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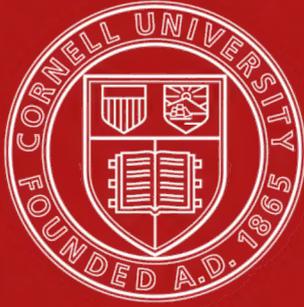
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No. 2.

REPORT ON BIRDS COLLECTED ON THE SURVEY.

BY S. F. BAIRD.

BUTEO SWAINSONI, Bonaparte. (p. 19.)¹—Swainson's Buzzard.

PLATES XII AND XIII.

Buteo swainsoni, BONAP. Comp. List, p. 3, (1838.)

Buteo vulgaris, RICH. & SW. Faun. Bor. Am. Birds, p. 47.

There are few results of any of the expeditions more interesting than the discovery by Captain Beckwith's party that this hawk was abundant in the Rocky mountains. The species first figured and described by Richardson and Swainson as the common buzzard of Europe had been variously identified by American authors, but most agreed in supposing it to be the young bird of the western red-tailed hawk, now known as *Buteo montanus*. That such is not the fact, however, is clearly shown by Captain Beckwith's collection, in which are three good specimens, all differing from each other, and one of them exactly in the plumage figured in the Fauna Boreali-Americana, as quoted above.

8540. Cochetope Pass. Iris grayish brown (24.)—8539 do. same locality. Iris whitish 25.—8541. San Luis valley, 13. Iris whitish.

BUTEO CALURUS, Cassin, (p. 22.)—Red-tailed Black Hawk.

PLATE XIV.

Buteo calurus, CASSIN, Proc. Acad. Philad. VII, 1855, 281.

Similar in general form to *Buteo vulgaris* and *Buteo augur*. Bill rather strong; edges of the upper mandible with distinct rounded lobes; wings long, fourth and fifth quills longest; tail moderate, or rather short; tarsi feathered in front for nearly half their length; naked behind, naked portion in front having about ten transverse scales; claws large, strong, fully curved.

Tail bright rufous above, white at base, with about eight to ten irregular and imperfect narrow bands and one wide sub-terminal band of brownish black, and narrowly tipped with reddish white; beneath silky reddish white.

Entire plumage above and below brownish black, deeper and clearer on the back and abdomen, and paler on the throat and breast. Plumage of the upper parts with concealed transverse bands of white at the base of the feathers; and of the under parts with circular spots and transverse bands of the same also at the base of the feathers; quills brownish black, with a large portion of their inner webs white, banded and mottled with pale ashy brown; under tail coverts transversely barred with brownish black and pale rufous.

Total length, female about 21 inches; wing $16\frac{1}{2}$, tail 9 inches. Male rather smaller.

Not rare in the Rocky mountains.

BUTEO OXYPTERUS, Cassin, (p. 30.)

PLATE XV.

This species is about the size of *Buteo pennsylvanicus*, but the wings and legs are much longer. The inner webs of the quills are dark cinereous, their inferior surfaces of a bronzed or silky

¹ The number in parentheses after the scientific name refers to the page of the General Report on Birds, Pacific Railroad Survey, vol. ix, where the species is described in detail.

olive lustre. Length about 16 inches; wing $13\frac{1}{2}$. The only specimen known at present was collected not far from Fort Fillmore by Dr. T. C. Henry.

BUTEO MONTANUS, Nuttall, (p. 26.)—The Western Red-tailed Hawk.

Buteo montanus, Nutt. Manual Orn. U. S. I, 112, (1840.)

Adult female.—Throat and neck before dark brown mixed with white; the brown color more extended, and, with the abdomen, tibiae, and under tail coverts, much more tinged with rufous than in *B. borealis*. Tibiæ distinctly barred transversely with rufous. Size rather larger. General appearance similar to *Buteo borealis*, but rather larger, and with the wings longer; throat and neck before brown; breast and abdomen white, with a very pale fulvous or rufous tinge; sides with numerous narrow lanceolate and oblong spots of dark brown and rufous; abdomen with a broad transverse band composed of spots of the same description. Tibial feathers pale rufous, with numerous transverse bands of a darker shade of the same color. Under wing coverts pale yellowish white, with brown spots. Tail above bright rufous narrowly tipped with white, with a subterminal band of black, and a few indications of transverse stripes near the shafts of the feathers. Upper parts of the body dark amber brown, with partially concealed ashy white and pale fulvous spots and transverse bands, especially on the scapulars and shorter quills. Upper tail coverts reddish white, with transverse bands of dark brown. Bill dark bluish; tarsi and toes yellow.

This species can only be distinguished from *B. borealis* by its larger size, the greater extent of the dark color of the throat, and the prevalence of the rufous color of the abdomen and tibiae. In some specimens, however, the abdomen is nearly pure white. Another plumage of this bird, apparently adult, of both sexes, is as follows, and is the most easily recognized of any stage:

Adult male and female.—Like the preceding, but with the under parts pale rufous, lighter on the breast, some feathers, especially on the abdomen, having longitudinal lines and spots of dark brown. Tibiæ rufous, with transverse bars of a darker shade of the same color. Tail bright rufous; tip paler, with a subterminal band of black. This second plumage, described above, we have never seen in *Buteo borealis*.

Sangre del Christo Pass. (6.) Iris whitish.

CIRCUS HUDSONIUS, Linnaeus, (p. 38.)—The Marsh Hawk.

Falco hudsonius, Linn. Syst. Nat. I, 128, (1766.)

Adult.—Form rather long and slender; tarsi long; ruff quite distinct on the neck in front. Entire upper parts, head, and breast, pale bluish cinereous; on the back of the head mixed with dark fulvous; upper tail coverts white. Under parts white, with small cordate or hastate spots of light ferruginous; quills brownish black, with their outer webs tinged with ashy, and a large portion of their inner webs white; tail light cinereous, nearly white on the inner webs of the feathers, and with obscure transverse bands of brown; under surface silky white; under wing coverts white.

Younger.—Entire upper parts dull amber brown, many feathers edged with dull rufous, especially on the neck; under parts dull reddish white, with longitudinal stripes of brown, most numerous on the throat and neck before; tibiae tinged with reddish; upper tail coverts white.

Young.—Entire upper parts dark amber brown; upper tail coverts white. Under parts rufous, with longitudinal stripes of brown on the breast and sides; tail reddish brown, with about three wide bands of dark fulvous, paler on the inner webs. Tarsi and toes yellow.

Total length, female, 19 to 21 inches; wing $15\frac{1}{2}$, tail 10 inches. Male, total length 16 to 18 inches; wing $14\frac{1}{2}$, tail $8\frac{1}{2}$ to 9 inches.

6859. Rocky mountains. (4.)—Desert between White river and San Rafael creek, Utah. (28.)

TINNUNCULUS SPARVERIUS, Vieill. (p. 13.)—Sparrow Hawk.

Falco sparverius, Linn. Syst. Nat. I, 1766, (128.)

No. 8519. Cochetope Pass.

OTUS WILSONIANUS, Lesson, (p. 53.)—The Long-eared Owl.

Otus wilsonianus, Lesson, Traite d'Orn. I, p. 110. (1831.)

Sp. CH.—Ear tufts long and conspicuous; eyes rather small; wings long; tarsi and toes densely feathered. Upper parts mottled with brownish black, fulvous, and ashy white; the former predominating. Breast pale fulvous, with longitudinal stripes of brownish black; abdomen white; every feather with a wide longitudinal stripe, and with transverse stripes of brownish black;

legs and toes pale fulvous, usually unspotted, but frequently with irregular narrow transverse stripes of dark brown. Eye nearly encircled with black; other feathers of the face ashy white, with minute lines of black; ear tufts brownish black, edged with fulvous and ashy white; quills pale fulvous at their bases, with irregular transverse bands of brown; inferior coverts of the wing pale fulvous, frequently nearly white; the larger widely tipped with black; tail brown, with several irregular transverse bands of ashy fulvous, which are mottled as on the quills; bill and claws dark; irides yellow.

Total length, female, about fifteen inches; wing 11 to 11½; tail 6 inches. Male, rather smaller.

No. 9144. Cochetope Pass. (23.) No. 9145. Rio Grande valley. (23.)

ATHENE CUNICULARIA, Molina, (p. 60.)—Burrowing Owl.

Strix cunicularia, MOLINA, Sagg. Stor. Nat. Chili, (1782.)

SP. CH.—Resembling *A. hypugaea*, but larger; tarsus longer, and more fully feathered in front to the toes.

Adult.—Upper parts light ashy brown, with large spots of dull white enclosed in edgings of brownish black. Throat white; a transverse band of brownish black and reddish white feathers across the neck in front, succeeded by a large patch of white. Breast light brown, with large spots of white like the upper parts; abdomen yellowish white, with hastate or crescent-shaped spots of reddish brown disposed to form transverse bands; under tail coverts, tibiae, and tarsus, and under wing coverts, yellowish white; quills and tail light brown, with spots of reddish white, edged (the spots) with brownish black; tail with about six transverse bands or pairs of spots of reddish white, enclosed or edged with dark brown.

No. 9168. Uncompagre river, Utah. (27.) Iris greenish yellow.

CHORDEILES HENRYI, Cassin, (p. 153.)—Western Night-Hawk.

PLATE XVII.

Chordeiles henryi, CASSIN, Illustrations, I, Jan. 1855, 233.

SP. CH.—Female similar to *C. virginianus*, but the upper parts much more mottled and more rufous. The males lighter.

6698. Rio Grande valley. (10.)

SIALIA ARCTICA, Swainson, (p. 224.)—Arctic Bluebird.

PLATE XXXV.

Erythaca arctica, RICH. & SW., F. B. A. II, 1831, 209; pl. xxxix.

SP. CH.—Entirely blue; paler beneath; the belly and under tail coverts white.

No. 7606. Cochetope Pass, (20.)

EREMOPHILA CORNUTA, Boie, (p. 403.)—Sky Lark.

PLATE XXXII.

The figure on the plate is taken from a specimen collected in Utah Territory by Captain Stansbury, (No. 3702,) and supposed at one time to be the *Otocoris occidentalis* of Colonel McCall. A subsequent examination of a large series of western specimens rendered it very doubtful whether there is really any such species, as distinguished by a white chin and throat from the *Eremophila cornuta*.

XANTHOCEPHALUS ICTEROCEPHALUS, Baird, (p. 531.)—Yellow-headed Blackbird.

Icterus icterocephalus, BONAP. Am. Orn. I, 1825, 27; pl. iii.

SP. CH.—First quill nearly as long as the second and third, (longest,) decidedly longer than the third. Tail rounded, or slightly graduated. General color black, including the inner surface of wings and axillaries, base of lower mandible all round, feathers adjacent to nostrils, lores, upper eyelids, and remaining space around the eye. The head and neck all round, the fore part of the breast, extending some distance down on the median line, and a somewhat hidden space around the anus, yellow. A conspicuous white patch at the base of the wing formed by the spurious feathers, interrupted by the black alula.

Female smaller, browner; the yellow confined to the under parts and sides of the head, and a superciliary line. A dusky maxillary line. No white on the wing. Length of male, 10.00 inches; wing, 5.60; tail, 4.50.

No. 8554. Sawatch Pass, (15.)

CORVUS CARNIVORUS, Bartram, (p. 560.)—American Raven.

Corvus carnivorus, BARTRAM, Travels in E. Florida, 1793, 290.

SP. CH.—Fourth quill longest; third and fifth about equal; second between fifth and sixth; first nearly equal to the eighth. Length about 24 or 25 inches; extent, 50 to 51; wing, about 17; tail, 10. Tail moderately graduated; the outer about 1.60 to 1.90 of an inch less than the middle. Entirely glossy black, with violet reflections.

Hab.—Entire continent of North America. Rare east of the Mississippi.

No. 6857. Between White river and San Rafael, Utah, (29.)

PICA HUDSONICA, Bonap. (p. 576.)—Magpie.

Corvus hudsonica, JOS. SABINE, App. Narr. Franklin's Journey, 1823, 25, 671.

SP. CH.—Bill and naked skin behind the eye, black. General color black. The belly, scapulars, and inner webs of the primaries white; hind part of back grayish; exposed portion of the tail feathers glossy green, tinged with purple and violet near the end; wings glossed with green; the secondaries and tertials with blue; throat feathers spotted with white. Length, 19.00; wing, 8.50; tail, 11.00.

8481. Utah creek, near Fort Massachusetts, (7.)—7100. Cochetope Pass, (14.)

PERISOREUS CANADENSIS, Bonap. (p. 590.)—Canada Jay.

Corvus canadensis, LINN. Syst. Nat. I, 1766, 158.

SP. CH.—Tail graduated; lateral feathers about one inch shortest. Wings a little shorter than the tail. Head and neck, and fore part of breast white. A plumbeous brown nuchal patch, becoming darker behind, from the middle of the crown to the back, from which it is separated by an interrupted whitish collar. Rest of upper parts ashy plumbeous; the outer primaries margined, the secondaries, tertials, and tail feathers obscurely tipped with white. Beneath smoky gray. Crissum whitish. Bill and feet black. Length, 10.70; wing, 5.75; tail, 6.00; tarsus, 1.40.

No. 8452. Sangre del Christo Pass, Utah, (5.)

CENTROCERCUS UROPHASIANUS, Swainson, (p. 624.)—Sage Cock; Cock of the Plains.

SP. CH.—Tail feathers twenty. Above varied with black, brown, and brownish yellow; coverts having all the feathers streaked with the latter. Beneath black; the breast white; the upper feathers with spiny shafts; the lower streaked with black; tail coverts with white tips; the sides also with much white. Length, 29; wing, 11.30; tail, 11.50.

No. 10023. Cochetope Pass, (21.)—Iris grayish white.

GRUS CANADENSIS, Temm. (p. 655.)—Sand-hill Crane; Brown Crane.

Ardea canadensis, LINN. Syst. Nat. I, 1766, 234, No. 3.

SP. CH.—Bill compressed. Lower mandible not as deep towards the tip as the upper. Gonys nearly straight, in the same line with the basal portion of bill. Commissure decidedly curving from beyond the middle to the tip, where it is even, not crenated. Color bluish gray; the primaries and spurious quills dark plumbeous brown; the shafts white. Cheeks and chin whitish. Entire top of head (bounded inferiorly by a line from commissure along the lower eyelid) bare of feathers, warty and granulated, thinly beset with short scattered black hairs. Feathers of occiput advancing forward in an obtuse angle; the grey feathers along this point, and over the auricular region, tinged with plumbeous. Length, 48; wing, 22; tarsus, 10; commissure, 6.

No. 9394. Rio Grande valley, (No. 12.)

SYMPHEMIA SEMIPALMATA, Hartlaub, (p. 729.)—Willet.

Scolopax semipalmatus, Gmelin, Syst. Nat. I, 1788, 659.

SP. CH.—The largest American species of this genus. Bill longer than the head, straight, rather thick, and strong; groove in the upper mandible extending about half its length, in the lower mandible nearly obsolete; wings long; legs long, strong; toes moderate, united at base by membranes, the larger of which unites the outer and middle toe; hind toe small; tail short. *Adult*. Entire upper parts dark ash color, (without spots;) the shafts of the feathers brownish black; rump and upper tail coverts white. Under parts white, tinged with ashy on the neck and sides; axillaries and under wing coverts brownish black; primary quills white at base, and tipped with brownish black; secondaries white, spotted with brownish black; tail ashy white, the two middle feathers strongly tinged with ashy; others spotted with dark ashy brown. Bill dark bluish brown, lighter at base; legs light blue. *Younger*. Entire plumage spotted, and transversely banded with brownish black.

Total length about 15 inches; wing, $8\frac{1}{4}$; tail, $3\frac{1}{4}$; bill about $2\frac{1}{2}$; tarsus about $2\frac{1}{2}$ inches.

No. 9818. Great Basin, Utah.

NUMENIUS LONGIROSTRIS, Wilson, (p. 743.)—Long-billed Curlew.

SP. CH.—The largest American species of this genus. Bill very long, much curved; upper mandible longer than the under, somewhat knobbed at the tip; wing rather long; legs moderate; toes united at base. Entire upper parts pale rufous, tinged with ashy; every feather with transverse and confluent bands of brownish black, most numerous and predominating on the back and scapulars; secondary quills, under wing coverts, and axillaries, bright rufous; primaries with their outer webs brownish black and their inner webs rufous, with transverse bands of black. Under parts pale rufous, with longitudinal lines of black on the neck and sides; tail rufous, tinged with ashy, transversely barred with brownish black. Bill brownish black; base of under mandible reddish yellow; legs bluish brown. Specimens vary to some extent in the shade of the rufous color of the plumage, and very much in the length of the bill. The rufous color is probably more distinct in the young. Total length about 25 inches; wing, 10 to 11; tail, 4; bill, 5 to 8; tarsus, $2\frac{1}{4}$ inches.

Great Salt Lake, May 15, 1854. (No. 2.)

FULICA AMERICANA, Gmelin, (p. 751.)—Coot; Poule d'Eau; Mud Hen.

Fulica americana, Gm., Syst. Nat. I, 1788, 704.

SP. CH.—Head and neck glossy black, with a tinge of ashy; under tail coverts white. Entire other plumage dark bluish cinereous or slate color, with a tinge of olive on the back and darker on the rump. Edge of wing at shoulder and edge of first primary white; secondary quills tipped with white; rump frequently tinged with brownish. Bill very pale yellow or nearly white, with a transverse band of brownish black near the end; tip white; legs dull grayish green. Female similar, but with the tints lighter. Young like the adult, but with the under parts lighter; abdomen frequently ashy white; back and rump dark olive brown; head and neck lighter.

Total length about 14 inches; wing, 7; tail, 2 inches.

9984. Great Salt Lake City.

CYGNUS AMERICANUS, Sharpless, (p. 758.)—American Swan.

Cygnus americanus, SHARPLESS, Doughty's Cab. N. H. I, 1830, 185, pl. xvi.

SP. CH.—Bill as long as the head, broad, high at the base; the feathers ending on the forehead in a semicircular outline. Nostrils far forward, the anterior extremity considerably more forward than half the commissure. Tail of 20 feathers.

Adult pure white; bill and legs black; the former with an orange or yellowish spot in front of the eye. Less mature specimens with the head above tinged with reddish brown. Length, 55 inches; wing, 22.00; tarsus, 4.25; bill above, 4.20.

Hab.—Continent of North America.

9978. Salt Lake City.

ANAS BOSCHAS, L. (p. 774.)—Mallard.

Anas boschas, LINN. Syst. Nat. I, 1766, 205.

SP. CH.—*Male*. Head and neck bright grass green, with violet gloss, the top of the head duller; a white ring round the middle of the neck, below which and on the fore part and sides of the breast the color is dark brownish chestnut. Under parts

and sides, with the scapulars, pale gray, very finely undulated with dusky; the outer scapulars with a brownish tinge. Fore part of back reddish brown; posterior more olivaceous. Crissum and upper tail coverts black, the latter with a blue gloss. Tail externally white; wing coverts brownish gray, the greater coverts tipped first with white, and then more narrowly with black. Speculum purplish violet, terminated with black; a recurved tuft of feathers on the rump.

Female with the wing exactly as on the male. The under parts plain whitish ochrey, each feather obscurely blotched with dusky. Head and neck similar, spotted and streaked with dusky; the chin and throat above unspotted. Upper parts dark brown, the feathers broadly edged and banded with reddish brown parallel with the circumference.

Length of male, 23; wing, 11; tarsus, 1.70; commissure of bill, 2.50.

9699. Salt Lake City.

AYTHYA AMERICANA, B o n. (p. 793.)—Red-head.

SP. CH.—Bill as long as the head, broad, blue, the end black; the region anterior to the nostrils dusky. Head, and neck for more than half its length, brownish red, glossed above and behind with violaceous red. Rest of neck and body anterior to the shoulders, lower part of back and tail coverts black. Beneath white, sprinkled with gray and black anterior to the crissum; the sides, interscapulars, and scapulars finely lined with undulating black and white in nearly equal proportions, imparting a general gray tint. Wing coverts bluish gray, finely sprinkled with whitish. The speculum, consisting of the ends of the secondaries, hoary grayish blue, lightest externally, and the innermost narrowly edged externally with black. Basal portion of inner primaries somewhat similar to the speculum. Tail of fourteen feathers.

Female with the head, neck, and fore part of body brownish; the region round the base of the bill whitish. Length of male, 20.50; wing, 9.50; tarsus, 1.60; commissure, 2.30.

9787. Salt Lake City. 9786. Uncompagne river, Utah. (26.)

NETTION CAROLINENSIS, B a i r d, (p. 777.)—Green-winged Teal.

Anas carolinensis, GMELIN, Syst. Nat. I, 1788, 533.

SP. CH.—Head and neck all round chestnut; chin black; forehead dusky. Region round the eye, continued along the side of the head as a broad stripe, rich green, passing into a bluish black patch across the nape. Under parts white, the feathers of the jugulum with rounded black spots. Lower portion of neck all round, sides of breast and body, long feathers of flanks and scapulars beautifully and finely banded closely with black and grayish white. Outer webs of some scapulars, and of outer secondaries black, the latter tipped with white; speculum broad and rich green; wing coverts plain grayish brown, the greater coverts tipped with buff. A white crescent in front of the bend of the wing; crissum black, with a triangular patch of buffy white on each side. Lower portion of the green stripe on each side of the head blackish, with a dull edge of whitish below.

Female with the wings as in the male. The under parts white, with hidden spots on the jugulum and lower neck; above dark brown, the feathers edged with gray.

Length, 14 inches; wing, 7.40; tarsus, 1.14; commissure, 1.68.

9721. Salt Lake City.

BUCEPHALA AMERICANA, B a i r d, (p. 796.)—Golden Eye; Whistle Wing.

Clangula americana, BONAP. Comp. List, 1838.—EYTON, Mon. Anat. 1838, 167.

SP. CH.—Bill black. Head and upper part of neck glossy green; the under surface opaque velvety purplish black. An elliptical patch along the base of upper mandible anterior to the eye, lower part of neck, under parts generally, and sides, middle and greater wing coverts, the innermost secondaries (and tertials, except the innermost three or four) white. The white on the wing is in a continuous patch, although there is a concealed black bar on the bases of the greater coverts. The inner scapulars are white, margined externally with black; posteriorly, however, they are black, streaked centrally with white. The inner scapulars and tertials, and the whole back, rump, and lesser wing coverts, are black; the primaries and tail black, with a hoary gloss. The under side of quills and lower greater coverts are plumbeous gray; the rest of the under wing and the axillars are sooty brown. The long white feathers of the flanks are edged superiorly with black.

Female with the head and neck above snuff brown, without white patch. White of wing less extended; the middle coverts only touched with white. There is a tendency to a black bar across the tips of the greater coverts. The white of the wing sometimes well defined.

Length, 18.75; wing, 8.50; tarsus, 1.50; commissure, 2.

9798. Great Salt Lake City.















No 3.

REPORT ON BIRDS COLLECTED ON THE ROUTE.

BY C. B. R. KENNERLY, M. D.

1. FALCO POLYAGRUS, Cassin, (p. 12.)¹—Great-footed Hawk.

8503. Camp on Little Colorado, 1853-4. (38.) Kennerly & Möllhausen.

This beautiful hawk we observed while encamped on the Little Colorado river. When seen he was busily engaged in seeking his prey among the bushes that grew along the river. With difficulty the specimen was procured, and very fortunately also, as we did not see it again.

2. TINNUNCULUS SPARVERIUS, Vieill, (p. 14.)—Sparrow Hawk.

8507. Camp 105, New Mexico, January 23, 1854. Kennerly & Möllhausen.

This beautiful little hawk we saw first in the vicinity of the Aztec mountains. It confined itself to the open valleys or among the scattering cedars on the hill sides. We found it somewhat difficult to procure a specimen on account of its shyness, although we saw it frequently from thence to the Pacific.

3. BUTEO MONTANUS, Nuttall, (p. 26.)—Western Red-tail.

8533. Camp 149, New Mexico, March 16, 1854. (185.)—8549. Camp 114, New Mexico, February 6, 1854. (71.) Kennerly & Möllhausen.

This species of hawk was by far the most abundant that we observed from the Rocky mountains to the Pacific ocean. Wherever we found smaller birds we were sure to find this, their untiring and watchful enemy. One specimen that I obtained had the proventriculus filled with mice, small birds, and lizards.

4. BUTEO ELEGANS, Cassin, (p. 28.)—Western Red-shoulder.

8524. Camp on Little Colorado, New Mexico, November 17, 1853. (32.) Kennerly and Möllhausen.

5. ARCHIBUTEO LAGOPUS, Gray, (p. 32)—Rough-legged Hawk.

8546. Near Zuñi, New Mexico, November 9, 1853. Kennerly & Möllhausen.

We found this large and beautiful hawk quite abundant in the vicinity of the Pueblo of Zuñi. Here it confined itself to the neighborhood of the stream, watching eagerly for ducks, which seemed to be its favorite prey. We did not observe it often after leaving this village.

6. CIRCUS HUDSONIUS, Vieill, (p. 38.)—Marsh Hawk.

6860. Fort Conrad, New Mexico, October, 1853. Dr. Kennerly.

We found this bird throughout Texas and New Mexico, wherever we found a marsh. When

¹ The page references are to volume IX of this series.

seen they were always hunting the marshes closely for their prey; flying low around and around, from point to point, and occasionally suddenly turning as if to examine more closely some place just passed. When encamped near such places we seldom failed to see three or four, particularly towards the close of the day, engaged in searching food.

7. CRAXIREX UNICINCTUS, Cassin, (p. 46.)—Harris' Buzzard.

9134. New Mexico, February 27, 1854. (179.) Kennerly & Möllhausen.

The only specimen of this bird that we saw we procured from the Mohave Indians, on the Great Colorado river, who had captured it alive by some means.

8. BUBO VIRGINIANUS, Bon. (p. 49.)—Great Horned Owl.

Little Colorado, New Mexico.—9154. Camp No. 98, New Mexico. (46.)—9158. Sixth Camp, Little Colorado, December 15, 1853. (37.) Kennerly & Möllhausen.

When encamped in the dark forest, or near a cañon with rough and rugged sides, the stillness of the night was generally broken by the dismal cry of this owl, "hooting hoarse courtship to his ill-omened paramour." Occasionally allured by our camp fires he would sweep around our heads for a while, then disappear again in the darkness to render his dismal notes or hunt his prey. The specimens that we procured were caught or shot in the deep and dark cañons that we passed, where they made their homes among the cliffs along the sides. Sometimes frightened by the loud and reverberating report of a gun in these places, they would creep among the rocks, attempting to conceal themselves, and were thus captured alive.

9. SCOPS M'CALLI, Cassin, (p. 52.)—Western Screech Owl.

9147. Camp 118, New Mexico, February 10, 1854. Kennerly & Möllhausen.

This singular little owl we observed only on Bill Williams' Fork. There he lives in the large cactus of that region, (*Cereus giganteus*), occupying the deserted holes of various species of woodpeckers. He seldom makes his appearance during the day, and when he does, it is only to show his head from his hole, ready at any time to disappear in a moment upon the approach of danger. On one occasion we observed him among some very thick bushes near the water.

10. OTUS WILSONIANUS, Lesson, (p. 53.)—Long-eared Owl.

9146. Camp 107, New Mexico, January 28, 1854. (57.) Kennerly & Möllhausen.

The only specimen of this bird that we saw was killed in a cañon, a short distance west of the Aztec mountains. The cañons of that country afford good places for the nests of these birds, which they build in common with the crow, and some of the hawks, along the precipitous cliffs that compose the sides of these cañons. The place generally selected is one unapproachable by the wolf and lynx, the unceasing enemies of their young.

11. ATHENE CUNICULARIA, Bonap. (p. 60.)—Burrowing Owl.

9168. Los Angeles, California, March 4, 1854. (191.) Kennerly & Möllhausen.

Wherever we found the prairie dog, (*Cynomys*), there we were sure to find this singular little owl. Indisposed, as it would seem, to burrow a hole in the earth for itself, it occupies those that have been deserted by the marmot, and occasionally, I believe, I have seen it enter the same hole with that animal. At any hour of the day they may be seen seated upon the mounds erected around the holes of the marmot, or else with its head protruding from the orifice, disappearing immediately when approached. Sometimes when molested they commence bowing and chattering in a somewhat ludicrous manner at the intruder, or fly swiftly away, keeping near the earth, and alighting suddenly in the vicinity of a burrow to renew these amusing motions.

We found it also very abundant in the valley of the San Gabriel river, California, associated with the large ground squirrel of that region. Here its habits were the same as we have observed them elsewhere.

I am not disposed to believe with some that this bird feeds on the young of the animals with which it is always associated. In this event a degree of animosity would certainly exist between them which the closest observation has failed to detect. On the contrary, they seem to live together in the utmost harmony. I think there is but little doubt that the owl feeds upon these animals when they die from natural causes; thus he becomes a scavenger to the burrows, and on that account is respected rather than hated by his companions.

12. *CONURUS CAROLINENSIS*, K u h l, (p. 67.)—Parakeet.

3896. Fort Smith, Arkansas. H. B. Möllhausen.

13. *GEOCOCCYX CALIFORNIANUS*, B a i r d, (p. 73.)—Paisano.

6178. El Paso, Texas. Dr. Kennerly.—6182. Fort Conrad, New Mexico. Dr. Kennerly.—6183. Little Colorado river, November 2, 1853. (33.) K. & M.

We found this bird quite abundant near San Antonio, Texas, living among the thick mezquite (*Algarobia*) bushes. Frequently, as we marched up the Rio Grande, did it cross the road in front of us, running very rapidly and disappearing among the weeds. It was also seen occasionally during the winter along the Little Colorado river. After leaving this river, although we did not see the bird itself, yet we frequently saw the tracks of this, or some other species of the same genus in the sands along the valley of Bill Williams' Fork. We found it somewhat difficult to procure a specimen, owing to its shyness and rapidity on foot. It is said that sometimes it is captured alive by being pursued on horseback, and when thus taken very soon becomes quite tame, willingly remaining about the house and soon destroying all the mice in its vicinity. Besides mice, which they catch with as much dexterity as a cat, they also eat lizards, which are generally numerous in the vicinities in which this bird is found.

I embraced the opportunity of dissecting the specimen that I procured and found that the viscera consisted simply of the stomach or digesting cavity and a very short intestinal canal, very little if at all longer than the rectum of other birds.

14. *PICUS HARRISII*, A u d. (p. 87.)—Harris' Woodpecker.

6079. Little Colorado river, December 8, 1853. (35.) K. & M.

This bird was found along the Little Colorado river, in the month of December, wherever the cottonwood trees grew. When seen there were generally several in company. After leaving this river, however, we did not see them again.

15. PICUS SCALARIS, Wagler, (p. 94.)

6115. ♀. Colorado river, California, February 15, 1854. (165.) K. & M.

Near San Antonio, Texas, we saw this bird very often, as well as during our march several hundred miles west of that place. But after leaving the Rio Grande we did not meet with it until we reached the head waters of Bill Williams' Fork. From thence to the Great Colorado river we saw it frequently wherever we found timber, but it was very shy, alighting in the tops of the leafless cottonwood trees, and keeping a vigilant lookout.

16. CENTURUS UROPYGIALIS, Baird, (p. 111.)—Gila Woodpecker.

PLATE XXXVI.

♂, ♀. Bill Williams' Fork, New Mexico, February 13 and 16. (99, 171.) Kennerly and Möllhausen.

First described from specimens collected by the expedition.

We saw this bird continually almost during our march along the Big Sandy, Bill Williams' Fork, and the Great Colorado, but it was with great difficulty that we procured several specimens, on account of its shyness. Seated in the top of a tree, it was ever on guard, and upon the approach of danger flew away, accompanying its flight with its peculiar notes. Its flight was in an undulating line, like that of other birds of this class.

17. COLAPTES MEXICANUS, Swainson, (p. 120.)—Red-shafted Woodpecker.

6160. Camp 134, New Mexico. (180.) Kennerly and Möllhausen.

Our attention was called particularly to this bird upon reaching the Big Sandy. From thence to the Great Colorado we pursued it almost daily without being able to procure a specimen. We saw it on the barren hills among the large cacti, (*Cereus giganteus*), in which it builds its nest, as well as among the bushes and trees of the valley. Its shyness was inexplicable to us until we reached the Great Colorado, where we found it closely hunted and much prized by the Indians on account of the beauty of its feathers, with which they make head dresses. We procured from the Indians a beautiful live specimen, which had been caught in a trap. We met with it again occasionally during our march up the Mohave river.

18. ATTHIS COSTAE, Reich. (p. 138.)—Coste's Humming Bird.

PLATE XIX.

6073, ♂; 6074, ♀. Bill Williams' Fork, New Mexico, February 9, 1854. (79, 80.) Kennerly and Möllhausen.

First recognized as belonging to the fauna of the United States from specimens collected by the expedition.

In the month of February, while travelling along Bill Williams' Fork, we found a few flowers that had already expanded beneath the genial rays of the sun, and around these we never failed to find this beautiful bird. At this season they were generally paired, and they were ever flitting around the flowers enjoying their sweets "with hearts of controversy." Their notes consisted of a rapid chirping sound. Approaching near the coast of California, where the valleys were clothed with flowers of every hue, these diminutive and interesting little creatures were continually flitting before us.

19. PANYPTILA MELANOLEUCA, Baird, (p. 141.)—White-throated Swift.

PLATE XVIII, FIG. I.

6017. Camp 123. Bill Williams' Fork, New Mexico, February 16, 1854. (169.) Kennerly and Möllhausen.

First described from the specimen collected by the expedition.

This curious and interesting bird was found in the month of February among the cañons of Bill Williams' Fork. We did not observe it elsewhere during our journey. Large flocks at any time could be seen in the vicinity of these cañons, flying and circling around very high, and far beyond the reach of shot. Towards the close of the day, when the sun had sunk behind the hills, they occasionally descended lower. We found them only where the walls of the cañons were very high and consisted of almost perpendicular masses of rocks. Sometimes we have seen them sweeping down and then ascending nearly perpendicularly very near the stones, as if examining them in order to select a place for their nests. The construction of these had obviously not yet commenced, as we saw none engaged in the work, nor did we observe any old nests, unless these birds build like the common cliff swallow, (*Hirundo fulva*), of which there were many also in this region, and whose nests were found in many places. Mr. Möllhausen, however, is inclined to the opinion that they build in the holes and crevices of the cliffs. In its flight and habits, as far as we were able to observe, it closely resembles the common chimney swift, (*Chaetura pelagica*.)

20. ANTROSTOMUS NUTTALLII, Cassin, (p. 141.)—Nuttall's Whipporwill.

6004. Camp 130, New Mexico, February 23, 1854. (177.) Kennerly and Möllhausen.

The only specimen of this bird that we saw was presented to us on the Great Colorado river by a Mexican boy, who had captured it alive by some means.

21. MILVULUS FORFICATUS, Swainson, (p. 169.)—Scissor-tail.

7381. San Antonio, Texas, July, 1853. (15.) Dr. Kennerly.

We frequently saw this beautiful and singular fly-catcher as we marched from the Gulf of Mexico several hundred miles into western Texas, but beyond this limit we saw them no more. We found them among the thick mezquite (*Algarobia*) bushes, as well as upon the open prairie. When perched they were generally on the summit of a bush or tall weed, the tail being constantly in motion. Frequently they would dart off after some passing insect, circling around, showing occasionally the singular bifurcation of the tail, but seldom alighting again on the same bush, as many other fly-catchers do. We have sometimes seen it upon the open prairie fly for a long distance near the earth, as if in search of its insect prey.

