

statement is thus worded on account of the doubt connected with many of the descriptions. There are, however, three cases reported as occurring in hens which are comparable. The first case, that reported by Bechstein,* was a chicken with a testicle on the right side and an ovary on the left, that is much like the Pipilo. The two cases reported by Simpson † were less perfect. One was simply a female bird with a half developed vas deferens on the right side, the other had a vas deferens on each side. In both cases there were slight mixtures in the habits and plumage of the two sexes.

In the Pipilo each side was perfect after its sex and showed no resemblance to the other sex, thus separating it from the second example given by Simpson. The natural explanation is that the two generative mounds took on the two sexes and that the accessory structures followed the master organs. So the Wolffian duct remained on one side and the Mullerian on the other.

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

BY WILLIAM BREWSTER.

(Concluded from Vol. VII, p. 212.)

122. **Antrostomus nuttalli** (Aud.) Cass. NUTTALL'S WHIP-POOR-WILL.—Although these Whip-poor-wills were common in many of the localities visited but few specimens were taken, a fact largely owing to their nocturnal habits. They were oftenest heard in rocky places, especially among foot-hills. One killed near Tombstone, on the evening of April 8, frequently alighted on the ground to pick up beetles.

123. **Chordeiles acutipennis texensis** (Lawr.) Ridgw. TEXAN NIGHTHAWK.—Represented in the collection by nine specimens from the following localities: Santa Rita Mountains,

* Naturgeschichte der Voegel, Bd. II, p. 1219.

† Article, Hermaphroditism, Todd's Ency. of Anatomy and Physiology.

(♂ and ♀, May 16); Tucson (♂ and ♀, June 8); Camp Lowell (♀ June 21, three ♂ and one ♀ June 22).

124. *Picus villosus harrisi* (Aud.) Allen. HARRIS'S WOODPECKER.

40. ♂ ad., Chiricahua Mountains, March 14. Length, 9.10; extent, 15.60; wing, 4.93. "Iris brown. Common here among pines."

125. *Picus scalaris* Wagl. TEXAN SAPSUCKER.—Common. A nest containing four eggs was found April 19, at Tucson.

A male taken April 15, at Cienega Station, differs from the other Arizona specimens as follows: The red of the head is restricted to a stripe above and behind the eye and to a broad band on the occiput, the entire forehead and crown being black finely spotted with white. In these respects it agrees with descriptions of var. *lucasanus*, but the tail-markings are as in *scalaris* proper. A female in first plumage (No. 441, Tucson, May 26) has the crown dull red, the occiput black, the plumage beneath thickly spotted, and the dorsal bars dull and ill-defined.

126. *Picus stricklandi* Malh. STRICKLAND'S WOODPECKER.—The explorations of the past season developed little of importance regarding this Woodpecker, save the fact of its occurrence among the Santa Rita Mountains, where Mr. Stephens found it nearly as abundant as in the Chiricahua range. His efforts to obtain its eggs were unsuccessful, but a nest containing young was discovered May 16. "The shell of the tree (a sycamore) was very hard, and as I had only a pocket knife to cut with, I did not attempt to open the hole. The voices of the young sounded as if they might be about two weeks old." The above date would indicate that this Woodpecker is a rather early breeder, an inference which is further sustained by the fact that a female, taken April 1, "would have laid in two or three weeks."

The fourteen specimens collected show a remarkable amount of variation in respect to the spotting of the under parts. In some examples the markings are small, tear-shaped, and confined chiefly to the sides and a scarcely continuous band across the breast, the median line of the body being nearly immaculate, and the throat absolutely so. In others the feathers of the throat (but not of the chin) have fine brown shaft-streaks, and the remainder of the under plumage is so thickly and coarsely spotted that its light ground-color is often nearly obliterated. Between these extremes are many intermediate styles, scarcely any two birds being exactly alike. The increase in the size and number of spots is usually correlated with a decrease in the amount of white on the tail. Normally the outer feathers have three white spaces continuous across both webs; the second pair two. But with heavily-spotted birds the white on the second feather is sometimes confined to a single pair of sub-terminal spots

(which are not confluent at the shaft) and one or two shallow scallops on the outer web; while the exterior feathers have the white much restricted (but never interrupted except near their bases) by the increased width of the black bars.

A male and female from the Santa Rita Mountains are curiously tinged with reddish-brown. In the male this color is very generally distributed both above and beneath, while on the interscapulars and some of the primaries it deepens to reddish-chestnut. Possibly it is a stain caused by contact with bark or decaying wood, but the whole plumage is so evenly dyed that this explanation is hardly satisfactory. The female of this pair is also peculiar in possessing a continuous but partially concealed *nuchal band* of brownish-orange, which, on the sides of the neck, is fully exposed, but behind can be seen only upon raising or otherwise disarranging the feathers. Both specimens seem to be adult birds.

23, ♀ ad., Cave Creek, March 7. Length, 8.10; extent, 14; wing, 4.55; tail, 3.25; culmen, .98.

