

32. *Cardinalis cardinalis*. CARDINAL.—Abundant resident, particularly in the heavily wooded bottom lands of the Mississippi on both sides of the river. Nesting begins early in April or even by the last of March. I have found good-sized young by the middle of April. Nests are placed in bushes and thorn trees, near the ground, or in roots of fallen trees. The eggs are two, three, or four in number.

33. *Habia ludoviciana*. ROSE-BREADED GROSBEAK.—Common summer resident. This is a well-known song bird, and is found in many parts of the city as well as in the deepest woods. The nests, of which I have examined a large number, are placed in the tops of trees and saplings. The eggs can be seen from below in most cases. They are from four to six in number.

34. *Passerina cyanea*. INDIGO BUNTING.—A well known bird in this locality, coming from the south in late April or by the first of May. By the last of May nesting has begun. Three or four eggs are deposited, and the Cowbird usually adds one or more. The nest is built in grass, weeds, or briars, or in the sprouts at the foot of a tree.

35. *Spiza americana*. DICKCISSEL.—Abundant summer resident, breeding in clover fields, where many nests can be found in a limited area. These are placed in the tops of clumps of clover or in shorter growth. I have found them sunk in the ground. The eggs are two, three, or four, in number.

DESCRIPTIONS OF A NEW SPECIES AND THREE NEW SUBSPECIES OF BIRDS FROM ARIZONA.

BY DR. EDGAR A. MEARNS, U. S. A.

Junco ridgwayi, sp. nov.

SP. CHAR. — Above similar to *J. caniceps*; below indistinguishable from *J. annectens*.

Adult Male (Type, No. 2770, Coll. E. A. Mearns, Whipple Barracks, Arizona, April 22, 1884):—Upper parts of head and neck, with rump, throat and jugulum, ash-gray. Lores grayish black. Scapulars and interscapular region bright rufous; outer webs of inner tertiaries tinged with the same. Abdomen and crissum white. Sides pinkish. Wings and tail dark grayish ash, the latter with the outer rectrix wholly white, the second white except a dusky line along each edge, and the third with a long white terminal stripe nearly confined to the inner web. Bill flesh color, slightly tipped with black. Feet and claws light brown. Length, 163; alar ex-

panse, 257; wing, 80; tail, 77; culmen, 12; tarsus, 20.5; middle toe and claw, 20; middle claw, 6 mm.

Adult Female (No. 11,187, U. S. Nat. Mus., Coll. C. Drexler, Fort Bridger, Utah, May 28, 1858): — Similar to the male, but duller, with an olive wash to the gray of head, and the plumage generally faded to a brown color, which is probably the result of exposure, the bird being in worn breeding dress. Size smaller.

I take pleasure in naming this handsome Junco after Mr. Robert Ridgway, of Washington, D. C. It was abundant at Whipple Barracks and in the vicinity of the neighboring town of Prescott, Arizona, during the latter part of April, 1884, at which season all of the four species of this genus found by Dr. Coues during his long residence in this locality had departed, with the exception of a few individuals of *Junco oregonus shufeldti* that still lingered in the mixed woods of oaks and pines, in company with the present species. I preserved but a single specimen of each, and cannot now refrain from smiling at the recollection of my misdirected zeal in garnering series of specimens of Flickers, Long-crested Jays, Black-headed Grosbeaks and other conspicuous but well-known birds, while these two Juncos, both of which were new to science, were almost ignored. I inferred that *Junco ridgwayi* was then on its breeding ground, the migrants having nearly all departed, a supposition that I was unable to verify, however, never having visited the locality since then during the breeding season.

An example of this species was taken in New Mexico, as I am informed by Mr. Ridgway, to whom I am indebted for the loan of two breeding birds of this species — male and female, taken at Fort Bridger, Utah, by C. Drexler on May 28, 1858 — and for many other specimens, needed for comparison, from the National Museum collection. Its habitat will probably be found to include the lower evergreen-forested areas of the Great Basin region from Utah southward.

Spinus tristis pallidus subsp. nov.

