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Birds

OUTLINE

OF

AMERICAN ORNITHOLOGY

BY

Spencer
Fullerton
S. F. BAIRD, JR., & Robert
RIDGWAY

PART I.

LAND BIRDS

BOSTON
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PREFACE.

THE object of the present volume is to furnish a convenient manual of North American Ornithology, reduced to the smallest possible compass by the omission of everything that is not absolutely necessary for determining the character of any given specimen. It consists, in considerable part, of the analytical and diagnostic tables of the much more elaborate work, the "History of North American Birds," by Messrs. Baird, Brewer, and Ridgway, although these have been rearranged and somewhat enlarged and improved by the introduction of notes on the color of the iris and the character of the nesting and eggs of the species. Where any of these features belong to all the members of a family, subfamily, or genus, they will be found detailed under the appropriate heads; otherwise they are given, if known, in the diagnosis of the species.

It is hoped that in its present dimensions the "Outlines of American Ornithology" will serve as a handy book for the sportsman and traveller, as well as the resident naturalist, and that all may find it a convenient and satisfactory means of identifying any North American bird in all its variations of plumage.

SPENCER F. BAIRD.

SMITHSONIAN INSTITUTION, WASHINGTON,

January 8, 1874.

MAR 27 1872

OUTLINES OF AMERICAN ORNITHOLOGY.

FAMILY **TURDIDÆ**. — THE THRUSHES.

Families allied to **Turdidæ**.

A. Nostrils oval. Loral and frontal feathers with bristly points, or interspersed with bristles; rictus with longer or shorter bristles.

Saxicolidæ. Wings very long and much pointed, reaching beyond the middle of the short square or emarginated tail, and one and a half times or more the length of the latter. The spurious primary very short, the second quill longer than the fourth. In the closed wing the outer secondary reaches only about two thirds the length of longest primary. (Page 7.)

Turdidæ. Wings moderate, more rounded, not reaching beyond middle of the often rounded tail, and not more than one and a third the latter, usually more nearly equal. Spurious primary sometimes half the length of second quill; the second quill shorter than the fourth. In the closed wing the outer secondary reaches three fourths or more the length of longest primary.

B. Nostrils linear, in lower edge of nasal membrane. Loral and frontal feathers soft and downy, and no bristles or bristly points whatever about the mouth.

Cinclidæ. Body very short and broad. Wings short, rounded, and concave. (Page 7.)

Subfamilies.

A. Turdinæ. — Tarsus covered anteriorly with a continuous plate without scales. (Page 2.)

Wings decidedly longer than the tail, which is nearly even. Bill considerably shorter than the head.

First quill usually not one fourth the second. Wings pointed. Tarsus hardly the length of head, but yet longer than middle toe; outstretched toes falling short of tip of tail. Eyes generally brown. (Page 2.) . *Turdus*.

B. Miminæ. — Tarsi scutellate anteriorly; scales seven. (Page 4.)

Wings decidedly longer than the tail, which is nearly even. Tarsus as long as the head.

Bill decidedly shorter than the head, scarcely notched; wings pointed; first quill less than half the second; third and fourth longest. Claws not peculiar. Bristles prominent. Tarsus considerably longer than middle toe and claw. Eyes yellow or orange. (Page 4.) . *Oreoscoptes*.

Wings decidedly shorter than the tail, which is considerably graduated; first quill half or more than half the second.

Bill notched at tip, shorter than head; straight.

熱帯天竺の習性

- Scutellæ very distinct; gonys straight, or even declining at tip.
 Eyes yellow. (Page 6.) *Mimus*.
 Scutellæ more or less obsolete; gonys convex, ascending at tip.
 Eyes brown. (Page 6.) *Galeoscoptes*.
 Bill not notched at tip, lengthened; sometimes much decurved. Eyes
 yellow or orange. (Page 5.) *Harporhynchus*.

SUBFAMILY TURDINÆ. (Page 1.)

GENUS TURDUS, LINNÆUS. (Page 1.)

Subgenera.

1. *Sexes similar*.

Hylocichla. Smallest species. Bill short, broad at base; much depressed. Tarsi long and slender, longer than middle toe and claw, by the additional length of the claw; outstretched legs reaching nearly to tip of tail. Body slender. Color: above olivaceous or reddish, beneath whitish; breast spotted; throat without spots. (Page 2.)

Turdus. Bill stouter and higher. Tarsi stout and short, scarcely longer than middle toe and claw. Body stout, generally whitish beneath and spotted. (Second quill longer than fifth?) (Page 4.)

Planesticus. Similar to preceding. (Second quill shorter than fifth?) Beneath mostly uni-colored; unstreaked except the throat, which is whitish with dark streaks. (Page 4.)

2. *Sexes dissimilar*.

Merula. Similar to *Turdus*. Male usually more or less black, especially on the head; females brownish, often with streaked throats. Bill distinctly notched. Not North American.

Hesperocichla. Similar to *Turdus*. Male reddish beneath, with a black collar. Bill without notch. (Page 4.)

SUBGENUS HYLOCICHLA, BAIRD. (Page 2.)

Species and Varieties.

1. *Spots beneath rounded, covering breast and sides*.

A. Rufous-brown above, becoming much brighter toward the bill, and more olivaceous on the tail. Beneath white; whole breast with rounded spots. Nest on tree; eggs pale blue.

H/a/d 1. ~~*T. mustelinus*~~. Beneath nearly pure white, with rounded blackish spots over the whole breast, sides, and upper part of abdomen; wing, 4.25; tail, 3.05; culmen, .80; tarsus, 1.26. *Hab.* Eastern Province United States, south to Guatemala and Honduras. Cuba and Bermuda of West Indies. (*The Wood Thrush*.)

2. *Spots beneath triangular, on breast only*.

B. Entirely uniform in color above, — olivaceous, varying to reddish or greenish with the species. Beneath whitish, with a wash of brownish across the breast and along sides. Spots triangular, and confined to the breast. Nest on trees or bushes; eggs blue, spotted with brownish; except in *T. fuscescens*, which nests on the ground, and lays plain blue eggs.

a. *No conspicuous light orbital ring.*

H/ 2. *T. fuscescens*. Yellowish-rufous or olive-fulvous above; a strong wash of pale fulvous across the throat and jugulum, where are very indistinct cuneate spots of same shade as the back. Wing, 4.10; tail, 3.00; culmen, .70; tarsus, 1.15. *Hab.* Eastern Province of North America. North to Nova Scotia and Fort Garry. West to Great Salt Lake. South (in winter) to Panama and Brazil. Cuba. (*Wilson's Thrush.*)

H/ 3. *T. aliciae*. Grayish clove-brown above; breast almost white, with broad, blackish spots; whole side of head uniform grayish. Wing, 4.20; tail, 3.20; culmen, .77; tarsus, 1.15. *Hab.* Eastern Province of North America, west to Missouri River, south to Costa Rica. Cuba. In summer from Labrador around Arctic coast to Kodiak. (*Gray-checked Thrush.*)

b. *A conspicuous orbital ring of buff.*

H/ 4. *T. swainsoni ustulatus*
Greenish-olive above, breast and sides of head strongly tinged with buff. Spots on breast broad, distinct, nearly black. Length, 7.00; wing, 3.90; tail, 2.90; culmen, .65; tarsus, 1.10. *Hab.* Eastern and Middle Provinces of North America. North to Slave Lake, south to Ecuador, west to East Humboldt Mountains. (*Olive-backed Thrush.*) var. *swainsoni*.
Brownish-olive above, somewhat more rufescent on wing; breast and head strongly washed with dilute rufous. Spots on breast narrow, scarcely darker than back. Wing, 3.85; tail, 3.00; culmen, .70; tarsus, 1.10. *Hab.* Pacific Province of United States. Guatemala. (*Oregon Thrush*) var. *ustulatus*.

C. Above olivaceous, becoming abruptly more reddish on upper tail-coverts and tail. Spots as in *swainsoni*, but larger and less transverse,—more sharply defined. An orbital ring of pale buff. Nest on ground; eggs blue, probably always unspotted.

H. 5. *T. pallasi unalascae*.

Olivaceous of upper parts like *ustulatus*. Reddish of upper tail-coverts invading lower part of rump; no marked difference in tint between the tail and its upper coverts. Flanks and tibiae yellowish olive-brown; a faint tinge of buff across the breast. Eggs plain. Wing, 3.80; tail, 3.00; culmen, .70; tarsus, 1.20. *Hab.* Eastern Province of United States (only?). (*Hermit Thrush.*) var. *pallasi*.

Olivaceous of upper parts like *swainsoni*. Reddish of tail not invading the rump, and the tail decidedly more castaneous than the upper coverts. Beneath almost pure white; scarcely any buff tinge on breast; flanks and tibiae grayish or plumbeous olive. Size smaller than *swainsoni*; bill depressed. Wing, 3.50; tail, 2.60; culmen, .60; tarsus, 1.15. *Hab.* Western Province of North America, from Kodiak to Cape St. Lucas. East to East Humboldt Mountains. (*Dwarf Hermit Thrush.*) var. *unalascae*.

Olivaceous above, like preceding; the upper tail-coverts scarcely different from the back. Tail yellowish-rufous. Beneath like *nanus*. Size larger than *swainsoni*. Wing, 4.20; tail, 3.35; culmen, .80; tarsus, 1.30. *Hab.* Rocky Mountains. From Fort Bridger, south (in winter) to Southern Mexico. (*Mountain Hermit Thrush.*) var. *auduboni*.

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SUBGENUS **TURDUS**, LINN. (Page 2.)

- ② **Turdus iliacus**. Smaller than Robin (*T. migratorius*), but of a similar grayish-olive above, including head. Under parts white; the feathers of the lower throat and breast streaked with brown. Sides, axillars, and inner wing-covert reddish-cinnamon. A conspicuous white streak over the eye, extending as far back as the nape. Wing, 4.64. *Hab.* Europe; accidental in Greenland. Nest on trees. Eggs bluish, spotted with reddish. (*Redwing Thrush*.)

Merula, Leach.

SUBGENUS **PLANETICUS**, BONAP. (Page 2.)

Varieties.

Merula migratoria.

COMMON CHARACTERS. Throat white with dark streaks. Rest of under parts, including lining of wing, reddish or ochraceous; the anal region whitish; lower eyelid white. Length about 10 inches.

② **Turdus migratorius.**

Above slaty-olive, approaching to black on the head. Beneath rufous-chestnut. Spot in lore and on upper eyelid of white. Tail, 4.25. *Hab.* Whole of North America; Mexico, south to Oaxaca and Cordova; Cuba (very rare) and Tobago, of West Indies. Nest on trees. Eggs plain blue. (*Common Robin*.) var. *migratorius*.

Above dull grayish-ash, not darker on the head. Beneath pale yellowish-buff; tinged with ashy across breast; a continuous white stripe from the lores over and a quarter of an inch behind the eye. More white on belly and flanks than in *T. migratorius*. Bill stouter; tail only 3.75, while the wing is the same. *Hab.* Cape St. Lucas, Lower California. Nesting and eggs unknown. (*Cape Robin*.) var. *confinis*.

SUBGENUS **HESPEROCICHLA**, BAIRD. (Page 2.)

H. naevia.

Turdus naevius. Above dark bluish-slate; under parts generally, a patch on the upper eyelids continuous with a stripe behind it along the side of the head and neck, the lower eyelids, two bands across the wing-coverts and the edges of the quills, in part, rufous orange-brown; middle of belly white. Sides of the head and neck, continuous with a broad pectoral transverse band, black. Female duller. Length, 9.75 inches. Nest on bushes or trees. Eggs blue, spotted with dark brown. *Hab.* West coast of North America, from Behring Straits to California. (*Oregon Robin*.)

SUBFAMILY **MIMINÆ**. (Page 1.)GENUS **OREOSOPTES**, BAIRD. (Page 1.)

- ② **Oreoscoptes montanus**. Above brownish-ash; each feather darker in the centre. Beneath dull white, thickly marked with triangular spots, except on the under tail-coverts and around the anus, which regions are tinged with yellowish-brown. Wing-coverts and quills edged with dull white. Tail-feathers brown; the outer edged, and all (except,

perhaps, the middle) tipped with white. Length, 8 inches; wing, 4.85; tail, 4.00; tarsus, 1.21. Nest in bushes. Eggs blue, blotched with brown and lilac. (*Sage-Thrasher*.)

HAB. Rocky Mountains of United States, west to Pacific, south to Cape St. Lucas.

GENUS **HARPORHYNCHUS**, CABANIS. (Page 2.)

Nest usually very bulky; in low bushes or brush. Eggs with ground-color whitish to blue or green, thickly sprinkled with fine dots or spots of rufous-brown markings (uniform blue in *crissalis*).

Species.

A. Spots beneath sharply defined and conspicuous, — much darker in color than the upper parts.

1. **H. rufus.** The markings lineo-cuneate; wing-bands sharply defined.

Above rufous; markings below dark brown; outer tail-feathers diluted at tip; wing, 4.00; tail, 5.20; bill from nostril, .79, nearly straight; tarsus, 1.30; middle toe, .90 (1,377 ♂, Carlisle, Penn.). Prevailing color of eggs, buff. Hab. Eastern Province United States. (*Brown Thrasher*.) var. *rufus*.

Wing, 4.40; tail, 5.70; bill, .79; tarsus, 1.35; middle toe, .90 (5,652 ♂, Republican River). Hab. Plains between Missouri River to Rocky Mountains. (*Long-tailed Thrasher*.) var. *longicauda*.

Above umber-brown; markings beneath black; tail-feathers not paler at tip; wing, 3.90; tail, 4.90; bill, .85, slightly curved; tarsus, 1.40; middle toe, .94 (4,016 ♂, Brownsville, Tex.) Prevailing color of eggs pale greenish. Hab. Eastern Mexico, north to Rio Grande of Texas. (*Texas Thrasher*.) var. *longirostris*.

2. **H. ocellatus.** The markings circular; wing-bands conspicuous.

Above grayish-brown; markings beneath black; tail-feathers broadly tipped with white; wing, 4.10; tail, 5.60; bill, from rictus, 1.50, moderately curved; tarsus, 1.50. Hab. Oaxaca, Mex. (*Ocellated Thrasher*.)

3. **H. cinereus.** The markings deltoid; wing-bands narrow, but sharply defined. (*Cape Thrasher*.)

Above brownish-cinereous; markings beneath blackish-brown; tail-feathers broadly tipped with white; wing, 4.00; tail, 4.60; bill, .88, much curved; tarsus, 1.30; middle toe, .85 (12,960 "♀" — ♂? Cape St. Lucas). Prevailing color of eggs greenish-white. Hab. Cape St. Lucas, Lower California.

B. Spots beneath obsolete, not darker than the plumage above; roundish in form.

4. **H. curvirostris.**

Above cinereous; wing-bands distinct; spots below distinct, upon a white ground; femoral region and crissum very pale ochraceous; tail-feathers broadly and sharply tipped with pure white; wing, 4.30; tail, 4.50; bill, 1.00, stout, moderately curved; tarsus, 1.40; middle toe, 1.12 (7,200 ♂, Ringgold Barracks, Texas). Prevailing color of eggs greenish. Hab. from Rio Grande Valley in Texas to Cordova, Orizaba, Oaxaca, Colima, and Mazatlan. (*Curve-billed Thrasher*.) var. *curvirostris*.

Wing-bands obsolete, and tail-spots very narrow and obsolete; spots below just discernible upon a grayish ground; femoral region and crissum dilute ochraceous-brown; wing, 4.30; tail, 5.20; bill, 1.00,

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) for arbitrary values of the parameters α and β . It is shown that the system of equations (1) has solutions for arbitrary values of the parameters α and β if and only if the conditions $\alpha \geq 0$ and $\beta \geq 0$ are satisfied.

[Faint mirrored bleed-through from the reverse side of the page]

slender, moderately curved; tarsus, 1.30; middle toe, 1.00 (8,128 ♂, "New Mexico"—probably Eastern Arizona). Prevailing color of eggs bluish. *Hab.* Arizona (Camp Grant). (*Palmer's Thrasher.*) var. *palmeri*.

C. Entirely unspotted beneath.

5. H. redivivus. Anal region and lower tail-coverts light ochraceous.

Above soft brownish-cinereous, tail considerably darker; wing-bands almost obsolete, and tail-feathers merely diluted at tips. Beneath paler than above,—almost white on throat and abdomen; anal region and lower tail-coverts yellowish-ochraceous. A distinct "bridle" formed by the hair-like tips of the feathers, bordering the throat; maxillary stripe white with transverse bars of dusky; wing, 3.90; tail, 5.25; bill, 1.05, slender, moderately curved; tarsus, 1.25; middle toe, .86 (40,718 ♂, 20 miles from Colorado River, near Fort Mojave). *Hab.* Arizona (Gila River, Fort Yuma, and Fort Mojave). (*Leconte's Thrasher.*) var. *lecontei*.

