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No. 4.

ON A COLLECTION OF BIRDS LATELY MADE  
BY MR. F. STEPHENS IN ARIZONA.

BY WILLIAM BREWSTER.

*(Continued from p. 147.)*

60. **Carpodacus frontalis** (Say) Gray. HOUSE FINCH.  
571, ♀ ad., Camp Lowell, June 22.

61. **Loxia curvirostra mexicana** (Strickl.) Baird. MEX-  
ICAN CROSSBILL. — Chiricahua Mountains; most numerous on  
the eastern side. Young just able to fly were taken March 7.

All of the following specimens are referable to true *mexicana*.

16, ♂ ad., Chiricahua Mountains, March 6. Length, 7.10; extent,  
11.90; wing, 4; tail, 2.73; culmen, .87.

17, ♀ ad., same locality and date. Length, 7.10; extent, 11.80; wing,  
3.88; tail, 2.75; culmen, .85. "Iris dark brown. The jaw muscles were  
extraordinarily developed on the side toward which the lower mandible  
crossed."

24, ♀ ad., Chiricahua Mountains, March 7. Length, 6.80; extent,  
11.40; wing, 3.70; tail, 2.52; culmen, .81.

25, ♀ juv., first plumage, same locality and date. This bird had been  
out of the nest but a few days and the tips of the mandibles had not begun  
to cross.

116, ♂ juv., first plumage, Chiricahua Mountains, March 26. Length,  
6.90; extent, 12; wing, 4; tail, 2.75; culmen, .65. Wings and tail fully  
grown; mandibles decidedly crossed.

62. **Chrysomitris psaltria** (*Say*) *Bp.* ARKANSAS GOLD-FINCH.—“Common in only a few localities. I have not found much difference among the examples that occur here and have taken few that answered the description of var. *arizonæ*. California specimens are almost identical with those from New Mexico.”

130, ♂ ad., Chiricahua Mountains, March 30. Length, 4.50; extent, 7.80; wing, 2.65; tail, 1.90. “Iris brown.”

63. **Chrysomitris pinus** (*Wils.*) *Bp.* PINE FINCH.—Common among the Chiricahua Mountains.

20, ♂ ad., Chiricahua Mountains, March 7. Length, 5; extent, 8.90; wing, 2.91; tail, 2.20.

128, ♂ ad., Chiricahua Mountains, March 29. Length, 4.90; extent, 8.60; wing, 2.96; tail, 2.14; “Iris dark brown.”

64. **Poocetes gramineus confinis** *Baird.* WESTERN GRASS FINCH.—“Common on prairies.”

The utility of recognizing this race of the Grass Finch seems to me questionable, although the western bird certainly possesses slight differential characters; these, however, are so largely comparative that they are difficult of adequate description, and any one attempting to determine examples by the books without the aid of large series of specimens, will be likely to abandon the task in despair.

158, ♀ ad., Sulphur Spring Valley, April 4. Length, 6.20; extent, 10.20; wing, 3.20; tail, 2.90.

164, ♂ ad., near Tombstone, April 5. Length, 6.40; extent, 10.80; wing, 3.35; tail, 3.04.

65. **Spizella socialis arizonæ** *Coues.* WESTERN CHIPPING SPARROW.—Noted only at Cave Creek. “A large flock; they keep much among trees.”

11, ♂ ad., Cave Creek, March 5. Length, 5.50; extent, 8.90. “Iris dark brown; bill dark flesh color; legs pale brownish.”

66. **Spizella breweri** *Cass.* BREWER'S SPARROW.—Four specimens, all taken April 5, near Tombstone. Eight were killed by one shot into a flock which had gathered about a water-hole, but they were in such ragged plumage, owing to the progress of the spring moult, that half of them had to be thrown away.

67. **Junco oregonus** (*Towns.*) *ScL.* OREGON SNOWBIRD.—A single specimen obtained March 5, on Cave Creek.

68. **Junco cinereus caniceps**\* (*Woodh.*) *Coues.* GRAY-HEADED SNOWBIRD.

\* In citing this and the next form as races of *cinereus*, I follow Mr. Henshaw, with whose views respecting the affinity of the three birds I fully agree.

10, ♂ ad., Cave Creek, March 5. Length, 6.20; extent, 9.20. Iris dark brown; bill and legs flesh color.

15, ♀ ad., same locality and date. Length, 6.30; extent, 9.

141, ♀ ad., Chiricahua Mountains, March 31. Length, 6.10; extent, 9.30. Iris dark brown.

69. **Junco cinereus dorsalis** (Henry) Henshaw. RED-BACKED SNOWBIRD.

108, ♀ ad., Chiricahua Mountains, March 26. Length, 6.50; extent, 9.50; wing, 3.05; tail, 3.18. "Not as plenty here as *J. cinereus*."

70. **Junco cinereus** (Swains.) Caban. MEXICAN SNOWBIRD.—Nine specimens, all taken during March, in the Chiricahua Mountains.

71. **Amphispiza bilineata** (Cass.) Coues. BLACK-THROATED SPARROW.—Mr. Stephens found this Sparrow on barren plains sparsely covered with low bushes; he considers it a permanent resident in Arizona.

*Juv., first plumage* ♂ (No. 613, Camp Lowell, June 28). Crown, lores, orbital region and sides of head generally, dull brownish-ash; a white superciliary line as in the adult; back faded brown with shaft-stripes of a darker shade on most of the feathers; wing-coverts and outer webs of inner secondaries, reddish-buff; beneath dull white with the breast and sides of the abdomen thickly but finely streaked with dull black.

In addition to the bird just mentioned the collection includes five adults from the following localities: San Pedro River (♂, Dec. 25); Sulphur Spring Valley (♂, April 4); Tucson (♀, May 3); Santa Rita Mountains (♀, May 20); Camp Lowell (♂, May 30).

72. **Peuceæa cassini** (Woodh.) Baird. CASSIN'S SPARROW.—Although special efforts were made to obtain specimens of this species, only one was secured during the trip. "The song of the male is peculiar; about midway it drops several notes and is finished on one key. Several others seen. They were all very wild."

159, ♀ ad., Sulphur Spring Valley, April 4. Length, 6.30; extent, 7.80; wing, 2.50; tail, 2.82. "Iris brown."

