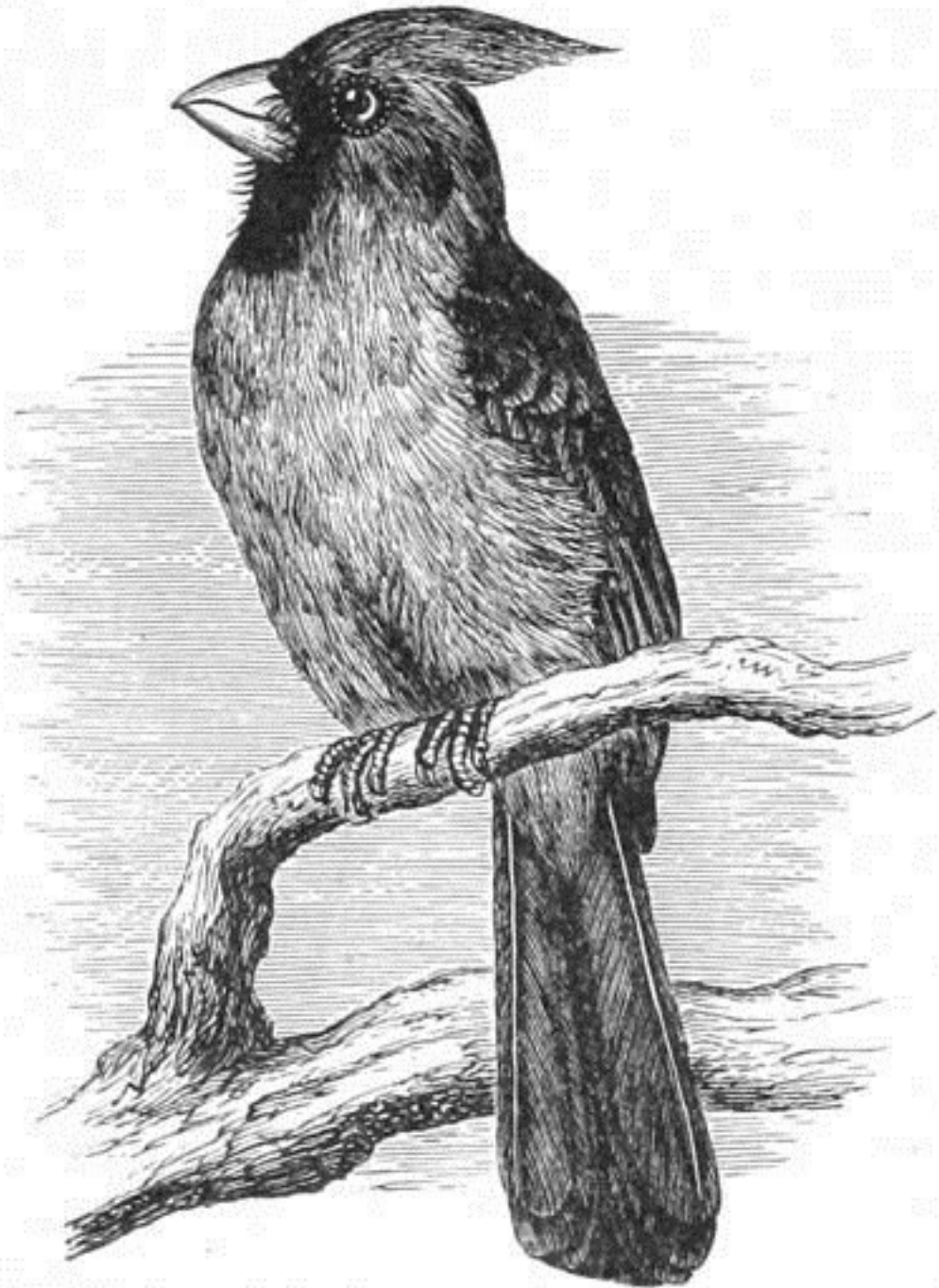
¹⁶ *Cardinalis virginianus*, var. *carneus*. ? *Cardinalis carneus*, Less. R. Z. 1842, 209.—Bonap. Consp. I, 501. According to the locality quoted (“Acapulco et Realejo”) this name is the one to be applied to the variety diagnosed in the synopsis; it is difficult, however, to make anything out of the description, as it is evidently taken from a female or immature bird. If the locality quoted be correct, this form ranges along the Pacific Coast, probably from latitude 20° south, as far at least as Nicaragua. North of 20°, and on the Tres Marias Islands, it is replaced by var. *igneus*, and on the Atlantic coast, from Tampico south to Honduras, is represented by the var. *coccineus*. In the very long, stiff crest-feathers, and light red rump, this variety of *C. virginianus* closely approximates to *C. phœniceus*, but in other respects is very distinct.

¹⁷ *Cardinalis phœniceus*, (Gould.) Bonap. P. Z. S. 1837, p. 111; Consp. I, 501.—Sclater & Salvin, Ex. Orn. Pt. VIII, 1868, pl. lxxiii.

Cardinalis virginianus, Bonap

REDBIRD; CARDINAL GROSBEAK

Coccothraustes virginiana, Brisson, Orn. III, 1760, 253. *Loxia cardinalis*, Linn. Syst. I, 1766, 300.—Wilson, Am. Orn. II, 1810, 38, pl. vi, f. 1, 2. *Coccothraustes cardinalis*, Vieill. Dict. *Fringilla (Coccothraustes) cardinalis*, Bon. Obs. Wils. 1825, No. 79. *Fringilla cardinalis*, Nutt. Man. I, 1832, 519.—Aud. Orn. Biog. II, 1834, 336; V, 514, pl. clix. *Pitylus cardinalis*, Aud. Syn. 1839, 131.—Ib. Birds Am. III, 1841, 198, pl. cciii. *Cardinalis virginianus*, Bon. List, 1838.—Ib. Consp. 1850, 501.—Baird, Birds N. Am. 1858, 509.—Max. Cab. J. VI, 1858, 268. *Grosbec de Virginie*, Buff. Pl. enl. 37.



Cardinalis virginianus.

Sp. Char. A flattened crest of feathers on the crown. Bill red. Body generally bright vermilion-red, darker on the back, rump, and tail. The feathers of the back and rump bordered with brownish-gray. Narrow band around the base of the bill, extending to eyes, with chin and upper part of the throat black.

Female of a duller red, and this only on the wings, tail, and elongated feathers of the crown. Above light olive; tinged with yellowish on the head; beneath brownish-yellow, darkest on the sides and across the breast. Black about the head only faintly indicated. Length, 8.50; wing, 4.00; tail,

4.50; culmen, .75; depth of bill, .58; breadth of upper mandible, .35. (28,286 ♂, Mount Carmel, Southern Illinois.)

Hab. More southern portions of United States to the Missouri. Probably along valley of Rio Grande to Rocky Mountains.

The bill of this species is very large, and shaped much as in *Hedymeles ludovicianus*. The central feathers of the crest of the crown are longer than the lateral; they spring from about the middle of the crown, and extend back about an inch and a half from the base of the bill. The wings are much rounded, the fourth longest, the second equal to the seventh, the first as long as the secondaries. The tail is long, truncate at the end, but graduated on the sides; the feathers are broad to the end, truncated obliquely at the end.

Most North American specimens we have seen have the feathers of the back edged with ashy; the more northern the less brightly colored, and larger. Mexican skins (var. *coccineus*) are deeper colored and without the olivaceous. In all specimens from eastern North America the frontal black is very distinct.

Specimens from the Eastern Province of United States, including Florida and the Bermudas, are all alike in possessing those features distinguishing the restricted var. *virginianus* from the races of Mexico, namely, the wide black frontal band, and distinct gray edges to dorsal feathers, with small bill. Specimens from Florida are scarcely smaller, and are not more deeply colored than some examples from Southern Illinois. Rio Grande skins, however, are slightly less in size, though identical in other respects.

Habits. The Cardinal Grosbeak, the Redbird of the Southern States, is one of our few birds that present the double attraction of a brilliant and showy plumage with more than usual powers of song. In New England and the more northern States it is chiefly known by its reputation as a cage-bird, both its bright plumage and its sweet song giving it a high value. It is a very rare and only an accidental visitor of Massachusetts, though a pair was once known to spend the summer and to rear its brood in the Botanical Gardens of Harvard College in Cambridge. It is by no means a common bird even in Pennsylvania. In all the Southern States, from Virginia to Mexico, it is a well-known favorite, frequenting gardens and plantations, and even breeding within the limits of the larger towns and cities. A single specimen of this bird was obtained near Dueñas, Guatemala, by Mr. Salvin.

The song of this Grosbeak is diversified, pleasant, and mellow, delivered with energy and ease, and renewed incessantly until its frequent repetitions somewhat diminish its charms. Its peculiar whistle is not only loud and clear, resembling the finest notes of the flageolet, but is so sweet and so varied that by some writers it has been considered equal even to the notes of the far-famed Nightingale of Europe. It is, however, very far from being among our best singers; yet, as it is known to remain in full song more than two thirds of the year, and while thus musical to be constant and liberal in the utterance of its sweet notes, it is entitled to a conspicuous place among our singing birds.

In its cage life the Cardinal soon becomes contented and tame, and will live many years in confinement. Wilson mentions one instance in which a Redbird was kept twenty-one years. They sing nearly throughout the year, or from January to October. In the extreme Southern States they are more or less resident, and some may be found all the year round. There is another remarkable peculiarity in this species, and one very rarely to be met with among birds, which is that the female Cardinal Grosbeak is an excellent singer, and her notes are very nearly as sweet and as good as those of her mate.

This species has been traced as far to the west in its distribution as the base of the Rocky Mountains, and into Mexico at the southwest. In Mexico it is also replaced by a very closely allied variety, and at Cape St. Lucas by still another. It is given by Mr. Lawrence among the birds occurring near New York City. He has occasionally met with it in New Jersey and at Staten Island, and, in one instance, on New York Island, when his attention was attracted to it by the loudness of its song.

It is given by Mr. Dresser as common throughout the whole of Texas during the summer, and almost throughout the year, excepting only where the *P. sinuata* is found. At Matamoras it was very common, and may be seen caged in almost every Mexican hut. He found it breeding in great abundance about San Antonio in April and May.

Mr. Cassin states that the Cardinal Bird is also known by the name of Virginia Nightingale. He adds that it inhabits, for the greater part, low and damp woods in which there is a profuse undergrowth of bushes, and is particularly partial to the vicinity of watercourses. The male bird is rather shy and careful of exposing himself.

Wilson mentions that in the lower parts of the Southern States, in the neighborhood of settlements, he found them more numerous than elsewhere. Their clear and lively notes, even in the months of January and February, were, at that season, almost the only music. Along the roadsides and fences he found them hovering in small groups, associated with Snowbirds and various kinds of Sparrows. Even in Pennsylvania they frequent the borders of creeks and rivulets during the whole year, in sheltered hollows, covered with holly, laurel, and other evergreens. They are very fond of Indian corn, a grain that is their favorite food. They are also said to feed on various kinds of fruit.

The males of this species, during the breeding season, are described as very pugnacious, and when confined together in the same cage they fight violently. The male bird has even been known to destroy its mate. In Florida Mr. Audubon found these birds mated by the 8th of February. The nest is built in bushes, among briars, or in low trees, and in various situations, the middle of a field, near a fence, or in the interior of a thicket, and usually not far from running water. It has even been placed in the garden close to the planter's house. It is loosely built of dry leaves and twigs, with a large proportion of dry grasses and strips of the bark of grapevines. Within, it is finished and lined with finer stems of grasses wrought into a circular form. There are usually two, and in the more Southern States three, broods in a season.

Mr. Audubon adds that they are easily raised from the nest, and have been known to breed in confinement.

The eggs of this species are of an oblong-oval shape, with but little difference at either end. Their ground-color appears to be white, but is generally so thickly marked with spots of ashy-brown and faint lavender tints as to permit but little of its ground to be seen. The eggs vary greatly in size, ranging from 1.10 inches to .98 of an inch in length, and from .80 to .78 in breadth.

***Cardinalis virginianus*, var. *igneus*, Baird**

CAPE CARDINAL

Cardinalis igneus, Baird, Pr. Ac. Sc. Phila. 1859, 305 (Cape St. Lucas).
—Elliot, Illust. N. Am. Birds, I, xvi.—Cooper, Orn. Cal. 1, 238. *Cardinalis virginianus*, Finsch, Abh. Nat. Brem. 1870, 339.

Sp. Char. Resembling *virginianus*, having, like it, the distinct grayish edges to feathers of the dorsal region. Red lighter, however, and the top of head, including crest, nearly pure vermilion, instead of brownish-red. Black of the lores not passing across the forehead, reaching only to the nostril. Wing, 4.00; tail, 5.00; culmen, .83; depth of bill, .66; breadth of upper mandible, .38. (No. 49,757 ♂, Camp Grant, 60 miles east of Tucson, Arizona).

Female distinguishable from that of *virginianus* only by more swollen bill, and more restricted dusky around base of bill. *Young*: bill deep black.

Hab. Cape St. Lucas; Camp Grant, Arizona; Tres Marias Islands (off coast of Mexico, latitude between 21° and 22° north). Probably Western Mexico, from Sonora south to latitude of about 20°.

In the features pointed out above, all specimens from Arizona and Tres Marias, and of an exceedingly large series collected at Cape St. Lucas, differ from those of other regions.

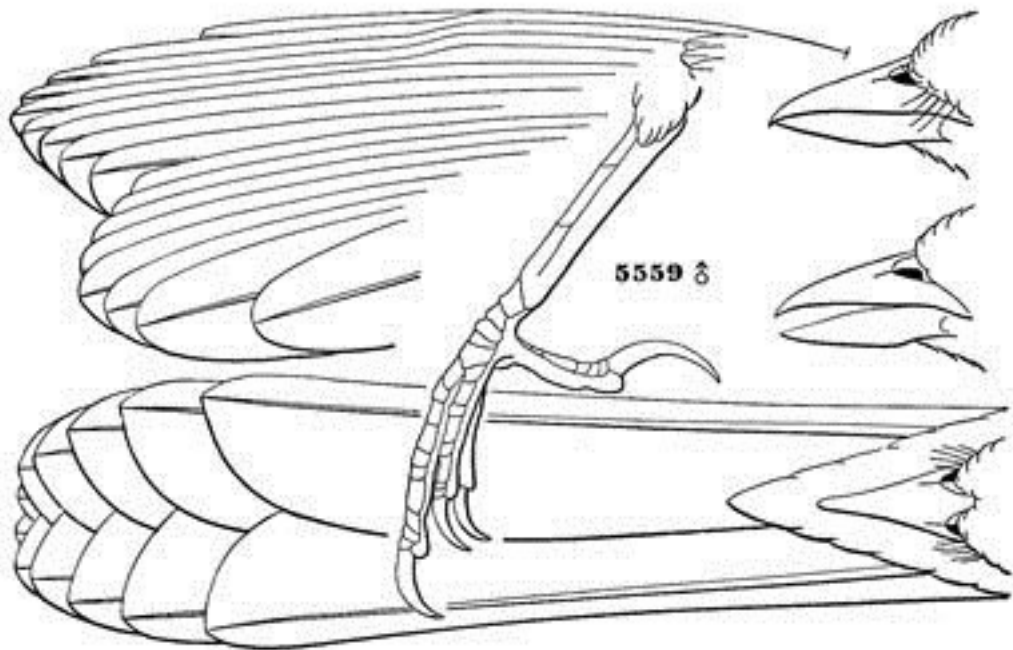
No specimens are in the collection from Western Mexico as far south as Colima, but birds from this region will, without doubt, be found referrible to the present race.

Habits. There appears to be nothing in the habits of this form of Cardinal, as far as known, to distinguish it from the Virginia bird; the nest and eggs, too, being almost identical. The latter average about one inch in length, and .80 in breadth. Their ground-color is white, with a bluish tint. Their markings are larger, and more of a rusty than an ashy brown, and the purple spots are fewer and less marked than in *C. virginianus*.

The memoranda of Mr. John Xantus show that in one instance a nest of this bird, containing two eggs, was found in a mimosa bush four feet from the ground; another nest, with one egg, in a like situation; a third, containing three eggs, was about three feet from the ground; a fourth, with two eggs, was also found in a mimosa, but only a few inches above the ground.

Genus PIPILO, Vieillot

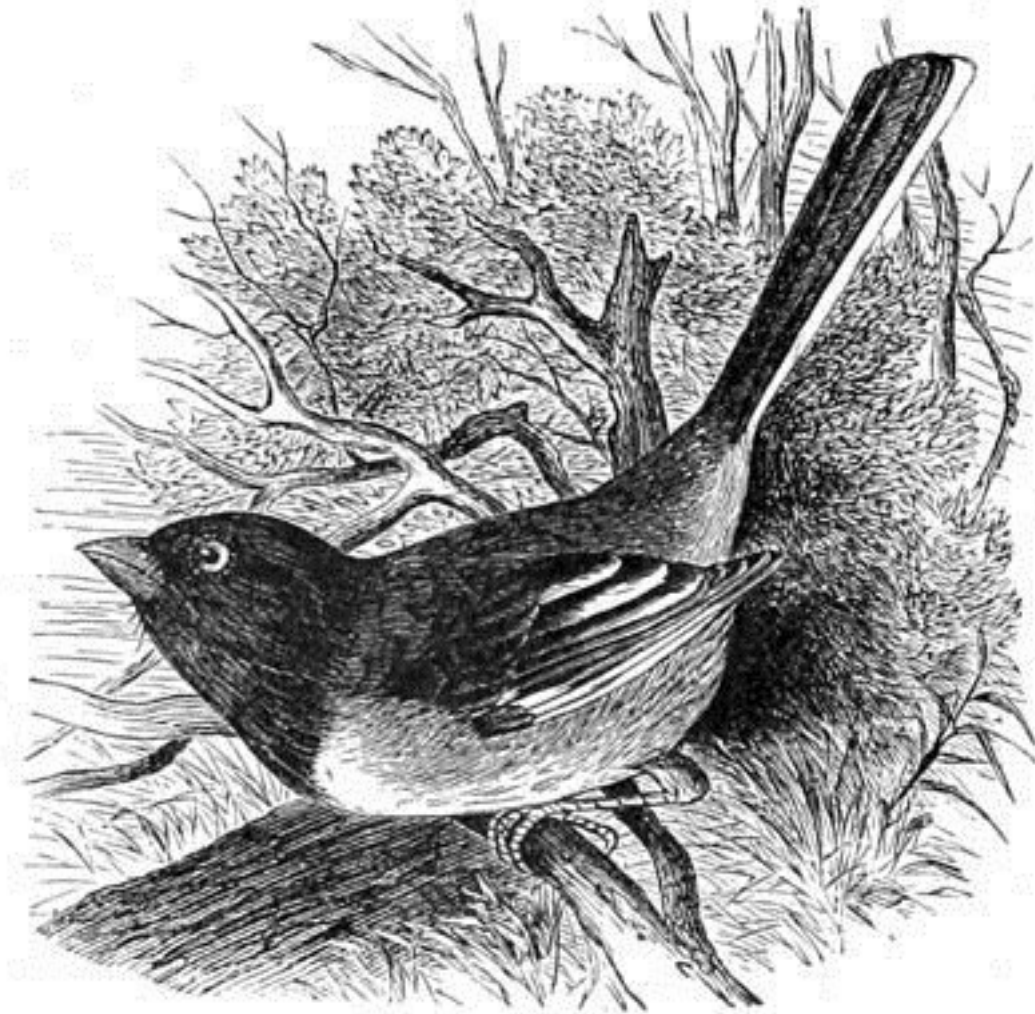
Pipilo, Vieillot, Analyse, 1816 (Agassiz). (Type, *Fringilla erythrophthalma*, Linn.)



Pipilo fuscus.
5559 ♂

Gen. Char. Bill rather stout; the culmen gently curved, the gonys nearly straight; the commissure gently concave, with a decided notch near the end; the lower jaw not so deep as the upper; not as wide as the gonys is long, but wider than the base of the upper mandible. Feet large, the tarsus as long as or a little longer than the middle toe; the outer lateral toe a little the longer, and reaching a little beyond the base of the middle claw. The hind claw about equal to its toe; the two together about equal to the outer toe. Claws all stout, compressed, and moderately curved; in some western specimens the claws much larger. Wings reaching about to the end of the upper tail-coverts; short and rounded, though the primaries are considerably longer than the nearly equal secondaries and tertials; the outer four quills

are graduated, the first considerably shorter than the second, and about as long as the secondaries. Tail considerably longer than the wings, moderately graduated externally; the feathers rather broad, most rounded off on the inner webs at the end.



Pipilo erythrophthalmus.

The colors vary; the upper parts are generally uniform black or brown, sometimes olive; the under white or brown; no central streaks on the feathers. The hood sometimes differently colored.

In the large number of species or races included in this genus by authors, there are certain differences of form, such as varying graduation of tail, length of claw, etc., but scarcely sufficient to warrant its further subdivision. In coloration, however, we find several different styles, which furnish a convenient method of arrangement into groups.

Few genera in birds exhibit such constancy in trifling variations of form and color, and as these are closely connected with geographical distribution, it seems reasonable to reduce many of the so-called species to a lower rank. In the following synopsis, we arrange the whole of North American and Mexican *Pipilos* into four sections, with their more positive species, and in the subsequent discussion of the sections separately we shall give what appear to be the varieties.