Mr. J. A. Allen has called attention to this well-marked geographical race of the American Goldfinch, in his annotations to Mr. W. E. D. Scott's paper on Arizona birds, published in the *Auk*, Vol. IV, p. 198. His remarks are as follows: —

"Six specimens in winter plumage are strikingly different from the Eastern bird in corresponding plumage. The white edging of the feathers of the wing and tail in the Arizona bird is much broader; the dorsal surface is much lighter, the yellow of the throat is much purer, lacking almost wholly the greenish shade seen in the Eastern bird; the white of the belly is purer, with a faint fulvous instead of grayish shade; the sides are washed with a paler shade of fulvous brown, in quite strong contrast, however, with the almost pure, solid white of the abdomen and lower tail-coverts. If summer specimens should show correspondingly paler tints in comparison with Eastern examples, as they are almost sure to do, the Arizona form is quite as well entitled to recognition as a subspecies as are several of the pallid forms of Sparrows which have been accorded this rank."

With commendable and characteristic conservatism, Mr. Allen abstained from imposing a name upon this race until summer specimens should reveal more clearly its true status. My task, therefore, is reduced to describing the breeding dress, and naming the new subspecies.

Adult Male in Breeding Plumage (Type, No. 6311, Coll. E. A. Mearns, Fort Verde, Yavapai County, in central Arizona, May 3, 1888): — Similar to the corresponding plumage of Eastern *S. tristis*, but with the black cap larger and extending farther back on the head, the general color decidedly paler, and all of the white markings increased in area. The wing bands, formed by the white tips of the greater and lesser coverts, are considerably broader. The secondaries and tips of primaries are more broadly edged with white, as are the tail-feathers, the inner webs of which are more largely occupied by white. Irides hazel. Bill brownish yellow at base, shading to dusky olive at tip. Feet pale yellow, claws brown. Length, 138; alar expanse, 240; wing, 80; tail, 57; culmen, 10.5; bill, measured from nostril, 8.7; gape, 12; from tip of bill to centre of pupil, 16; from tip of bill to occiput, 26; from base of bill to occiput, 18; length of tibia, 23; tarsus, 13.5; middle toe and claw, 15.5; middle claw, 5.3; hallux with its claw, 13; claw of hallux, 6 mm.

A quite large series of winter specimens of both sexes in my collection, from Fort Verde, Arizona, fully confirms Mr. Allen's description and conclusions based on six specimens in Mr. Scott's collection. The winter plumage is much paler than that of the Eastern bird, with much extension of the white, some specimens having tails that are nearly all white, in which condition they differ in appearance from Eastern *tristis* about as *Acanthis hornemannii* does from *A. linaria*. This pale race will doubtless

prove to be an inhabitant of the whole area of the Great Basin. It is considerably larger than the Eastern bird, as shown in the following

MEASUREMENTS.*

	<i>Spinus tristis.</i>						<i>Spinus tristis pallidus.</i>					
	26 MALES (from New York).			7 FEMALES (from New York).			10 MALES (from Arizona).			11 FEMALES (from Arizona).		
	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum
Length . . .	131.6	139.7	125.2	125.0	130.0	120.7	135.0	140.0	130.0	132.0	136.0	127.0
Expense . . .	227.6	231.9	222.3	218.0	221.2	211.1	238.0	243.0	230.0	229.0	233.0	225.0
Wing	72.4	76.2	67.6	70.4	72.4	67.1	78.0	80.0	77.0	75.0	76.0	74.0
Tail	50.8	53.1	47.8	49.5	55.6	47.8	56.0	58.0	55.0	54.0	58.0	51.0
Culmen . . .	10.2	10.9	9.4	10.2	10.4	9.4	10.9	11.8	10.5	10.7	11.5	10.0
Bill from nostril . . .	8.1	8.6	7.6	8.6	8.6	8.6	8.7	8.7	8.7	8.5	8.5	8.4
Gape	10.7	10.9	10.2	11.7	12.4	10.7	11.1	12.0	10.5	11.4	12.0	10.5
Tarsus . . .	13.7	14.2	13.2	14.0	14.2	13.5	13.8	15.0	13.0	14.0	15.0	13.0
Middle toe and claw . .	15.5	16.3	14.1	15.2	15.5	15.0	16.0	17.0	15.0	16.0	17.0	15.0
Middle toe . .	10.9	11.2	10.7	10.2	10.4	9.9	12.0	12.0	12.0	10.0	10.0	10.0
Middle claw .	5.6	5.8	5.1	5.1	5.1	5.1	5.3	6.0	5.0	5.3	6.0	4.5

Coccothraustes vespertina montana Ridgway.