73. **Peuceæa carpalis** Coues. RUFIOUS-WINGED SPARROW.—Found sparingly about Tucson and Camp Lowell. It inhabited the mesquite thickets, keeping closely hidden in the bunches of "sacaton" grass, from which, when flushed, it flew into the branches above.

233, ♀ ad., Tucson, April 19. Length, 5.70; extent, 7.90; wing, 2.42; tail, 2.82.

234, ♂ ad., same locality and date. Length, 5.90; extent, 8; wing, 2.57; tail, 3. "Iris brown; bill dark brown above, paler below; legs pale brown."

432, ♀ ad., Tucson, May 25. Length, 5.80; extent, 7.80; wing, 2.46; tail, 2.75. With nest and three eggs.

442, ♂ ad., Tucson, May 27. Length, 5.80; extent, 8; wing, 2.58; tail, 3.

582, ♂ ad., Camp Lowell, June 24. Length, 5.90; extent, 8.20; wing, 2.55; tail, 2.91.

74. **Peucea ruficeps boucardi** (*Scl.*) *Ridg.* BOUCARD'S SPARROW.—These Sparrows were met with at Cave Creek, near Morse's Mill, and in the Santa Rita Mountains. Among some notes taken at the first-named place I find the following: "I saw five of these Sparrows to-day [March 4] but two of them escaped me. They were in scrub-oaks on rocky hillsides, and were apparently mated. They acted somewhat like Wrens, hiding among the rocks and flushing from the grass at a point some distance beyond where I would mark them down. Two went into the low branches of the oaks, from which I easily shot them. I have not found the species before in Arizona, but I took several near Fort Bayard, New Mexico, in 1876." A specimen taken near the end of March was shot "on a ridge among thick brush," while two others, obtained in the Santa Rita Mountains in May, occurred at a high elevation on similar ground.

1, ♂ ad., Cave Creek, March 4. Length, 6.60; extent, 8.30; wing, 2.80; tail, 3.29.

2, ♀ ad., same locality and date. Length, 6.40; extent, 7.90; wing, 2.60; tail, 3.02.

3, ♂ ad., same locality and date. Length, 6.50; extent, 8.20. "Iris brown; legs pale flesh-color; bill dark bluish slate-color."

138, ♂ ad., Chiricahua Mountains, March 31. Length, 6.50; extent, 8.30; wing, 2.56; tail, 3.15.

387, ♀ ad., Santa Rita Mountains, May 16. Length, 6.10; extent, 8.10; wing, 2.58; tail, 2.95. "Iris brown; bill blackish above, light bluish below; legs pale flesh-color."

413, ♀ ad., Santa Rita Mountains, May 20. Length, 6.30; extent, 7.80; wing, 2.50; tail, 3.

The specimens enumerated above represent true *boucardi* and are readily separable from Texas examples by the characters which my friend Mr. Brown has lately pointed out\* in his diagnosis of the new race, *eremaca*.

75. **Melospiza fasciata fallax** *Baird.* WESTERN SONG SPARROW.—Rather common about Tucson where they haunted willow thickets and tall marsh grass near water.

258, ♀ ad., Tucson, April 21. Length, 6.30; extent, 8.20; wing, 2.60; tail, 2.98; culmen, .58. "Iris dark brown; bill dark above, light below; legs light brown. With nest and three eggs."

\* This Bulletin, Vol. VII, p. 26.

270, ♀ ad., Tucson, April 23. Length, 6.10; extent, 7.90; wing, 2.42; tail, 2.86; culmen, .54.

319, ♂ ad., Tucson, May 3. Length, 6.30; extent, 8.40; wing, 2.60; tail, 2.99; culmen, .55.

338, ♀ ad., Tucson, May 6. Length, 6.10; extent, 7.80; wing, 2.52; tail, 2.97; culmen, .53. "With nest and three eggs: set completed."

510, ♂ ad., Tucson, June 8. Length, 6.50; extent, 8.40; wing, 2.74; tail, 3.16; culmen, .52.

76. **Melospiza lincolni** (*Aud.*) *Baird*. LINCOLN'S FINCH. — "Common along streams" in March. Two specimens (Cave Creek, March 5).

77. **Passerella townsendi schistacea** (*Baird*) *Coues*. SLATE-COLORED SPARROW. — None were met with during 1881, but I have a specimen taken by Mr. Stephens near Tucson, in February, 1880.

78. **Pipilo maculatus megalonyx** (*Baird*) *Coues*. SPURRED TOWHEE. — Two males, Chiricahua Mountains, March 26 and 28. "Common in brush, usually along streams. They have a variety of calls, some of which resemble those of the Catbird. The song, uttered while the bird is sitting on a tree, sounds like *jack-jacksonii*."

The North American Towhees of the *maculatus* group are at present involved in much confusion. The trouble seems to be that each locality furnishes a race of its own which either possesses certain slight individual characteristics, or combines, in varying degrees, the characters of two or more recognized forms. The case, however, is not peculiar; for to a greater or less extent the same state of things obtains among the Song Sparrows, Shore Larks, and several other species, in which the forces of evolution are still actively working.

79. **Pipilo chlorurus** (*Towns.*) *Baird*. GREEN-TAILED TOWHEE. — Several specimens taken late in April. "Not common; usually found in low brush."

80. **Pipilo fuscus mesoleucus** (*Baird*) *Ridgw.* CAÑON TOWHEE. — "Common in rocky localities on plains, and in valleys." A nest containing three eggs was taken June 15 at a point about twenty-five miles north of Tucson. The eggs are grayish-white with numerous, short, zigzag lines of black about the larger end and occasional spots or dashes of brown and dull lavender scattered over the general surface of the shell. They measure respectively .91 × .69, .94 × .69, and .92 × .69. The nest, which was placed about four feet above the ground in a "cat-claw" mesquite, is firmly and rather compactly built of fibrous shreds

from the stalks of herbaceous plants, with a few twigs and whole stems supporting the outside, and a scanty lining of horse-hair. Its external diameter is about five inches; its depth two. The cavity is two inches wide and one and a half deep. Both nest and eggs differ somewhat from California examples of *crissalis* in my collection, the eggs being smaller and whiter, the nest softer and more compact.