Above ashy-drab, tail darker and more brownish; wing-bands inconspicuous, and tail-feathers hardly diluted at tips. Beneath, the ochraceous covers the abdomen, and the throat inclines to the same. No "bridle." Cheeks and ear-coverts blackish, with conspicuous shaft-streaks of white; wing, 4.30; tail, 5.60; bill, 1.40, stout, very much bowed,—the arch regular; tarsus, 1.55; middle toe, 1.00 (3,932 ♂, California). Prevailing color of eggs bluish-green. *Hab.* Coast region of California. (*California Thrasher.*) var. *redivivus*.

6. H. crissalis. Anal region and lower tail-coverts deep chestnut.

Above, brownish-ashy with a slight purplish cast, tail not darker; no trace of wing-bands; tail-feathers diluted, and tinged with rusty at tips. Beneath, of a uniform, paler tint than the upper plumage, not lighter medially; throat white, with a conspicuous "bridle"; from this up to the eye whitish, with transversely angular bars of dusky; wing, 4.00; tail, 6.50; bill, 1.25, very slender, bowed from the middle; tarsus, 1.30; middle toe, .90 (11,533 ♂, Fort Yuma). Eggs uniform pale blue. *Hab.* Region of Gila River to Rocky Mountains; north to Southern Utah (St. George, breeding; Dr. Palmer). (*Red-vented Thrasher.*)

GENUS **MIMUS**, BOIE. (Page 2.)

M. polyglottus. Ashy-brown above; white beneath. Wings and tail black, two bands across the wings, and more or less of the three outer tail-feathers white. Length, 9.50; wing, 4.50; tail, 5.00. Nest bulky; on trees or bushes. Eggs greenish-blue; coarsely marked all over with brown and purple. *Hab.* North America generally to 40°. (*Mocking-Bird.*)

GENUS **GALEOSCOPTES**, CABANIS. (Page 2.)

G. carolinensis. Dark lead-color with black cap, and chestnut-red under tail-coverts. Length, 8.75; wing, 3.65. Nest in low bushes. Eggs uniform bluish-green. *Hab.* United States except west coast; to Central America. (*Catbird.*)

FAMILY CINCLIDÆ. (Page 1.)

GENUS CINCLUS, BECHSTEIN.

Characters the same as those of the family. Colors dark brown or ^{slaty} almost black; in some species varied with white on head, throat, or back. Nest large and domed, entrance at base. Eggs white.

Brown species.

C. pallasi.

Plumage beneath scarcely lighter than that above; head and neck brownish, darkest above. Wing, 4.00; tail, 2.15; bill, .50; tarsus, 1.20; middle toe, .85. Legs (in life), pinkish white (8,496, Fort Mass. N. M.). *Hab.* Middle Province of North America from Sitka, south to Guatemala. (*American Dipper.*)

var. *mexicanus*.

Plumage beneath much lighter than that above, — very light along the median line; head not brownish, the contrast in shade between upper and lower surfaces very marked. Wing, 3.50; tail, 2.05; bill, .45; tarsus, 1.30; middle toe, .90. Legs yellow. (42,788 ♂, Costa Rica.) *Hab.* Guatemala and Costa Rica. (*Slate-colored Dipper.*)

var. *ardesiacus*.

Plumage uniform dusky-brown, middle of belly blackish; *back and rump squamated with black*; wings and tail blackish-brown. Total length, 8.00; wing, 4.00; tail, 2.50; tarsus, 1.25; bill (to rictus), 1.10 (Salvin). *Hab.* Lake Baikal to Kamtschatka; Amoorland; S. E. Siberia; Japan (Salvin) . . . var. *pallasi*.

FAMILY SAXICOLIDÆ. (Page 1.)

American genera compared with *Turdus*.

Turdus. Tarsi long, exceeding the middle toe; wings reaching to the middle of the tail, which is about four fifths the length of the wings. Bill stout; its upper outline convex toward the base. Second quill shorter than fifth. Sexes alike.

Saxicola. Tarsi considerably longer than the middle toe, which reaches nearly to the tip of the tail. Tail short, even; two thirds as long as the lengthened wings, which reach beyond the middle of the tail. Second quill longer than fifth. Bill attenuated; its upper outline concave towards the base. Sexes dissimilar. Eggs plain blue.

Sialia. Tarsi short; about equal to the middle toe. Wings reaching beyond the middle of the tail. Bill thickened. Sexes dissimilar. Eggs plain blue.

GENUS SAXICOLA, BECHSTEIN.

S. œnanthe. Bluish-gray above; line over eye, forehead, and beneath white; stripe through eye, wing, and upper tail-covert, black. Tail white, broadly tipped with black. Female duller colored. Length, 6.00; wing, 3.45; tail, 2.50. Nest on ground. Eggs plain blue. *Hab.* North of Old World, and arctic region of the New. (*The Wheat-Ear.*)

GENUS SIALIA, SWAINSON. (Page 7.)

Species.

COMMON CHARACTERS. Rich blue above, duller in the female. Beneath reddish or blue in the male, reddish or light drab in the female. Young with wings and tail only blue, the head and anterior parts of body with numerous whitish spots. Eyes brown. Length about 6.50. Eggs plain blue. Nest in holes of trees.

THE HISTORY OF THE

REIGN OF

THE GREAT BRITANNIA, FROM THE DEATH OF KING CHARLES THE SECOND, TO THE PRESENT TIME.

By JOHN HUGHES.

1704.

THE HISTORY OF THE REIGN OF KING CHARLES THE SECOND, FROM THE DEATH OF KING CHARLES THE FIRST, TO THE PRESENT TIME. BY JOHN HUGHES. IN TWO VOLUMES. THE FIRST VOLUME. LONDON, Printed by J. Sturges, at the Sign of the Gun, in St. Dunstons Church-yard, 1704.

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Αρχιεπίσκοπος καὶ Ἀδελφὸς ἡμεῖς. Α.

THE UNIVERSITY OF CHICAGO

(E 0945) REVUE DE L'ÉCONOMIE

(1870-1871)

(Page 8)

NOV 20 1964

A. Breast reddish, or chestnut.

1. **S. sialis.** No chestnut on the back; throat reddish; abdomen and crissum white.

Blue of a rich dark purplish shade. Tail about 2.75. *Hab.* Eastern Province United States, Cuba, and Bermudas . . . var. *sialis*.

Blue of a greenish shade. Tail about 3.20. *Hab.* East Mexico and Guatemala var. *azurea*.

2. **S. mexicana.** Chestnut, in greater or less amount, on the back; throat blue; abdomen and crissum blue. *Hab.* West and South Middle Province United States, south to Jalapa, Cordova, and Colima.

B. Breast blue (light drab in ♀).

3. **S. arctica.** Entirely rich greenish-blue; abdomen white. *Hab.* Middle Province United States; Fort Franklin, British America.

FAMILY SYLVIIDÆ.

Most of the species (at least the American) have the eggs whitish, spotted with rusty, etc. The eyes are brown.

Subfamilies.

- A.** Wings longer than the nearly even and emarginate tail. Scutellæ of tarsus scarcely or not at all appreciable. General color olivaceous above. No white on tail.

Nostrils naked. Scutellæ distinct on inner face of tarsus only. Head plain.

(Page 8.) *Sylviinæ*.

Nostrils overhung by bristly feathers. Scutellæ of tarsus not appreciable.

Head with a colored central crest. (Page 8.) *Regulinæ*.

- B.** Wings about equal to the graduated tail. Tarsal scutellæ distinct. Above bluish; tail with white spots or patches.

Nostrils uncovered. Head plain; either bluish or black above. (Page 9.)

Polioptilinæ.

SUBFAMILY SYLVIINÆ. (Page 8.)

The characters given above of the subfamily answer for the single American genus.

GENUS PHYLLOPNEUSTE, MEYER & WOLF.

P. borealis. Olive-green above; beneath greenish-white; more yellow behind; axillars yellow. A line over eye, and band across wing, greenish-yellow. Bill dark brown; legs olive. Length, 4.75; wing, 2.50; tail, 2.00. Nest on ground, and domed. Eggs white, spotted with pink. *Hab.* China, Eastern Siberia, and east side of Behring Straits. (*Alaska Willow-Warbler*.)

SUBFAMILY REGULINÆ. (Page 8.)

The characters given above of the subfamily answer for the single American genus.

GENUS REGULUS, CUV.

Length about 4 inches; wing, 2.25. Nest of American species undescribed, probably pensile, with white eggs, spotted obsoletely with buff.

APR 15 1872

Species.

R. calendula. Head with entire cap in adult plain olivaceous, with a concealed patch of crimson. *Hab.* Whole of North America; south to Guatemala; Greenland. (*Ruby-crowned Wren*) *Kinglet.*

R. satrapa. Head with forehead and line over the eye white, bordered inside by black, and within this again is yellow, embracing an orange patch in the centre of the crown. *Hab.* Whole of North America. (*Golden-crowned Wren*.) *Kinglet.*

R. cuvieri. Head with forehead and line through the eye black, bordered inside by whitish, and within this again by black, embracing an orange-red patch in the centre of the crown. *Hab.* Banks of Schuylkill River, Pennsylvania. (*Cuvier's Wren*.) *Kinglet.*

SUBFAMILY POLIOPTILINÆ. (Page 8.)

GENUS POLIOPTILA, SCLAT.

Length, about 4.25. Nest felted, conical, high, woven to small upright twigs, coated externally with lichens. Eggs greenish-white, dotted with brown, etc.

Species.

Top of head plumbeous in adult ♂.

P. cærulea. Two outer tail-feathers entirely white. A narrow frontal line, extending back over the eye, black. Wing, 2.50. *Hab.* North America. (*Blue-gray Gnatcatcher*.)

P. plumbea. Outer tail-feather, with the whole of the outer web (only), white. No black on the forehead, but a stripe over the eye above one of whitish. Wing, 1.80. *Hab.* Arizona. (*Lead-colored Gnatcatcher*.)

Top of head black in adult ♂.

P. melanura. Edge only of outer web of outer tail-feather white. Entire top of head from the bill black. Wing, 1.85. *Hab.* Rio Grande and Gila. (*Black-capped Gnatcatcher*.)

tailed

FAMILY CHAMÆADÆ. — THE GROUND-TITS.

GENUS CHAMÆA, GAMBEL.

Resembles the Titmice in loose plumage, bristly lores, and want of notch to bill, but with the culmen sharp-ridged, rictus bristled; scales of tarsi in one continuous plate. Wing excessively rounded; the sixth quill longest, only two thirds the length of the tail, which is much graduated.

C. fasciata. GAMBEL. Above olivaceous-brown; beneath pale cinnamon, throat and breast faintly streaked. Lores and spot above eye whitish. Iris white. Length, 6.20; wing, 2.30; tail, 3.50; bill above, .52. Nest in low shrubs; eggs pale greenish-blue. *Hab.* Coast of California. (*Ground-Tit*.)

FAMILY PARIDÆ. — THE TITMICE.

Subfamilies.

Parinæ. Body compressed. Bill shorter than the head. Wings rounded, equal to or shorter than the rounded tail. Second quill as short as the tenth. Tarsus longer than

the middle toe and claw, which are about equal to the hinder; soles of toes widened into a palm. Plumage rather soft and lax. Eyes brown, except in *Psaltiriparus*. Nest in holes; eggs white, spotted with reddish, except in *Psaltiriparus* and *Auriparus*.

Sittinæ. Body depressed. Bill about equal to or longer than the head. Wings much pointed, much longer than the nearly even tail. Tarsus shorter than the middle toe and claw, which are about equal to the hinder. Plumage more compact. Eyes brown. Nest in holes of trees; eggs white, spotted with reddish. (Page 12.)

SUBFAMILY PARINÆ. (Page 9.)

Genera.

Bill with curved outlines.

Head with a long pointed crest. Wings and tail rounded.

Body full and large. Tail about equal to wings. (Page 10.) . *Lophophanes.*

Head with feathers full, but not crested. Wings and tail rounded.

Body full. Tail about equal to wings. (Page 10.) . . . *Parus.*

Body slender. Tail much longer than wings; much graduated. Eyes sometimes white. Nest external, pensile; purse-shaped, open at side. Eggs pure white. (Page 11.) *Psaltiriparus.*

Bill with outlines nearly straight.

Head with compact feathers. Wings pointed.

Body slender. Tail rather shorter than the wings; nearly even. Nest external; open in the side. Eggs pale blue, spotted with brown. (Page 12.)

Auriparus.

GENUS LOPHOPHANES, KAUP.

Species.

L. bicolor. Above plumbeous; forehead black; crown much like the back. *Hab.* Eastern Province of United States. Length, 6.25. (*Tufted Titmouse.*)

L. atricristatus. Above plumbeous; forehead whitish; crown black. *Hab.* East Mexico, north to Rio Grande. Length, 5.25. (*Black-crested Titmouse.*)

L. inornatus. Above olivaceous; forehead and crown like the back. *Hab.* Southern Mexico and Western Province of United States. Length, 5.00. (*California Titmouse.*)

L. wollweberi. Sides of head banded black and white; crown ash; throat black. *Hab.* S. Rocky Mountains of United States; Mexico to Oaxaca. Length, 4.50. (*Wollweber's Titmouse.*)

GENUS PARUS, LINNÆUS.

Species and Varieties.

1. *Head and neck, above and beneath, black; their sides white.*

A. A broad white stripe above the eye, meeting across forehead.

1. **P. montanus.** Edges of wing-coverts, secondaries, and tail scarcely paler than general tint above. Beneath ashy-whitish, medially. Wing, 2.85; tail, 2.50; bill (along culmen), .50; tarsus, .69; middle toe, .43; wing-formula, 4 = 5, 3 = 6, 7, 2; graduation of tail, .18. *Hab.* Mountain regions of Middle and Western United States. (*Mountain Chickadee.*)

B. No white stripe above the eye.

a. Tail as long as, or longer than, wing. Conspicuous white edgings to wing-coverts, secondaries, and tail-feathers.

2. P. atricapillus.

Dorsal region yellowish-cinereous, wings and tail purer ash; sides light ochraceous. White edgings of tail-feathers *not* margining their ends. Wing, 2.60; tail, 2.60; bill, .40; tarsus, .62; middle toe, .36; wing-formula, 4, 5, 6, 3, 7, 8, 2 = 9; graduation of tail, .30. (12,851 ♂, Brooklyn, N. Y.) *Hab.* Eastern Province of North America, north of about 39°. (*Black-capped Titmouse.*) . . . var. *atricapillus*.

Dorsal region and sides with scarcely a perceptible yellowish tinge; white edgings of tail-feathers passing around their ends. Beneath whitish. Wing, 2.75; tail, 2.80; culmen, .35; tarsus, .65; middle toe, .40; wing-formula, 5, 4 = 6, 3 = 7, 8, 2 = 9; graduation of tail, .50. (3,704 ♂? Salt Lake City, Utah.) *Hab.* Region of Missouri River and Rocky Mountains. (*Long-tailed Titmouse.*) var. *septentrionalis*.

Colors as in *Atricapillus*, but much darker. Beneath more ochraceous. Wing, 2.40; tail, 2.50; culmen, .40; tarsus, .60; middle toe, .40; wing-formula, 4th, 5th, and 6th equal, 3 = 7, 2 = 10; graduation of tail, .25. (6,762 ♂? Fort Vancouver, Washington Territory.) *Hab.* Pacific Province of North America. (*Western Titmouse.*) . . . var. *occidentalis*.

b. Tail shorter than wing; no conspicuous white edgings to wings and tail.