Species

A. Sides and lower tail-coverts rufous, in sharp contrast with the clear white of the abdomen. Tail-feathers with whitish patch on end of inner webs.

a. Head and neck black, sharply defined against the white of breast. Rump olive or blackish.

Black or dusky olive above

1. **P. maculatus.** White spots on tips of both rows of wing-coverts, and on scapulars. No white patch on base of primaries. *Hab.* Mexico, and United States west of the Missouri. (Five races.)

2. **P. erythrophthalmus.** No white spots on wing-coverts, nor on scapulars. A white patch on base of primaries. *Hab.* Eastern Province of United States. (Two races.)

Bright olive-green above

3. **P. macronyx.**¹⁸ Scapulars and wing-coverts (both rows) with distinct greenish-white spots on tips of outer webs.

4. **P. chlorosoma.**¹⁹ Scapulars and wing-coverts without trace of white spots. *Hab.* Table-lands of Mexico. (Perhaps these are two races of one species, *macronyx*.)

b. Head and neck ashy, paler on jugulum, where the color fades gradually into the white of breast. Rump and upper tail-coverts bright rufous.

5. **P. superciliosa.**²⁰ An obsolete whitish superciliary stripe. Greater wing-coverts obsolete whitish at tips; no other white markings on upper parts, and the tail-patches indistinct. *Hab.* Brazil. (Perhaps not genuine *Pipilo*.)

¹⁸ *Pipilo macronyx*, Swainson, Phil. Mag. I, 1827, 434. Real del Monte, Mex.—Ib. Anim. in Men. 1838, 347.—Bp. Consp. 487.—Sclater & Salvin, 1869, 361. *Pipilo virescens*, Hartlaub, Cab. Jour. 1863, 228, Mex.Sp. Char. Prevailing color above olive-green; the head and neck all round black, abruptly contrasted below with the white under parts; above passing insensibly into the green of the back; feathers of interscapular region obscurely dusky medially; sides and crissum rufous. Scapulars and greater and middle coverts with outer webs pale greenish-yellow at ends; these blotches faintly margined externally with olive-green. Edge of wing yellow; outer primary edged with whitish, edges of other primaries and of secondaries uniform olive-green. Fifth quill longest, fourth and sixth scarcely shorter; first shorter than ninth. Legs stout, claws much curved. Tail wanting in the single specimen before us (a male from the city of Mexico, belonging to Mr. G. N. Lawrence). *Dimensions* (prepared specimen): Wing, 3.70. Exposed portion of first primary, 2.30; of second, 2.73; of longest (measured from exposed base of first primary), 2.85. Bill: Length from forehead, .75; from nostril, .45. Legs: Tarsus, 1.14; middle claw, .38; hind toe and claw, .85; claw alone, .52. In describing this species, Swainson mentions an accompanying specimen as similar, but without any white spots on wings, suggesting that it may be the female. A specimen in the plumage from Oaxaca is characterized as follows.

¹⁹ *Pipilo chlorosoma*, Baird. 50,225 ♂, Oaxaca. Similar to *P. macronyx* in color, but without any trace of white markings on the wings. Outer tail-feathers with an obscurely defined greenish-white patch about an inch long, at the end of inner web; similar, but successively smaller patches on the second and third feathers, all whiter on upper than lower surface. Fifth quill longest; first shorter than ninth. *Dimensions* (prepared specimen): Total length, 8.20; wing, 3.75; tail, 4.80. Bill: Length from forehead, .73; from nostril, .43. Legs: Tarsus, 1.24; middle toe and claw, 1.10; claw alone, .36; hind toe and claw, .85; claw alone, .50. No. 60,050, Mexico, is similar, in all essential respects. From the analogies of the black *Pipilos*, it is reasonable to consider these two birds as distinct species, or at least varieties, especially as the specimen before us of that with unspotted wings is marked male. The general appearance is otherwise much the same, the unspotted bird rather smaller, and without the dusky interscapular markings described in *macronyx*. Should No. 50,225 represent a distinct species, it may be called *P. chlorosoma*, and distinguished as above. (60,050, Mexico, Boucard.)

²⁰ *Pipilo lateralis* (Natt.). *Emberiza lateralis*, Natt. Mus. Vind. MSS. *Poospiza lat.* Burm. Th. Bras. III, Av. 2, p. 215. *Pipilo superciliosa*, Swains. An. Menag. 311, 95, fig. 59.

B. Sides ashy or tinged with ochraceous; lower tail-coverts ochraceous, not sharply contrasted with white on the abdomen, or else the abdomen concolor with the side. Head never black, and upper parts without light markings (except the wing in *fuscus* var. *albicollis*).

a. Wings and tail olive-green.

6. **P. chlorurus.** Whole pileum (except in young) deep rufous, sharply defined. Whole throat pure white, immaculate, and sharply defined against the surrounding deep ash; a maxillary and a short supraloral stripe of white. Anterior parts of body streaked in young. *Hab.* Western Province of United States.

b. Wings and tail grayish-brown.

7. **P. fuscus.** A whitish or ochraceous patch covering the throat contrasting with the adjacent portions, and bounded by dusky specks. Loes and chin like the throat. *Hab.* Mexico, and United States west of Rocky Mountains. (Five races.)

8. **P. aberti.** Throat concolor with the adjacent portions, and without distinct spots. Loes and chin blackish. *Hab.* Colorado region of Middle Province, United States. (Only one form known.)

SECTION I

Head black

Pipilo erythrophthalmus

After a careful study of the very large collection of Black-headed Pipilos (leaving for the present the consideration of those with olive-green bodies) in the Smithsonian Museum, we have come finally to the conclusion that all the species described as having the scapulars and wing-coverts spotted with white—as *arcticus*, *oregonus*, and *megalonyx*, and even including the differently colored *P. maculatus* of Mexico—are probably only geographical races of one species, representing in the trans-Missouri region the *P. erythrophthalmus* of the eastern division of the continent. It is true that specimens may be selected of the four races capable of accurate definition, but the transition from one to the other is so gradual that a considerable percentage of the collection can scarcely be assigned satisfactorily; and even if this were possible, the differences after all are only such as are caused by a slight change in the proportion of black, and the varying development of feet and wings.

Taking *maculatus* as it occurs in the central portion of its wide field of distribution, with wing-spots of average size, we find these spots slightly bordered, or at least often, with black, and the primaries edged externally with white only towards the end. The exterior web of lateral tail-feather is edged mostly with white; the terminal white patches of outer feather about an inch long; that of inner web usually separated from the outer by a black shaft-streak. In more northern specimens the legs are more dusky than usual. The tail is variable, but longer generally than in the other races. The claws are enormously large in many, but not in all specimens, varying considerably; and the fourth primary is usually longest, the first equal to or shorter than the secondaries. This is the race described as *P. megalonyx*, and characterizes the Middle Province, between the Sierra Nevada of California and the eastern Rocky Mountains, or the great interior basin of the continent; it occurs also near the head of the Rio Grande.

On the Pacific slope of California, as we proceed westward, we find a change in the species, the divergence increasing still more as we proceed northward, until in Oregon and Washington the

extreme of range and alteration is seen in *P. oregonus*. Here the claws are much smaller, the white markings restricted in extent so as to form quite small spots bordered externally by black; the spots on the inner webs of tail much smaller, and even bordered along the shaft with black, and the outer web of the lateral entirely black, or with only a faint white edging. The concealed white of the head and neck has disappeared also.

Proceeding eastward, on the other hand, from our starting-point, we find another race, in *P. arcticus*, occupying the western slope of the Missouri Valley and the basin of the Saskatchewan, in which, on the contrary, the white increases in quantity, and more and more to its eastern limit. The black borders of the wing-patches disappear, leaving them white externally; and decided white edgings are seen for the first time at the bases of primaries, as well as near their ends, the two sometimes confluent. The terminal tail-patches are larger, the outer web of the exterior feather is entirely white except toward the very base, and we thus have the opposite extreme to *P. oregonus*. The wings are longer; the third primary longest; the first usually longer than the secondaries or the ninth quill.

Finally, proceeding southward along the table-lands of Mexico, and especially on their western slope, we find *P. maculatus* (the first described of all) colored much like the females of the more northern races, except that the head and neck are black, in decided contrast to the more olivaceous back. The wing formula and pattern of markings are much like *megalonyx*, the claws more like *arcticus*. Even in specimens of *megalonyx*, from the southern portion of its area of distribution, we find a tendency to an ashy or brownish tinge on the rump, extending more or less along the back; few, if any indeed, being uniformly black.

As, however, a general expression can be given to the variations referred to, and as they have an important geographical relationship, besides a general diagnosis, we give their characters and distribution in detail.

The general impression we derive from a study of the series is that the amount of white on the wing and elsewhere decreases from the Missouri River to the Pacific, exhibiting its minimum in Oregon and Washington, precisely as in the small black Woodpeckers; that in the Great Basin the size of the claws and the length of tail increases considerably; that the northern forms are entirely black, and the more southern brown or olivaceous, except on the head.

The following synopsis will be found to express the principal characteristics of the species and their varieties, premising that *P. arcticus* is more distinctly definable than any of the others. We add the character of the green-bodied Mexican species to complete the series.

Synopsis of Varieties

I. *P. erythrophthalmus*

1. Wing, 3.65; tail, 4.20. Outer tail-feather with terminal half of inner web white. Iris bright red, sometimes paler. *Hab.* Eastern Province United States. (Florida in winter.) ... var. *erythrophthalmus*.

2. Wing, 2.90; tail, 3.75. Outer tail-feather with only terminal fourth of inner web white. Iris white. *Hab.* Florida (resident) ... var. *alleni*.

II. *P. maculatus*

A. Interscapulars with white streaks.

a. Outer webs of primaries not edged with white at the base.

1. Above olive-brown, the head and neck, only, continuous black; back streaked with black. White spots on wing-coverts not bordered externally with black. Wing, 3.25; tail, 4.00; hind claw, .44. *Hab.* Table-lands of Mexico ... var. *maculatus*.²¹

2. Above black, tinged with olive on rump, and sometimes on the nape. White spots as in last. Inner web of lateral tail-feathers with terminal white spot more than one inch long; outer web broadly edged with white. Wing, 3.45; tail, 4.10; hind claw, .55. *Female* less deep black than male, with a general slaty-olive cast. *Hab.* Middle Province of United States, from Fort Tejon, California, to Upper Rio Grande, and from Fort Crook to Fort Bridger ... var. *megalonyx*.

3. Above almost wholly black, with scarcely any olive tinge, and this only on rump. White spots restricted, and with a distinct black external border. White terminal spot on inner web of lateral tail-feather less than one inch long; outer web almost wholly black. Wing, 3.40; tail, 3.90; hind claw, .39. *Female* deep umber-brown, instead of black. *Hab.* Pacific Province of United States, south to San Francisco; West Humboldt Mountains ... var. *oregonus*.

b. Outer webs of primaries distinctly edged with white at base.

4. Above black, except on rump, which is tinged with olivaceous. White spots very large, without black border. Inner web of lateral tail-feather with terminal half white, the outer web almost wholly white. Wing, 3.50; tail, 3.90; hind claw, .39. *Female* umber-brown, replacing black. *Hab.* Plains between Rocky Mountains and the Missouri; Saskatchewan Basin ... var. *arcticus*.

B. Interscapulars without white streaks.

5. Above dusky olive; white spots on scapulars and wing-coverts small, and without black edge. Tail-patches very restricted (outer only .40 long). No white on primaries. Wing, 2.85; tail, 3.10. *Female* scarcely different. *Hab.* Socorro Island, off west coast of Mexico ... var. *carmani*.²²

²¹ *Pipilo maculatus*, Swainson, Philos. Mag., 1827.

²² *Pipilo carmani*, Baird, MSS.; Lawrence, Ann. N. Y. Lyc. X, 7. (Specimens in collection made by Colonel A. J. Grayson.)

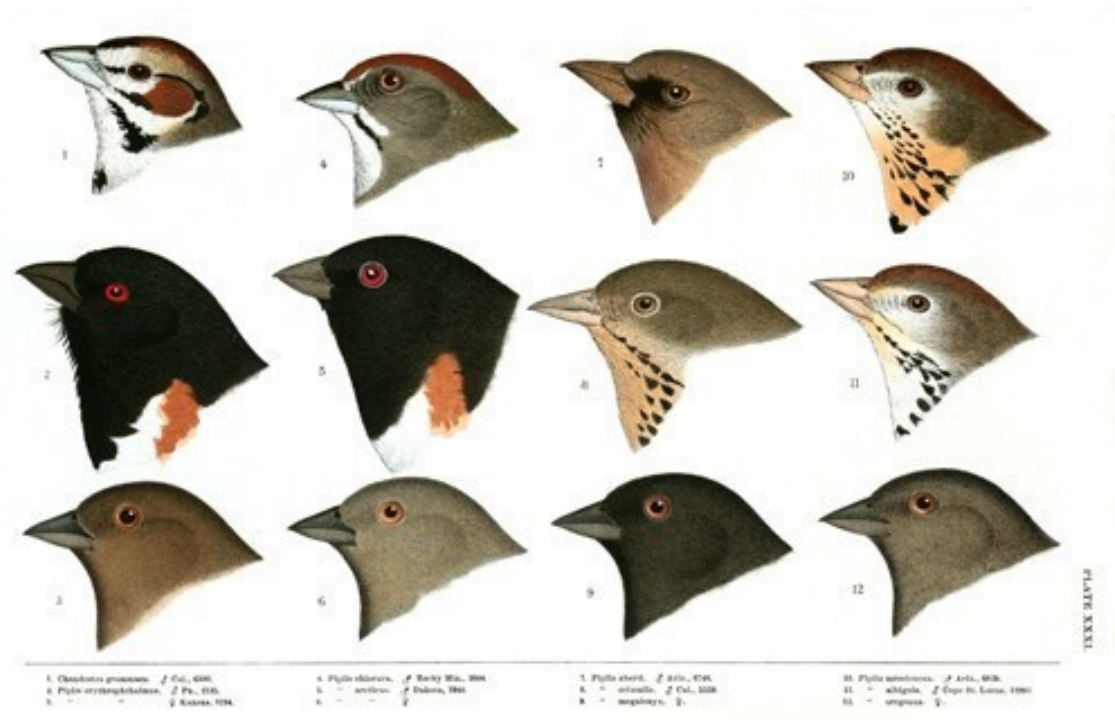


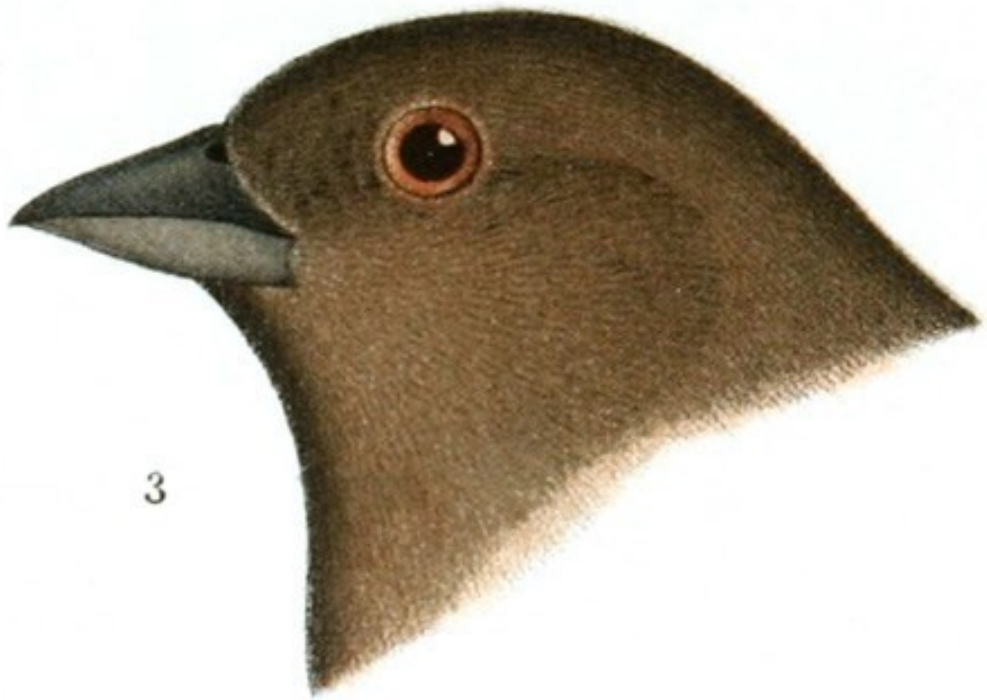
PLATE XXXI.



1. *Chondestes grammacus*. ♂ Cal., 6300.



2. *Pipilo erythrophthalmus*. ♂ Pa., 2135.



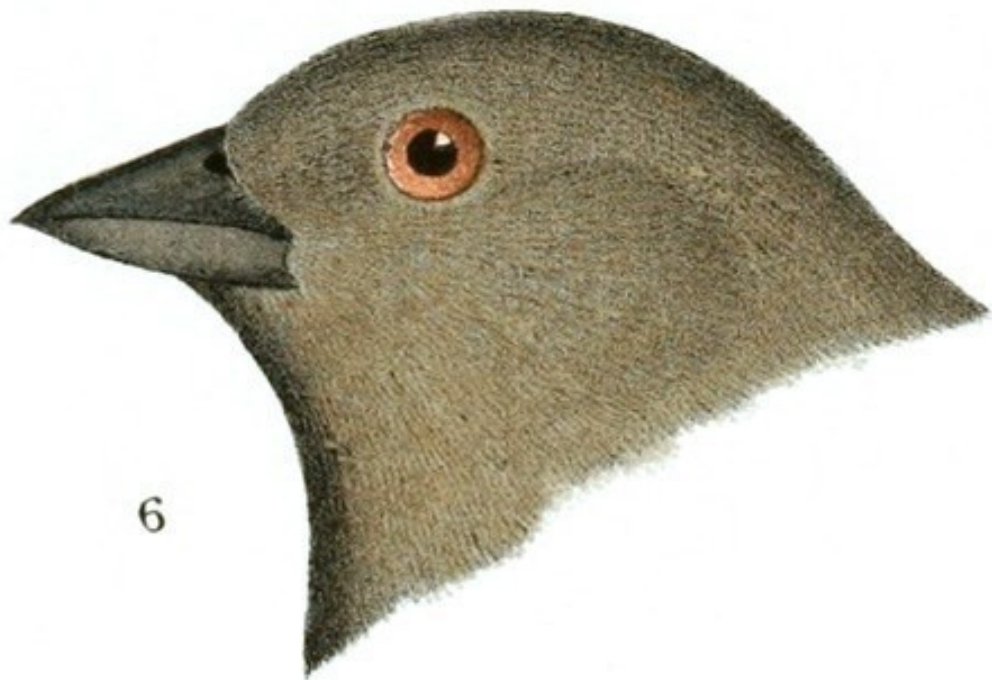
3. *Pipilo erythrophthalmus*. ♀ Kansas, 8194.



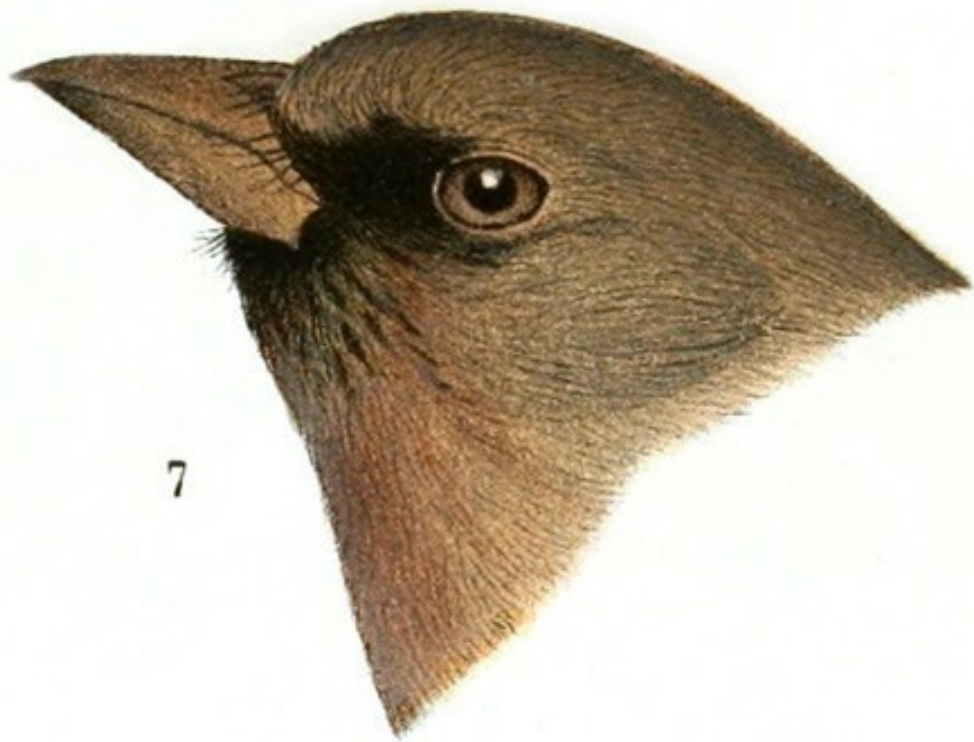
4. *Pipilo chlorura*. ♂ Rocky Mts., 2644.