177, ♂ ad., Tombstone, April 7. Length, 8.80; extent, 11.60. "Iris light brown."

186, ♀ ad., Tombstone, April 9. Length, 8.10; extent, 10.90; wing 3.50; tail, 4.15.

416, ♂ ad., Santa Rita Mountains, May 20. Length, 8.50; extent, 11.50; wing, 3.73; tail, 4.45.

81. **Pipilo aberti** Baird. ABERT'S TOWHEE. — "I have found this species common along the Colorado and Gila Rivers, and I took several on the San Pedro in December, 1880. They appear to be restricted to the vicinity of streams and usually to thick brush, although they frequent trees more than most of the members of this genus. I have seen them hunting insects in the bark of large trees in a manner similar to that of Wrens. They are rather shy. The usual note is a sharp chirp. The song is difficult to describe; it is rapid and near the middle rises to a higher key, quickly falling again and ending on the initial note. The nest is rather bulky; it is sometimes built in bushes near the ground, and again in trees. I found one in a bunch of mistletoe at a height of at least thirty feet."

A nest found May 28, at Tucson, was built on the top of a mesquite stump, where it was kept in place by the surrounding sprouts. It contained three fresh eggs which measure respectively  $.91 \times .72$ ,  $.92 \times .72$ , and  $.90 \times .71$ . They are elliptical in shape, and in the character and distribution of their markings they resemble the above-described eggs of *P. mesoleucus* from which, however, they differ in having a faint but decided bluish cast. The nest is large and loosely built. It is composed mainly of broad strips or ribbons of bark with which are mingled small, pliant twigs and the green stems and leaves of the mesquite (?). The whole structure is homogeneous and, strictly speaking, it has no lining, but the materials surrounding the cavity are rather softer than the rest, while they are arranged with some regard to smoothness. The external diameter of this nest is about seven inches; its depth three. The cavity is three inches wide and two deep.

*Juv., first plumage* (No. 520, Tucson, June 10). Above uniform light brown; wing-coverts, outer edges of the inner secondaries and a narrow tipping on the tail, brownish-ochraceous; beneath brownish-fulvous with an ochraceous tinge on the throat, abdomen, and crissum, and a broad band of coarse but obscure black spots extending across the breast; head-markings as in the adult, but duller.

Eight specimens were collected. "Iris light brown; bill brownish horn-color above, bluish beneath; legs brown."

82. **Cardinalis virginianus igneus** (*Baird*) *Coues*. SAINT LUCAS CARDINAL. — Found only at Tucson, where it occurred sparingly in low brush, usually near streams.

269, ♂ ad., Tucson, April 23. Length, 9.40; extent, 12.40; wing, 4.12; tail, 4.92; longest feathers of crest, 1.35. "Iris dark brown; legs brown."

83. **Pyrrhuloxia sinuata Bonap.** TEXAN CARDINAL. — In the latter part of April three of these Cardinals were taken near Tucson, and several others were seen in the same place during March, 1880. They were found among mesquites, along brush fences, and in the shrubbery of an arroyo. "Iris dark brown; bill yellowish horn-color; legs pale brown. Food seeds, green buds and insects."

84. **Zamelodia melanocephala** (*Swains.*) *Coues*. BLACK-HEADED GROSBK. — Common at high elevations among the mountains.

367, ♂ ad., Santa Rita Mountains, May 13. Length, 8.10; extent, 12.90; wing, 4.17; tail, 3.75. "Iris dark brown; legs light plumbeous."

391, ♀ ad., Santa Rita Mountains, May 16. Length, 8.40; extent, 12.80; wing, 4.28; tail, 3.70.

In addition to being considerably larger than any of my more northern specimens, these examples are peculiar in having the interscapular feathers so broadly edged with brownish-orange (brownish-yellow in the ♀) that the back appears to be about equally streaked with light and dark color.

85. **Guiraca cœrulea** (*Linn.*) *Swains.* BLUE GROSBK. — Only a few were seen during the present trip, but Mr. Stephens found them common on the Gila River in 1876. "They are late migrants."

445, ♂ ad., Tucson, May 28. Length, 7.20; extent, 11.10; wing, 3.60; tail, 3.27. "Iris dark brown; bill black above, bluish below; legs black."

86. **Passerina amoena** (*Say*) *Gray*. LAZULI BUNTING. — Two specimens, obtained April 25, at Tucson, are noted as "the first ones seen." One of them, a male, has the blue almost completely obscured by rufous, which forms a broad tipping on all the feathers of the upper parts. The throat, however, remains nearly pure blue.

87. **Calamospiza bicolor** (Townsend) Bonap. LARK BUNTING.—Several large flocks were seen April 13, in the neighborhood of Tombstone. Most of the males were in parti-colored dress, not above one per cent having put on the black breeding-plumage. The stomachs of all which were killed contained "buds and seeds."

88. **Molothrus ater obscurus** (Gmel.) Coues. DWARF COWBIRD.

277, ♂ ad., Tucson, April 25. Length, 7.30; extent, 12.40; wing, 4.02; tail, 3.20. "Iris dark brown."

417, ♂ ad., Santa Rita Mountains, May 20. Length, 7.10; extent, 12.10; wing, 4.01; tail, 3.17.

89. **Agelæus phoeniceus** (Linn.) Vieill. RED-WINGED BLACKBIRD.

511, ♀ ad., Tucson, June 8. Length, 8.10; extent, 13.20; wing, 4.22; tail, 3.40.

90. **Icterus parisorum** Bonap. SCOTT'S ORIOLE.—Although this Oriole was oftenest seen among the foot-hills it occasionally occurred on the most barren plains, where it seemed content with the scanty shelter afforded by the cactus thickets. In the hill country it frequented the oak belt, and was seldom observed at a high elevation. During the breeding season it was seen near Tucson, as well as among the Santa Rita Mountains, but no nests were found in either locality.

*Juv., first plumage* (♀, No. 528, Tucson, June 14). Generally like the adult, but with all the wing-feathers edged and tipped with white, the wing-bands yellowish, the tail tipped with yellow, the breast obscured with brownish, and the yellow of the under parts paler and greener.