3. P. meridionalis. Beneath ashy (nearly dark as upper surface), whitish medially. Wing, 2.60; tail, 2.20; culmen, .40; tarsus, .63; middle toe, .40; wing-formula, 4, 5, 6, 3 = 7, 2 = 10; graduation of tail, .10. (10,203, Mexico.) *Hab.* Eastern Mexico. (*Mexican Titmouse.*)

4. P. carolinensis. Beneath pale soiled ochraceous-whitish, scarcely lighter medially. Wing, 2.55; tail, 2.30; culmen, .35; tarsus, .53; middle toe, .38; wing-formula, 5, 4, 6, 7, 3, 8, 2 = 9; graduation of tail, .10. (706 ♂, Washington, D. C.) *Hab.* Eastern Province of United States, south of about 40°. (*Carolina Titmouse.*)

2. Head and neck, above and beneath, brown, the throat darkest; their sides white.

C. Back, scapulars, rump, and sides rusty-chestnut.

5. P. rufescens. Side of neck pure white. Wing, 2.35; tail, 2.00; tarsus, .61; middle toe, .40. Tail scarcely graduated. *Hab.* Pacific coast of North America. (*Chestnut-sided Titmouse.*)

D. Back, etc., grayish or ochraceous brown.

6. P. hudsonicus. Side of neck grayish. Back, etc., smoky-gray. Sides dark rusty-brown. Wing, 2.45; tail, 2.45; tarsus, .62; middle toe, .35; graduation of tail, .30. (17,101, Halifax, N. S.) *Hab.* Arctic America; south to northern boundary of the United States (except to westward). (*Hudson's Bay Titmouse.*)

7. P. sibiricus. Side of neck white. Back, etc., rusty ochraceous-gray. Sides rusty-ochraceous. Wing, 2.70; tail, 2.80; tarsus, .66; middle toe, .36; graduation of tail, .30. *Hab.* Europe. (*Siberian Titmouse.*)

GENUS **PSALTRIPARUS**, BONAP. (Page 10.)

Nest very large, pensile; purse-shaped, with circular entrance near top. Eggs white.

A. Head striped with black on the sides.

P. melanotis. The stripes passing under the eye and uniting on the occiput. *Hab.* Eastern Mexico

B. No stripes on the head.

P. minimus. Back ashy; crown light brown. *Hab.* Pacific Province of United States. var. *minimus*.

Back and crown uniform ashy. *Hab.* Middle Province and southern Rocky

Mountains of United States var. *plumbeus*.

GENUS **AURIPARUS**, BAIRD. (Page 10.)

A. flaviceps, BAIRD. Above cinereous; head, all round, yellow; lesser wing-coverts chestnut; beneath brownish-white. Iris brown. Length, 4.50 inches; wing, 2.16; tail, 2.35. Nest large, suspended at end of twigs; subglobular; entrance circular; eggs pale blue, with brown spot. *Hab.* Valleys of the Rio Grande and Colorado; Cape St. Lucas. (*Yellow-headed Bush-Titmouse*; *Verdin*.)

SUBFAMILY **SITTINÆ**. (Page 10.)

Iris brown. Nest in holes of trees; eggs white, with reddish spots.

GENUS **SITTA**, LINNÆUS.

Species and Varieties.

A. Crown black.

S. carolinensis. Belly white; no black stripe through eye. Length about 6.00. (*White-bellied Nuthatch*.)

Bill, .70 long, .17 deep. Black spots on tertials sharply defined.

Hab. Eastern Province North America var. *carolinensis*.

Bill, .80 long, .14 deep. Black spots on tertials obsolete. *Hab.* Middle

and Western Province United States, south to Cordova, Mexico var. *aculeata*.

S. canadensis. Belly brownish-rusty. A black stripe through eye. Length 4.50. *Hab.* Whole of North America. (*Canada Nuthatch*.)

B. Crown not black. Length about 4.00; wing, 2.50.

S. pusilla. Crown light hair-brown; hind toe much longer than the middle one. *Hab.* South Atlantic and Gulf States. (*Brown-headed Nuthatch*.)

S. pygmaea. Crown greenish-plumbeous; hind toe about equal to middle one. *Hab.* Western and Middle Province United States, south to Xalapa. (*Pygmy Nuthatch*.)

FAMILY **CERTHIADÆ**. — THE CREEPERS.

CHAR. Primaries ten; first very short, less than half the second. Tail long, wedge-shaped, the feathers stiffened and acute. Bill slender, much compressed and curved. Outer lateral toe much longest; hind toe exceeding both the middle toe and the tarsus, which is scutellate anteriorly and very short. Entire basal joint of middle toe united to the lateral. Iris brown. Nest in holes, or behind bark of trees or stumps. Eggs grayish-white, sprinkled with fine reddish spots.

GENUS **CERTHIA**, LINN.**Species and Varieties.**

C. familiaris. Above brownish, more rufescent on the rump, each feather streaked centrally with whitish; wings with about three zigzag bands of pale ochraceous. Lower parts whitish; a white streak over the eye.

A. Crissum white.

Tail shorter than wing.

1. Dusky tints prevailing above; beneath dull ashy-white. Wing, 2.50; tail, 2.20; bill, .55. *Hab.* Europe var. *familiaris*.

Tail longer than wing.

2. Light tints prevailing above; beneath pure silky-white. Wing, 2.60; tail, 2.65; bill, .70. *Hab.* Europe var. *costæ*.

B. Crissum ochraceous.

3. Rump fulvous; beneath pure silky-white. Wing 2.60; tail, 2.85; bill, .60. (Pacific coast specimens more brownish, with longer bills.) *Hab.* Whole of North America var. *americana*.

4. Rump chestnut; beneath dull ashy-white. Wing, 2.50; tail, 2.70; bill, .65. *Hab.* Table-lands of Mexico var. *mexicana*.

FAMILY **TROGLODYTIDÆ**. — THE WRENS.

CHAR. Rictal bristles wanting; the loreal feathers with bristly points. Bill usually without notch. Wings much rounded, about equal to tail, which is graduated. Primaries ten, the first generally about half the second. Basal joint of middle toe usually united to half the basal joint of inner, and the whole of that of the outer, or more. Lateral toes about equal, or the outer a little the longer. Tarsi scutellate. Eyes brown except in *Campylorhynchus*. Eggs and nest various.

Genera.

A. Lateral toes very unequal.

a. Culmen depressed basally, the interval between the nostrils wider than the much compressed anterior half of the bill. Plate on the posterior half of the tarsus continuous. **Catherpes**. (Page 14.)

b. Culmen compressed basally, the interval between the nostrils narrower than the rather depressed anterior half of the bill. Plate on the posterior half of the tarsus broken into smaller scales. **Salpinctes**. (Page 14.)

B. Lateral toes equal.

c. Length about 8 inches. **Campylorhynchus**. (Page 14.)

d. Length less than 6 inches.

Bill abruptly decurved or hooked at the tip. Outstretched feet not reaching near to end of tail. **Thryothorus**. (Page 14.)

Tail longer than the wing, the feathers black, variegated terminally with whitish. (Page 100.) . . . Subgenus *Thryomanes*.

Tail shorter than the wing, the feathers rusty, not variegated with whitish. (Page 106.) . . . Subgenus *Thryothorus*.

Bill only gently curved at the tip. Outstretched feet reaching nearly to or beyond the end of the tail.

THE SCYTHIAN, 1866.

General and Particular

The Scythian is a small, slender, and somewhat dark-skinned man, with a high forehead, and a small, pointed nose. He is usually dressed in a simple, loose-fitting tunic, and wears a small, pointed cap.

He is usually found in the mountains.

He is usually found in the mountains, and is usually dressed in a simple, loose-fitting tunic, and wears a small, pointed cap.

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THE SCYTHIAN, 1866.

4. Great. The Scythian is usually found in the mountains, and is usually dressed in a simple, loose-fitting tunic, and wears a small, pointed cap. He is usually found in the mountains, and is usually dressed in a simple, loose-fitting tunic, and wears a small, pointed cap.

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Back without streaks. No distinct superciliary stripe. **Troglodytes.** (Pages 00, 00.)

Bill curved, sub-conical. Tail as long as wing.

Subgenus *Troglodytes*.

Bill straight, subulate. Tail much shorter than wing.

Subgenus *Anorthura*.

Back streaked with black and white. **Cistothorus.** (Page 13.)

Bill short, stout; its depth equal to one half its length from the nostril; gonys straight or even convex, ascending. Crown streaked; no distinct superciliary stripe. Subgenus *Cistothorus*.

Bill elongated, slender; its depth less than one third its length from the nostril; gonys slightly concave, declining. Crown not streaked; a conspicuous superciliary stripe. Subgenus *Telmatodytes*.

GENUS **CAMPYLORHYNCHUS**, SPIX. (Page 13.)

Species.

Top of head and post-ocular stripe reddish-brown; back streaked longitudinally and linearly with white. All the feathers beneath conspicuously spotted. Crissum and flanks with rounded or elongated spots. Iris reddish. Nostrils inferior, linear, overhung by a scale. Nests large and purse-shaped; eggs white, profusely marked with salmon-colored or reddish spots.

a. Spots much larger on throat and jugulum than elsewhere. Inner webs of second to fifth tail-feathers (between middle and outer feathers) black, except at tips. Length, 8.00; wing, 3.40; tail, 3.55. *Hab.* Adjacent borders of United States and Mexico. (*Cactus Wren*.) . . . *brunneicapillus*.

b. Spots on throat and jugulum little larger than elsewhere. Inner webs of intermediate tail-feathers banded with white like the outer. Length, 7.50. *Hab.* Cape St. Lucas. (*Cape Cactus Wren*.) . . . *affinis*.

GENUS **SALPINCTES**, CABANIS. (Page 13.)

S. obsoletus. Bill about as long as the head. Upper parts brownish-gray, each feather with a central line and (except on the head) transverse bars of dusky, and a small dull brownish-white spot at the end. Rump, sides of the body, and posterior part of belly and under tail-coverts dull cinnamon, darker above. Rest of under parts dirty white; feathers of throat and breast with dusky central streaks. Lower tail-coverts banded broadly with black. Inner tail-feathers like the back; the others with a broad black bar near the end; the tips cinnamon; the outer on each side alternately banded with this color and black. A dull white line above and behind the eye. Length, 5.70; wing, 2.82; tail, 2.40. Young not marked or banded beneath. Nest among rocks; eggs white, sparingly dotted with brownish-red. *Hab.* Central regions of the United States, to Mexico, east to mouth of Yellowstone River. Cape St. Lucas. Not recorded from Pacific slope. (*Rock Wren*.)

GENUS **CATHERPES**, BAIRD. (Page 13.)

Species and Varieties.

C. mexicanus. Above brownish, sprinkled with white; tail bright rufous, with distinct transverse bars of black; chin, cheeks, throat, and jugulum silky-white; rest of lower parts ferruginous, sprinkled with black and white dots. Nest in

walls, boxes, and among rocks; eggs supposed to be white with numerous blotches of reddish-brown.

a. Culmen almost straight, the tip decurved, gonys straight. Above blackish-brown; wings and back sparsely sprinkled with minute white specks; *no such markings on head or neck.* Bars on tail very broad, .12 in width on outer feathers. Wing, 2.84; tail, 2.40; culmen, .96; tarsus, .75; middle toe, .68; posterior, .47; outer, .52; inner, .49 (52,791, Mazatlan, Mexico). *Hab.* Mexico. (*Mexican Wren; White-throated Wren.*) . . . var. *mexicanus*.

b. Culmen and gonys both gently curved, the latter somewhat concave. Above cinnamon-ashy, more reddish on rump and wings; head and neck above with numerous dots of white; very few of these on back and wings. Tail-bars very narrow and thread-like. Wing, 2.48; tail, 2.12; culmen, .83; tarsus, .56; middle toe, .52; posterior, .35; outer, .44; inner, .36 (53,425 ♂, Fort Churchill, Nevada). *Hab.* Middle (and Pacific?) Province of United States. (*Cañon Wren.*) var. *conspersus*.

GENUS **THRYOTHORUS**, VIEILL. (Page 13.)

SUBGENUS **THRYOTHORUS**.

T. ludovicianus. Above reddish-brown; exposed surface of the wings and tail rather faintly barred with black; crissum strongly barred with the same; white superciliary stripe bordered above by black. Sides of neck much spotted with whitish; wing-coverts spotted with the same. Length about 6 inches; wing, 2.50. Eggs reddish-white, blotched with purple and brownish-red.

a. Beneath whitish, ochraceous, the sides plain. Bill, from nostril, .45. *Hab.* Eastern Province of United States. (*Great Carolina Wren.*) var. *ludovicianus*.

b. Beneath deep reddish-ochraceous, the sides obsoletely barred. Bill, from nostril, .56. *Hab.* Rio Grande of Texas, and adjacent portions of Mexico. (*Berlandier's Wren.*) var. *berlandieri*.

SUBGENUS **THRYOMANES**. (Page 13.)

T. bewickii. Above umber-brown; tail black, the middle feathers grayish-brown, barred with black, the outer ones spotted with ashy-white at ends. Beneath whitish, more or less tinged with plumbeous. A conspicuous superciliary stripe of white. Length about 5.50 inches; tail about 2.50. Nest of sticks and feathers in natural cavities, or in boxes or holes about houses; eggs white, finely blotched round larger end with black and brown. (*Long-tailed House-Wren.*)

Above reddish-umber; beneath grayish-white. Wing, 2.20; tail, 2.30; bill, .50. *Hab.* Eastern Province of United States (rather southern). (*Bewick's Wren.*) var. *bewickii*.

Colors similar but darker, and less reddish above. Wing, 2.20; tail, 2.30; bill, .60. *Hab.* Pacific Province of United States. (*Vigor's Wren.*) var. *spilurus*.

Above ashy-brown; beneath nearly pure white. Wing, 2.40; tail, 2.60; bill, .55. *Hab.* Southern Middle Province of United States, and adjacent portions of Mexico. (*White-bellied Wren.*) var. *leucogaster*.

GENUS **TROGLODYTES**, VIEILL. (Page 14.)SUBGENUS **TROGLODYTES**.

T. ædon. Beneath grayish-white, crissum and flanks distinctly barred; above grayish-brown, more rusty on the rump; wings and tail obsoletely barred with dusky. Length about 4.90. Nest in cavities, boxes, etc. Eggs salmon-colored, minutely dotted.

a. Back without distinct bars.

Breast and sides immaculate; rump decidedly rufescent. Wing, 2.05; tail, 1.80; bill, .50. *Hab.* Eastern Province of United States (dark-colored individuals = *Americanus*, Aud.). (*House Wren*; *Wood Wren*). . . . var. *ædon*.

b. Back distinctly barred with darker.

Breast and sides faintly speckled; sides scarcely different from abdomen; rump faintly rufescent; colors grayer. Wing, 2.15; tail, 1.90; bill, .48. *Hab.* Eastern Mexico, from Rio Grande southward. (*Aztec Wren*.) var. *aztecus*.

Breast and sides immaculate; sides much more brownish than abdomen; rump scarcely rufescent. Wing, 2.15; tail, 2.10; bill, .55. *Hab.* Western Province of United States. (*Parkman's Wren*.) . . . var. *parkmani*.

SUBGENUS **ANORTHURA**.

T. parvulus. Beneath pale ochraceous, the sides, flanks, and crissum distinctly barred with blackish and white; above rusty-brown, the wings and tail obsoletely barred. Length about 4.00 except in *alascensis*. Nest on or near the ground. Eggs white, spotted with reddish-brown.

Throat and breast pale grayish-ochraceous, immaculate. Above deep rusty-brown, without bars on the back and rump. Wing, 1.90; tail, 1.35; bill, .40. *Hab.* Europe. (*European Wren*.) var. *parvulus*.

Throat and breast pale yellowish-ochraceous, freckled with deeper. Above deep rusty-brown, the back and rump distinctly barred with darker. Wing, 1.95; tail, 1.25; bill, .42. *Hab.* Eastern Province of North America. (*Winter Wren*.) var. *hyemalis*.

Throat and breast deeper ochraceous, similarly mottled; above much darker rusty, the back without bars. Wing, 1.85; tail, 1.35; bill, .45, straighter and more slender. *Hab.* Pacific Province of North America. (*Pacific Winter Wren*.) var. *pacificus*.

Throat and breast deep ochraceous, uniform; above umber-brown, without trace of bars on the back. Wing, 2.10; tail, 1.60; bill, .55. *Hab.* Alaska and Aleutian Islands. (*Alaska Wren*.) var. *alascensis*.

GENUS **CISTOTHORUS**, CABAN. (Page 14.)SUBGENUS **CISTOTHORUS**.

C. stellaris. Above rusty-olive, the occiput and back black, streaked with white; wings and tail lighter, barred with black; beneath whitish medially, ochraceous, freckled with whitish laterally; crissum deep ochraceous, without bars. Length about 4.50 inches. Nest among aquatic grasses or reeds, spherical, with the entrance on the side; eggs pure white, immaculate. (*Short-billed Marsh Wren*.)