On comparing thirteen Evening Grosbeaks from Arizona with seventy-two specimens from Fort Snelling, Minnesota, all collected by the writer, the Arizona form appeared to be separable from the Eastern, as a subspecies. Through the kindness of Messrs. Robert Ridgway, J. A. Allen, and George B. Sennett, I was enabled to add to this material all of these Grosbeaks in the United States National Museum at Washington, in the American Museum of Natural History of New York, and in the private collection of Mr. Sennett, thus bringing together about 150 specimens. From the study of this quite extensive material, it became apparent that the Western bird, *in general*, is very different from that inhabiting the region of the Great Lakes and north-central portion of North America. The distinction rests entirely on the female, such apparent characters as may seem to exist in the male, when individual examples are compared, being completely overlapped and extinguished when large series are

*In millimetres; taken from specimens in the flesh, by the author.

brought together. Western females have the parts which are of an ashen color in the Eastern bird of a yellowish brown; and this striking difference pertains to all Western birds, as well as to those from Mexico. I am unable to detect any marked difference between specimens from British Columbia and the northwestern United States, and those from the Valley of Mexico and the highlands of Vera Cruz. Specimens before me from British Columbia, Washington, Oregon, California, Utah, Arizona, New Mexico, Valley of Mexico, and Mirador (near Vera Cruz), are all examples of the western subspecies, which must be called *montana*, that name having been applied by Mr. Ridgway to the Evening Grosbeak inhabiting the southern Rocky Mountains of the United States and thence southward through the highlands of Mexico into Central America, although none of the characters assigned by him are adequate to separate the Western bird from that of the Great Lake region, the diagnosis having been based on the characters of the male, and the describer's intention having been to separate from the northern bird at large that inhabiting Mexico and the southern Rocky Mountain region, as shown by his assignment of habitats to the two forms: "HAB. (Var. *vespertina*): Pacific coast to Rocky Mountains; northern America east to Lake Superior. (Var. *montana*): Southern Rocky Mountains of United States into Mexico; Orizaba! (SCLATER, 1860, 251); Vera Cruz (alpine regions, breeding) SUMICHRAST, Pr. Bost. Soc., I, 550; Guatemala, SALVIN." As the subspecies *montana* has been dropped, not appearing in the A. O. U. Check-List nor in Mr. Ridgway's Manual of North American Birds, the characters on which it was based having been shown to be inconstant, I have enumerated it in the present article as new, since here first described, retaining Mr. Ridgway's name, his type, from Cantonment Burgwin, New Mexico, being an example of the new subspecies.

Adult Male (Type, No. 11,960, U. S. National Museum, collected by W. W. Anderson, at Cantonment Burgwin, New Mexico, June 3, 1859):—Indistinguishable from northeastern specimens of true *C. vespertina*.

Adult Female (Type, No. 4163, Coll. E. A. Mearns, Oak Creek, near Fort Verde, Yavapai County, Arizona, August 14, 1885):—Pattern of markings as in *C. vespertina*, but the color of most of the body is brown, mixed with olive yellow, and tinged with gray, instead of being wholly grayish as in *vespertina*. The black stripe at each side of the throat and

the dark markings of the wings and tail, are less restricted. The irides are hazel, the entire bill light yellowish green, the tarsi and toes pale yellowish brown, and the claws dark brown. The general color is yellowish brown instead of grayish.

Young Male in First Plumage (No. 4165, Coll. E. A. Mearns, Oak Creek, thirty miles north of Fort Verde, Arizona, August 14, 1885):—In general appearance it resembles the female more than the male, although traces of the male dress are present, as indications of the frontal crescent, black patch on crown, dark mantle, white tertials, and wholly black primaries and tail-feathers. The grayish tinge is entirely wanting. The body is olivaceous buff, more greenish above and brownish below; frontal crescent buff; crown patch with a brownish black spot occupying the centre of each feather; stripe on each side of throat dusky olive; interscapular region darker olivaceous; rump with blackish edging to the feathers; upper tail-coverts black, broadly edged with greenish buff, the longest of them black throughout; inner greater wing-coverts sulphur-yellow; tertials smoky white, with a slight amount of dusky on their inner edge; feathers of crissum white, edged with a pale buff; bill greenish olive, yellowish green only at extreme base; tarsus, toes and claws brown. Another specimen (No. 4164, ♂, juv.), presumably belonging to the same brood, of which the female above described was the parent, differs in having the crown patch indicated by a slightly darker olivaceous coloring instead of having blackish centres to the feathers, in having the longest upper tail-coverts tipped with buff, and more black on the inner edge of the tertials, though much less in amount than in adult females. There is also a small white spot at the tip of the inner web of the outer tail-feather. The bill, tarsus, toes, and claws are a little less dark than in the preceding specimen, although both have these parts darker than in either parent.