42, ♂ ad., Morse's Mill, March 14. Length, 8.10; extent, 14.30; wing, 4.61; tail, 3.31; culmen, 1.16.

43, ♀ ad., same locality and date. Length, 7.90; extent, 14.20; wing, 4.45; tail, 3.03; culmen, .96.

117, ♀ ad., Morse's Mill, March 27. Length, 8.10; extent, 14.40; wing, 4.46; tail, 3.38; culmen, 1.05.

129, ♂ ad., Morse's Mill, March 30. Length, 8.40; extent, 14.20; wing, 4.53; tail, 3.20; culmen, 1.22.

143, ♀ ad., Morse's Mill, April 1. Length, 7.70; extent, 14.

144, ♀ ad., same locality and date. Length, 8.20; extent, 14.40; wing, 4.55; tail, 3.27; culmen, 1.05.

156, ♂ ad., Morse's Mill, April 2. Length, 7.80; extent, 14.30; wing, 4.44; tail, 2.92; culmen, 1.15.

358, ♀ ad., Santa Rita Mountains, May 12. Length, 7.40; extent, 14.20; wing, 4.37; tail, 2.90; culmen, 1.03.

379, ♂ ad., Santa Rita Mountains, May 14. Length, 8.60; extent, 14.70; wing, 4.45; tail, 3.23; culmen, 1.25.

398, ♀ ad., Santa Rita Mountains, May 17. Length, 7.80; extent, 14; wing, 4.32; tail, 3.05; culmen, .99.

399, ♀ ad., same locality and date. Length, 7.90; extent, 14.10; wing, 4.40; tail, 3.18; culmen, 1.06.

127. **Sphyrapicus varius nuchalis** Baird. RED-NAPED WOODPECKER.—Met with during March, in the Chiricahua Mountains. It was found among scrubby pines and was not common. The stomachs of the specimens dissected contained small black ants.

128. **Sphyrapicus thyroideus** (Cass.) Baird. WILLIAMSON'S WOODPECKER.—Two specimens, both females, were taken early in March in the Chiricahua Mountains. One of these birds

had "innumerable eggs of some parasite between the muscle and skin on the upper side of the wings."

129. **Centurus uropygialis** *Baird*. GILA WOODPECKER.— One of the four specimens obtained during the past season is accompanied by the following notes. "Nine miles east of Tombstone, April 8. This point is the furthest east that I have seen this Woodpecker. I did not find it on the upper Gila. The present specimen was among oaks and walnuts which were sparingly distributed along an arroya. They usually frequent mesquites or giant cactuses, but the latter are wanting here and the mesquite is only a low shrub." The remaining three skins were taken June 1 and 2, at Camp Lowell.

Juv., first plumage, ♀ (No. 477, Camp Lowell, June 2). Crown with faint transverse vermiculations of dull brown. The white of the back and wings tinged with smoky-brown. Abdomen reddish-saffron. Otherwise like adult of the same sex.

130. **Melanerpes formicivorus bairdi** *Ridgw.* CALIFORNIAN WOODPECKER.— Found only among the Chiricahua Mountains where a few specimens were taken about the middle of March. "In Arizona and New Mexico I have never seen acorns buried in the bark of trees by this bird, as is its common practice in California. Otherwise there is little difference in their habits in the two regions."

One of the Arizona examples—a female—has nearly the whole of the black pectoral crescent streaked with white, thus showing an approach to certain more southern races.

131. **Colaptes auratus mexicanus** (*Sw.*) *Ridgw.* RED-SHAFTED FLICKER.

115, ♂ ad., Chiricahua Mountains, March 26. Length, 12.90; extent, 20.90. "Iris dark brown. Stomach contained ants. Common here but invariably shy." This specimen has a few red feathers on the nape.

132. **Colaptes chrysoides** (*Malh.*) *Baird*. MALHERBE'S FLICKER.—Mr. Stephens regards the distribution of this species in Arizona as coextensive with that of the giant cactus, for he has never seen it excepting where this singular plant grows. In coming from California by the Mohave route, in 1880, the first cactuses were met with on the Big Sandy River, a tributary of the Bill Williams River, and *C. chrysoides* was there observed for the first time. During the past season the birds were found in moderate numbers both at Tucson and Camp Lowell. Their notes were indistinguishable from those of *C. mexicanus*, and in a general way their habits were much the same. They were

fond of sitting on the tops of the cactuses, whence they could command an uninterrupted view of the surroundings. Several nests were found, but as all were in thorny cactus trunks the eggs were inaccessible. A female shot April 20, as she flew from her nesting-hole, proved on dissection to be laying.

Juv., first plumage, ♂ (No. 475, Camp Lowell, June 2). Differing from the adult in having the forehead, and crown anteriorly, washed with claret-red; the back and wings ashy-brown in strong contrast with the rufous-brown of the head; the primaries broadly tipped with brownish-white; the under parts darker with finer spotting; and the black pectoral crescent reduced in size and restricted to the middle of the breast.