White streaks on back extending to rump; rump distinctly barred with brown, and speckled with whitish; jugulum tinged with ochraceous; sides speckled with whitish; lining of wing pale ochraceous. Wing, 1.75; tail, 1.60; bill, .40; tarsus, .65. *Hab.* Eastern Province of United States var. *stellaris*.

White streaks of the back not extending to the rump; rump plain rufous, without bars or specks; jugulum not tinged with ochraceous; sides not speckled with whitish; lining of wings snowy white. Wing, 1.75; tail, 1.50; bill, .45; tarsus, .72. *Hab.* Mexico and Guatemala; Brazil? var. *elegans*.

SUBGENUS TELMATODYTES.

T. palustris. Above olive-brown, more rufescent on the rump; interscapulars black, streaked with white; tertials spotted with black, and tail barred with the same; crown with a dusky tinge laterally. Beneath brownish-white, tinged with grayish-brown on the jugulum and sides; a white superciliary stripe; crissum barred with darker. Length about 5.50 inches. Nest in situation and form similar to that of *C. stellaris*; eggs chocolate-brown, uniform or in dense specks upon a paler ground. (*Long-billed Marsh Wren.*)

Bill equal to tarsus; tail-coverts (above and below) very obsoletely barred or plain; bars on tail broken; those on middle feathers obsolete. Wing, 2.10; tail, 1.85; bill, .60. *Hab.* Eastern Province of United States. (*Eastern Marsh Wren.*) var. *palustris*.

Bill shorter than tarsus; tail-coverts distinctly barred with darker; bars on tail continuous, those on middle feathers distinct. Wing, 2.15; tail, 1.90; bill, .50. *Hab.* Western Province of United States. (*Tulé Wren.*) var. *paludicola*.

FAMILY MOTACILLIDÆ. — THE WAGTAILS.

Families allied to Motacillidæ.

COMMON CHARACTERS. Primaries nine; the first quill nearly as long as the second or third. Tarsi distinctly scutellate the whole length anteriorly. Bill conical, but slender or depressed, usually, except in *Cærebidæ*, half the length of the head; more or less bristled, or notched. Nostrils oval or rounded. Lateral toes nearly or quite equal, and shorter than the middle; the basal joint of the middle free nearly to its base externally, united for about half internally.

Motacillidæ. Bill slender. Culmen slightly concave at base. Legs long; claws but little curved. Hind toe considerably longer than the middle one; its claw much longer (twice) than the middle claw; all the claws but slightly curved. Innermost secondaries (so-called tertials) elongated, much longer than the outer secondaries; and the fifth primary emarginated at end. Nest on ground.

Sylvicolidæ. Bill rather slender, conical, or depressed. Culmen straight or convex. Hind toe shorter than the middle; the claws all much curved. Hind claw not conspicuously longer than the middle one. When the hind toe is lengthened, it is usually in the digit, not the claw. Tertials generally not longer than the secondaries, and not emarginated. Gape wide; tongue slightly split at end. Nest variously placed.

Cærebidæ. Similar to *Sylvicolidæ*. Bill generally longer; equal to head or more. Gape of mouth narrow; tongue generally much fringed at the end. Nest on trees.

Subfamilies and Genera.

Motacillinae. Tail longer than or equal to wings; the two central feathers rather longer than lateral; the feathers broadest in middle, whence they taper gradually to the rounded tip. Colors uniform: gray, black, yellowish; without pale edges to feathers above, or streaks below. Nest on ground. (Page 18.)

Tail from coccyx considerably longer than the wings, doubly forked. Hind claw shorter than the toe; decidedly curved. (Page 18.) *Motacilla.*

Tail from coccyx equal to the wings, slightly graduated. Hind claw decidedly longer than the toe, slightly curved. (Page 18.) *Budytes.*

Anthinae. Tail shorter than the wings, emarginate at end, the two central shorter than lateral; the feathers broadest near the end, and rounding rapidly at end. Above grayish-brown, the feathers edged with paler. Under parts streaked. Nest on ground. (Page 18.)

Wings much pointed and lengthened.

Hind toe and claw shorter than tarsus; outstretched toes falling short of tip of tail. (Page 18.) *Anthus.*

Hind toe and claw longer than tarsus; outstretched toes extending beyond tip of tail. (Page 19.) *Neocorys.*

SUBFAMILY MOTACILLINÆ.

GENUS MOTACILLA, LINN.

M. alba. Above ashy, wings and tail blackish; all the wing-feathers edged with white; two outer tail-feathers mostly white; occiput, nape, chin, throat, and jugulum deep black; rest of head and lower parts white. Wing, 3.50; tail, 3.80. Eggs grayish-white, uniformly and finely spotted with ash-colored and black dots. *Hab.* Europe; accidental in Greenland. (*White Wagtail.*)

GENUS BUDYTES, CUVIER.

B. flava. Above olive-green, the nape and crown plumbeous; beneath sulphur-yellow; the chin, maxillæ, and a superciliary stripe, white; two outer tail-feathers mostly white. Wing, 3.00; tail, 2.80. Eggs brownish-yellow, or reddish-white, profusely and finely dotted with reddish-gray, a few zigzag lines of blackish at larger end. *Hab.* Pa-læarctic region; Alaska, etc. (*Yellow Wagtail.*)

SUBFAMILY ANTHINÆ.

GENUS ANTHUS, BECHST.

Bill and feet blackish. Prevailing color above olive-brown. Beneath buff. Edge and inside of wings white. Shafts of middle tail-feathers above dark brown. Eggs dark-chocolate, with lines or streaks of black. Length, 6.50. *Hab.* All North America, in winter south to Peru. (*American Titlark.*) *A. ludovicianus.*

Bill and feet dusky flesh-color. Prevailing color above olive-green; more distinctly streaked. Beneath greenish-white. Edge and inside of wings greenish-yellow. Shafts of middle tail-feathers above whitish. Eggs reddish-brown, mottled with darker. *Hab.* Europe; occurs in Greenland, and on Norton Sound. (*European Titlark.*) *A. pratensis.*

Feet yellowish-brown; the two longest under tail-coverts with a blackish longitudinal spot; the longest tertial almost equal to the longest primary; the shaft of the first tail-feather mostly white; no green on the plumage; the throat rust-color. *Hab.* "Aleutian Islands." (*Aleutian Titlark.*) *A. cervinus.*

GENUS **NEOCORYS**, SCLATER. (Page 18.)

N. spraguei. Above pale grayish-buff, heavily streaked with grayish-black; beneath buffy-white, streaked across the jugulum with dusky; all the wing-feathers edged with whitish; two outer tail-feathers almost wholly white. Wing, 3.20 to 3.30; tail, 2.30 to 2.50; tarsus, .90. *Hab.* Plains of the Upper Missouri and Saskatchewan. (*Missouri Skylark.*)

FAMILY **SYLVICOLIDÆ**. — THE WARBLERS.

Iris brown or hazel. Live usually among trees or bushes. Nest variously built and placed. Eggs always white or whitish, more or less spotted with dusky or reddish.

Subfamilies.

A. Bill conical, its bristles very weak, or wanting.

a. Bill sub-conical, the culmen and commissure nearly straight.

Sylvicolinæ. Feet weak, not reaching near the end of the tail. Wing pointed, considerably longer than the nearly even or slightly emarginated tail. Feet dark-colored (except in *Helmitherus*, *Helinaia*, and *Parula*). *Arboreal.*

Geothlypinæ. Feet strong, reaching nearly to end of the tail. Wing rounded. Feet pinkish-white. *Terrestrial.* (Page 20.)

b. Bill high and compressed, the culmen and commissure much curved.

Icterianæ. Bill without notch or rictal bristles; wing much rounded, shorter than the tail. (Page 20.)

B. Bill depressed, its bristles strong.

Setophaginæ. Bill, *tyrannine*, considerably broader than high, the tip more or less hooked, and with a distinct notch. Rictal bristles reaching half-way, or more, to the tip. (Page 20.)

Sections and Genera.

Bill conical; its bristles very short, or wanting.

SYLVICOLINÆ.

1. Middle toe, with claw, longer than tarsus.

Mniotiltaæ. Bill much compressed for terminal half, the lateral outline decidedly concave; culmen and gonyes decidedly convex; commissure moderately concave. Rictal bristles very inconspicuous; notch just perceptible. (Page 20.) *Mniotilta.*

2. Middle toe, with claw, not longer than tarsus.

Vermivoreæ. Bill without a distinct notch, or lacking it entirely; rictal bristles wanting, or very minute; culmen and gonyes nearly straight; bill only very moderately compressed. (Page 21.)

a. Middle toe and claw about equal to tarsus.

Bill not acute; culmen and gonyes decidedly convex; notch just perceptible; bristles apparent. (Page 21.) *Protonotaria.*

Bill moderately acute, robust; no notch; culmen straight, its base elevated and slightly arched; bristles not apparent. (Page 21.) *Helinaia*.

Bill moderately acute; robust; no notch; culmen convex, its base not elevated; bristles apparent. (Page 21.) *Helmitherus*.

b. Middle toe and claw considerably shorter than tarsus.

Bill very acute, its outlines nearly straight; notch not perceptible; bristles not apparent. (Page 21.) *Helminthophaga*.

Bill very acute, its outlines nearly straight; notch just perceptible; bristles strong. (Page 22.) *Parula*.

Sylvicoleæ. Bill distinctly notched; rictal bristles strong; outlines generally slightly curved. (Page 23.)

Bill acute, gonys slightly concave. (Page 23.) *Perissoglossa*.

Bill not acute, gonys convex. (Page 23.) *Dendroica*.

GEOTHYLPINÆ.

3. Wings pointed, longer than the nearly even tail.

Seiuræ.

Above olive-brown; beneath white with dark streaks. (Page 28.) *Seiurus*.

Above olive-green; beneath yellow without streaks. (Page 29.) *Oporornis*.

4. Wings rounded, shorter than the graduated tail.

Geothlypeæ.

Above olive-green; beneath yellow, without streaks. (Page 29.) *Geothlypis*.

ICTERIANÆ.

5. Bill very deep and compressed; tail graduated; outer toe deeply cleft.

Icteriæ.

Olive-green above; bright yellow anteriorly beneath. Upper mandible deeper than the lower. (Page 30.) *Icteria*.

6. Bill slender, sub-conical, but curved; tail nearly even; outer toe adherent for basal half.

Teretristeæ.

Above olive-gray; beneath whitish posteriorly, and yellow anteriorly. Cuba. *Teretristis*.

SETOPIAGINÆ.

7. Bill *tyrannine*. Tail broad, equal to or longer than the wing, and much rounded.

Setophageæ. Colors mainly black, red, and white. (Page 31.)

Tail not longer than the wing. Above black, wing variegated. *Setophaga*.

Tail longer than the wing. Above plumbeous, wing unvariegated.

Mexico. *Myioborus*.

8. Bill *sylvicoline*. Tail narrow, almost even; shorter than the wing.

Myiodioctææ. Colors yellow beneath, olive-green or ashy above.

Black markings about the head in the ♂. (Page 30.) *Myiodioctes*.

9. Bill somewhat *parine*. Tail equal to the wing, almost even. Mexico.

SUBFAMILY SYLVICOLINÆ.

GENUS **MNIOTILTA**, VIEILL. (Page 19.)

M. varia. VIEILL. Bill with the upper mandible considerably decurved, the lower straight. General color of the male black, the feathers broadly edged with white; the head all round black, with a median stripe in the crown and neck above, a superciliary and a maxillary one of white. Middle of belly, two conspicuous bands on the wings,

outer edges of tertials and inner of all the wing and tail feathers, and a spot on the inner webs of the outer two tail-feathers, white. Rump and upper tail-coverts black, edged externally with white. Female similar; the under parts white, obsoletely streaked with black on the sides and under tail-coverts. Length, 5 inches; wing, 2.85; tail, 2.25. Nest on ground. Eggs thickly dotted and blotched with red. *Hab.* Eastern Province of North America, and north to Fort Simpson. Both coasts of Mexico (as far north as Mazatlan, on west side), and southward to Bogota. Whole of West Indies and Bermuda. (*Black and White Creeper.*)

GENUS **PROTONOTARIA**, BAIRD. (Page 19.)

P. citrea, BAIRD. Bill very large; as long as the head. Head and neck all round, with the entire under parts, including the tibiae, rich yellow, excepting the anal region and under tail-coverts, which are white. Back dark olive-green, with a tinge of yellow; rump, upper tail-coverts, wings, and tail above, bluish ash-color. Inner margin of quills and the tail-feathers (except the innermost) white; the outer webs and tips like the back. Length, 5.40; wing, 2.90; tail, 2.25. Nest in holes and stumps. Eggs thickly blotched with reddish-brown. *Hab.* Eastern Province of United States (Southern region); Cuba, Costa Rica, and Panama R. R. Not recorded from Mexico or Guatemala. Accidental in New Brunswick (G. A. BOARDMAN in letter). Yucatan (LAWRENCE). (*Prothonotary Warbler.*)

GENUS **HELMITHERUS**, RAF. (Page 20.)

Species.

Colors plain. Above olivaceous, beneath nearly white. No spots or bands on wing or tail. Length about 5.50.

H. vermivorus. Above olive-green. Head yellowish, with two black stripes above and one behind the eye. Tail rounded. Nest on ground. Eggs white; dotted with reddish-brown. *Hab.* Eastern United States, south to Costa Rica; Cuba. **Helmitherus.** (*Worm-eating Warbler.*)

H. swainsoni. Above dull olive-green, tinged with brown. Stripes on the head somewhat as in the last, but reddish-brown; the median light stripe on the crown scarcely visible. Tail slightly forked. *Hab.* South Carolina and Georgia; Cuba (very rare). **Helinaia.** (*Swainson's Warbler.*)

GENUS **HELMINTHOPHAGA**, CABAN. (Page 20.)

In size among the most diminutive of Warblers; not exceeding 5 inches. Nest on the ground. Eggs generally clear white, minutely and rather sparsely dotted with brown.

Species and Varieties.

A. Tail with a conspicuous patch of white.

a. A black patch covering throat and breast.

1. chrysoptera. Above ash, beneath white. Forehead and a patch on the wing yellow. *Hab.* Eastern Province of United States, south to Bogota; Cuba. (*Golden-winged Warbler.*)

2. bachmanni. Above olive-green; beneath, with forehead, yellow; crown ash, bounded anteriorly with a black bar. No yellow on wing. *Hab.* South Carolina and Georgia. Cuba in winter. (*Bachman's Warbler.*)

b. No black on throat or breast.

3. **pinus**. Above olive-green; beneath, with forehead, yellow; wings ash, with two white bands; lores black. *Hab.* Eastern Province of United States, south into Guatemala. (*Blue-winged Yellow Warbler*.)

B. Tail without a conspicuous white patch.

c. Crown with a concealed patch of rufous (obsolete in ♀).

4. **ruficapilla**. Above olive-green; head ashy; beneath continuous yellow; a light orbital ring. *Hab.* North America (very rare in Middle and Western Provinces); Greenland. South to Southern Mexico (Oaxaca, Cordova, Orizaba). (*Nashville Warbler*.)

Yellow of throat spreading over cheeks, and staining lores and eyelids. Atlantic States. (Carlisle, Penn., specimens.) var. *ruficapilla*.

Yellow of throat confined within the maxillæ; lores and eyelids clear white. Mississippi Valley. (Chicago specimens.) var. *ocularis*.

Yellow of throat restricted to a medial stripe, leaving its sides ashy. Middle Province. (Specimen from Fort Tejon, Cal., and East Humboldt Mountains, Nevada.) . . . var. *gutturalis*.

5. **virginiae**. Above ash to the rump, beneath white. A patch on the jugulum, with the upper and lower tail-coverts, yellow. *Hab.* Rocky Mountains of United States, west to East Humboldt Mountains. (*Virginia Warbler*.)

6. **luciae**. Above ash, beneath continuous white. Upper tail-coverts chestnut. *Hab.* Colorado region of Middle Province. (*Lucy's Warbler*.)

7. **celata**. Above continuous olive-green, below continuous pale yellow. (Orange on crown in ♂ only?) (*Orange-crowned Warbler*.)

Above ashy-olive, beneath yellowish olivaceous-white; inner webs of tail-feathers broadly edged with white. (Middle regions of North America; Mexico.) . . . var. *celata*.

Above greenish-olive, beneath bright greenish-yellow; white edges to inner webs of tail-feathers obsolete. (Pacific Province of North America.) . . . var. *lutescens*.