22. SAYORNIS NIGRICANS, Bonap, (p. 183.)—Black Fly-catcher.

7215. Camp 105, Pueblo creek, New Mexico, March 19, 1854. (189.) K. & M.

After passing the mountains of California and descending into the valley of the San Gabriel river, we found this little bird quite abundant, though we had not noticed it before. It was generally found perched upon the summit of a bush, from which it would occasionally make short excursions in search of its prey. At this season, March, they were rarely found in pairs, so I presumed that they were hatching.

23. SAYORNIS SAYUS, Baird, (p. 185.)—Say's Fly-catcher.

7228. Bill Williams' Fork, New Mexico, February 10, 1854.—7233. Do. February 16, 1854. (88, 170.) K. & M.

We found this bird common in Texas and as far to the westward as the Great Colorado river. It built its nest under the cliffs along the stream, and in its notes, and in every other respect, closely resembles the common pewee, (*Tyrannula fusca*.)

24. SIALIA MEXICANA, Swainson, (p. 223.)—Western Blue Bird.

7637. Camp 110, New Mexico, January 31, 1854. (60.) K. & M.—7635. Fort Conrad, New Mexico, October, 1853. (52.) Dr. Kennerly.

We found this beautiful bird very abundant during our march up the Rio Grande, and from thence to the Great Colorado. At the time of which we write, from November to the latter part of January, they were always seen in large flocks, near the different streams that we passed.

25. SIALIA ARCTICA, Swainson, (p. 224.)—Rocky Mountain Blue Bird.

7607. 75 miles west of Albuquerque, November 1853. (15.) K. & M.

26. REGULUS CALENDULA, Licht. (p. 226.)—Ruby-crowned Wren.

7177. Camp 105, January 24, 1854. (55.)—7167. Camp 116, New Mexico, February 8, 1854. (75.) K. & M.

We found these beautiful little kinglets in the Aztec mountains, in the month of January, and along Bill Williams' Fork in the month of February. They were found in the thickest bushes, and seemed always to be busily engaged in searching for their insect food and chirping as they hopped about.

27. DENDROICA AUDUBONII, Baird, (p. 273.)—Audubon's Warbler.

7663. Cocomongo Ranch, California, March 19, 1854. (190.)

This beautiful little bird was found by Dr. Woodhouse in the mountainous districts of New Mexico, but it did not attract our attention until we reached the border settlements of California. In the vicinity of the Cocomongo Rancho we found it very abundant among the low bushes in the month of March. The song of this bird somewhat resembles that of the summer yellow bird, (*Dendroica aestiva*.)

28. COTYLE SERRIPENNIS, Bonap. (p. 313.)—Rough-winged Swallow.

6031. Camp 124, New Mexico, February 21, 1854. (176.) K. & M.

We found this swallow very abundant along the Great Colorado river in the month of February. In its flight it resembles the common barn swallow (*Hirundo rufa*.) We did not have an opportunity of noticing anything in connexion with its nidification, as the season, I presume, had not yet arrived for nest building.

29. PHAINOPEPLA NITENS, Sclater, (p. 320.)

8281. Camp 120, February 12, 1854. (96.)—8282. Camp 113, New Mexico, February 5, 1854. (69.) K. & M.

This beautiful little bird we found very abundant along Bill Williams' Fork and the Great Colorado. It usually perched upon the topmost branch of a small tree, watching closely your approach, and whether flying and resting continually uttered its short and singular cry. On account of its shyness we found it difficult to procure a specimen.

30. MYIADESTES TOWNSENDII, Cab. (p. 321.)—Townsend's Flycatcher.

8286. Near Zuñi, New Mexico. K. & M.

We procured several specimens of this bird in the Rocky mountains and in the vicinity of the Pueblo of Zuñi. From thence westward we saw it occasionally. It inhabited generally the cedar thickets, upon the berries of which, I presume, it feeds.

31. COLLYRIO EXCUBITOROIDES, Baird, (p. 327.)—White Rumped Shrike.

8715. Camp 130, New Mexico, February 23, 1854. K. & M.

This bird we saw occasionally on the Little Colorado river in the month of December, and on the Great Colorado in February. It was very shy and when seen was generally perched upon the summit of a small bush or weed watching eagerly for its prey.

HARPORHYNCHUS.

This bird attracted my attention particularly after reaching the head waters of Bill Williams' Fork. From thence to the Great Colorado we saw it frequently, but found it very difficult to procure a specimen of it, as it inhabited the thickest weeds and artemisia bushes, running very rapidly, and with difficulty made to fly, and then its flight was very rapid and short, darting suddenly down and disappearing in the bushes. The species was probably *H. crissalis*, Henry.

32. MIMUS POLYGLOTTUS, Boie, (p. 344.)—Mocking Bird.

8164. Bill Williams' Fork, February 9, 1854. (83.) K. & M.

During our march through Texas we were frequently delighted with the music of this wonderful songster; nor were we altogether without his company while crossing New Mexico. We always found him in the vicinity of the little streams that we passed, and at evening and the early dawn, mounting the summit of some bush or small tree, he warbled forth his imitative and fantastic songs.

33. OREOSOPTES MONTANUS, Baird, (p. 347.)—Mountain Mocking Bird.

8136. Near Zuñi, New Mexico. November 26, 1853.—8137, 8138. Bill Williams' Fork. Camp 119, 120, February 11, 18, 1854. (49, 50.) K. & M.

After leaving the Rio Grande we first met with this bird near the Pueblo of Zuñi; and frequently afterwards we heard its notes while travelling over the arid mesas or among the

bushes in the valleys. While singing it was perched upon some small tree or bush. We frequently saw it seeking food upon the ground and when approached too nearly did not generally fly away, but running very rapidly soon disappeared among the weeds or bushes.

34. CATHERPES MEXICANUS, Baird, (p. 357.)—White-throated Wren.

7116. Camp 116. Bill Williams' Fork, February, 1854. (66.) K. & M.

Among the hills bordering the Big Sandy, where the rocks were piled up thick and high, we found this little bird darting from rock to rock and creeping among the crevices with great activity, and keeping up continually its singular notes. The rapidity of its motions around the rocks rendered it difficult to procure a specimen. We did not observe it elsewhere.

35. CERTHIA AMERICANA, Bonap. (p. 372.)—Creeper.

7154. Pueblo creek, New Mexico, January 22, 1854. (47.) K. & M.

This little creeper attracted my attention particularly in the Aztec mountains, where we found it very abundant among the rough-barked cedars. Its retreat was generally discovered by hearing its quick and sharp notes, and then by a close and careful search it was generally seen proceeding leisurely upwards and downwards, in straight or spiral lines towards the top of the tree, dodging dexterously to the opposite side from the observer, and only resuming his occupation when assured of solitude and safety.

36. SITTA ACULEATA, Cassin, (p. 375.)—Western Nuthatch.

PLATE XXXII, FIG. 3. Fig 4 represents the head of *S. carolinensis*.

6807. One hundred miles west of Albuquerque, New Mexico. (26.) Kennerly and Möllhausen.

We found this little bird quite abundant among the pines of the Sierra Madre, and frequently afterwards in the mountains that we crossed. When seen he was generally busily engaged in searching for food on the trees, passing up and down and around, accompanying his motions with his peculiar notes.

37. SITTA PYGMAEA, Vigors, (p. 378.)—California Nuthatch.

6804. Cold Spring, Rocky mountains, November 17, 1853. (22.)—6803. San Francisco mountains, New Mexico, December 27, 1853.

This little bird we found quite abundant in the Sierra Madre and San Francisco mountains, even high up where the snows were deep. Here he still lingered to seek his insect food on the lofty pines. After leaving this latter range of mountains, however, we did not observe this bird again.

38. POLIOPTILA PLUMBEA, Baird, (p. 382.)

PLATE XXXIII, FIG. 2.

7189. Camp 119, Bill Williams' Fork, New Mexico, February 11, 1854. (91.)—Camp 113, February 5, 1854. (70.) Kennerly & Möllhausen.

First described from these specimens.

We found this little bird quite abundant along Bill Williams' Fork, in the month of February. In its habits it very closely resembles the *Psaltriparus plumbeus*.

39. LOPHOPHANES WOLLWEBERI, Bon. (p. 386.)

6795. Pueblo creek, New Mexico, January 22, 1854. (50.) Kennerly and Möllhausen.

This little bird was found in the thick bushes along Pueblo creek. When noticed it was ever in motion, hopping from twig to twig, searching for its food. We found it also among the pines of the Aztec mountains.

40. PSALTRIPARUS PLUMBEUS, Baird, (p. 398.)

PLATE XXXIII, FIG. 2.

Little Colorado, New Mexico, November 1853. (40.)—6776, 6777. Camp 111, Bill Williams' Fork, New Mexico, February 1, 1854. (62, 63.)—6774. Camp 120, Bill Williams' Fork, February 12, 1854. (94, 95.) Kennerly & Möllhausen.

First described from these specimens.

We found this little bird first along the Little Colorado river, among the scattered bushes, in large flocks. They passed rapidly from place to place, uttering their short, quick notes. We found them again along the head waters of Bill Williams' Fork, inhabiting the tops of the cottonwood trees. Attracted by their notes, they could only be seen by a very careful search. A singular fact in connexion with them is, that those along the Little Colorado all had black eyes, while the eyes of those found on the Fork were yellow. No other possible difference could be discovered. Had they been found together, or even near each other, it might be a fair conclusion to consider them of different sexes, merely; but they were separated by a distance of several hundred miles.

41. EREMOPHILA CORNUTA, Boie, (p. 403.)—Sky Lark.

8727, 8728. Near Zuñi, New Mexico, November 19, 1853. (26, 27.) Kennerly and Möllhausen.

We found this bird throughout Texas and New Mexico, living, for the part, in naked and desert districts, often far from water. They were never seen except in flocks. We were almost sure to find them about the settlements of the prairie dog, (*Cynomys ludovicianus*.) When on the wing they whirled around from time to time near the earth, keeping close together, and descending suddenly when about to alight. They accompanied their flight with a low chirping note, and sometimes kept this up while running on the ground. We never observed them perched on a bush or tree.

42. CARPODACUS CASSINII, Baird, (p. 414.)

PLATE XXVII, FIG. 1.

6420, 6421. Pueblo creek, New Mexico, January 22, 1854. (48, 52.) Kennerly and Möllhausen.—6422. Albuquerque, November 15, 1853. Dr. Kennerly.

First described from these specimens.

This interesting bird we found inhabiting various points between the Rio Grande and the Great Colorado. We found them very abundant along Pueblo creek; not only in the low

valley but high up in the Aztec mountains, among the snows. It inhabits, for the most part, the thick bushes along the running streams; in this and other respects resembling the *Carpodacus familiaris*.

43. CARPODACUS FRONTALIS, Gray, (p. 415.)—House Finch.

6427. Camp 118, New Mexico, February 10, 1854. (86.) Kennerly and Möllhausen.

This little bird is very common along the valley of the upper Rio Grande. There it is said to be quite domestic in its habits, frequenting the houses and building about the churches and other buildings. Dr. Woodhouse found it very abundant as high up as Santa Fé. We saw it frequently during our marches to the westward as far as the Great Colorado. The winter season does not seem to frighten it from this region. It was generally found in the vicinity of the various creeks that we passed.

44. CHRYSOMITRIS PSALTRIA, Bonap. (p. 422.)—Arkansas Finch.

6397, 6398, 6399, 6400. Bill Williams' Fork, New Mexico, February, 1854. (97, 78, 74, 76.) Kennerly and Möllhausen.

This beautiful little bird we found very abundant in the month of February, feeding on the young buds of the cottonwood trees along Bill Williams' Fork. At this season they were in small flocks; and the only note we heard from them was a short chirp as they hopped from twig to twig, or flew from one tree to another.

45. COTURNICULUS PASSERINUS, Bonap. (p. 450.)—Yellow-winged Sparrow.

6334. Bill Williams' Fork, New Mexico. (175.)

We found this bird among the thick bushes along the valley of Bill Williams' Fork, as well as along the Great Colorado river. In some places they were quite numerous, going in flocks of five or six or more.

46. ZONOTRICHIA GAMBELII, Gambel, (p. 460.)—Gambel's Finch.

6201, 6202, 6203. White Cliff creek, New Mexico, February, 1854. (65, 64, 61.) Kennerly and Möllhausen.

This sparrow we first noticed upon approaching the Big Sandy creek; from thence to the Great Colorado we found them abundant. At this season (February) they were mostly in flocks, and were generally found among the bushes in the vicinity of the water.

47. JUNCO OREGONUS, Sclater, (p. 466.)—Oregon Snow Bird.

6266. Zuñi, New Mexico. (30.) Kennerly and Möllhausen.

We frequently saw this little bird in the vicinity of the Pueblo of Zuñi, in the month of October and the latter part of November. It was very abundant among the cedar to the westward of this settlement as far as the Little Colorado. Its note at this season was a short chirp, closely resembling that of the common snow bird, (*J. hyemalis*.)

48. POOSPIZA BELLII, Sclater, (p. 470.)

6336. Colorado river, California, December 15, 1853. Kennerly and Möllhausen.

This little bird was found in the month of December along the Little Colorado river, wherever the weeds and bushes were thick. It was never observed very far from the water, and its food at this season seemed to consist of the seeds of various kinds of weeds. In its motions it was quick; and when made to fly, its flight was short, rapid, and near the earth.

49. SPIZELLA MONTICOLA, Baird, (p. 472.)—Tree Sparrow.

6354, 6355. Little Colorado river, New Mexico, December 18, 20, 1853. (39.) Kennerly and Möllhausen.

Along the Little Colorado river, in the month of December, we found this little sparrow quite abundant, feeding upon the seeds of the grapes and weeds that grow along the valley.

50. SPIZELLA BREWERI, Cassin, (p. 475.)—Brewer's Sparrow.

6358. Camp 127. Bill Williams' Fork, New Mexico, February 26, 1854. (174.) Kennerly and Möllhausen.

We found this bird throughout New Mexico, from the Rio Grande to the Great Colorado, along the different streams, where it fed upon the seeds of various kinds of weeds.

51. MELOSPIZA FALLAX, Baird, (p. 481.)

PLATE XXVII, FIG. 2.

Pueblo creek, New Mexico, January 22, 1854. (51.) First described from this specimen.

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

52. MELOSPIZA LINCOLNII, Baird, (p. 482.)—Lincoln's Finch.

6325. Camp 131, New Mexico, February, 1854. (100.) K. & M.

This bird we found in the month of February, from the Big Sandy to the Great Colorado river. It confined itself to the thick bushes along the stream, and when seen was generally busily hopping from twig to twig in search of food. When made to fly, its flight was noticed to be very rapid and near the earth.

53. CYANOSPIZA CIRIS, Baird, (p. 503.)—Painted Finch.

6277, 5278. San Antonio, Texas, July, 1853. (14, 17.) Dr. Kennerly.

We often listened with pleasure to the melodious warblings of this beautiful finch, in the vicinity of San Antonio, Texas, where we found it very abundant among the thick mezquite (*Algarobia*) bushes, in the month of July. It is deservedly a great favorite there on account of the beauty both of its plumage and its notes.

54. PIPILO MEGALONYX, Baird, (p. 515.)

6733. Pueblo creek, New Mexico, Camp 104, January 22, 1854. (49.) K. & M.

The bird first attracted our attention in the month of January, in the Aztec mountains, along Pueblo creek. Here we saw it often, but generally singly. It inhabited the thickest bushes, and its motions were so constant and rapid, as it hopped from twig to twig, that we found it difficult to procure a specimen. Its flight was also rapid and near the ground.

55. PIPILO ABERTII, Baird, (p. 516.)—Abert's Finch.

PLATE XXX.

6750. Camp 114, February 6, 1854. (72.)—6751. Camp 120, Bill Williams' Fork, New Mexico, February 12. (92.) K. & M.

In the month of February, while travelling down the Big Sandy creek and Bill Williams' Fork, we found this bird very abundant. They confined themselves to the thick bushes near the water. Generally, two or three were seen together. Their motions were very rapid and their note was a peculiar, loud, chattering sound, sharp but not disagreeable. After leaving the Great Colorado we did not see it again.

56. PIPILO MESOLEUCUS, Baird, (p. 518.)

PLATE XXIX.

6827. Bill Williams' Fork, New Mexico, February 5, 1854. (67) K. & M.
First described from this specimen.

57. PYRANGA HEPATICA, Swainson, (p. 302.)

PLATE XXXI.

Seen in the San Francisco mountains, New Mexico.

58. AGELAIUS PHOENICEUS, Vieillot, (p. 526.)—Red-wing Blackbird.

8574 ♂. Fort Conrad, New Mexico, October, 1853.—8576. Cold Spring, New Mexico, November 17, 1853, (23.)—Camp 150. Cocomongo Ranch, California, March 19, 1854, (187.) K. & M.

We found these birds quite abundant in various places in New Mexico, wherever we found marshes and swampy grounds. We saw them also in the Sierra Madre, near Cold Spring, and Dr. Woodhouse found them also in the San Francisco mountains, near the Laguna Enematio.

59. AGELAIUS GUBERNATOR, B o n . (p. 529.)—Red-shouldered Blackbird.

8597. Camp 150. Cocomongo Ranch, California, May 19, 1854, (188.) K. & M.

In the month of October, near the ruins of Valverde, on the Rio Grande, we procured two specimens of a bird belonging to this genus, but cannot assert positively that it is this species, owing to the imperfect condition of the plumage. But during our marches along Bill Williams' Fork, along the Great Colorado, and the Mohave river, we found them quite numerous; but more abundant still along the creeks and swampy grounds that we passed as we approached near the settlements of California. Large flocks could here be seen whirling around in graceful curves like dark clouds, chattering joyfully as they moved along, or settling as a black veil on the topmost branches of some tree, indulging loudly in their harsh music.

60. STURNELLA NEGLECTA, A u d . (p. 537.)—Western Meadow Lark.

8616. Fort Conrad, New Mexico, October, 1853.—8611. Camp 117, New Mexico, February 9, 1854.—8612. Camp 126, New Mexico, February 19, 1854, (173.) K. & M.

This bird is abundant in Texas, and we found it along the valley of the Rio Grande as far as Albuquerque; from thence westward as far as the Pueblo of Zuñi we saw it occasionally. But after leaving this village we did not meet with it again until we reached Bill Williams' Fork, from thence, however, to the Pacific coast it was very common along all of the streams that we passed. In its habits it closely resembles the *S. ludoviciana*, but I think close attention will discover some difference in the notes. In the former these are not so prolonged, and end more abruptly.

61. ICTERUS SPURIUS, B o n . (p. 547.)—Orchard Oriole.

6706. San Antonio, Texas, July, 1853. Dr. Kennerly.

This beautiful little oriole we found very abundant near San Antonio, Texas, in the month of July. It seemed to prefer the places where the mezquite (*Algarobia*) grew the thickest.

62. CORVUS CACALOTL, W a g l e r , (p. 563.)—Colorado Raven.

PLATE XX.

6855. Bill Williams' Fork, New Mexico, February 7, 1854. 73? 102, 97. Camp 110, January 31, 1854, (54.) K. & M.

This bird was one of our most constant companions during our marches from the Rio Grande westward. Four or five of them would frequently follow our train for several days over sandy and dreary plains, where no other living object was seen, and nothing heard save their dismal croaks. I have known them to become quite tame after following us in this manner undisturbed, and to walk about among our mules and in the camp, permitting themselves to be approached frequently quite closely, without seeming disposed to fly away. When we evacuated the camp, they immediately took possession of it and enjoyed what was left hurriedly, quarrelling at the same time with the coyotes should they dare to intrude.

63. CORVUS CRYPTOLEUCUS, C o u c h , (p. 365.)—White-necked Crow.

PLATE XXII.

Seen abundantly on the Llano Estacado.

64. PICICORVUS COLUMBIANUS, B o n . (p. 573.)—Clark's Crow.

8474, 8475. 75 miles west of Albuquerque, November 15, 1853. K. & M.

In the thick pine woods skirting the eastern slope of the Rocky mountains we found this bird quite abundant. We seldom saw more than two or three together; and when seen they were generally busily engaged in searching for food, flying alternately from the ground to the trees, and keeping up continually their loud song. After leaving the mountains we did not see it again.

65. GYMNOKITTA CYANOCEPHALA, P r . M a x . (p. 574.)—Maximilian's Jay.

8468. 95 miles west of Albuquerque, November 16, 1853. K. & M.

Between the Puebla of Laguna and the Sierra Madre we frequently saw large flocks of this bird during the latter part of the month of November. They frequented chiefly the water courses, and when scared would circle around rising higher above our heads, uttering their singular cry, then suddenly descending would alight in the top of some tree on the adjoining cliffs. Its voice somewhat resembles that of the common cat-bird (*Mimus carolinensis*.) After leaving the Rocky mountain range we saw it no more.

66. PICA HUDSONICA, B o n a p . (p. 576.)—Magpie.

8480. Fourth Camp, Little Colorado, New Mexico, December 8, 1853. Kennerly and Möllhausen.

We found this beautiful magpie in great numbers soon after leaving the Rio Grande, and from time to time afterwards as we marched towards the coast of California. It seems to live indifferently in the deep cañons, among the hills, or in the valleys, but is never found except in the vicinity of water.

67. CYANURA MACROLOPHUS, B a i r d , (p. 582.)—Crested Jay.

8351. One hundred miles west of Albuquerque, New Mexico, November 17, 1853. (20.)—Camp 105, January 23, 1854. (53.) Kennerly and Möllhausen.

First described from these specimens.

Among the lofty pines of the Sierra Madre we first saw this bird. Leaving this range we did not find it again until we crossed the Aztec mountains; here it was less abundant than in the former place, and for the most part was found among the cedars on the high grounds, though sometimes seen among the clumps of large pines that were scattered along the valley. After leaving this vicinity we did not observe it again.

68. CYANOCITTA CALIFORNICA, S t r i c k l a n d , (p. 584.)—California Jay.

8462. Camp 149, California, March 16, 1854. (186.) Kennerly and Möllhausen.

We found what we supposed was this bird from the Rocky mountains to the coast of California, wherever we found the piñon trees. It is probable that they feed upon the nuts of this tree. They seldom remain long in one position, but are almost continually hopping from limb to limb, or flying from tree to tree, and keeping up all the time their well-known cry. It is probable, however, that all those seen east of the Coast mountains of California were in reality *C. woodhousii*.

69. ZENAIDURA CAROLINENSIS, Bonap. (p. 604.)—Dove.

8748. Bill Williams' Fork, New Mexico, February 28, 1854. (181.) Kennerly and Möllhausen.

This bird is very common in Texas, in the vicinity of San Antonio, also along the Gulf coast; but travelling towards the west, for about two hundred miles from the former place, it seemed suddenly to disappear, and we saw it no more.

70. LOPHORTYX CALIFORNICUS, Bonap. (p. 644.)—California Quail.

9388. Mohave river, March 14, 1854. (183.) Kennerly and Möllhausen.

We did not see this beautiful partridge until we reached the waters of the Mohave river, some forty miles below the Spanish trail; but during our march up this stream we found it very abundant, as well as among the settlements near the coast. In its habits it does not differ from the *Lophortyx gambelii*.

71. LOPHORTYX GAMBELII, Nutt. (p. 645.)—Gambel's Partridge.

9360. Camp 97, New Mexico, January 10, 1854. (44.) Kennerly and Möllhausen.

This beautiful bird we found in great numbers during our march up the Rio Grande. Large flocks were frequently crossing the road before us, or seen huddled together under a bush. After leaving the river we found them again so numerous along Partridge creek as to give origin to the name of the stream. From thence to the Great Colorado we occasionally saw them, but after leaving the river we did not find them again. These birds are said to become quite domesticated when unmolested. But when pursued they can seldom be made to fly, depending more upon their feet as a mode of escape than upon their wings. They run very rapidly, and seldom, if ever, hide and remain close in the grass or bushes, like the common Virginia partridge.

72. GRUS FRATERCULUS, Cassin, (p. 656.)—Little Crane.

PLATE XXXVII.

10378. Albuquerque, New Mexico, October, 1853. Kennerly and Möllhausen.

First described from this specimen.

73. BUTORIDES VIRESCENS, Bon. (p. 676.)—Green Heron.

9490. Sans Bois creek, Choctaw country. H. B. Möllhausen.

74. NYCTHERODIUS VIOLACEUS, Reich. (p. 679.)—Yellow-crowned Night Heron.

9482. Fort Smith, Arkansas. H. B. Möllhausen.

75. IBIS ORDII, Bonap. (p. 685.)—Glossy Ibis.

9505. San Francisco, California, March 28, 1854. (196.) Kennerly and Möllhausen.

This bird we first observed at San Eleazario, Texas, where we found it feeding about the lagoons in the vicinity of the town. There, being unmolested, it was very tame, and could be approached without difficulty. At Fray Christobal we found them very abundant, and observed

them occasionally as we marched towards the Pacific. In the market at San Francisco it is a very common bird. When on the wing they arrange themselves either in a straight line or a wedge-shaped figure, accompanying their flight with their peculiar notes.

76. *ÆGIALITIS VOCIFERUS*, Cassin, (p. 692.)—Killdeer.

6590. Camp 121, New Mexico. Kennerly and Möllhausen.

Throughout Texas and New Mexico we found this bird wherever there was permanent water. Its well-known cry we often heard late at night as it flew over our camp or ran along the shore of some pool or running stream.

77. *GALLINAGO WILSONII*, Bon. (p. 710.)—English Snipe.

6614. Camp 123, New Mexico, February 16, 1854. Kennerly and Möllhausen.

We found this snipe abundant in the swamps along Bill Williams' Fork in the month of February; but we did not observe it elsewhere during our journey.

78. *GAMBETTA MELANOLEUCA*, Bon. (p. 731.)—Tell-tale.

We found small flocks of this bird only on Bill Williams' Fork and on the Mohave river, during the latter part of February and the month of March. Here they were very gentle and easily approached.

79. *NUMENIUS LONGIROSTRIS*, Wils. (p. 743.)—Long-billed Curlew.

San Francisco, California. (195.)

This bird we did not meet with until we reached San Francisco, where we found it very common in the market.

80. *RALLUS ELEGANS*, Aud. (p. 746.)—King Rail.

San Francisco, California. (196.)

We saw this bird first in the vicinity of San Francisco, where it was quite abundant in the month of March. It was one of the most numerous water birds that we found in the market.

81. *BERNICLA CANADENSIS*, Boie, (p. 764.)—Canada Goose.

1954. Rio Rita, Laguna, New Mexico, November, 1853. Kennerly and Möllhausen.

We found this goose very abundant along the Rio Grande, and met with it frequently from thence to the Pacific. During the period of which we write, from October to March, they were always seen in flocks.

82. *DAFILA ACUTA*, Jenyns, (p. 776.)—Pin-tail Duck.

Bill Williams' Fork, New Mexico. (172.) Kennerly and Möllhausen.

We found this a very abundant species in the marshes along Bill Williams' Fork, where they congregated with hundreds of other ducks of various species; was quite troublesome and annoying on account of its watchfulness. It was generally on such occasions the first to take to the wing, and by its cries give the alarm.

83. *NETTION CAROLINENSIS*, Baird, (p. 777.)—Green-winged Teal.

9722. ♂, ♀. Rio Rita, Laguna, New Mexico, November 12, 1854. (3.)—9723. ♀. Ditto. Kennerly and Möllhausen.

This duck was probably more abundant than any species that we met with. Besides finding great numbers along the Rio Grande, we scarcely ever failed to see it during our westward journey, wherever we found running water.

84. *QUERQUEDULA CYANOPTERA*, Baird, (p. 780.)—Red-breasted Teal.

9750. Mohave river, March 11, 1854.—9740. ♂. Camp 123, February 16, 1854. (166.) Kennerly & Möllhausen.

We saw this bird frequently on Bill Williams' Fork, Great Colorado and Mohave rivers. The male, when in full plumage, is one of the most beautiful of all the ducks; but they seemed to be remarkably scarce in comparison with the number of females.

85. *CHAULELASMUS STREPERUS*, Gray, (p. 782.)—Gadwall.

9796. ♂. San Francisco, California, March, 1854.

86. *AIX SPONSA*, Boie, (p. 785.)—Summer Duck.

9776. San Francisco, California, ♂, February, 1854. Kennerly and Möllhausen.

This beautiful duck we did not see before reaching San Francisco, in the vicinity of which place we found it very abundant.

87. *FULIX AFFINIS*, Baird, (p. 792.)—Little Black Head.

We found this duck very common in the vicinity of San Francisco, but did not observe it before reaching that place.

88. *BUCEPHALA ALBEOLA*, Baird, (p. 797.)—Butter Ball.

9813. Bill Williams' Fork, New Mexico, February, 1854. (89.)

This expert little diver we saw occasionally in small flocks, in the month of February, along Bill Williams' Fork and the Great Colorado river.







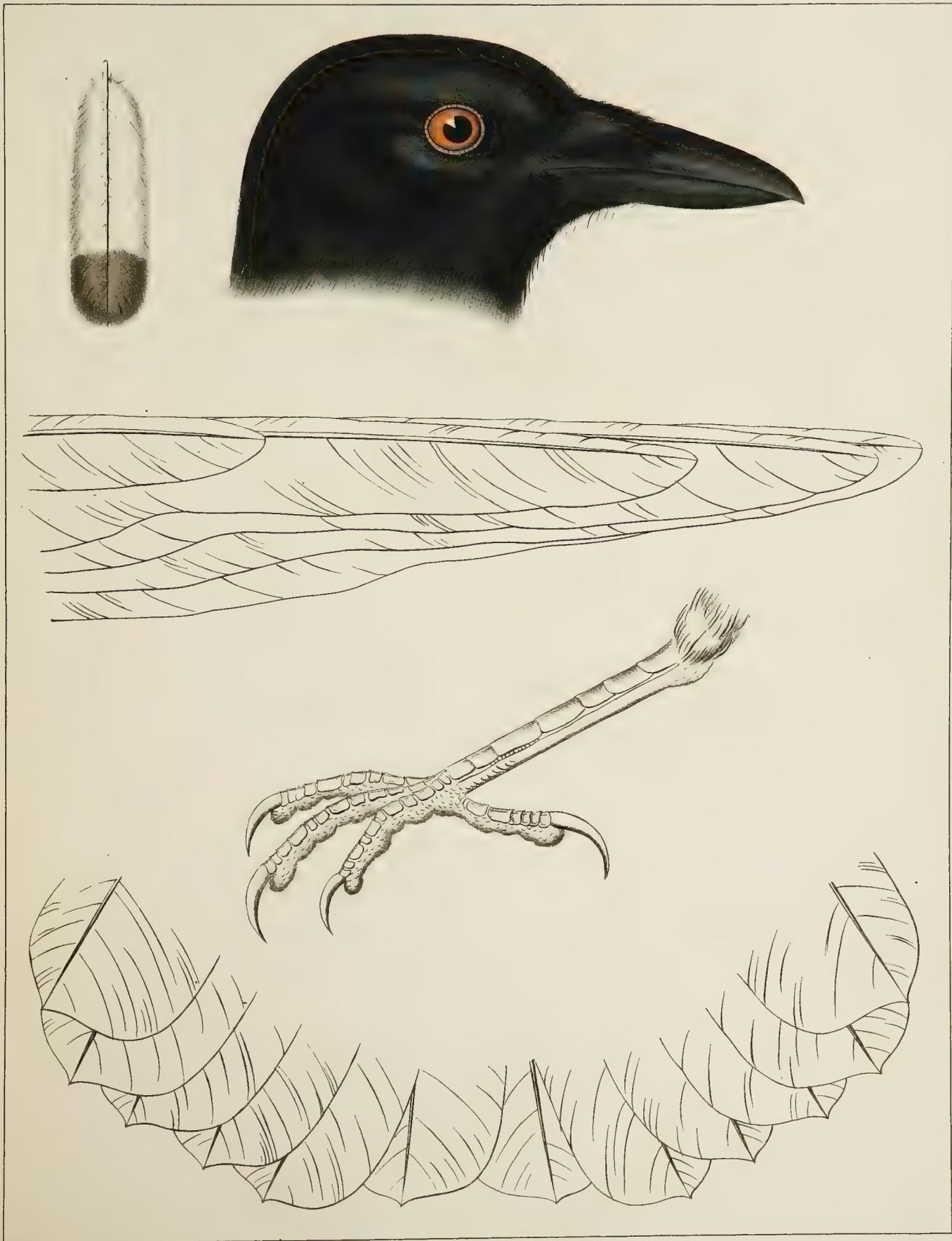




Fig 2



Fig 1







Fig 1a



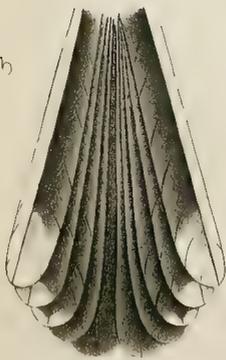
Fig 3



Fig 4.



Fig 1b







No. 1.

REPORT UPON BIRDS COLLECTED ON THE SURVEY.

BY A. L. HEERMANN, M. D.

HYPOTRIORCHIS FEMORALIS, Gray.

PLATE I.

Falco femoralis, TEMM. Pl. Col. I, plate 121.—CASSIN, in Gen. Rep. P. R. R. Survey, IX, 1858, 11.

SP. CH.—*Male*.—Head, wings, and back, of a light slate color; the primaries being of a darker hue, and on their inner vanes barred with white, with which also the larger coverts are tipped. A white line, starting from above the eye, extends down the occiput, becoming rufous as it forms a collar on the hind neck. A deep slate colored moustache descends from the angle of the mouth one half inch on the throat; auriculars are of the same color. Chin, white. Breast, orange or yellowish white, and in some specimens marked with elongated spots of black. Abdomen, thighs, and under coverts of the tail, rufous. Sides and flanks, dusky black; each feather being banded with delicate transverse white lines, and often uniting so as to form a band in front at the junction of the breast and abdomen. In some specimens this band does not appear, as the dusky black feathers do not in all cases extend across the abdomen. Tail, of a light gray slate color, is composed of twelve feathers traversed by nine white bars; the ends of all these feathers being tipped with white except the two centre ones. Legs, yellow. Bill, yellow, tipped with bluish black. Length, 14 inches.

The female resembles the male in its plumage, but its colors are less brilliant and marked.

The young bird has the back and tail of a dusky brown, each feather being fringed with a narrow border of lighter shade. The primaries and tertiaries are edged with white. Breast yellowish white, covered with a broad band of dusky black, extending down to the thighs; these feathers often being edged with light clayish yellow. Moustache and auriculars, dusky brown.

I saw this bird twice on the vast plains of New Mexico, near the United States boundary line, before procuring it; flying over the prairies in search of small birds and mice, and at times hovering, as is the wont of our common sparrow hawk, (*Tinnunculus sparverius*.) We possess little information relative to its habits from those authors who have written on this bird. It appears to be a resident of Surinam, Cayenne, Brazil, Chili, and other portions of South America, and is used in Chili for hunting the partridge. Besides this species, the Mexican ibis, also from South America, comes yearly to incubate in California; and further researches will doubtless still add to our fauna from that continent and Mexico.