Juv., ♀ (No. 476, Camp Lowell, June 2). Similar to the young ♂, but lacking the red moustache and the claret wash on the forehead and crown.

One of the adults before me (No. 243, ♀, Tucson, April 20), differs from the typical condition in having the yellow of the wings and tail replaced by orange, while the shafts of many of the feathers show an even stronger reddish cast, those of the rectrices at their bases being especially deep in color. The crown, also, is darker than in my other specimens. This departure from the normal coloring undeniably narrows the gap which separates *chrysoïdes* from *mexicanus*, but it may be merely a chance reversion, or what is perhaps still more likely, the specimen in question may be a hybrid.

243, ♀ ad., Tucson, April 20. Length, 11.60; extent, 18.70; wing, 5.55; tail, 3.95; culmen, 1.76. "Iris brown; bill black; legs greenish. Stomach contained insects and small seeds."

459, ♀ ad., Camp Lowell, May 31. Length, 11.20; extent, 18.60; wing, 5.65; tail, 4.08; culmen, 1.67.

469, ♂ ad., Camp Lowell, June 1. Length, 11.70; extent, 18.80; wing, 5.70; tail, 4.28; culmen, 1.63.

475, ♂ juv., first plumage, Camp Lowell, June 2. Barely able to fly.

476, ♀ juv., first plumage, same locality, date, and remarks.

594, ♂ ad., Camp Lowell, June 25. Length, 11.40; extent, 18.40.

133. **Ceryle alcyon** (Linn.) Boie. BELTED KINGFISHER.

321, ♀ ad., Tucson, May 3. Length, 13.60; extent, 22.40; wing, 6.35; tail, 4.12; culmen, 2.44. "Iris dark brown; bill black, pale at base below; legs dark. Several frequent the river here."

134. **Geococcyx californianus** (Less.) Baird. CHAPARRAL COCK.—"I have not found them common either in Arizona or New Mexico, but they are abundant in Southern California, and I have seen three or four in Colorado. They run rapidly, putting a horse to pretty good speed to overtake them. If pursued by a dog they will often take to a small tree, and on such occasions they can be closely approached. They can increase their speed when running by the use of their wings, and they

can also rise into a tree by taking a running start and then sailing on spread wings. They do not attempt any real flight, however. Their food includes lizards, snakes, grasshoppers, beetles, etc."

456, ♂ ad., Camp Lowell, May 31. Length, 23.10; extent, 21.50. "Iris dark brown with a narrow light-yellow ring next the pupil; bill dull brownish-black; feet pale bluish; scutella of tarsi dull yellowish; bare space on sides of head, dull blue about the eye, whitish for a small space behind the eye, and still farther back, red with a yellowish tinge."

135. **Coccyus americanus** (Linn.) Bonap. YELLOW-BILLED CUCKOO.

512, ♂ ad., Tucson, June 8. Length, 12.60; extent, 17; wing, 6; tail, 6.57; culmen, 1.13. "Iris brown; legs dark greenish-brown; bare orbital space much the color of the surrounding feathers. This is the first specimen that I have seen in Arizona."

527, ♂ ad., Tucson, June 12. Length, 12.30; extent, 16.70; wing, 5.94; tail, 6.47; culmen, 1.13. "Two others seen to-day."

136. **Scops asio trichopsis?** (Wagl.) Brewster. MEXICAN SCREECH OWL.

The specimens catalogued below are unmistakably referable to the so-called *trichopsis** of our South-western border, a form which, as I have lately stated, grades into *asio* through the California race *bendirii*. There is a doubt, however, as to whether Mr. Ridgway's *trichopsis* is really the *trichopsis* of Wagler, and this question, I believe, still remains unsettled. Mr. Henshaw's Arizona specimens were referred to *maccalli*, but as that race is now restricted, within the United States, to the Valley of the Lower Rio Grande, in Texas, they probably belong here.

488, ♀ ad., Camp Lowell, June 3. Length, 8; extent, 21.20; wing, 5.52; tail, 3.20. "Iris yellow; bill black, paler at tip; toes pale. Parent of the next."

489, ♀ juv., first plumage, same locality and date. "Shot by moonlight among low mesquites. Call-note a kind of *chuck*, different from anything that I have previously heard. There were others, probably the remainder of the brood, but after I had shot the parent they remained silent."

137. **Bubo virginianus subarcticus** (Hoy) Ridgw. WESTERN HORNED OWL.—The female of the pair mentioned below was shot as she flew from her nest, which was built in a mesquite at a height of about fifteen feet. It contained a recently hatched bird and one addled egg. The latter measures 2.15 × 1.75.

*See this Bulletin, Vol. VII, p. 32.

347, ♀ ad., Tucson, May 7. Length, 20.80; extent, 53.20; wing, 14.50; tail, 8.50. "Iris yellow; bill and claws black. The stomach contained beetles, portions of craw-fish and a few fish scales."