Only a small proportion of the males collected by Mr. Stephens have the adult plumage perfected. A female (No. 189, Tombstone, April 10) has a black throat-patch extending from the chin to the breast, and small, sagittate black spots on the crown.

"Iris dark brown; bill black, bluish at base below; legs dark bluish. Food, insects."

91. **Icterus cucullatus** Swains. HOODED ORIOLE.—An uncommon species, found only in the valleys, where it seemed to prefer cottonwoods to other trees.

The specimens taken are all adults, with the exception of a male which, although evidently a bird of the previous year, differs from the females only in having a black throat-patch and several concealed black spots on the interscapulars. One of the females is also peculiar in having many half-concealed black spots on the throat and jugulum. Some of the richest-colored males have the interscapular feathers tipped with yellow.



92. **Icterus bullocki** (*Swains.*) *Bonap.* BULLOCK'S ORIOLE.—Only two of these Orioles were taken during 1881; but in the previous summer Mr. Stephens found them not uncommon in the foot-hills of the Chiricahua Mountains.

93. **Corvus corax carnivorus** (*Bartr.*) *Ridgw.* AMERICAN RAVEN.—Incidentally mentioned as common about Tucson.

94. **Corvus cryptoleucus** *Couch.* WHITE-NECKED RAVEN.—A small proportion of the Ravens seen about Tucson were recognized as belonging to this species. Their notes differed widely from those of the common Raven, and "at times sounded somewhat like the quacking of a Duck."

324. ♀ ad., Tucson, May 4. Length, 19.90; extent, 40.70; wing, 14.06; tail, 8.94. "Iris dark brown."

95. **Cyanocitta stelleri macrolopha** (*Baird*) *Ridgw.* LONG-CRESTED JAY.—Five specimens, Chiricahua Mountains, March 24 to 26. "These Jays are common in the pines well up the mountain sides, but they are wary and difficult of approach. When pursued they fly from one tree to the lower branches of the next and jumping from limb to limb, take flight again as soon as they reach the top. If one can follow fast enough to get within range before the bird reaches the top of the tree he may obtain a shot, but it is necessary to keep behind some object while accomplishing this. They are noisy and have a variety of calls, some of which are disagreeably harsh. I think they are shyer here than in other localities where I have met with them." One of Mr. Stephens' specimens (No. 106) has the crest strongly tinged with blue, thus approaching var. *diademata* of Mexico.

96. **Aphelocoma woodhousii** (*Baird*) *Ridgw.* WOODHOUSE'S JAY.—One specimen, Galeysville, January 29, 1881.

97. **Aphelocoma sordida arizonæ** *Ridgw.* ARIZONA JAY.—Mr. Stephens met with this Jay in the Chiricahua and Santa Rita Mountains, and judging from the number of specimens obtained it must be rather abundant in both ranges. "They go in flocks of from five to twenty, and are generally seen in the foot-hills. They are restless, and in most localities shy, but around mills, where they congregate to feed on the grain in horse droppings, they become used to the presence of human beings and are more easily approached. Their food is chiefly broken acorns."

A nest found May 16, in the Santa Rita Mountains, is a bulky structure composed chiefly of yellowish rootlets with some coarse

dead twigs protecting its exterior and a scanty lining of fine grasses. The female was sitting on four eggs, which were on the point of hatching. The only specimen saved measures 1.13 X .82. It is pale greenish-blue, absolutely without markings, and closely resembles a Robin's egg. "The others were similar, as were three eggs of a set taken in 1876, and two of one found in 1880."

Of the fifteen specimens collected only four have the bill wholly black. With all the others there is more or less flesh-color, which, although usually confined to the base and tip of the lower mandible, sometimes spreads over nearly the whole of the bill below as well as encroaching on the maxilla at the tomia, and occasionally even occupies a narrow central space along the ridge of the culmen above the nostrils. Mr. Henshaw has remarked on this feature, which he considers peculiar to young birds. If this view be correct it must require several years for the bill to become unicolor.

98. **Eremophila alpestris chrysolæma** (*Wagl.*) *Coues*. MEXICAN SHORE LARK. — The only Shore Lark in the collection, a young bird in first plumage, taken on the plains at the base of the Santa Rita Mountains, has been referred by Mr. Ridgway to the above race.

99. **Tyrannus verticalis** *Say*. ARKANSAS FLYCATCHER. — Although this species was much less numerous than the following, especially after the spring migrants had gone, a few pairs were found breeding about Camp Lowell, where a nest containing three slightly incubated eggs was taken on June 20. The collection includes skins from Tucson and Camp Lowell.

100. **Tyrannus vociferans** *Swains*. CASSIN'S FLYCATCHER. — "Abundant in summer. Neither *verticalis* nor *vociferans* winters in Arizona." Specimens were collected at Tombstone, Tucson, and among the Santa Rita Mountains.

The peculiar attenuation of the primaries in this species has been freely commented on by authors, but no one seems to have noticed that this character, at least as applied in diagnoses, is to be found in only the *male* of *T. vociferans*. Nevertheless this is true of the somewhat large series of specimens before me, among which there is a decided and very constant sexual difference in the shape of the outer four primary feathers. All the adult males have them abruptly and deeply notched on the inner webs about half an inch from the tip, the emargination extending more than half-way to the shaft and reducing the width of the feather, terminally, to about .12 of an inch. In the females these feathers show no well-defined notching, the tips being simply tapered, usually with a slightly concave outline, although the outline is sometimes actually rounded. A young male from Riverside,

California (No. 6380, Sept. 19, 1881), taken during its first autumnal moult, has the old primaries (1-2) almost without attenuation, their tips being only slightly tapered, while the new ones (3-5) are as deeply notched as in any of the adults. Hence it is probable that males in first plumage will be found to have the primaries shaped like those of the female.

The sexes of *T. verticalis* differ in a similar manner but less markedly, for the first primary of the female, although broader than that of the male, usually has the same falcate shape. I have one or two females, however, which, by the wing characters alone, can with difficulty be distinguished from females of *vociferans*.