Superadded to their sharp talons and powerful beaks, the family of the *Falconidae*, to which this interesting species belongs, possesses strength and daring to a high degree. They nourish themselves exclusively on living animals, disdaining to devour that which they have not captured by their own address. Necessity forcing them to range over a large extent of country for their food, they naturally become wanderers. Assimilating in pairs during the breeding season, many species remain so mated during life; though not indispensably necessary to one another, each being able to provide for itself, yet by mutual assistance in the pursuit of prey the operation of procuring subsistence is vastly simplified and facilitated.

PANYPTILA MELANOLEUCA, Baird.—White-bellied Swift.

Cypselus melanoleucus, BAIRD, Proceed. Ac. Nat. Sc., Phil., Vol. VII, June, 1854, 118.

Panyptila melanoleuca, BAIRD, Gen. Rep. IX, 1858, 141.

SP. CH.—Head, dusky brown. Body tail and wings, dusky black. Throat breast and a band $\frac{1}{2}$ inch in breadth from breast to vent, white. Ends of larger coverts tipped with white. A large white patch on the flanks, a faint white line over the eye and the outer edge of the first primary, white. Length $5\frac{1}{2}$ inches.

I met this bird several times, first in San Fernando Pass, near Los Angeles; again near Palm Spring, between the Colorado desert and Vallecitta; again near Tucson, and lastly in Texas; always, however, flying at a great height, being either far beyond or on the extreme limit of gun shot range, and was therefore unable to do more than slightly wound one of them. From the extent of their wings, the birds of this family appear to be formed to live in the air, where, in fact, they pass most of their time, gliding about in extensive circles without effort and apparently little motion of the wings. This ease of flight stands them in good need in their migratory movements, allowing them readily to pass into warmer climes. During pleasant weather they find their insect prey in the upper air, but when cloudy or rainy we find them skimming the ground in their pursuit. When on the ground, the shortness and weakness of their legs, added to their length of wing, incapacitates them from again rising in the air; hence I have several times seen the European species, (*C. murarius*), picked up in the streets of Geneva, Switzerland, having fallen there during a quarrel with its fellows. When they wish to take rest during the day, which is rare, they always alight on some elevated point whence they can throw themselves into the air and take to wing. Though numbers were flying about the rocks near Tucson, I heard them utter no note. Sociable among themselves, gathering in large flocks, they never mingle with their nearly related brethren the swallows. They generally construct their nests in the crevices of rocks or the holes in old buildings, many species having secretory glands, exuding a glutinous substance with which to fasten them firmly. The eggs, from 4 to 6 in number, are pure white and of an elongated form. Previous to the settlement of this country by Europeans, the chimney swallow (*C. pelagius*) built its nest in the hollows of old trees, but has almost universally changed this habit, as indicated by its name, derived from the locality to which it now resorts for the purposes of incubation.

CERYLE AMERICANA, Boie.—Texas Kingfisher.

Alcedo americana, Gmel. Syst. Nat., vol. I, part I, p. 451.

Ceryle americana, BAIRD, Gen. Rep. IX, 1858, 159.

SP. CH.—*Male*.—Upper plumage dark glossy green, the head and wing coverts sprinkled with small white spots. A moustache of dark green from angle of lower bill. Wings, dark green, almost black, crossed by three bands formed by white spots on the primaries. Throat, vent, and band on hind neck, white. A broad band of dark rufous covers the breast. Flanks, sides, and under tail coverts, spotted with green. Tail, dark glossy green, the inner webs white, banded with dusky black spots. Bill and feet dusky. Length, 8 inches.

Female resembles the male, but in her the broad rufous breast band is replaced by one of glossy green, less perfect than in the male. Length, 8 inches.

I first saw this species near the Nueces in Texas, where it is said to be not rare, and it has frequently been brought from the Rio Grande by naturalists. The birds of this family live principally on fish. Remaining patiently for hours on a stake or branch over a stream, watching a favorable opportunity to pounce upon its prey, which seen, it plunges into the water, often disappearing entirely beneath its surface, seizes upon and swallows its victim whole; throwing

up at a later period, like the owl and the hawk, the indigestible parts in the form of a pellet. Watchful and shy, it flies off at the least approach of danger with great rapidity. The young resembles the female, taking on the full livery of the adult after the first year. The nest, composed of a few loose straws thrown negligently together, on which are laid 4 white eggs of a spherical form, is placed in a burrow varying in length from 2 to 10 feet, excavated in the steep river banks.

MILVULUS FORFICATUS, Sw.—Swallow-tailed Fly-catcher.

Muscicapa forficata, Gmel Syst. Nat. vol. I, part II, p. 931.

Milvulus forficatus, Baird, Gen. Rep. IX, 1858, 169.

SP. CH.—Head, cheeks, and upper parts ash gray; back ditto, with the addition of a roseate tinge. A concealed patch of orange-vermillion on the top of the head. Rump of a brownish hue. Upper tail coverts sooty black. Wings dusky brown, the secondaries and coverts being edged with clear grayish white. Throat, white; breast an impure white, inclining towards the vent to a roseate blush. Axillary feathers scarlet. Tail twice the length of the body, forked, and composed of twelve feathers, the two outer ones roseate white to within one and a half or two inches of their tips, which are black. Outer tail feathers black. Length fourteen inches.

Female like the male, the tail being shorter, and the vermillion patch on the head less distinct. Length eleven and a half inches.

Abundant and frequenting the prairie lands of Texas. Of a quarrelsome disposition, they are often seen five or six in the air at a time fighting together, presenting a very beautiful sight as they turn and manoeuvre, spreading at every movement their long forked tail to its fullest extent.

The family of the fly-catchers is both numerous and resident of every portion of the globe. In the deep forests of the tropics we find some of brilliantly colored plumage, while those of more temperate regions assume a more modest garb. Their food consists principally of insects, though occasionally varied with fruit. Certain species are in continual movement, actively engaged in seeking insects on the lofty trees, while others, perched silently on the bush tops or branches of a tree, await with patience their approach, when, after darting upon and devouring them, they resume their post. Tyrannical in the extreme, they frequently prove themselves especially courageous during the breeding season, attacking and driving off all intruders on their domain, not excepting even crows and hawks, so much larger and more powerful than themselves. In some species there are marked differences between the sexes, but this is not generally the case. The young take on the plumage of the adult after the first year. Their nest is generally built on a bush or tree; some choose the hollow of a tree, while others, under cover of a shelving rock or other sheltered situation, build a nest of mud. The eggs are generally four in number.

? HARPORHYNCHUS CURVIROSTRIS, Cabanis.—Curved-bill Mocking Bird.

Orpheus curvirostris, Sw. Phil. Mag. and Annals. 1827, p. 368.

Harporhynchus curvirostris, Baird, Gen. Rep. IX, 1858, 351.

SP. CH.—Upper parts pale brown, increasing gradually in depth of color from the head to the tail. Under parts brownish gray, becoming of a feeble clay color towards the vent. Throat ash color. Breast and abdomen thickly covered with faint, rounded, dusky spots. Tail feathers tipped underneath and edged with ashy margins. Bill black. Feet brown. Length

I first met with this species in the thickets near Tucson, or saw it on the topmost branches of the mezquite tree, pouring forth its melody. Like the California mocking bird it possesses musical powers surpassed by few other birds. When alarmed, it dives immediately in the underbrush, whence it is almost impossible to dislodge it. Though the specimens shot were

procured in Mexico, still is it an interesting bird to us from the fact of its having been previously found in Texas. Its food consists of berries and fruits when in season, or of insects or their larvæ, and worms, which are collected among the trees or from the ground, on which it spends much of its time.

LOPHOPHANES ATRICRISTATUS, C a s s i n .—Black-crested Chicadee.

Lophophanes atricristatus, CASSIN, Illus. B. of Tex. and Cal. p. 13, pl. 3.—BAIRD, Gen. Rep. IX, 385, p. 69.

Parus atricristatus, CASSIN, Proceed. Ac. N. Sc. Phil. vol. V, p. 103, pl. 2.

SP. CH.—*Male*.—Front and chin white; under parts ashy white; lighter from the belly to vent. Cheeks gray. Crest black. Back slaty gray. Wings and tail brown, the latter formed of twelve feathers. Flanks and sides have a ferruginous tinge. Bill and legs black. Length five and a half inches.

Female.—Slightly smaller than male. Crest brownish black.

This bird, discovered in, and brought back from Texas by Dr. Woodhouse, while with Captain Sitgreaves' expedition to the Zuñi and Colorado rivers, was first observed by me near Fort Clark, Texas, where it was quite an abundant species. It is active and sprightly in its movements, searching with great assiduity for insects about the bark and branches of trees. While thus employed it keeps up a chattering note, varied with an occasional low plaintive whistle. Its habits much resemble those of our common chicadee, (*Parus atricapillus*.) The sub-family of the *Parinae* is found in North America, Europe, Asia, and Africa. Their usual resort is in the woods, and their habits, as above described, ceaselessly active, examining with care every crack in the bark, the under part of each leaf, and throwing themselves into every possible attitude while prosecuting their labors. They now and then vary their diet with grain, seeds, nuts, and rarely meat; sometimes, when urged by necessity, attacking and killing sickly birds by fracturing their skulls. The nest, made of grasses, feathers, wool, and mosses, and often containing from twelve to sixteen eggs, is generally built in the hollow of a tree, though some species construct them of a pendulous form, while others build a simple oval nest in the forks of two or more branches, having two holes for ingress or egress, or with a view to leave a convenient place for the projection of the long tail with which some of these species are adorned.

PEUCAEA CASSINII, B a i r d .

PLATE IV, FIG. 2.

Zonotrichia cassinii, WOODHOUSE, Pr. A. N. Sc. VI. 1852, 60.

Peuceea cassinii, BAIRD, Gen. Rep. IX, 1858, 485.

SP. CH.—Upper parts reddish brown; the centre of the feathers of the back and head deep brown, their margins being bluish gray. Primaries and secondaries brownish, edged with dirty white. Flexure of wing, yellow. Tail feathers, twelve in number, brown, tipped with grayish brown; the two outer and centre ones pale brown, the latter having a dark central line in their entire length and numerous little transverse bars. A narrow grayish yellow line from base of mandible over the eye. Throat and breast gray, with a short, sooty, narrow line from the base of lower mandible on each side. Breast and sides dirty gray. Belly, vent, and crissum dirty yellowish gray, some of the feathers of the latter having dark, longitudinal spots. Bill horn color, darker above. Feet flesh color. Length five and three-fourth inches.

My attention having been attracted by the sound of a new note while at Camanche Spring, Texas, I found, after some observation, that it proceeded from this bird. Rising with a tremulous motion of its wings some twenty feet or more, it descends again in the same manner to within a few yards of the spot whence it started, accompanying its entire flight with a lengthened and pleasing song. The country thereabouts is very barren, being covered with low stunted bushes, into which the bird takes refuge on being alarmed, gliding rapidly through the grass and

shrubby, adroitly and effectually evading its pursuer. I observed them during four or five days of our travel, when they disappeared. They were probably migrating at the time, though their continued and oft-repeated song gave notice they were about preparing for the duties of incubation.

PLECTROPHANES MELANOMUS, Baird.—Black-shouldered Longspur.

Plectrophanes melanomus, BAIRD, Gen. Rep. IX, 1858, 436.

SP. CH.—*Male*.—Top of the head, flexure of wings, a patch behind the ears, the breast and abdomen, black. A broad band of chestnut on the hind neck, between which and the occiput is a spot of white. A line over the eye, the throat, and ears, of a dirty yellow gray. Under tail coverts white. Lesser wing coverts black, tipped with white, forming a white band. Upper parts light brown, each feather dark brown in its centre. Sides dark gray. The tail composed of twelve white feathers tipped with brown, this tipping increasing in depth from the outer to the central feathers until it extends about half-way down these latter. Bill dusky. Feet dark brown. Length $5\frac{1}{2}$ inches. During the winter a gray margin on the feathers nearly conceals all those portions which are black in spring. This disappearing by friction or otherwise, the spring livery is fairly donned.

Female.—Upper parts light brown, the centre of each feather marked with a dark brown spot. These spots being thicker and smaller on the top of the head give it a darker hue. Vent and throat gray, the latter margined by a line of pale brownish gray spotted feathers, which extends down to and spreads over the breast, belly, and sides. Tail, bill, and feet, like those of the male. Length $5\frac{1}{4}$ inches.

I first remarked this bird in flocks, associated with the *P. McCownii*, at a large prairie dog village some miles west of Puerto del Dado. Fresh meat having become scarce in camp, and desiring a few birds for supper, I fired into a flock covering densely quite a large space. Three dozen fell at the first discharge, and among them I was pleased to find this species and the *P. McCownii*. From this point to the Rio Grande we found both of these species abundant wherever we struck isolated water-holes; these being the only spots for miles around where drink can be obtained. When fired at they rise as if to fly away; but forced by thirst to return after describing a few curves to the only spot where their parched tongues can find relief, they may, if the hunter feels so inclined, be fairly slaughtered. I have often seen from 100 to 150 brought down in four or five discharges of a gun. While on a trip to the Rocky mountains in 1843, I met a closely allied species, *P. ornatus*, in small flocks and pairs, scattered over the prairies of the Platte river, and was fortunate enough to discover one of their nests. Built on the ground, it was composed of fine grasses and lined with hair. The eggs, four in number, were white, with black lines at the larger end, and a few faint neutral tint blotches scattered over the surface.

PLECTROPHANES MCCOWNII, Lawrence.—Rufous-winged Lark Bunting.

Plectrophanes McCownii, LAWRENCE, Annals of N. Y. Lyceum, Vol. V. p. 123.—BAIRD, Gen. Rep. IX, 437.

SP. CH.—*Male*.—Top of head and crescent on breast black. Upper parts light brown, with dark brown linear spots in the centres of the feathers. Primaries and secondaries dusky brown, with margins of grayish white. Lesser wing coverts black, broadly tipped with chestnut. Line over the eye dirty white. A small black patch at the angle of the lower mandible. A line of small brown spots runs down the front of the neck from near the same point. Sides of neck and auriculars pale ashy brown. Sides and flanks dark gray. Breast below the crescent gray, changing gradually to dirty white on the belly. Tail composed of twelve feathers; two central ones brown, the rest white, tipped with a broad band of dusky hue. Bill and feet dusky brown. Length $5\frac{1}{2}$ inches.

Female.—Upper parts light brown, each feather dark brown in its centre. Wings brown, fringed with dusky white. Line over the eye pale rusty color. Chin dusky white. Breast, sides, and flanks, pale rusty gray; abdomen paler. An indistinct pale brown band across the upper portion of the breast; auriculars and sides of head same color. Tail, bill, and feet as in the male. Length $5\frac{1}{4}$ inches.

I found this species congregated in large flocks with the preceding, engaged in gleaning the seeds from the scanty grass on the vast arid plains of New Mexico. Insects and berries form also part of their food, in search of which they show great activity, running about with ease and celerity. From Dr. Henry, U. S. A., I learned that in spring large flocks are seen at Fort Thorne, having migrated hither from the north the fall previous. With the return of mild weather they again go north for the purposes of incubation. Among these flocks I detected also the shore lark, (*Eremophila cornuta*,) but it formed a small proportion of the numbers.

POOSPIZA BILINEATA, Sclater.—Black-throated Finch.

Emberiza bilineata, CASSIN, Pr. A. N. Sc. V, 104.

Poospiza bilineata, BAIRD, Gen. Rep. IX, 1858, 470.

SP. CH.—*Male*.—White stripe commencing at the front and running over and five-eighths of an inch beyond the eye, being bordered above by a narrow black line. Another white line starting near the base of lower mandible and running down the neck. Space between the two stripes black near the bill, and becoming of a lighter hue at the auriculars. Lower eyelid white. Throat black. Breast and vent dirty white. Sides and flanks slaty yellow gray, changing to a light rusty white towards the vent. Upper parts brown, tinged with olive; the head a little darker than the back. Primaries dusky brown, edged with light brown. Tail feathers deep brown, the three outer ones being edged and tipped with white. Bill and feet dark blue, black. Length 5½ inches. Female like the male

I first remarked this beautiful little finch just before reaching Tucson, Sonora, Mexico, where I found it associated with several other species of sparrows. They were collected in large flocks, flying from bush to bush, and alighting on the ground to pick up grass seeds and insects. It appeared to be quite numerous, and I followed it as far in Texas as the spring of the Dead Man's Hole, between El Paso and San Antonio. Though not very wild, its restlessness as it flew about the undergrowth made it difficult to procure. It uttered only a chirp during the time I observed it.

CYANOSPIZA CIRIS, Baird.—Painted Bunting.

Emberiza ciris, LINN. Syst. Nat. I, 313.

Cyanospiza ciris, BAIRD, Gen. Rep. IX, 1858, 503.

SP. CH.—*Male*.—Head, neck, auriculars, and flexure of wing, of a rich purplish blue. Chin and lores green. Eyelids, throat, and lower parts, rich vermilion, paler towards sides and vent. Centre of abdomen sometimes strongly tinged with yellow. Back and scapulars glossy green, tinged with yellow. Back, rump, and tail coverts, purplish red. Lesser wing coverts purple; larger, green. Wings purplish brown, edged with purplish green. Upper surface of tail purplish brown. Under surface of tail and wings slate gray. Bill black above, lighter beneath. Legs brown. Length 5½ inches.

Female.—Upper parts olive green, brighter towards rump. Lower parts dusky Naples yellow, brightest on the belly, and tinged on the breast with olive green. Bill pale lead color, darker above. Legs lead color. In size a little smaller than the male.

This, the most brilliant of our finches, is quite abundant in Texas, and is seen pouring forth at short intervals during the day its sweet and lively ditty from the bush and tree tops.

PIPILO CHLORURA, Baird.

Fringilla chlorura, TOWNS. in AUD. Orn. Biog. V, 1839, 336.

Pipilo chlorurus, BAIRD, Gen. Rep. IX, 1858, 519.

Fringilla blandigiana, GAMBEL, Pr. A. N. Sc. I, 1843, 269.

SP. CH.—Crown, bright chestnut. Front, lores, a line running from lower mandible and breast, slaty gray; being darkest on the front and lores. A small patch at base of upper mandible; a line from angle of mouth, throat, and abdomen, white. Sides

and flanks brownish, fading to rust color on approaching the vent. Flexure of wing and under coverts bright yellow. Upper parts olive brown, the wings and tail having a brighter greenish yellow tinge. Bill dark brown above, paler beneath. Legs dusky brown. Length 7 inches.

I first discovered this bird near Tucson, frequenting in numbers the thick undergrowth, and seeking seeds and insects on the ground and inclined to shun observation, always keeping in the most retired situations, though sociable among themselves, going about single or in pairs associated with the *Poospiza bilineata* and two or three other species of finch. When started they fly low, diving into the bushes, and soon disappearing from sight. Occasionally, until reaching El Paso, Texas, birds of this species were met, mingled with the flocks of migrating *Fringillidae*. I there found and procured a pair about entering upon the duties of incubation.

PIPILO ABERTII, Baird.—Abert's Ground Finch.

Pipilo abertii, BAIRD, Stansbury Ex. to Great Salt Lake, p. 325.—IB. Gen. Rep. IX, 516.

SP. CH.—Upper parts of a pale rusty brown, wings and tail being of a darker hue. Under parts of a brighter rusty color, the lower part of breast paler than the rest. Vent and under tail coverts bright rufous. Under margin and tips of tail feathers light brown. Chin and lores smutty black, this color extending to some of the feathers down the throat. Bill and feet light brown. Length 9 inches.

On the borders of the Gila, east of Fort Yuma, this bird was quite abundant, keeping to the close sheltered thickets, where, secure from intrusion, it sought among the dead leaves for various seeds, insects and their larvæ, on which it feeds. Its habits much resemble those of the *P. fusca*, or cañon finch, diving into the bushes when alarmed, and repeating at intervals a short chirp. After leaving the Gila river we saw them no more, as we no longer followed the course of any large stream, for the borders of which these birds seem to have a decided preference.

PIPILO MESOLEUCUS, Baird.

Pipilo mesoleucus, BAIRD, Proceed. Acad. N. Sc. Phil. Vol. VII, p. 119.

SP. CH.—Upper parts dull brown, darker on upper surface of tail. A patch of dull chestnut on the head. Chin dirty white; throat and breast rusty gray, with brown spots starting from the base of lower mandible on each side of the neck and spreading out over the breast, the central lower spot larger and darker than the others. Lower part of breast, flexure of wing and abdomen, white. Vent and lower tail coverts ferruginous. Sides and flanks dusky. Tail feathers, with the exception of the two central ones, tipped with rust, and in some specimens the outer edge of the two external feathers similarly colored. Length $8\frac{1}{4}$ inches.

I saw this species in the vicinity of Tucson. Its habits appeared, from the limited opportunity I had of observing it, to be the same as those of the preceding species.

CALAMOSPIZA BICOLOR, Bonap.—Prairie Lark Finch.

Fringilla bicolor, TOWNS, Journ. Ac. Nat. Sc. Phil. vol. VII, p. 189.

Calamospiza bicolor, BAIRD, Gen. Rep. IX, 492.

SP. CH.—*Male*.—In spring plumage, black. A large patch of white on the wing, including some of the smaller coverts, the tips of the first row and the secondary coverts. Primaries edged with white. Tail feathers blackish brown broadly tipped with white with the exception of the two middle feathers. Bill light blue. Feet dusky. Length $6\frac{1}{2}$ inches.

Female.—Upper parts light brown, the feathers being darker towards the quills. Primaries light brown margined with white. Tertiaries with broad cream colored border. Tail light brown above, sooty brown beneath, narrowly bordered with white, each

feather. except the two middle ones, being slightly tipped on the inner margin of the point with white. Lower parts white with longitudinal spots of dark brown covering the sides, flanks, and breast. A moustache of small brown spots from angle of lower mandible, running down the neck and joining in with those of the breast. A line over the eye of rusty white. Auriculars light brown. The young male in the fall resembles the female, but takes on the livery of the adult the following spring.

This bird was first observed on approaching the Pimos villages, associated with large flocks of sparrows, gleaning grain and grass seed from the ground. When started it would fly but a short distance before again resuming its occupation. After crossing the San Pedro river I found it in large flocks, having killed fourteen at one shot. At Fort Fillmore, in Mesilla valley, it is quite common, and associates with the cow-bird and black-bird, searching for grain amongst the stable offals. Again I met it in Texas during the month of April, having seen, however, but one male bird in full spring plumage, the others still retaining their winter coat or only commencing to take on their spring livery. While travelling some years ago towards the Rocky mountains, I found it quite abundant on the Platte river. The male bird is often seen rising in the air with a tremulous fluttering motion of the wings, very much after the manner of our reed bird, (*Dolichonyx oryzivora*,) singing the while, and until again alighting, a disconnected but not unmusical chant. The nest, placed on the ground, is formed of fine grasses lined with hair, and contains four to five pale blue eggs. Although I found many of them, in one instance only were they spotted with faint red dashes.

PYRRHULOXIA SINUATA, Bonap.—Texian Cardinal Bird.

Cardinalis sinuatus, Bon. Proceed. Zool. Soc. of London, 1837, p. 111.—CASSIN'S B. of Cal. and Tex. p. 204, pl. 33.

Pyrrhuloxia sinuata, BAIRD, Gen. Rep. IX, 1858, 508.

SP. CH.—*Male*.—General color of upper parts dark ash. Throat, breast, thighs, under wing coverts, and the centre of abdomen down to vent, light bright carmine, deeper on the throat. Sides of abdomen and flanks slaty gray. An elongated crest front, around, and under the eyes; primaries and upper part of tail bright rich brownish red, the two central tail feathers having a slight green reflection, while the edges and tips of the tertiaries and the tips of the primaries are tinted with brown ash. Under part of tail brighter than upper part, with a reflection of grayish lead and tipped with lead color. Bill yellow, the upper one having a dusky tinge. Feet flesh color. Length 8 inches.

Female.—Chin dusky white. Under parts down to vent rusty ash, darker on flanks and sides. Around the eyes, at base of upper mandible, an indistinct blotch, on upper part of throat and another at middle of abdomen, pale carmine. Crest smaller than the male. In its other markings and colorings like the male.

This species in its form and habits is closely allied to the Cardinals, but the formation of the bill differs so much in the two that Bonaparte has placed it in the sub-genus *Pyrrhuloxia*. Instead of, as in the Cardinal, the nearly equal mandibles, the culmen slightly rounded and arched to the tip, which is acute, we find in this species the lower mandible much broader and larger, the gonys rising very abruptly and the culmen very much rounded and arched as in the genus *Pyrrhula*. We met the first specimen of this bird in a dry cañon a little to the east of the crossing of San Pedro river, perched on a bush, and seeming wearied and lost; probably a wanderer, as no more were observed until we reached El Paso. Here we found it everywhere among the hedges and trees, and continued to see it occasionally on our road until we left civilization behind us. It is said to be quite common on the Rio Grande and in Mexico. Raising its crest erect as it moves actively about in search of food, it emits at intervals a clear plaintive whistle, varied by a few detached notes.

PYRANGA AESTIVA, Vieill.—Summer Red Bird.

Tanagra aestiva, AUD. B. of A., Fol. pl. 44.

Tanagra aestiva, GMEL, Syst. Nat. vol. I, Part II, p. 889.

Pyrranga aestiva, BAIRD, Gen. Rep. IX, 1858, 301.

SP. CH.—*Male*.—Plumage, vermillion, assuming a brownish or reddish cast on the upper surface. Wings, dusky brown; edged with vermillion. Bill, yellowish horn color. Feet, light brown.

Female.—Upper parts, olive, the rump and tail having a yellowish tinge. Under parts, dull orange yellow, wings brown edged with yellowish olive. Bill and legs like the male. At times the plumage of the adult female is mottled with bright reddish brown.

The young resembles the female, but is often mottled with red, yellow and green, before assuming its complete adult plumage.

This bird is quite abundant in Texas, where we frequently heard its loud, melodious whistle while hunting in the oak woods which thickly border the edges of the streams.

XANTHORNIUS AFFINIS, Lawrence.—Lesser Orchard Oriole.

Xanthornus affinis, LAW. Annals of N. Y. Lyceum, vol. V, p. 113.

Icterus spurius, BAIRD, Gen. Rep. IX, 547.

SP. CH.—*Male*.—Head, throat, and upper part of back, deep black. Lower part of back, tail coverts and all the under parts, deep chestnut, lesser wing coverts being of the same color. Tail and wings, brownish black, the wing feathers being margined with yellowish white. Bill deep blue black, lighter at the base of lower mandible. Legs, blue. Length, 6 inches.

Female.—Upper parts, olive brown, assuming a yellowish green cast on the front and rump. Under parts, greenish yellow. Wings, brown, each feather being margined with ashy white. Tail, olive brown above, lighter beneath, the outer webs of the feathers, yellowish green.

This bird in all its changes of plumage is a fac-simile of its closely allied species, *Xanthornus spurius*. They differ only in size. It was observed abundantly about San Antonio, searching on the trees for insects and their larvae, uttering a shrill and lively note much like that of our common orchard oriole. Their nest, composed of flexible grasses, is suspended from the branches of the mezquite tree. Incubation not having commenced while I was in the country, no eggs were procured.

CENTURUS UROPYGIALIS, Baird.—Gila Woodpecker.

Centurus uropygialis, BAIRD, Pr. Acad. Nat. Sc., Phil., vol. VII, p. 120.—IB. Gen. Rep. IX, 1858, 11.

SP. CH.—*Male*.—Head, neck and underparts, brownish ash. An obscure band of yellowish ash on the back of the neck in some specimens. A blood red patch on the head. Back and wings barred transversely with black and white. Abdomen near vent, yellow. Crissum and under tail coverts white barred with black. The central tail feathers black on their outer vane with a strip of white commencing at the base and running to a point at about $\frac{3}{4}$ the length of the feather. The inner vanes barred and their points black. The 2 outer feathers, white barred with black, intermediate ones, black. Bill, black. Feet, dusky. Length, 9 inches.

Female.—Wanting the red patch on the head. Front and top of the head of a lighter ash than the under parts. Length, $9\frac{1}{4}$ inches.

This bird is abundant among the mezquite trees on the borders of Gila river. The giant cactus, (*Cereus giganteus*), often 40 feet high, and which grows abundantly on the arid hill sides throughout this whole section of country, is frequently filled with holes bored out by this bird. The pith of the plant is extracted until a chamber of suitable size is obtained, when the juice exuding from the wounded surface hardens and forms a smooth dry coating to the cavity, thus making a convenient place for the purposes of incubation. At Tucson it frequents the corn fields and is seen alighting on the old hedge posts, in search of insects. Its note resembles very much that of our red-headed woodpecker.

CENTURUS FLAVIVENTRIS, Swains.—Yellow-bellied Woodpecker.

Centurus flaviventris, Sw. Two Cent & a Quart. p. 354.—BAIRD, Gen. Rep. IX, 1858, 110.

SP. CH.—*Male*.—Front and vent, yellow. Collar on back of neck, orange yellow. A blood red patch on top of the head. Feathers between the front and red patch, grey, between red patch and orange collar, grayish slate. Under parts, pale ash. Crissum and under tail coverts, marked with dusky arrow heads. Back and wings barred with white and black; rump and upper tail coverts, white. Tail, black, with the exception of the two outer feathers, which are barred with white on their outer veins. Bill, black. Feet, light blue. Length $9\frac{1}{4}$ inches.

Female.—Like the male, but wanting the red patch on the head. Length, 9 inches.

Not rare in Texas and frequenting abundantly the mezquite woods which cover portions of the prairie in the vicinity of San Antonio.

PICUS SCALARIS, Wagler.—Barred Woodpecker.

Picus scalaris, WAGLER, Isis, 1829, p. 511.—BAIRD, Gen. Rep. IX, 1858, 94.

SP. CH.—*Male*.—Front dusky black. Top of the head black, interspersed with white spots tipped with red, the red tips forming a scarlet patch on the back of the head. A white line over the eye. Another from base of upper mandible running down the cheek. A moustache from base of lower mandible runs down the neck joining the auriculars; both moustache and auriculars black. Back banded with black and white. Wings banded with seven bars formed by white spots on the outer vanes of the feathers. Under parts dirty white, marked with oblong black spots on the sides of the breast, and rounded ones on the sides and crissum. Lower tail coverts barred with black. Four central feathers of the tail black, the two outer ones black banded with white, and the intermediate one having the outer vane and end margined with white. Bill blue black. Feet dusky. Length $6\frac{1}{2}$ inches.

Female.—Like the male, with the exception of the top of the head, which is entirely black. Length $6\frac{1}{2}$ inches.

I observed this small woodpecker in the southernmost portion of California, and found it more and more abundant as we advanced towards Texas, where it is common.

ORTYX TEXANUS, Lawrence.—Texian Partridge or Quail.

Ortyx texanus, LAWRENCE, Ann. Lyc. N. Hist. N. Y. vol. VI, p. 1.—BAIRD, Gen. Rep. IX, 641.

SP. CH.—*Male*.—Lores white. Throat white, encircled by a black band which starts near base of upper mandible and becomes broader in front of the neck. A white line over the eye, commencing at the nostril and running laterally on the neck, bordered above by a narrow line of black. Crown dark brown, margined with gray and tinged with rufous. Feathers on lower part of hind neck dull black, in central parts edged with white and tipped with reddish brown. The shoulders and upper portions of the back chestnut, mottled with deep brown, bordered with ash; the rest of the upper parts light brown, becoming lead color on the tail, the whole being mottled with ash, white, and deep brown. Below the black throat band is one of rufous. Breast and vent dull white, the feathers being crossed by broad curving bars of deep brown, almost black. Feathers of sides and flanks rufous in their centre, margined on their edges with irregular white blotches partially encircled by broad bands of deep brown. Under parts of tail and wings pale lead color slightly mottled with gray. Under tail coverts rufous tipped with dull white, and with central arrow heads of deep brown. Bill black. Legs light brown. Length 8 inches.

Female.—Chin dull white. Lores, throat, and line over the eye pale ochre. The rufous breast band of the male is replaced by a general rufous tinge. The transverse bars on breast and abdomen are less rich and numerous. Bill horn color above, lighter beneath. In all other respects like the male. Length $7\frac{3}{4}$ inches.

This bird bears a close resemblance to the *Ortyx virginianus*, but the following differences may at once be detected on comparing the two species: The *O. texanus* is smaller, the rufous color of the breast is paler, but forms a more perfect band in the male specimen. The transverse bars on abdomen are twice as broad as those of the *O. virginianus*, while the rich chestnut tinge forming the prevalent tint on the back of the latter is replaced in the *O. texanus* by a light brown and a more general ashy hue.

This bird was first observed in numbers on the Pecos river, although seen some days previous to reaching this point. Its numbers increased as we neared civilization, and near San Antonio it became plentiful. The call of the male bird consists of two notes, (repeated at intervals,) which are less loud, clear, and ringing than those of our common quail, (*O. virginianus*.) It feeds on the open prairies upon grass seeds, grains, berries, and insects, and if alarmed takes refuge among the scattered mesquite trees and clumps of bushes. When hunted it lays to the dog like our common species, and if flushed flies in a direct line with a loud whirring noise, caused by the shortness and rapid motion of the wings. I found an egg of this bird, which had been dropped upon the road. In form and color it was like that of our common quail though smaller.

LOPHORTYX GAMBELII, Nutt.—Gambel's Partridge.

Lophortyx gambelii, (NUTTAL) GAMBEL, Proceed. Ac. N. Sc. Phil. vol. I, p. 260, 1843 —BAIRD, Gen. Rep. IX, 645.

SP. CH.—*Male*.—Crest brownish black, composed of six feathers. Front grayish white, each feather having in its centre a longitudinal line of black. A transverse band of white, dividing the top of the head in about two equal portions, runs down the side of the neck, forming a border to the patch of chestnut covering the top and back of the head; a fine line of black lies between this white line and the chestnut patch. Throat black, encircled by a white band reaching nearly to the eye. Upper parts and breast grayish slate, the feathers of the sides and back of the neck having in their centres a delicate longitudinal brown line. Primaries pale ashy brown, inner vanes of tertiaries bordered with cream color. Middle of breast and abdomen cream color, with a large black spot in the centre of the latter. Sides and flanks deep chestnut, each feather with a longitudinal linear spot of white. Under tail coverts with broad bands of ashy brown running down the centre of the feathers. Bill dusky. Feet light brown. Length $9\frac{1}{2}$ inches.

Female.—Crest smaller than male. Throat dirty gray. Breast and upper parts grayish slate, the head having a brownish tinge. Feathers of the neck and breast with a line of brown in their centre. Inner vanes of tertiaries bordered with cream color. Lower part of breast and abdomen cream color, the centre of each feather being marked with a thin line of dark brown. Vent, crissum, and under tail coverts, longitudinally striped with grayish brown. Sides and flanks chestnut, each feather being marked in its centre with a strip of white. The plumage, where of similar marking, is paler in its coloring than in the male bird. Bill dusky. Feet light brown. Length 9 inches.

From Fort Yuma, on the Colorado, to Eagle Springs, between El Paso and San Antonio, where we last saw a flock of these birds, we found them more or less abundant whenever we followed the course of the Gila or struck water holes or streams of any kind. Although frequenting the most arid portions of the country, where they find but a scanty subsistence of grass seeds, mesquite beans, and insects, still they show a preference for the habitation of man, being much more numerous in the cultivated fields of Tucson, Mesilla valley, and El Paso. Towards evening, in the vicinity of the Mexican villages, the loud call note of the male bird is heard, gathering the scattered members of the flock, previous to issuing from the cover where they have been concealed during the day. Resorting to the trails and roads in search of subsistence, they utter while thus engaged a low soft note which keeps the flock together. They are not of a wild nature, often permitting a near approach, and seldom fly unless suddenly flushed, but prefer to escape from danger by retreating to the dense thickets.