561, ♂ ad., Camp Lowell, June 21. Length, 19.20; extent, 49.20; wing, 13.12; tail, 8.

138. **Glaucidium gnoma** *Wagl.* CALIFORNIA PYGMY OWL.—The single specimen obtained by Mr. Stephens differs from my California examples in absolutely lacking any tinge of umber or reddish-brown both above and below, the ground color of the upper parts being dark brownish-plumbeous, and the longitudinal streaks beneath nearly black. This condition, doubtless, is merely an extreme one of the bird's recognized "plumbeous" phase.

89, ♂ ad., Chiricahua Mountains (10,000 feet) March 24. Length, 6.50; extent, 13; wing, 3.50; tail, 2.90. "Iris yellow. This bird was sitting on the extreme top of a dead pine. I heard another but failed to find it. The note was repeated a number of times at intervals of about once a second. I saw a flock of four near Fort Bayard, New Mexico, in 1876."

139. **Glaucidium ferrugineum** (*Maxim.*) *Kaup.* FER-
RUGINEOUS PYGMY OWL.

482, ♂ ad., Camp Lowell, June 3. Length, 7; extent, 13.40; wing, 3.60; tail, 2.90. "Iris yellow, bill greenish-yellow; cere yellowish-green; toes dull greenish-yellow; claws black. In some cottonwoods near camp I heard this individual—or another of the same species—for several consecutive mornings. His note was a loud *cuck* repeated several times as rapidly as twice each second. At each utterance the bird jerked his tail and threw back his head. Occasionally a low *chuck*, audible for only a short distance, replaced the usual call."

140. **Micrathene whitneyi** (*Cooper*) *Coues.* WHITNEY'S
PYGMY OWL.—In 1872 Capt. Bendire secured several specimens of this pretty little Owl near Tucson, but no one seems to have since met with it in Arizona, and up to the present time it has remained a rare and little-known species. This, doubtless, has been chiefly owing to the fact that the Territory has been only superficially explored, for Mr. Stephens found it a very common bird in the desert region about Tucson and Camp Lowell. His first specimen was obtained in the following manner. Happening one day to cut down the trunk of a giant cactus for the purpose of investigating a Woodpecker's hole, he found a Whitney's Owl within, dead, but apparently only just killed by the fall. The hint was at once acted on with results disastrous to both Owls and cactuses, for an extensive raid on the latter, continued during several weeks in different localities, yielded a goodly num-

ber of the coveted birds. Those taken from holes were all females, but some males were afterwards shot in elder and willow thickets. The notes accompanying two specimens obtained June 3 at Camp Lowell are so interesting that I transcribe them in full. "I was walking past an elder bush in a thicket when a small bird started out. Thinking it had flown from its nest I stopped and began examining the bush, when I discovered a Whitney's Owl sitting on a branch with its side towards me and one wing held up, shield-fashion, before its face. I could just see its eyes over the wing, and had it kept them shut I might have overlooked it, as they first attracted my attention. It had drawn itself into the smallest possible compass so that its head formed the widest part of its outline. I moved around a little to get a better chance to shoot, as the brush was very thick, but whichever way I went the wing was always interposed, and when I retreated far enough for a fair shot I could not tell the bird from the surrounding bunches of leaves. At length, losing patience, I fired at random and it fell. Upon going to pick it up I was surprised to find another, which I had not seen before, but which must have been struck by a stray shot." Rather curiously both of these specimens proved to be adult males. It is by no means certain, however, that the males are not to a certain extent gregarious during the breeding season, for on another occasion two more were killed from a flock of five which were sitting together in a thick bush.

Judging from the notes at hand these little Owls are strictly nocturnal in their habits. With the evening twilight they came forth from their retreats and were sometimes dimly seen, but oftener heard calling to one another. They had several different notes, one of which sounded like the syllable "*churf*"; while another was a low "*tw-jur rrr*." These cries were heard at all times of the night, but oftenest in the early evening and again at daybreak.

During Mr. Stephens's raid on the cactuses several nests were discovered. These were invariably in deserted Woodpeckers' holes and usually at such a height that the trunk had to be felled. In every case this resulted in the breaking of the eggs, but one of the accessible nests fortunately contained a sound specimen. This egg is broadly ovate in shape, and measures 1.07 X .91. The shell, which is clear white, is slightly rough-

ened by numerous pores, but it nevertheless has a decided polish. Fresh eggs were found from May 10 to June 27, dates which indicate that the species breeds rather late in the season.

Juv., first plumage. ♀ (No. 608, Camp Lowell, June 28). Above plumbeous-ashy, the forehead spotted with pale rufous, the back indistinctly barred with reddish-brown; wings and tail marked as in the adult, but with rusty-brown instead of pale rufous; beneath ashy-white, barred everywhere—but most heavily on the breast—with ashy-brown; throat tinged with rufous. Another specimen, which is apparently a little older, has the back sparingly marked with rusty.