Similar to var. *celata*, but plumage darker and more dingy. No white edgings to tail-feathers, and apparently *no rufous* on the crown in either sex. (Georgia, Florida, etc.) . . . var. *obscura*.

d. No rufous on crown.

8. **peregrina**. Above olive-green; head and neck pure ash; beneath continuous white. *Hab.* Eastern Province of North America north to Fort Simpson, H. B. T., south to Panama. Cuba (rare). (*Tennessee Warbler*.)

GENUS **PARULA**, BONAP. (Page 20.)

Species.

Blue above, anterior lower parts yellow. A triangular patch of greenish on the back. Size small, less than 5.00.

P. americana. Eyelids white. Yellow beneath restricted to anterior half.

Two white bands on wing; a dusky collar across the jugulum. Nest usually built of lichen or Spanish moss. Eggs white, sparingly spotted. *Hab.* Eastern Province of United States, south to Guatemala; Bahamas; Cuba; Jamaica; St. Croix; St. Thomas. (*Blue Yellow-Back*.)

P. pitaiyumi. Eyelids dusky. Yellow beneath, extending back along sides to the crissum. *Hab.* Central and South America in several varieties.

GENUS **PERISSOGLOSSA**, BAIRD. (Page 20.)

COMMON CHARACTERS. *Male.* Top of head black. Above olive, becoming yellowish on rump. Head, neck, and lower parts bright yellow, becoming whitish posteriorly. Dorsal feathers with black centres; breast and sides streaked with black. A black streak through the eye. Length about 5.25. Arboreal. Nest in trees.

P. tigrina. Large white patches on inner webs of tail-feathers.

Sides of head and middle of throat tinged with chestnut. One large white patch on wing, covering both rows of coverts. Outer web of lateral tail-feather blackish. *Hab.* Eastern United States to fur countries. In winter in Greater Antilles. (*Cape May Warbler.*)

P. carbonata. No white patches on tail-feathers.

No chestnut about head. Two bands on the wing, the anterior one white, the posterior yellow. Outer web of lateral tail-feather whitish. *Hab.* Kentucky. (*Carbonated Warbler.*)

GENUS **DENDROICA**, GRAY. (Page 20.)**Species and Varieties.**

COMMON CHARACTERS. Length about 5.00 to 5.75. Tail always with a white spot; its ground-color never clear olive-green. Only in *D. æstiva* with yellow spot on inner edge. Eggs usually with a white or a bluish-white ground, marked with purplish-brown and obscure lilac; in some, mingled with varying shades of sienna-brown. Nest, so far as known, in bushes and trees, except *D. palmarum*, which is on the ground.

Inner webs of tail-feathers with a large patch, or broad edge, of yellow GROUP A.

Inner webs of tail-feathers with a large patch, or broad edge, of white.

Wings with conspicuous white markings GROUP B.

Wings without conspicuous white markings GROUP C.

Group A. — Golden Warblers.

Rump and crissum without rufous markings Series I.

Rump and crissum with rufous markings Series II.

Series I.

Prevailing color rich yellow, shaded on upper parts with olive-green. ♂ with streaks of chestnut across the breast and along the sides, and with or without a greater or less tinge of the same on the crown. ♀ with the streaks beneath obsolete or entirely wanting; no rufous on crown. *Juv.* paler and duller than the ♀, sometimes quite ashy.

A. Tarsus less than .65 of an inch. Outer webs of tail-feathers with yellow predominating.

1. *D. æstiva.* Crown generally pure yellow, sometimes with only a tinge of rufous; lower webs of wing-coverts and tertials pure yellow; rump and upper tail-coverts much mixed with the same. Wing-formula, $1 = 2, 3$; wing, 2.60; tail, 2.05; bill, from nostril, .30; tarsus, .62. *Hab.* Entire continent of North America; in winter south to Bogota and Cayenne; Trinidad (only locality in West Indies). (*Yellow Warbler.*)

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B. Tarsus not less than .70 of an inch. Outer webs of tail-feathers with dusky predominating.

a. Crown without any rufous, or with only a tinge.

2. **D. petechia.** *Nape olive-green* (except in *juv.*); *sides streaked* (except in *juv.*). Crown greenish, sometimes tinged with orange-rufous anteriorly; lower webs of wing-coverts, etc., not pure yellow, and rump and upper tail-coverts without any admixture of yellow. *Hab.* West Indies (except Barbadoes and Trinidad); not on the Continent. (Numerous varieties.)

3. **D. aureola.** *Nape always ashy; sides never streaked.* Abdomen, anal region, and axillars nearly white; forehead and crown strongly tinged with rufous; nape dark ashy. Wing-formula, 2, 3, and 4 equal, 5, 1 = 6; wing, 2.55; tail, 2.00; bill, .32; tarsus, .75. *Hab.* Galapagos Islands.

b. Crown with only a sharply defined ovate patch of dark purplish-rufous.

4. **D. capitalis.** A broad superciliary stripe of pure yellow; wing-formula, 3 = 4, 2, 1 = 5; wing, 2.30; tail, 2.00; bill, .30; tarsus, .70. (♀ distinguishable from that of the varieties of *petechia* by the distinctly yellow upper eyelid, and considerably shorter tarsus.) *Hab.* Barbadoes Island, West Indies.

c. Head all round rufous.

5. **D. vieilloti.** (♀ not distinguishable from that of other species.)

Hab. Continental Middle America. (Numerous varieties.)

Series II.

Prevailing color yellow; crown, rump, and crissum with spots of rufous; a band of the same on the side of the head, from bill (meeting both on forehead and on chin) around eye and over ear-coverts.

6. **D. eoa.** *Hab.* Jamaica (GOSSE).

Group B.

Base of primaries with white patch.

Two white bands on wing Series I.

No white bands on wing Series II.

Base of primaries without white patch.

Rump yellow.

Crown with a yellow spot Series III.

Crown without a yellow spot Series IV.

Rump not yellow.

Throat white (with black streaks in *striata* and *pharetra*) . . . Series V.

Throat yellow or orange Series VI.

Throat black, or mixed with black Series VII.

Series I.

7. **D. olivacea.** ♂. Head and neck, all round, fine light orange-rufous; a broad black "spectacle" along side of the head. ♀. Head yellowish, dusky on top; spectacle obsolete. *Hab.* Whole of Eastern Mexico; Guatemala.

Series II.

8. **D. cærulescens.** ♂. Head dark blue above and black underneath; a black patch covering whole lateral and under side of head and lateral lower parts. Rest of upper parts dark blue; bases of primaries and

abdomen pure white. ♀. Above olive, with a light superciliary stripe; beneath wholly light greenish-buff; base of primaries white. *Hab.* Eastern Province of United States; in winter south into Cuba, Jamaica, and St. Domingo. (*Black-throated Blue Warbler.*)

Series III.

9. *D. coronata*. A yellow patch on each side of the breast; above ashy streaked with black; belly white. ♂. Breast more or less black; upper parts ash with a bluish tinge. ♀. Breast only streaked with black; ash of upper part grayish or brownish.

Throat white; a white superciliary streak; two white bands on wing. *Hab.* Eastern Province of North America, north to Alaska and Greenland; in winter south to Panama and West Indies (resident in Jamaica!) (*Yellow-rumped Warbler.*) . . . var. *coronata*.

Throat yellow; no white superciliary streak; one white patch formed by the fusion of the two bands on the wing. *Hab.* Western Province of North America from British Columbia, south to Cape St. Lucas and Jalisco, Western Mexico; east to Rocky Mountains. (*Audubon's Warbler.*) . . . var. *auduboni*.

Series IV.

10. *D. maculosa*. Whole lower parts bright yellow; black streaks across breast and along sides; crown ash; lores, auriculars, and back black. ♀ scarcely different. *Hab.* Eastern Province of North America, from Fort Simpson to Panama; Cuba and Bahamas. (*Magnolia Warbler.*)

Series V.

A. Above ashy-blue, or soft bluish-green.

11. *D. cærulea*. Lower parts pure white or greenish-white; with or without a narrow band across the breast; above fine ashy-blue, or soft bluish-green; if blue (♂), the back and crown streaked with black; if green (♀ and *juv.*), these streaks obsolete. *Hab.* Eastern Province of United States (rare northward except in Mississippi Valley), south to Bogota in winter; Cuba. (*Cærulean Warbler.*)

B. Above not ashy-blue nor bluish-green, but streaked with black upon an ashy greenish-olive or yellowish ground, or else bright olive-green.

a. Sides more or less rufous, and without black or dusky streaks on under surfaces.

12. *D. pennsylvanica*. ♂. Crown pure yellow; throat and auriculars pure white; ♀ *ad.* similar, but crown greenish, and more or less streaked. *Juv.* Above bright olive-green, nearly grass-green, *without streaks* except on the back; side of head, and sides, clear ashy, the latter with or without a trace of chestnut; eyelids and medial lower parts pure white. *Hab.* Eastern Province of United States, south to Panama; Bahamas. (*Chestnut-sided Warbler.*)

13. *D. castanea*. ♂. Crown reddish-chestnut; throat and sides rufous; auriculars black. ♀ similar, but crown thickly streaked, sometimes without a trace of rufous; jugulum and throat only tinged with rufous. *Juv.* Above greenish-olive, streaks obsolete; beneath, *including lower tail-coverts*, pale greenish-buff, or whitish-buff, and without any trace of streaks on the sides (distinction from ♀ of *D. striata*) the sides usually with a tinge of chestnut. *Hab.* Eastern Province of North America, from Hudson's Bay Territory to New Granada. (*Bay-breasted Warbler.*)

b. Sides without any rufous, and with black or dusky streaks.

[The main body of the page contains several paragraphs of extremely faint, illegible text. The text appears to be organized into a list or series of entries, with some lines indented. Due to the low contrast and blurriness, the specific words and sentences cannot be transcribed.]

Medial lower parts not streaked; inner webs of tail-feathers with broad patch of white.

14. **D. striata.** ♂. Crown deep black; auriculars and lower parts white; throat with two series of black streaks, converging and forming an angle on the chin. Above ashy streaked with black. ♀ similar, but crown greenish streaked with black; lower parts tinged with greenish. *Juv.* Above greenish-olive, the streaks obsolete; beneath pale greenish-yellow; *the lower tail-coverts pure white.* *Hab.* Eastern Province of North America, north to Greenland and Kodiak, south to Bogota, Cuba, and Bahamas. (*Black-poll'd Warbler.*)

Medial lower parts streaked with black; inner webs of tail-feathers merely edged with white.

15. **D. pharetra.** ♂. Above grayish-white, with broad streaks of black; posteriorly, plain brownish-gray; lower parts with cuneate spots of black. *Hab.* Jamaica.

Series VI.

A. A black "mask" around the eye and on auriculars, and extending down the side of the throat; a light superciliary stripe continued back into a large space, of similar color, on side of neck.

16. **D. Blackburnia.** Crown with an orange or yellowish spot (exposed or concealed); superciliary stripe, side of neck and throat, intense orange-red (♂ ad.), or varying from this to pale buff (*juv.*). ♂ intense black above; back streaked with white or yellowish. ♀ olive-gray above, streaked with black. *Juv.* olive-gray above without distinct streaks. *Hab.* Eastern Province of United States, south to Ecuador; Bahamas. (*Blackburnian Warbler.*)

17. **D. dominica.** Crown without an orange or yellowish spot; superciliary stripe and side of neck pure white; throat gamboge-yellow; above ash, without streaks. (*Yellow-throated Warbler.*)

Superciliary stripe bright yellow anterior to the eye. Bill, .45; tarsus, .60; wing, 2.60; tail, 2.00. *Hab.* Atlantic United States and West Indies var. *dominica.*

Superciliary stripe pure white anterior to the eye. Bill, .35; tarsus, .60; wing, 2.70; tail, 2.20. *Hab.* Mississippi region of United States; Mexico (Yucatan on east coast, and Colima on west coast); Guatemala and Honduras var. *albiflora.*

B. No black "mask." Superciliary stripe scarcely reaching behind the eye. Sides of neck ashy like the back.

18. **D. graciae.** Auriculars, neck, crown, and upper parts generally, ashy; a supra-loral stripe, a crescent on the lower eyelid, and the anterior lower parts gamboge-yellow. Crissum white. (*Grace's Warbler.*)

Back and sides streaked with black; abdomen white.

Yellow of throat terminating abruptly at the jugulum; supra-loral stripe extending about .20 of an inch past the eye, this portion of it white; dorsal streaks broad. Wing, 2.60; tail, 2.20. *Hab.* Arizona (Fort Whipple) var. *graciae.*

Yellow of throat covering whole jugulum, and not ending abruptly; supra-loral stripe scarcely passing the eye, and wholly yellow; dorsal streaks narrow. Wing, 2.20; tail, 1.95. *Hab.* British Honduras (Belize) var. *decora.*

MAY 18 *Back and sides not streaked with black; abdomen yellow.*

Yellow of throat extending back to the crissum; supra-loral stripe as in the last; dorsal streaks wanting. Wing, 2.10; tail, 1.95.

Hab. Porto Rico. (*Adelaide's Warbler.*) . . . var. *adelaidæ*.

Series VII.

Throat black in ♂, mixed with black in ♀.

A. Sides streaked; black of throat with its posterior outline concave.

a. Side of head white and black.

19. **D. nigrescens.** A small yellow spot over the lore; above ash; beneath white. ♂. Whole crown uniform glossy black; back streaked with black. ♀. Crown ash streaked with black; throat mixed with white anteriorly. *Juv.* Crown and cheeks ashy; throat mostly white; back without streaks. *Hab.* Western and Middle Province of United States, south, in winter, into Western Mexico (Oaxaca). (*Black-throated Gray Warbler.*)

b. Side of head yellow and black, or yellow and olive.

Black of throat covering jugulum; a hidden yellow spot in middle of forehead.

20. **D. chrysopareia.** Black above, pure white below; no tinge of yellow behind the black jugular patch. *Hab.* Eastern Middle America, from Guatemala to Texas (San Antonio). (*Golden-cheeked Warbler.*)

21. **D. virens.** Olive-green above, the crown and back without streaks; beneath white, the breast and anal region tinged with black. *Hab.* Eastern Province of North America, from Greenland to Panama; Cuba; Oaxaca; Heligoland, Europe. (*Black-throated Green Warbler.*)

Black of throat confined anteriorly to the jugulum; no yellow spot on forehead.

22. **D. townsendi.** Above olive-green, the crown and back with conspicuous black streaks; beneath yellow anteriorly, and white posteriorly. ♀, black of throat mixed with yellow; *juv.*, no black on throat, and streaks on back obsolete. *Hab.* North and Middle Province of United States, south, in winter, into Guatemala. (*Townsend's Warbler.*)

B. Sides not streaked; black of throat with its posterior outline convex.

23. **D. occidentalis.** Above ash tinged with olive; beneath white. Head nearly all yellow. ♂. Top of head yellow with a few small black spots; nape black; back streaked with black; sides pure white. (♀ not seen.) *Juv.* Yellow of crown overlaid by olive; above greenish-plumbeous, without any black on nape or back; throat yellowish-whitish; sides tinged with ashy. *Hab.* Western and Middle Province of United States, south to Guatemala. (*Western Warbler.*)

Group C.

A. Above ash; no supra-loral stripe; eyelids not yellow.

24. **D. kirtlandi.** Above, including side of head and neck, bluish-ash; crown and back streaked with black; beneath (except crissum) pale yellow; breast speckled, and sides streaked with black; lores and orbital region, black; eyelids white. *Hab.* Eastern Province of United States (Cleveland, Ohio), and Bahamas. (*Kirtland's Warbler.*)

14

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST

BY

JOHN BURNET

OF THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

THE SECOND

LONDON

Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard, 1679.

25. **D. pityophila.** Above, including side of head and neck, dull ash; the forehead and crown olive-green; crown and back not streaked; beneath white; the throat and jugulum yellow; sides ashy; no specks on breast, nor streaks on sides, but a few along side of neck, between the ash and yellow. *Hab.* Cuba. (*Cuban Warbler.*)

B. Olive-green or brown above; a supra-loral stripe of yellow; eyelids yellow.

a. Above olive-green, without streaks; crissum white; sides of breast with obsolete grayish streaks.

26. **D. pinus.** Forehead and ear-coverts olive; abdomen white; yellow supra-loral stripe not continued behind the eye. ♀ more grayish; *juv.* above umber, beneath light grayish-brown, tinged with yellow. *Hab.* Eastern Province of United States; Bahamas. (*Pine-creeping Warbler.*)

? 27. **D. montana.** Forehead and ear-coverts yellow; abdomen yellow; yellow supra-loral stripe continued past the eye into the yellow of the auriculars. (♀ and other stages unknown.) *Hab.* "Blue Mountains of Virginia." (*Blue-Mountain Warbler.*)

b. Above olive-green, the back streaked with chestnut; crissum yellow; streaks of black on sides.