101. **Myiarchus mexicanus cooperi\*** (Kaup) Baird.  
COOPER'S FLYCATCHER. — This large Myiarchus which, as I lately announced, † Mr. Stephens has the credit of first finding within our boundaries, was ascertained to be a common summer resident about Camp Lowell. Of its occurrence in New Mexico, also, I now have positive evidence, a previously undetermined specimen, taken by Mr. Stephens near the Gila River, June 12, 1876, proving on comparison to be identical with the Arizona ones.

The collector's notes relating to the habits of this Flycatcher are disappointingly brief. It frequented low mesquites and was tame and rather noisy, having a variety of loud calls, some of which resembled those of *M. cinerescens*, while others were "almost Thrasher-like." Its food seemed to consist largely of beetles. On June 27 a nest was found at Camp Lowell. "Both parents were distinctly seen and positively identified. The nest was in an old Woodpecker's hole in a giant cactus about eighteen feet from the ground. It was lined with soft, downy weed-seeds, and contained two young just hatched and an addled egg." The egg, unfortunately, is so badly broken that accurate measurements are impossible, but an approximation would be 1.04 X .74. In ground-color and markings it closely resembles eggs of *M. crinitus*, the shell being a dull clayey-buff over which are numerous longitudinal lines and dashes of purplish-brown or lavender.

\* The question of the relationship which *M. cooperi*, *M. erythrocerus*, *M. mexicanus* and *M. crinitus* bear to one another, and that of the respective names which should be used for each, has been recently discussed at some length. (See Bull. U. S. Geolog. Surv., Vol. IV, pp. 32-33; *ibid.*, Vol. V, No. 3, pp. 402-404; Proc. U. S. Nat. Mus., Vol. I, p. 139; and *ibid.*, Vol. 3, pp. 13-15.) While I cannot claim to have personally investigated the points at issue, I am at present inclined to follow Mr. Ridgway's ruling, at least so far as *M. cooperi* is concerned.

† This Bulletin, Vol. VI, p. 252.

These markings are pretty evenly distributed, but are coarsest at the larger end of the egg.

462, ♂ ad., Camp Lowell, May 31. Length, 9.90; extent, 14.10; wing, 4.40; tail, 4.40; culmen, 1.15. "Iris brown; bill and legs black."

468, ♂ ad., Camp Lowell, June 1. Length, 10; extent, 14.30; wing, 4.35; tail, 4.44; culmen, 1.10.

472, ♂ ad., Camp Lowell, June 2. Length, 9.90; extent, 14.10; wing, 4.40; tail, 4.37; culmen, 1.27.

473, ♂ ad., same locality and date. Length, 10; extent, 14.20; wing, 4.40; tail, 4.60; culmen, 1.25.

491, ♂ ad., Camp Lowell, June 4. Length, 9.60; extent, 14.20; wing, 4.40; tail, 4.40; culmen, 1.13.

492, ♂ ad., same locality and date. Length, 9.80; extent, 14.30; wing, 4.38; tail, 4.49; culmen, 1.15.

558, ♂ ad., Camp Lowell, June 21. Length, 9.80; extent, 14.30; wing, 4.37; tail, 4.47; culmen, 1.16.

592, ♂ ad., Camp Lowell, June 25. Length, 9.80; extent, 13.80; wing, 4.23; tail, 4.35; culmen, 1.16.

463, ♀ ad., Camp Lowell, May 31. Length, 9.60; extent, 13.70; wing, 4.12; tail, 4.34; culmen, 1.10.

464, ♀ ad., same locality and date. Length, 9.50; extent, 13.60; wing, 4.16; tail, 4.32; culmen, 1.11.

493, ♀ ad., Camp Lowell, June 4. Length, 9.60; extent, 13.70; wing, 4.16; tail, 4.16; culmen, 1.10.

559, ♀ ad., Camp Lowell, June 21. Length, 9.40; extent, 13.40; wing, 4.04; tail, 4.10; culmen, 1.10.

591, ♀ ad., Camp Lowell, June 25. Length, 9.40; extent, 13.60; wing, 4.15; tail, 4.10; culmen, 1.12.

102. *Myiarchus cinerescens* Lawr. ASH-THROATED FLY-CATCHER. — Specimens were obtained at Tombstone, Tucson, and Camp Lowell. In the latter locality the bird was common through June and was presumably breeding, although no nests were actually found. At all the points in Arizona where they were observed these Flycatchers frequented the timber in valleys and along streams, none being seen among the denser forests of the mountains.

103. *Myiarchus lawrencii* (Giraud) Baird. LAWRENCE'S FLYCATCHER. — This pretty *Myiarchus*, scarcely larger than our common Phœbe, was met with only among the Santa Rita Mountains, where it was apparently not uncommon, although its distribution seemed to be very local, most of Mr. Stephens' specimens being taken in a single cañon. They haunted the banks of streams, perching on dead limbs and taking frequent flights after insects. The only note heard was a short, mournful

“*pecûr.*” No nests were found, but a female shot May 17 was laying.

In my preliminary announcement\* of the occurrence of this species in Arizona I inadvertently gave the number of specimens as eight, whereas nine were really obtained. These show little variation in color or markings, but the females are slightly smaller than the males. The characters which separate *M. lawrencii* from its respective allies, *M. tristis* of Jamaica and *M. nigricapillus* of Central America, are well maintained in this series.

360, ♂ ad., Santa Rita Mountains, May 12. Length, 7.20; extent, 10.50; wing, 3.25; culmen, .76; tail, 3.38. “Iris dark brown; bill and legs black.”

361, ♂ ad., same locality and date. Length, 7.20; extent, 10.30; wing, 3.25; culmen, .80; tail, 3.43.

364, ♂ ad., same locality and date. Length, 7.30; extent, 10.30; wing, 3.20; culmen, .80; tail, 3.35.

400, ♂ ad., same locality, May 17. Length, 7.10; extent, 10.20; wing, 3.20; culmen, .77; tail, 3.36.

412, ♂ ad., same locality, May 19. Length, 7.30; extent, 10.50; wing, 3.26; culmen, .82; tail, 3.32.

388, ♀ ad., same locality, May 16. Length, 7.10; extent, 10; wing, 3.20; culmen, .81; tail, 3.20.

401, ♀ ad., same locality, May 17. Length, 7; extent, 10; wing, 3.05; culmen, .74; tail, 3.05.