Among sixteen adult birds I find remarkably little individual variation. Some specimens, however, are rather more coarsely spotted above than others, and the color of the longitudinal streaks beneath varies, in the different examples, from ashy-brown slightly tinged with rufous to a decided rusty-chestnut. There is apparently no sexual difference, even in respect to size. The extremes are as follows:

Largest ♂, length, 6; extent, 15.10; wing, 4.33; tail, 2.26.

Smallest ♂, length, 5.60; extent, 14.60; wing, 4.20; tail, 2.19.

Largest ♀, length, 5.90; extent, 15.20; wing, 4.27; tail, 2.16.

Smallest ♀, length, 5.60; extent, 14.90; wing, 4.23; tail, 2.11.

141. **Falco sparverius** *Linn.* SPARROW HAWK. — The Sparrow Hawk was a common and generally distributed species in all the regions traversed. I have already, in another connection,* mentioned the finding of its feathers in a cave near Gayleyville.

"Iris dark brown; bill bluish, blackening at tip; legs light yellow."

142. **Polyborus cheriway** (*Jacq.*) *Caban.* CARACARA EAGLE. — Heermann is accredited with having found this species "abundant" on the Rio Gila and Colorado near Fort Yuma, but I cannot learn that it has ever been detected elsewhere in Arizona. Its presence at Tucson, as attested by the following specimen, is therefore of some interest.

348, ♂ im., Tucson, May 9. "Iris brown; bill pale green at base, becoming nearly white at tip; bare portions of the head dull purplish-red, whitish under the eyes; legs white with a yellowish tinge. This individual was in company with Turkey Buzzards and Ravens at a slaughter-house: It was wilder than the other birds, being the first to fly when I approached the spot. I was told of another individual which sometimes accompanied it."

143. **Pandion haliaetus carolinensis** (*Gm.*) *Ridgw.* FISH HAWK. — The only mention of this species which I find among the present notes, is an incidental reference to an individual seen near Tucson on April 23.

*This Bulletin, Vol. VII, p. 211.

144. **Accipiter cooperi Bonap.** COOPER'S HAWK.—This Hawk was occasionally seen during Mr. Stephens's visit to the Santa Rita Mountains. On May 18 a nest was found in the fork of a green oak at a height of about thirty feet. It had apparently been used several seasons. The eggs, which were slightly incubated, measure respectively 1.92×1.41 ; 1.93×1.42 ; 1.91×1.40 ; 1.92×1.40 . The parent birds were exceedingly shy, but one of them was finally killed with a rifle-ball.

406. ♂ ad., Santa Rita Mountains, May 18. Length, 16.70; extent, 30; wing, 9.38; tail, 8.44. "Iris brownish-red; cere, greenish-blue; legs, greenish-yellow. Taken with set of four eggs."

This specimen is absolutely indistinguishable from some of my Massachusetts examples.

145. **Buteo abbreviatus Caban.** ZONE-TAILED HAWK.—This fine Buteo was met with only at Tucson, where three specimens were taken. Of the first Mr. Stephens writes: "I was standing on a dam that crossed the river at the head of an irrigating ditch, when below me a Vulture, as at the time I supposed it to be, attempted to catch some minnows in a shallow place, fluttering over the water and trying to snatch up the little fish with its feet. Failing in this it alighted on the dam near me when I fired and killed it." This occurred in April. Later in the season (June 7) a fine adult pair was obtained near the same place but under somewhat different conditions. "I was looking for nests among the mesquites when the male of this pair came circling over me. Upon shooting him the female appeared, and I succeeded in getting her also. Feeling sure that they had a nest, I began to search the surrounding trees and soon discovered it,* well hidden by bunches of mistletoe."

Dr. Coues took a Zone-tailed Hawk on the Gila River, Sept. 24, 1864, and this, so far as I know, is the only identified Arizona specimen which has been previously announced. I cannot help thinking, however, that the bird which Capt. Bendire found breeding in Arizona in 1872 really belonged to this species, as he at first supposed, and not to *Urubitinga anthracina*, as afterwards surmised by Mr. Henshaw. Nor is it improbable that the black Hawks seen by the latter gentleman near Camp Bowie were also referable here.

311. ♂ im., Tucson, April 30. Length, 18.70; extent, 49.50; wing, 15; tail, 8.75; culmen (chord from cere); .88. "Iris brown; bill black, green-

* The notes do not state what this nest contained.

ish at base both above and below; cere, legs, and feet, yellow; claws black. The stomach contained two lizards, a few fish scales and some feathers. Sexual organs very minute." This specimen is in nearly the same plumage as the one described by Mr. Ridgway in "History of North American Birds" (Vol. III, p. 273).

501. ♂ ad., Tucson, June 7. Length, 19.20; extent, 48.40; wing, 15.60; tail, 9.15; culmen (chord from cere), .73.

502. ♀ ad., same locality and date. Length, 21.20; extent, 53.10; wing, 16.88; tail, 10; culmen (chord from cere), 1.