Remarks.—In fully adult males, of both subspecies, the tertials lose the smoke-brown tint and the black inner edging, becoming pure white; and the tail-feathers lose the white on their inner webs, becoming black throughout. There is considerable variation in respect to the breadth of the yellow frontal crescent of both forms. In most specimens a very narrow edging of black is interposed between the maxilla and the yellow front, which occasionally appears as a broad black band encroaching on the yellow, but is quite frequently absent. The broadest front in the series is in an immature bird from Hudson's Bay Territory, specimens from Minnesota, Arizona, and Washington Territory, respectively, coming next to it, in this respect; and the narrowest front is seen in an immature male from the city of Mexico, specimens from Minnesota, New Mexico, Washington, California, and Arizona following in order after it. The original type of *mon-*

tana, from New Mexico, has the frontal stripe quite as broad as in average Minnesota specimens. In Western and Southern birds there is a slight average increase in the intensity of the yellow in males. Season appears to exert but little influence upon the plumage, though the yellowest males were taken in spring, and Western females average browner in winter, with an increase of the olive yellow in autumn. The brownest females of *C. vespertina montana* come from the extreme localities of Walla Walla and Mirador, and were taken in January and June, respectively. The variation in size in the subspecies *montana*, throughout its range, is almost inappreciable, measurements of specimens from the northwestern United States averaging almost exactly the same as those from southern Mexico, while those from intervening localities show only slight individual variations.

MEASUREMENTS.*

	<i>Coccothraustes vespertina</i> (from Minnesota).						<i>Coccothraustes vespertina montana</i> (from Arizona).					
	13 MALES			13 FEMALES			3 MALES			8 FEMALES		
	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum
Length . . .	203	210	199	201	205	190	202	204	200	200	204	195
Expense . . .	348	361	338	342	353	329	349	357	340	343	348	339
Wing	115	122	110	113	118	110	116	120	113	112	115	110
Tail	72	76	66	69	73	65	72	77	70	70	72	68
Culmen (chord) . . .	19.5	20.6	18.3	19.5	20.5	18.7	21	21	21	20.6	21.5	19.5
Bill from nostril . . .	15.4	16.4	15	15.6	16.3	15	16.2	16.5	16	15.7	16.5	15
Gape	21.6	22.5	21	21.7	22.5	21	21.7	22	21	20	23	21
Height of billat base .	15.5	16.2	14.8	15.5	16	15	15.7	17	15	15	15.5	14.5
Width of billat base .	14.7	15.2	14	14.6	15.2	14	14.7	15	14.5	14.5	15.2	14
Tarsus	21.9	23	21	22	23.5	21	20.8	21	20.5	21.3	22	20
Middle toe and claw . .	24.2	25	23	24.1	26	23	24.5	26	23	24.2	26	23.5
Middle claw .	7.3	8.3	6.3	7.5	8	7	7	8	6	7.3	8.5	7
Hallux with its claws . .	17.8	19	16.5	17.5	18.5	16.5	16	16	16	16	16.1	15.9

Melanerpes formicivorus aculeatus subsp. nov.

A comparison of more than fifty Arizona specimens of this species with the series of *Melanerpes formicivorus bairdi* from

* In millimetres; taken from specimens in the flesh, by the author.

the Pacific coast of the United States, *M. formicivorus* from southeastern Mexico and Central America, and *M. formicivorus angustifrons* from Lower California, in the American Museum of Natural History, New York, the U. S. National Museum at Washington, and the cabinet of Mr. George B. Sennett, shows that it is subspecifically separable from either of the above forms. It differs from all of them in the small size and peculiar shape of the bill, but is in most respects intermediate between *M. formicivorus bairdi* and *M. formicivorus*.