402, ♀ ad., same locality and date. Length, 7.10; extent, 10.

403, ♀ ad., same locality and date. Length, 7; extent, 9.80; wing, 3.10; culmen, .85; tail, 3.16. “Laying.”

104. **Sayiornis sayi** (*Bonap.*) *Baird.* SAY'S PEWEE.—“Common on prairies; usually found singly, perching on weed-stalks. They do not frequent timber. “Iris dark brown; bill and legs black.” Several specimens collected.

105. **Sayiornis nigricans** (*Swains.*) *Bonap.* BLACK PEWEE.—Found more or less abundantly along streams, but rarely at a great elevation in the mountains. “The nest is similar to that of *S. fusca*, and is built under bridges or sometimes in deserted dwellings. Iris dark brown; bill and legs black.” Several specimens taken.

106. **Contopus borealis** (*Swains.*) *Baird.* OLIVE-SIDED FLYCATCHER.—Two specimens were obtained in May in the Santa Rita Mountains, where it was “not very common.”

107. **Contopus pertinax** *Caban.* COUES'S FLYCATCHER, 392, ♀ ad., Santa Rita Mountains, May 16. Length, 7.70; extent, 12.50; wing, 4.12; tail, 3.30; culmen, .78. “Iris dark brown; bill black above, yellow below with dusky tip; legs black.”

\* This Bulletin, Vol. VI, p. 252.

108. **Contopus virens richardsoni** (*Swains.*) *Coues*  
WESTERN WOOD PEWEE.

371, ♂ ad., Santa Rita Mountains, May 13. Length, 6.40; extent, 10.70.  
"Iris dark brown; bill black above, dusky below."

109. **Empidonax flaviventris difficilis** *Baird*. WESTERN  
YELLOW-BELLIED FLYCATCHER.

Both of the following specimens are more decidedly ochraceous than are my California examples, the latter, like many Pacific Coast birds, showing a closer approach to the eastern form. *Difficilis*, however, seems to be a pretty strongly characterized race, if not, as Mr. Ridgway has lately ranked it, a distinct species.

484, ♂ ad., Camp Lowell, June 3. Length, 5.50; extent, 8.10; wing, 2.60; tail, 2.46.

517, ♀ ad., Tucson, June 10. Length, 5.50; extent, 8.10; wing, 2.46; tail, 2.52.

110. **Empidonax pusillus** (*Swains.*) *Baird*. LITTLE  
FLYCATCHER. — A common bird about Tucson, where it inhabits willow thickets near water. Numerous nests were taken: the one sent me is a loosely woven structure composed chiefly of dry grasses, with a neat lining of horse-hair. It agrees closely with northern New England nests of *E. trailli*, and like them differs widely from the compact, Yellow-Warbler-like nests which *trailli* builds in the region about Columbus, Ohio, and at St. Louis, Missouri.\*

The series of skins is a full one, and the specimens uniformly sustain the characters ascribed to *pusillus*, a race which seems to me quite as constant as many which have been regarded with less suspicion and disfavor.

111. **Empidonax hammondi** (*Xantus*) *Baird*. HAM-  
MOND'S FLYCATCHER.

172, ♀ ad., near Tombstone, April 12. Length, 5.40; extent, 8.90.

237, ♂ ad., Tucson, April 19. Length, 5.40; extent, 8.70.

363, ♀ ad., Santa Rita Mountains, May 12. Length, 5.30; extent, 8.30.

No. 237 has the outer web of the external rectrices as white as in average specimens of *E. obscurus*. I have Colorado examples also which cannot be separated from *obscurus* by this character alone.

112. **Empidonax obscurus** (*Swains.*) *Baird*. WRIGHT'S  
FLYCATCHER. — This species was noted only in the vicinity of Tombstone, where a few were found early in April among scattered clumps of trees.

The four specimens collected have the lower mandible pale orange.

\* See this Bulletin, Vol. I, pp. 14-17 and 75-76, and Vol. V, pp. 20-25.

passing into dusky at the tip, and in this respect differ from some more northern ones in which the part is flesh-color.

113. **Empidonax fulvifrons pallescens** *Coues*. BUFF-BREASTED FLYCATCHER.—A single specimen from the Santa Rita Mountains is accompanied by the following remarks: "Rare here; more numerous in the Chiricahua Mountains last season [1880]; and rather common near Fort Bayard, New Mexico, in 1876. One of its notes is a chirp similar to a Warbler's."

395. ♂ ad., Santa Rita Mountains, May 17. Length, 5.10; extent, 7.90. "Iris dark brown; bill black, yellow below; legs black."

114. **Pyrocephalus rubineus mexicanus** (*Scl.*) *Coues*. VERMILION FLYCATCHER.—This beautiful species was found at Cienega Station in April; near Tucson and among the Santa Rita Mountains during May; and about Camp Lowell in early June. In all these localities it was abundant among undergrowth, usually near water. "Their motions resemble those of other Flycatchers, excepting that they have a habit of poising over one spot for several seconds at a time, maintaining their position by a rapid fluttering of the wings very nearly in the manner of a Sparrow Hawk."

A nest taken April 25, at Tucson, was placed in the horizontal fork of a stout mesquite branch to which it was attached in such a manner that its upper surface was flush with that of the embracing supports. This nest is composed outwardly of small twigs, and is lined with horse and cow hair and a few feathers. It entirely lacks the exterior coating of lichens spoken of by Dr. Merrill,\* but in other respects it agrees well with his description of the Fort Brown (Texas) specimen. The three eggs which it contained are creamy white with rounded blotches of brown and pale lilac wreathed about their larger ends. They measure respectively .72 × .53, .71 × .53, .70 × .52. Mr. Stephens found other nests similar in construction and position to the present one. He considers three eggs the full complement.

*Fuv., first plumage*, ♂ (No. 6153 (Coll.'s No. 466) Camp Lowell, June 1). Above similar to the adult female, but with the rump golden-brown; the wing-coverts and outer webs of the secondaries, brownish-fulvous; and the feathers of the occiput, nape and interscapular region tipped with brownish-white; beneath white with a tinge of lemon-yellow on the

\*Proceedings U. S. Nat. Mus., Vol. 1, p. 142.

sides and crissum; the breast and sides of the abdomen thickly marked with rounded spots of clear brown.