CALLIPEPLA SQUAMATA, Gray.—Scaly Partridge.

Ortyx squamatus, VIG. Zool. Journ. vol. V, 1830, p. 275.

Callipepla squamata, BAIRD, Gen. Rep. IX, 1858, 646.

SP. CH.—*Male*.—Head light rusty ash; feathers of the crown light brown tipped with white. Throat pale cream color. Upper parts bluish ash, assuming a rusty tinge on the rump. Wings light brown; tertiaries margined on their inner vanes with white. Under parts pale bluish ash, becoming pale cream color on lower portions of abdomen and vent, the centre of the abdomen being marked with a pale rust patch. The feathers of the breast and abdomen with a central light brown arrow head and fringed with a narrow border of darker hue, while those of the back of the neck have the outer fringe well marked, though

the arrow heads are much less distinct and numerous. Flanks bluish ash with a tinge of brown, each feather having a longitudinal spot of white in its centre. Under tail coverts pale rusty white, with longitudinal bands of light brown occupying the centre of the feathers. Bill black. Feet lead color. Length nine and a half inches.

Female.—Plumage the same as the male. Crest smaller and delicate longitudinal lines of brown freckling the centres of the feathers of the throat. Length nine and a half inches.

The San Pedro river, a branch of the Gila east of Tucson, was the most western point at which I observed this species; here a flock of these birds ran before us at a quick pace, with outstretched necks, heads elevated, crests erect and expanded, and soon disappeared among the thick bushes which surrounded us on all sides. After this I saw them occasionally until I arrived at Lympia Spring. Lieutenant Barton, United States army, informed me that he had procured it near Fort Clarke, one hundred and twenty miles west of San Antonio, where, however, it is rare. This beautiful partridge is found abundantly on the open plains, often starting up before us when passing over the most arid portions of our route. It also seems partial to the prairie dog villages. These, covering large tracts of ground destitute of vegetation, (everything but a stray cactus here and there being consumed by the prairie dogs,) probably offer the attraction of some favorite insect.

ACTIDURUS NAEVIUS, Heermann.—Mottled Grass Plover.

PLATE VI.

Actidurus navius, HEERMANN, Proceed. Acad. Nat. Sc. Phil. vol. VII.

Tryngites rufescens, CASSIN, in Gen. Rep. P. R. R. 1858, 739.

SP. CH.—*Form*.—Bill slender, as long as the head; culmen straight; sides compressed towards the tip, which is slightly curved; nostrils linear. Wings pointed, and when closed reaching to the end of the tail, the first primary being the longest. Tail long, broad, and rounded, the central feathers longest. Tarsae and toes long; claws short and acute.

Color.—The feathers of the upper parts black in the centre, with broad margins of yellowish brown; primaries brown, the ends being black narrowly tipped with white. Under surface white, becoming mottled with black two and a half inches from their termini, which there change to a grayish hue. The under wing coverts, irregularly marked and mottled with black, are silver gray, dusky towards the ends, but tipped and bordered with pure white. Under parts pale yellow ochre, the feathers bordered with faint white. Those of the breast near the pinion of the wing having in their centre a linear spot of black. Lower part of abdomen and vent of a much paler hue than the breast. Tail brown on its upper surface, the two middle feathers having a bronze tinge, the others being tipped with yellowish white followed by a black band. Under surface grayish, the inner vanes being mottled with minute brown spots. Bill black. Feet light yellow. Length seven and a half inches.

While riding on the prairies near San Antonio, my attention was called to this bird from its being smaller than Bartram's tatler, (*Actitis bartramius*), which there abounds. It ran nimbly on the ground among the grass in search of insects, uttering when disturbed a weak tweet, two or three times repeated. The birds of this genus, unlike the *Tringae*, (which congregate in large flocks showing a preference for the seashore,) migrate in small parties, resorting to the fresh water ponds and streams of the interior, or seek their food on the broad grassy plains. They run with great celerity. If alarmed they fly with rapidity, making wide circuitous sweeps before alighting. When wounded they take to the water, swimming with facility and often diving to escape danger. The nest, formed of grasses and containing four eggs, is placed on the ground, which has been previously hollowed out. When disturbed during the breeding season, the female, flying a short distance from her nest, throws herself on the ground, fluttering along as if wounded, and thus decoys the intruder into following her away. Once at a safe distance she takes to wing, returning to her home by a circuitous route.

LIST OF BIRDS

COLLECTED BETWEEN

Fort Yuma and San Antonio, Texas, during the survey of railroad route from the Mississippi to the Pacific ocean, under the command of Lieutenant J. G. Parke, Top. Engs.

	Specimens.	Page.		Specimens.	Page.
Hypotrionchus femoralis.....	1.....	9	Pipilo chlorura.....	1.....	15
Panyptila melanoleuca.....	1.....	10	Pipilo mesoleucus.....	1.....	15
Ceryle americana.....	1.....	10	Calamospiza bicolor.....	2.....	15
Milvulus forficatus.....	2.....	11	Pyrrhuloxia sinuata	2.....	16
Harporhynchus curvirostris.....	1.....	11	Pyrrhuloxia aestiva	2.....	17
Lophophanes atricristatus.....	2.....	12	Xanthornus affinis.....	2.....	17
Peucaea cassinii.....	2.....	12	Centurus uropygialis.....	2.....	17
Plectrophanes melanomus.....	2.....	13	Centurus flaviventris	1.....	18
Plectrophanes m'cownii.....	2.....	13	Picus scalaris.....	3.....	18
Poospiza bilineata.....	2.....	14	Ortyx texanus.....	2.....	18
Cyanospiza ciris.....	1.....	14	Lophortyx gambelii	2.....	19
Pipilo aberti	2.....	15	Callipepla squamata.....	2.....	19





Fig 2



Fig 1



No. 2.

REPORT UPON BIRDS COLLECTED ON THE SURVEY.

BY A. L. HEERMANN, M. D.

CATHARTES CALIFORNIANUS, S h a w .—The California Vulture.

Cathartes californianus, NUTTALL'S Ornithology, vol. I, p. 39.

AUDUBON, Birds of America, Fol. pl. 426.—CASSIN, Gen. Rep. P. R. R. IX, 1858, 5.

Cathartes californicus, AUD. Birds of America, Oct. vol. I, p. 12, pl. 1.

Vultur californianus, SHAW, Nat. Misc., vol. IX, pl. 301.

This species, the largest which our western fauna possesses, was observed occasionally during our survey sailing majestically in wide circles at a great height and ranging by its powers of flight over an immense space of country in search of food. Whilst unsuccessfully hunting in the Tejon valley, we have often passed several hours without a single one of this species being in sight, but on bringing down any large game, ere the body had grown cold, these birds might be seen rising above the horizon and slowly sweeping towards us, intent upon their share of the prey. Nor in the absence of the hunter will his game be exempt from their ravenous appetite, though it be carefully hidden and covered by shrubbery and heavy branches; as I have known these marauders to drag forth from its concealment and devour a deer within an hour. Any article of clothing thrown over a carcass will shield it from the vulture, though not from the grizzly bear, who little respects such flimsy protection. My coat, used on one occasion to cover a deer, was found, on our return, torn by Bruin to shreds and the game destroyed. The California vulture joins to his rapacity an immense muscular power, as a sample of which it will suffice to state that I have known four of them, jointly, to drag off, over the space of two hundred yards, the body of a young grizzly bear weighing upwards of a hundred pounds. A nest of this bird with young was discovered on the Tuolumnes river in a thicket, by some Indians who were there sent in search of a horse thief. It was about eight feet back from the entrance of a crevice in the rocks, completely surrounded and masked by thick under brush and trees and composed of a few loose sticks thrown negligently together. The effluvia arising from the vicinity was overpowering. We found two other nests of a like construction and similarly situated; one at the head of the Merced river and the other in the mountains near Warner's ranche. From the latter nest the Indians yearly rob the young, and having duly prepared them by long feeding, kill them at one of their great festivals.

CATHARTES AURA, L i n n .—The Red-headed Turkey Vulture.

Cathartes aura, RICH. and SWAIN, Faun. Bor. Amer. vol. II, p. 4.—NUTTALL'S Ornith. vol. I, p. 43.—AUDUBON, Birds of Amer. Oct. vol. I, p. 15; pl. 2.—CASSIN, Gen. Rep. IX, 6.

This bird ranges over the whole extent of California, being met in great numbers in the vicinity of Fort Yuma, at the junction of the Colorado and Gila rivers, and more especially on

the desert between the Colorado and Carissa creek. It here finds an ample supply of food from the carcasses of the numerous animals perishing from fatigue or the want of grass and water, and whose whitened bones, strewn over the ground, mark both the road and the hardships of the western pioneer. They seem to be on terms of amity with both the raven and California vulture whilst feeding, but upon the approach of the coyote or prairie wolf they all retire to a respectful distance until he has gorged himself on the dainty fare. The eyes of a carcass first extracted, they invariably begin their assault at the anus, this being the most practicable place to effectuate a breach, whence to deal havoc on the internal parts. An entrance once made, a scene of plunder, noise, confusion, and dispute ensues, baffling all description. Each one striving, as best he may, to bolt the morsel he has seized, or to rob his neighbor glutton, whose booty is too voluminous for him to despatch at once. When, however, in very large numbers, they will attack a carcass indiscriminately at several points, wrenching off the skin and flesh with their powerful beaks, whilst they brace themselves with their feet as they pull.

POLYBORUS THARUS, Molina.—The Caracara Eagle.

Polyborus tharus, CASSIN, Gen. Rep. IX, 45.

Polyborus vulgaris, VIEILL. Gal. vol. I, p. 23; pl. 7.—AUD Birds of Amer. Fol. pl. 161.

Polyborus brazilensis, AUD. Oct. vol. I, p. 21; pl. 4

I am happy to be able to add this interesting species to the fauna of California, having seen it on the Colorado river, near Fort Yuma, in company with the preceding species. The carrion of an ox was covered with turkey buzzards, and one specimen of the Caracara eagle was amongst them, but proved so shy that I could not shoot it, although waiting in ambush full two hours in hopes it would return. We followed this species on our survey down the Gila until we left that river, seeing one or more every day, and found it again in Texas on striking the settlements. At San Antonio, in the vicinity of slaughter-houses, it is met with in great numbers, twenty or thirty often having been seen at one time. We found its nest on the Medina river, built in an oak, and constructed of coarse twigs and lined with leaves and roots, but being quite recently finished contained no eggs. Although so closely allied to the vulture by its habits, we find its nidification quite different; as all the birds of that family, without exception, so far as known, lay either on the rocks or on the ground.

AQUILA CANADENSIS, Linn.—The Golden Eagle.

Aquila chrysaetos, RICH. and SWAIN, Faun. Bor. Amer. vol. II, p. 12.—AUD. Birds of Amer. Fol. pl. 181.—IB. Birds of Amer. Oct. vol. I, p. 50; pl. 12.

Aquila canadensis, CASSIN, Gen. Rep. IX, 41.

A specimen of this bird was seen whilst we were crossing over Livermore's Pass. It flew from a rock not twenty yards distant, thereby rendering it impossible to mistake the species. I also met with two others in northern California, and obtained the tarsae and feet of a specimen killed in the mountains bordering the Mokelumne river. It is there, as elsewhere, a wild and scarce bird, rarely seen save by the naturalist who is on the alert.

HALIAETUS LEUCOCEPHALUS, Linn.—The Bald Eagle.

Haliaetus leucocephalus, AUD. B. of A. Oct. vol. I, p. 57; pl. 14.

Falco leucocephalus, AUD. B. of A. Fol. pl. 31 and 126.

Common in northern California, and more especially so about the falls of the Columbia river, (Oregon,) the salmon of which, thrown up dead on the shores at certain periods of the year,

form a great attraction to this bird, the California vulture, the turkey buzzard, and the ravens, which there abound. We found this species in the Tulare valley, on the borders of large lakes, and in one place counted three nests within sight of each other. In 1849, there was an eyrie of these birds about four miles from Sacramento City, which they have since forsaken, on account of the continual passage to and fro of steamers and vessels on the river, or they have been shot by some wanton gunner, too ready to make trial of his skill upon them.

PANDION CAROLINENSIS, Gmel.—The Fish Hawk; The Osprey.

Pandion carolinensis, DEKAY, Nat. Hist. N. Y. Birds, part I, p. 6; pl. 8, fig. 18.—CASSIN, IX, 44.

Pandion haliaetus, AUD. B. of A. Oct. vol. I, p. 64; pl. 15.

Aquila haliaetus, RICH & SWAINS Faun. Bor. Amer. vol. II, p. 20.

Falco haliaetus, AUD. B. of A. Fol. pl. 81.—WILSON, Amer. Ornith. vol. V, p. 13, pl. 37, fig. 1.

Abundant, being met with throughout the whole extent of California. In the fall it migrates south.

FALCO POLYAGRUS, Cassin.—The American Lanier Falcon.

Falco polyagrus, CASSIN, Birds of Texas and California, p. 88 and 121, pl. 16.—IB. Gen. Rep. IX, 12.

Occasionally specimens of this bird were seen during our expedition, but of so wild a nature as to baffle all attempts to procure it. It frequents the rocky and wooded portions of the country or the broad open plains. Perched on some prominent rock whence it can survey a large extent of country, it will suddenly, with almost unerring aim, dart through the air with the swiftness of an arrow to seize upon its prey. On one occasion I saw this bird pursuing a large hare, (*Lepus townsendii*), at which it stooped several times, the hare barely escaping from the falcon's talons by extraordinary exertions and bounds as the bird gained upon him. Pursuer and pursued soon disappeared over the rolling ground, thus hiding from my sight the final result of this exciting chase. On a previous visit to California, I obtained, near Sacramento, three specimens, and saw a young unfledged one in San Francisco. I also procured one of these birds on the Farrallone islands, where probably it had been wafted by the high winds prevalent during winter. It cannot be considered a rare bird, although but few specimens as yet enrich the naturalist's collection.

HYPOTRIORCHIS COLUMBARIUS, Linn.—The Pigeon Hawk.

Falco columbarius, WILSON, Amer. Ornith. vol. II, p. 107, pl. 15, fig. 3.—AUD. B. of A. Oct. vol. I, p. 88, pl. 21.—

IB. B. of A. Fol. pl. 92.—DEKAY, Nat. Hist. N. Y. part I, p. 15, pl. 4, fig. 9.—RICH & SWAINS. Fau. Bor. Amer. vol. II, p. 35.—CASSIN, Gen. Rep. IX, 9.

This species, not very common, is most generally met with on the wooded hill sides, from whence they start in search of their prey. On one occasion, perceiving one of these birds apparently about to begin his repast on some luckless fowl held in his talons, I pursued him so closely and with such success that, fatigued and terrified, he dropped his prey, which, proving to be a very plump California partridge, I gratefully bagged.

TINNUNCULUS SPARVERIUS, Linn.—The Sparrow Hawk.

Tinnunculus sparverius, VIEILL. Ois. Am. Sept. p. 40, pl. 12 and 13.

Falco sparverius, AUD. B. of A. Oct. vol. I, p. 90, pl. 22.—IB. B. of A. Fol. pl. 142.—WILSON, A. Ornith. vol. II, p. 117, pl. 16, fig. 1.—IB. vol. IV, p. 57, pl. 32, fig. 2.—CASSIN, Gen. Rep. IX, 13.

Abundant throughout the whole of California.

BUTEO INSIGNATUS, Cassin.—Brown Hawk.

Buteo insignatus, CASSIN'S Birds of Texas and California, p. 102.—IB. p. 198, pl. 31.—IB. Gen. Rep. IX, 23.

I first remarked this species at the crossing of Graysonville ferry on the San Joaquin river and continued to meet with it occasionally, until we had crossed Kern river. Owing to the lateness of the season, I was able to ascertain but little regarding its propagation, the only nests which were found having been forsaken for some time previously by the young. These nests, composed externally of coarse sticks and lined with roots, were built in the topmost branches of oaks, which grow abundantly on the banks of the large water courses. This bird, like the rest of its genus, appears sluggish in its habits, perching for hours in a quiescent state on some tall tree and permitting the hunter to approach without any signs of fear. This apparent stolidity, however, may be owing to the fact that it is seldom molested and has not yet learned to mistrust a gun, as do the birds of prey in more settled portions of the country.

BUTEO ELEGANS, Cassin.—Western Red-shouldered Hawk.

Buteo elegans, CASSIN, PR. A. N. SC. VII, 281.—IB. Gen. Rep. IX, 28.

Abundant, and extending from northern California to the edge of the Colorado desert.

BUTEO MONTANUS, Nutt.—Western Red Tail.

Buteo montanus, Nutt. Man. I, 1840. 112.—IB. CASSIN, Gen. Rep. IX, 26

Abundant in northern California, and rare in no part of the country. I met with this bird likewise in New Mexico and Texas.

ARCHIBUTEO FERRUGINEUS, Licht.—The Western Rough-legged Buzzard.

Buteo ferrugineus, LIGHT. Trans. Berlin Acad. 1838, p. 428.

Archibuteo ferrugineus, CASSIN'S B. of Tex. and Cal. p. 159, pl. 26.—IB. Gen. Rep. IX, 34.

Archibuteo regalis, GRAY, Genera of Birds, vol. I, pl. 6.

During a previous visit to California I found this species in the valley of the Sacramento, and had considered it rare in that section of country; but during the recent survey in the southern part of the State I found it very abundant, having seen on one occasion in the mountains, about sixty miles from San Diego, five or six of these birds at the same moment. It is there much more numerous than the *Buteo borealis*. Large tracts of land in the southern portion of the State being totally destitute of trees, this bird alights on the ground, or, taking a position on some slightly elevated tuft of grass or stone, will sit patiently for hours watching for its prey. Its food, on dissection, proved to consist of mice, ground squirrels, and other small animals. In plumage it appears to vary as much as its closely allied species, *Archibuteo sancti-johannis*, (Gmelin;) and in a specimen shot by one of the men, but so badly mutilated that it could not be prepared, the tail was strongly tinged with the red color peculiar to the *Buteo borealis*. I several times noticed a bird sailing over the prairies, of about the same size as this species, but entirely black and of heavy continuous flight. It was, I think, of this genus; but never having procured one, I am undecided whether it be the adult bird of the species under consideration (the *A. sancti-johannis*) or a new bird to be added to this group. I discovered in 1851, on the Cosumnes river, the eggs and nest of this bird. While climbing a tree to examine some magpies' nests, the hawk in flying from her own betrayed her retreat. It was placed in the

centre of a bunch of mistletoe springing from the forks of the oak, and was composed of coarse twigs lined with grasses and moss; the eggs, two in number, being white, marked with faint brown dashes, differing greatly from those of the European species, *A. lagopus*, (Gmel.) With those of the *A. sancti-johannis*, I have never had the opportunity of comparing them.

ELANUS LEUCURUS, Vieill.—The Black-shouldered Hawk.

Elanus dispar, AUD. B. of A. Oct. vol. I, p. 70, pl. 16.

Falco dispar, AUD. B. of A. Fol. pl. 352.—NUTTALL. Ornith. vol. I, p. 93.—TEMME. Pl. Col. vol. I, pl. 319, (young plumage).—CH. BONAPARTE, Am. Orn. vol. II, p. 18, pl. 11, fig. 1.

Falco melanopterus, BON. Journ. Acad. Nat. Sc. of Phil. vol. V, p. 28, 1825.

Elanus leucurus, CASSIN, Gen. Rep. IX, 37.

The extensive marshes of Suisun, Napa, and Sacramento valleys are the favorite resorts of these birds, more especially during the winter season, as they there find a plentiful supply of insects and mice, their principal nourishment. They generally range over their feeding grounds in small flocks, from a single pair up to six or seven pairs together. I fell in with an isolated pair in the mountains between Elizabeth lake and Williamson's Pass, hovering over a small fresh water marsh; this being the only instance observed by me of their travelling so far inland, or away from large bodies of water or marsh. In July and August the young of this species are found quite abundant in the country, thereby proving that it does not migrate for the purposes of incubation.

ACCIPITER COOPERI, Bonaparte.—Cooper's Hawk.

Falco cooperi, BON. Syn. App. p. 432.—NUTT. Orn. vol. I, p. 90.

Falco stanleyi, NUTT. Orn. vol. I, p. 91.—AUD. B. of A. Fol. pl. 36.

Astur cooperi, AUD. Oct. vol. I, p. 98, pl. 24.—DEKAY, Nat. Hist. of N. Y. Part I, p. 18, pl. 4, fig. 5.

Not rare.

ACCIPITER FUSCUS, Gmelin.—The Sharp-shinned Hawk.

Frequenting in great abundance the woodland country throughout California.

CIRCUS HUDSONIUS, Linn.—The Marsh Hawk.

Circus cyaneus, AUD. B. of A. Oct. vol. I, p. 105, pl. 26.

Falco cyaneus, AUD. B. of A. Fol. pl. 356.—BONAP. A. Orn. vol. II, p. 30, pl. 12.

Falco uliginosus, WILS. Am. Orn. vol. VI, p. 67, pl. 51, fig. 1.

Abundant in California; I also met with this species in New Mexico and Texas, and its range therefore extends over our entire country.

ATHENE CUNICULARIA, Molina.—The Burrowing Owl.

Strix cucularia, MOLINA, Saggio, 1786.

Athene cucularia, CASSIN, Gen. Rep. IX, 60.

Common on the extensive open prairies, where, associated with the ground squirrel, they often form a large community, though not as great as prairie-dog villages, which latter often cover a mile or more of ground. The sight of this bird is very clear by day, nor will he allow the hunter on foot to approach within fair shooting distance. When approached, however, on a horse or mule, from which animals he apprehends no danger, his confidence renders him a certain

victim to the sportsman. If not killed outright, however severe the wound, he at once beats a retreat, disappearing in his burrow, whence he can be dragged forth only with considerable labor and difficulty. When suddenly alarmed, he flies some distance, then alighting on the ground, jerks his body three or four times successively in an upright position, as if to take an extended view and measure or avoid whatever danger threatens. The nest, formed of a few straws carelessly thrown together at the bottom of a tortuous burrow from 6 to 8 feet in length, contains four nearly spherical eggs, of a pure white.

GLAUCIDIUM GNOMA, Wagler.—Little Western Owl.

Strix passerinoides, AUD. B. of A. Fol. pl. 432, figs. 4 & 5.

Surnia passerinoides, AUD. B. of A. Oct. vol. I, p. 117, pl. 30.

Glaucidium gnoma, CASSIN, Gen. Rep. IX, 62.

This beautiful little species is found among the mountainous districts of the mining regions of California, where it cannot be considered a rare bird. It is, however, seldom captured, as it flies generally at night, though sometimes it may be caught perched on the branch of a tree, napping, during the day. In 1852, I shot three of these birds on the borders of the Calaveras river, a friend of mine, Mr. McMullin, procured another on the Cosumnes, and Mr. Bell, of New York, saw it in 1849, on the American river, thereby showing that it extends over a large portion of California.

STRIX PRATINCOLA, Bonap.—The American Barn Owl.

Strix pratincola, DEKAY'S N. His. of N. Y. part 1, p. 31, pl. 13, fig. 28.—CASSIN, Gen. Rep. IX, 47.

Strix flammea, NUTT. Orn. vol. I, p. 139.—WILS. Am. Orn. vol. VI, p. 57, pl. 50, fig. 2.—AUD. B. of A. Fol. pl. 171.

Strix americana, AUD. Oct. vol. I, p. 127, pl. 34.

Quite a common bird in all parts of California. At one time they frequented the old hollow trees of Sacramento City, but have gradually disappeared, as their old haunts have been destroyed to make way for the march of improvement and civilization. I found large numbers in winter ensconced and sheltered during the day among the reeds of Suisun valley. I obtained a living specimen, self-captured, he having entangled himself in the bushes. It is abundant in the old Catholic missions of California, where it frequents the ruined walls and towers, constructing its nest in the crevices and nooks of these once stately buildings, now fast falling to decay, and which form not only a shelter for birds, but also for innumerable bats, reptiles, and vermin of various kinds.

BRACHYOTUS CASSINII, Brewer.—Short-eared Owl.

Otus brachyotus, AUD. B. of A. Oct. vol. I, p. 140, pl. 38.

Strix brachyotus, AUD. Fol. pl. 432, fig. 6.—NUTT. Orn. vol. I, p. 132.—WILS. Am. Orn. vol. IV, p. 64, pl. 33, fig. 3.—

RICH. and SW. F. Bor. Am. vol. II, p. 75.

Brachyotus cassinii, (BREWER,) CASSIN, Gen. Rep. IX, 53.

Abundant in Suisun and Napa valleys, being found in equal numbers with the preceding species. When started from the ground or reeds, where it seeks shelter during the day, it flies a few yards and alights again on the ground, not appearing wild or shy in its nature, or perhaps so blinded by the brightness of the sun as to ill distinguish surrounding objects. I started from the bushes a specimen of this bird on the desert extending between the Tejon Pass and the Mohave river, on the borders of which I also met another.

BUBO VIRGINIANUS, Gmel.—Great Horned Owl.

Bubo virginianus, NUTT. Orn. vol. I, p. 124.—DEKAY, N. Hist. N. Y. part I, p. 24, pl. 10, fig. 22.—AUD. B. of A. Oct. vol. I, p. 143, pl. 39.—CASSIN, Gen. Rep. IX, 49.
Strix virginiana, AUD. Fol. pl. 61.—WILS. Am. Ornith. vol. VI, p. 52, pl. 50, fig. 1.

While encamped in the mountains bordering the Tejon valley, I occasionally heard the cry of this species at dusk and during the night. In 1849 it was very abundant around Sacramento City, but is now rare in that locality, from the same causes which have also driven almost entirely away the *Strix pratincola*.

SCOPS ASIO, Linn.—The Little Screech Owl.

Strix asio, NUTT. Orn. vol. I, p. 120.—AUD. B. of A. Fol. pl. 97.—WILS. Am. Orn. vol. V, p. 83, pl. 42, fig. 1.
Strix naevia, WILS. vol. III, p. 17, pl. 19, fig. 1.
Bubo asio, AUD. B. of A. Oct. vol. I, p. 147, pl. 40.—DEKAY, N. Hist. N. Y. part I, p. 25, pl. 12, figs. 25 & 26.

This species is not rare though not easily procured, inasmuch as it leaves its covert only at night in search of prey.

ANTROSTOMUS NUTTALLI, Aud.—Nuttall's Whip-poor-will.

Caprimulgus nuttalli, AUD. B. of A. Oct. vol. VII, p. 350, pl. 495.
Antrostomus nuttalli, BAIRD, Gen. Rep. IX, 149.

I saw two specimens of this bird in the mountains bordering the Tejon valley. They started from the ground, flew a few yards, and alighted almost immediately, as if blinded by the too glaring light of the sun. I shot one to assure myself of the species, but being on a grizzly bear hunt, with only my rifle in hand, it was so mutilated as to be worthless as a specimen. Dr. Milhau, U. S. A, at Fort Yuma, informed me of a small species of *Caprimulgus* very abundant around the fort during the spring and summer seasons. I procured none, being there during the winter, and am unable to say if it be the present species or not.

CHORDEILES POPETUE, Vieillot.—Night Hawk.

Chordeiles virginianus, AUD. B. of A. Oct. vol. I, p. 159, pl. 43.
Caprimulgus virginianus, NUTT. Orn. vol. I, p. 619.—AUD. B. of A. Fol. pl. 147.
Caprimulgus americanus, WILS. Am. Orn. vol. V, p. 65, pl. 40, fig. 1—2.
Caprimulgus popetue, VIEILL. Ois. Am. Sept. vol. I, p. 56, pl. 24.
Chordeiles popetue, BAIRD, Gen. Rep. IX, 151.

Not rare during the spring and summer seasons. I met with this species quite abundantly in Texas.

PANYPTILA MELANOLEUCA, Baird.—White-bellied Swift.

Cypselus melanoleucus, BAIRD, Proceed. Ac. N. Sc. Phil. vol. VII, p. 118.—JB. Gen. Rep. IX, 141.

I saw this bird on several occasions, but always flying so high as to be beyond or on the extreme limit of gun-shot range, and was not fortunate enough to procure one.

PROGNE PURPUREA, Linn.—The Purple Martin.

Hirundo purpurea, AUD. B. of A. Oct. vol. I, p. 170, pl. 45.—IB. Fol. pl. 22.—NUTT. Orn. vol. I, p. 598.—WILS. Am. Orn. vol. V, p. 58, pl. 39, fig. 1—2.

Very abundant, breeding in large numbers in the hollow trees which are still left standing in the city of Sacramento.

HIRUNDO RUFa, Vieill.—The Barn Swallow.

Hirundo rufa, Nutt. Orn. vol. I, p. 601.

Hirundo americana, Wils. Am. Orn. vol. V, pl. 38, figs. 1—2.—Aud. B. of A. Fol. pl. 173.

Hirundo rustica, Aud. Oct. vol. I, p. 181, pl. 48.

Abundant throughout California, New Mexico, and Texas.

HIRUNDO BICOLOR, Vieill.—The White-bellied Swallow.

Hirundo bicolor, Vieill. Ois. Am. Sept. vol. I, p. 61, pl. 31.

Abundant.

HIRUNDO LUNIFRONS, Say.—The Cliff Swallow.

Hirundo fulva, Bonap. Am. Orn. vol. I, p. 63, pl. 7, fig. 1.—Aud. B. of A. Oct. vol. I, p. 177, pl. 47.—Ib. Fol. pl. 68.

Abundant, building its nest in the cities under the eaves of houses, and in the mountains under the shelving rocks. I found it abundant, also, in New Mexico and Texas. This species, formerly considered as one of our western birds, has within a few years commenced its migrations to our northern States, gradually extending them year after year further south, until it has become in Pennsylvania a regular visitor, like the other common species of the same genus, arriving in spring, incubating, and taking its departure in the fall for more genial climes.

HIRUNDO THALASSINA, Swains.—Violet Green Swallow.

Hirundo thalassina, Sw. Philos. Mag. 1827, p. 366.—Aud. B. of A. Oct. vol. I, p. 186, pl. 49.—Ib. Fol. pl. 385.
BAIRD, Gen. Rep. IX.

I met with this beautiful little species occasionally during our survey, but always on its migrations southward, it being the fall of the year. On the summit of the Tejon Pass I shot several towards dusk as they flew circling in the air in pursuit of insects, a manœuvre which they are in the habit of performing at this season every evening before retiring to rest. Among these large flocks of swallows I remarked a small black swift, (*Acanthylis*,) but was unable to procure it. While visiting Dr. T. C. Henry, U. S. A., at Fort Thorne, New Mexico, we observed many of these swallows flying over a pond on the edge of the Rio Grande river. Its migrations extend over California, and it is one of the most abundant species in Oregon.

COTYLE RIPARIA, Linn.—The Bank Swallow.

Hirundo riparia, Wils. Am. Orn. vol. V, p. 46, pl. 38, fig. 4.—Aud. B. of A. Oct. vol. I, p. 187, pl. 50.

Abundant.

COTYLE SERRIPENNIS, Aud.—Rough-winged Swallow.

Hirundo serripennis, Aud. Synopsis, p. 37.—Ib. B. of A. Oct. vol. I, p. 193, pl. 51.—Ib. Orn. Biog. vol. IV, p. 593.—
BAIRD, Gen. Rep. IX.

Abundant. I observed while in Texas, in this species, a curious instance of the manner in which birds accommodate themselves to the localities in which they sojourn. The river banks, a favorite resort with them around San Antonio, possess in few spots only the conditions requisite for their nidification, being either insufficiently steep to afford them opportunities of sinking their holes, or being in their more abrupt parts composed of a hard rocky earth, into which they

are unable to penetrate. Hence they seek out the holes and crevices in the dwelling-houses of the town, there to build their nests and raise their young. Somewhat puzzled to comprehend why these birds frequented and flew so constantly in the back court of the Plaza House, as they generally wander over the prairies and in the vicinity of water in search of their food, I watched them and perceived several dart between the curtains enclosing a piazza, and disappear in large cracks of the wall, where the twittering of their nestlings welcoming their return at once explained the mystery.

TYRANNUS VERTICALIS, Say.—Arkansas Fly-catcher.

Tyrannus verticalis, SAY, Long's Exped. vol. II, p. 60.—BAIRD, Gen. Rep. IX.

Muscicapa verticalis, BONAP. Am. Orn. vol. I, p. 18, pl. 2, fig. 2.—AUD. B. of A. Oct. vol. I, p. 199, pl. 54.—NUTT. Orn. vol. I, p. 273.

Very abundant, replacing in California the *Tyrannus intrepidus*, Vieill., or king-bird of our eastern States, as he unrelentingly pursues and drives away all hawks and crows that encroach on his domain. The nest is the counterpart of that of the king-bird, being constructed of the same material, while the eggs so resemble those of that species that, placed side by side, it is impossible to distinguish between the two unless previously marked.

SAYORNIS SAYUS, Rich.—Say's Fly-catcher.

Tyrannula saya, RICH. & SW. F. Bor. Am. vol. II, p. 142, pl. 45.

Muscicapa saya, BONAP. Am. Orn. vol. I, p. 20, pl. 2, fig. 3.—AUD. B. of A. Oct. vol. I, p. 217, pl. 59.—NUTT. Orn. vol. I, p. 277.

Sayornis sayus, BAIRD, Gen. Rep. IX, 185.

We met this bird abundantly in southern California, where, in the course of a day's hunt, I have killed five or six of them. It is more especially plentiful in the fall, at the time of its migration southward. I found this species in New Mexico, in the northern part of Texas, near El Paso, and, though somewhat rare in Sacramento valley, I there procured two specimens. In migrating it prefers the deep valleys bordered by high hills, but is found also on the open plains, where, perched on the stalk of some dead weed or on a prominent rock, it darts forth in pursuit of its prey, to return again to its point of observation.

CONTOPUS BOREALIS, Rich.—Cooper's Fly-catcher.

Tyrannus borealis, RICH. & SW. F. Bor. Am. vol. II, p. 141, pl. 35.

Muscicapa cooperii, AUD. B. of A. Oct. vol. I, p. 212, pl. 58.—NUTT. Orn. vol. I, p. 282.

Contopus cooperi, BAIRD, Gen. Rep. IX, 188.

Although I have not myself seen this species in California, a friend of mine procured two specimens on the Cosumnes river, one of which he presented to me. Both proved to be females.

MYIARCHUS MEXICANUS, Kaup.—Ash-colored Fly-catcher.

Tyrannula cinerascens, LAWRENCE, Annals of N. Y. Lyceum, Sept. 1851, p. 121.

Tyrannula mexicana, KAUP.

Myiarchus mexicanus, BAIRD, Gen. Rep. IX, 179.

Abundant. The individuals obtained for the collection were shot near Posa creek. Of shy and retiring habits, it prefers the deep shady forests, where its insect food abounds. The nest, found in the hollow of a tree or in a deserted squirrel or woodpecker's hole, is composed of grasses lined with feathers. The eggs, five in number are cream color, marked and speckled with purplish red dashes and faint neutral tint blotches.

SAYORNIS NIGRICANS, Swains.—Rocky Mountain Fly-catcher.

Tyrannula nigricans, SWAINS. Synop. Mex. Birds, Phil. Mag. N. S. vol. I, p. 367.