146. **Asturina nitida plagata** (Licht.) Ridgw. MEXICAN GOSHAWK. — "A common species in some of the mesquite groves about Tucson. Flight Falcon-like and very swift. The cry is a loud 'crur' repeated four or five times in succession. At a distance it sounds much like the scream of a Peacock."

The stomachs of the specimens examined contained lizards, small squirrels, fish scales, the wing-covers of beetles, and unrecognizable fur and bones of small rodents. A nest found May 2, was placed in the fork of a cottonwood about forty feet above the ground. It was composed outwardly of cottonwood twigs and was lined with leaves. The single egg which it contained is white with a faint bluish tinge. It is ovate in shape and measures 2.04 × 1.65.

Among the adults collected by Mr. Stephens I find little variation in either color or markings, and the sexes differ only in size. A male killed early in May represents the now well-known immature condition which curiously resembles that of the Broad-winged Hawk.

244. ♀ ad., Tucson, April 20. Length, 17.90; extent, 37.20; wing, 11.12; tail, 8. "Iris dark brown; bill and claws, black; cere, legs, and feet, bright yellow. Laying, but had not completed her set."

250. ♀ ad., Tucson, April 21. Length, 17.70; extent, 34.90; wing, 11.34; tail, 8.

302. ♂ ad., Tucson, April 28. Length, 16.30; extent, 32.10; wing, 10.38; tail, 7.50.

305. ♂ ad., Tucson, April 29. Length, 16.20; extent, 33.10; wing, 10.18; tail, 7.12.

323. ♂ ad., Tucson, May 3. Length, 16.30; extent, 33.90; wing, 10.50; tail, 7.88.

330. ♂ im., Tucson, May 4. Length, 16.50; extent, 33.40; wing, 9.95; tail, 7.94. "Iris brown; bill and claws, bluish-black; cere, rictus, legs and feet, yellow."

147. **Cathartes aura** (Linn.) Illig. TURKEY BUZZARD. — Incidentally mentioned in the notes as being common near Tucson. A large Vulture seen at Cave Creek, March 7, was thought by Mr. Stephens to be *Pseudogryphus californianus*.

148. **Zenaidura carolinensis** (Linn.) Bp. CAROLINA DOVE.—An abundant species throughout most of the regions traversed.

149. **Melopelia leucoptera** (Linn.) Bp. WHITE-WINGED DOVE.—This Dove was not uncommon about Tucson, where specimens were taken at intervals between April 26 and May 23. They frequented the mesquite tracts and fed largely on mesquite "beans." Their notes were similar to those of the Turtle Dove, but hoarser, and uttered with more apparent effort. They were usually rather shy.

On the journey to California they were occasionally seen in dreary deserts where few other birds seemed able to support life. At Yuma they were actually common, but none were found to the westward of this point. A nest obtained July 8, on the Gila River, was placed in a mesquite on the side of a sand-hill. It contained two eggs, slightly incubated, which measure respectively $1.30 \times .91$ and $1.20 \times .92$. Arizona skins are identical with Texas ones.

"Iris dark orange; bill black; legs dull red; bare orbital space blue."

150. **Chamæpelia passerina** (Linn.) Swains. GROUND DOVE.—Rather common about Tucson, where a number of specimens were obtained.

The Arizona males in my series are much lighter colored than those from Florida, and their bills, instead of being yellow or dull orange, as in eastern birds, are pure Indian red, with the usual dusky tip. These differences appear to be constant, but my material is not sufficiently extensive to enable me to judge of their bearing or importance.* In some generalizations, based upon the examination of fifty-six examples in the Smithsonian Museum, Mr. Ridgway says:† "As a rule, Florida and West India skins are most deeply colored," but he does not mention any variations in the color of the bill, which is simply described as "yellow."

"Iris pink (No. 300); pinkish-brown (No. 301); bill red, tipped with blackish; feet and legs pale flesh-color."

151. **Lophortyx gambeli** Nutt. GAMBEL'S QUAIL.—Specimens were obtained near Tucson, and others noted at and beyond Walters, a station in the Colorado Desert. The first *Lophortyx californicus* were met with in the San Gorgonio Pass, a day's drive to the westward of where the last Gambel's Partridges were seen.

* Prof. Baird has described a var. *pallescens* from Cape St. Lucas, to which these specimens are possibly referable. See Proc. Acad. Nat. Scien. Philad., 1859.

†History of North American Birds, Vol. III, p. 390.

152. *Callipepla squamata* (Vig.) Gray. SCALED QUAIL.

—These Quail were usually met with in the most barren places, often in deserts miles from any water. They were commonly found in flocks of from six to ten, but as many as thirty were occasionally seen together. They were so shy and difficult to obtain that Mr. Stephens rarely got more than one from a flock. He traced them westward to Picacho Station (Southern Pacific Railroad) beyond which point he thinks they do not extend.