The series of adults is a very full one and includes several interesting styles of plumage. Some of the males have the brown of the back mixed with ashy, which has a tendency to form a collar on the nape, and gives the interscapular region a patched appearance. In others the red of the under parts as well as that of the crown is replaced by orange; while one specimen has a large patch of lemon-yellow on the right side of the breast, which shows in striking contrast with the otherwise clear carmine of the lower surface. These variations present a curious analogy to certain similar ones which occur in the Scarlet Tanager and Summer Red-bird.

115. *Ornithium imberbe ridgwayi*. var. nov. RIDGWAY'S  
BEARDLESS FLYCATCHER.

Ch. Sp. ♂ Similis *O. imberbi*, sed rostro robustiore; colore obscuriore ac magis cinerario.

Adult ♂ (No. 6000, author's collection — collector's No. 313. Tucson, May 1, 1881. F. Stephens). Above ashy brown; crown nearly pure brown in decided contrast with the back; rump pale brown with a faint olive tinge; wings and tail brown, edged with ashy-white; greater and middle wing-coverts tipped with fulvous, forming two wing-bars; edge of wing and under wing-coverts pale lemon-yellow; lores and sides of head posteriorly, ashy; a narrow frontal line continued backward above and nearly around the eye, ashy-white; under parts ash, shading posteriorly to ashy-white on the belly, and with the faintest possible lemon tinge on the jugulum and crissum; bill stout; upper mandible much curved, brown; under mandible slightly curved, brown at tip, brownish-orange at base; commissure reddish-orange.

*Dimensions.* Length, 4.60; extent, 7.20; wing, 2.23; tail, 1.96; culmen, .42; tarsus, .56; depth of bill at nostrils, .15.

Adult ♀ (No. 6133, author's collection — collector's No. 446. Tucson, May 28, 1881. F. Stephens). Smaller than the male, slightly more yellowish below and with a faint tinge of olive on the back.

*Dimensions.* Length, 4.50; extent, 6.70; wing, 2.04; tail, 1.78; culmen, .40; tarsus, .52; depth of bill at nostrils, .14.

*Juv., first plumage,* ♂ (No. 6138, author's collection — collector's No. 451. Tucson, May 29, 1881. F. Stephens). Crown plumbeous; back olive-brown; wing and tail-coverts, outer edges of secondaries, and a broad tipping on all the rectrices, dull brownish-chestnut; beneath delicate ashy-buff, shading to yellowish-white on the belly and crissum; bill orange, dusky at tip of upper mandible.

*Habitat,* Arizona.

The chief points of difference between the above race and *imberbe* proper may be briefly expressed as follows:

*O. imberbe.* — Depth of bill at nostrils, .11 to .13. Above olivaceous-ash; entire under parts strongly tinged with lemon-yellow.



*O. imberbe ridgwayi*.—Depth of bill at nostrils, .14 to .15. Above ashy-brown; beneath ash or ashy-white with scarcely any yellowish.

In the present connection I have examined seven specimens of *O. imberbe*. Five of these, from the collection of the National Museum, represent the following localities: Texas (Rio Grande Valley), Mexico (Mazatlan and Tehautepec) and Yucatan (Merida). The remaining two, in my own cabinet, were taken at Lomita Ranch, Texas, in March, 1880. The result of a careful comparison of this material is that the Texas examples prove to be identical with those from Mexico and Central America, while the Arizona birds differ very constantly from all the others in respect to the points mentioned above. The entire series is, of course, a small one, but its evidence seems sufficient to warrant the varietal separation of the Arizona form.

The detection of this Flycatcher in Arizona is perhaps the most interesting discovery resulting from Mr. Stephens' late trip. *O. imberbe* has only recently been added to our fauna by Mr. Sennett, and the locality of his single specimen—Lomita, Texas—was so far beyond the previously known range of the species that its occurrence seemed hardly likely to prove more than a mere accident. In 1880, however, Mr. M. A. Frazar secured additional specimens at Lomita, and now an allied, but apparently distinct race, turns up in Arizona.

Mr. Stephens found the curious little bird only at Tucson, where his first specimen was taken April 28. Afterwards others were shot in the same locality, but they were by no means common. The males had a habit of perching on the tops of the tallest trees in the vicinity of their haunts, and at sunrise occasionally uttered a singular song which Mr. Stephens transcribes as "yooop-yooop-yooopéedeedledeè, the first half given very deliberately, the remainder rapidly." A commoner cry, used by both sexes in calling to one another, was a shrill "pièr pièr pièr pièr, beginning in a high key and falling a note each time." They were very shy, and specimens were obtained only at the expense of much trouble and perseverance. Their loud calls were frequently heard, but when the spot was approached the bird either relapsed into silence or took a long flight to resume its calling in another direction. In their motions they resembled other small Flycatchers, but their tail was less frequently jerked.

On May 28 Mr. Stephens met with a young bird which had but just left the nest. It was accompanied by the female parent, who showed much solicitude and frequently uttered her shrill cries, to which the offspring responded in nearly similar tones. Both

individuals were secured, but neither the nest nor the remainder of the brood — if indeed there were any more — could be found. On the following day this episode was repeated, a second female being found in attendance on another young bird of nearly the same age as that obtained on the previous occasion.

308, ♂ ad., Tucson, April 29. Length, 4.80; extent, 7.20; wing, 2.28; tail, 2.04; culmen, .40; tarsus, .55. "Iris dark brown; bill black, basal half of lower mandible reddish-brown; legs black. Contents of stomach worms and insects."

313, ♂ ad., Tucson, May 1. Length, 4.60; extent, 7.20; wing, 2.23; tail, 1.96; culmen, .42; tarsus, .56.

446, ♀ ad., Tucson, May 28. Length, 4.50; extent, 6.70; wing, 2.04; tail, 1.78; culmen, .40; tarsus, .52. Parent of the next.

447, ♂ juv., first plumage, same locality and date.

450, ♀ ad., Tucson, May 29. Length, 4.30; extent, 6.80. Parent of the following.

451, ♂ juv., first plumage, same locality and date.