Muscicapa nigricans, AUD. B. of A. Oct. vol. I, p. 218, pl. 60.

Sayornis nigricans, BAIRD, Gen. Rep. IX, 183.

Abundant throughout all California, constructing its nest in like situations as our *Tyrannula nunciola*, Wils. It seems to have a marked predilection for the vicinity of streams or lakes, where it is nearly always to be seen, perched upon a stake or branch, occasionally darting in the air for an insect, then returning to the same place to renew its watch and repeat its manoeuvres. The nest, composed of mud and mosses, lined with hair, is placed against the rocks, the rafters of a house or bridge, or against the inside of a large hollow tree, and the eggs, four or five in number, are pure white, speckled with red.

TYRANNULA TRAILLII, Aud.—Traill's Fly-catcher.

Muscicapa trilli, AUD. B. of A. Oct. vol. I, p. 234, pl. 65.

Muscicapa trilli, AUD. B. of A. Fol. pl. 45.

Abundant.

PYROCEPHALUS RUBINEUS, Boddart.—Scarlet-crowned Fly-catcher.

Pyrocephalus rubineus, CASSIN'S Illust. B. of Tex. & Cal. p. 127, pl. 18.—BAIRD, Gen. Rep. IX, 201.

Muscicapa rubineus, BODD. Tab. des Pl. Enl. Buff p. 42.

I had the good fortune to procure at Fort Yuma a specimen of this brilliantly plumaged but small fly-catcher, which Dr. Milhau, United States army, informed me is there quite common in spring. The plumage of the specimen procured is not brilliant, owing probably to a deformity in its bill, which is crossed as in the cross-bill, thereby preventing the bird from obtaining a sufficient supply of food for its proper nutriment. I saw another specimen in Tucson, Sonora, Mexico, but did not obtain it. It stations itself upon the topmost branches of trees, and when pursued, appears wild, flying to a considerable distance before again alighting. This bird forms an interesting item for our list, as it proves to be a new species to add to the ornithological fauna of California.

MYIADESTES TOWNSENDII, Aud.—Townsend's Ptilogonys.

Ptilogonys townsendii, AUD. B. of A. Oct. vol. I, p. 243, pl. 69.—AUD. B. of A. Fol. pl. 419.

Myiadestes townsendii, BAIRD, Gen. Rep. IX, 321.

Although I procured several specimens during my previous stay in California, still I did not find it common there. Dr. T. C. Henry, United States army, assures me, however, that in the environs of Fort Webster, New Mexico, now abandoned, large numbers of this species may be obtained in the course of a single day's hunt during the fall and winter months. Its flight appears feeble, and when about alighting it expands its tail several times before becoming quietly fixed on its perch. On dissecting the specimens which I procured in northern California, the stomach was filled with a red berry, growing at that season on bushes which cover the mountain sides in great profusion.

PTILOGONYS NITENS, Swains.—Black Crested Fly-catcher.

Ptilogonys nitens, Sw. Cab. Cyclo. Animals in Menageries, p. 285.—CASSIN'S B. of Tex. and Cal. p. 169, pl. 29.

Cichlopsis nitens, BAIRD, Gen. Rep. IX, 320.

This bird is seldom found in the northern parts of California, although I obtained both old and young on the Cosumnes river in 1851. Since then a naturalist and friend of mine residing

there has not seen one, though giving much of his attention to the migratory habits of such birds as pass through that section of country. I was therefore surprised on meeting this species after sixty miles of travel through the Colorado desert in the vicinity of the Little Lagoon. On nearing the Colorado river they increased greatly in numbers, twenty or thirty being often seen on the wing at a time. In November, the period of their migration southward, they are very abundant in this section of country. They usually perch on the mesquite trees, jerking their tails almost incessantly, as do some species of fly-catchers, emitting, the while, a low plaintive whistle, and dashing occasionally in irregular curves and angles high in the air in pursuit of insects.

POLIOPTILA CAERULEA, G m e l.—Blue-gray Gnat-catcher.

Culicivora caerulea, DEKAY, N. Hist. N. Y. Part I, p. 109, pl. 56, fig. 126.

Muscicapa caerulea, AUD. Fol. pl. 84.—WILS. Am. Orn. vol. II, p. 164, pl. 18, fig. 5.—NUTT. Orn. vol. I, p. 297.

Abundant.

POLIOPTILA MELANURA, L a w r.—Black-headed Gnat-catcher.

Culicivora mexicana, (BONAP.) CASSIN'S B. of TEXAS and CALIFORNIA, p. 163, pl. 27.

Polioptila melanura, BAIRD, Gen. Rep. IX.

I first came across this species near San Diego, in 1851, and found it abundant during the recent survey in the vicinity of Fort Yuma. The last specimen I obtained was from a hedge surrounding the cultivated fields of the Pimos Indians, whose villages are situated about two hundred miles above the junction of the Gila and Colorado rivers. Its habits resemble those of the preceding species, quick and restless in its movements, searching actively for its food, and darting occasionally in the air in pursuit of small insects. Its note is of so feeble a tone as to be heard only at the distance of a few yards. In searching its food it resorts, from preference, to low trees and weeds, where it finds the most copious harvest.

MYIODIOCTES PUSILLUS, W i l s o n.—Green Black-capped Fly-catching Warbler.

Muscicapa pusilla, WILS. Am. Orn. vol. III, p. 103, pl. 26, fig. 4.—AUD. B. of A. Fol. pl. 124.

Myiodioides wilsonii, AUD. B. of A. Oct. vol. II, p. 21, pl. 75.

Myiodioides pusillus, BAIRD, Gen. Rep. IX, 293.

During our expedition this species proved abundant, being found wherever the wood or heavy brush and thickets afforded it a sufficient shelter.

DENDROICA AUDUBONII, T o w n s.—Audubon's Warbler.

Sylvicola audubonii, TOWNS. Audubon, B. of A, Oct. vol. II, p. 26, pl. 77.

Sylvia audubonii, TOWNS. Jour. Acad. N. Sci. Phil. vol. VII, p. 191.—AUD. B. of A. Fol. pl. 395.

Dendroica audubonii, BAIRD, Gen. Rep. IX, 273.

Abundant, replacing in California the *Sylvicola coronata* of our eastern States. It assembles in the fall and spring in small flocks, often associated during their migrations with the titmouse (*Parus*) and ruby-crowned wren, (*Regulus calendula*,) skipping about in the tree tops, actively searching for insects, oftentimes flying in the air in their pursuit. Some few of these birds spend the whole winter in California, as I have seen them in Sacramento valley throughout all the inclement season.

DENDROICA AESTIVA, Gmelin.—Yellow-Poll Wood Warbler.

Sylvicola aestiva, RICH. & SW. F. Bor. Am. vol. II, p. 211.—AUD. B. of A. Oct. vol. II, p. 50, pl. 83.

Dendroica aestiva, BAIRD, Gen. Rep. IX, 252.

Abundant over the entire country.

DENDROICA NIGRESCENS, Towns.—Black-throated Gray Warbler.

Sylvicola nigrescens, AUD. B. of A. Oct. Vol. II, p. 62, pl. 114.

Sylvia nigrescens, AUD. Fol. pl. 395.—TOWNSEND, Jour. Acad. N. Scien. Phil. vol. VII, p. 191.

Sylvia halseyii, G. P. GIRAUD, 16 New Species of N. A. Birds, fig. 1.

Dendroica nigrescens, BAIRD, Gen. Rep. IX, 270.

I obtained, in 1852, a few specimens of this species near Sacramento City and also on the range of mountains which divide the Calaveras and Mokelumne rivers. During this expedition, in the month of October, I met with but a single individual in the mountains adjoining the summit of the Tejon Pass. It was then migrating southward with several other small species of birds and gleaning its insectivorous food from the topmost branches of some tall oaks. The notes of this bird closely resemble those of a locust.

TRICHAS TOLMIEII, Towns.—Tolmie's Warbler.

Trichas macgillivrayii, AUD. B. of A. Oct. vol. II p. 74, pl. 100.

Sylvia tolmiei, TOWNS. Jour. Acad. N. Scien. Phil. vol. VIII, p. 149.—IB. Townsend's Narrative, p. 343.

Geothlypis macgillivrayi, BAIRD, Gen. Rep. IX, 244.

A beautiful and somewhat rare species, affording but few opportunities for the study of its habits, as it retires amidst the deep shady swamps and brushwood, from whence it seldom makes its appearance.

TRICHAS DELAFIELDII, Aud.—Delafield's Yellow-throat.

Trichas delafieldii, AUD. B. of A. Oct. vol. II, p. 81, pl. 103.—IB. Synop. p. 65.

Sylvia delafieldii, AUD. Orn. Biog. vol. V, p. 307.

Geothlypis trichas, BAIRD, Gen. Rep. IX, 241.

Abundant and like its closely allied species, the *Trichas marilandicus*, haunts the low thickets in the vicinity of water, in which localities it seeks its food on the ground, seldom appearing above the tops of the bushes. It incubates in the country, for though I was not fortunate enough to discover its nest, I shot on several occasions the bird in its young plumage.

HELMINTHOPHAGA CELATA, Say.—Orange-crowned Warbler.

Helinaia celata, AUD. B. of A. Oct. vol. II, p. 100, pl. 112.

Sylvia celata, AUD. B. A. Fol. pl. 178.—BONAP. Am. Orn. vol. I, p. 45, pl. 5, fig. 2.—SAY, Long's Exped. to Rocky Mts. vol. I, p. 169.—NUTT. Orn. vol. I, p. 413.

Helminthophaga celata, BAIRD, Gen. Report IX, 257.

This bird is plentiful all over the country, having procured it in northern California, in the Tejon valley, and on the Colorado river, near Fort Yuma. It is migratory in its habits, but some few pairs incubate near the summits of the highest mountains in the mining regions.

CERTHIA AMERICANA, Bon.—Brown Tree Creeper.

Certhia familiaris, WILS. Am. Orn. vol. I, p. 122, pl. 8, fig. 1.—AUD. B. of A. Oct. vol. II, p. 109, pl. 115.—IB. Fol. pl. 415.

Certhia americana, BONAP. Compar. List. p. 11.—BAIRD, Gen. Rep. IX, 372.

Abundant in California, especially in the mountainous districts.

TROGLODYTES OBSOLETUS, S a y.—Rock Wren.

Troglodytes obsoleta, Nutt. Orn. vol. I, p. 435.—Aud. B. of A. Oct. vol. II, p. 113, pl. 116.—Ib. Fol. pl. 360.—SAY, Long's Exp. to the Rocky Mts. vol. II, p. 4.
Salpinctes obsoletus, BAIRD, Gen. Rep. IX, 357.

I have met with this bird not only throughout the whole extent of California, but also in New Mexico and Texas, and while encamped in the Tejon valley have often, in the course of the day, obtained from five to six specimens. It frequents the rocky portions of the country, passing in the crevices and under the boulders which lie profusely scattered over the mountains. It lives upon spiders, worms, and small insects, and while in pursuit of them it utters, at intervals, a loud, quick note, of a peculiarly thrilling character.

TROGLODYTES MEXICANUS, S w a i n s.—Mexican Wren.

Troglodytes mexicanus, Sw. Zool. Illus. 2d series, vol. I, pl. 11.
Catherpes mexicanus, BAIRD, Gen. Rep. IX, 356.

On a previous visit to California, I procured this species on the Calaveras and Cosumnes rivers. Its habits and resorts are the same as the *Trog. obsoletus*.

TROGLODYTES BEWICKII, A u d.—Bewick's Wren.

Troglodytes bewickii, Aud. B. of A. Oct. vol. II, p. 120, pl. 118.—Ib. Fol. pl. 18.—NUTT. Orn. vol. I, p. 434.
Thryothorus bewickii, BAIRD, Gen. Rep. IX, 363.

Abundant. Near Fort Clark, Texas, I found a nest of this species constructed in an old Comanche Indian shield. The target, formed of two thicknesses of hide, had been hung on a bush as a mark to fire at; from exposure to the weather, the two sides, having separated, formed a pocket, in which this bird had domiciliated itself. It is like the rest of the genus, very querulous in its notes, repeating, when disturbed, its alarm cries with great vehemence.

TROGLODYTES AMERICANUS, A u d.—Wood Wren.

Troglodytes americanus, Aud. B. of A. Oct. vol. II, p. 123, pl. 119.—Ib. Fol. pl. 179.—DEKAY, N. Hist. N. Y. part I, p. 54.—BAIRD, Gen. Rep. IX, 368.

Abundant in the wooded portions of the country.

TROGLODYTES AEDON, Vieill.—House Wren.

Troglodytes aedon, Vieill. Ois. Am. Sep. vol. II, p. 52, pl. 107.—Aud. B. of A. Oct. vol. II, p. 125, pl. 120.—Ib. Fol. pl. 83.

Abundant.

TROGLODYTES PALUSTRIS, Wils.—Marsh Wren.

Troglodytes palustris, Aud. B. of A. Oct. vol. II, p. 135, pl. 123.—Ib. Fol. pl. 100.—NUTT. Orn. vol. I, p. 439.
Certhia palustris, WILS. Am. Orn. vol. II, p. 58, pl. 12, fig. 4.

Abundant throughout all the marshy districts of the country.

CAMPYLORHYNCHUS BRUNNEICAPILLUS, L a f r e s n a y e.—Brown-headed Wren.

Picolaptes brunneicapillus, LAF. Guerin's Mag. de Zoolog. p. 61.—CASSIN, B. of Tex. and Cal. p. 156, pl. 25
Campylorhynchus brunneicapillus, BAIRD, Gen. Rep. IX, 355.

This bird, though well known as a Mexican species, is now for the first time added to the fauna of California. I first discovered it on the desert extending between the Tejon pass and the Mohave river, where its purse-shaped nest, placed on the branches of the cactus, at no great height from the ground, is frequently to be met with. The nest, composed of grasses and lined with feathers, has an entrance in the form of a covered passage, varying from six to ten inches in length. The eggs, six in number, are of a delicate salmon color, very pale, and often so thickly speckled with ash and darker salmon colored spots as to give a rich cast to the whole surface of the egg. I sometimes stopped to open these nests, as the feathers with which they were lined often indicated that certain species of birds were to be found in their neighborhood. The naturalist, thus put on the alert, will more readily obtain such of those species as may have escaped his eye. In this manner I discovered the uttermost western range of the blue partridge, (*Callipepla squamata*, Vigors.) I obtained, at a later period, other specimens of this wren in the valley of the San Fernando Mission, in San Bernardino valley, in the vicinity of Fort Yuma, and finally in Texas, in certain portions of which it is by no means rare. Its habits are like those of the wrens, creeping into holes and under the leaves and grass in search of insects. If wounded only it is easily lost, running or fluttering to a ground squirrel's hole, or any other cavity, where it takes refuge. On the Mohave desert, having winged one of these birds, it was discovered only on lifting a hollow log in which it had taken shelter and throwing it several times violently on the ground, when it struggled out in vain endeavors to escape.

LOPHOPHANES INORNATUS, G a m b e l.—Plain Chicadee.

Parus inornatus, GAMBEL, Proceed. Acad. N. Scien. Phil. vol. II, p. 265.—IB. Journal Ac. N. S. Phil. 2d series, vol. I, p. 35, pl. 8, fig. 2.

Lophophanes inornatus, BAIRD, Gen. Rep. IX, 386.

Abundant throughout the country, and possessing an almost endless variety of notes.

PARUS RUFESCENS, T o w n s.—Chestnut-backed Titmouse or Chicadee.

Parus rufescens, TOWNS, Journ. Acad. N. Scien. Phil. vol. VII, p. 190.—AUD. B. of A. Oct. vol. II, p. 158, pl. 129.—IB. Fol. pl. 353, figs. 1 and 2.

This bird and its nestlings I found in the month of July frequenting the stunted oaks and bushes covering the sand hills around San Francisco, where it appears not to be rare. I never saw it in any other part of California, though said by Mr. Audubon to be an abundant species in Oregon and on the Columbia river.

PARUS MONTANUS, G a m b e l.—Rocky Mountain Chicadee.

Parus montanus, GAMBEL, Proceed. Acad. N. Scien. Phil. vol. I, p. 259.—IB. Journal Ac. N. S. Phil. 2d series, vol. I, p. 35, pl. 8, fig. 1.

Dr. Gambel first brought from California a single specimen of this bird, which he presented to the Philadelphia Academy of Natural Sciences, but which by some mishap was lost soon after the figure had been drawn for the journal of that institution. In 1851 I met with two small flocks of these birds in company with the *Psaltria minima*, on the mountains surrounding the volcano, in the southern mines, and again during the late survey on the summit of the Tejon Pass, associated with several species of *Sylvicola*, which were then migrating south. In its movements it is restless, diligently gleaning its food, consisting of insects, in the moss and

interstices of the bark of trees, often suspended back downwards as it clings to the under side of a branch. Its note very much resembles that of our black-capped chickadee, (*Parus atricapillus*, Linn.)

PSALTRIA MINIMA, Towns.—Least Chickadee.

Parus minimus, Towns. Journ. Acad. N. Scien. Phil. vol. VII, p. 190.—Aud. B. of A. Oct. vol. II, p. 160, pl. 130.—
Ib. Fol. pl. 353, figs. 5 and 6.

Abundant, and found in the fall in flocks of from twenty to thirty individuals, following each other from tree to tree, travelling thus in a single day over a large tract of country. It incubates in California, as I have found there its pendulous nest, containing from six to eight pure white eggs.

ÆGITHALUS FLAVICEPS, Sundevall.

Conirostrum ornatum, Lawrence, Annals N. Y. Lyceum, vol. V, p. 112, pl. 5, fig. 1.
Ægithalus flaviceps, Sundevall, Ofversigt, VII, 129.
Paroides flaviceps, Baird, Gen. Rep. IX, 400.

I first discovered in California this beautiful little species at the terminus of the Mohave river, where I pursued them among the mezquite trees, but owing to their wildness I procured none. I remarked that in searching their food they often remain suspended with their back downwards as do the chickadees or titmice. I found their nests abundant near Fort Yuma, though from the lateness of the season few of the birds remained. The nest is spherical, formed of twigs, and having an entrance on the side; the interior being lined with down and feathers, and containing from four to six eggs of a pale blue color, and dashed with small black spots. This species is new to the fauna of California, though well known as a Mexican and Texian bird.

CHAMAEA FASCIATA, Gambel.—Ground Wren.

Chamaea fasciata, Gambel, Proceed. A. N. Sc. Phil. vol. III, p. 154.—Ib. Journ. A. N. Sc. Phil. 2d series, vol. I, p. 34, pl. 8, fig. 3.
Parus fasciatus, Gamb. Proceed. A. N. Sc. Phil. vol. II, p. 265.

Abundant. This bird frequents the low brush and thickets, and while creeping actively and restlessly through the undergrowth in search of food utters a low plaintive note or whistle, holding its tail erect over its back after the manner of the wren. It incubates in the country, though I have never discovered its nest.

REGULUS CALENDULA, Linn.—Ruby-crowned Wren.

Regulus calendula, Aud. B. of A. Oct. vol. II, p. 168, pl. 133.—Ib. B. of A. Fol. pl. 195.
Sylvia calendula, Wils. Am. Orn. vol. I, p. 83, pl. 5, fig. 3.

Abundant throughout California. I procured specimens at the Little Lagoon (Colorado desert) and as far south as the villages of the Pimos Indians.

SIALIA MEXICANA, Swainson.—Western Blue Bird.

Sialia occidentalis, Towns. Journ. Acad. N. Scien. Phila. vol. VII, p. 188.—Aud. B. of A. Oct. vol. II, p. 176, pl. 135.—
Ib. Fol. pl. 393, figs. 4 and 5.
Sialia mexicana, Baird, Gen. Report IX, 223.

As plentiful in California as is our *Sialia wilsonii* in this section of the country, and having

the same habits. The nest, built in the hollow of a tree, is composed of grasses, and contains four to six eggs of a pale blue color.

SIALIA ARCTICA, Swains.—Arctic Blue Bird.

Sialia arctica, AUD. B. of A. Oct. vol. II, p. 178, pl. 136.—IB. Fol. pl. 393, figs. 2 and 3.—NUTT. Orn. vol. II, p. 573.

Met with occasionally in small flocks during the winter season. I saw it in New Mexico, and Colonel M'Call, U. S. A., informed me that in Santa Fé it breeds like our common blue bird, in boxes put up for that purpose by the inhabitants of the city.

CINCLUS AMERICANUS, Swains.—American Dipper.

Cinclus americanus, RICH. and Sw. F. Bor. Am. vol. II, p. 173.—AUD. B. of A. Oct. vol. II, p. 182, pl. 137.

Cinclus mertonii & townsendii, AUD. B. A. Fol. pl. 435.

Hydrobata mexicana, BAIRD, Gen. Rep. IX, 229.

This interesting species I found in abundance on the mountain rivulets of northern California, preferring the clear limpid streams, and often forsaking a locality when the water is made turbid by miners washing the earth in search of gold. Alighting on the edge of the water it patiently awaits the passage of its prey, uttering at intervals a low buzzing whistle which is repeated at short intervals. Quite unsuspecting, it is easily approached and killed, but if wounded only, it dives with great celerity, using its wings under water to propel itself forward. During the late survey I met with and procured but one single specimen, on the small stream which takes its rise near the summit of the Tejon Pass.

MIMUS POLYGLOTTUS, Linn.—Common Mocking Bird.

Orpheus polyglottus, DEKAY, N. Hist. N. Y. part I, p. 67, pl. 39, fig. 84.—AUD. B. of A. Oct. vol. II, p. 187, pl. 138.

Turdus polyglottus, AUD. Fol. pl. 21.—WILS. Am. Orn. vol. II, p. 13, pl. 10, fig. 1.—NUTT. Orn. vol. I, p. 320.

Mimus polyglottus, var. *caudatus*, BAIRD, Gen. Rep. IX, 344.

This bird was first observed on Posa creek, and was found abundant in the valley of Los Angeles, where they frequented the low bushes and hedges of prickly pear, still growing around the fields of the abandoned missions, and forming an impenetrable barrier. The fruit of this plant was at the time ripe, and the throats of several of the birds killed were tinged a deep carmine from its juice. We met occasionally with this species during the second survey, under Lieutenant Parke, and when passing through western Texas it proved to be one of the most common birds of the country.

MIMUS MONTANUS, Towns.—Rocky Mountain Mocking Bird.

Orpheus montanus, TOWNS. Journ. Acad. N. S. Phil. vol. VII, p. 192.—AUD. B. of A. Oct. vol. II, p. 194, pl. 139.—IB. Fol. pl. 379, fig. 1.

Oreoscoptes montanus, BAIRD, Gen. Rep. IX, 347.

This species is often met with in southern California, having remarked it on several occasions in the environs of San Diego, and from thence to Fort Yuma. In New Mexico and Texas we found it, seeing one or more individuals daily for over three hundred miles after leaving El Paso. On being flushed it flies but a short distance, and generally alights on the ground, running some way before it stops. When in the arid regions where the cactus abounds, the ripe fruit of which affords its favorite food, it alights on the branches of that plant, and although I have closely examined the feet of several individuals, it would appear that it suffers no inconvenience from the needle like points projecting from all parts of these plants.

HARPORHYNCHUS REDIVIVUS, G a m b e l.—California Mocking Bird.

Toxostoma rediviva, GAMBEL, Journ. Acad. N. S. Phil. 2d series, vol. I, p. 42.

Harpes redivivus, GAMB. Proceed. Acad. N. S. Phil. vol. II, p. 264

Harporhynchus redivivus, BAIRD, Gen. Rep. IX, 349.

Abundant, not only having procured it in northern California, but also as far south as Texas, on the borders of the Rio Grande. Shy and wild in its habits, when startled it flies low some distance, and plunging into a thicket alights, runs on the ground, and so conceals itself that it is not again easily found. Its notes are equal in harmony to those of our mocking bird, and among the miners it is well known as the California mocking bird. It incubates in the country, but the only nest I found, composed externally of coarse twigs and lined with fine roots, contained young, it then being the month of July.

TURDUS MIGRATORIUS, L i n n.—The Robin.

Turdus migratorius, AUD. B. of A. Oct. vol. III, p. 14, pl. 142.—NUTT. Orn. vol. I, p. 339.—WILS. Am. Orn. vol. I, p. 35, pl. 2, fig. 1.

Abundant, but only appearing in the mining regions of California during the winter season. Several flocks of these birds were observed at Fort Yuma in the month of December.

TURDUS NAEVIUS, G m e l.—The Varied Thrush.

Turdus naevius, AUD. B. of A. Oct. vol. III, p. 22, pl. 143.

Orpheus meruloides, RICH. & SW. F. Bor. Am. part II, p. 187, pl. 38.

Abundant, being found in the mountainous districts in large flocks, frequenting the moist hill sides in search of food. It does not incubate in the country, but migrates north in early spring.

TURDUS NANUS, A u d.—Dwarf Thrush.

Turdus nanus, AUD. B. of A. Oct. vol. III, p. 32, pl. 147.

Abundant. I found this species breeding in the stunted oaks covering the sand hills around San Francisco.

ANTHUS LUDOVICIANUS, L i c h t.—American Pipit.

Anthus ludovicianus, DEKAY, N. Hist. N. Y. part I, p. 76, pl. 64, fig. 99.—AUD. B. of A. Oct. vol. III, p. 40, pl. 150.

Anthus spinoletta, NUTT. Orn. vol. I, p. 450.

Alauda rufa, WILS. Am. Orn. vol. V, p. 89, pl. 42, fig. 4.

Abundant.

OTOCORIS ALPESTRIS, L i n n.—Shore Lark.

Alauda cornuta, DEKAY'S N. Hist. of N. Y. part I, p. 179, pl. 73, fig. 165.—RICH. & SW. F. Bor. Am. vol. II, p. 245.

Alauda alpestris, WILS. Am. Orn. vol. I, p. 85, pl. 5, fig. 4.—AUD. B. of A. Oct. vol. III, p. 44, pl. 151.—NUTT. Orn. vol. I, p. 455.

Eremophila cornuta, BAIRD, Gen. Report, IX, 403.

Abundant.

OTOCORIS RUF A, A u d.—Western Shore Lark.

Alauda rufa, AUD. B. of A. Oct. vol. VII, p. 353, pl. 497.

Abundant. Congregating with the two preceding species, they form together large flocks, covering the plains during the fall season, engaged in gleaning the seeds of grasses and small

insects, which form their principal nourishment. At this period they are easily approached, and large numbers may be killed at a single shot. During summer, they are seen frequenting the roads and flying a few paces before the traveller as he advances. The nest, sunk in a slight hollow in the ground, is composed of grasses lined with fine hair. The eggs, four to five in number, are light green ash, covered thickly with minute light umber brown spots, sometimes forming a crown at the larger end of the egg.

EMBERNAGRA CHLORURA, Towns.—Blanding's Finch.

Embernagra blandingiana, GAMBEL.—CASSIN'S B. of Tex. & Cal., p. 70, pl. 12.

Fringilla blandingiana, GAMBEL, Proceed. Ac. N. S. Phil. vol. I, p. 260.

Fringilla chlorura, AUD. Orn. Biog. vol. V, p. 336.

Zonotrichia chlorura, HEERMANN, Jour. Ac. N. S. Phil. 2d series, vol. I, p. 51, pl. 9, fig. 1.

Pipilo chlorura, BAIRD, Gen. Rep. IX, 519.

I met with a single specimen of this bird in the Tejon valley, where I discovered it among a flock of sparrows consisting of several varieties. On a former occasion I procured a single bird of this species in Sacramento valley, and consider it as accidental in California, or at least in the northern part of it.

POOSPIZA BELLII, Cassin.—Bell's Bunting.

Emberiza bellii, CASSIN, Proceed. Ac. N. S. Phil. vol. V, p. 105, pl. 4.

Poospiza bellii, BAIRD, Gen. Rep. IX, 470.

In the fall of 1851 I first noticed this species in the mountains bordering the Cosumnes river, and on the late expedition we found it in great numbers on the broad tract of arid land lying between Kern river and the Tejon Pass, and again on the desert between this latter and the Mohave river, often wandering at a great distance from water. The *Picolaptes brunneicapillus*, two kinds of woodpecker, an occasional raven, and this species, appear to be the only birds inhabiting these large and desolate plains, where the artemisia (*Larrea mexicana*) alone flourishes amid the surrounding weak and scanty vegetation. When undisturbed, it chants merrily its ditty from some bush top, but upon the appearance of danger drops at once to the ground and disappears in the shrubbery or grass. The nest, built in a bush, is composed of twigs and grasses, lined with hair. The eggs, four in number, are light greenish blue, marked with reddish purple spots differing in intensity of shade.

PASSERCULUS ROSTRATUS, Cassin.—Large-billed Sparrow.

Emberiza rostrata, CASSIN, Proceed. Ac. Nat. S. Phil. vol. VI, p. 184.

In 1851 I procured this bird on the shores of the Bay of San Diego, and also, during the late survey, in considerable numbers at Santa Barbara and San Pedro. It frequents the low sandy beach and the heavy sedge grass which fringes the shores, where it feeds upon the marine insects and seeds thrown up by the tides and in which it finds quick and easy concealment when closely pursued.

SPIZA AMOENA, Say.—Lazuli Painted Finch.

Spiza amoena, AUD. B. of A. Oct. Vol. III, p. 100, pl. 171.

Fringilla amoena, AUD. B. A. Fol. pl. 398.—BONAP. Am. Orn. vol. I, p. 61, pl. 6, fig. 5 —NUTT, Orn. vol. I, p. 473.

Emberiza amoena, SAY, Long's Exped. to Rocky mts. vol. II, p. 47.

This beautiful little species teems over the whole surface of California during the summer months; having been observed in the mountains near Shasta City, in the Sacramento valley,

and the intermediate country down to the southern part of California. Its chant, shrill and musical, repeated at intervals, resembles in sweetness and tone that of our Indigo bird (*Spiza cyanea*.) Its nest, attached to the upright branches of bushes or the stalks of strong weeds, is built of grasses lined with the inner bark of the oak, and contains four eggs of a faint blue tinge.

JUNCO OREGONUS, Towns.—Oregon Snow Finch.

Fringilla oregona, Towns. Jour. Ac. N. S. Phil. vol. VII, p. 183.—Aud. B. of A. Fol. pl. 398.

Niphoeca oregona, Aud. Oct. vol. III, p. 91, pl. 168.

Junco oregona, Baird, Gen. Rep. IX, 467.

We met with this bird near Fort Yuma in December, having previously remarked it during the fall, in large flocks, migrating from the north, where it spends the summer in the duties of incubation. Its habits are similar to those of our common snow bird, (*Junco hyemalis*), and like that species it prefers the grass fields, hedges and woods, actively employed in seeking its food on the ground and emitting at intervals a sharp chirp. The nest of this bird, built in a low cedar bush, was composed of grasses and lined with fine roots and hair. The eggs, four in number, were light greenish and roseate white with spots of faint neutral tint and larger ones varying in hue, from a reddish to a dark sepia.

PASSELLA TOWNSENDII, Aud.—Townsend's Finch.

Plectrophanes townsendii, Aud. B. of A. Fol. pl. 424.

Fringilla cinerea, Aud. B. of A. Oct. vol. III, p. 145, pl. 187.

Passerella townsendii, Baird, Gen. Rep. IX, p. 489.

Abundant and migratory, visiting California only during the winter. Of a solitary and quiet nature, it resorts to the thickets and underwood in quest of food, scratching up and turning over the leaves and ground, making occasionally a hop backwards to ascertain the result of its labors. Its habits are the same as those of our fox sparrow, (*Z. iliaca*.) In the octavo edition of Mr. Audubon's work on the Birds of America, the name of brown finch has been given to the figure of this bird, while to the figure of the *Z. guttata* the name of Townsend's finch has been applied. This is evidently a mistake on the part of the engraver of the plates.

ZONOTRICHIA GRAMINEA, Gmel.—Bay-winged Finch.

Emberiza graminea, Wils. Am. Orn. vol. IV, p. 51, pl. 31, fig. 5.—Aud. B. of A. Oct. vol. III, p. 65, pl. 159.

Fringilla graminea, Aud. Fol. pl. 94.—Nutt. Orn. vol. I, p. 482.

Poocetes gramineus, Baird, Gen. Rep. IX, 447.

A very abundant species, being found not only in California but also in New Mexico and Texas.

ZONOTRICHIA GUTTATA, Nutt.—Brown Song Sparrow.

Fringilla guttata, Nutt. Orn. 2d edit. vol. I, p. 581.

Fringilla townsendii, Aud. B. of A. Oct. vol. III, p. 143, pl. 188.

Fringilla cinerea, Aud. B. of A. Fol. pl. 390, fig. 4.

Abundant throughout the whole country, but more especially so in the bushes bordering the streams, ponds, or marshes. Its notes are sweet but few in number, resembling those of our common song sparrow, (*Zonotrichia melodia*.) Its nest, usually built in a thick tuft of bushes, is composed externally of grasses and lined with hair, containing four eggs of a pale blue ash color, very thickly covered with dashes of burnt umber.

ZONOTRICHIA GAMBELII, Nutt.—Gambel's Finch.

Fringilla gambelii, Nuttall, Man. I, 2d ed. 556.

Zonotrichia gambelii, Baird, Gen. Rep. IX, 460.

Abundant, being found in the most arid parts of the country during the fall, at which time they are migrating southward. I have procured this bird in very young plumage in the month of July near San Francisco, showing thereby that it sometimes breeds in California. It was our almost constant companion during the survey under Lieutenant Parke, through Mexico, New Mexico, and in Texas.

ZONOTRICHIA CORONATA, Pallas.—Black and Yellow-crowned Finch.

Fringilla atricapilla, Aud. B. of A. Oct. vol. III, p. 162, pl. 193.

Emberiza atricapilla, Aud. B. of A. Fol. pl. 394, fig. 3.—Gmel. Syst. Nat. vol. I, part II, p. 875.

Zonotrichia coronata, Baird, Gen. Rep. IX, 461.

This species appears abundant in the fall season, being generally associated with the white-crowned finch and the California song sparrow. Resorting to the deep shady thickets and woods, where it passes the greater part of the time, and in the mountainous districts, it prefers the hill sides covered with dense undergrowth. It occasionally breeds in California. I found its nest in a bush near Sacramento City. It was composed of coarse stalks of weeds, and lined internally with fine roots. The eggs, four in number, are ashy white, marked with lines of brown umber, sometimes appearing black from the depth of their shades, and covered also with a few neutral tint spots.

CHONDESTES GRAMMACA, Say.—Prairie Lark Finch.

Emberiza grammaca, Aud. B. of A. Oct. vol. III, p. 63, pl. 158.

Fringilla grammaca, Bonap. Am. Orn. vol. I, p. 47, pl. V, fig. 3.—Long's Exp. to Rocky Mts. vol. I, p. 139.

This species is numerous in California, in New Mexico, and in Texas. Arriving in this latter country in May, I found this bird mated and about to commence the duties of incubation.

SPIZELLA SOCIALIS, Wilson.—Chipping Sparrow.

Fringilla socialis, Wils. Am. Orn. vol. II, p. 127, pl. 16, fig. 3.—Nutt. Orn. vol. I, p. 497.—Aud. B. of A. Fol. pl. 104.

Emberiza socialis, Aud. Oct. vol. III, p. 80, pl. 165.

Abundant.

SPIZELLA PALLIDA, Swains.—Clay-colored Sparrow.