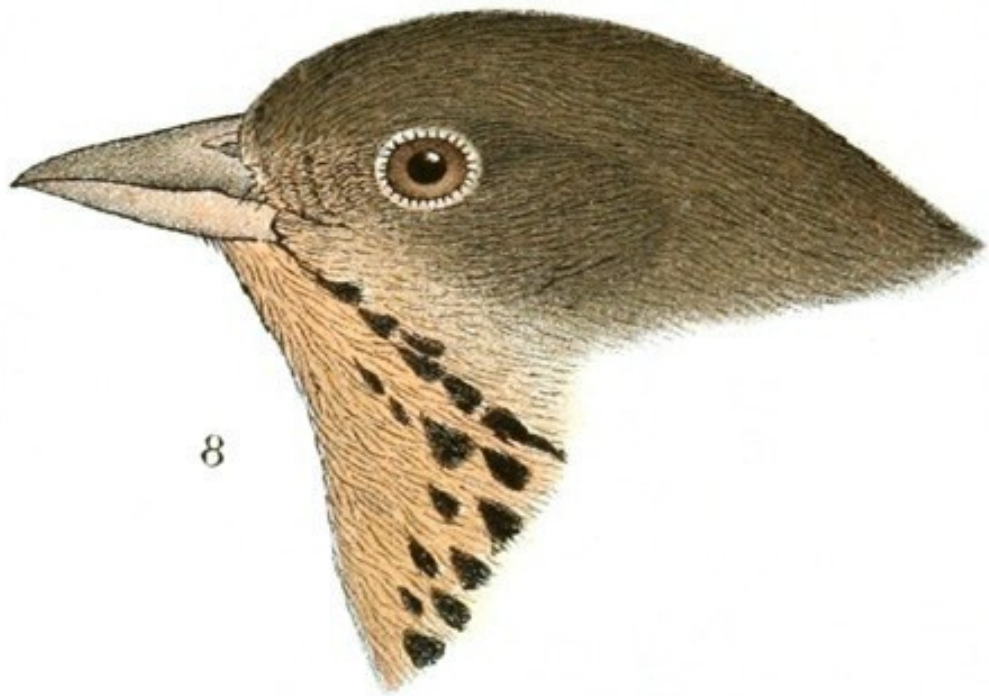
5. *Pipilo arcticus*. ♂ Dakota, 1944.



6. *Pipilo arcticus*. ♀.



7. *Pipilo aberti*. ♂ Ariz., 6748.



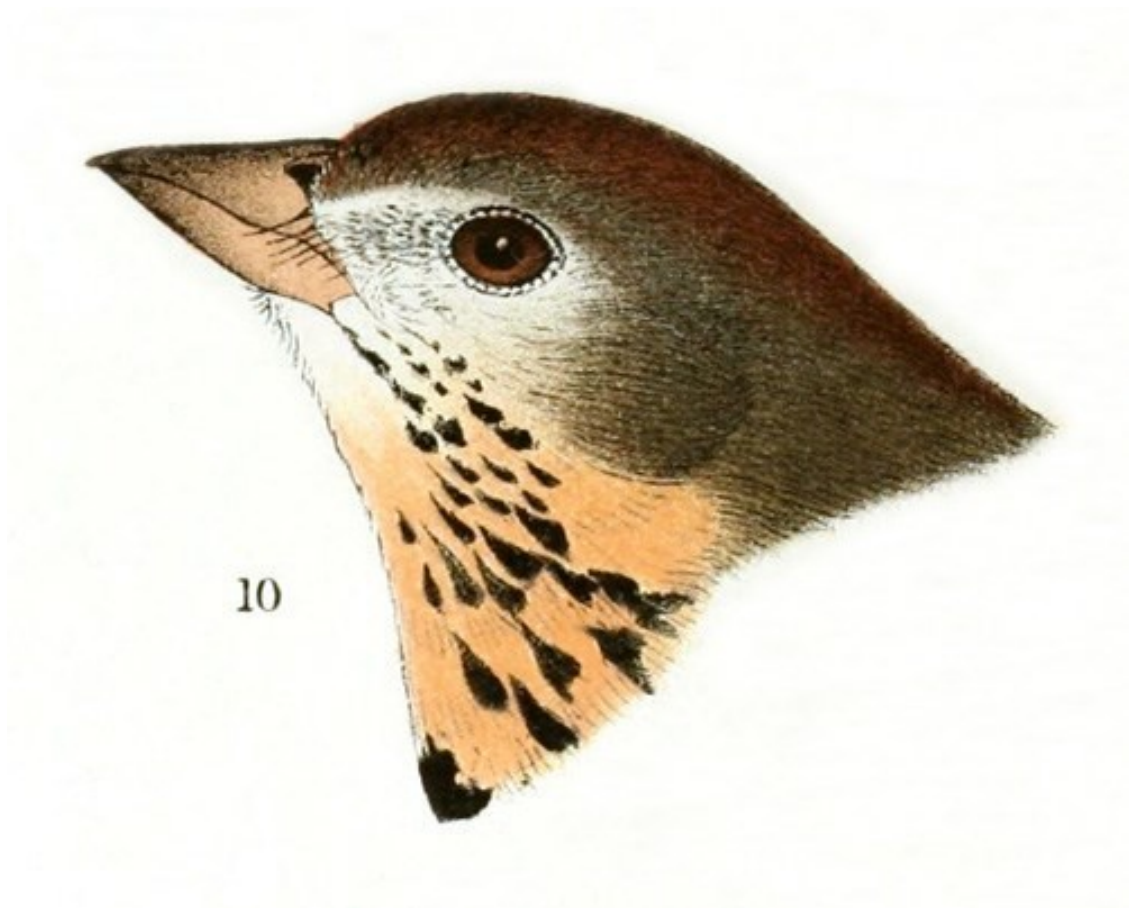
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8. *Pipilo crissalis*. ♂ Cal., 5559.

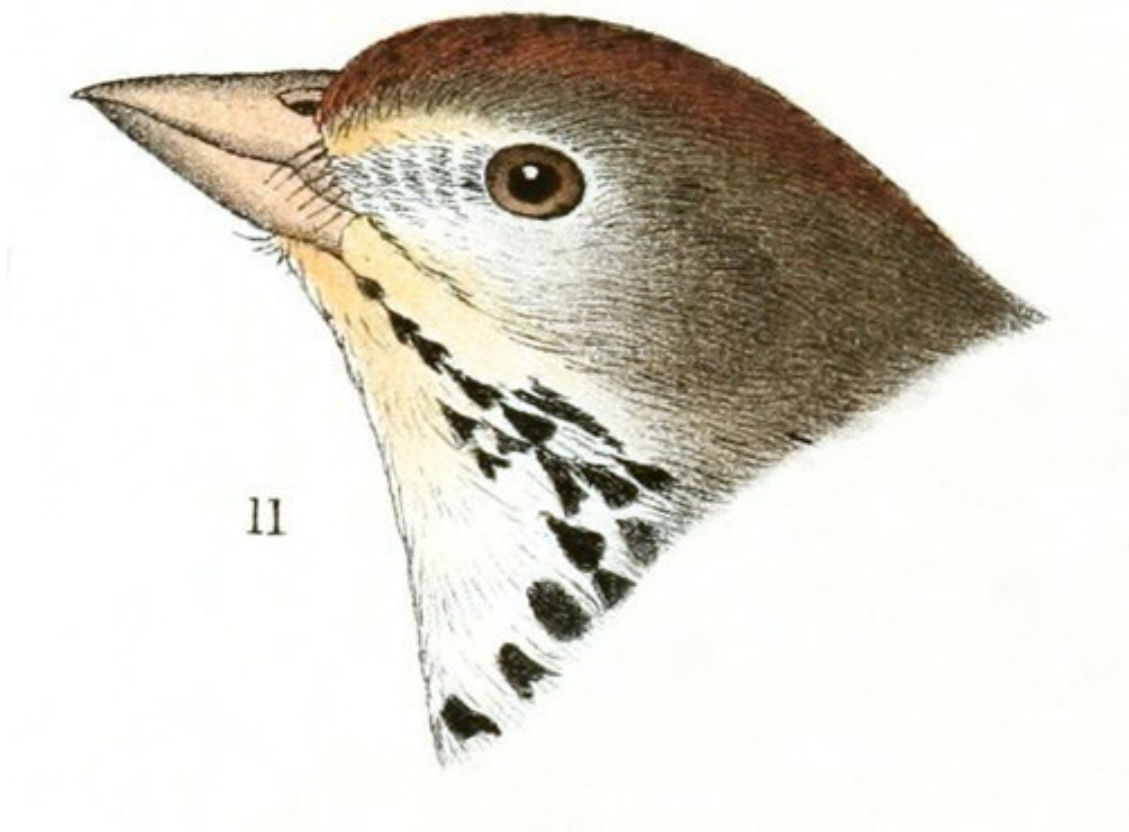


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9. *Pipilo megalonyx*. ♀.



10. *Pipilo mesoleucus*. ♂ Ariz., 6829.



11. *Pipilo albigula*. ♂ Cape St. Lucas, 12993.

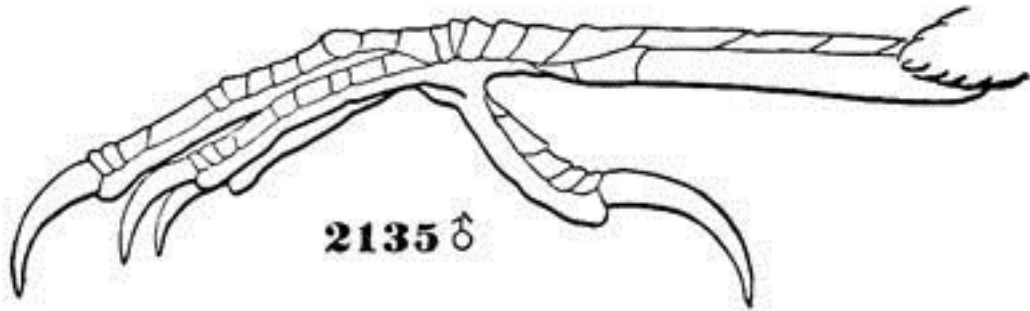


12. *Pipilo oregonus*. ♀.

Pipilo erythrophthalmus, Vieillot

GROUND ROBIN; TOWHEE; CHEWINK

Fringilla erythrophthalma, Linn. Syst. Nat. I, 1766, 318.—Aud. Orn. Biog. I, 1832, 151; V, 511, pl. xxix. *Emberiza erythrophthalma*, Gm. Syst. Nat. I, 1788, 874.—Wilson, Am. Orn. VI, 1812, 90, pl. liii. *Pipilo erythrophthalmus*, Vieill. Gal. Ois. I, 1824, 109, pl. lxxx.—Bon. List, 1838.—Ib. Conspectus, 1850, 487.—Aud. Syn. 1839, 124.—Ib. Birds Am. III, 1841, 167, pl. cxcv.—Baird, Birds N. Am. 1858, 512.—Samuels, 333. *Pipilo ater*, Vieill. Nouv. Dict. XXXIV, 1819, 292. *Towhee Bird*, Catesby, Car. I, 34. *Towhee Bunting*, Latham, Syn. II, I, 1783, 199.—Pennant, II, 1785, 359.



2135 ♂

Sp. Char. Upper parts generally, head and neck all round, and upper part of the breast, glossy black, abruptly defined against the pure white which extends to the anus, but is bounded on the sides and under the wings by light chestnut, which is sometimes streaked externally with black. Feathers of throat white in the middle. Under coverts similar to sides, but paler. Edges of outer six primaries with white at the base and on the middle of the outer web; inner two tertiaries also edged externally with white. Tail-feathers black; outer web of the first, with the ends of the first to the third, white, decreasing from the exterior one. Outermost quill usually shorter than ninth, or even than secondaries; fourth quill longest, fifth scarcely shorter. Iris red; said to be sometimes paler, or even white, in winter. Length, 8.75; wing, 3.75; tail, 4.10. Bill black, legs flesh-color. *Female* with the black replaced by a rather rufous brown.

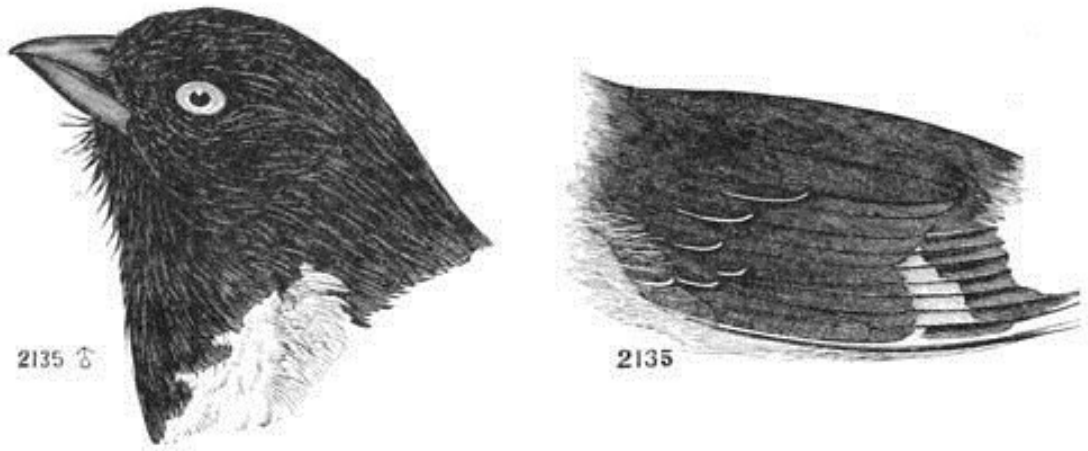
Hab. Eastern United States to the Missouri River; Florida (in winter).

The tail-feathers are only moderately graduated on the sides; the outer about .40 of an inch shorter than the middle. The outer tail-feather has the terminal half white, the outline transverse; the white of the second is about half as long as that of the first; of the third half that of the second. The chestnut of the sides reaches forward to the black of the neck, and is visible when the wings are closed.

A young bird has the prevailing color reddish-olive above, spotted with lighter; beneath brownish-white, streaked thickly with brown.

The description above given may be taken as representing the average of the species in the Northern and Middle States. Most specimens from the Mississippi Valley differ in having the two white patches on the primaries confluent; but this feature is not sufficiently constant to make it worthy of more than passing notice, for occasionally western specimens have the white spaces separated,

as in the majority of eastern examples, while among the latter there may, now and then, be found individuals scarcely distinguishable from the average of western ones.



Pipilo erythrophthalmus.

2135 ♂

In Florida, however, there is a local, resident race, quite different from these two northern styles, which are themselves not enough unlike to be considered separately. This Florida race differs in much smaller size, very restricted white on both wing and tail, and in having a yellowish-white instead of blood-red iris. Further remarks on this Florida race will be found under its proper heading (p. 708), as *P. erythrophthalmus*, var. *alleni*.

Specimens of *erythrophthalmus*, as restricted, from Louisiana, as is the case with most birds from the Lower Mississippi region, exhibit very intense colors compared with those from more northern portions, or even Atlantic coast specimens from the same latitude.

Habits. The Ground Robin, Towhee, Chewink, Charee, or Joreet, as it is variously called, has an extended distribution throughout the eastern United States, from Florida and Georgia on the southeast to the Selkirk Settlements on the northwest, and as far to the west as the edge of the Great Plains, where it is replaced by other closely allied races. It breeds almost wherever found, certainly in Georgia, and, I have no doubt, sparingly in Florida.

This bird was not observed in Texas by Mr. Dresser. It has been found in Western Maine, where it is given by Mr. Verrill as a summer visitant, and where it breeds, but is not common. It arrives there the first of May. It is not given by Mr. Boardman as occurring in Eastern Maine. In Massachusetts it is a very abundant summer visitant, arriving about the last of April, and leaving about the middle of October. It nests there the last of May, and begins to sit upon the eggs about the first of June. It is slightly gregarious just as it is preparing to leave, but at all other times is to be met with only in solitary pairs.

The Ground Robin is in many respects one of the most strongly characterized of our North American birds, exhibiting peculiarities in which all the members of this genus share to a very large degree. They frequent close and sheltered thickets, where they spend a large proportion of their time on the ground among the fallen leaves, scratching and searching for worms, larvæ, and insects. Though generally resident in retired localities, it is far from being a shy or timid bird. I have known it to show itself in a front yard, immediately under the windows of a dwelling and near the main street of the village, where for hours I witnessed its diligent labors in search of food. The spot was very shady, and unfrequented during the greater part of the day. It was not disturbed when the members of the family passed in or out.

The call-note of this bird is very peculiar, and is variously interpreted in different localities. It has always appeared to me that the Georgian *jo-rēēt* was at least as near to its real notes as *tow-hēē*. Its song consists of a few simple notes, which very few realize are those of this bird. In singing, the male is usually to be seen on the top of some low tree. These notes are uttered in a loud voice, and are not unmusical. Wilson says its song resembles that of the Yellow-Hammer of Europe, but is more varied and mellow. Nuttall speaks of its notes as simple, guttural, and monotonous, and of its voice as clear and sonorous. The song, which he speaks of as quaint and somewhat pensive, he describes as sounding like *t'sh'd-wītee-tě-tě-tě-tě*.

Wilson says this bird is known in Pennsylvania as the "Swamp Robin." If so, this is a misnomer. In New England it has no predilection for low or moist ground; and I have never found it in such situations. Its favorite haunts are dry uplands, near the edges of woods, or high tracts covered with a low brushwood, selecting for nesting-places the outer skirts of a wood, especially one of a southern aspect. The nest is sunk in a depression in the ground, the upper edges being usually just level with the ground. It is largely composed of dry leaves and coarse stems as a base, within which is built a firmer nest of dry bents well arranged, usually with no other lining. It is generally partially concealed by leaves or a tuft of grass, and is not easily discovered unless the female is seen about it.

Dr. Coues says these Buntings are chiefly spring and autumnal visitants near Washington, only a few breeding. They are very abundant from April 25 to May 10, and from the first to the third week of October, and are partially gregarious. Their migrations are made by day, and are usually in small companies in the fall, but singly in the spring. Wilson found them in the middle districts of Virginia, and from thence south to Florida, during the months of January, February, and March. Their usual food is obtained among the dry leaves, though they also feed on hard seeds and gravel. They are not known to commit any depredations upon harvests. They may be easily accustomed to confinement, and in a few days will become quite tame. When slightly wounded and captured, they at first make a sturdy resistance, and bite quite severely. They are much attached to their young, and when approached evince great anxiety, the female thrusting herself forward to divert attention by her outcries and her simulated lameness.

The eggs of this species are of a rounded-oval shape, and have a dull-white ground, spotted with dots and blotches of a wine-colored brown. These usually are larger than in the other species, and are mostly congregated about the larger end, and measure .98 of an inch in length by .80 in breadth.

***Pipilo erythrophthalmus*, var. *alleni*, Coues**

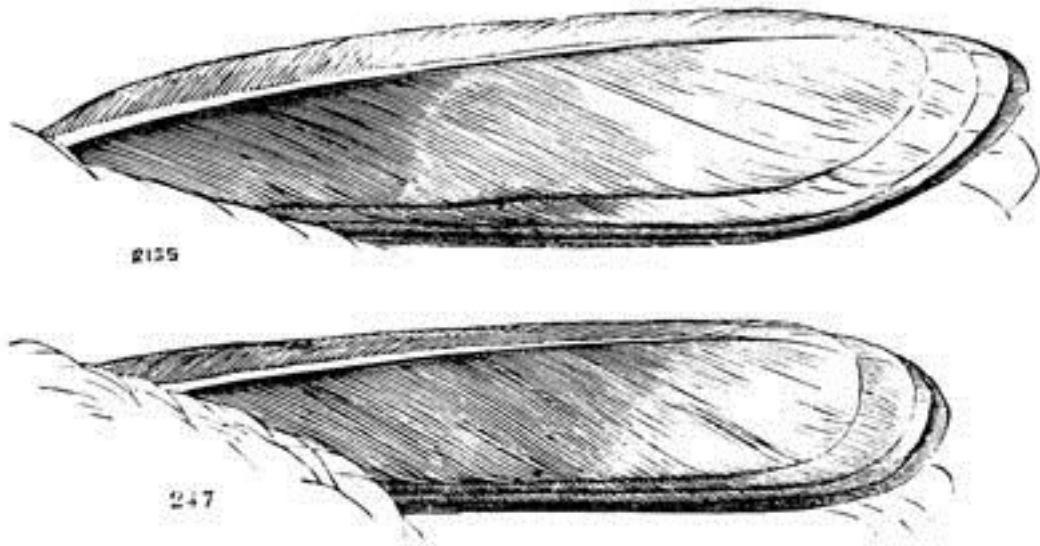
WHITE-EYED CHEWINK; FLORIDA CHEWINK

Pipilo alleni, Coues, American Naturalist, V, Aug. 1871, 366.

Sp. Char. Similar to *erythrophthalmus*, but differing in the following respects: White spaces on wings and tail much restricted, those on inner webs of lateral tail-feathers only .50 to .75 long. Size very much smaller, except the bill, which is absolutely larger. Iris white.

♂. (55,267, Dummits's Grove, Florida, March, 1869.) Length, 7.75; wing, 3.00; tail, 3.75; bill from nostril, .38; tarsus, .97.

♀. (55,271, same locality and date.) Wing, 3.00; tail, 3.50; bill from nostril, .37; tarsus, .91. White on primaries almost absent.



Pipilo erythrophthalmus.
2135, 247,
var. *alleni*.