Adult (Type, No. 6345, Coll. E. A. Mearns, Squaw Peak, central Arizona, May 9, 1888):—General size and coloring intermediate between *M. formicivorus* and *M. formicivorus bairdi*; throat less yellow than in either of them; bill shorter, more slender, and less arcuate than in either of the other forms of *M. formicivorus*; white striping of chest more than in the Pacific coast form, less than in *formicivorus*.

Young in First Plumage (No. 5556, ♀, juv., Coll. E. A. Mearns, Baker's Butte, Mogollon Mountains, central Arizona, July 18, 1887):—Similar to adults, but lacking the black band across the fore part of crown, the whole top of the head being red, *in both sexes*; colors duller, with the quill-feathers, neck and breast slightly brownish; pectoral band broader, with less of the white striping; black streaks of sides less sharply defined, having a blurred appearance.

Habitat.—Southwestern United States, southward through the mountainous portions of western Mexico.

MEASUREMENTS* OF *Melanerpes formicivorus aculeatus* FROM ARIZONA.

	17 MALES.			17 FEMALES.			BOTH SEXES (34 specimens).		
	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum
Length	242	250	232	237	248	231	240	250	231
Alar expanse.	457	472	442	450	475	437	454	475	437
Wing	144	151	137	144	150	140	144	151	137
Tail	89	97	82	90	95	83	89	97	82
Culmen (chord)....	26.3	29	24	25.5	28	23	25.9	29	23
Tarsus.....	22	24	21	21.5	24	19	21.7	24	19
Middle toe and claw .	25.2	27	24	24.6	26	22.5	24.9	27	22.5

*In millimetres; taken in the flesh by the author.

MEASUREMENTS OF 12 SPECIMENS OF *Melanerpes formicivorus bairdi*
FROM CALIFORNIA.

				Wing	Tail	Culmen	
1,028	♂	ad.	San Fernando Valley, Cal.	E. C. Thurber	150	96	31.5
884	♂	ad.	San Gabriel, California	"	145	96	30
44,121	♂	ad.	California (F. Gruber)	Am. Mus. Nat. Hist.	147	97	30.5
44,118	♂	ad.	California (J. Krider)	"	153	93	31
25,661	♂	ad.	Cosumnes River	"	150	92	30.5
929	♂	ad.	Newcastle, California	George B. Sennett	145	86	33.5
....	♂	ad.	Sebastopol, California	"	150	88	31.5
675	♂	ad.	Alhambra, California	E. C. Thurber	145	87	27.5
884	♂	ad.	San Gabriel, California	"	145	90	28.5
25,662	♂	ad.	California	Am. Mus. Nat. Hist.	145	84	29.5
930	♂	ad.	Newcastle, California	George B. Sennett	140	81	28
...	♂	ad.	Sebastopol, California	"	148	82	28

COMPARATIVE MEASUREMENTS OF THE FOUR SUBSPECIES OF
Melanerpes formicivorus.

Average of <i>M. f. bairdi</i> from California (7 males and 5 females)	147	89	30
Maximum " " " " " " " "	153	97	33.5
Minimum " " " " " " " "	140	81	27.5
<hr/>			
Average of <i>M. formicivorus</i> from S. E. Mexico and Central America*	141	89	29.5
Maximum " " " " " " " "	150	91	31
Minimum " " " " " " " "	135	79	28.9
<hr/>			
Average of 34 specimens of <i>M. f. aculeatus</i> from Arizona	144	89	29.9
Maximum " " " " " " " "	151	97	29
Minimum " " " " " " " "	137	82	23
<hr/>			
Average of <i>M. f. angustifrons</i> from Lower California*	137	86	30.5
Maximum " " " " " " " "	141	89	31.5
Minimum " " " " " " " "	132	84	29.2

OBSERVATIONS ON THE AVIFAUNA OF PORTIONS
OF ARIZONA.

BY EDGAR A. MEARNS, M. D.

(Concluded from Vol. VII, p. 55.)

Dryobates villosus hyloscopus. CABANIS'S WOODPECKER. — Breeds commonly throughout the pine belt, often ascending higher in summer, then preferring aspens to the fir and spruce woods of high altitudes. It very rarely descends to the cottonwoods of the Verde Valley to fraternize with its smaller relative, Baird's Woodpecker, and only when the moun-

*Taken from Ridgway's Manual of North American Birds,