Emberiza pallida, Rich. & Sw. Fau. Bor. Am. vol. II, p. 251.—Aud. B. of A. Oct. vol. III, p. 71, pl. 161.—Fol. pl. 398, fig. 2.

These birds we met with throughout our entire route in California and Texas. On the passage from the Pimos villages to Tucson, we noticed large flocks gleaning their food among the bushes, as they travelled south. In Tejon valley, during the fall season, we constantly saw them associated with large flocks of sparrows, congregated about the Indian cultivated fields, where they find a bountiful supply of seed and grain, passing, like the rest of the *Fringillidae*, the greater portion of their time on the ground for this purpose.

PASSERCULUS SAVANNA, Wils.—Savanna Finch.

Fringilla savana, WILS. Am. Orn. vol. IV, p. 72, pl. 34, fig. 4.—NUTT. Orn. vol. I, p. 489.—AUD. B. of A. Fol. pl. 109.
Emberiza savana, AUD. Oct. vol. III, p. 68, pl. 160.

Abundant.

PASSERCULUS ALAUDINUS, Bonap.

Passerculus alaudinus, BONAP. Comptes Rend. vol. XXXVII, p. 918, Dec. 1853.

This bird I shot on the swampy borders of a pond near the barracks at Benicia. Its habits, from the limited observations afforded me, I deem the same as those of our sea side finch, (*Ammodramus maritimus*.) When flushed from its covert of rushes and rank grass it flew but a short distance and settled down, concealing itself so quickly that unless promptly shot while on the wing it could not be captured.

PEUCAEA LINCOLNII, Aud.—Lincoln's Finch.

Peucea lincolni, AUD. B. of A. Oct. vol. III, p. 116, pl. 177.
Fringilla lincolni, AUD. Fol. pl. 193.
Melospiza lincolni, BAIRD, Gen. Rep. IX, 482.

I have obtained this species not unfrequently both in northern California and the Tejon valley, and on all occasions found it in company with flocks of sparrows, composed of several different varieties.

COTURNICULUS PASSERINUS, Wils.—Yellow-winged Finch.

Emberiza passerina, AUD. B. of A. Oct. vol. III, p. 73, pl. 162.
Fringilla passerina, AUD. B. of A. Fol. pl. 130.—WILS. Am. Orn. vol. III, p. 76, pl. 24, fig. 5.

Abundant.

AMMODRAMUS RUFICEPS, Cassin.—Brown-headed Finch.

Ammodramus ruficeps, CASSIN, Ill. B. of Tex. and Cal. p. 135, pl. 20.—IB. Proceed. Ac. Nat. Sc. Phil. vol. VI, p. 184.
Peucea ruficeps, BAIRD, Gen. Rep. IX, 486.

In the fall of 1851 I shot, on the Cosumnes river, but one specimen of this bird, from among a large flock of sparrows, but in 1852, during the spring, in the mountains near the Calaveras river, I found it quite abundant. It flew then in pairs, picking grass seeds from the ground, and when started never extended its flight beyond a few yards. Its notes in character resemble the ditty of our chipping sparrow, (*Spizella socialis*.)

LINARIA PINUS, Wilson.—Pine Linnnet.

Linaria pinus, AUD. B. of A. Oct. vol. III, p. 125, pl. 180.
Fringilla pinus, AUD. Fol. pl. 180.—WILS. Am. Orn. vol. II, p. 133, pl. 17, fig. 1.—NUTT. Orn. vol. I, p. 511.
Carduelis pinus, DEKAY'S N. H. of N. Y. vol. I, p. 167, pl. 59, fig. 136.
Chrysomitris pinus, BAIRD, Gen. Rep. IX, 425.

Found in the mountainous districts during the winter season, feeding on the young buds of plants or extracting the seeds from the pine cone, to which it often hangs with its back downwards while thus occupied.

CARDUELIS TRISTIS, L i n n .—American Goldfinch.

Carduelis tristis, DEKAY'S N. Hist. N. Y. vol. I, p. 166, pl. 66, fig. 151.—AUD. B. of A. Oct. vol. III, p. 129, pl. 181.
Fringilla tristis, NUTT. ORN. vol. I, p. 507.
Chrysomitris tristis, BAIRD, Gen. Rep. IX, 421.

Abundant.

CARDUELIS LAWRENCII, C a s s i n .—Lawrence's Goldfinch.

Carduelis lawrencii, CASSIN, Proc. Ac. N. Sc. Phil. vol. V, p. 105, pl. 5.

These birds are very abundant throughout the northern mining regions of California, frequenting the hill sides covered with brush, the seeds and buds of which they seek with great avidity. Later in the season I found them near San Diego, in quest of grass seeds on the level plains, in large flocks and so closely packed that I have shot thirteen at one discharge of my gun as they were about alighting on the ground. Their nest, built in the forks of a bush or stunted oak, is composed of fine grasses lined with hair and feathers, and contains four or five pure white eggs.

CARDUELIS PSALTRIA, S a y .—Arkansas Goldfinch.

Carduelis psaltria, AUD. B. of A. Oct. vol. III, p. 134, pl. 183.
Fringilla psaltria, AUD. Fol. pl. 400, fig. 1.—SAY, Long's Ex. to Rky. Mts. vol. II, p. 40.—NUTT. ORN. vol. I, p. 510.—
 BONAP. Am. ORN. vol. I, p. 54, pl. 6, fig. 3.
Chrysomitris psaltria, BAIRD, Gen. Rep. IX, 422.

Abundant, frequenting and feeding in the same localities as the preceding species, and often associated with the pine finch, (*Linaria pinus*.) While thus associated, I shot, on one occasion, some sixty or seventy of both species, which appeared at the time to be picking the fine gravel mixed in with the mud used as mortar in a chimney recently constructed by a party of miners. At each discharge of the gun they would fly away, returning, however, in a few minutes to the same spot whence they had been driven.

CARPODACUS PURPUREUS, G m e l .—Purple Finch.

Fringilla purpurea, WILS. Am. ORN. vol. I, p. 119, pl. 7, fig. 4.—NUTT. ORN. vol. I, p. 529.—AUD. B. of A. Fol. pl. 4.
Erythrospiza purpurea, AUD. Oct. vol. III, p. 170, pl. 196.
Carpodacus californicus, BAIRD, Gen. Rep. IX, 413.

I met with but a small flock of these birds in the mountains on the Calaveras river.

CARPODACUS FAMILIARIS, M c C a l l .—Domestic Purple Finch.

Carpodacus familiaris, MCCALL, Proc. Ac. N. Sc. Phil. vol. VI, p. 61.—CASSIN'S B. of Tex. and Cal. p. 73, pl. 13.
Erythrospiza frontalis, HEERMANN, Journ. Ac. N. Sc. Phil. vol. I, 2d series, p. 53.
Carpodacus frontalis, BAIRD, Gen. Rep. IX, 415.

This beautiful and abundant species is found throughout the whole extent of California Sonora, and New Mexico, collecting in large flocks during the winter season and wandering over the country. Its food consists principally of the young buds of trees and bushes. Resorting in the spring of the year to the habitations of man, it forms its nest under the eaves of the

houses. At other times it chooses for the purposes of nidification the cactus plants, a deserted woodpecker's hole, or the branch of a small tree. According to the locality chosen, the nest is composed of different substances, but is generally made externally of coarse grass or weeds, and lined with hair or fine roots. The eggs, from four to six in number, are pale blue, marked with spots and lines of black.

COCCOBORUS CAERULEUS, Linn.—Blue Grosbeak.

Coccyborus caeruleus, DEKAY'S N. H. of N. Y. part I, p. 145, pl. 64, fig. 146.—AUD. B. of A. Oct. vol. III, p. 204, pl. 204.
Fringilla caerulea, AUD. Fol. pl. 122.—NUTT. ORN. vol. I, p. 529.

This bird is quite abundant in Lower California, whither it migrates from the north in the fall season. Specimens of both old and young were procured there late in the summer.

COCCOBORUS MELANOCEPHALUS, Swainson.—Black-headed Grosbeak.

Coccyborus melanocephalus, AUD. B. of A. Oct. vol. III, p. 214, pl. 206.
Fringilla maculata, AUD. B. of A. Fol. pl. 373, figs. 2, 3 & 4.
Fringilla melanocephala, AUD. ORN. Biog. vol. IV, p. 519.

Abundant and migratory. During spring we saw these birds in Sacramento valley and in the mountainous districts, feeding on the buds of young plants, and in September we saw numbers of the young plumaged birds in Tejon valley. Its song, clear and musical, resembles very much that of our robin, (*Turdus migratorius*.) The nest, formed with little care, of twigs very loosely thrown together and lined with roots, is placed on the branches of a bush. The eggs, four in number, are greenish blue, marked with irregular spots of umber brown varying in intensity of shade.

PIPILO MEGALONYX, Baird.

Pipilo megalonyx, BAIRD, Gen. Rep. IX, 515.

Very abundant in the valleys and mountains of California, where, retiring to the close sheltered thickets, it passes its time in pursuit of insects. When disturbed in its avocations it utters a note of alarm, and flying low passes from bush to bush, concealing itself with great facility. The nest, made on the ground, is composed externally of oak leaves and coarse weed stalks, the lining being of fine grasses and roots. The eggs, numbering from four to five, are of a faint greenish white, minutely dotted with reddish brown spots.

PIPILO FUSCA, Swains.—Cañon Finch.

Pipilo fusca, SWAINS. Philos. Mag. 1827, p. 434.—CASSIN, B. of Cal. & Tex. p. 124, pl. 17.

Abundant and a resident of the country, as it is found at all seasons of the year. It prefers the heavy growth of trees and shrubbery, on the borders of streams, building its nest in a bush or grape vine at some height from the earth, differing in this latter respect from the other American species with whose nidification we are acquainted and which always place their nests on the ground. The nest is of coarse twigs and grass and lined with fine roots. The eggs are four and of a pale blue, dashed with black spots and a few neutral tint blotches, forming a crown at the larger end. These eggs differ entirely from those of the other known species of the same genus, while they so resemble those of the different species of blackbirds as to be confounded with them, unless marked when taken from the nest.

PYRANGA LUDOVICIANA, Wils.—Louisiana Tanager.

Pyranga ludoviciana, AUD. B. of A. Oct. vol. III, p. 231, pl. 210.

Tunagra ludoviciana, AUD. B. of A. Fol. pl. 400, fig. 3.—WILS. Am. Orn. vol. III, p. 27, pl. 20, fig. 1.—NUTT. Orn. vol. I, p. 471.

Occasionally seen on our late survey, frequenting the dense shady woods, uttering now and then its loud and mellow note as it sat perched amid the heavy foliage of the oak. During the month of August a fine male specimen was captured on Posa creek, in the act of eating the fruit of the elder bush, which at the same time was bearing blossoms, green and ripe fruit. Several specimens in young plumage were procured in September, while encamped at Tejon valley.

YPHANTES BULLOCKII, Swains.—Bullock's Oriole.

Xanthornus bullockii, SWAINSON, Philos. Mag. June, 1826, p. 436.

Icterus bullockii, AUD. B. of A. Oct. vol. IV, p. 43, pl. 218.—BAIRD, Gen. Rep. IX, 549.

Abundant and migratory, breeding in numbers in Sacramento valley, and also in the southern country. Its note, consisting in a clear mellow whistle varying in cadence, is repeated at intervals, and is of the same character as that of our Baltimore oriole, (*Yphantès baltimore.*) The nest, pendant from the branch of a tree, is composed of varied materials, such as rags, tow, cotton, strings, &c., when made in the neighborhood of civilization where these luxuries are obtainable; but in the large open plains of California I have often seen it swung to the branches of the oak and composed entirely of flexible grasses. The eggs, four to six in number, are ashy white, veined at the larger end with numerous lines of black and reddish umber.

MOLOTHRUS PECORIS, Gmel.—Common Cowbird.

Molothrus pecoris, RICH. & SW. F. BOR. Am. vol. II, p. 277.—AUD. B. of A. Oct. vol. IV, p. 16, pl. 212.—BAIRD, Gen. Rep. IX, 524.

Icterus pecoris, AUD. B. of A. Fol. pl. 424, fig. 4.—NUTT. Orn. vol. I, p. 178.

Abundant. I remarked a flock of these birds as far south as Fort Yuma, and also in New Mexico and Texas.

AGELAIUS XANTHOCEPHALUS, Bonap.—Saffron-headed Blackbird.

Agelaius xanthocephalus, RICH. & SW. F. BOR. Am. vol. II, p. 281.—AUD. B. of A. Oct. vol. IV, p. 24, pl. 213.

Icterus icterocephalus, BONAP. Am. ORN. vol. I, p. 27, pl. 3, figs. 1 and 2.—NUTT. Orn. vol. I, p. 176.

Xanthocephalus icterocephalus, BAIRD, Gen. Rep. IX, 531.

Abundant and found in the fall mingling among the flocks of other species of *Agelaius*, which collect by thousands at that period. On the approach of spring they separate into comparatively small bands, and scatter over the plains and marshes in search of food. In May they resort to the large marshy districts in the valleys, where they incubate. While on the wing over the marshes to and from their nests the male birds emit their notes, (consisting of a curious medley of sounds as though produced by strongly striking together pieces of metal or glass,) and continue them for some time after alighting. The nest is attached to the upright stalks of the reeds, and finally fixed by being wove around them by flexible grasses. It differs from the nidification of the other two California species, no mud entering into its composition. This can easily be accounted for by the fact that the nest, suspended in mid-air to the stalks of the reed,

must be built of the lightest material, so as not to be prostrated by the strong winds which sometimes prevail in that section of the country. The eggs, four in number, are pale ashy green, thickly covered and minutely dotted with points and spots of light umber brown. The egg of this species forms a remarkable exception to the rest of its genus, its coloring and markings resembling those of our towhee bunting, (*Pipilo erythrophthalmus*.) While passing a few days at Fort Inge, Texas, I was much astonished one day to find the parade ground, the horse and cattle yards, covered with immense flocks of these birds, having remarked but a few stray ones previous to this period. One of the officers informed me of a like occurrence the year before, and that they then had disappeared as suddenly as they came.

AGELAIUS TRICOLOR, Aud.—Red and White-winged Blackbird.

Agelaius tricolor, AUD. B. of A. Oct. vol. IV, p. 27, pl. 214.—BAIRD, Gen. Rep. IX, 530.

Abundant. During the winter of 1852, while hunting in the marshes of Suisun valley, I have often, on hearing a dull, rushing, roaring noise, looked upwards and found it was produced by a single flock of these birds, numbering so many thousands as to darken the sky for some distance by their masses. In the northern part of California I found a breeding place of this species occupying several acres covered with elder bushes and willow, and in the immediate vicinity of water. I was led to this retreat by following the direction taken by many small flocks on their return from the surrounding country over which they scattered for miles in quest of food for their young. The nests, often four or five on the same bush, were composed of mud and straw and lined with fine grasses. The eggs are light blue, marked with lines and spots of dark umber and a few light purple dashes. I fell in with several other breeding places at different times, but, though situated in the same kind of locality as the above one, they were abandoned; thus rendering it probable that every year different grounds are resorted to for the purposes of incubation.

AGELAIUS GUBERNATOR, Wagler.—Red and Black-winged Blackbird.

Agelaius gubernator, AUD. B. of A. Oct. vol. IV, p. 29, pl. 215.—BAIRD, Gen. Rep. IX, 529.

Abundant, and found in the fall season associating with the two preceding species. Its nest is built in the willow bushes and tussocks of grass, above the level of the water, in the marshes, and but a few pairs together, differing in this respect from the preceding species, which prefers dry situations near water, and congregates by thousands while breeding. The nest is composed of mud and roots, and lined with fine grasses. The eggs, four in number, are pale blue, dashed with spots and lines of black.

SCOLECOPHAGUS CYANOCEPHALUS, Wagler.—Mexican Grackle.

Scolecophagus mexicanus, SWAINS. Two Cent. and a Quart.

Quiscalus brewerii, AUD. B. of A. Oct. vol. VII, p. 345, pl. 492.

Scolecophagus cyanocephalus, BAIRD, Gen. Rep. IX, 552.

This abundant and beautiful species is scattered over the whole surface of California, and is also very common in New Mexico and Texas, though not a resident of the two last, leaving before the season of incubation. During the fall it frequents the cattle yards and outskirts of towns, where it obtains a plentiful supply of food. It appears very familiar, alighting on the houses and in the streets, having but little cause of fear from man. Its note, before taking

wing, is a soft, clear whistle, but when congregated in spring on the trees, according to their usual custom previous to migrating north, they keep up a continual chattering for hours at a time, as though revelling in an exuberance of spirits, ceasing occasionally only to recommence with renewed vigor and delight. Some few pairs breed in the oaks on the sand hills around San Francisco, though, while on entering the thickets where their nests were built, the parent birds gave every sign of anxiety and alarm, I had not the good fortune to discover a single one, so well were they concealed.

STURNELLA NEGLECTA, A u d.—Missouri Meadow Lark.

Sturnella neglecta, AUD. B. of A. Oct. vol. VII, p. 339, pl. 489.—BAIRD, Gen. Rep. IX, 537.

Abundant, frequenting the prairie lands where, in the fall, they collect in large flocks. The nest of this species, placed on the ground, is composed of fine grasses, and contains from four to five eggs of a pure white, marked with deep reddish brown spots and blotches.

CORVUS CORAX, L i n n.—Raven.

Corvus corax, AUD. B. of A. Oct. vol. IV, p. 78, pl. 224.—IB. B. of A. Fol. pl. 101.—WILS. Am. Orn. vol. IX, p. 113, pl. 75, fig. 3.—RICH. & SW. F. Bor. Am. vol. II, p. 290.

Corvus carnivorus, BAIRD, Gen. Rep. IX, 560.

This bird appears to inhabit the whole of our northern continent, and was our almost constant companion during the late surveys. Whenever we were about breaking up camp, even in the most arid regions, it was to be seen sailing around and waiting our departure to alight and snatch from the ground what few particles of food might have been left or thrown away. Lagging at times behind our train in pursuit of game, I have seen these birds follow our trail for miles on the road to pick up the grains of corn which would fall through the cracks of the wagons. In California I found its nest placed high on the bold, precipitous, rocky, cliffs, secure against all danger; but in the vast desolate plains of New Mexico it builds on low trees, and I saw two nests on cactus plants, at less than three feet from the ground, showing how much localities or circumstances will influence the habits of birds regarding incubation. It is very familiar in the neighborhood of slaughter houses and ranches, where it is rarely disturbed, its services as scavenger being considered an equivalent to the robbery it occasionally commits, when hard pressed for food, of some hapless young chicken.

CORVUS AMERICANUS, A u d.—American Crow.

Corvus americanus, AUD. B. of A. Oct. vol. IV, p. 87, pl. 225.

Corvus corone, WILS. Am. Orn. vol. IV, p. 79, pl. 35, fig. 3.—RICH. & SW. F. Bor. Am. vol. II, p. 291.—NUTT. Orn. vol. I, p. 209.

Abundant.

PICA NUTTALLII, A u d.—Nuttall's Yellow-billed Magpie.

Pica nuttalli, AUD. B. of A. Oct. vol. IV, p. 104, pl. 228.—BAIRD, Gen. Rep. IX, 578.

Corvus nuttalli, AUD. B. of A. Fol. pl. 362, fig. 1.

This bird appears to inhabit the western slope of the Sierra Nevada mountains, being found abundantly in California and Oregon, associating with the crows and ravens in the fall. Noisy and restless, it flies from tree to tree, calling its companions by a loud chattering note, and if once alarmed is not apt to figure as a specimen in the naturalist's collection, as it possesses all

the cunning and vigilance of the crow. The nest, built in an oak, often in the vicinity of some ranch, is composed of a mass of coarse twigs, forming a sphere with a small lateral aperture, the interior being lined with fine roots.

CYANURA STELLERI, Gmelin.—Steller Jay.

Corvus stellerii, Gmel. Syst. Nat. vol. I, p. 370.—Nutt. Orn. vol. I, p. 229.—Aud. B. of A. Fol. pl. 362, fig. 2.
Garrulus stelleri, Aud. Oct. vol. IV, p. 107, pl. 230.
Cyanura stelleri, Baird, Gen. Report IX, 581.

Abundant, and resident in the mountainous districts, and as far south as Warner's Rancho, where, though common, they were so wild and vigilant as not to be easily procured. They resort to the forests of pine and oak which cover the mountain sides, where, flying restlessly from tree to tree, and alighting on the lower branches, they proceed to ascend by hopping from twig to twig to the topmost point, procuring thus a plentiful supply of acorns or of the seeds of the pine. While thus employed they emit a harsh, screaming note that can be heard at a considerable distance.

CYANOCITTA CALIFORNICA, Vigors.—California Jay.

Garrulus californicus, Vigors, Beechy's Voyage, Zool. p. 21, pl. 5.
Cyanocitta californica, Baird, Gen. Rep. IX, 584.
Corvus ultramarinus, Aud. B. of A. Oct. vol. IV, p. 115, pl. 232, fig. 3.

Frequenting not only the same districts as the preceding species, but abundantly found throughout the valleys. Noisy, alert, and cunning in its habits, wild and wary, it still often seeks the habitations of man, near which to rear its young; being drawn thither by the abundance of food found in such localities. The nest, built in a thick-leaved bush or on the lower branches of an oak, at but little height from the ground, is made of twigs and lined with roots. The eggs, four in number, are emerald green, dotted profusely with umber brown spots.

LANIUS EXCUBITOROIDES, Swains.—American Grey Shrike.

Lanius excubitoroides, Rich. & Sw. F. Bor. Am. vol. II, p. 115, pl. 35.

Abundant.

VIREO SOLITARIUS, Vieill.—Solitary Vireo.

Vireo solitarius, Aud. B. of A. Oct. vol. IV, p. 144, pl. 239.

Abundant.

VIREO GILVUS, Vieill.—Warbling Vireo.

Vireo gilvus, Nutt. Orn. vol. I, p. 309.—Aud. B. of A. Oct. vol. IV, p. 149, pl. 241.
Muscicapa melodia, Wils. Am. Orn. vol. V, p. 85, pl. 42, fig. 2.

Abundant.

ICTERIA LONGICAUDA, Lawrence.—Western Chat.

Icteria longicauda, Lawrence, Ann. N. Y. Lyceum.—Baird, Gen. Rep. IX, 249.

Abundant.

AMPELIS CEDRORUM, Vieillot.—Cedar Bird.

Bombycilla carolinensis, BRISS. Orn. vol. II, p. 337.—AUD. B. of A. Oct. vol. IV, p. 169, pl. 246.—NUTT. Orn. vol. I, p. 243.

Bombycilla cedrorum, VIEILL, Ois. de l' Am. Sept. vol. I, p. 88, pl. 57.

Ampelis cedrorum, BAIRD, Gen. Rep. IX, 318.

I occasionally met with small flocks during the fall and winter.

SITTA ACULEATA, Cassin.—Western Nuthatch.

Sitta aculeata, CASSIN, Pr. A. N. Sc.—BAIRD, Gen. Rep. IX, 375.

Abundant.

TROCHILUS ANNA, Lesson.—Anna Humming Bird.

Trochilus anna, AUD. B. of A. Oct. vol. IV, p. 188, pl. 252.

Ornismya anna, LESSON, Hist. Nat. des Ois. Mou. p. 205, pl. 74.

Calliphlox anna, HEERMANN, Proceed. Ac. N. Sc. Phil. vol. III, p. 111.

Atthis anna, BAIRD, Gen. Rep. IX, 137.

Trochilus icterocephalus, NUTT, Orn. 2d edit. vol. I, p. 712.

In the month of March, 1851, I found this beautiful species quite common at San Diego, and it had at that early period assumed its full spring plumage. In September, 1852, I procured many specimens on a small island in the Cosumnes river, where grew abundantly several varieties of flowers, to which these diminutive birds resorted in great numbers. At that season many of the young males had but a few metallic feathers about the throat and the plumage of the adults had already lost that fire and brilliancy of coloring which it possesses in spring. While on the wing in pursuit of insects, or immediately after alighting on a small branch, they utter a very weak twitter or note, sometimes continued for a minute or more. The nest, placed in the forks of a bush or on the branch of an oak, is composed of fine mosses and lined with the down taken from the fruit of the willow. The eggs, of a pure white color, are two in number.

TROCHILUS ALEXANDRI, Bourcier & Mulsant.—Purple-throated Humming Bird.

Trochilus alexandri, B. & M. Annals of the Roy. Soc. of Phys. and Nat. Sc. Lyons, vol. IX, p. 330.—CASSIN's B. of Tex. and Cal. p. 141, pl. 22.—BAIRD, Gen. Rep. IX, 133.

On a trip to Sonora, Mexico, in the spring of 1851, I found for the first time this bird abounding in the arid country back of Guyamas. Here, amidst the most scanty vegetation, the cacti having predominance over all other, this little species, in the month of April, had constructed its nest. The same year, somewhat later, I found it among the flowers and bushes in the burial ground of Sacramento City, which locality had been chosen by several pairs for the purposes of incubation. I found it also on Dry creek and the Cosumnes river, and think that further researches will prove it to extend over a much larger range than we are aware of at present. The nest, beautifully constructed of fine mosses and lined with the down of various plants and seeds, contains two pure white eggs.

SELASPHORUS RUFUS, G m e l .—Nootka Sound Humming Bird.

Selasphorus rufus, GOULD'S Monog. of the Trochil. part III.—AUD. B. of A. Oct. vol. IV, p. 200, pl. 254.—BAIRD, Gen. Rep. IX, 134.

This diminutive species migrates to the higher northern latitudes, although some few pairs breed every year in the neighborhood of San Francisco, where I observed them during the whole summer, but was unable to discover their nests. I also noticed in this same locality the white-crowned finch (*Z. atricapilla*) and the chesnut-backed tit, (*Parus rufescens*), which birds I have seen breeding in no other part of the country, the masses migrating north, while probably these few stragglers, arriving late in the season, stop at this point. The cold sea winds, which blow strongly every afternoon during the summer at San Francisco, give to this locality very much the climate we might expect in higher latitudes.

CERYLE ALCYON, L i n n .—Belted Kingfisher.

Alcedo alcyon, AUD. B. of A. Oct. vol. IV, p. 205, pl. 255.—WILS. Am. Orn. vol. III, p. 59, pl. 23, fig. 1.—NUTT, Orn. vol. I, p. 594.

Ceryle alcyon, BAIRD, Gen. Rep. IX, 158.

Abundant on all the principal lakes and water courses.

PICUS HARRISII, Aud.—Harris' Woodpecker.

Picus harrisii, AUD. B. of A. Oct. vol. IV, p. 242, pl. 261.—BAIRD, Gen. Rep. IX, 87.

Occasionally observed during the survey, but a somewhat rare species, though procured in northern California and at Tejon Pass. Its clear trumpet-like notes, uttered as it climbs the trees, betrays its locality and it is then easily shot.

PICUS MERIDIONALIS, S w a i n s .—Little Georgian Woodpecker.

Picus meridionalis, RICH. & SW. F. Bor. Am. vol. II, p. 308.

Picus gairdnerii, AUD. B. of A. Oct. vol. IV, p. 252.

Neither common or especially rare. I obtained several specimens in the mountains of northern California.

PICUS NUTTALLI, G a m b .—Nuttall's Woodpecker.

Picus nuttalli, GAMBEL, Proceed. Ac. N. Sc. Phil. vol. I, p. 259. (1841.)

Picus scalaris, (Wagl.) GAMBEL, Jour. Ac. N. Sc. Phil. vol. I, 2d series, p. 55, pl. 9, figs. 2 & 3. (Not of Wagler.)

Occasionally found in the same localities as the preceding species, but much more abundant in the valleys.

PICUS SCALARIS, W a g l e r .—Barred Woodpecker.

Picus scalaris, WAGLER, Isis, 1829, p. 511.—BAIRD, Gen. Rep. IX, 94.

I procured this bird first at Vallecitta, but found it abounding in the woods about Fort Yuma. This species is new to the California fauna though frequently seen in Texas, several expeditions sent having collected it.

PICUS RUBER, G m e l .—Red-breasted Woodpecker.

Picus ruber, GM. Syst. Nat. vol. I, p. 429.—LATR. Ind. Orn. vol. I, p. 223.—AUD. B. of A. Oct. vol. IV, p. 261, pl. 266.

Sphyrapicus ruber, BAIRD, Gen. Rep. IX, 104.

This species is not rare in the mountains, and occasionally a stray one is met in the valleys. Their call note, similar to the cry of a child in pain, is peculiarly disagreeable. Their quick restless motions and untiring diligence in quest of food, as they pass around the branches and trunks of the forest trees, are like those of the rest of the family.

PICUS VARIUS, Linn.—Yellow-bellied Woodpecker.

Picus varius, WILS. Am. Orn. vol. I, p. 147, pl. 9, fig. 2.—AUD. B. of A. Oct. vol. IV, p. 263, pl. 267.—NUTT. Orn. vol. I, p. 574.

? *Sphyrapicus nuchalis*, BAIRD, Gen. Rep. IX, 103.

Though one of our commonest species on the eastern side of the continent, I now introduce it for the first time into the fauna of California, having procured it at Fort Yuma, where it is not rare.

PICUS THYROIDEUS, Cassin.—Black-breasted Woodpecker.

Picus thyroideus, CASSIN, Illust. B. of Tex. & Cal. p. 201, pl. 32.—IB. Proceed. Ac. N. Sc. Phil. vol. V, p. 349.

I procured this bird some three years since in the southern mines of California, where it frequents more especially the pine trees in search of food. I never saw it alight on the oak, though abundant in that locality.

CENTURUS UROPYGIALIS, Baird.—Gila Woodpecker.

Centurus uropygialis, BAIRD, Acad. Nat. Sc. Phil. vol. VII, p. 120.—IB. Gen. Rep. IX, 111.

It was with great pleasure that I found this bird in considerable numbers on the Colorado, and am able to add another brilliant species to the fauna of California. Its ordinary notes resemble those of our red-headed woodpecker, (*Picus erythrocephalus*,) but it varies them often to a soft plaintive cry, as if hurt or wounded. I found, on dissection, their stomachs filled with the white gelatinous berry of a parasite plant. This plant grows abundantly on the mezquite trees, and its fruit forms the principal food of many species of birds during the fall.

MELANERPES TORQUATUS, Wils.—Lewis' Woodpecker.

Picus torquatus, WILS. Am. Orn. vol. III, p. 31, pl. 20, fig. 3.—AUD. B. of A. Oct. vol. IV, p. 280, pl. 272.—NUTT. Orn. vol. I, p. 577.

Melanerpes torquatus, BAIRD, Gen. Rep. IX, 115.

This large and abundant species extends all over California, being found in considerable numbers in the mountains as far south as Tejon Pass. They appear of a gay and sociable disposition, occasionally darting in the air in pursuit of insects, or chasing each other in playful mood while on the wing. Their note is a feeble, oft-repeated twitter, continued while flying and when about to alight. On alighting they gently open their wings, moving them tremulously for some time, and more especially so if in company.

MELANERPES FORMICIVORUS, Swains.—Ant-eating Woodpecker.

Melanerpes formicivorus, CASSIN'S B. of Cal. & Tex. p. 7, pl. 2.—BAIRD, Gen. Rep. IX, 114.

Picus formicivorus, SWAINS. Taylor's Phil. Mag. 1827, p. 439.

These gay plumaged birds, residents of California, are found in every portion of the country. Like the *Melanerpes torquatus*, they appear to be gay and sociable, collecting at times (a dozen or more) on the topmost limbs of some decayed monarch of the forest, whence they dart suddenly in the air in pursuit of insects, to return again to their elevated position, soon to repeat the

same manœuvre. When gathered in numbers their loud and querulous notes are heard at all hours of the day, as they are among the noisiest and most clamorous birds of this family. In the fall this species has the curious and peculiar habit of laying up provision against the inclement season. Small round holes are dug in the bark of the pine and oak, into each one of which is inserted an acorn, and so tightly is it fitted or driven in that it is with difficulty extracted. The bark of the pine trees, when thus filled, presents at a short distance the appearance of being studded with brass-headed nails. Stowed away in large quantities in this manner, the acorns not only supply the wants of the woodpecker, but the squirrels, mice, and jays avail themselves likewise of the fruits of its provident labor. The nest is hollowed out from the body of a tree or of some decayed branch, and varies from six inches to two feet in depth. The eggs, four or five in number, of a pure white, are placed at the bottom of this cavity, resting on the soft bed of dust and fine chips which have there fallen during the labor of excavation.

MELANERPES ALBOLARVATUS, Cassin.

Melanerpes albolarvatus, CASSIN, Journ. Ac. N. Sc. Phil. new series, vol. II, p. 257, pl. 22.

Picus albolarvatus, BAIRD, Gen. Rep. IX, 96.

Mr. Bell, of New York, first discovered this species in the vicinity of Sutter's mills, on the American river. It frequented the higher branches of the pines, keeping almost out of gunshot range. Active and restless in its movements, it utters at intervals its sharp and clear note as it pursues its avocations.

COLAPTES MEXICANUS, Swains.—Orange-shafted Woodpecker.

Colaptes mexicanus, Sw. Synop. of B. of Mexico, Philos. Mag. 1827, p. 440.—RICH. & Sw. F. Bor. Am. vol. II, p. 815.

Picus mexicanus, AUD. B. of A. Oct. vol. IV, p. 290, pl. 274.

Colaptes collaris, VIGORS, Zool. of Beechey's Voyage, p. 24, pl. 9.

Abundant, having procured specimens not only in California but also in the Rocky mountains, New Mexico, and Texas. Its habits are those of our golden-winged woodpecker, (*Colaptes auratus*.) It passes much of its time on the ground, carrying havoc among the ant-hills spread over all the dry portions of the country, occasionally varying its fare with such berries and wild fruits as there abound.

COLAPTES AYRESII, Aud.—Red-moustached Woodpecker.

Picus ayresii, AUD. B. of A. Oct. vol. VII, p. 318, pl. 494.

Rare, having met with but two specimens in the mountains bordering the Cosumnes river.

GEOCOGCYX MEXICANUS, Gmel.—Chaparral Cock.

Geococcyx variegata, WAGLER, Isis, 1831, p. 524.

Saurothera marginata, KAUP, Isis, 1832, p. 991.

Saurothera bottae, BLAINVILLE, Less. Traité d'Orn. vol. I, p. 145.

Phasianus mexicanus, GMEL. Syst. Nat. vol. I, part II, p. 741.

Geococcyx californianus, BAIRD, Gen. Rep. IX, 73.

We found this bird throughout California, frequenting at times the most arid portions of the country. It often crossed our path, or ran before us for a short distance on the road, dashing, when alarmed, immediately into the chaparral, where, swift of foot, it easily evaded pursuit. It

may, however, be overtaken when followed on horseback over the vast open plains where no friendly bush offers the weary bird a shelter. When closely chased, if on an elevated point, it will sometimes fly, but always sailing downward. I once saw one captured by a couple of dogs, their appetites whetted by recent success in overtaking and bringing down a coyote or prairie wolf. Hotly pressed, the bird would gain upon his enemies while sailing down the mountain slope, but taking to his feet on the first ascent, this advantage was again soon lost, and the fugitive, worn out, fell at length a victim to their relentless determination.