116. **Trochilus alexandri** Bourc. & Muls. BLACK-CHINNED HUMMINGBIRD. — The first specimen met with was a female which, with a nest and two eggs, was taken at Tucson on April 23. The species was also found breeding among the Santa Rita Mountains, as well as near Camp Lowell. At all these points it was decidedly the most abundant of the Hummingbirds.

Six of the seven examples collected are females, and Mr. Stephens remarks on the apparent absence of the males during the breeding season.

The nest just mentioned, and another obtained April 28 in the same locality, are now in my possession. Both were built in willows, one being saddled on a small branch, while the other rested lightly in the fork of a slender twig. Their construction is homogeneous, the only material used being a creamy-white down, probably from willow catkins. One nest, however, has a few delicate, faded leaves attached to its exterior. The eggs are indistinguishable from those of *T. colubris*. The first set was fresh, the second slightly incubated.

117. **Calypte costæ** (Bourc.) Gould. COSTA'S HUMMINGBIRD.

289, ♀ ad., Tucson, April 26. Length, 3.70; extent, 4.60. "Iris dark brown; bill and legs black."

294, ♂ im., Tucson, April 27. Length, 3.55; extent, 4.52. This specimen lacks the ruffs of the adult male, but has a patch of violet feathers on the centre of the throat.

118. **Selasphorus platycercus** (*Swains.*) *Bonap.* BROAD-TAILED HUMMINGBIRD.

366, ♂ ad., Santa Rita Mountains, May 13. Length, 4; extent 5.50. "Iris dark brown; bill black; feet black, their soles lighter."

385, ♂ ad., Santa Rita Mountains, May 15. Length, 4.70; extent, 5.90.

119. **Iache latirostris** (*Swains.*) *Elliot.* BROAD-BILLED HUMMINGBIRD.—From the known fact of its occurrence among the Chiricahua Mountains, as ascertained by Mr. Henshaw in 1874, it was of course to be expected that this Hummer would eventually be found, under similar conditions, in other parts of Arizona, a probability which Mr. Stephens has confirmed by the capture of five specimens in the Santa Rita Mountains. In addition to these, several others were seen at various times during his short stay in that range, and I infer from his notes that the birds were not uncommon there. They were always found near water, and usually along the streams which flowed through cañons, high among the mountains. They seemed to prefer sycamores to other trees, and invariably perched on dead twigs where they could command an open view. "Their notes were flat and differed from those of other Hummers."

356, ♂ ad., Santa Rita Mountains, May 12. Length, 4.10; extent, 5.05; wing, 2.11; bill, .91. "Iris dark brown; point of bill below, with terminal third above, black; rest of upper mandible reddish-brown; of lower, purplish-red; feet black."

365, ♀ ad., Santa Rita Mountains, May 13. Length, 3.95; extent, 5.05; wing, 1.98; bill, .92. "Bill above, and its tip below, black; remainder of lower mandible reddish. Not near laying."

382, ♂ ad., Santa Rita Mountains, May 14. Length, 4; extent, 5.02.

405, ♂ ad., Santa Rita Mountains, May 18. Length, 3.88; extent, 4.98; wing, 1.99; bill, .88.

411, ♀ ad., Santa Rita Mountains, May 19. Wing, 2.03; bill, .90.

120. **Cypselus saxatilis** *Woodh.* WHITE-THROATED SWIFT.

—In some notes made at Cave Creek, under date of March 4, Mr. Stephens incidentally refers to this Swift as follows: "We camped here last night chiefly for the purpose of investigating some caves said to contain large quantities of bird-droppings. I went to one of the largest of these to-day and found the floor covered with tons of bat droppings as well as a little from birds. There were also a few feathers (primaries and rectrices) of *Cypselus saxatilis* and some of *Falco sparverius*."

121. **Antrostomus vociferus arizonæ** *Brewster.* STEPHENS' WHIP-POOR-WILL.—During 1881 this Whip-poor-will was

again met with in Arizona among the Santa Rita Mountains, where, however, it was less numerous than it had been in the Chiricahua range in 1880. The only specimen obtained was an adult male which was shot, by moonlight, in oaks near a stream.

Through Mr. Stephens' kindness I am now enabled to present descriptions of the female and egg alluded to in a letter quoted in connection with the original description\* of the race.

Adult ♀ (6309, author's collection, Chiricahua Mountains, Arizona, July 4, 1880. F. Stephens). General coloring similar to that of the male, but lighter, the ground tints more ochraceous; the white of the tail replaced by reddish-fulvous which forms a narrow tipping on the outer three pairs of rectrices; the tawny gular crescent continued around the sides of the neck, the ends meeting behind and forming an uninterrupted collar.

*Dimensions.* Length, 9.60; extent, 18.80; wing, 6.27; tail, 5.03; culmen, .80; tarsus, .70; longest rectal bristle, 1.40.

This specimen differs even more widely from the female, than does my type from the male of *A. vociferus*. The ochraceous of the lores, superciliary-stripe, and neck-collar, spreads over the entire plumage both above and beneath, giving it a tawny tinge which overlies and obscures the usual dark markings. On the shoulders, breast, lores and throat this color deepens to a fine reddish-chestnut, and elsewhere it replaces the ashy, dirty white and other light tints of the eastern birds. In its general coloring the plumage strikingly resembles that of the brown phase of *Scops asio kennicotti*. The ochraceous neck-collar is also present in the male from the Santa Rita Mountains, but it is less distinctly defined, being somewhat obscured, especially on the nape, by dusky mottling. In all other respects this example agrees closely with my type.

The egg is white with a dull gloss. At first sight it appears to be immaculate, but a closer inspection reveals a few faint blotches of the palest possible purple, so faint indeed that they might pass for superficial stains were it not for the fact that they underlie the external polish. The absence of well-defined markings may probably be explained by the assumption that the bird had laid one or more clutches earlier in the season, thus exhausting her supply of coloring pigment. The specimen measures 1.17 X .87.

355, ♂ ad., Santa Rita Mountains, May 11. Length, 9.90; extent, 18.70; wing, 6.50; tail, 5.15; culmen, .76; tarsus, .70; longest rectal bristle, 1.73.

(To be continued.)

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\*This Bulletin, Vol. VI, pp. 69-72.