Some time since I called attention* to certain points of difference between Texas and Arizona specimens of the Blue Quail, suggesting the name "*pallida*," for the Arizona representative in the event of its proving distinct. More recent examination of material from various localities has confirmed the stability of these differences, which are certainly sufficient to warrant the recognition of a new race. I find, however, that Vigors described† the pale interior form, which accordingly must stand as *C. squamata*, the Texas bird being the one eligible for a new name.‡ As the two have been more or less generally confused by authors I find it necessary to rearrange their characters as follows:—

Callipepla squamata (Vigors) Gray. SCALED QUAIL.

Adult ♂ (No. 5870—collector's No. 183—near Tombstone, Arizona, April 9, 1881. F. Stephens). Head with a broad, convex, but not conspicuous crest of lengthened feathers. Above faded ashy-brown with a faint bluish cast on the nape and tail; beneath brownish-white, nearly uniform, but with a trace of ashy on the breast; entire head, including the throat, cheeks, forehead, crown and occiput (but not the crest), nearly uniform pale brownish-drab, without markings; feathers of nape, back anteriorly, and the breast, narrowly but sharply margined with black, giving the effect of imbricated scales, the feathers of the breast having in addition a concealed, obtusely-V-shaped marking of brown; feathers of the abdomen with transverse, sub-terminal, irregular bars of rusty-brown; those of the crissum with shaft streaks of rusty; tips of long feathers of the crest, inner edges of tertials, and shaft-streaks on feathers of the flanks, yellowish-white; no rusty patch on the abdomen.

* This Bulletin, Vol. VI, p. 72.

† "ORTYX SQUAMATUS. Corpore plumbescenti-cano, interscapulio pectoreque dilutionibus, horum plumis circulo gracili brunneo ad apicem cinctis; cristæ occipitalis apice, gull, abdomine medio, crisso, striisque abdominis laterum rufescenti-albis.

MAGNITUDO *Ortygis californiani*.

HABITAT IN MEXICO. IN MUSÆO SOC. ZOOL."—Zool. Journal, V, 275.

‡ In addition to the names *Ortyx squamatus* and *Callipepla squamata*, the synonymy of the species includes only two titles; viz. *Callipepla strenua*, Wagler, Isis, XXV, 1832, of the species includes only two titles; viz. *Callipepla strenua*, Wagler, Isis, XXV, 1832, 144. Wagler's diagnosis clearly applies to *C. squamata* proper; I have not been able to consult the other reference, but from the extracts given by Cassin (Ill., I, 1853, p. 133), especially the sentence, "It inhabits the Mesquite regions in Northern Mexico," I infer that De la Llave also described the same form.

Sexes similar.

Habitat. Arizona; New Mexico; east to Western Texas (El Paso). Table lands of Mexico.

Callipepla squamata castanogastris var. nov. CHESTNUT-BELLIED SCALED QUAIL.

CH. SP. ♂ similis *C. squamata*, sed colore in toto magis plumbeo; capitis lateribus et vertice obscurioribus; macula ferrugineo-castanea in abdomine. ♀ dissimilis, pallidior ac sine macula castanea.

Adult ♂ (No. 6547—collector's No. 1640—Rio Grande City, Texas, November 11, 1880. M. A. Frazar). Entire upper parts, with sides of head, and a broad space across breast, deep bluish-cinereous, tinged with olive on the back, wings, and crown; throat deep buff. in marked contrast with the bluish of cheeks and breast; under tail-coverts and crissum warm brownish-cinnamon; abdomen pale brownish-orange, with a broad, elongate, central patch of dark rusty-chestnut; otherwise with the markings as in *C. squamata*.

Adult ♀ (No. 6546—collector's No. 1655—Rio Grande City, Texas, November 16, 1880. M. A. Frazar). Paler beneath than the ♂, and without any trace of the abdominal chestnut patch.

Habitat. Valley of the Lower Rio Grande in Texas; Eastern Mexico (New Leon).

The prominent differential characters of these two races may be more briefly given as follows:—

C. squamata.—General coloring pale and faded; crown and sides of head scarcely darker than throat, and rarely with any bluish tinge; no decided chestnut patch on abdomen; sexes similar.

C. squamata castanogastris.—General coloring deep and rich; crown concolor with back, and cheeks with breast,—both very much darker than throat; abdomen with a conspicuous central patch of solid rusty-chestnut; sexes dissimilar, the ♀ lacking the abdominal chestnut patch, and being much lighter colored than the ♂.

The individual and geographical variation shown by my series of eighteen specimens of *C. squamata* proper, is comparatively slight. New Mexican examples seem to be a trifle bluer than Arizona ones, and autumnal birds from both Territories are richer-colored than those taken in spring and summer; but all are very much paler than my types of *C. castanogastris*, while in none of them is there any decided chestnut patch beneath, the nearest approaches showing only a slight rusty tipping on a few of the feathers. I have not been able to examine as large a number of the Texas form, but Mr. Frazar, who has shot upwards of a hundred in the valley of the Lower Rio Grande, assures me that the adult male never lacks this conspicuous feature. The material in the National Museum, which Mr. Ridgway has kindly placed at my disposal, fully bears out the above generalizations.