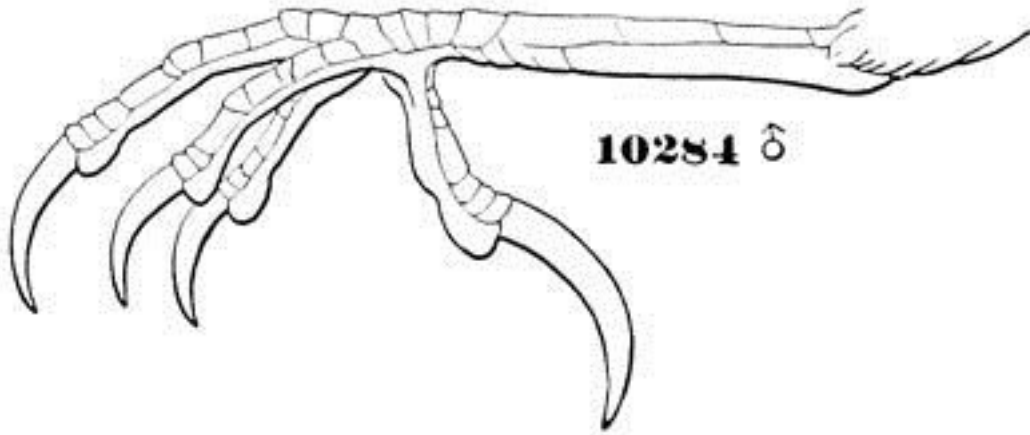
This interesting variety of *Pipilo erythrophthalmus* was found in Florida, in the spring of 1869, by Mr. C. J. Maynard, and probably represents the species as resident in that State. It is considerably smaller than the average (length, 7.75; extent, 10.00; wing, 3.00; tarsus, .95), and has very appreciably less white on the tail. The outer web of outer feather is only narrowly edged with white, instead of being entirely so to the shaft (except in one specimen), and the terminal white tip, confined to the inner web, is only from .50 to .75 of an inch long, instead of 1.25 to 1.75, or about the amount on the second feather of northern specimens, as shown in the accompanying figures. There is apparently a greater tendency to dusky streaks and specks in the rufous of the side of the breast or in the adjacent white. Resident specimens from Georgia are intermediate in size and color between the northern and Florida races.

The bill of Mr. Maynard's specimen is about the size of that of more northern ones; the iris is described by him as pale yellowish-white, much lighter than usual.

Pipilo maculatus,²³ var. megalonyx, Baird

LONG-CLAWED TOWHEE BUNTING

Pipilo megalonyx, Baird, Birds N. Am. 1858, 515, pl. lxxiii.—Heerm. X, S, 51 (nest).—Cooper, Orn. Cal. I, 242.



10284 ♂

Sp. Char. Similar to *P. arcticus* in amount of white on the wings and scapulars, though this frequently edged with black, but without basal white on outer web of primaries. Outer edge of outer web of external tail-feather white, sometimes confluent with that at tip of tail. Concealed white spots on feathers of side of neck. Claws enormously large, the hinder longer than its digit; the hind toe and claw reaching to the middle of the middle claw, which, with its toe, is as long as or longer than the tarsus. Inner lateral claw reaching nearly to the middle of middle claw. Length, 7.60; wing, 3.25; hind toe and claw, .90. *Female* with the deep black replaced by dusky slaty-olive.

Hab. Southern coast of California and across through valleys of Gila and Rio Grande; north through the Great Basin across from Fort Crook, California, to Fort Bridger, Wyoming.

This form constitutes so strongly marked a variety as to be worthy of particular description. The general appearance is that of *P. arcticus*, which it resembles in the amount of white spotting on the wings. This, however, does not usually involve the whole outer web at the end, but, as in *oregonus*, has a narrow border of black continued around the white terminally and sometimes externally. There is not quite so much of a terminal white blotch on the outer tail-feather, this being but little over an inch in length, and the outer web of the same feather is never entirely white, though always with an external white border, which sometimes is confluent with the terminal spot, but usually leaves a

²³ *Pipilo maculatus*, Swainson. Sp. Char. *Male*. Similar to the female of *Pipilo arcticus*, but rather more olivaceous; only the head and neck all round black; shading above insensibly into the back. The white markings mostly edged narrowly externally with black, and clouded with rusty; the nape-feathers faintly, the interscapular broadly, streaked centrally with blackish; lower back and rump, with outer edges of quill and tail feathers, olivaceous-brown. A narrow shaft-streak in white at end of tail. Fourth quill longest; fifth scarcely shorter; first about equal to secondaries. Claws moderate; perhaps larger than in *erythrophthalmus*. Length of skin, 7.80; wing, 3.15; tail, 4.20; tarsus, 1.10; middle toe and claw, .96; claw alone, .34; hind toe and claw, .81; claw alone, .45. *Hab.* Mexico (Oaxaca; Real del Monte, Philos. Mag., 1827). It is a serious question whether this comparatively little known Mexican species of *Pipilo* is not to be considered as identical with some or all of the species of the United States, with spotted wing-coverts, notwithstanding the difference in the color of the body. It appears, however, to be constant in the olivaceous character of the back,—no reference being made to Mexican specimens entirely black above,—and as such it may be considered a permanent geographical race.

brown streak near the end never seen in *arcticus*, which also has the whole outer web white except at the base. From *oregonus* the species differs in the much greater amount of white on the wings and the less rounded character of the spots. *Oregonus*, too, has the whole outer web of external tail-feather black, and the terminal white spot of the inner web less than an inch in length. We have never seen in *oregonus* any concealed white spotting on the sides of the head.

The greatest difference between this race and the two others lies in the stout tarsi and enormously large claws, as described, both the lateral extending greatly beyond the base of the middle one, the hinder toe and claw nearly as long as the tarsus. The only North American passerine birds having any approach to this length of claw are those of the genus *Passerella*.

This great development of the claws is especially apparent in specimens from the Southern Sierra Nevada, the maximum being attained in the Fort Tejon examples; those from as far north as Carson City, Nev., however, are scarcely smaller. In most Rocky Mountain Pipilos, the claws are but little longer than in *arcticus*.

In this race the female is not noticeably different from the male, being of a merely less intense black,—not brown,—and conspicuously different as in *arcticus* and *oregonus*; there is, however, some variation among individuals in this respect, but none are ever so light as the average in the other races.

The young bird is dusky-brown above, with a slight rusty tinge, and obsolete streaks of blackish. White markings as in adult, but tinged with rusty. Throat and breast rusty-white, broadly streaked with dusky; sides only tinged with rufous.

Habits. According to Mr. Ridgway's observations, the *P. megalonyx* replaces in the Rocky Mountain region and in the greater portion of the Great Basin the *P. arcticus* of the Plains, from their eastern slope eastward to the Missouri River, and the *P. oregonus* of the Northern Sierra Nevada and Pacific coast. It is most nearly related to the latter. He became familiar with the habits of this species near Salt Lake City, having already made like observations of the *oregonus* at Carson. A short acquaintance with the former, after a long familiarity with the latter, enabled him to note a decided difference in the notes of the two birds, yet in their external appearance they were hardly distinguishable, and he was at first surprised to find the same bird apparently uttering entirely different notes, the call-note of *P. megalonyx* being very similar to that of the common Catbird. The song of this species, he adds, has considerable resemblance in style to that of the eastern *P. erythrophthalmus*, and though lacking its musical character, is yet far superior to that of *P. oregonus*. This bird is also much less shy than the western one, and is, in fact, quite as unsuspecting as the eastern bird.

Nests, with eggs, were found on the ground, among the scrub-oaks of the hillsides, from about the 20th of May until the middle of June.

This species has been obtained on the southern coast of California, and through to the valleys of the Gila and the Rio Grande. In California it was obtained near San Francisco by Mr. Cutts and Mr. Hepburn; at Santa Clara by Dr. Cooper; at Monterey by Dr. Canfield; in the Sacramento Valley by Dr. Heermann; at San Diego by Dr. Hammond; at Fort Tejon by Mr. Xantus; at Saltillo, Mexico, by Lieutenant Couch; in New Mexico by Captain Pope; and at Fort Thorn by Dr. Henry.

Lieutenant Couch describes it as a shy, quiet bird, and as found in woody places.

Dr. Kennerly met with this bird at Pueblo Creek, New Mexico, January 22, 1854. It first attracted his attention early in the month of January, in the Aztec Mountains, along Pueblo Creek. There it was often met with, but generally singly. It inhabited the thickest bushes, and its motions were so constant and rapid, as it hopped from twig to twig, that they found it difficult to procure specimens. Its flight was rapid, and near the ground.

Dr. Cooper speaks of this species as a common and resident bird in all the lower districts of California, and to quite a considerable distance among the mountains. It was also found on the islands of Catalina and San Clemente, distant sixteen miles from the mainland. Though found in New Mexico, Dr. Cooper has met with none in the barren districts between the Coast Range and the Colorado, nor in the valley of the latter.

Their favorite residence is said to be in thickets and in oak groves, where they live mostly on the ground, scratching among the dead leaves in the concealment of the underbrush, and very rarely venturing far from such shelter. They never fly more than a few yards at a time, and only a few feet above the ground. In villages, where they are not molested, they soon become more familiar, take up their abodes in gardens, and build their nests in the vicinity of houses.

Dr. Cooper gives them credit for little musical power. Their song is said to be only a feeble monotonous trill, from the top of some low bush. When alarmed, they have a note something like the mew of a cat. On this account they are popularly known as Catbirds. He adds that the nest is made on the ground, under a thicket, and that it is constructed of dry leaves, stalks, and grass, mingled with fine roots. The eggs, four or five in number, are greenish-white, minutely speckled with reddish-brown, and measure one inch by .70.

Dr. Coues found this species a very abundant and resident species in Arizona. It was rather more numerous in the spring and in the fall than at other times. He found it shy and retiring, and inhabiting the thickest brush. Its call-note is said to be almost exactly like that of our eastern Catbird. He describes its song as a rather harsh and monotonous repetition of four or six syllables, something like that of the *Euspiza americana*. He found females with mature eggs in their ovaries as early as May 5.

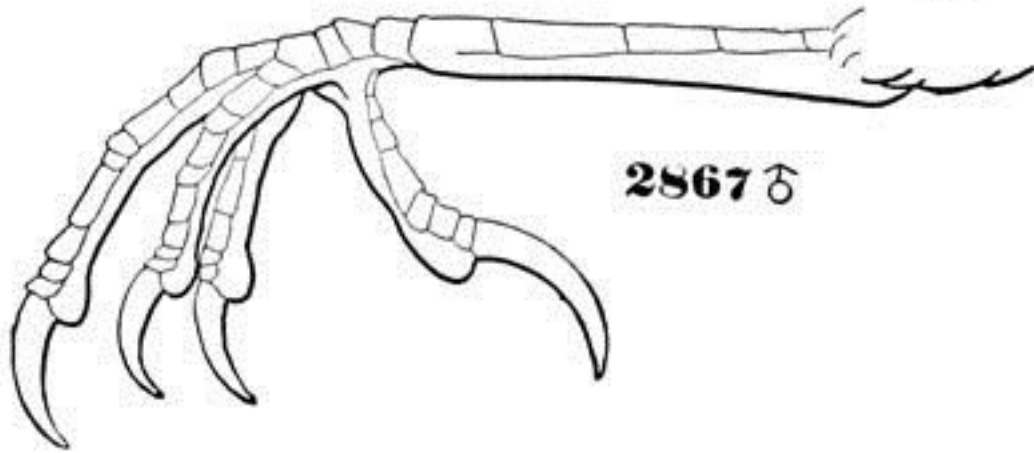
A nest of this species, collected by Mr. Ridgway near Salt Lake City, May 26, was built on the ground, among scrub-oak brush. It is a very slight structure, composed almost entirely of coarse dry stems of grass, with a few bits of coarse inner bark, and with a base made up wholly with the latter material, and having a diameter of about four inches.

The eggs of this nest, four in number, have an average measurement of .95 of an inch in length by .73 in breadth. Their ground-color is crystalline-white, covered very generally with spots and small blotches of purplish and wine-colored brown, somewhat aggregated at the larger end.

Pipilo maculatus, var. oregonus, Bell

OREGON GROUND ROBIN

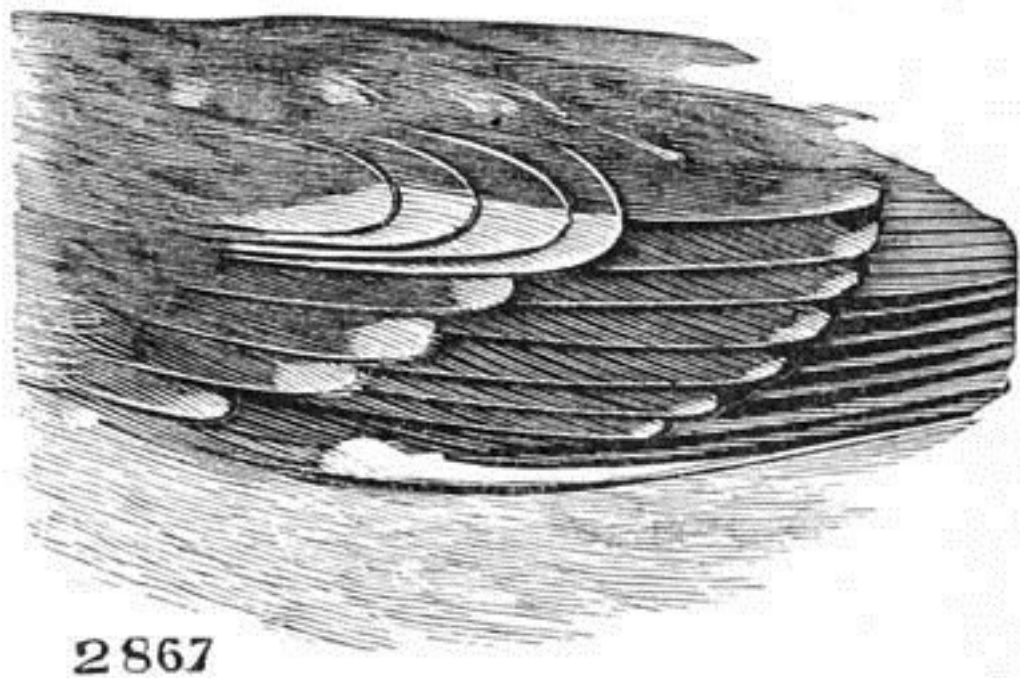
Pipilo oregonus, Bell, Ann. N. Y. Lyc. V, 1852, 6 (Oregon).—Bonap. Comptes Rendus, XXXVII, Dec. 1853, 922.—Ib. Notes Orn. Delattre, 1854, 22 (same as prec.).—Baird, Birds N. Am. 1858, 513.—Lord, Pr. R. A. Inst. IV, 64, 120 (British Col.).—Cooper & Suckley, 200.—Cooper, Orn. Cal. I, 241. *Fringilla arctica*, Aud. Orn. Biog. V, 1839, 49, pl. cccxciv. (not of Swainson). *Pipilo arctica*, Aud. Syn. 1839, 123.—Ib. Birds Am. III, 1841, 164, pl. cxciv.



2867 ♂

Sp. Char. Upper surface generally, with the head and neck all round to the upper part of the breast, deep black; the rest of lower parts pure white, except the sides of the body and under tail-coverts, which are light chestnut-brown; the latter rather paler. The outer webs of scapulars (usually edged narrowly with black) and of the superincumbent feathers of the back, with a rounded white spot at the end of the outer webs of the greater and middle coverts; the outer edges of the innermost tertials white; no white at the base of the primaries. Outer web of the first tail-feather black, occasionally white on the extreme edge; the outer three with a white tip to the inner web. Outer quill shorter than ninth, or scarcely equalling the secondaries; fourth quill longest; fifth scarcely shorter. Length, 8.25; wing, 4.40; tail, 4.00. *Female* with the black replaced by a more brownish tinge. Claws much as in *erythrophthalmus*.

Hab. Coasts of Oregon and Washington Territories, south to San Francisco, California. Melting eastward and south into *megalonyx*. West Humboldt Mountains and Northern Sierra Nevada.



2867

Comparing this race with *arcticus*, we do not find much difference in the white of the scapular region, except that the white marks here, as elsewhere on the wing, are rounded, the extreme end of the outer web of the feather being black instead of running out acutely white to the very tip of the outer webs of the feathers. This gives rather less extension to the white. In fact, most of the white marks are edged externally with black, converting them into spots. There is no white whatever at the exposed base of the outer web of the second to fifth primaries, and there is only a trace of white near the end, instead of having a conspicuous white edging from base to near the tip.

The outer web of the outer tail-feather, instead of being entirely white for the exposed portion, is only very slightly edged with white; usually entirely black. The white at the end of the feathers is much more restricted, and extends only over the three outer feathers; usually not reaching to the shaft. The relations to var. *megalonyx* have been given under the latter head.

Habits. The Oregon Ground Robin, so far as known, has a restricted residence, the western portion of Oregon and Washington Territory during the summer, and in the more northern portions of California. Its occurrence in the latter State seems to have escaped the notice of Dr. Cooper, though he gives it conjecturally, having seen birds which he supposed to be of this species in the higher Sierra Nevada. In its habits and notes Dr. Cooper could observe no difference between this species and *P. megalonyx*, both having the complaining *mew*, from which they have obtained the name of Catbird on that coast.

Mr. J. K. Lord found a nest containing six eggs, which he supposed to belong to a bird of this species, at Fort Colville. It was built on the top of a stump, round which young shoots had grown like a fringe, completely hiding it from the sharpest eye. Mr. Hepburn met with it at Victoria.

Dr. Cooper, in his Report on the Birds of Washington Territory, states that the song of this species in spring, as it sits on a low bush enjoying the sunshine, is like the final trill of the Redwing, or the lisping faint notes of the Cowbird. It is a constant resident of the Territory, but only frequents the edge of the coast in winter. He also mentions finding it about thirty miles south of San Francisco in autumn. Dr. Suckley met with it west of the Cascade Mountains.

In very many respects, in the opinion of Mr. Ridgway, the Oregon Ground Robin very closely resembles the common and familiar eastern "Chewink." There is noticeable in this western representative a peculiar manner of flight, and a predilection for bushy places, closely corresponding with those of the eastern bird. It differs, in the most marked manner, however, in its extreme shyness, and in the total absence of the agreeable and striking notes of the Towhee. The notes of this bird are, he states, of the rudest description, and instead of being familiar and unsuspecting, it is one of the shyest and most difficult to approach of any of the western birds.

He found it quite plentiful about Sacramento, where it inhabits the thickets in company with the western Chat. After crossing the Sierra Nevada it was found more abundant still in the chaparrals of the sheltered ravines on the eastern base of those mountains, as well as in the shrubbery of the river valleys. During the winter it forsakes the former for the latter localities. Eastward this species was found as far as the West Humboldt Mountains, where typical examples were obtained.

At Carson City, early in March, his attention was attracted by the peculiar notes of this *Pipilo*; the bird was sitting on a high rock above the thick chaparral of the hillside, and sharply defined against the sky. It was readily distinguishable by the black of its head and breast, in sharp contrast with the pure white of its lower parts. Every few moments it would raise its head to utter, in a short trill, its rude song. When approached, it would jerk its expanded white-tipped tail, and disappear among the bushes. It was abundant in the chaparrals, on the hillsides, and among the thickets and buffalo-berry bushes along the rivers. The males were in full song, perching, as they sang, on a prominent rock or bush.

Mr. Nuttall met with a nest of this species on the 14th of June. It was built in the shelter of a low undershrub, in a depression scratched out for its reception. It was made of a rather copious lining of

clean wiry grass, with some dead leaves beneath, as a foundation. The eggs were four, nearly hatched, very closely resembling those of the Towhee, thickly spotted over, but more so at the larger end, with very small round and very numerous reddish-chocolate spots. The pair showed great solicitude about their nest, the male, in particular, approaching boldly to scold and lament at the dangerous intrusion.

The Oregon Ground Robin Mr. Lord considered a quaint and restless bird. He found it very abundant from the coast to the summit of the Rocky Mountains, and also very common on Vancouver Island. It arrives the last of April and first of May, and frequents dark woods and thick tangled underbrush. He describes it as stealthy and shy, with a habit of hiding, but its cry usually betrays its place of concealment. This cry he states to be like the squall of the Catbird.

Mr. Townsend found it abundant on the Columbia, where, as he observed, it lived mostly on the ground, or on bushes near the ground, rarely ascending trees. Mr. Audubon gives the measurement of its egg as 1.12 inches in length and .87 in breadth.

The egg of this species is more rounded than are those of this genus generally, and there is but little difference between the two ends. The ground-color is white, with a greenish tinge, and is very generally and profusely spotted with fine markings of reddish and purplish-brown. They measure .95 by .80 of an inch.

Pipilo maculatus, var. arcticus, Swainson

ARCTIC TOWHEE BUNTING

Pyrgita (Pipilo) arctica, Sw. F. Bor.-Am. II, 1831, 260. *Pipilo arcticus*, Nuttall, Man. I, 1832, 589.—Ib., (2d ed.,) 1840, 610.—Bell, Ann. N. Y. Lyc. V, 1852, 7.
—Baird, Birds N. Am. 1858, 514.