28. **D. discolor.** Bright gamboge-yellow beneath; streak on lores and along side of neck, as well as along sides and flanks, deep black; dorsal feathers chestnut medially. ♀ duller, but similar; *juv.* not seen. *Hab.* Eastern Province of United States; in winter, throughout West Indies. (*Prairie Warbler.*)

c. Above olive-brown, the back not streaked; crissum gamboge-yellow; streaks of reddish-chestnut on sides.

29. **D. palmarum.** *Ad.* Forehead and crown deep rufous; superciliary stripe bright yellow, continued back over auriculars; sexes alike. *Juv.* and *ad.* in winter. Crown brownish, streaked with dusky; streaks on sides more dusky. *Hab.* Eastern Province of North America, north to Fort Simpson and Hudson's Bay; Bahamas; Cuba, St. Domingo, and Jamaica, in winter. (*Yellow Red-Poll.*)

SUBFAMILY GEOTHYLPINÆ. (Page 19.)

GENUS SEIURUS, SWAINSON. (Page 20.)

Length about 6 inches. Nest on ground or fallen logs. Eggs white, with dark spots.

A. Middle of crown brownish-orange, bordered by blackish. No white superciliary streak. Nest domed. *Hab.* Eastern North America; south to Costa Rica; Bermuda and West Indies. (*Golden-crowned Thrush.*) . . . *S. aurocapillus.*

B. Crown like the back. A well-defined superciliary light stripe.

Thickly streaked beneath, including crissum. Ground-color and superciliary stripe yellowish. Bill small. *Hab.* Whole of Eastern and Arctic North America, to Eastern South America; all West Indies. (*Water Thrush.*)

S. noveboracensis.

Sparsely streaked beneath; throat and crissum immaculate. Ground-color and superciliary stripe white. Bill very large. *Hab.* Eastern United States to Pennsylvania; south to Guatemala; Cuba and Jamaica. (*Louisiana Water Thrush.*) *S. ludovicianus.*

GENUS **OPORORNIS**, BAIRD. (Page 20.)

Average dimensions: Length, 6.00; wing, 3.00; tail, 2.25.

Throat and crown ash-color; a white ring round the eye. No black on the side of the head. *Hab.* Eastern United States. (*Connecticut Warbler.*) *O. agilis.*

Throat and superciliary stripe yellow; top of the head and a streak beneath the eye black. Nest on ground. Eggs white; finely sprinkled with reddish.

Hab. Eastern United States; to Panama and Cuba. (*Kentucky Warbler.*) *O. formosus.*

GENUS **GEOTHLYPIS**, CABAN. (Page 20.)

Nest on ground. Eggs white, with dark spots.

Species and Varieties.

Throat yellow	<i>Series I.</i>
Throat ash	<i>Series II.</i>

Series I.

A. Black mask extending beneath the eye and on the auriculars.

1. **G. trichas.** Black mask bordered along its posterior edge with pale ashy or whitish; maxillæ black. Sexes dissimilar. ♀. Olive-brown above; throat only, distinctly yellow; no black mask. *Juv.* Without either black or pure yellow; above olive-brown, like ♀, beneath pale ochraceous-buff. Length about 4.50.

Abdomen almost always whitish; occiput russet-olive. Bill, from nostril, .30; tarsus, .70; wing, 2.25; tail, 2.15. *Hab.* Whole of United States; in winter most of West Indies, and Middle America, north to Guatemala. (*Maryland Yellow-throat.*) var. *trichas.*

Colors similar; abdomen yellow. Bill, .45; tarsus, .90; wing, 2.50; tail, 2.50. *Hab.* Nassau; New Providence; Bahamas var. *rostratus.*

Abdomen bright yellow; occiput whitish-ash tinged with yellow. Bill, .32; tarsus, .75; wing, 2.45; tail, 2.50. *Hab.* Eastern Mexico (Jalapa?) var. *melanops.*

2. **G. æquinoctialis.** Black mask not bordered posteriorly by ashy or whitish; much narrower on forehead than on auriculars; maxillæ yellow. Sexes similar. *Hab.* South America. Several varieties.

B. Black mask not extending underneath the eye, but confined to lores and frontlet.

3. **G. poliocephala.** Bill much as in *Granatellus*. Above olive-green; the crown light ash; beneath yellow. Sexes similar. *Hab.* Central America.

Series II.

4. **G. philadelphia.** Head all round ashy; lores only, black. Sexes nearly similar. Length, 5.50.

Eyelids dusky (except in ♀); a black patch on jugulum of ♂. ♀. Throat tinged with yellow. *Hab.* Eastern Province of North America; in winter south to Panama. (*Mourning Warbler.*) var. *philadelphia.*

Eyelids white; no black patch on jugulum. ♀. Throat not tinged with yellow. *Hab.* Western and Middle Province of United States; in winter south to Costa Rica (Western coast). (*Macgillivray's Warbler.*) var. *macgillivrayi.*

SUBFAMILY **ICTERIANÆ**. (Page 20.)

Size large (about 8 inches). Lower jaw not deeper than upper anterior to nostrils.

Tail moderate. Partly yellow beneath, olive-green above *Icteria*.

Size smaller (about 6 inches). Lower jaw deeper than upper. Tail almost fan-shaped. Partly red beneath, plumbeous-blue above. (Mexican.) . . *Granatellus*.

GENUS **ICTERIA**, VIEILL. (Page 20.)

I. virens. Above olive-green; beneath gamboge-yellow for the anterior half, and white for the posterior. A white stripe over the eye. Length about 7.00. Nest in bushes near the ground. Eggs white, spotted with reddish-brown and lilac.

Length of tail, 3.30 inches. *Hab.* Eastern United States to the Plains; in winter through Eastern Mexico to Guatemala. (*Yellow-breasted Chat*.)

var. *virens*.

Length of tail, 3.70 inches. *Hab.* Western United States from the Plains to the Pacific; Western Mexico in winter. (*Long-tailed Chat*.) var. *longicauda*.

SUBFAMILY **SETOPHAGINÆ**. (Page .)GENUS **MYIODIOCTES**, AUD. (Page 20.)

A. Tail with white patches on the inner feathers.

1. **M. mitratus**. Head and neck black. Front, cheeks, and under parts yellow. Back olive-green. Length, 5.00. Nest in low bushes near the ground. Eggs white, spotted with fine red and a few spots of purple. *Hab.* Eastern Province of United States, south to Panama and West Indies. (*Hooded Warbler*.)

2. **M. minutus**. Olive above; yellowish beneath. Two white bands on the wings. Nesting unknown. *Hab.* Eastern United States. (*Small-headed Warbler*.)

B. Tail without white patch on the outer feathers.

3. **M. pusillus**. Crown black. Forehead, cheeks, and under parts yellow. Back olive. Length, 4.75. Nest? Eggs white, finely dotted with reddish, especially near larger end. (*Green Black-Cap*.)

Yellow of forehead without an orange tinge; upper parts dull olive-green; pileum with very dull steel-blue lustre. *Hab.* Eastern Province and Rocky Mountains of North America, south to Costa Rica. var. *pusillus*.

Yellow of forehead with an orange cast; upper parts bright yellowish-green; pileum with a bright steel-blue lustre. *Hab.* Pacific Province of North America, from Sitka to Costa Rica . . . var. *pileolatus*.

4. **M. canadensis**. Streaks on the crown, stripes on sides of head and neck, with pectoral collar of streaks, black. Rest of under parts, and line to and around the eye, yellow. Back bluish. Length, 5.25. Nest on ground. Eggs white, with fine dots and blotches of brown, chiefly round larger end. *Hab.* Eastern Province of United States, south to Ecuador. (*Canada Flycatcher*.)

GENUS **SETOPHAGA**, SWAINS. (Page 20.)**A.** Belly white. End of lateral tail-feathers black. Sexes dissimilar.

Ground-color black, without vertex spot. Sides of breast and bases of quills and tail-feathers reddish-orange in male, yellowish in female. Length, 5.25. Nest in fork of three or four branches of trees. Eggs grayish-white, blotched and dotted with purple, lilac, and brown. *Hab.* Eastern North America to Rocky Mountains in summer. (*American Redstart*) *ruticilla*.

B. Belly vermilion or carmine red. Lateral tail-feathers, including their tips, white. Sexes similar.

Entirely lustrous black, including head and neck. No vertex spot. A white patch on the wings. Length, 5.25. *Hab.* Guatemala to Mexico, and Southern Arizona? (*Painted Flycatcher*) *picta*.

Plumbeous-ash, including head and neck. A chestnut-brown vertex spot. No white on wings. *Hab.* Mexico *miniata*.

FAMILY **HIRUNDINIDÆ**.—THE SWALLOWS.

The eyes are hazel or brown in all the North American species.

Genera.**A.** Nostrils broadly oval, or circular; opening upwards and forward, and exposed; without overhanging membrane.

a. Edge of wing smooth. Tarsus short, stout; equal to middle toe without claw; feathered on the inner side above. Nostrils almost or entirely without membrane.

Bill stout; culmen and commissure much curved. Frontal feathers without bristles. Tail deeply forked. Color lustrous-black; belly and crissum sometimes white. (Page 32.) *Progne*.

Bill rather weaker; commissure and culmen nearly straight to near tip. Frontal feathers bristly. Tail nearly even. Throat, rump, and crissum, and usually forehead, rufous; belly white. (Page 33.) . . . *Petrochelidon*.

b. Edge of wing smooth. Tarsus longer than in last; equal to middle toe and half the claw. Nostrils bordered along posterior half by membrane, but not overhung internally. Bill very small. Tail forked. Crissum dusky except in *Neochelidon fucata*. Various genera and subgenera, none North American, as *Atticora*, *Notiochelidon*, *Neochelidon*, and *Pygochelidon*.

c. Edge of wing armed with stiff recurved hooks. Tarsus as in preceding (tarsus and toes much as in *Pygochelidon*). Bill larger and more depressed. Tail emarginate only. Crissum white. (Page 33.) *Stelgidopteryx*.

B. Nostrils lateral; bordered behind and inside, or overhung by membrane, the outer edge of which is straight, and directed either parallel with axis of bill or diverging from it.

a. Tarsus short; about equal to middle toe without claw. Tibial joint feathered; feathers extending along inside of upper end of tarsus.

Tarsus bare at lower end. Lateral claws reaching only to base of middle.

Tail very deeply forked, much longer than closed wings; lateral feathers linear and very narrow at end, twice the length of central. Upper parts and pectoral collar steel-blue; front and throat, sometimes under parts, rufous. Tail-feathers with large spots. (Page 33.)

Herundo.

Tail with shallow fork, not exceeding half an inch, shorter than closed wings. Feathers broad. Color blue or green above, with or without white rump; white beneath. Tail-feathers without spots. (Page 33.)

Tachycineta.

Tarsus with a tuft of feathers at lower end. Lateral claws lengthened, reaching beyond base of middle claw.

Tail slightly forked. Color dull-brown above; beneath white, with brown pectoral collar. (Page 34.)

Cotyle.

b. Tarsus long; equal to middle toe and half claw; entirely bare. Tail considerably forked, about equal to closed wing. Color green above; white beneath. *Hab.* Bahamas, Jamaica

Callichelidon.

GENUS **PROGNE**, BOIE. (Page 31.)

P. subis. Above lustrous blue-black; beneath lustrous blue-black or brownish-gray, uniform, or with the abdomen and crissum white, or whitish. Females always with the throat and jugulum gray. Length, about 7.50. Nest in hollow trees or boxes. Eggs white.

A. Adult males entirely steel-blue. Females and young males with the abdomen pure white.

Feathers about the anus smoky-gray beneath the surface.

Wing about 6.00; fork of tail, .80 deep. ♀ and *Juv.* Abdominal and crissal feathers always with dusky shafts, and with the concealed portion grayish. Forehead and nape heavy grayish. *Hab.* Continental North America, except arctic region; Bermuda. (*Purple Martin.*) var. *subis*.

Feathers about the anus snowy-white beneath the surface.

Wing, 5.50; fork of tail, .90 deep. ♀ and *juv.* Abdominal and crissal feathers entirely snowy-white, — never with dusky shafts (except ♂ *juv.* in transition). Forehead dusky grayish-brown; nape steel-blue. *Hab.* Cuba and Florida Keys. (*Cuban Martin.*) var. *cryptoleuca*.

GENUS **PETROCHELIDON**, CABANIS. (Page 31.)

Above glossy bluish-black, the back with concealed streaks of white; head and neck, except on cap, and including nuchal collar, rump (and crissum faintly) chestnut-brown. Beneath dull white, tinged with reddish-gray on sides. Nest of mud, lined, built against rocks, or under eaves of houses. Originally with cylindrical bottle-shaped entrance. Eggs white, spotted with reddish.

Frontlet reddish-white, with narrow band of black along upper mandible. Length, 5.15. *Hab.* United States; south to Panama. Not found in West Indies. (*Cliff Swallow.*) var. *lunifrons*.

Frontlet chestnut-brown, without black at base of upper mandible. Length, 4.50. *Hab.* Mexico and Guatemala. (*Mexican Swallow.*) var. *swainsoni*.

GENUS **HIRUNDO**, LINN. (Page 31.)SUBGENUS **HIRUNDO**, LINN. (Page 31.)

H. horreorum. Above glossy blue, back streaked with concealed white. Beneath reddish-white; forehead and throat rufous; a black pectoral collar interrupted in middle; tail-feathers with large light spots on inner webs. Tail very deeply forked. Length, 7.00. Nest of mud and grass; lined with feathers; open above. Eggs white, spotted with reddish. *Hab.* North America; north to Great Slave Lake; south to Panama and West Indies. South America? (*Barn Swallow.*)

SUBGENUS **TACHYCINETA**, CAR. (Page 32.)

COMMON CHARACTERS. Blue or green above, white below. Nest usually in holes of trees, or cliffs, without mud in their composition. Eggs immaculate, pure white.

Plumage above soft and velvety without metallic gloss. Sides of head, space around eyes, and whole under parts, white; with the feathers all plumbeous at base. Female duller in plumage. Young with bases of throat-feathers gray to roots. Length, 4.75.

H. thalassina. Above velvety-green, with various shades and tinges of violet and purple. *Hab.* Western and Middle Provinces of United States; south to Guatemala. (*Violet-green Swallow.*)

Plumage above compact, and with rich green metallic gloss. Sides of head to line with eyes like its upper part. Beneath white; the feathers of chin and throat, and generally of crissum, white to base. A concealed spot in jugulum. Female duller. Young with bases of throat-feathers pure white to roots. Length, 6.25.

H. bicolor. Above metallic-green. Inside of wings and axillars ash-color. *Hab.* North America; north to Great Slave Lake; south to Guatemala. Bermuda and Cuba. (*White-bellied Swallow.*)

GENUS **STELGIDOPTERYX**, BAIRD. (Page 31.)

S. serripennis. Above uniform smoky-brown. Beneath mouse-gray; the abdomen and crissum white; the latter sometimes tinged with dusky. No trace of pectoral band. Length, 5.40. Nest in holes in banks; composed of sticks and feathers. Eggs immaculate pure white. *Hab.* All United States; south to Central Mexico. (*Rough-winged Swallow.*)

GENUS **COTYLE**, BOIE. (Page 32.)

C. riparia. Above grayish-brown, the margins of feathers somewhat paler. Beneath pure white; the sides of body and pectoral band like back. Length, 4.75. Nest excavated in sand-banks. Eggs pure white. *Hab.* Both hemispheres. In America, from Arctic Ocean to Brazil. (*Bank Swallow.*)

FAMILY VIREONIDÆ. — THE VIREOS.

The next three families are closely allied, as follows: —

COMMON CHARACTERS. Bill stout, and considerably hooked at tip, or with the point bent abruptly downward; with a deep notch, and sometimes a tooth or lobe just behind the notch; the tip of the lower mandible likewise frequently bent up, and with a notch behind it. The nostrils lateral, the bristles of the mouth generally well developed. The primaries are ten (except in a few *Vireos*), the outer from one fourth to one half the second. Tail variable. Tarsi scutellate anteriorly; sometimes with a tendency to division on the lateral plates; hitherto not met with. Basal joints of toes more adherent. Separated from *Turdidæ* by greater adhesion of toes; from *Troglodytidæ* by notched and hooked bill, etc.