The stomachs of the birds I examined were filled with the grasshopper and large black beetles found on the plains. The nest, laid on the branches of the cactus, is formed of a few loose sticks thrown negligently together in the same manner as that of our yellow-billed cuckoo, (*Coccyzus americanus*.) It contains two large, nearly spherical white eggs. I have not witnessed the following feat, but am assured by many old Californians that this bird, on perceiving the rattlesnake coiled up asleep, basking in the sun, will collect the cactus and hedge him around with a circle, out of which the reptile, unable to escape, and enraged by the prickly points opposing him on every side, strikes himself and dies from the effects of his self-inoculated venom. This bird is common in western Texas and on the Rio Grande.

ECTOPISTES CAROLINENSIS, L i n n.—Carolina Turtle-dove.

Ectopistes carolinensis, DEKAY, N. H. of N. Y. part I, p. 197, pl. 74, fig. 166.—AUD. B. of A. Oct. vol. V, p. 36, pl. 286.
Columba carolinensis, NUTT. Orn. vol. I, p. 626.—WILS. Am. Orn. vol. V, p. 1, pl. 43.
Zenaidura carolinensis, BAIRD, Gen. Rep. IX.

Abundant.

CALLIPEPLA CALIFORNICA, L a t h.—California Partridge.

Callipepla californica, GOULD'S Odontophorinae.
Ortyx californica, AUD. B. A. Oct. vol. V, p. 67, pl. 290.
Perdrix de la californie, ATLAS, Voyage de la Perouse, pl. 36.

This very numerous and beautiful species is found in California as far south as Vallecita, where commences the desert extending to the Colorado, and which forms an impassable barrier between it and its closely allied species, Gambel's partridge, (*Callipepla gambelii*.) When flushed from the ground it immediately flies to the trees, if in a wooded country, squatting so closely lengthwise on a branch that it is rarely seen and procured while thus hidden. It does not lay to the dog, but runs until so hotly pursued as to be forced to fly. It is easily tamed, and is often domesticated in California with poultry. Two years since, a gentleman having imported a large number, attempted to introduce this species on Long Island as a game bird. Unfortunately, after the first breeding season, they were all brought by the gunners to the New York market. The nest, made in the open field or at the foot of a bush, is composed of loose grasses, arranged without much care. The eggs, twelve or sixteen in number, are yellowish or grayish white, spotted and dashed with dark brown or burnt umber.

CALLIPEPLA GAMBELII, N u t t.—Gambel's Partridge.

Callipepla gambelii, GOULD'S Odontophorinae.—CASSIN'S Ill. B. of Cal. and Tex. p. 45, pl. 9.
Lophortyx gambelii, NUTT. Proc. A. N. Sc. Phil. vol. I, p. 260.—BAIRD, Gen. Rep. IX, 645.

I first discovered this beautiful species in California on the Mohave desert, at the point where the Mohave river empties into a large salt lake forming its terminus. The first intimation of

their probable vicinity was given by large quantities of their feathers strewed on the ground in the neighborhood of some deserted Indian huts. The single flock I met with, however, was so wild that it could not be approached. Later I observed them on the Big Lagoon of New river, which they had probably reached by following the river banks at the time of the overflow of the Colorado. At Fort Yuma they were quite abundant, congregating in large coveys, frequenting the thick underwood in the vicinity of the mesquite trees. I found, on dissection, their stomachs filled with the mesquite bean, a few grass seeds, and the berry of a parasite plant growing here in great quantities, and affording at certain seasons a dainty meal to the deer, who seek it with great avidity. On being suddenly flushed these birds separate very widely, but immediately upon alighting commence their call note, resembling the soft chirp of a young chicken. This note is kept up for some time, each individual fowl seeming to vie with the others in repeating it. The alarm past and the flock once more reunited, they relapse into silence, only broken by the occasional cluck of the male bird. Once scattered, unless closely marked, they are not readily started again, as they hug or lie close in their thick, bushy, and impenetrable coverts. Dr. Milhau, U. S. A., then stationed at Fort Yuma, informed me that in spring the Indians catch them in snares and bring them in numbers for sale.

CALLIPEPLA PICTA, D o u g l a s s.—Plumed Partridge.

Callipepla picta, GOULD'S Odontophorinae.

Ortyx plumifera, (GOULD,) AUD. B. of A. Oct. vol. V, p. 69, pl. 391.

Known by the miners and hunters of California as the mountain quail, from the localities which it prefers. They are wild and difficult to procure, flying and scattering at the least symptom of danger, and recalling each other together with a note expressive of great solicitude, which much resembles that of the hen turkey gathering her brood around her. During the survey I observed them only once, and then but for a few minutes, as we passed through a deep cañon leading down to Elizabeth lake. Our hunters saw them on the mountains surrounding Tejon valley, but though I went several times in search of them I procured none.

TETRAO O B S C U R U S, S a y.—Dusky Grouse.

Tetrao obscurus, SAY, LONG'S EX. to Rky. Mts. vol. II, p. 14.—BONAP. Am. Orn. vol. III, p. 27, pl. 18.—NUTT. Orn. vol. I, p. 666.—AUD. B. of A. Oct. vol. V, p. 89, pl. 295.—BAIRD, Gen. Rep. 620.

Abundant in the pine regions of California and Oregon. I have never met with this species, though I have often heard of it as one of the game birds most frequently brought into the markets of the small mining towns of northern California.

GALLINULA GALEATA, L i c h t.—Florida Gallinule.

Gallinula galeata, NUTT. Orn. vol. II, p. 223.—BONAP. Am. Orn. vol. IV, p. 128, pl. 27, fig. 1.

Gallinula chloropus, AUD. B. of A. Oct. vol. V, p. 132, pl. 304.

Found in the marshy valley districts, where it is not a rare bird. I procured several at Elizabeth lake, associated with the American coot, (*Fulica americana*,) both of which species were swimming in search of food among the reeds on its borders.

FULICA AMERICANA, G m e l.—American Coot.

Fulica americana, AUD. B. of A. Oct. vol. V, p. 138, pl. 305.—NUTT. Orn. vol. II, p. 229.

Fulica atra, WILS. Am. Orn. vol. IX, p. 61, pl. 63, fig. 1.

Plentiful, being found on all the small lakes and ponds which checker the plains of California. In the month of December we met with large numbers of these birds on the lakes of Warner's

Ranch. They incubate in the country, as their eggs were obtained in Sacramento valley during the month of May.

RALLUS VIRGINIANUS, Linn.—Virginia Rail.

Rallus virginianus, AUD. B. of A. Oct. vol. V, p. 174, pl. 311.—WILS. Am. Orn. vol. VII, p. 109, pl. 62, fig. 1.—NUTT. Orn. vol. II, p. 205.

I obtained this bird within a few miles of Sacramento City, but am unable to say whether it is a common species, so rarely does it show itself, even in localities where it may be in numbers. All the birds of this genus, being averse to take wing, run with remarkable swiftness, and are soon lost to the hunter, the compressibility of their bodies enabling them to slide with great ease through the dense masses of reeds which form their usual haunts.

RALLUS ELEGANS, Aud.—Red-breasted Rail.

Rallus elegans, AUD. B. of A. Oct. vol. V. p. 160, pl. 309.—DEKAY, N. H. of N. Y. part I, p. 260, pl. 99, fig. 221.

Abundant, having seen it on several occasions in different parts of California, and also exposed for sale in the San Francisco market. While hunting in the marshes of Suisun valley, I started a specimen of *Rallus* much smaller than the present one, but was unable to determine the species, as, (being embarrassed at the time with a load of fifteen geese killed shortly before,) it alighted before I could shoot.

GRUS CANADENSIS, Temminck.—Sand Hill Crane.

Grus canadensis, RICH. & SW. F. Bor. Am. vol. II, p. 373.—NUTT, Orn. vol. II, p. 38.—BAIRD, Gen. Rep. 655.
Grus americana, AUD. B. of A. Oct. vol. V, pl. 314.

These fine birds make their appearance in California in the fall in large flocks, coming from the north to spend the winter under a more genial clime. When migrating, they follow each other in a line, giving vent the while to a loud but not unmusical rattle. In the spring I have observed large flocks start from the ground, sail around in extensive circles, gradually rising to a great height, when the signal being sounded by one or more of the leaders they would at once fall into line and commence their migrations back to the northern regions for the purposes of incubation. While in California it frequents the plains and marshes, but being wild and very vigilant is difficult of approach. Among the many thousands I have seen both in spring and fall, I have never yet discovered the white whooping crane, (*Grus americana*) In the early settlement of California by Americans, when turkeys were yet scarce, I have known a sand hill crane to command from sixteen to twenty dollars in the San Francisco market for the purpose of replacing, on the Christmas dinner table, that almost indispensable feature of this particular festival.

IBIS MEXICANUS, Gmel.—Mexican Ibis.

Ibis chalconoptera, TEMM, Pl. Col. pl. 511.
Tantalus mexicanus, GMEL, Syst. Nat. vol. I, part II, p. 652.
Ibis ordii, BAIRD, Gen. Rep. IX, 685.

Abundant. Found in small flocks during the winter, which separate in pairs towards spring. It incubates in the country, selecting to that effect the most retired portions of the marshes in the large valleys. I have killed the young still retaining the down on the head but never discovered the nest. Its habits are very similar to those of the curlew, probing the ground and

searching in the mud of the sloughs and ponds for its food, which consists of small shells, worms, and even fish. It is often exposed for sale in the California markets.

ARDEA HERODIAS, L i n n.—Great Blue Heron.

Ardea herodias, WILS. Am. Orn. vol. VIII, pl. 65, fig. 2.—AUD. B. of A. Oct. vol. VI, p. 122, pl. 369.—NUTT. Orn. vol. II, p. 42.

Abundant on all the large water courses and lakes.

ARDEA VIRESCENS, L i n n.—Green Heron.

Ardea virescens, AUD. B. of A. Oct. vol. VI, p. 105, pl. 367.—WILS. Am. Orn. vol. VII, p. 97, pl. 61, fig. 1.—NUTT. Orn. vol. II, p. 63.

Butorides virescens, BAIRD, Gen. Rep. IX, 676.

Abundant.

ARDEA EGRETTEA, G m e l i n.—Great American Egret.

Ardea egretta, AUD. B. of A. Oct. vol. VI, p. 132, pl. 370.—WILS. Am. Orn. vol. VII, p. 106, pl. 61, fig. 4.—NUTT. Orn. vol. II, p. 47.

Herodias egretta, BAIRD, Gen. Rep. IX, 666.

They breed in large numbers, associated with other species, on the edges of sloughs and marshes.

ARDEA CANDIDISSIMA, G m e l.—Snowy Heron.

Ardea candidissima, WILS. Am. Orn. vol. VII, p. 120, pl. 62, fig. 4.—AUD. B. of A. Oct. vol. VI, p. 163, pl. 374.—NUTT. Orn. vol. II, p. 49.—GMEL. Syst. Nat. vol. I, part II, p. 633.

Garzetta candidissima, BAIRD, Gen. Rep. IX, 665.

Abundant.

BOTAURUS LENTIGINOSUS, S t e p h e n s.—American Bittern.

Ardea minor, WILS. Am. Orn. vol. VIII, p. 35, pl. 65, fig. 3.—AUD. B. of A. Fol. pl. 337.

Ardea lentiginosa, AUD. B. of A. Oct. vol. VI, p. 94, pl. 365.—NUTT. Orn. vol. II, p. 60.

Botaurus lentiginosus, BAIRD, Gen. Rep. IX, 674.

Plentiful, frequenting the marshes, where I have often shot from ten to fifteen in a day's hunt. The flesh is very palatable.

ARDETTA EXILIS, G m e l i n.—Least Bittern.

Ardea exilis, GMELIN, Syst. Nat. vol. I, part II, p. 645.—AUD. B. of A. Oct. vol. VI, p. 100, pl. 366.—WILS. Am. Orn. vol. VIII, p. 37, pl. 65, fig. 4.

Ardetta exilis, BAIRD, Gen. Rep. IX, 673.

Abundant, resorting to the same localities as the preceding species.

CHARADRIUS VOCIFERUS, L i n n.—Killdeer Plover.

Charadrius vociferus, GMEL. Syst. Nat. vol. I, part II, p. 685.—AUD. B. of A. Oct. vol. V, p. 207, pl. 317.—WILS. Am. Orn. vol. VII, p. 73, pl. 59, fig. 6.

Abundant in all portions of the country. The traveller is often started by its melancholy cry even on the most barren wastes, where this bird finds an ample supply of insects.

CHARADRIUS HELVETICUS, L i n n.—Black-bellied Plover.

Charadrius helveticus, AUD. B. of A. Oct. vol. V, p. 199, pl. 315.—NUTT, Orn. vol. II, p. 26.

Vanellus helveticus, WILS. Am. Orn. vol. VII, p. 42, pl. 57, fig. 4.

Tringa helvetica, GMEL. Syst. Nat. vol. I, part II, p. 676.

I shot a single specimen of this bird on the seashore of San Diego, in February, 1851, but have seen it several times exposed for sale in the San Francisco market.

? CHARADRIUS CANTIANUS, L a t h.—Kentish Plover.

Charadrius cantianus, LATH. Birds, vol. IX, p. 328.—GOULD, B. of Eur. vol. IV, pl. 298.—YARRELL, Brit. Birds, vol. II, p. 405.

Kentish plover, MACGILL. Brit. Birds, vol. VI, p. 44, pl. 186.

A young plumaged bird of the genus *Charadrius*, previously unknown to us as a North American species, was obtained at San Diego, in January, 1854. It so closely resembles in its young plumage the European plover (*Charadrius cantianus*) that I do not feel justified, at present, in describing it as a distinct species, more especially so as I did not procure the adult. The following is the description of the specimen procured: Upper parts of a brownish ash color, the primaries being of a dusky black. Wing coverts edged with white. Forehead, breast, a collar around the neck, and all the under parts, white. On each side of the breast an ash brown spot, which color also is that of the auriculars. Bill black. Feet dark brown. Length six inches. I found it associated in flocks with the peep, (*Tringa wilsoni*), resorting to the sea beach, which, exposed at low tide, offers a bountiful supply of food to many species of waders. The low plaintive whistle of this plover is often repeated as it glides along the sandy beach, occasionally coming to a stand and gazing around for some moments as if on the lookout for danger. While thus stationary this bird is not readily perceived, as its color approaches closely that of the sand on which it rests.

CHARADRIUS MONTANUS, T o w n s.—Rocky Mountain Plover.

Charadrius montanus, TOWNS, Jour. Ac. N. Sc. Phil. vol. VII, p. 192.—AUD. B. of A. Oct. vol. V, p. 213, pl. 318.

I first met with this quiet and gentle bird on the plains near the Pueblo Los Angeles, in the month of November, scattered in small flocks industriously gleaning their subsistence over these broad levels. They appeared unsuspecting, uttering a low whistle when disturbed and flying but a short distance, resuming their occupation at once on alighting. I procured a pair of these birds in New Mexico and saw several flocks there, usually in the vicinity of prairie dog villages or on the most arid plains.

APHRIZA VIRGATA, G m e l i n.—Townsend's Surf Bird.

Aphriza townsendii, AUD. B. of A. Oct. vol. V, p. 228, pl. 322.

Aphriza virgata, BAIRD, Gen. Rep. IX, 698.

I obtained this bird in the San Francisco market in the winter of 1849, and subsequently in June, met with it on the Farrallone Islands. They there gathered in small flocks engaged in picking up marine insects from its rock bound shores, covered with kelp and shell fish. They did not appear wild, for when fired at, uttering a low piping note as they flew, they soon alighted again. Closely pursued, however, they would, after several shots, fly away beyond danger to the adjoining islands of the group.

HAEMATOPUS TOWNSENDII, A u d.—Townsend's Oyster-catcher.

Haematopus townsendii, AUD. B. of A. Oct. vol. V, p. 245, pl. 326.

Haematopus townsendii, AUD. B. of A. Fol. pl. 427, fig. 2.

I met with a pair of these birds on the Farrallone Islands in June. The female showed great signs of uneasiness, as do many of our waders at the season of incubation, but I was unable to find its nest, although searching long and diligently.

TRINGA WILSONII, N u t t a l l.—Little Sandpiper.

Tringa pusilla, WILS. Am. Orn. vol. V, p. 32, pl. 37, fig. 4.—AUD. B. of A. Oct. vol. V, p. 230, pl. 337.

Tringa wilsonii, NUTT. Orn. vol. II, p. 121.

Abundant on the sea shore and also found on the edges of ponds in the interior.

TRINGA ARENARIA, L i n n.—Sanderling Sandpiper.

Tringa arenaria, AUD. B. of A. Oct. vol. V, p. 237, pl. 333.—GMEL. Syst. Nat. vol. I, part II, p. 680.

Calidris arenaria, NUTT, ORN. vol. II, p. 4.—BAIRD, Gen. Rep. IX, 723.

Plentiful on the sea shore.

TOTANUS SEMIPALMATUS, G m e l.—Willet.

Totanus semipalmatus, AUD. B. of A. Oct. vol. V, p. 324, pl. 347.—NUTT. Orn. vol. II, p. 144.

Scolopax semipalmata, GMEL, Syst. Nat. vol. I, part II, p. 659.—WILS. Am. Orn. vol. VII, p. 27, pl. 56, fig. 3.

Symphemia semipalmata, BAIRD, Gen. Rep. IX, 727.

Plentiful on the marshy districts near the sea. Found also on Humboldt river on the eastern confines of California and on the whole sea board from San Francisco to San Diego.

TOTANUS MACULARIUS, L i n n.—Spotted Sandpiper.

Totanus macularius, AUD. B. of A. Oct. vol. V, p. 303, pl. 342.—NUTT. Orn. vol. II, p. 162.

Tringa macularia, LINN. Syst. Naturae, vol. I, part II, p. 672.—WILS. Am. Orn. vol. VII, p. 60, pl. 59, fig. 1.

Tringoides macularius, BAIRD, Gen. Rep. IX, 735.

Not so abundant a species as in the eastern States, and found occasionally only on the fresh water streams of California.

TOTANUS MELANOLEUCUS, Vieill.—Tell-tale Tattler.

Totanus melanoleucus, DEKAY, N. H. of N. Y. part I, p. 250, pl. 94, fig. 212.—AUD. B. of A. Fol. pl. 308.

Scolopax vociferus, AUD. Oct. vol. V, p. 316, pl. 345.—WILS. Am. Orn. vol. VII, p. 57, pl. 58, fig. 5.

Gambetta melanoleuca, BAIRD, Gen. Rep. IX, 731.

Abundant in the marshy districts. Ever too ready to sound the alarm on the hunter's approach, its unwelcome vigilance often causes it to fall a victim to his disappointment and ire.

LIMOSA FEDOA, Linn.—Great Marbled Godwit.

Limosa fedoa, AUD. B. of A. Oct. vol. V, p. 331, pl. 348.—NUTT. Orn. vol. II, p. 173.

Scolopax fedoa, LINN. Syst. Nat. vol. I, part II, p. 663.—WILS. Am. Orn. vol. VII, p. 30, pl. 66, fig. 4.

This bird was observed only in the vicinity of the salt marshes, and on the sea beach at low tide, where it collects in small flocks, often advancing some distance in the water in quest of food.

SCOLOPAX WILSONII, Temm.—Common Snipe.

Scolopax wilsonii, AUD. B. of A. Oct. vol. V, p. 339, pl. 350.—NUTT. Orn. vol. II p. 185.

Scolopax gallinago, WILS. Am. Orn. vol. VI, p. 18, pl. 47, fig. 1.

Gallinago wilsonii, BAIRD, Gen. Rep. IX, 710.

Arrives in California in September and remains until April, frequenting the marshes and moist grounds. When flushed it springs with a feeble squeak, and flying in rapid irregular zig-zag lines, is soon beyond the sportsman's reach unless his eye be quick and his aim unerring.

SCOLOPAX NOVEBORACENSIS, Gmel.—Red Breasted Snipe.

Scolopax noveboracensis, Gm. Syst. Nat. vol. I, part II, p. 658.—RICH. & SW. F. Bor. Am. vol. II, p. 398.—AUD. B. of A. Oct. vol. VI, p. 10, pl. 351.

I have occasionally met with these birds in flocks on marshy grounds and in the vicinity of ponds. Gathering together after alighting they are often shot in large numbers while engaged in search of worms, insects, and small snails, which abound in the localities they frequent. On one occasion I procured, in two hours, over sixty of these birds, besides a dozen duck and teal.

RECURVIROSTRA OCCIDENTALIS, Vigor.—Western Avocet.

Recurvirostra occidentalis, VIGORS, Zoolog. Journ. vol. IV, p. 356.—IB. Zool. of Beechey's Voyage, p. 23, pl. 12.

This species was observed in various parts of California, resorting to the shallow pools, in which it wades breast deep, finding on the soft muddy bottom a plentiful feast of insects and snails. Although half web-footed it does not swim unless wounded, when it takes immediately to deep water, swimming with great celerity, soon advancing beyond range if not at once disabled by a second shot. Specimens were obtained from a small fresh water pond at Livermore's Rancho, on the salt marshes of Suisun valley, and on the borders of the reedy swamps covering a large portion of the lower part of the Sacramento valley.

NUMENIUS LONGIROSTRIS, Wilson.—Long-billed Curlew.

Numenius longirostris, WILS. Am. Orn. vol. VIII, p. 23, pl. 64, fig. 4.—NUTT. Orn. vol. II, p. 94.—AUD. B. of A. Oct. vol. VI, p. 35, pl. 355.

These birds arrive in flocks in California during September, resorting to the fields and open prairies, where they find an abundant supply of insects. Wild in their nature, always on the alert, and the prairie offering no undulations behind which the hunter can approach unseen, they are one of the most difficult game birds to secure. Their first whistle of alarm startles at once the whole flock, which, taking to wing, speeds away a long distance before again settling down. Abundant in fall and winter, they migrate to the northern regions in spring for the purposes of incubation.

NUMENIUS BOREALIS, Lath.—Esquimaux Curlew.

Numenius borealis, LATH. Birds, vol. IX, p. 180.—NUTT. Orn. vol. II, p. 101.—AUD. B. of A. Oct. vol. VI, p. 45, pl. 357

A common game bird in the San Francisco market, though I did not myself procure it.

BERNICLA CANADENSIS, Linnaeus.—Canada Goose.

Anser canadensis, AUD. B. of A. Oct. vol. VI, p. 178, pl. 376.—RICH. & SW. F. Bor. Am. vol. II, p. 468.—NUTT. Orn. vol. II, p. 349.

Anas canadensis, WILS. Am. Orn. vol. VIII, p. 53, pl. 67, fig. 4.

Common in California, but the least abundant of the four species found there.

BERNICLA HUTCHINSII, Richardson.—Hutchin's Goose.

Bernicla hutchinsii, RICH. & SW. F. BOR. AM. VOL. II, p. 470.—AUD. B. OF A. FOL. PL. 277.

Anser hutchinsii, AUD. OCT. VOL. VI, p. 198, pl. 377.

Arrive in California towards the end of September or beginning of October. On their advent they are much emaciated by their long voyage from the northern regions, but after feeding a short time on the young, tender, nutritious grasses which sprout after the first winter rains, they form one of the greatest delicacies of the pioneer's repast. From the facility, however, with which great numbers of them are obtained, they soon fall into disrepute.

Whilst hunting during a space of two months in Suisun valley, I observed them, with other species of geese, at dawn, high in the air, winging their way towards the prairies and hilly slopes, where the tender young wild oats and grapes offered a tempting pasturage. This early flight lasted about two hours, and as far as the eye could reach the sky was spotted with flock after flock, closely following in each other's wake, until it seemed as though all the geese of California had given rendezvous at this particular point. Between ten and eleven o'clock they would leave the prairies, first in small squads, then in large masses, settling in the marshes and collecting around the ponds and sloughs thickly edged with heavy reeds. Here, swimming on the water, bathing and pluming themselves, they keep up a continued but not unmusical clatter. This proves the most propitious time of the day for the hunter, who, under cover of the tall reeds, and guided by their continual cackling, approaches closely enough to deal havoc among them. Discharging one load as they sit on the water and the other as they rise, I have thus seen twenty-three geese gathered from two shots, while many more, wounded and maimed, fluttered away and were lost. At about one o'clock they leave the marshes and return to feed on the prairies, flying low and affording the sportsman again an opportunity to stop their career. In the afternoon, about five o'clock, they finally leave the prairies, and rising high in the air wend their way to the roosting places whence they came in the morning. These were often at a great distance, as I have followed them in their evening flight until they were lost to view. Many, however, roost in the marshes. Our boat, sailing one night down the sloughs leading to Suisun bay, having come among them, the noise made as they rose in advance of us, emitting their cry of alarm, (their disordered masses being so serried that we could hear their pinions strike each other as they flew,) impressed us with the idea that we must have disturbed thousands. Such are the habits of the geese during the winter. Towards spring they separate into smaller flocks and gradually disappear from the country, some few only remaining, probably crippled and unable to follow the more vigorous in their northern migration. On examination, I found a great difference in the size of this bird, but beyond this could discover no peculiar characteristics by which to mark them as distinct species. Many have from a few white feathers up to a full and distinct white ring on the neck, at the point where the black joins the grey of the breast. Intermediate grades so closely approaching one another in size, form, and color render it impossible to make any decided, certain, and marked classification among them. I observed these birds very abundant about the bay of San Diego, searching for small shell-fish and sea grasses on the shores at low tide.

ANSER ALBIFRONS, B e c h s t .—White-fronted Goose.

Anser albifrons, AUD. B. of A. Oct. vol. VI, p. 209, pl. 380.—AUD. Fol. pl. 286.—GOULD'S B. of Europe, vol. V, pl. 349.—NUTT. Orn. vol. II, p. 346.—RICH. & SW. F. Bor. Am. vol. II, p. 466.

Anser gambelii, BAIRD, Gen. Rep. IX, 761.

One of the most common species, resorting to the same localities as the preceding and associating with them during the winter. Lieutenant Stoneman, United States army, informed me that he had, on one occasion, seen this as well as the others caught in a lasso while on the wing. The wind blowing violently, the birds flew low to avoid its influence, and as they passed by a point of rocks, behind which were concealed two Californians, the lasso was thrown in the air among them, seldom failing to bring down a bird, the noose encircling it by the neck, wings, or body. Of the geese this is considered the most delicate for the table, as it feeds almost exclusively on the young herbage growing on the highlands and about the fresh water ponds.

ANSER HYPERBOREUS, G m e l .—Snow Goose.

Anser hyperboreus, AUD. B. of A. Oct. vol. VI, p. 212, pl. 381.—GOULD, B. of Eur. vol. V, pl. 346.—GMEL. Syst. Nat. vol. I, part II, p. 504.—WILS. Am. Orn. vol. VIII, p. 76 and 89, pl. 68, fig. 5 and pl. 69, fig. 5.

Frequents more especially the salt marsh districts, though found also inland. The food which it selects in these localities gives their flesh a strong sedgy flavor, which causes them to be but little esteemed. These birds often cover so densely with their masses the plains in the vicinity of the marshes as to give the ground the appearance of being clothed in snow. Easily approached on horseback, the natives sometimes near them in this manner, then suddenly putting spurs to their animals gallop into the flock, striking to the right and left with short clubs, and trampling them beneath their horses' feet. I have known a native to procure seventeen birds in a single charge of this kind through a flock covering several acres.

CYGNUS BUCCINATOR, R i c h a r d s o n .—Trumpeter Swan.

Cygnus buccinator, RICH. & SW. F. Bor. Am. vol. II, p. 464.—NUTT. Orn. vol. II, p. 370.—AUD. B. of A. Oct. vol. VI, p. 219, pl. 382 and 383.

Occasionally seen in the air following each other in single file, and sounding their trumpet-like note as they advance. I observed a few in Suisun and Sacramento valleys, and found them frequently in the San Francisco market.

AIX SPONSA, L i n n .—Summer Duck.

Anas sponsa, GMEL. Syst. Nat. vol. I, part II, p. 539.—AUD. B. of A. Oct. vol. VI, p. 271, pl. 391.—WILS. Am. Orn. vol. VIII, p. 97, pl. 70, fig. 3.—NUTT. Orn. vol. II, p. 394.

Aix sponsa, BAIRD, Gen. Rep. IX, 785.

Abundant, breeding in the hollow trees bordering the streams of California.

MARECA AMERICANA, G m e l .—American Widgeon.

Anas americana, GMEL. Syst. Nat. vol. I, part II, p. 526.—WILS. Am. Orn. vol. VIII, p. 86, pl. 69, fig. 4.—AUD. B. of A. Oct. vol. VI, p. 259, pl. 389.

Mareca americana, BAIRD, Gen. Rep. IX, 883.

Abundant.

DAFILA ACUTA, L i n n.—Pintail Duck.

Anas acuta, GMEL. Syst. Nat. vol. I, part II, p. 528.—AUD. B. of A. Oct. vol. VI, p. 266, pl. 390.—NUTT. Orn. vol. II p. 386.

Dafila acuta, BAIRD, Gen. Rep. IX, 776.

Plentiful, especially so in spring, when they collect in large flocks on the open plains and about the fresh water ponds previous to migrating northward.

ANAS BOSCHAS, L i n n.—Mallard.

Anas boschas, GMEL. Syst. Nat. vol. I, part II, p. 538.—NUTT. Orn. vol. II, p. 379.—AUD. B. of A. Oct. vol. VI, p. 236, pl. 385.

Abundant; breeding wherever a suitable and secure locality offers, having found its nest in the marshes, on the edges of small fresh water ponds, and once also in a wild oat field at some distance from water. The Indians entrap these as well as other ducks in a weir constructed of willow branches and shoot them with arrows from ambushes built on the shore.

QUERQUEDULA CAROLINENSIS, G m e l.—Green Winged Teal.

Anas carolinensis, GM. Syst. Nat. vol. I, part II, p. 533.—AUD. B. of A. Oct. vol. VI, p. 281, pl. 392.

Nettion crecca, BAIRD, Gen. Rep. IX, 778.

Abundant in California, having procured it as far south as Carissa creek on the borders of the Colorado desert.

QUERQUEDULA CYANOPTERA, Vieill.—Red-breasted Teal.

Querquedula cyanoptera, CASSIN'S Illus. of B. of Cal. & Tex. p. 82, pl. 15.—BAIRD, Gen. Rep. IX, 780.

Anas cyanoptera, VIEILL. Nouv. Diet. vol. V, p. 104.

Anas rafflesii, KING, Zool. Journ. vol. IV, p. 97.

This beautiful teal is abundant in California during spring and summer, incubating on the marshes and migrating south on the approach of winter. Its nest is composed of coarse grasses, lined with the down taken from its own breast, and contains from twelve to fourteen eggs of a faint green color. I found this species in January near San Diego and at a later period in Texas near Fort Thorne, where Dr. C. Henry, United States army, informed me that it was quite a common bird. Its habits and flight, as far as observed, are similar to those of our blue wing teal, (*Q. discors*.)

CHAULELASMUS STREPERA, L i n n.—Gadwall Duck.

Anas strepera, GMEL, Syst. Nat. vol. I, part II, p. 520.—AUD. B. of A. Oct. vol. VI, p. 254, pl. 388.

Not rare, and some few pair incubate in the country, as I have procured the eggs in the marshy districts of Sacramento valley during the spring.

SPATULA CLYPEATA, L i n n.—Shoveller Duck.

Rynchaspis clypeata, GOULD. B. of Eur. vol. V, pl. 360.

Anas clypeata, GMEL, Syst. Nat. vol. I, part II, p. 518.—WILS. Am. Orn. vol. VIII, p. 65, pl. 67, fig. 7.—NUTT. Orn. vol. II, p. 375.—AUD. B. of A. Oct. vol. VI, p. 292, pl. 394.

Plentiful, preferring the fresh water ponds and streams, where it is found associated with the teal and mallard. I procured it as far south as the Big Lagoon of the Colorado desert.

FULIGULA MARILA, L i n n.—Scaup Duck.

Fuligula marila, AUD. B. of A. Oct. vol. VI, p. 316, pl. 397.—NUTT. ORN. vol. II, p. 437.

Anas marila, GMEL. Syst. Nat. vol. I, part II, p. 519.—WILS. Am. ORN. vol. VIII, p. 84, pl. 69, fig. 3

Abundant on the salt bays, and occasionally penetrates the interior of the country.

NYROCA VALLISNERIA, W i l s.—Canvas-back Duck.

Anas vallisneria, WILS. Am. ORN. vol. VIII, p. 103, pl. 20, fig. 5.

Fuligula vallisneria, AUD. B. of A. Oct. vol. VI, p. 299, pl. 395.—NUTT. ORN. vol. II, p. 430.

Aythya vallisneria, BAIRD, Gen. Rep. IX, 794.

Not abundant, though occasionally exposed in the market for sale. In 1849 I saw twelve dollars paid for a single bird of this kind for the table.

NYROCA ERYTHROCEPHALA, B o n a p.—Red-headed Duck.

Fuligula ferina, AUD. B. of A. Oct. vol. VI, p. 311, pl. 397.

Anas ferina, WILS. Am. ORN. vol. VIII, p. 110, pl. 70, fig. 6.

Aythya americana, BAIRD, Gen. Rep. 793.

Not abundant, but occasionally breeds in the country. I saw, on the swamps of Sacramento valley, several pair in June, and inspection of the female showed the breast to be denuded of feathers, as is the case with most of the birds of this family during the period of incubation.

CLANGULA ALBEOLA, L i n n.—Buffel-headed Duck.

Clangula albeola, RICH. & SW. F. Bor. Am. vol. II, p. 453.

Fuligula albeola, AUD. B. of A. Oct. vol. VI, p. 369, pl. 408.—NUTT. ORN. vol. II, p. 445.

Anas albeola, GMEL. Syst. Nat. vol. I, part II, p. 517.

Bucephala albeola, BAIRD, Gen. Rep. IX, 797.

This beautiful little species is abundant, both inland and on the salt bays of the coast. I observed it as far south as the Gila river.

OIDEMIA PERSPICILLATA, L i n n.—Surf Duck.

Oidemia perspicillata, RICH. & SW. F. Bor. Am. vol. II, p. 449.

Fuligula perspicillata, AUD. B. of A. Oct. vol. VI, p. 337, pl. 402.

Abundant. Found on the whole seaboard of California, in San Francisco bay, and about Benicia. The vast shallow flats bordering Suisun and San Pablo bays are among its favorite feeding grounds. Living almost exclusively on shell fish, its flesh acquires so rank a flavor that gunners seldom waste their shot upon it. I have known it, in consequence, to become so fearless as to pass under and about the wharves of San Diego while persons were walking overhead.

ERISMATURA RUBIDA, W i l s.—Ruddy Duck.

Fuligula rubida, AUD. B. of A. Oct. vol. VI, p. 324, pl. 399.—NUTT. ORN. vol. II, p. 426.

Anas rubidus, WILS. Am. ORN. vol. VIII, p. 128, pl. 71, figs. 5 and 6.

Observed both in fresh water and on the large salt bays and lesser indentations occurring on the California coast.

MERGUS SERRATOR, Linn.—Red-breasted Merganser.

Mergus serrator, GMEL. Syst. Nat. vol. I, part II, p. 546.—AUD. B. of A. Oct. vol. VI, p. 395, pl. 412.—WILS. Am. Orn. vol. VIII, p. 81, pl. 69, fig. 2.

Abundant throughout California. I procured specimens on the Gila river, east of Fort Yuma.

MERGUS CUCULLATUS, Linn.—Hooded Merganser.

Mergus cucullatus, GMEL. Syst. Nat. vol. I, part II, p. 544.—AUD. B. of A. Oct. vol. VI, p. 402, pl. 413.—NUTT. Orn. vol. II, p. 465.—WILS. Am. Orn. vol. VIII, p. 79, pl. 69, fig. 1.