Sp. Char. Upper parts generally, with head and neck all round to the upper part of the breast, black; the rump usually tinged with ashy. Middle of breast and of belly white; sides chestnut; under tail-coverts similar, but paler. Entire outer webs of scapulars and of dorsal feathers immediately above them, and of ends of primary and secondary coverts, to the shaft, with edges of outer webs of three innermost tertials, and of the second to the fifth primaries, conspicuously white. Whole outer web of the first and ends of the first to the fourth tail-feathers, white, the amount diminishing not very rapidly. Outermost quill longer than ninth, sometimes than eighth, nearly always exceeding the secondaries; third quill longest; fourth scarcely shorter. Length about 8 inches; wing, 4.40; tail, 4.10; hind toe and claw, .74. *Female* paler brown instead of black; the rufous, seen in *P. erythrophthalmus*, tinged with ashy.

Hab. High central plains of Upper Missouri, Yellowstone, and Platte; basin of Missouri River, especially west, including eastern slope of Rocky Mountains; San Antonio, Texas (Dresser, Ibis, 1865, 492).

P. arcticus is similar in form to *P. erythrophthalmus*, which, however, is readily distinguished by the entire absence of white on the scapulars and wing-coverts. The amount of white on the tail decreases much less rapidly. The differences between it and *P. oregonus* will be found detailed under the head of the latter species.

One specimen (8,193) from Fort Leavenworth, with a few white spots only on the scapulars, may perhaps be considered a hybrid between *arcticus* and *erythrophthalmus*.

In some specimens the interscapulars are edged externally with white. The feathers of throat and sides of head show occasional concealed spots of white about the middle. As in *erythrophthalmus*, the bases of the primaries are white along the outer edge, showing under the primary coverts, sometimes, but perhaps not generally, confluent with the white towards the end of the same web.

The female is of a dull ashy-brown, difficult to describe, but with only a slight tinge of the rufous seen in *P. erythrophthalmus*, which is most distinct on top of head and back. There is an almost inappreciable ashy superciliary stripe.

The young bird resembles in general appearance that of *megalonyx*, but is lighter colored, and with the dusky streaks on the jugulum much narrower. The brown above is as light as in *erythrophthalmus*, but without the reddish cast seen in the latter, and not blackish, as in *megalonyx*.

Habits. The Saskatchewan or Arctic Ground Finch was first met with by Sir John Richardson. It was observed by him only on the plains of the Saskatchewan, where he had no doubt of its breeding, as one specimen was killed late in July. It was said to arrive in that region in the end of May, and to frequent shady and moist clumps of wood. It was generally seen on the ground. Its habits, so far as they were observed, correspond with those of the Towhee Bunting, which it closely resembles in external appearance. It feeds on grubs, and is a solitary and retired, but not a distrustful bird.

Besides its occurrence in the Valley of the Saskatchewan, these birds have often been found on the high central plains of the Upper Missouri, on the Yellowstone and Platte Rivers. Audubon met with it at Fort Union. Dr. Hayden obtained it on the Yellowstone, in August; at Fort Lookout, June 22; at Bijou Hills, from May 1 to the 15th; at Bon Homme Island, May 9. Dr. Cooper obtained it at Fort Laramie in September. Mr. Allen found it in Colorado, where it was more abundant on the foothills than on the plains. He also found this species an abundant inhabitant of the thickets in the valley of the Great Salt Lake, in its habits strongly resembling the common birds of the Eastern States. Though its song is also somewhat similar, its call-note, he adds, is totally different, very nearly resembling that of the Catbird.

Dr. Woodhouse met with but few of these birds either in the Indian Territory or in New Mexico. Mr. Dresser, in November, 1863, when hunting in the Bandera Hills, noticed several of these birds near the camp, and obtained several near San Antonio during the winter. None of these birds appear to have been observed in the Arctic regions beyond the Saskatchewan Plains.

Mr. Nuttall met with this species on the western slopes of the Rocky Mountains, but as he apparently did not appreciate the difference between this form and the *oregonus*, we cannot determine with certainty to which his descriptions apply in all cases. He found it, in manners and habits, the counterpart of our common eastern species, frequenting forests and scratching among the dead leaves among bushes and thickets. He describes it as more shy than the common species. If the nest be invaded, the male shows more boldness, and reiterates his complaints until the cause of his alarm is removed. He speaks of its warble as quaint and monotonous, and very similar to the notes of the Towhee,—but the note of our bird, *towhee*, is never heard west of the mountains. In its stead this bird is said to have a note like the mew of a cat.

The egg of the *arcticus* is oval in shape, and measures one inch in length by .70 in breadth. It has a white ground, but is so generally and so thickly covered with fine dots of umber-brown, intermingled with paler markings of lavender and neutral tints, that the ground can hardly be distinguished.

SECTION II

Head and body above brown; throat with a light patch

Pipilo fuscus, Swainson

Synopsis of the Varieties

Common Characters. Grayish-brown above, with a more or less appreciable rufous tinge on the crown. A patch covering the throat, ochraceous or white, contrasting with the surrounding portions, and encircled more or less completely, especially posteriorly, by dusky spots; lores like the chin. Crissum deep ochraceous, the lower part of abdomen tinged more or less with the same.

A. No trace of white tips to middle wing-coverts. Throat ochraceous.

a. Crown only faintly tinged with rufous.

1. Abdomen pale grayish-brown; throat and lores deep reddish-ochraceous; the deep ochraceous confined posteriorly to lower tail-coverts. Wing, 3.90; tail, 5.00. *Hab.* California ... var. *crissalis*.

2. Abdomen distinctly white centrally, but surrounded by grayish laterally and anteriorly; throat and lores pale ochraceous; deep ochraceous of crissum extending forward over lower part of abdomen. Wing, 3.80; tail, 4.00. *Hab.* Mexico ... var. *fuscus*.²⁴

b. Crown very distinctly rufous.

²⁴ *Pipilo fuscus*, Sw. Phil. Mag. I, 1827, 434 (Temiscaltepec).—Ib. Anim. in Menag. 1838, 347.—Bp. Consp. 1851, 487.—Sclater, P. Z. S. 1856, 304 (Cordova). ? *Kieneria fusca*, Bp. C. R. XL, 1855, 356. Sp. Char. Above dull olive-brown; the top of head having the central portion of feathers tinged (inconspicuously and obscurely) with rufous. Chin and throat pale rufous, bordered by dusky streaks; a single dusky spot in lower part of jugulum. Belly and flanks behind, anal region and crissum, rather darker rufous. Sides grayish-olive, lighter than the back, tingeing the breast, and leaving only a small patch in the centre of under parts white, shading into the surrounding ashy-brown. Fourth and fifth quills longest; first shorter than ninth, or than secondaries. *Dimensions* (prepared specimen): Total length, 7.75; wing, 3.80; tail, 4.20; exposed portion of first primary, 2.30; of longest (measured from exposed base of first primary), 3.03. Bill: Length from forehead, .65; from nostril, .40. Legs: Tarsus, .95; middle toe and claw, 1.00; hind toe and claw, .68; claw alone, .36. *Hab.* Highlands of Mexico. The specimen described is from the city of Mexico, and belongs to Mr. G. N. Lawrence; others before us are from Temiscaltepec (the original locality of Swainson's type), Guadalajara, and Tepic. While admitting the strong probability that the different brown *Pipilos* with rufous throat bordered by black spots, *P. fuscus*, *crissalis*, *mesoleucus*, *albigula*, and probably even *albicollis*, are geographical modifications of the same original type, the large collection before us vindicates the action of those who have referred the California species to that described by Swainson as *fuscus*, and who have distinguished the *P. mesoleucus* from both. The original description of *fuscus* agrees almost exactly with *crissalis*, both actually scarcely separable; while the *mesoleucus*, intermediate in geographical position, is decidedly different from either. The relationships of these different forms will be found expressed in the general diagnosis already given. Two descriptions given by Swainson, copied below, of the *P. fuscus*, differ somewhat from each other, and may not have been taken from the same specimen. The identification of either with *P. mesoleucus* would be a difficult matter; while the first one expresses the peculiar characters of *crissalis* more nearly than any other. The statement of "white beneath," without any qualification, applies better to *mesoleucus* than to others, but the "pale rufous tinge" observable in *crissalis* and *fuscus* is very different from the abruptly defined chestnut cap of *mesoleucus*. *Pipilo fuscus*, Swainson, Phil. Mag. I, 1827, 434. "Gray, beneath paler; throat obscure fulvous, with brown spots; vent ferruginous. Length, 8.00; bill, .70; wings, 3.50; tail, 4.00; tarsi, .90; hind toe and claw, .70." *Hab.* Table land; Temiscaltepec. *Pipilo fuscus*, Swainson, Anim. in Men. 1838, 347. "Grayish-brown above; beneath white; chin and throat fulvous, with dusky spots; under tail-coverts fulvous; tail blackish-brown, unspotted. Bill and legs pale, the latter smaller, and the claws more curved than in any other known species; crown with a pale rufous tinge. Length, 7.50; wings, 3.50; tail, 4.00; tarsus, .90; middle toe and claw the same; hinder toe, .65. Rather smaller than *maculata*."

3. The ochraceous of posterior under parts spreading over whole lower part of abdomen and flanks. Ochraceous of the throat palest anteriorly, the chin and lores being almost white; it spreads over the jugulum also, outside the series of rather scattered dusky spots. Whole breast white. Wing, 3.80; tail, 4.30. *Hab.* Southern Middle Province of United States ... var. *mesoleucus*.

4. The ochraceous of under parts confined to crissum and anal region; ochraceous of the throat palest posteriorly, where it is nearly white, and confined within the encircling series of rather coalesced dusky spots. Abdomen, only, white. Wing, 3.80; tail, 4.20. *Hab.* Cape St. Lucas ... var. *albigula*

B. Middle coverts distinctly, and greater obsoletely, tipped with white. Throat white crossed by an ochraceous band.

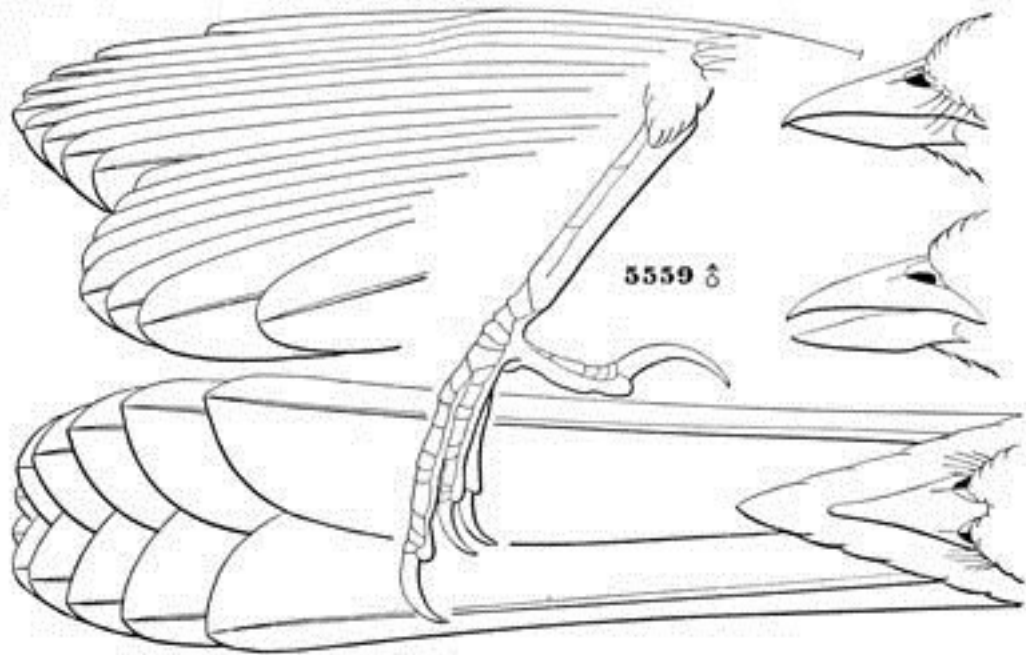
5. Crown without a trace of rufous. Dusky spots surrounding the white gular patch, coalesced posteriorly into a narrow crescent. Whole breast and abdomen white, somewhat broken anteriorly. Flanks and lower tail-coverts ochraceous. Wing, 3.30; tail, 3.70. *Hab.* Mexico ... (var. ?) *albicollis*²⁵

Pipilo fuscus, var. crissalis, Vigors

BROWN TOWHEE; CAÑON FINCH

Pipilo fusca, Cassin, *Illust.* I, IV, 1853, 124, pl. xvii (the figure seems to be of the California species, the description more like *mesoleucus*).—Newberry, *Zoöl. Cal. & Or. Route, Rep. P. R. R.* VI, IV, 1857, 89. *Kieneria fusca*, Bonap. *Comptes Rendus*, XL, 1855, 356. *Fringilla crissalis*, Vigors, *Zoöl. Blossom*, 1839, 19. *Oriturus wrangeli*, Brandt, Bonap. *Comp. Rend.* 43, 1856, 413. *Pipilo fuscus*, Baird, *Birds N. Am.* 1858, 517.—Heerm. X, S, 51 (nest).—Cooper, *Orn. Cal.* I, 245.

²⁵ *Pipilo albicollis*, Sclater. Above uniform olivaceous-brown; the cap not differently colored. Lores, chin, and throat white, the two last bordered and defined by dusky spots; jugulum and breast white, the former clouded with olivaceous, and with a dusky blotch in middle; middle of throat crossed by an olivaceous band which curves round on each side under the ear-coverts; sides grayish. Flanks behind, anal region, and crissum, rufous. Middle wing-coverts with a whitish bar across their tips. Fourth and fifth quills longest; first shorter than ninth and secondaries. Length, 7.00; wing, 3.30; tail, 3.70. Bill and legs light. *Hab.* Central Mexico. This “species” may fairly be considered as one extreme of the series of which *P. crissalis* is the other; and differs from the rest merely in a greater amount of white, and the absence of rufous tinge on top of head. The fulvous of throat is concentrated in a band across its middle portion, leaving chin and lower throat white; this, however, is foreshadowed in the paler chin of *mesoleucus*, and the whitish lower throat of *albigula*. The uniformity of coloring above is nearly equalled by that of *P. crissalis*. The whitish band across the middle wing-coverts is the most positive character.



Pipilo fuscus, var. *crissalis*.
5559 ♂

Sp. Char. Above dark olive-brown, the crown with a very slight tinge of scarcely appreciable dark rufous. Under parts with the color somewhat similar, but of a lighter shade, and washed with grayish; middle of the belly only whitish; the under tail-coverts pale rufous, shading into lighter about the vent and sides of lower belly; chin and throat well-defined pale rufous, margined all round by brown spots, a few of them scattered within the margin. Eyelids and sides of head, anterior to the eye, rufous like the throat. One or two feathers on the lower part of the breast with a concealed brown blotch. Outer primary not edged with white. Fifth quill longest; first shorter than ninth, or even than secondaries. Bill pale brown, darker above; legs light. Length, 8.50 inches; wing, 4.00; tail, 4.60.

Hab. Coast region of California.

The bill is sinuated, as in *P. aberti*, differing from that of *P. erythrophthalmus*.

This race is very similar to the original *P. fuscus* of Mexico, the original description of Swainson answering almost exactly. It is, however, considerably larger; the proportions of wing are similar; and there is no decided indication of whitish in the middle of the body beneath, such as is always distinctly appreciable in *fuscus*, and still more in *mesoleucus*.

A young bird differs but little from the adult except in having obsolete dusky streaks below; the upper parts are uniform.

Habits. The Brown, or Cañon Finch of California is found nearly throughout the State of California. Mr. Xantus obtained it at Fort Tejon, and Mr. Ridgway observed it among the chaparrals on the foothills of the western slope of the Sierras.

Dr. Cooper considers the name of Cañon Finch ill applied to this species, as it is equally plentiful in level districts, wherever trees and shrubbery exist. He regards it as one of the most abundant and characteristic birds of California, residing in all the lower country west of the Sierras, and extending up the slopes of the Coast Range to the height of three thousand feet. They are said to have habits very similar to those of all the other species, living much upon the ground, and seeking their food among the dead leaves, which they greatly resemble in color. This resemblance Dr. Cooper regards as a great protection to them from Hawks; their hues also correspond with those of the earth

and the dusky foliage during most of the year. They are thus less conspicuous in the light, and they venture more fearlessly forth and feed in open grounds.

They have but little song, and only utter a few faint chirps and hurried notes, as they sit perched upon some low bush, in the spring. At San Diego Dr. Cooper saw the first nest with eggs on April 17, but some birds had laid much earlier, as he found young hatched by the 20th. He afterwards observed other nests, all of which were built in bushes, from two to four feet from the ground, and all but one contained three eggs; the other had four. He has found them built in low trees, and one in a vine growing over the porch of a house. The nest is formed of coarse twigs, bark, and grass, is thick and large, and is lined with fine root-fibres and finer grasses. The eggs are pale blue, spotted with purplish-brown blotches, mostly small and scattered. He gives the measurement of the eggs as .90 by .65 of an inch. In the more northern part of the State they are said to lay four eggs oftener than three. They are supposed by him to have two broods in a season.

Colonel McCall has no doubt that they are found throughout California, as he has met with them from the upper waters of the Sacramento to the mouth of the Gila; the former having its origin in the extreme north, and the latter touching the extreme southern boundary of the State. It is most abundant south of Santa Barbara.

Colonel McCall states that its habits and manners differ somewhat from those of the common Towhee and the Arctic Finches. Its flight is more even and regular, and is without that violent jerking of the tail from side to side, which gives such a singular appearance of awkwardness to the movements of the Towhee. It is less shy and suspicious than the Arctic. It is also much less decidedly a Ground Finch than either of the others. Its favorite abode he found to be the vicinity of watercourses, where it is generally to be seen in pairs, though he has, at times, surprised eight or ten together under the shade of a large bush at noon in a summer day, when he has had no difficulty in procuring three or four specimens before the party dispersed. It is at all times a familiar bird, boldly coming into the roads to feed, and permitting a close approach. If compelled to retreat, it darts suddenly into the thicket, but returns as soon as the cause of alarm has disappeared. Near Santa Barbara he found thirty or forty of these birds, in the month of July, dispersed over an old field of some five acres in extent, contiguous to a sea-beach, through which flowed a small stream of fresh water. They were feeding on the ground, sheltered by a rank growth of weeds. When one was flushed it flew into a neighboring tree instead of seeking shelter again in the weeds. The young at that time were fully fledged, and scarcely differed in the color of their plumage from the adults.

Dr. Heermann once met with a nest of this bird built in a grapevine overhanging the Sacramento River. He describes the eggs of this species as differing entirely from any of this genus he had ever met with, and as having so great a resemblance to the eggs of the three different species of Blackbirds inhabiting California that they were liable to be confounded with them unless marked when taken from the nest.

Dr. Newberry, who found this bird very common in the Sacramento Valley, states that when he first met with it, a strange bird to him, its habit of scratching among the dry leaves under the bushes, as well as its long tail and jerking flight from one clump of bushes to another, at once indicated to him its affinities.

Among the memoranda made by Mr. Xantus at Fort Tejon are the following in reference to this species: "474, nest and two eggs, found May 19 on a small thorn-bush in a very dark thicket, about six feet from the ground; 1,675, nest and one egg, on a thick thorny bush, six feet from the ground; 1,851, nest and two eggs, May 12, on a rose-bush, four feet from the ground, eggs already incubated."

The eggs of this species measure one inch by .75, have a light ground of robin-blue, and are spotted and blotched with varying shades of dark and light purple. In some the color of the blotches is so deep as not to be distinguishable from black, except in a strong light. The lighter shades are a faint lavender.

Pipilo fuscus, var. mesoleucus, Baird

CAÑON BUNTING

Pipilo mesoleucus, Baird, Pr. A. N. Sc. Ph. VII, June, 1854, 119 (Rocky Mountains).—Ib. Birds N. Am. 1858, 518, pl. xxix.—Kennerly, P. R. R. X, b pl. xxix.—Heerm. X, c. p. 15.—Cooper, Orn. Cal. 1, 247. ? *Pipilo fusca*, “Swains.,” Sclater & Salvin, P. Z. S. 1869, 361 (city of Mexico).

Sp. Char. Above very dull olivaceous-brown, with a grayish tinge; hood dull chestnut, conspicuously different from the back. Sides like the back, but paler; posteriorly, and about the vent and under tail-coverts, pale brownish-red. The ashy olive-brown of the sides scarcely meeting across the breast, the lower portion of which, with the upper belly, is rather pure white. The loreal region, chin, throat, and upper part of the breast, pale yellowish-rufous, finely spotted on the sides and more coarsely across the breast with brown; an obscure spot in the middle of the breast; edge of outer primary white. Bill pale brown; legs flesh-color; first quill about equal to eighth, third and fourth longest. Length, 8.50 inches; wing, 3.80; tail, 4.70.

Hab. Valley of Upper Rio Grande and across to the Gila River. East to Santa Caterina, New Leon.

This race is similar in general appearance to *P. crissalis*, but the olive-brown and rufous are both of a lighter shade. The crown is of a decided rufous, conspicuously different from the back, instead of nearly the same tint. The light reddish under the head is wider throughout, and extends down to the upper part of the breast, blending with the colors of the breast and belly, instead of being narrower, more sharply defined, and restricted to the chin and throat; it is palest anteriorly, the chin and lore being almost white. The isolated larger spot on the breast is more conspicuous; the breast and belly are quite pure white, shaded with obsolete brownish blotches, instead of being uniform grayish-brown, with only an approach to whitish in the very middle. The edges of the wing and tail feathers are a good deal lighter, the outer web of the first primary being sharply edged with pure white, instead of obscure grayish-brown. The size generally is rather smaller, the wings more pointed.