A. Basal phalanx of anterior toes abbreviated; that of median toe decidedly shorter than the basal of inner, or the two basal of outer, and adherent for its whole length on both sides to the lateral (i. e. not free at all). Lateral plates of tarsus undivided, except at extreme lower end.

Vireonidæ. Gonys more than half the length of lower jaw (from tip to angle of mouth), usually longer than width of mouth, which is narrow. Bill conical, much compressed, decurved at end and notched, but scarcely toothed. Frontal feathers bristly and erect, or bent but slightly forward. Nostrils overhung by membrane. Tarsus longer than middle toe and claw. Lateral toes generally unequal; outer claw reaching half-way along middle claw.

B. Basal phalanx of middle toe about as long as the basal of inner, or the two basal of outer; free externally, at least for about one third its length, internally for about one half. Lateral plates of tarsus with decided tendency to subdivision (except in *Myiadestinæ*).

Ampelidæ. Gonys decidedly less than half the length of lower jaw, or than width of mouth, which is very broad and deeply cleft. Bill triangular, much depressed, decurved at end and notched, with moderate though decided tooth. Frontal feathers rather soft, scarcely bristly or erect. Nostrils overhung by membrane. Tarsus equal to or shorter than middle toe and claw. Lateral toes nearly equal; outer claw reaching only to base of middle claw.

Laniidæ. Gonys about half the length of lower jaw; about equal to width of mouth. Bill very powerful and raptorial, much compressed, with a strongly marked hook, notch, and tooth at end. Frontal feathers very bristly, and directed forwards, so as to conceal nostrils and base of bill. Nostrils with bony walls, except behind. Tarsus longer than middle toe and claw, sometimes much scutellate on sides. Lateral claws nearly equal; outer claw reaching a little beyond base of middle claw.

GENUS VIREO, VIEILL.

The *Vireonidæ* are exclusively American, and are referrible to several genera, only one, however, belonging to the United States. They have all a melodious song, and as far as known, make a deep nest, suspended by its upper edge between the forks of a horizontal twig. The eggs are white, generally with a few reddish or brown blotches.

Quite a number are characterized by having the eyes white, red, or yellow.

Subgenera.

Vireosylvia. Bill compressed, narrow; culmen and commissure straight, the tip abruptly curved (or, if this is not the case, there is no trace of light

bands on the wing; see section "b"). Superciliary stripe continued back to the occiput. No trace of light bands on the wing. No conspicuous ring round the eye.

a. No spurious primary. Bill compressed, its tip abruptly hooked; culmen and commissure straight. Crown decidedly more ashy than the back.

Sp. flavoviridis, barbatula, olivacea, philadelphica.

b. An acute spurious primary. Bill depressed, the tip only slightly hooked; culmen slightly curved. Crown scarcely more ashy than back. *Sp. gilvus.*

Lanivireo. Bill compressed, stout; culmen arched from the base, commissure curved. Superciliary stripe stopping at posterior angle of the eye and curving under it, enclosing the eye in a conspicuous orbital ring, interrupted only in front. Two conspicuous white bands on the wing.

a. No spurious primary. *Sp. flavifrons.*

b. With an acute spurious primary. *Sp. solitaria, plumbea.*

Vireo. Bill stout, scarcely compressed, sub-cylindrical. First primary not spurious, or, if so, not acute.

a. Two conspicuous light bands on wing. *Sp. atricapillus, noveboracensis, huttoni.*

b. One distinct light band on wing, and this not sharply defined, the anterior one being almost obsolete. *Sp. belli, pusillus, vicinior.*

SUBGENUS VIREOSYLVA, BON.

Species and Varieties.

COMMON CHARACTERS. All the species olive above, white or yellowish beneath. Cap ashy or brownish, contrasting more or less abruptly with the olive back. A whitish superciliary stripe extending to the nape, and a dusky one to and behind the eye. No light bands on the coverts. Inside of wings (flanks sometimes) and crissum yellowish, otherwise usually white beneath.

No spurious primary. *Series I.*

A spurious primary. *Series II.*

Series I. (No spurious primary.)

A. A dusky "moustache" or cheek stripe along each side of the throat.

a. No distinct dusky line along side of the crown.

1. **V. calidris.** Eyes red? Light stripes of the head dingy grayish-white; crown distinctly ashy; back grayish-olive; crissum and lining of the wing scarcely yellow. Length, 5.50. Wing, 3.20; tail, 2.35; bill, .42.

Hab. Cuba, Bahamas, and South Florida. (*Florida Vireo.*)

var. barbatula.

B. No "moustache."

a. A dusky line along each side of crown.

2. **V. olivaceus.** Grayish olive-green above; beneath white, tinged laterally with dull olive; crissum and lining of wing scarcely yellow; inner edges of quills white. Eyes red. Length, 5.75. Wing, 3.30; bill, .38. *Hab.* Eastern Province of North America, south to Northern South America. (*Red-eyed Vireo.*)

3. **V. flavoviridis.** Yellowish olive-green above; beneath white medially, bright greenish olive-yellow laterally; crissum, lining of wings, and inner edges of quills, light yellow. Eyes yellow. Length, 6.00. Wing, 3.15; bill, .41. *Hab.* Middle America north of Panama. (*Yellow-green Vireo.*)

Small business

TO

Small

b. No dusky line on side of crown.

5. **V. philadelphicus.** Above grayish-green; crown ashy. Beneath light yellow, deepest on the jugulum, whitish on belly. Eyes? Length, 5.00. Wing, 2.70; bill, .27. *Hab.* Eastern Province of North America; in winter south to Costa Rica. (*Philadelphia Vireo.*)

Series II. (A spurious primary.)

C. No dusky line along side of crown. No "moustache."

6. **V. gilvus.** Eyes hazel (in all?). Crown nearly like the back. Length, about 5.25.

Above olive-gray, rump more virescent; crown more ashy. Beneath dingy whitish, with a strong tinge of dingy buff from bill along sides and across breast. Bill, .14 deep, .30 long; wing, 2.85; tail, 2.05. *Hab.* Eastern Province of United States. (*Warbling Vireo.*) var. *gilvus*.

Similar, but above more grayish, and beneath with the buff tinge almost absent. Bill, .11 deep, and .22 long; wing, 2.80; tail, 2.15. *Hab.* Western Province of United States. (*Swainson's Vireo.*)

var. *swainsoni*.

SUBGENUS **LANIVIREO**, BAIRD. (Page 35.)

Species and Varieties.

COMMON CHARACTERS. A broad stripe from bill to and around, but not beyond, the eye. Two broad white bands across the wings. Bill plumbeous-blue, black toward culmen. Iris brown in all species?

1. **L. solitarius.** Spurious primary exposed. Throat and orbital ring white. Spurious primary well developed, — .60 or more long, .10 broad.

Nape and side of neck plumbeous; upper tail-coverts olive-green. Crissum tinged with yellow, but none on side of throat, nor across breast. Length, 5.40. Wing, 3.05; tail, 2.40; bill, from nostril, .27; tarsus, .66. *Hab.* Eastern Province of United States, straggling westward to the Pacific Coast, especially in its migration southward into Mexico, where it penetrates in winter as far as Guatemala. (*Solitary Vireo.*) var. *solitarius*.

Above continuous olive-brown; below ochraceous-white, with a buffy tinge across breast, and deeply olivaceous along sides. Crissum tinged with yellow. Length, about 5.30. Wing, 2.80; tail, 2.15; bill, .30; tarsus, .66. *Hab.* Pacific Province of United States, straggling in autumn eastward into the Middle Province. (*Cassin's Vireo.*) var. *cassini*.

Above continuous ashy-plumbeous. Beneath pure white, ashy along sides, and very slightly so across breast. Length, 5.75. Wing, 3.25; tail, 2.50; bill, .30; tarsus, .66. *Hab.* Middle Province of United States, south, in winter, through Western Mexico to Colima. (*Lead-colored Vireo.*) var. *plumbeus*.

2. **L. flavifrons.** Spurious primary concealed. Throat and orbital ring yellow.

Anterior half of body olive-green above, lemon-yellow below; posterior half plumbeous-ash above, white below. Length, 5.80. Wing, 3.00; tail, 1.90; bill, .32; tarsus, .70. *Hab.* Eastern Province of United States, south, in winter, to Costa Rica, and very rare in Cuba. (*Yellow-throated Vireo.*)

SUBGENUS **VIREO**, VIEILL. (Page 35.)

Species.

COMMON CHARACTERS. All the species olivaceous or ashy above, beneath whitish, or olivaceous-yellow. Wings with light bands. A light stripe from bill over the eye, but not beyond it, except in *carmioli*. Iris brown, as far as known, except in *V. noveboracensis*, where it is white.

A. Two conspicuous light bands on wing.*a.* Sexes different. Whole lore white.

1. ***V. atricapillus*.** Above olive-green, outer edges of tail-feathers bright yellowish-green; wing-bands greenish-white. Sides olivaceous-yellow. *Male*. Head and neck (except lore, orbital ring, chin, and throat) deep black; lower parts pure white medially. *Female* with the black replaced by dull slate; lower parts ochraceous-white medially. Length, 4.75. Wing, 2.30; bill, from nostril, .24. *Hab.* Southern Texas; Mazatlan, Mexico. (*Black-capped Vireo*.)

b. Sexes alike. Lore dusky, with light mark above it.

2. ***V. carmioli*.** Above brownish olive-green. Beneath, with supra-loral stripe, orbital ring, and light markings on the wings, light ochrey-yellow more whitish on the throat. Wing, 2.55; tail, 2.00; tarsus, .66; bill, .26. *Hab.* Costa Rica.

3. ***V. noveboracensis*.** Above olive-green, ashy across the nape. Supra-loral stripe and orbital ring deep yellow. Beneath ashy-white on throat, purer white on abdomen; sides, and a tinge across the breast, light yellow. Iris white. Length, 4.90. Wing, 2.40; tail, 2.00; tarsus, .63; bill, .26. *Hab.* Eastern Province of United States, south (in winter) to Guatemala (and Bogota?); very rare in Cuba; abundant and resident in Bermuda. (*White-eyed Vireo*.)

4. ***V. huttoni*.** Above grayish-olive, more olive-green toward tail. Below pale grayish-buff. Orbital ring very broad, yellowish-white. Length, 4.70. Wing, 2.50; tail, 2.05; tarsus, .67; bill, .24. *Hab.* California; in winter, Western Mexico to Oaxaca. (*Hutton's Vireo*.)

B. Only one band on wing, and this indistinct.

5. ***V. belli*.** Above ashy-olive, more virescent posteriorly. Markings on side of head not well defined. Below dull white, with a slight buffy tinge, strongly stained with yellow on sides and flanks. Upper feathers of middle row of wing-coverts passing into paler at tip, producing an indication of an anterior band. Length, 4.25. Wing, 2.20; tail, 1.80; tarsus, .69; bill, .25. *Hab.* Plains between the Mississippi Valley and the Rocky Mountains, from Dakota to Texas; in winter south to Tehuantepec, Mexico. (*Bell's Vireo*.)

6. ***V. pusillus*.** Above grayish-ash, very slightly tinged with olive on rump. Below dull white, ashy laterally, the flanks with the slightest possible tinge of yellow. Length, 4.80. Wing, 2.30; tail, 2.20; tarsus, .69; bill, .24, .13 deep. *Hab.* Arizona; Cape St. Lucas, Lower California; California north to Sacramento City. (*Least Vireo*.)

7. ***V. vicinior*.** Above bluish-ash, below ashy-white, scarcely more ashy laterally. Lores entirely ashy-white. Length, 5.60. Wing, 2.60; tail, 2.40; tarsus, .67; bill, .26, .18 deep. *Hab.* Fort Whipple, Arizona. (*Arizona Vireo*.)

FAMILY **AMPELIDÆ**. — THE CHATTERERS.

Subfamilies.

COMMON CHARACTERS. Gape of mouth nearly straight. Metatarsal scutellæ in three series. Body plain beneath.

Ampelinæ. Wings very long and much pointed, longer than the short, even tail. First primary excessively rudimentary; the outermost about the longest. Gape without bristles. Frontal feathers extending forward beyond the nostrils. Under coverts of tail reaching almost to its tip. Secondary quills with flat horny appendages at end of shaft like red sealing-wax.

Ptilogonatinæ. Horny appendages like red sealing-wax at end of shaft of secondaries. Wings rounded, shorter than the graduated tail. First primary nearly half the second. Gape well bristled. Frontal feathers falling short of the nostrils. No red horny appendage to wing-feathers. (Page 39.)

SUBFAMILY **AMPELINÆ**.GENUS **AMPELIS**, LINN.

Species.

COMMON CHARACTERS. A lengthened crest of soft blended feathers. Colors, soft silky brownish becoming more vinaceous anteriorly, and ashy posteriorly above. A black stripe on side of head, from nasal feathers across lores through the eye and behind it beneath crest, and a patch of the same on chin, with a white streak between them, on side of lower jaw.

A. Wing variegated. Lower tail-coverts rufous. Crest much developed. Forehead and side of head bright purplish-rufous. Black patch covering whole throat, and sharply defined. No white line between black of lore, etc., and brown of forehead. Inner webs of primaries tipped narrowly with white.

a. Terminal band of tail red.

A. phœnicopterum. Greater coverts tipped with red, producing a band across the wing. No yellow on tips of primaries. *Hab.* Japan and Eastern Siberia.

b. Terminal band of tail yellow.

A. garrulus. Secondary and primary coverts tipped with white, forming two broad short bands. Primaries with outer webs tipped with yellow. Length, 7.40; wing, 4.50. Eyes hazel (AUD.); dark red (RICH). Nest on trees, of fine grass and hair, or thread lichens, lined with feathers, and resting on spruce twigs. Eggs greenish-slate or stone-color, spotted with brown. *Hab.* Arctic regions of both hemispheres; in winter south into northern United States, and along Rocky Mountains as far as Fort Massachusetts, New Mexico." (*Waxwing*.)

B. Wings unvariegated. Lower tail-coverts white. Crest moderately developed. Forehead, etc., not different from crest. Chin only black, this fading gradually into the brown of throat. A white line between black of lore, etc., and brown of forehead. Inner webs of primaries not tipped with white.

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a. Terminal band of tail yellow.

A. cedrorum. Wing bluish-ashy. Length, 7.00; wing, 4.00. Eyes blood-color (WILSON); brownish-black (AUD.). Nest on trees, like preceding, without the feathers; eggs very similar. *Hab.* Whole of North America, from 52° N., south (in winter?) to Guatemala; Jamaica and Cuba in winter. (*Cedar-Bird.*)

SUBFAMILY **PTILOGONATINÆ.** (Page 38.)

CHAR. Legs moderate. Nostrils oval, with wide naked membrane above and to some extent behind them; the frontal feathers not reaching to their border, and rather soft. Wings graduated, shorter than the somewhat broad, fan-shaped tail; the first quill nearly half the second. Adults plain.

Ptilogonateæ. Tarsi scutellate anteriorly; not longer than middle toe and claw.

Myiadestææ. Tarsi with a continuous plate anteriorly; longer than middle toe and claw.

SECTION **PTILOGONATEÆ.**

Crest narrow, pointed, its feathers stiff, their webs compact; outer primaries broad. Tail rounded *Phænopepla.*

Crest broad, decumbent, soft, the feathers loose; outer primaries attenuated. Tail even or cuneate. (Mexican.) *Ptilogonys.*

GENUS **PHÆNOPEPLA,** SCLATER.

P. nitens, SCLATER. *Male.* Glossy greenish-black; a lengthened patch of white on inner webs of primaries. *Female.* Brownish-ash, paler beneath. No white on primaries. Length, 7.60. Iris red. Nest on horizontal branches; of plant fibre, etc., lined with finer materials. Eggs light slate-color, with purple and black blotches all over. *Hab.* Middle and Western Province of United States. South to Cape St. Lucas and Mexico. (*Crested Black Flycatcher.*)

SECTION **MYIADESTÆÆ.**

GENUS **MYIADESTES,** SWAINSON.

An ochraceous band across base of secondaries and upper primaries, conspicuous on outer surface.

1. **M. townsendi.** Generally dull ashy, paler beneath. Throat and abdomen whitish. Iris brown. Length, 8.00; wing, 4.50; tail, 3.85. Nest bulky; of sticks, placed in cavity of rocks? Eggs unknown. *Hab.* Middle and Pacific Provinces of United States only. (*Townsend's Solitaire.*)

No ochraceous on outer webs of secondaries and primaries. About the size of preceding.