The following specimens of *C. squamata* were collected by Mr. Stephens during his late trip.

6318, ♀ ad., Camp Bowie, January 10. Length, 10.60; extent, 14.80; wing, 4.53; culmen, .63.

6319. ♂ ad., same locality and date. Length, 10.60; extent, 14.90; wing, 4.57; culmen, .62.
36. ♀ ad., Cave Creek, March 12. Length, 10.20; extent, 15.20; wing, 4.80; culmen, .60.
183. ♂ ad., near Tombstone, April 9. Length, 10.30; extent, 14.40; wing, 4.50; culmen, .57.
194. ♀ ad., near Tucson, April 14. Length, 10.40; extent, 14.70; wing, 4.57; culmen, .61.
350. ♂ ad., Santa Rita Mountains, May 11. Length, 10.30; extent, 14.70; wing, 4.56; culmen, .61.
351. ♂ ad., same locality and date. Length, 10.70; extent, 15.30; wing, 4.65; culmen, .60.
352. ♂ ad., same locality and date. Length, 10.40; extent, 14.70.
422. ♂ ad., near Tucson, May 21. Length, 10.30; extent, 15.20; wing, 4.61; culmen, .59.
424. ♂ ad., same locality and date. Length, 11; extent, 15.20; wing, 4.68; culmen, .62.
532. ♂ ad., near Tucson, June 16. Length, 10.20; extent, 15; wing, 4.70; culmen, .60.
533. ♂ ad., same locality and date. Length, 10.40; extent, 15.10.
535. ♀ ad., same locality and date. Length, 10.60; extent, 15; wing, 4.58; culmen, .61. "About to lay."
536. ♂ ad., same locality and date. Length, 10.30; extent, 14.80; wing, 4.59; culmen, .60.

153. **Cyrtonyx massena** (Less.) Gould. MASSENA QUAIL.

—Although Mr. Stephens made repeated efforts to obtain specimens of this Quail, only one pair was met with during his extended wanderings. I extract the following from his notes relating to this occasion. "I was walking up a gulch at the foot of a steep peak, when a pair of Massena Partridges rose from the grass about ten feet ahead of me. The female went first, closely followed by the male, which I recognized by the black under tail-coverts. I was carrying my gun on my shoulder, and before I got ready to fire they had passed over the adjoining ridge and disappeared in a gulch beyond. Upon looking there I flushed the male, which rose within six feet of me, but missed him as he wound through the thick brush. Taking a few steps further the female flew and I managed to secure her. Their flight was very swift and each, as it rose, uttered a low whistling *weewee*. The locality was rocky, with thickly growing junipers and oaks, and sacaton grass beneath." The bird is known in Arizona as the "Fool Quail" or "Fool Hen."

137. ♀ ad., Chiricahua Mountains, March 31. Length, 8.40; extent, 16.70; wing, 5; tail, 2.65; culmen, .62. "Iris dark brown. Thighs muscular. Flesh white."

154. *Ardea herodias* Linn. GREAT BLUE HERON.—A single bird of this species was seen April 23, on the river near Tucson.
155. *Herodias alba egretta* (Gmel.) Ridg. AMERICAN EGRET.—Only one specimen, Tucson, April 23.
156. *Nyctiardea grisea nævia* (Bodd.) Allen. NIGHT HERON.—Observed on the same occasion as the preceding.
157. *Tantalus loculator* Linn. WOOD IBIS.—A flock was seen July 16 at Yuma, in a slough near the Colorado River.
158. *Ægialites vociferus* (Linn.) Cass. KILLDEER PLOVER.—Several were observed late in April about some ponds near Tucson.
159. *Porzana jamaicensis?* (Gmel.) Baird. LITTLE BLACK RAIL.—On April 23 a small, black Rail, which Mr. Stephens is sure belonged to this species, was flushed from the edge of a marshy pool near Tucson. I cannot learn that either *jamaicensis* or its California race *coturniculus* has been previously reported from Arizona.
160. *Fulica americana* Gmel. AMERICAN COOT.—Numbers of Coots were seen at Tucson in the latter part of April. They frequented a series of shallow ponds near the river.
161. *Spatula clypeata* (Linn.) Boie. SHOVELLER.—Several of these Ducks were seen April 23, in the ponds just mentioned.
162. *Querquedula discors* (Linn.) Steph. BLUE-WINGED TEAL.—A fine adult male in the collection was taken May 5, at Tucson.
163. *Querquedula cyanoptera* (Vieill.) Cass. CINNAMON TEAL.—Two or three pairs were observed near Tucson on April 23.
164. *Erismatura rubida* (Wils.) Bonap. RUDDY DUCK.—A few individuals were met with in April near Tucson. This species was not found south of Utah by Mr. Henshaw.
165. *Hydrochelidon nigra* Linn. BLACK TERN.—On April 17 a female in full nuptial plumage was taken at Cienega Station. In company with several others it was busily employed in catching insects that were flying over a small meadow.