Compared with *P. fuscus*, we find the tail decidedly longer; the wing more pointed; the first quill about equal to the eighth, instead of shorter than the secondaries. The colors generally are paler; the cap of head bright distinct rufous in strong contrast with the other plumage, instead of being only very obscurely tinged with that color. The white of belly is purer, and extends farther forward, displacing the ashy tinge almost to the buff of the throat.

If we consider all the brown *Pipilos* as modifications of one primitive species, it will be well to consider the Arizonan and New Mexican bird as the central figure around which the others are grouped. The common character will then be varied in the California race, *crissalis*, by the absence of decided rufous on crown, a darker shade of color, and an extension of the gray of sides over the whole under parts, almost entirely displacing the white. The wing is more rounded, and the general dimensions larger southward on the central plains of Mexico; the general tints are almost precisely as in the California bird, except that the white of belly is very evident; but the chestnut cap and extended whiteness of belly, together with the pointed wing of *mesoleucus*, are wanting. In *P. albigula* of Cape St. Lucas we have the general characters of *mesoleucus*, with paler colors, more restricted spots encircling throat, and a tendency to white in its lower part. In this it approaches *albicollis* of Southwestern Mexico.

Habits. This little-known form was first obtained by Dr. Kennerly, naturalist to the Pacific Railroad Expedition on the 35th parallel, under Lieutenant Whipple. He met with it at Bill Williams

Fork, in Arizona, February 5, 1854. It was described by Professor Baird the following June. Dr. Kennerly furnished at the time no information in regard to its habits.

Dr. Heermann, in his Report on the birds observed in Lieutenant Parke's expedition, mentions having met with this species in the vicinity of Tucson. Its habits, so far as he could judge of them from his opportunities, appeared very similar to those of *Pipilo aberti*.

Lieutenant Couch met with this species at Santa Catalina, Mexico, in April, 1853, but furnishes no information in reference to its manners. Mr. J. H. Clark, who obtained a specimen near the Copper Mines of the Mimbres, states that they were met with in abundance in the deep valleys or cañons of that region. They were almost always in or about the thick clumps of bushes, several usually being in company.

Dr. Kennerly, who met with them on a second trip, in June, 1855, near Los Nogales, in Mexico, speaks of them as not very common in that region. He found them preferring the dense bushes in the valleys. When approached, they became very restless, flying from one bush to another, accompanying their motions with very peculiar notes, which he does not describe.

Dr. Coues found this species abundantly distributed throughout the warmer portions of New Mexico and Arizona, from the valley of the Rio Grande to that of the Colorado. He did not observe any at Fort Whipple, though they were found breeding some twenty-five miles to the southward. He found them associating freely with *Pipilo aberti*, and inhabiting the same regions. The two birds have very similar habits.

Dr. Henry also states that this species is common in New Mexico both summer and winter, and, so far as he has observed, dwelling almost entirely among the mountains. It appeared to him very retiring in its habits, and seemed to prefer the cañons. He has seldom, if ever, observed it far from shady gorges, where, like its relative of the Eastern States, the Towhee Bunting, it passes the greater part of its time on the ground, and is generally accompanied by its congener, the Arctic Finch. When disturbed, it seeks the thickest cover, though it is by no means shy or difficult to approach. Its nest is usually constructed in the branches of a thick cedar or dwarf oak, and he has never known it to produce more than one brood in a season.

Dr. Cooper states that these birds are very abundant in Southern Arizona, that their habits closely resemble those of *P. aberti*, and that their eggs are similar to those of *Pipilo fuscus*.

Pipilo fuscus, var. albigula, Baird

CAPE TOWHEE

Pipilo albigula, Baird, P. A. N. S. Nov. 1859, 305 (Cape St. Lucas).—Elliot, Illust. Am. Birds, I, pl. xv (“= *P. mesoleucus*”).—Cooper, Orn. Cal. I, 248.

Sp. Char. Similar to var. *mesoleucus*, having, like it, a distinctly rufous crown and white abdomen. Differing, however, in the following respects: The pale ochraceous gular area is more sharply defined, the buff being confined within the encircling series of dusky spots; the buff is palest posteriorly, instead of directly the opposite. The rufous of the crissal region is more restricted, only tingeing the anal region instead of invading the lower part of the abdomen, the white beneath also is shifted farther back, covering the abdomen alone, instead of the breast, the whole jugulum being distinctly ashy, like the sides. Wing, 3.80; tail, 4.25.

Hab. Cape St. Lucas.

A very large series of specimens from Cape St. Lucas agree in possession of the characters pointed out above, distinguishing them from *mesoleucus*, to which race the present one is most nearly related.

Habits. The White-throated or Cape Towhee of Cape St. Lucas was first met with by Mr. Xantus in the southern extremity of the peninsula of Lower California, and described by Professor Baird in 1859. Its close resemblance to *P. mesoleucus* suggests an equal similarity as to its habits, in regard to which we possess no actual knowledge. Mr. Xantus has furnished us with no memoranda as to the manners of the bird. We have only the brief mention among his notes to the effect that No. 4,855 is the nest with four eggs of this *Pipilo*, found in a wild *Humulus* thicket; and that No. 5,076 is a nest with eggs of the same, found in a thicket of wild roses in the garden fence.

Judging from the large number of the nests and eggs of this species collected by that gentleman at Cape St. Lucas, it would seem to be very abundant in that locality.

The eggs of this variety measure .95 of an inch in length and .72 in breadth. They bear a strong resemblance to those of the *P. fuscus*, but the markings are darker and more distinctly defined, standing out with a clear and striking effect, in marked contrast with the light background. The ground-color of the egg is a light tint of robin-blue. The markings of dots, dashes, and lines are all about the larger end, and are of a deep dark shade of purplish-brown, so dark as, except in a strong light, to be undistinguishable from black.

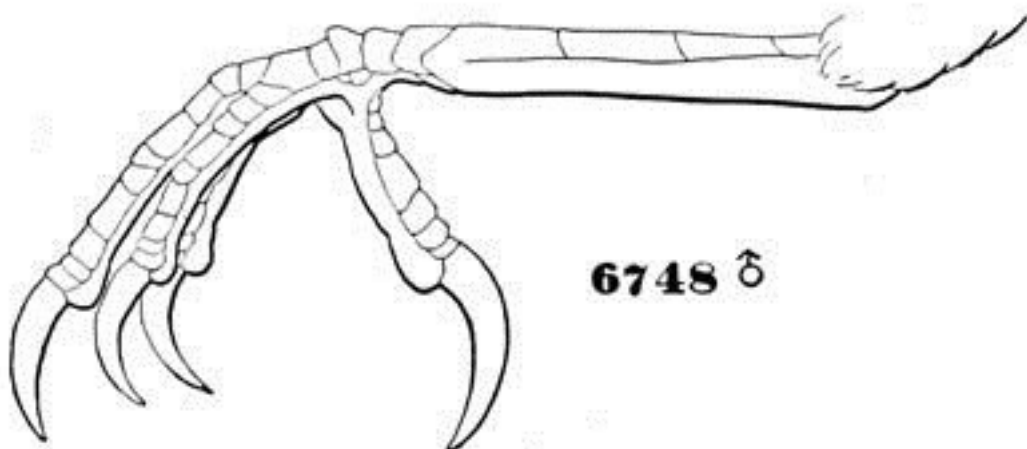
SECTION III

Brown; throat without light patch

Pipilo aberti, Baird

ABERT'S TOWHEE

Pipilo aberti, Baird, Stansbury's Rep. Great Salt Lake, Zoölogy, June, 1852, 325 (New Mexico).—Ib. Birds N. Am. 1858, 516, pl. xxx.—Kennerly, P. R. R. X, b, pl. xxx.—Heermann, X, c, 15.—Cooper, Orn. Cal. 1, 244. *Kieneria aberti*, Bonap. Comptes Rendus, XL, 1855, 356.



6748 ♂

Sp. Char. General color of upper parts pale brownish yellowish-red; beneath brighter, and more ochraceous, especially on the under coverts, palest on the middle of the belly. Sides of head anterior to eyes, and chin dark brown. Bill and legs yellowish. Length, 9 inches; wing, 3.70; tail, 4.85.

Hab. Base of Rocky Mountains in New Mexico. Valley of Gila and Colorado.

This plainly colored bird is perhaps the largest of the North American Finches, and is without any blotches, spots, or variations of importance from one color, except on the chin and sides of the head. The bill is similar to that of *P. erythrophthalmus*, but the cutting edge is less concave and more sinuated. The tail is more graduated; the claws thicker and stronger. The wings are short and much rounded; the first quill shorter than the secondaries; fifth and fourth longest.

It may be easily distinguished from all the varieties of *fuscus* by the blackish lores and chin, as well as by the absence of any colored gular area, there being, instead, a pinkish rufous tinge prevalent over the whole throat and jugulum. There are no dusky spots across the throat as in *fuscus*.

Habits. Dr. Cooper assigns the base of the Rocky Mountains, in New Mexico, and the valleys of the Gila and Colorado Rivers, as the habitat of this species. Dr. Coues speaks of it as one of the most abundant and characteristic birds of those two valleys, and adds that it ranges northward to within a few miles of Fort Whipple, but is not found in the adjacent mountains. It was common at Fort Mohave, and particularly so at Fort Yuma.

Dr. Kennerly met with it at Camp No. 114, New Mexico, February 6, and again at Bill Williams Fork, February 12. He states that while travelling down the Big Sandy Creek and Bill Williams Fork, in the month of February, he found them very abundant. They confined themselves to the thick bushes near the water. Generally two or three were seen together. Their motions were very rapid, and their note was a peculiar, loud, chattering sound, sharp but not disagreeable. After leaving the Great Colorado he did not see it again.

On the borders of the Gila, east of Fort Yuma, Dr. Heermann found this bird in great abundance. It kept in the close sheltered thickets, where, secure from intrusion, it sought among the dead leaves for various seeds and insects and their larvæ, on which it feeds. In its habits it very much resembles the *Pipilo fuscus*, or Cañon Finch, diving into the bushes when alarmed, and repeating, at intervals, a short chirp. After leaving the Gila River he did not meet with any more, as he followed no longer the course of any large stream, for the borders of which these birds seem to have a decided preference.

Dr. Cooper regards this species as the almost exact counterpart of the *Pipilo fuscus*. The only difference he noticed in habits was in the character of its loud note of alarm, remarkably similar, however, to that of two very distinct birds of the same valley, namely, *Centurus uropygialis* and *Phainopepla nitens*. Like the Cañon Finch, this species is said to live almost constantly on the ground, but appears rather more gregarious, especially in winter.

About the first of April Dr. Cooper met with many of their nests. They were generally built in thorny shrubs, and were composed of a flooring of coarse twigs, or of green herbs, and strongly interwoven with strips of bark, grass, and leaves. One bird had taken advantage of the recent introduction of horses into the valley to obtain a lining of horse-hair for its nest. The eggs were in all cases only three, bluish-white, with brown spots and streaks in a ring near the large end, quite variable in number, and measuring one inch by .70. One of the nests was in a low mesquite-tree, another in a dense cluster of dead twigs hanging from a cottonwood. The time required for hatching was twelve or thirteen days, and in a fortnight more the young left the nest. Dr. Cooper found nests with eggs as late as May 25, and had no doubt that they raise two or more broods in a season. He adds that the song of the male, throughout April and May, is precisely like that of *P. fuscus*, and also reminded him of the notes of *P. oregonus* and of the eastern Black-throated Bunting (*Euspiza americana*).

Dr. Coues has kindly supplied me with the following interesting sketch of this species, as observed by him in Arizona:—

“This species appears to have a remarkably restricted geographical distribution. I never saw it at Fort Whipple, but on the Colorado bottom in the same latitude, and thence along the river to Fort Yuma, I found it to be one of the most abundant and characteristic birds of all. At the time I observed it, in September, it was generally in small flocks, and proved rather difficult to capture, partly because the dense underbrush it inhabited was almost impenetrable, and partly on account of its natural timidity. Everything along the river-bottom is scorched with the heat, and the dry dead twigs constantly snap at a touch, with such noise that it is almost impossible to force a passage through the underbrush without alarming all its inmates. The bird occurs everywhere along the river-side, but is particularly numerous on the patches of mesquite, and the extensive areas grown up to young willows and cottonwoods, and the arrowwood (*Tessaria borealis*). Its ordinary cry of alarm, if not its call-note, is a loud, clear chirp, very different from the mewing sound made under similar circumstances by its congener, the *P. megalonyx*. The latter, as is well known, is almost exactly like that of a Catbird. I never heard the song of this bird, which appears to sing only during the breeding-season, but Dr. Cooper says it resembles that of the western Black *Pipilos*, and I can indorse his observation, that this is curiously like the monotonous notes of the Black-throated Bunting,—*Chip, chip, chee-chee-chee*; the first two syllables deliberately pronounced, the others more rapidly enunciated, with greater emphasis. The associates of this species seem to be few, if indeed they be not confined to the *P. mesoleucus*, a very near ally. The moult seems to me unusually protracted, as many September specimens were still in poor plumage.

“Excepting my experience with this bird on the Colorado, I only met with it on the Hassayampa, a small stream a few miles from Fort Whipple, yet in a somewhat different region, across a slight mountain-ridge, lower and warmer. Two specimens were secured, adult and young, the first week in August.”

Dr. Coues, on his way from Arizona to the Pacific (Ibis, 1866, p. 261), mentions that he was often startled by the loud, clear, sharp chirp of this bird, which, though fringilline in character, is more than usually powerful, and is its alarm-note. Everywhere in the Colorado Valley this was one of the most characteristic birds. Fort Yuma seemed to be its head-quarters. It is, like all its congeners, a retiring species, and keeps perseveringly in the almost impenetrable undergrowth. It is said to be more decidedly gregarious than most of the genus, often collecting in flocks of a dozen or more, wandering restlessly, yet in a cautious manner, through the thickets.

A nest with eggs, procured at Fort Mohave by Dr. Cooper, is in the Smithsonian Collection (No. 7,276). The egg measures .93 by .70 of an inch, is obovate in shape, being much rounded at the smaller end. Its ground-color is a dull white, without any perceptible tinge of blue,—though possibly bluish when fresh,—with heavy dots and occasional delicate, hair-like, zigzag markings of black. These markings are wholly confined to the larger end. One of the eggs has these markings much finer, consisting of minute dots, more dense, and upon the apex of the larger end. The nest is loosely built and very bulky. Its external diameter is about six inches, and its depth three. The cavity is three inches wide and two deep. It is constructed almost entirely of strips of inner bark, the coarser, ribbon-like pieces being used on the outer portion, and the finer shreds composing the lining. Externally are also a few sticks about one quarter of an inch in diameter.

SECTION IV

Crown rufous; body above, olive-green

Pipilo chlorurus, Baird

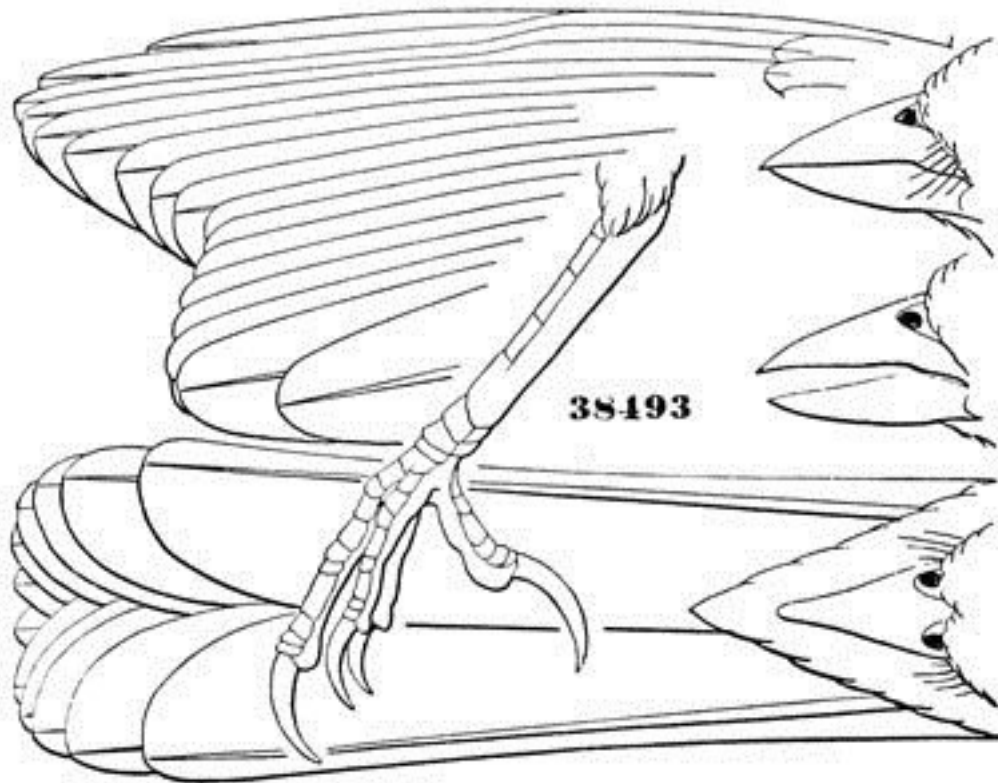
GREEN-TAILED BUNTING; BLANDING'S FINCH

Fringilla chlorura, (Townsend,) Aud. Orn. Biog. V, 1839, 336 (Young). *Zonotrichia chlorura*, Gambel, J. A. N. Sc. Ph. 2d Series, I, 1847, 51. *Embernagra chlorura*, Bonap. Conspectus, 1850, 483. *Fringilla blandingiana*, Gambel, Pr. A. N. Sc. Ph. I, April, 1843, 260. *Embernagra blandingiana*, Cassin, Illus. I, III, 1853, 70, pl. xii. *Pipilo rufipileus*, Lafresnaye, Rev. Zoöl. XI, June, 1848, 176.—Bp. Conspectus, 1850, 487. *Kieneria rufipileus*, Bon. Comptes Rendus, XL, 1855, 356. *Pipilo chlorura*, Baird, Birds N. Am., 1858, 519.—Heerm. X, c, 15.—Cooper, Orn. Cal. 1, 248.

Sp. Char. Above dull grayish olive-green. Crown uniform chestnut. Forehead with superciliary stripe, and sides of the head and neck, the upper part of the breast and sides of the body, bluish-ash. Chin and upper part of throat abruptly defined white, the former margined by dusky, above which is a short white maxillary stripe. Under tail-coverts and sides of body behind brownish-yellow. Tail-feathers generally, and exterior of wings, bright olive-green, the edge and under surface of the wings bright greenish-yellow; edge of first primary white. First quill longer than eighth, fourth longest. Length, about 7 inches; wing, 3.20; tail, 3.65.

Hab. Whole of the Middle Province, including the Rocky Mountains and eastern slope of the Sierra Nevada; north to beyond the 40th parallel; south to Mexico.

In this species the wing is considerably rounded, the tertials considerably shorter than the primaries, and not exceeding the secondaries; the fourth quill longest, the first shorter than the sixth, the second and fifth quills considerably longer than the rest. The tail is long and considerably graduated, the outer feather half an inch shortest; the feathers broad and obtusely pointed, the corners rounded.

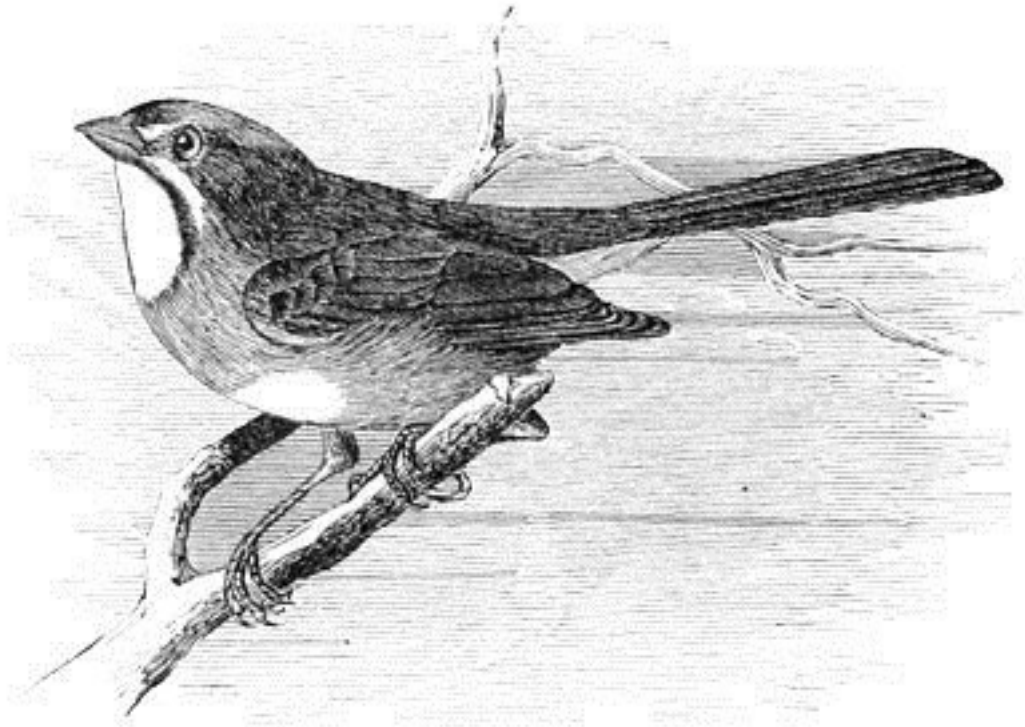


Pipilo chlorurus.