Abundant.

PHALACROCORAX PENEILLATUS, Brandt.—Brandt's Cormorant.

Phalacrocorax penicillatus, BRANDT, Bull. Sci. Acad. Imp. Petersb. vol. III, p. 55.

Graculus penicillatus, LAWRENCE, in Baird's Gen. Rep. IX, 880.

The specimens in my possession, captured on the Farrallone Islands, appear to be of the same species as that described by Brandt under the above title. Not having the work in which he describes the *Phal. penicillatus*, I have resorted, for the purpose of comparison, to a specimen so labelled and purporting to come from North America, in the museum of the Academy of Natural Sciences, of Philadelphia. They tally exactly in their color and markings, though they differ much in size. The tail is greyish black, composed of twelve feathers; feet black; bill dusky, but of lighter color towards base of lower mandible; gular sac blue, and at its base a gorgelet of dirty white. Plumage of back of head, sides of neck, and to the middle of the back, interspersed with white linear feathers, varying from two lines to two inches in length. Plumage of head, neck, and abdomen black, with glossy reflections of blue and green. The back black, with glossy green reflections, each feather being margined with a narrow fringe of dark bluish black.

Dimensions of the academy's specimen: Length twenty-four inches. From the flexure to the tip of wing ten inches. From point of bill to angle of mouth three and a half inches. Length of outer toe three and three-eighths inches; of second toe three and one-eighth inches; of inner toe one and two-eighths inch.

Dimensions of my specimen: Length twenty-eight inches. From flexure to tip of wing eleven and a half inches. From point of bill to angle of mouth four inches. Length of outer toe three and six-eighths inches; second toe three and two-eighths inches; inner toe one and four-eighths inch.

The bill in my specimen is stouter, the gular sac extends further down the throat, and the bare space around the eyes is larger. Both specimens are in full spring plumage. Late in June these birds were quite numerous at the west end of the island and did not appear to associate with other species, but flocking together on the most elevated rocks, passed the after part of the day in a state of repose, the morning having been employed in pursuit of fish, upon which they prey. This bird was not incubating at that period as were both the *P. townsendii* and the *P. splendens*.

PHALACROCORAX TOWNSENDII, Aud.—Townsend's Cormorant.

Phalacrocorax townsendii, AUD. B. of A. Oct. vol. VI, p. 438, pl. 427.—IB. Orn. Biog. vol. V, p. 149.

Although this bird has, by several authors, been considered synonymous with the *Phalacrocorax dilophus*, (Swainson,) I consider it a distinct species. In many of its markings they

bear a strong resemblance, but though I have often procured it in full spring plumage, I have never yet been able to detect the elongated tufts from behind each eye which distinguish that species at the first glance. I procured their eggs early in July, on the Farrallone Islands, and can only account for their tardy nidification from the fact that upon their first incubation the nests were rifled by the inhabitants of the island to supply their swine with a sufficiency of food.

PHALACROCORAX RESPLENDENS, A u d.—Violet-green Cormorant.

Phalacrocorax resplendens, AUD. B. of A. Oct. vol. VI, p. 440, pl. 419.—IB. Fol. pl. 412.

This beautiful species, easily distinguished by the metallic reflections of its plumage as well as its smaller size, was first discovered by Mr. J. K. Townsend, on the Columbia river, and is among the cormorants which fix their resting place on the Farrallone Islands. Its nest, placed on a ledge of the most precipitous cliffs, is formed of sea weed and raised three or four inches above the surface of the rock. In it are deposited three or four eggs of a light greenish color, but coated with a calcareous deposit peculiar to the eggs of this whole genus. Its food, on examination by dissection, I found to consist entirely of fish.

PELECANUS TRACHYRHYNCHUS, L a t h.—American Pelican.

Pelecanus trachyrhynchus, LATH. Birds, vol. X, p. 408.

Pelecanus americanus, AUD. B. of A. Oct. vol. VII, p. 20, pl. 422.—IB. Fol. pl. 311.

Pelecanus erythrorhynchus, LAWRENCE, Baird's Gen. Rep. IX, 868.

Abundant during the fall, when they migrate in long lines, following each other in single file so closely and exactly that if the least curve is described by the leader each one takes it precisely at the same point however large the flock. Some few pair breed in Sacramento valley, but the larger number go further north for that purpose.

PELECANUS FUSCUS, L i n n.—Brown Pelican.

Pelecanus fuscus, GMEL. Syst. Nat. vol. I, part II, p. 570.—AUD. B. of A. Oct. vol. VII, p. 32, pl. 423 & 424.—NUTT. Orn. vol. II, p. 476.

Abundant on our whole western coast, and seen even as far down as Panama. In the Gulf of California I observed a small black gull following this pelican incessantly on its flight, and as the latter plunged into the sea after fish the gull would immediately alight by its side. The pelican emerging from the water to discharge the fluid collected in the gular sac would drop its bill, when the fish partially protruding from between its mandibles, the gull would seize upon one and drag it out as his share of the booty. Although this feat is of hourly occurrence, I have never seen the pelican offer the least resistance, or show any anger or impatience at the intrusion or impudence of his little neighbor, who, like a tax gatherer, follows him through life, an evil inevitable.

STERNA CAYANENSIS, G m e l.—Cayenne Tern.

Sterna cayanensis, GMELN. Syst. Nat. vol. I, part II, p. 604.

Sterna caryana, AUD. B. of A. Oct. vol. VII, p. 76, pl. 429.—NUTT. Orn. vol. II, p. 268.

This bird is occasionally seen following up the rivers and hovering over the lakes in search of small fish, upon which it preys, plunging into the water after them, often disappearing beneath

its surface for some seconds. The specimen in the collection was obtained in January, at San Diego.

STERNA HIRUNDO, L i n n.—Common Tern.

Sterna hirundo, GMEL. Syst. Nat. vol. I, part II, p. 606.—AUD. B. of A. Oct. vol. VII, p. 97, pl. 433.—IB. B. of A. Fol. pl. 309.

Very abundant. Seen during the spring and summer coursing over the large marshes and lakes of the Sacramento valley, where they incubate. Their migration south begins with the approach of the inclement season.

STERNA NIGRA, L i n n.—Black Tern.

Sterna nigra, GMEL. Syst. Nat. vol. I, part II, p. 608.—AUD. B. of A. Oct. vol. VII, p. 116, pl. 438.—RICH. & SW. F. Bor. Am. vol. II, p. 415.

Sterna plumbea, WILS. Am. Orn. vol. VII, p. 83, pl. 60, fig. 3.

Abundant, and one of the most noisy birds of its genus, emitting its sharp note, crik, crik, as it flits over the water in search of its prey. When, from a flock, one of these birds is shot, the others, uttering cries of distress, fly for some time around the hunter, and plunge as if to aid their disabled or dead companion. The sportsman can, consequently, if so inclined, obtain many specimens before they are sufficiently alarmed to fly from danger.

LARUS OCCIDENTALIS, A u d.—Western Gull.

Larus occidentalis, AUD. B. of A. Oct. vol. VII, p. 161.—IB. Orn. Biog. vol. V, p. 320.

Found on the whole seaboard of California. It is very abundant, as well as the greatest pest with which the egg hunters on the Farrallone Islands have to contend while gathering the eggs of the Murre, (*Uria brunnichii*), which breeds here in countless numbers.

At one o'clock every day, during the egg season, Sundays and Thursdays excepted, (this is to give the birds some little respite,) the egg-hunters meet on the south side of the island. The roll is called to see that all are present, that each one may have an equal chance in gathering the spoil. The signal is given, every man starting off at a full run for the most productive egging grounds. The gulls understanding, apparently, what is about to occur, are on the alert, hovering over head and awaiting only the advance of the party. The men rush eagerly into the rookeries; the affrighted murre have scarcely risen from their nests before the gull, with remarkable instinct, not to say almost reason, flying but a few paces ahead of the hunter, alights on the ground, tapping such eggs as the short time will allow before the egger comes up with him. The broken eggs are passed by the men, who remove only those which are sound. The gull then returning to the field of its exploits, procures a plentiful supply of its favorite food.

Mr. Audubon gives, as one of the marked characteristics of this species, that the ends of the first seven primaries are spotted with white, whereas only six of the blue back gull (*L. argentatus*) are marked in this manner. So slight a difference would scarcely warrant the introduction of a new species were there no other distinction, but having shot, one afternoon, some twenty or thirty on the wing, I found them indifferently with six or seven of the first primaries terminated with white. The back, however, of a deeper slate color instead of the light grayish blue of the *L. argentatus*, is a marked feature when the two are contrasted.

Though on the Farrallones during the breeding season, I saw no blue back gulls, notwithstanding a careful and diligent search. The nest of the western gull, placed on the rocky hill sides and on the flats, is composed of sea grasses and weeds, and contains from two to three eggs of a light olive green or brown, dashed with dark brown or black. Of these latter birds, as well as of their eggs, I obtained a great number.

LARUS ARGENTATUS, B r u n n.—Herring Gull.

Larus argentatus, AUD. B. of A. Oct. vol. VII, page 163, pl. 448.—NUTT. Orn. vol. II, p. 304.

Most abundant on the southern coast of California.

LARUS HEERMANNI, C a s s i n.—White-headed Gull.

Larus heermanni, CASSIN, Proceed. Ac. Nat. Sc. Phil. vol. VI, p. 187, (1852).—IB. Illus. B. of Cal. and Tex. p. 28, pl. 5.

I first discovered this gull on the coast as far north as Monterey, and again met it at all the intermediate points as far south as San Diego, where it was most plentiful. It there associates during the winter with the western gull, (*L. occidentalis*.) Following vessels as they enter the harbors, and circling around them, it appears to be waiting for such garbage as is from time to time thrown overboard from the cook's galley. It also alights on the kelp which covers an immense area off San Diego bay, amongst which it catches small fish and finds an ample supply of small crustacea and marine insects. Like the rest of the genus it eats carrion, having seen the body of a dead seal covered with this and the preceding species. The Coronadoes Islands, about fifteen miles to seaward from San Diego, are a favorite breeding resort of this bird. While travelling along the California coast, on one of the United States mail steamships, I observed two or three small species of gulls, for which I, of course, was unable to stop.

DIOMEDEA NIGRIPES, A u d.—Black-footed Albatross.

Diomedea nigripes, AUD. B. of A. Oct. vol. VII, p. 198.—IB. Orn. Biog. vol. V, p. 327.—CASSIN'S Ill. B. of Cal. and Tex. p. 210, pl. 35.

This species abounds on the California coast, skimming the waves in its flight, and following in the wake of passing vessels to pick up the refuse scraps thrown overboard. Voracious in its habits, it seizes on whatever is thrown on the water, of which propensity advantage may be taken by baiting a hook and drawing them on board. From the stern ports of a ship I have thus captured eight or ten of these birds in a single morning. I observed a white albatross on this coast, though smaller than the *Diomedea exulans* which we saw about Cape Horn. Not having procured it however, I cannot determine its species.

? PROCELLARIA.—? Fulmar.

Resembles very much our common fulmar (*P. glacialis*) in color and form, and was very abundant at some miles from the coast; but as I was unable to obtain a specimen, I cannot say what *Procellaria* it was. It may have been the Pacific fulmar (*P. pacificus*) described in Mr. Audubon's works. Two kinds of petrel (*Thalassidroma*) were also seen but not captured, in consequence of which their species still remains a matter of doubt.

MORMON CIRRHATUS, L a t h.—Tufted Puffin.

Mormon cirrhatus, AUD. B. of A. Oct. vol. VII, p. 234, pl. 462.—NUTT. Orn. vol. II, p. 539.

Alca cirrhata, LATHAM'S Birds, vol. X, p. 57, pl. 170.

This curious, odd-looking, and interesting species was observed on the Farrallones, and known by the inhabitants as the sea parrot. A deep cleft or crevice in the rock is chosen by them for the purposes of incubation, and a single dirty white egg, sometimes faintly dashed with brown, is laid on the bare ground at the innermost extremity of the cavity. To procure the eggs I was obliged to wrap my hand in a stout handkerchief, having several times ascertained by experience that a severe and cutting wound was the result of a bite from their knife-like and powerful bill.

PTYCHORHAMPHUS ALEUTICUS, P a l l a s .

Mergulus cassinii, GAMBEL, Proc. Acad. N. Sc. Phil. vol. II, p. 266. (1845.)

Ptychorhamphus aleuticus, CASSIN, in Baird's Gen. Rep. IX, 910.

In 1851 while enveloped in a dense fog some twenty miles off the bay of San Francisco, the captain of our ship, alarmed at the sound of breakers, lowered a boat to ascertain our whereabouts. Invited to join him, I took my gun and soon observed this small murre which occasionally shot by on its way to the Farrallones. Approaching within a few yards of the rock bound shores, its high peaks were seen covered with cormorants, gulls and other varieties of sea fowl. Our bearings taken, we returned to the ship, and on our way I shot a single specimen of this bird. The stomach I found, on dissection, to be filled with small fish and minute marine insects. They abound on these islands during the winter but on my return in spring they had already left to pass their summer in more northern climes.

CERORHINA OCCIDENTALIS, B o n a p.—Horn-Billed Auk.

Cerorhinca occidentalis, NUTT. Orn. vol. II, p. 538.

Ceratorhina occidentalis, AUD. B. of A. Fol. pl. 402, fig. 5.

Uria occidentalis, AUD. Oct. vol. VII, p. 364, pl. 471.

In the month of June on the Farrallones, while watching under the lee of a rock to shoot the sea lion, (a large species of seal,) which towards dusk leaves the ocean to crawl up on the shores, I first saw this singular bird pass by me with a small fish in its mouth and plunge suddenly as if into the ground. This aroused my attention as all other birds had retired to rest, save here and there a restless gull. On examining the ground next morning I found burrows leading under the rocks in which they lie concealed during the day, having never met them in my rambles which extended in all directions over the island and at all hours. By watching, however, several nights, I procured a few specimens. In these holes they had young, a single one being in each nest. I procured, during the winter, a young plumaged bird off the island of Santa Marguerita, on the coast of Lower California.

URIA BRUNNICHII, S a b i n e.—Large-Billed Guillemot.

Uria brunnichii, AUD. B. of A. Oct. vol. VII, p. 265, pl. 472.—RICH. & SW. F. Bor. Am. vol. II, p. 477.

Uria brunnichii, NUTT. Orn. vol. II, p. 529.—GOULD, B. of Eur. vol. V, pl. 398.

Uria ringvia, CASSIN, in Baird's Gen. Rep. IX, 914.

This bird is abundant on the sea coast, the Farrallones being one of its favorite breeding resorts. The traffic in their eggs from this place to San Francisco and inland reaches the value

annually of between one and two hundred thousand dollars. If undisturbed, it lays but a single egg and rears but one bird each season. No nest is prepared, but depositing her egg on the bare rock, ground or any slight ledge, the female, denuding a portion of her breast by plucking out the feathers, sits upright upon it during the period of incubation. Gentle and inoffensive, it is not only harassed by man but also by the gull, its most vigilant and often its worst enemy. I have frequently seen the gulls assemble in large numbers and by raising a great clamor and spreading their wings, endeavor to frighten them away from their trust that they might begin to plunder. I one day saw three gulls approach scientifically a single murre setting on her egg. Two of them feigning an attack in front, the murre raised herself to repel them with her sharp pointed bill, instantly the third advancing from the rear seized her solitary egg from beneath her and flew off with the booty, the two first immediately following to claim their share. The egg was dropped and broken on the rocks when a general scramble ensued between the three robbers for the valued prize. The egg hunters continue to rob them from May to July, when exhausted nature compels the bird to cease laying. During this period when driven from the rookeries, flying in terror to escape the threatening danger, they dash themselves to pieces against the rocky walls or collecting against them ten or twelve deep, numbers are crushed by the violence of each others' strugglings. At the time of the drive, (as it is called,) these birds all leave the island and settling on the water cover it for a mile around.

URIA COLUMBA, Pallas.—Black Guillemot.

Uria columba, CASSIN, in Baird's Gen. Rep. IX, 912.

Abundant and resident on the seacoast, breeding in the crevices of the rocks on the Farrallones.

COLYMBUS GLACIALIS, Linn.—Great Northern Diver or Loon.

Colymbus glacialis, GMEL. Syst. Nat. vol. I, part II, p. 588.—NUTT. Orn. vol. II, p. 513.—WILS. Am. Orn. vol. IX, p. 84, pl. 74, fig. 3.

Abundant on the fresh water lakes, where its lugubrious cry is occasionally heard towards evening.

COLYMBUS SEPTENTRIONALIS, Linn.—Red-throated Loon.

Colymbus septentrionalis, GMEL. Syst. Nat. vol. I, part II, p. 586.—NUTT. Orn. vol. II, p. 519.—AUD. B. of A. Oct. vol. VII, p. 299, pl. 478.

The specimen obtained was shot from the wharf at Newtown, San Diego.

PODICEPS CRISTATUS, Linn.—Crested Grebe.

Podiceps cristatus, AUD. B. of A. Oct. vol. VII, p. 308, pl. 474.—RICH. & SW. F. Ber. Am. vol. II, p. 410.—NUTT. Orn. vol. II, p. 250.

Abundant. Frequenting the fresh water districts, and observed also at Santa Barbara on the borders of the ocean.

PODICEPS CALIFORNICUS, Heermann.—California Grebe.

Podiceps californicus, HEERMANN, Proceed. Ac. Nat. Sc. Phil. vol. VII, p.

Form.—Size small. Bill slightly slender, curved upwards; wings short; first quill of primaries slightly longest; secondaries short; tertiaries longer, nearly equal to the primaries; tarsæ flattened; feet large.

Color.—The entire upper parts of a deep sooty brown, darkest and nearly black on the top of head and back; neck almost encircled with grayish white, and in front with an indistinct band of grayish brown. Sides and flanks tinged with brownish gray. Under parts silky white, and near the vent having a sullied appearance. Under wing coverts white. Some of the shorter primaries of a cinereous brown, faintly tipped with white; the secondaries white, of which a few have their outer webs brown. Bill dark, tipped with lighter horn color. Feet dark green. Length 12 inches.

At first sight this bird appears very closely allied to the *P. cornutus* and *P. auritus*, but on comparing them marked differences are at once perceived, both in size and form. I observed this grebe on the inland fresh water ponds, as well as on the sea shore, where it was abundant, passing its time on the water in pursuit of insects and small fish, with which, on dissection, I found its stomach filled. Having procured it only during the winter, I am unable to describe its spring livery, and between the two seasons there is much difference of plumage in the birds of this genus.

PODYLYMBUS LINEATUS, Heermann.—Lineated Diver.

Podilymbus lineatus, HEERMANN, *Proceed. Ac. Nat. Sc. Phil.* vol. VII, p.

Form.—Size small. Bill short and strong; nostrils conspicuous; wings short; second primary longest; secondaries short; tertiaries longer than secondaries; feet large.

Color.—Entire upper parts dark reddish brown. A white line from base of upper mandible under the eye, and running down the neck, succeeded by another under it of reddish brown. Spots at the base of under mandible reddish brown. Throat white, marked with a few obscure spots of reddish brown. Lower neck in front and upper part of breast pale reddish brown, with which the sides and flanks are also tinged; other under parts silky white; the lower portion of abdomen and vent mouse color. Quills dark cinereous; secondaries tipped with white. Bill horn color; feet black. Length 11 inches.

This bird is found on the fresh water courses and marshy lakes of California throughout the year, having procured it during the winter and discovered the nest in those localities during the summer. The nest, composed of a few loose straws or rushes, is placed on the ground near the edge of the water, and contains four eggs of a dirty white color.

LIST OF BIRDS

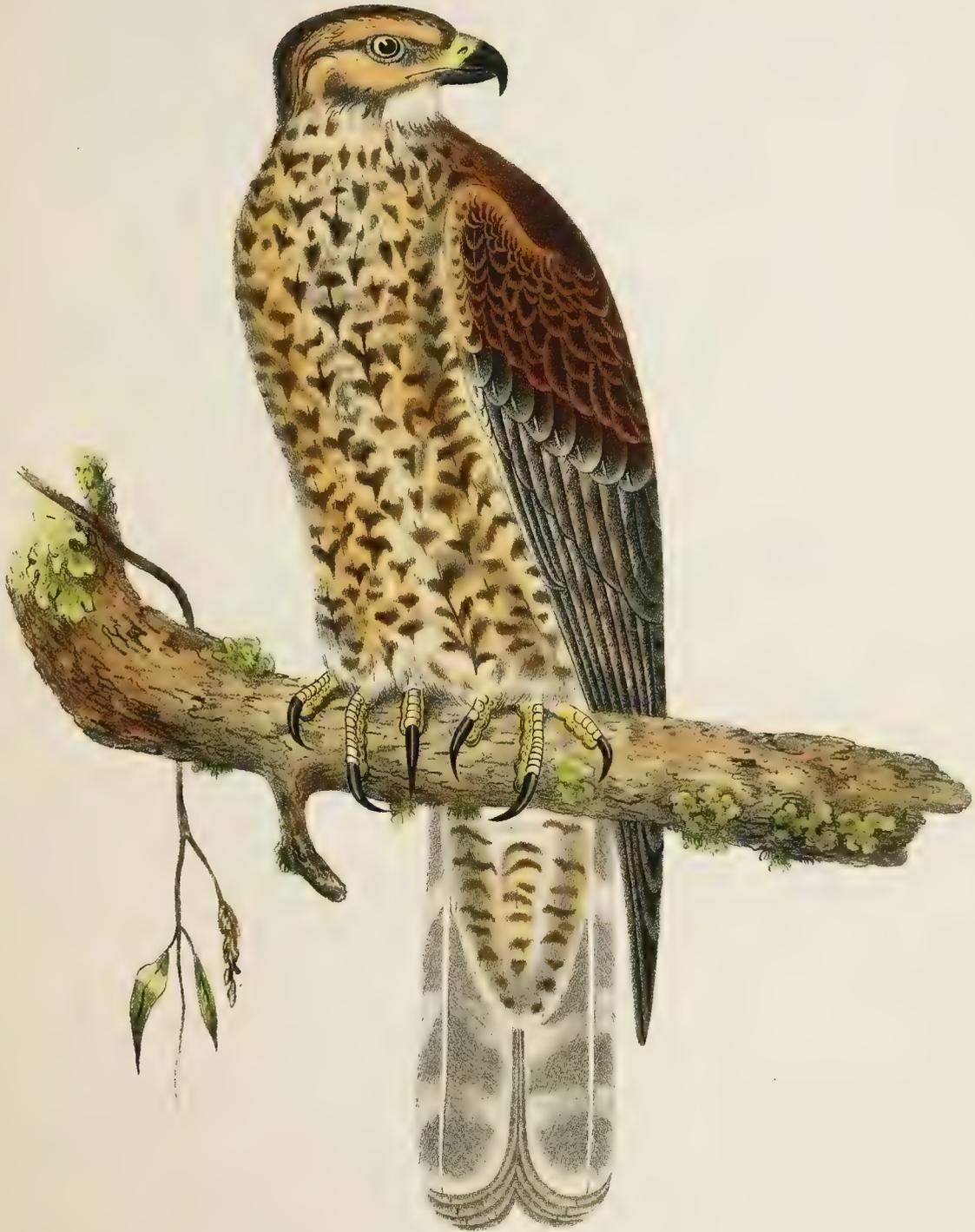
COLLECTED BETWEEN

San Francisco and Fort Yuma, California, during the survey of railroad route from the Mississippi to the Pacific ocean, under the command of Lieutenant R. S. Williamson, Top. Engs.

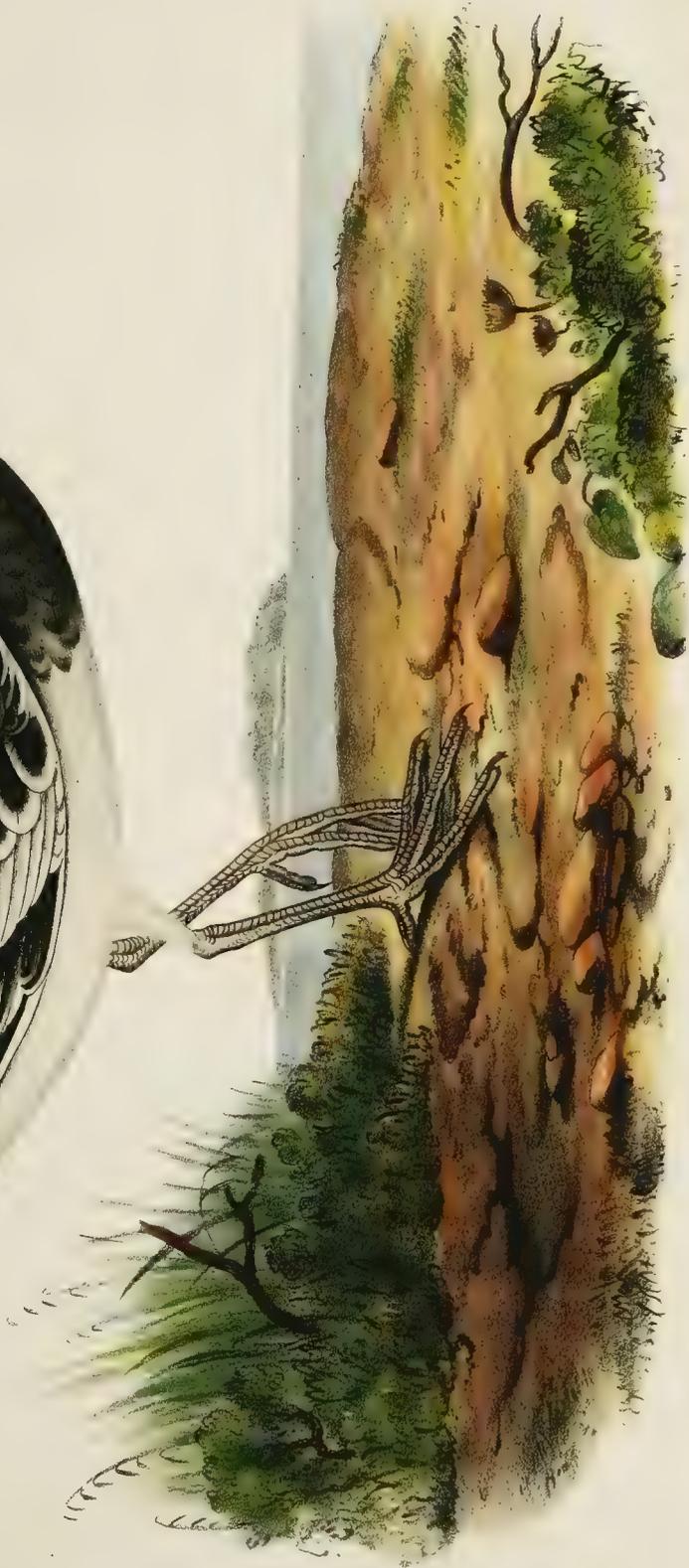
	Specimens.		Specimens.
Pandion carolinensis.....	1	Polioptila melanura.....	2
Hypotriorchis columbarius.....	1	Myiodiocytes pusillus ..	1
Tinnunculus sparverius.....	2	Dendroica audubonii.....	2
Buteo insignatus.....	1	Dendroica aestiva.....	2
Buteo elegans.....	2	Dendroica nigrescens.....	1
Buteo borealis.....	1	Trichas delafieldii.....	1
Archibuteo ferrugineus.....	1	Helminthophaga celata	2
Elanus leucurus.....	1	Certhia americana.....	1
Accipiter cooperi.....	2	Troglodytes obsoletus	2
Accipiter fuscus.....	1	Troglodytes bewickii	2
Circus hudsonius	1	Troglodytes aedon.....	1
Athene cunicularia.....	1	Troglodytes palustris.....	1
Strix pratincola.....	2	Campylorhynchus brunneicapillus.....	2
Brachyotus cassini	1	Lophophanes inornatus.....	2
Bubo virginianus.....	1	Parus rufescens	2
Scops asio.....	1	Parus montanus	2
Chordeiles popetue	2	Psaltria minima	1
Progne purpurea....	1	Chamaea fasciata	2
Hirundo rufa	2	Sialia mexicana	2
Hirundo lunifrons.....	2	Cinclus americanus.....	1
Hirundo thalassina.....	1	Mimus polyglottus.....	2
Cotyle riparia	1	Mimus montanus	2
Cotyle serripennis.....	1	Harpophynchus redivivus	1
Tyrannus verticalis	2	Turdus migratorius.....	2
Tyrannula sayii.....	2	Turdus naevius.....	2
Tyrannula cinerascens	1	Turdus nanus.....	1
Tyrannula nigricans.....	2	Anthus ludovicianus.....	1
Tyrannula richardsonii?.....	2	Otocoris rufa.....	1
Pyrocephalus rubineus.....	1	Embernagra chlorura	1
Ptilogonys nitens.....	2	Chondestes grammaca.....	2

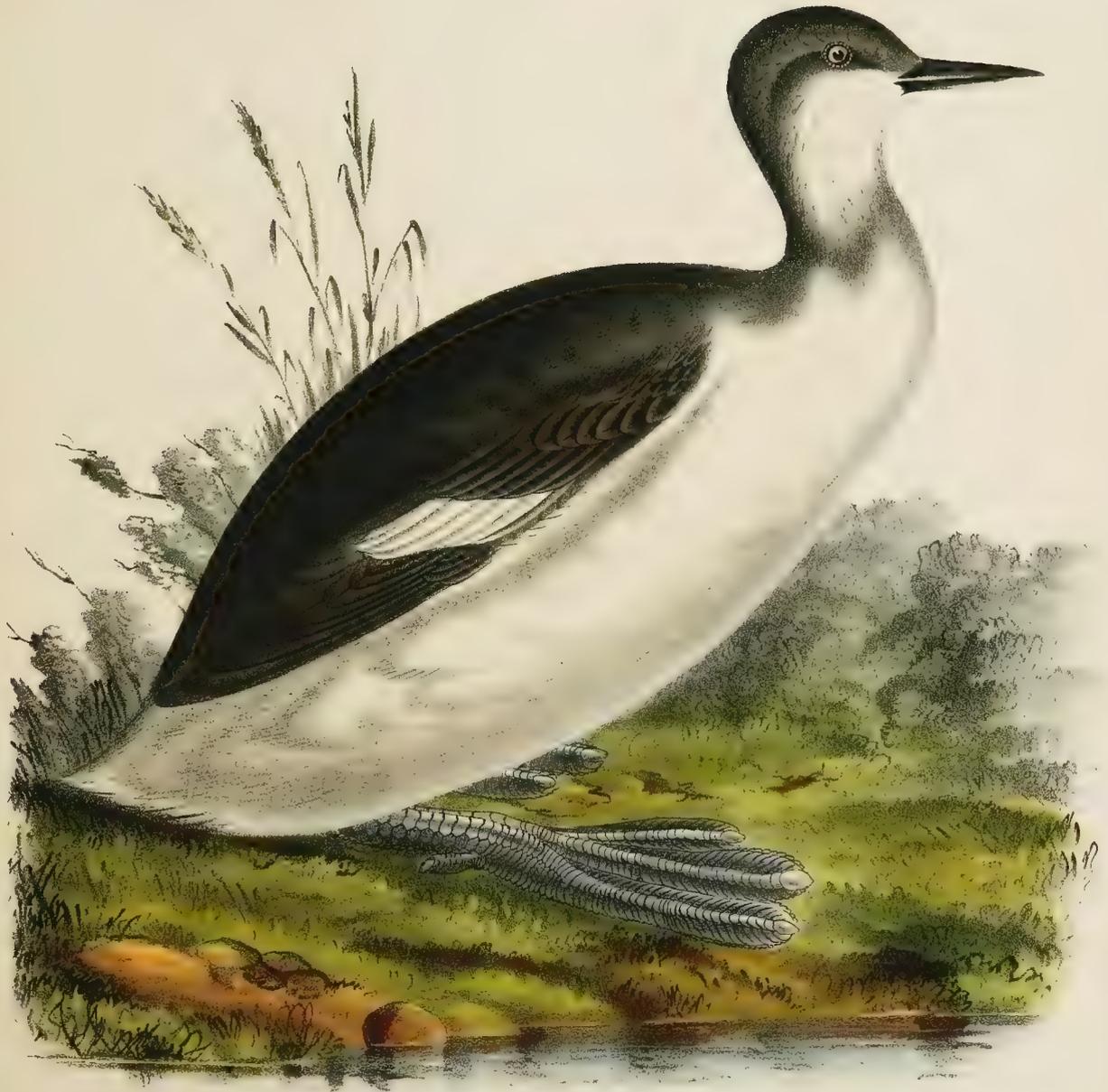
	Specimens.		Specimens.
Zonotrichia graminea.....	2	Picus meridionalis.....	1
Zonotrichia guttata.....	1	Picus ruber.....	2
Zonotrichia gambelii.....	2	Picus varius?.....	1
Zonotrichia coronata.....	2	Melanerpes torquatus.....	2
Passerella townsendii.....	1	Melanerpes formicivorus.....	2
Spizella socialis.....	2	Colaptes mexicanus.....	2
Spizella pallida.....	2	Geococcyx mexicanus.....	2
Poospiza belli.....	2	Callipepla californica.....	2
Passerculus rostratus.....	2	Callipepla gambelii.....	2
Passerculus alaudinus.....	1	Gallinula galeata.....	1
Spiza amoena.....	2	Fulica americana.....	1
Junco oregona.....	2	Rallus virginianus.....	2
Ammodramus ruficeps.....	1	Ardea herodias.....	1
Peucaea lincolni.....	2	Ardea virescens.....	2
Linaria pinus.....	1	Ardea candidissima.....	1
Carduelis tristis.....	2	Ardetta exilis.....	1
Carduelis lawrencii.....	1	Charadrius vociferus.....	1
Carduelis psaltria.....	2	Charadrius montanus.....	2
Pipilo arctica.....	3	Totanus semipalmatus.....	1
Pipilo fusca.....	2	Totanus macularius.....	2
Carpodacus purpureus.....	2	Totanus melanoleucus.....	2
Carpodacus familiaris.....	2	Scolopax wilsonii.....	2
Coccyzus coeruleus.....	2	Scolopax noveboracensis.....	1
Coccyzus melanocephala.....	1	Recurvirostra occidentalis.....	1
Pyrrhuloxia ludoviciana.....	2	Numenius longirostris.....	1
Yphantis bullockii.....	2	Aix sponsa.....	1
Molothrus pecoris.....	2	Querquedula cyanoptera.....	2
Agelaius xanthocephalus.....	1	Spatula clypeata.....	1
Agelaius tricolor.....	2	Nyroca valisneria.....	1
Agelaius gubernator.....	2	Fuligula marila.....	1
Scolecophagus cyanocephalus.....	2	Oedemia perspicillata.....	1
Sturnella neglecta.....	2	Mergus serrator.....	1
Corvus corax.....	1	Pelecanus trachyrhynchus.....	1
Corvus americanus.....	1	Pelecanus fuscus.....	1
Cyanura stellerii.....	1	Sterna hirundo.....	1
Cyanocitta californicus.....	2	Larus heermanni.....	1
Lanius excubitoroides.....	1	Diomedea nigripes.....	1
Sitta aculeata.....	2	Uria columba.....	1
Sitta canadensis.....	1	Colymbus septentrionalis.....	1
Trochilus anna.....	1	Podiceps cristatus.....	1
Picus harrisi.....	2	Podiceps californicus.....	1















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