38493

The extent of the chestnut of the crown varies somewhat; more extended probably in the males. The region on the side of the head, adjoining the nostrils, is whitish; the small feathers under the eye are spotted with the same. The posterior outline of the ash of the breast is much less sharply defined than the anterior.

Specimens vary in the brightness of the olive above, which is never as pure as that of the wings and tail. The olive of the tail, too, is darker than that of the wings.



Pipilo chlorurus.

A very young bird (1,896) has the whole under parts dull white, streaked and spotted on the sides of the throat and on the breast with dark brown. The crown and back are also thickly spotted. In 5,734 the ash of the breast has made its appearance; the middle of the belly is white, spotted; the chin white, encircled by spots. The spots above are restricted to near the head, and there is a small central patch of chestnut on the crown.

No. 1,896 is the original “Green-tailed Sparrow” killed July 12, 1834, by Townsend, and described in an extract of a letter to Mr. Audubon, published page 336 of Vol. V. of the Ornithological Biography.

Habits. Dr. Kennerly, who procured a specimen of this bird at San Elizario, Tex., December 16, states that it was obtained with some difficulty. For several successive days it was found in the same place, occupying a small clump of very thick weeds. When aroused, which was only accomplished with some effort, its flight was short, rapid, and decidedly irregular. Its motions on the ground were very awkward. This species was found by Mr. Ridgway very generally distributed throughout the fertile mountain portions of the interior. It was not seen by him in California, and was first met with in the ravines at the base of the eastern slope of the Sierra Nevada. On the high mountain-ranges it was a characteristic and the best-known singer, as well as one of the most abundant of the *Fringillidæ*, being found in all bushy places, from the bases to the summits of the mountains. It is exclusively a summer species, arriving at Carson City about the middle of April. He describes the usual note of this bird as very peculiar, and, as nearly as can be described, a sweet laughing utterance of the syllables *keek-keek*, a little resembling the *tweet* of a Canary, but very musical. This curious note was generally uttered when anything unusual attracted its attention, such as the approach of an intruder. Then, with elevated tail and its very conspicuous red cap raised, it would hop familiarly and unsuspectingly about. He adds that it is a songster of high merit, in power and variety ranking very little below the song of the *Chondestes grammaca*. The song varies in the modulations greatly with the individual, but the same general style is preserved. At times it seemed to have a slight resemblance to the song of

Bewick's Wren, and at others to that of a *Cyanospiza*, and more rarely, to be the reproduction of a passage from the song of the *Chondestes*.

In the early part of July, near Austin, in the cañons of the mountains, he found these birds breeding in the greatest abundance, and later in the same month a few of its nests were found on the East Humboldt Mountains. All of its nests, with hardly an exception, were placed from eighteen inches to two feet above the ground, among the thick bushes of a species of *Symphoricarpus*, or "snow-berry," which grows in great abundance upon the sides of the cañons of those mountains. The maximum number of eggs was four. It was also quite a common bird in the Wahsatch Mountains, though less abundant than the *P. megalonyx*.

Mr. Allen found this Finch quite numerous in Colorado Territory, and speaks of its song as very peculiar and very pleasing. It is said to resemble in no respect the eastern Towhee Finch, with which it is classed, but much more closely the group of Sparrows, so familiarly represented at the east by the White-throated, being like them in habits, song, and general aspect. It was more common among the foot-hills than on the plains. In Utah, according to Mr. Allen, this Finch begins to appear in numbers about September 20, from its breeding-haunts in the mountains.

Dr. Coues met with this species in Arizona, but only as a spring and autumn migrant. None remained there in summer to breed, and none were found there in the winter. In its migrations it passed rapidly by Fort Whipple, being found there only during the latter part of April and the beginning of May, and during the month of September. At those seasons it appeared to him the most silent and retiring of all the *Pipilos*. He found it very difficult to either observe its habits or to capture it. It winters sparingly at Fort Mohave.

Specimens of this bird were taken near Lookout Mountain by C. S. McCarthy, and at Gilmer, in Wyoming Territory, by Mr. Durkee.

Dr. Heermann, in his Report on the birds observed on the 32d. parallel, under Lieutenant Parke, mentions first meeting with this species near Tucson. They were frequenting, in numbers, the thick undergrowth, and were seeking seeds and insects on the ground. They seemed inclined to shun observation, and always kept in the most retired situations. They were sociable among themselves, going about singly or in pairs, associated with the *Poospiza bilineata* and two or three other kinds of Finch. When started they fly low, diving into the bushes, and soon disappear from sight. Occasionally, until reaching El Paso, Texas, birds of this species were met with, mingling with the flocks of migrating *Fringillidæ*. He there procured a pair apparently just entering upon incubation.

Instead of being suited by color, like most of the other *Pipilos*, to inhabit dark thickets and among dry leaves, this species is clad in a gayer livery, and seems well adapted for concealment in its summer resorts, and also among the growing vegetation of the lower country during the rainy season. Dr. Heermann found a few wintering in the Colorado Valley, and yet more at San Diego, but they left both places in March. He found them silent and shy, hiding very closely in the bushes, and feeding altogether on the ground. The only note he heard, resembled the crowing note of the California Quail.

Among the memoranda of Mr. Xantus, made near Fort Tejon, are the two following: "4,839, nest and two eggs (of *Pipilo chlorurus*) found in a dry hedge in Mr. Ritchie's garden; 5,083, nest and eggs found in a dark garden-hedge."

The eggs of the *chlorurus* are like those of no other *Pipilo* that I have met with. They are peculiar in shape, being nearly of an exact oval, neither end being apparently much more rounded than the other. Their ground-color is white with a bluish tint, over which is profusely diffused a cloud of fine dottings of a pinkish-drab. These markings are occasionally so fine and so thickly distributed as to give to the egg the appearance of a uniform color, or as an unspotted pinkish drab-colored egg. Occasionally the dots are deeper and larger, and more sparsely diffused.

In considering the eggs of the *Pipilos* in general we find certain variations which deserve more than a passing notice. Those of *erythrophthalmus*, *oregonus*, *arcticus*, and *megalonyx* are all fringilline in their characters, and have a marked affinity to eggs of *Melospiza*, *Zonotrichia*, and many other

genera of this order. The eggs of *aberti*, *fuscus*, *mesoleucus*, and *albigula* are also all closely alike, and exhibit a very close resemblance to those of the *Agelaii*, and even of the *Icteri*, while the eggs of *P. chlorurus*, though of a fringilline character, are unlike either style.

Family ALAUDIDÆ.—The Larks

Char. First primary very short or wanting. Tarsi scutellate anteriorly and posteriorly, with the plates nearly of corresponding position and number. Hind claw very long and nearly straight. Bill short, conical, frontal feathers extending along side of the bill; the nostrils concealed by a tuft of bristly feathers directed forward. Tertials greatly elongate beyond the secondaries.

Subfamilies and Genera

Alaudinæ. Bill stout, short, and conical; nasal fossæ transverse and completely filled by the thick tuft of bristly feathers, and perforated anteriorly by a circular nasal opening. (Old and New World.)

Crown with a depressed soft crest of feathers, of normal structure; a spurious primary; tail deeply emarginate ... *Alauda*.

Crown without a crest, but occiput with an erectile tuft of narrow elongated feathers on each side. No spurious primary; tail square, or slightly rounded ... *Eremophila*.

Calandritinæ. Bill broader, more depressed, and straighter at the base; nasal fossæ longitudinal, large, elongated, the nasal opening rather linear. (Old World.)

Of the *Alaudidæ* only the two genera diagnosed above belong to the American continent; and one of them is properly only a wanderer from the Old World, while the other is cosmopolitan.

The most characteristic feature of the Larks among other oscine families is seen in the scutellation of the tarsus. The anterior half of this is covered by divided scales lapping round on the sides, but instead of the two plates which go one on each side of the posterior half and unite ultimately behind as an acute ridge, there is but one which laps round on the sides, and is divided into scales like the anterior ones, but alternating with them. The posterior edge of the tarsus is as obtuse as the anterior, instead of being very acute. There is a deep separating groove on the inner side of the tarsus; and there may be really but one plate divided transversely, the edges meeting at this place.

In the elongated hind claw and lengthened tertials, general style of coloration, mode of life, and manner of nesting, there is a decided approximation in the *Alaudidæ* to the *Anthinæ*, of the family *Motacillidæ*; but in these the posterior edge of the tarsus is sharp and undivided transversely, the toes more deeply cleft, the bill more slender, etc.,—their relations being rather nearer to the *Sylvicolidæ* than to the present family.

Genus ALAUDA, Linn

Alauda, Linn. S. N. 1735

Gen. Char. Bill very small, less than half the length of the head, conical; nostrils exposed; rictal bristles quite strong; commissure without notch; tarsus much longer than middle toe; lateral toes equal; posterior toe about as long as the middle, its claw longer than the digit, and nearly straight; claws of anterior toe very small. Wing long, pointed, the third and fourth (apparently second and third) quills longest, the second and fifth successively, a little shorter; the first so small as to be almost concealed; tertials much elongated, reaching about half-way from end of secondaries to tip

of primaries; their ends emarginated; tail rather deeply emarginated, and a little more than half the length of the wing.

Species

A. arvensis. Above grayish-brown, beneath whitish, with a buffy tinge across jugulum and along sides; every feather above with a medial streak of dusky; sides of throat, sides, and across jugulum streaked with dusky; the outer tail-feathers partly white. Wing, 4.90; tail, 2.80; culmen, .40; tarsus, .80; hind claw, .50. Hab. Europe; accidental in Greenland and the Bermudas.

Alauda arvensis, Linn

THE SKYLARK

Alauda arvensis, Linn., Faun. Sue. p. 76. *Alauda vulgaris*, Leach, Syst. Cat. Mamm. and Birds in B. M. p. 21. *Alauda cœlipeta*, Pall. Zoögr. I, 524. *Alauda segetum*, Brehm, Vög. Deutschl. 318. *Alauda montana*, Brehm, Vög. Deutschl. 319, t. 20, f. 1. *Alauda agrestis*, Brehm, Vög. Deutschl. 320. *Alauda italica*, Gmel. S. N. I, 793.

Sp. Char. *Adult.* Above grayish umber-brown, beneath white, tinged across the breast with soft light ochraceous. Every feather above with a medial dusky streak, the shaft black; wing-feathers and upper tail-coverts bordered with white. Outer tail-feather mostly white, the next one edged with the same. A plain, light superciliary stripe; auriculars nearly uniform light brownish; sides of the throat, jugulum, and sides with short streaks of dusky brown.

Male. Wing, 4.90; tail, 2.80; culmen, .40; tarsus, .80; middle toe, .55; hind claw, .50.

Young. Above more yellowish-fulvous, the feathers with central spots, instead of medial stripes of dusky, and bordered terminally with whitish; jugulum washed strongly with ochraceous, and marked with dusky spots.

Hab. Europe; accidental in Greenland and the Bermudas; Aleutian Islands.

Habits. The famed Skylark of the Old World can rest a twofold claim to be included in a complete list of North American birds. One of these is their occasional occurrence in the Bermudas, and in Greenland. The other is their probably successful introduction near New York.

A few years since an attempt was made to introduce these birds, for which purpose several individuals were set at liberty on Long Island. For a short time they did well, and succeeded in raising one or more broods, but, owing probably to the constant persecution of all small birds by the foreign population of the neighborhood, the experiment nearly failed, and none were noticed in that vicinity. Within the last year or two, however, several pairs of these birds have been observed in Westchester County, and also on Long Island, by parties competent to recognize them, and hopes are now entertained that these desirable birds have obtained a foothold in this country.

According to Messrs. Dresser and Sharpe, the Skylark is found throughout the polar Arctic regions, from the British Islands eastward to Siberia and Northern China. A smaller subspecies is met with in Southeastern Europe, which does not present any character by which it can be separated from it. In Eastern Europe the Lark has been found as far north as the Faroe Islands, but has not been observed in Iceland. It reaches Christiania in March, and leaves in October. It has been found breeding in Lapland as far north as latitude 65°, and is a common summer visitant in Finland. Pallas found it abundant throughout Russia and Siberia, and Steller found it not only in Kamtschatka, but

equally in the Kurile Islands and in those between Asia and America, so that its occurrence in our Alaskan territories may be regarded as a not improbable event.

The same writers also state that the Skylark has been twice recorded as occurring in Greenland and in America; and in another place they state that “the Skylark occasionally visits Greenland, and has been met with in the Bermudas.” In the latter place a storm-tryed waif was taken by Mr. J. M. Jones after an easterly gale.

The Lark is a universal favorite in the Old World, and as a vocalist enjoys a reputation hardly second even to the far-famed Nightingale. It is an inhabitant of all the countries of Europe, and is said to be most abundant in the cultivated districts.

We only know of its song from caged specimens and from the testimony of European writers. Yarrell speaks of its notes as cheerful and exhilarating, fresh as the season of spring, and the admiration of all hearers. Its voice is described as powerful to an extraordinary degree, and its song wild and joyous. They sing while they fly, rising, with quivering wings almost perpendicularly, until they gain so great an elevation that they can no longer be distinguished; yet, while thus no longer visible, their wild music continues to be heard as that of some unseen spirits of the air. It is said that one familiar with their song can readily determine, by their notes, whether the singer is ascending, stationary, or descending. Occasionally, when at this great elevation, the Lark will close its wings and drop to the earth with the rapidity of a stone. At times it will sing while on the ground, but its most lively strains are poured forth during these flights. And though this bird will sing while in confinement, and is a favorite cage-bird, yet in singing they are said to flutter their wings, as if this motion were almost a necessary accompaniment to their song.

In regard to the song and its peculiarities writers are not quite in agreement. The general opinion seems to be that, while in the quality of its tone it is surpassed by the song of the Nightingale, the Bulfinch, and the Black-cap, it is unequalled in quantity, sprightliness, variety, and power. The Lark is in song eight months of the year, and during the summer months it sings from two in the morning, with very little intermission, until after sunset.

Mr. Macgillivray gives an excellent and graphic description of the habits of this bird, from which we extract a portion descriptive of its song. “It has been alleged,” he writes, “that the Lark ascends in a spiral manner, but my observation does not corroborate the statement. In rising it often passes directly upward, but with the body always horizontal, or nearly so, then moves in a curve, and continues thus alternately, but without a continued spiral motion. At first, the motion of the wings is uniformly fluttering; but afterwards it shoots them out two or three times successively at intervals, and when at its greatest height exhibits this action more remarkably. When it descends, the song is not intermitted, but is continued until it approaches the ground, when it usually darts down headlong, and alights abruptly. Frequently it resumes its song after alighting, and continues it for a short time, but more commonly it stops when it has reached the ground. Often a Lark may be seen hovering over a field, in full song, for a considerable time, at a small height. On the 4th of May, 1837, I observed a Lark perched on a half-burnt whin branch, where it remained singing a long time. I have often seen it perch on a wall, and several times on a hawthorn bush in a hedge; but it never, I believe, alights on tall trees.

“The song of the Lark is certainly not musical, for its notes are not finely modulated, nor its tones mellow; but it is cheerful and cheering in the highest degree, and protracted beyond all comparison. In a sunny day in April or May, when the grass-fields have begun to resume their verdure, it is pleasant to listen to the merry songster that makes the welkin ring with its sprightly notes; in the sultry month of July, still more pleasant is it to hear its matin hymn while the dew is yet on the corn; and in winter, should you chance to hear the well-known voice on high, it reminds you of the bright days that have gone, and fills you with anticipation of those that are to come. No doubt much of the pleasure derived from the Lark’s song depends upon association, but independently of circumstances and associations the song of the Lark imparts an elasticity to the mind, elevates the

spirits, and suspends for a time the gnawing of corroding care. The carol of the Lark, like the lively fife, excites pure cheerfulness. In confinement this bird sings every whit as well as when at large, and when rapidly perambulating the square bit of faded turf in its cage, it enacts its part with apparently as much delight as when mounting toward heaven's gate."

This bird succeeds well in cages, and lives to a great age, Yarrell mentioning one that lived nearly twenty years in confinement. Its natural food is grain, the seeds of grasses, worms, and various kinds of insects. They begin to mate in April, and have two broods in a season. Their nest is always placed on the ground, often sheltered by a tuft of grass, or some other protection. The nests are woven of coarse grasses and stems of plants, and are lined with finer materials of the same. The eggs are five in number, have a grayish-white ground, occasionally a greenish-white, very generally sprinkled and blotched with markings of dark-gray and an ashy-brown, so profusely as to conceal the ground. They are oval in shape, slightly more pointed at one end, and measure .93 of an inch in length by .70 in breadth.

According to Selby, the young of the first brood are fully fledged by the end of June, and the second in August. The Lark evinces a very strong attachment to its young, and many interesting accounts are given by European writers of its intelligent endeavors to conceal and to protect its nest,—in one instance constructing an artificial dome of dry grass, where the natural protection had been cut away by mowers, and in another attempting to remove the young to a place of greater safety.

The Lark has, in several instances, been successfully induced to mate and rear her young in an aviary; and Mr. W. P. Foster, of Hackney, is quoted by Mr. Yarrell as authority for the statement, that, during the period of producing the eggs, the female has been heard to sing with a power and a variety of tone equal to the voice of her mate.

While his mate is sitting on her eggs, the male Lark, apparently timid at all other times, is remarkably bold, and drives away other birds that venture too near their nest. He not only watches over her and seeks to protect her, but assiduously supplies her with food.

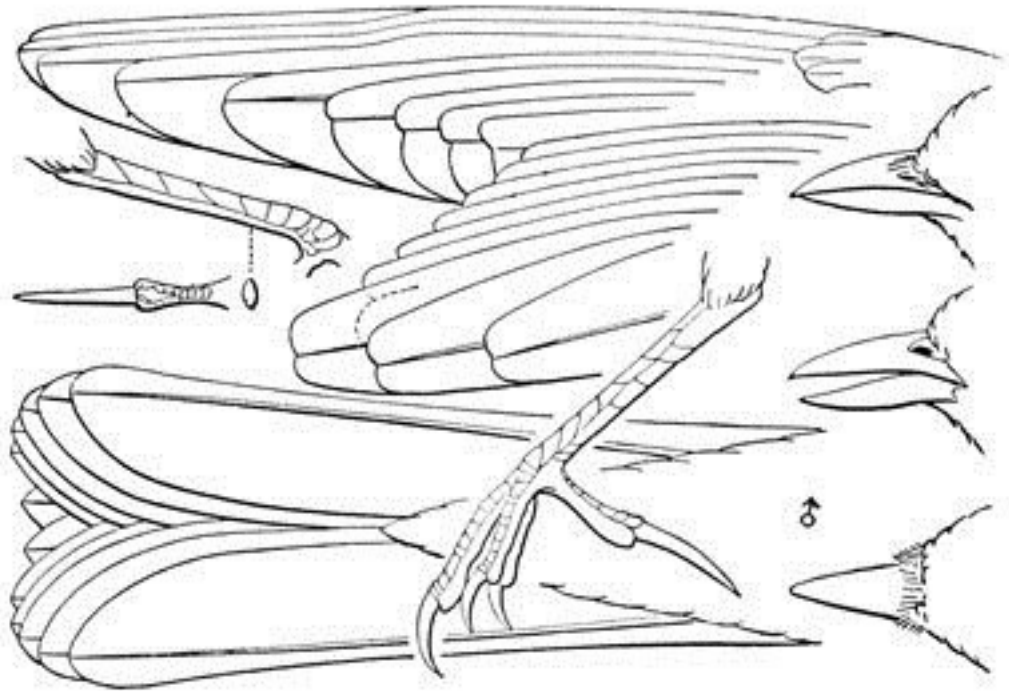
Genus EREMOPHILA, Boie

Eremophila, Boie, Isis, 1828, 322. (Type, *Alauda alpestris*. Sufficiently distinct from *Eremophilus*, Humboldt, [Fishes,] 1805.)

Phileremos, Brehm, Deutschl. Vögel, 1831.

Otocoris, Bonaparte, 1839. (Type, *Alauda alpestris*, Gray.) (We are unable to find where the genus is named.)

Gen. Char. First primary wanting; bill scarcely higher than broad; nostrils circular, concealed by a dense tuft of feathers; the nasal fossæ oblique. A pectoral crescent and cheek-patches of black.



♂ *Eremophila alpestris*.

This genus differs from *Melanocorypha* in having no spurious first primary, although the other characters are somewhat similar. *Calandritis* of Cabanis, with the same lack of first primary, has a much stouter bill. The spurious primary, more depressed bill, and differently constituted nostrils and nasal fossæ of *Alauda* are readily distinctive.



Eremophila alpestris.

The type of this genus is the *Alauda alpestris*, Linn., a well-known cosmopolitan species, though the birds of the New World have been distinguished under distinctive names, as *cornuta*, *chrysolema*, *peregrina*, etc. The examination and critical comparison of more than a hundred specimens from all

parts of North America, however, has convinced us of the identity with *alpestris* of the several forms mentioned above, though it may be advisable to retain one or more of them as geographical races.

Species and Varieties

E. alpestris. *Adult.* Above pinkish-gray, varying to cinnamon, the pinkish deepest on nape and lesser wing-coverts; tail black (except two middle feathers), the outer feather edged with white. Beneath white, the sides pinkish or grayish. A frontal band and superciliary stripe, the middle of auriculars, chin, and throat varying from white to deep Naples-yellow; forepart of crown, and "ear-tufts," a patch on lores and cheeks, and a broad crescent across the jugulum, deep black; end of auriculars ashy. *Female* and autumnal males, with the pattern less sharply defined, and the colors more suffused. *Young.* Brownish-black above, more or less mixed with clay-color, and sprinkled with whitish dots; wing-feathers all bordered with whitish. Beneath white. Markings on head and jugulum just merely indicated by dusky cloudings.

Wing (of adult male), 4.20 to 4.60; tail, 2.90 to 3.16; culmen, .60 to .65.

White frontal band, .25 to .30, wide; the black prefrontal patch, .26 to .35 wide. The pinkish above of an ashy-lilac shade.

Throat and forehead white, with only a very faint tinge of yellow; pinkish tinge above more rufous. *Hab.* Interior Northern Plains of the United States ... var. *occidentalis*.

Throat and forehead pale straw-yellow, or strongly tinged with it; pinkish tinge above varying from ashy-lilacous to purplish-rufous. *Hab.* Northern regions of Old and New Worlds ... var. *alpestris*.

Wing (adult male), 3.80 to 4.10; tail, 2.75 to 2.90; culmen, .53 to .62.

White frontal band, .13 to .16 wide; the black prefrontal patch, .35 to .50 wide. Pinkish above of a deep cinnamon shade. *Hab.* Desert plains of South Middle Province of United States, and table-lands of Mexico, south to Bogota ... var. *chrysolæma*.

PLATE XXXII.



PLATE XXXII.



1. *Eremophila cornuta*. ♂ Nev., 53470.



2. *Eremophila cornuta*. *Juv.*, Wisc., 4330.



3. *Alauda arvensis*. Europe.



4. ♂ Pa., 977.



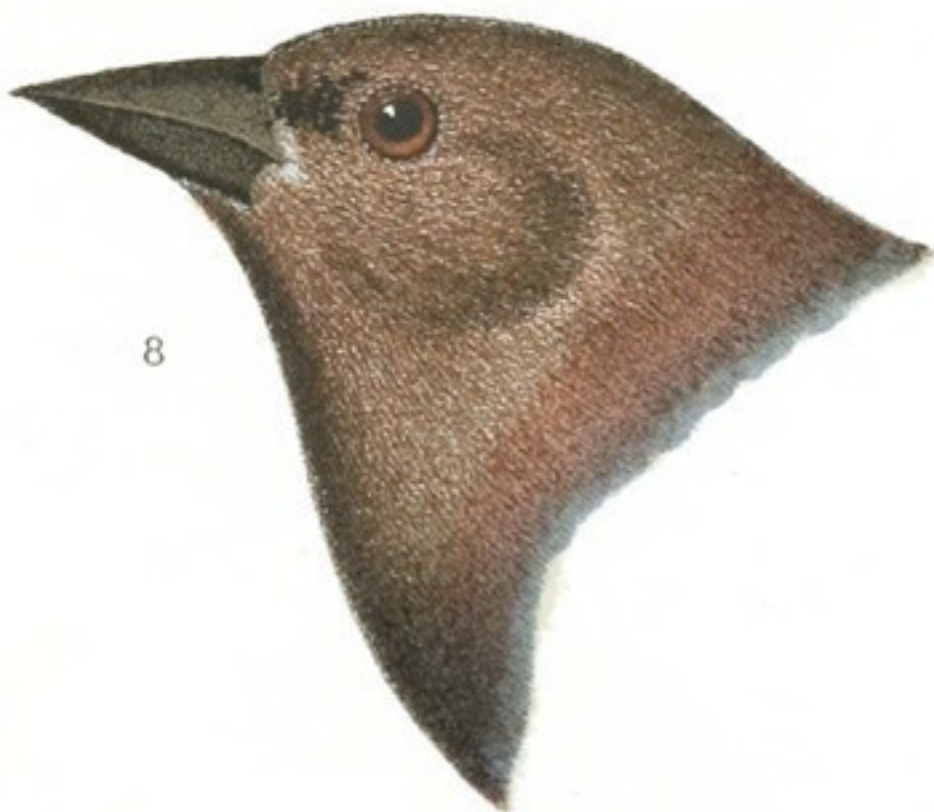
5. *Dolichonyx oryzivorus*. ♀ Kansas, 13069.



6. *Molothrus pecoris*. ♀ Ga., 32446.



7. *Molothrus pecoris*. ♀



8. *Molothrus pecoris*. *var. obscurus*. ♂ Manzanillo, Mex., 30165.



9. *Xanthocephalus icterocephalus*. ♂ Utah, 58624.

***Eremophila alpestris*, Boie**

THE SHORE LARK

Sp. Char. *Adult male*; spring. A frontal crescent, curving backward in a broad, sharply defined, superciliary stripe to the occiput; chin, throat and foreneck, and a crescent across middle of ear-coverts, whitish, either more or less tinged with yellow, or pure white. Lower parts, except laterally, white. A broad crescentic patch behind the frontal whitish crescent, running back on each side of the crown and terminating in an erectile tuft of narrow elongated feathers on each side of occiput, a patch covering the lores, nasal tufts, passing beneath the eye, and forming a broad “mustache” on the cheeks, with a convex outline behind and concave anteriorly, and a broad crescentic patch across the jugulum, deep black. A crescentic spot of grayish-drab across the ends of the auriculars. Posterior portion of the crown enclosed laterally between the “ear-tufts,” occiput, nape, lateral lower

parts, lesser and middle wing-coverts, and upper tail-coverts, pinkish-brown; the sides and flanks with obsolete dusky streaks. Back, scapulars, rump, wings, and two middle tail-feathers, ashy-drab, the feathers darker centrally, forming rather conspicuous broad streaks on lower part of back; middle and secondary coverts, secondaries and primaries bordered terminally, quite conspicuously, with white. Tail (except the *intermediae*) black; outer web of lateral feather almost entirely white, that of the next edged with the same.

Adult female; spring. Similar, but markings rather less sharply defined; a tendency to streaking of nape and crown; these streaks often displacing the continuous black of the anterior portion of crown. The “ear-tufts” less developed.

Winter adult. Similar to the spring dress, but the black areas obscured, more or less, by whitish borders to the feathers; the frontal whitish band less sharply defined. Breast with numerous more or less distinct deltoid specks of plumbeous, and the pinkish of the sides much tinged with the same. The dusky streaks above are broader and more conspicuous.

Young. First plumage, entirely different from the adult. Above dusky, variegated with whitish dots, sprinkled over the whole surface; these specks terminal on each feather, and of a deltoid form, becoming more transverse and crescentic on the scapulars and rump; each feather of the wings broadly bordered with pale brownish, approaching white on the coverts. The blackish areas are but faintly indicated by a dusky suffusion, generally very indistinct, across the breast, and over the cheeks; and variegated with badly defined, more dusky spots; lower parts, including post-ocular stripe, dull white; sides spotted with dusky.

The *E. alpestris*, as restricted, is represented in the collection by three perfect specimens, in the several stages of plumage described; while there is also a fine specimen from Astrachan, representing a white-throated race (“var. *bei*” on MS. label) of Central Asia. The series of American specimens is all that could possibly be desired, there being numerous examples from nearly the whole northern continent, from the Arctic regions to as far south as Bogota, and from coast to coast.

The common Shore Lark of the northern parts of North America appears to be absolutely identical with the European bird, each of the specimens of the latter being easily matched from the American series. It therefore becomes necessary to reduce the name “*cornuta*” to a synonyme of *alpestris*, the former not affording characters to distinguish it as even a variety. To *alpestris* may also be referred the form known as “*occidentalis*, McCall,” those specimens from the interior regions which are destitute of any yellow tinge on the throat. Were this feature a constant one in specimens from the region which it characterizes, it would be, of course, right to retain the name in the form of *alpestris* var. *occidentalis*. As it is, however, quite a large percentage of the specimens from every locality where *occidentalis* is found have more or less yellow throats, but it is possible that this mixture of the two may be the result of irregular migrations, those yellow-throated individuals being stragglers from their breeding habitat,—more to the eastward and northward. In its white instead of straw-yellow throat, and more lilaceous than vinaceous upper parts, this form bears a close resemblance to a race of the deserts of Western (and Central?) Asia,—the “*bei*”²⁶; the latter, however, has these features more exaggerated than in the one of the central plains of North America. Breeding throughout the table-lands of Mexico, and in the Western Province of the United States, north to about the 40th parallel, is a more strongly marked race, maintaining also more constancy in its peculiar features; this race is the *E. chrysolæma*, Wagl., of which name *rufa*, Aud., and *minor*, Giraud, are synonymes. This race, which we propose to call *E. alpestris* var. *chrysolæma*, differs from both the northern styles in smaller size and longer bill, and in coloration is the opposite extreme from *occidentalis*, having the vinaceous tints deeper and browner, instead of paler and less brown, than in *cornuta* (i. e. typical *alpestris*). The black markings are also more extended, in proportion to the other colors, reducing the white on the forehead to a very narrow band, instead of a broad spot equalling, or exceeding,

²⁶ The name in manuscript on the label of a specimen in the Schlüter collection, from Astrachan.

the black in width. Specimens from Bogota—about the southern limit of the genus on this continent—are, perhaps, referrible to *chrysolæma*, or at least not very different from it, though described by Sclater as distinct, under the name *peregrinus*.²⁷

In fewer words, the variations, with the region, are about as follows. Starting with North America, north of the United States, we begin with a style absolutely undistinguishable from that of Europe; this, to which the name *cornuta* belongs, visits the Eastern States only in winter, but breeds over the prairie region of Wisconsin, Illinois, and westward. West of the Rocky Mountains, especially south of about 40°, specimens referrible to this style are most numerous in winter, and in a large series a great percentage of the specimens entirely lack any yellow on the throat, while the pinkish-brown tints are lighter and less reddish; this style represents, in these peculiar features, the “var. *bei*” of Western Asia (Astrachan), and has been distinguished by the name *occidentalis*, McCall, though it is doubtful whether McCall’s description is of a specimen of this style or of one of *chrysolæma*, being taken from a young or immature bird. Breeding south of about 40°, from the Rocky Mountains to the Pacific coast, and throughout the table-lands of Mexico,—in winter sometimes resident at the northern limit assigned, and there mixed with northern-bred individuals,—is a kind which is smaller, and, generally, with a larger bill; the throat is deeper yellow than in the northern form, the pinkish tints deepened into cinnamon, and the frontal band narrower, caused by an encroachment of the black, which, in its several areas, is extended more in proportion to the other colors. This is the *E. chrysolæma* of Wagl., and of which *minor*, Giraud, and *rufa*, Aud., are synonymes, as already stated.

Along the coast of Oregon and Washington Territory is a very peculiar race, represented in the collection by several specimens. These differ essentially in having the dark streaks above very sharply defined, broad and clear blackish-brown,²⁸ while the lower parts are strongly tinged with yellow, even as deeply so as the throat. Additional specimens from the northwest coast may establish the existence of a race as distinct as any of those named above.

Var. *alpestris*

Alauda alpestris, Linn. S. N. I, 289.—Forst. Phil. Trans. LXII, 1772, 383.—Wilson,—Aud.—Jard.—Maynard, B. E. Mass. 1870, 121. *Otocorys a.* Finsch, Abh. Nat. 1870, 341 (synonymy and remarks). *Alauda cornuta*, Wils. Am. Orn. I, 1808, 85.—Rich. F. B. A. II. *Eremophila c.* Boie, Isis, 1828, 322.—Baird, Birds N. Am. 1858, 403.—Lord, P. R. A. Inst. IV, 118 (British Col.).—Cooper & Suckley, XII, 195.—Dall & Bannister, Tr. Ch. Ac. I, 1869, 218 (Alaska).—Cooper, Orn. Cal. I, 1870, 251.—Samuels, 280. *Phileremos c.* Bonap. List, 1838. *Otocoris c.* Auct. *Otocoris occidentalis*, McCall, Pr. A. N. Sc. V, June, 1851, 218 (Santa Fé).—Baird, Stansbury’s Rep., 1852, 318.

Char. *Adult*. Frontal whitish crescent more than half as broad as the black patch behind it. Throat and forehead either tinged, more or less strongly, with yellow, or perfectly white. Pinkish tint above, a soft ashy-vinaceous.

Measurements. (56,583 ♂, North Europe,) wing, 4.40; tail, 2.90; culmen, .60; width of white frontal crescent, .25; of black, .30. (3,780 ♂, Wisconsin,) wing, 4.20; tail, 3.00; culmen, .60; width of white frontal crescent, .30; of black, .26. (16,768 ♂, Hudson’s Bay Ter.) wing, 4.55; tail, 3.10; culmen, .65; width of white frontal crescent, .35; of black, .36. (8,491 ♂, Fort Massachusetts,) wing,

²⁷ *Otocorys peregrina*, Sclater, P. Z. S. 1855, 110, pl. cii. *Eremophila per.* Scl. Cat. Am. Birds, 1862, 127.

²⁸ A specimen from Cleveland, Ohio (7,429 ♀, April 1, Dr. Kirtland), and one from Washington, D. C. (28,246 ♂, Feb.), have nearly as distinct streaks above, but the white of lower parts is without any tinge of yellow.

4.35; tail, 3.15; culmen, .61; width of white frontal crescent, .27; of black, 27. (The three perfectly identical in colors.)

Young. On the upper parts the blackish greatly in excess of the whitish markings. Spots across jugulum distinct.

Hab. Northern Hemisphere; in North America, breeding in the Arctic regions and the open plains of the interior regions, from Illinois, Wisconsin, etc., to the Pacific, north of about 38°.

Var. *chrysolæma*

Alauda chrysolæma, Wagl. Isis, 1831, 350.—Bonap. P. Z. S. 1837, 111.
Otocorys ch. Finsch, Abh. Nat. 1870, 341. *Alauda minor*, Giraud, 16 Sp. Tex. B. 1841. *Alauda rufa*, Aud. Birds Am. VII, 1843, 353, pl. cccxcvii. *Otocoris r.*, Heerm. X. s, 45. ? *Otocorys peregrina*, Scl. P. Z. S. 1855, 110, pl. cii. *Eremophila p.*, Scl. Cat. Am. B. 1860, 127.

Char. Adult. Frontal crescent less than half as wide as the black. Throat and forehead deep straw-yellow; pinkish tints above deep cinnamon.

a. Specimens from California and Mexico, streaks on back, etc., very obsolete; darker central stripe to middle tail-feathers scarcely observable; white beneath.

<i>Measurements.</i>				
		wing	tail	bill
(3,507,	♂, Tonila, Mexico.)	3.80;	2.75;	.53—.15—.42.
(9,115,	♂, Mexico.)	4.10;	2.90;	.63—.13—.50.
(3,939,	♂, California.)	3.85;	2.75;	.56—.14—.45.
(58,582,	♂, Gt. Salt Lake City.)	4.10;	2.80;	.62—.16—.32.

b. Specimens from coast of Oregon and Washington Territory. Streaks on back, etc., very conspicuous; dark central stripe of tail-feathers distinct; yellow beneath.

Measurements. (8,734 ♂, Fort Steilacoom,) wing, 3.75; tail, 2.60; bill, .61—.15—.40.

Hab. Middle America, from the desert regions of the southern Middle Province of North America, south to Bogota.

Habits. Assuming the Shore Lark of the Labrador coast and the rufous Lark of the Western prairies to be one and the same species, but slightly modified by differences of locality, climate, or food, we have for this species, at all times, a wide range, and, during the breeding-season, a very unusual peculiarity,—their abundant distribution through two widely distant and essentially different regions.

During a large portion of the year, or from October to April, these birds may be found in all parts of the United States. Dr. Woodhouse found them very common throughout Texas, the Indian Territory, New Mexico, and California. Mr. Dresser states that he found the western variety—which he thinks essentially different in several respects from the eastern—in great numbers, from October to the end of March, in the prairies around San Antonio. Afterwards, at Galveston, in May and June, 1864, he noticed and shot several specimens. Although he did not succeed in finding any nests, he was very sure that they were breeding there. It is common, during winter, on the Atlantic coast, from Massachusetts to South Carolina. In Maine it is comparatively rare. In Arizona, Dr. Coues speaks of the western form as a permanent resident in all situations adapted to its wants. The same writer,

who also had an opportunity of observing the eastern variety in Labrador, where he found it very abundant on all the moss-covered islands around the coast, could notice nothing in their voice, flight, or general manners, different from their usual habits in their southern migrations, except that during the breeding-season they do not associate in flocks.

Richardson states that this Lark arrives in the fur countries in company with the Lapland Bunting, with which it associates, and, being a shy bird, would act as sentinel and give the alarm on the approach of danger. As Mr. Dall only obtained a single skin on the Yukon, it probably is not common there. Dr. Suckley states it to be a very abundant summer resident on the gravelly prairies near Fort Steilacoom, in Washington Territory. He describes it as a tame, unsuspecting bird, allowing a man to approach within a few feet of it. It is essentially a ground bird, rarely alighting on bushes or shrubs.

Dr. Cooper adds to this that the Shore Lark is common in the interior, but he only noticed one on the coast border. In ordinary seasons they seem to be permanent residents, and in winter to be both more gregarious and more common. He met with one as late as July 1, on a gravelly plain near Olympia, scratching out a hollow for its nest under a tussock of grass.

Dr. Cooper also found these birds around Fort Mohave in considerable flocks about the end of February, but all had left the valley by the end of March. About May 29 he found numbers of them towards the summits of the Providence range of mountains, west of the valley, and not far from four thousand feet above it, where they probably had nests. They were also common in July on the cooler plains towards the ocean, so that they doubtless breed in many of the southern portions of California, as well as at Puget Sound and on the Great Plains. Dr. Cooper states that in May or June the males rise almost perpendicularly into the air, until almost out of sight, and fly around in an irregular circle, singing a sweet and varied song for several minutes, when they descend nearly to the spot from which they started. Their nests were usually found in a small depression of the ground, often under a tuft of grass or a bush. Mr. Nuttall started a Shore Lark from her nest, on the plains, near the banks of the Platte. It was in a small depression on the ground, and was made of bent grass, and lined with coarse bison-hair. The eggs were olive-white, minutely spotted all over with a darker tinge.

According to Audubon, these Larks breed abundantly on the high and desolate granite tracts that abound along the coast of Labrador. These rocks are covered with large patches of mosses and lichens. In the midst of these this bird places her nest, disposed with so much care, and the moss so much resembling the bird in hue, that the nests are not readily noticed. When flushed from her nest, she flutters away, feigning lameness so cunningly as to deceive almost any one not on his guard. The male at once joins her, and both utter the most soft and plaintive notes of woe. The nest is embedded in the moss to its edges, and is composed of fine grasses, circularly disposed and forming a bed about two inches thick. It is lined with the feathers of the grouse and of other birds. The eggs, deposited early in July, are four or five in number, and are described by Mr. Audubon as marked with bluish as well as brown spots.

About a week before they can fly, the young leave the nest, and follow their parents over these beds of mosses to be fed. They run nimbly, and squat closely at the first approach of danger. If observed and pursued, they open their wings and flutter off with great celerity.

These birds reach Labrador early in June, when the male birds are very pugnacious, and engage frequently in very singular fights, in which often several others besides the first parties join, fluttering, biting, and tumbling over in the manner of the European House Sparrow. The male is described as singing sweetly while on the wing, but its song is comparatively short. It will also sing while on the ground, but less frequently, and with less fulness. Its call-note is quite mellow, and is at times so altered, in a ventriloquial manner, as to seem like that of another bird. As soon as the young are hatched their song ceases. It is said to feed on grass-seeds, the blossoms of small plants, and insects, often catching the latter on the wing, and following them to a considerable distance. It also gathers minute crustaceans on the sea-shore.

Mr. Ridgway found this species abundant over the arid wastes of the interior, and, in many localities, it was almost the only bird to be found. In its habits he could observe no differences between this bird and the *alpestris*. He met with their nests and eggs in the Truckee Reservation, June 3. The nest was embedded in the hard, grassy ground, beneath a small scraggy sage-bush, on the *mesa*, between the river and the mountains.

Mr. J. K. Lord mentions that, having encamped at Cedar Springs on the Great Plains of the Columbia, where the small stream was the only water within a long distance, he became interested in watching the movements of these Larks. As evening approached they came boldly in among the mules and men, intense thirst overcoming all sense of fear. He found these handsome little birds very plentiful throughout British Columbia. They were nesting very early on those sandy plains, even before the snow had left the ground. He saw young fledglings early in May.

A single specimen of this species was taken at Godhaab, Greenland, in October, 1835.

Eggs from Labrador are much larger in size than those from Wisconsin. Two eggs from the first, one obtained by Mr. Thienemann, the other by Mr. George Peck, of Burlington, Vt., measure .93 and .94 of an inch in length by .71 in breadth; while some from the West are only .83 in length and .63 in breadth, their greatest length being .90, and their largest breadth .69 of an inch. In their ground-color and markings, eggs from both localities vary about alike. The ground-color varies from a purplish-white to a dark gray, while the spots are in some a brownish-lavender, in others a brown, and, quite frequently, an olive-brown. In some they are in larger, scattered blotches; while in others they are in very fine minute dots so thickly and so uniformly diffused as almost to conceal the ground.

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