2. **M. obscurus.** Back and wings rusty-olive. Head and beneath ashy, top of head deepest ash. *Hab.* Mountains of Mexico and Guatemala; Tres Marias Islands.

3. **M. unicolor.** Entirely dark bluish slate-color, lighter beneath. Lores black. *Hab.* Central Mexico and Guatemala.

The first part of the history of the United States is the history of the colonies. The colonies were founded by Englishmen who had come to America in search of a better life. They were at first dependent on England for everything they needed, but as they grew in number and power, they began to assert their independence. This led to a series of conflicts with England, which culminated in the American Revolution.

The second part of the history of the United States is the history of the early years of the new nation. After the Revolution, the United States was a weak and divided country. The government was unstable, and the economy was in a state of chaos. However, through the efforts of men like George Washington and James Madison, the United States was able to establish a strong and stable government, and to begin to develop its economy.

The third part of the history of the United States is the history of the expansion of the country. The United States had always been a country of frontiers, and as the population grew, the need for more land became increasingly acute. This led to a series of wars and conflicts with the Native Americans, and to the acquisition of new territories from other countries.

The fourth part of the history of the United States is the history of the Civil War. The Civil War was a great and bloody conflict that divided the country into two halves. It was fought between the Union and the Confederacy, and it resulted in the destruction of the Confederacy and the preservation of the Union. The Civil War was a turning point in the history of the United States, and it led to the establishment of a more unified and powerful nation.

The fifth part of the history of the United States is the history of the modern era. This period is characterized by rapid economic growth, technological advancement, and the rise of a powerful industrial nation. The United States has become a world power, and it has played a leading role in the development of the world. The modern era of the United States is a period of great achievement and progress, and it is a testament to the strength and resilience of the American people.

1891-1892

The first of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured. The weather was very hot, and the crops were much injured.

The second of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

The third of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

The fourth of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

The fifth of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

The sixth of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

The seventh of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

The eighth of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

The ninth of the year was a very dry one, and the crops were much injured. The weather was very hot, and the crops were much injured.

FAMILY LANIIDÆ. — THE SHRIKES.

CHAR. Bill very powerful, strong, and much compressed, the tip abruptly hooked, deeply notched, and with a prominent tooth behind the notch; both mandibles distinctly notched, the upper with a distinct tooth behind, the lower with the point bent up. Tarsi longer than the middle toe, strongly scutellate. Primaries ten; first primary half the second, or shorter (occasionally wanting). Wings short, rounded; tail long and much graduated. Sides of tarsi with the plates divided on the outside. But one American genus.

GENUS COLLURIO, VIGORS.

Characters those of the family. In American species, the iris brown. Nest on trees; bulky and soft, of feathers, fur, down, etc., mixed with twigs.

Species.

A. Outer webs of secondaries wholly white for basal half (mostly concealed by coverts, however). Upper eyelid white.

1. **C. excubitor.** Nasal tufts grayish-white. In other respects, as regards colors, like *excubitoroides*. Wing, 4.20; tail, 4.00; tarsus, .95. *Hab.* Europe.

B. Outer webs of secondaries black to the base. Upper eyelids black.

a. White crescent on lower eyelid. Beneath with wavy bars of dusky in all stages. Tarsus less than 1.00; wing more than 4.50. Length, 10.00.

2. **C. borealis.** Upper half of nasal tufts white. Black spectacle bordered above the ear-coverts by hoary whitish. Scapulars and upper tail-coverts approaching white. Wing, 4.70; tail, 4.70; tarsus, .93. Eggs light greenish, marbled and blotched with clay-color and brown. *Hab.* Arctic America; in winter south into United States, especially into the northern portions. (*Northern Shrike.*)

b. No white crescent on lower eyelid. Beneath without bars, except in young. Tarsus more than 1.00; wing less than 4.50. Length, 8.50.

3. **C. ludovicianus.** Black spectacle not bordered over ear-coverts with whitish.

White patch on primaries reaching nearly as far as end of first quill.
Nasal tufts entirely black.

Black of lores and nasal tufts bordered above with hoary whitish. Tail white at base; inner webs of secondaries paler toward margin, but not abruptly white. Beneath entirely white, without ashy tinge laterally, or across breast. Axillars whitish. Upper tail-coverts ashy-white, scapulars pure white. Wing, 4.10; tail, 4.20; tarsus, 1.10; bill, .50. Eggs greenish-white, blotched with brown, purple, or umber. *Hab.* Western North America from Pacific Coast east to a little beyond the Mississippi, and to Texas. Nearly all of Mexico. (*White-rumped Shrike.*) . . . var. *excubitoroides*.

Black of lores, etc., not bordered above by whitish. Tail black at base. Inner webs of secondaries pure white to the shaft on basal half. Beneath tinged with ashy laterally and across breast. Scapulars and upper tail-coverts hardly different from back. Bill, .60. *Hab.* California and fur countries. (*White-winged Shrike.*)

var. *robustus*.

White patch on primaries reaching only about half-way to end of first quill. Nasal tufts hoary-grayish above.

Black of lores bordered above by hoary-whitish. Tail as in *elegans*, —secondaries as in *excubitoroides*. Beneath very strongly tinged with plumbeous laterally and across breast. Upper tail-coverts like the back, posterior scapulars only inclining to white. Axillars plumbeous. Wing, 3.80; tail, 3.95; tarsus, 1.00; bill, .50. Eggs yellowish or clayey white, blotched or marbled with brown, purple, or gray. *Hab.* South Atlantic and Gulf States. (*Loggerhead Shrike.*) var. *ludovicianus*.

FAMILY CÆREBIDÆ. — THE CREEPERS.

Similar to *Sylvicolidæ*, the gape of mouth less; tongue brush-like at tip.

GENUS CERTHIOLA, SUNDEVALL.

GEN. CHAR. Bill nearly as long as the head; as high as broad at base, elongated, conical, very acute, and gently decurved from base to tip. Culmen uniformly convex; gonys concave. No bristles at base of bill. Tail rounded, rather shorter than the wings. Tarsi longer than the middle toe. Iris brown? Nest pensile and arched. Eggs with yellowish ground dotted thickly with rufous spots.

C. bahamensis. Above dull dusky-brown; rump and edge of wing yellow. Beneath ashy-white; a pale yellow triangular patch on front of breast. A white stripe from bill above eye to nape; and a white patch at base of primaries. Outer tail-feathers tipped with white. Length, 4.40; wing, 2.30. *Hab.* Bahamas, straggling to Florida. (*Bahama Creeper.*)

FAMILY TANAGRIDÆ. — THE TANAGERS.

CHAR. Primaries nine. Bill usually conical, sometimes depressed or attenuated, usually more or less triangular at base, and with the cutting edges not much inflected; sometimes toothed or notched. Legs short; claws curved; colors usually brilliant.

GENUS PYRANGA, VIEILL.

GEN. CHAR. Bill somewhat straight; subconical, cylindrical, notched at tip; culmen moderately curved; commissure with a median acute lobe. Wings elongated; the four first primaries longest. Tail moderate, slightly forked. Colors of the male chiefly scarlet, of the female yellowish. Iris brown. In North American species the nest built on trees; shallow, of fibrous roots, etc., not compactly put together. Eggs greenish, blotched with lilac, purple, and brown. Length about 7.25, except in var. *cooperi*.

Species and Varieties.

A. Wing and tail blackish, or deep black, in more or less striking contrast to the color of the upper parts. Wing with two light bands (except in *P. rubra*).

a. Body and head red in the ♂; yellow in the ♀.

No. 1

Baselines

Wings intense black in the ♂; back not streaked.

1. **P. rubra.** Wing without any bands, or with merely indications of bright scarlet ones. ♂. Intense pure scarlet; wings and tail intense black. ♀. Olive-green above (including wings and tail), pale yellow below. *Juv.* ♂. Olive-green above, yellow below; wings and tail black. *Hab.* Eastern Province of United States. (*Scarlet Tanager.*)

Lesser wing-coverts black or dusky.

2. **P. ludovicianus.** Wing with two light yellow bands. ♂. Back, wings, and tail intense black; head crimson. ♀. Above olive-green, tinged with ashy on the back; beneath pale greenish-yellow; wings and tail dusky olive-green; no red on head. *Hab.* Western Province of United States. (*Louisiana Tanager.*)

B. Wing and tail reddish or greenish, of the same general color as the upper parts; wing without any light bands.

a. Wing, 3.00. Body always yellow; head red in the ♂.

3. **P. erythrocephala.** Above olive-green, beneath yellow. ♂. Head red. Wing, 3.00; tail, 2.70. *Hab.* Mexico (Temiscaltepec).

b. Wing, 3.50 or more. Body and head red in ♂.

Commissure with a distinct tooth; bill bluish.

4. **P. hepatica.** Bill small, not swollen laterally; culmen gently curved terminally, straight basally; commissural tooth small. ♂. Above reddish-ashy, becoming brighter reddish on the head above; beneath minium-scarlet medially, much tinged with ashy laterally. ♀. Ashy-green and greenish-yellow, instead of reddish. *Juv.* ♂ similar, but throat tinged with orange-red.

Auriculars grayish like the back; eyelids light red; lores grayish.

Wing, 4.10; tail, 3.40; bill, .50. *Hab.* Table-lands of Middle America, north into southern Rocky Mountains of United States.

(*The Liver-colored Tanager.*) var. *hepatica.*

Commissure without an appreciable tooth; bill pale brownish.

5. **P. aestiva.** ♂. Above purplish-red, beneath pure, fine, rosaceous-vermilion. ♀. Above brownish olive-green, beneath ochraceous-yellow.

Head above scarcely brighter reddish or yellowish than the back.

Bill, .55, or less, from nostril; primaries, .84 longer than secondaries. Length, 7.20; wing, 3.81; tail, 2.96; bill, .52. *Hab.* Eastern Province of United States, south, in winter, through Eastern Middle America to Peru. (*Summer Tanager.*) . . . var. *aestiva.*

Head above decidedly brighter reddish or yellowish than the back. Bill, .60 or more, from nostril; primaries, 1.16 longer than secondaries. Length, 8.60; wing, 4.24; tail, 3.68; bill, .64. *Hab.* Southern Middle Province of United States (Upper Rio Grande region and Lower Colorado Basin); in winter south, through Western Mexico, to Colima. (*Cooper's Tanager.*) . . . var. *cooperi.*

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FAMILY FRINGILLIDÆ. — THE FINCHES.

CHAR. Primaries nine. Bill very short, abruptly conical, and robust. Commissure strongly angulated at base of bill. Tarsi scutellate anteriorly, but the sides with two undivided plates meeting behind along the median line, as a sharp posterior ridge. Eyes hazel or brown, except in *Pipilo* where they are reddish or yellowish. Said also to be sometimes reddish in *Junco*. Nest and eggs very variable as to character and situation.

Coccothraustinæ. Bill variable, from enormously large to quite small; the base of the upper mandible almost always provided with a close-pressed fringe of bristly feathers (more or less conspicuous) concealing the nostrils. Wings very long and pointed, usually one half to one third longer than the forked or emarginate tail. Tarsi short. (Page 43.)

Pyrgitinæ. Bill robust, swollen, arched above without distinct ridge. Lower mandible at base narrower than upper. Nostrils covered; side of maxilla with stiff appressed bristles. Tarsi short, not longer than middle toe. Tail shorter than the somewhat pointed wings. Back streaked; under parts not streaked. (Page 50.)

Spizellinæ. Embracing all the plain-colored sparrow-like species marked with longitudinal stripes. Bill conical, always rather small; both mandibles about equal. Tarsi lengthened. Wings and tail variable. Lateral claws never reaching beyond the base of the middle claw. (Page 51.)

Passerellinæ. Sparrow-like species, with triangular spots beneath. Legs, toes, and claws very stout; the lateral claws reaching nearly to the end of the middle ones. (Page 50.)

Spizinæ. Brightly colored species, usually without streaks. Bill usually very large and much curved; lower mandible wider than the upper. Wings moderately long. Tail variable. (Page 50.)

SUBFAMILY COCCOTHTHAUSTINÆ. — THE TRUE FINCHES.

Genera.

A. Bill enormously large and stout; the lateral outline as long as that of the skull. Culmen gently curved.

Colors green, yellow, and black.

Hesperiphona. First quill equal to the second. Wings one half longer than the tail. Lateral claws equal, reaching to the base of the middle claw. Claws much curved, obtuse; hinder one but little longer than the middle. (Page 44.)

B. Bill smaller, with the culmen more or less curved; the lateral outline not so long as the skull. Wings about one third longer than the tail, or a little more; first quill shorter than the second. Claws considerably curved and thickened; hinder most so, and almost inappreciably longer or even shorter than the middle anterior one. Tarsus shorter than the middle toes. Lateral toes unequal.

a. Colors red, gray, and black, never streaked.

Pyrrhula. Bill excessively swollen; as broad and as high as long, not half the length of head; upper outline much curved. Tail-coverts covering two thirds of the tail, which is nearly even, middle and hinder claws about equal. (Page 45.)

b. Colors red and gray, or streaked brown and white.

Pinicola. Bill moderately swollen; longer than high or broad, upper outlines much curved; the tip hooked. Tail-coverts reaching over basal half of

tail, which is nearly even. Middle claw longer than hind; outer lateral claw extending beyond base of middle (reaching to it in *Pyrrhula* and *Carpodacus*). ♀ and *juv.* not streaked. (Page 45.)

Carpodacus. Bill variable, always more or less curved and swollen; longer than high or broad; the tip not hooked. Tail-coverts reaching over two thirds the tail, which is decidedly forked. Middle and hind claw about equal. ♀ and *juv.* streaked. (Page 45.)

c. Colors black and yellow.

Chrysomitris. Bill nearly straight. Hind claw stouter and more curved, but scarcely longer than the middle anterior one. Outer lateral toe reaching a little beyond the base of the middle claw; shorter than the hind toe. Wings longer and more pointed. Tail quite deeply forked. (Page 46.)

C. Hind claw considerably longer than the middle anterior one, with about the same curvature; claws attenuated towards the point, and acute. Lateral toes about equal. Wings usually almost one half longer than the tail, which is deeply forked. Tarsus shorter than middle toe.

a. Points of mandibles overlapping.

Loxia. Tarsus shorter than middle toe. Bill much compressed, elongate falcate, with the points crossing like the blades of scissors. Claws very large; lateral extending beyond the base of the middle. Colors red or gray. Streaked in *juv.* (Page 47.)

b. Points of mandibles not overlapping.

Ægiothus. Tarsus equal to the middle toe. Bill very acutely conical; outlines and commissure perfectly straight. Lateral toes reaching beyond the base of the middle one. No ridge on the side of the lower mandible. Streaked; a crimson pileum (except in one species). (Page 48.)

Leucosticte. Culmen slightly decurved; commissure a little concave. Bill obtusely conical; not sharp-pointed. A conspicuous ridge on the side of the lower mandible. Claws large; the lateral not reaching beyond the base of the middle one. Colors red and brown. (Page 49.)

D. Hind claw much the largest; decidedly less curved than the middle anterior one. Tarsus longer than the middle toe. Lateral toes equal; reaching about to the base of the middle claw. Hind toe as long as or longer than the middle one. Bill very variable; always more or less curved and blunted. Palate somewhat tuberculate; margins of lower jaw much inflexed. Tail slightly emarginate or even. Wings one half longer than the tail. First quill as long as the second.

Plectrophanes. Colors black and white. With or without rufous nape or elbows. Much white on tail. (Page 49.)

GENUS **HESPERIPHONA**, BONAP. (Page 43.)

Species and Varieties.

COMMON CHARACTERS. Wings and tail black, the tertials with more or less whitish; body concolored, with more or less of a yellowish tinge. ♂. Body yellowish, more olivaceous above; no white at base of primaries. ♀. Body grayish, merely tinged with yellow; a white spot at base of primaries. Nest and eggs unknown.

1. **H. vespertina.** ♂. Head olivaceous-sepia, with a yellow frontal crescent and a black occipital patch. ♀. Crown plumbeous-brown; a dusky "bridle" down side of the throat; upper tail-coverts tipped with a white spot. Length, 7.30; wing, 4.30. Nesting unknown.

Yellow frontal crescent broad, as wide as the black behind it; inner webs of tertials partially black; secondaries and inner webs of tail-feathers tipped with white. *Hab.* Northern mountain regions of United States and interior of British America. East to Ohio. (*Evening Grosbeak.*) var. *vespertina.*

Yellow frontal crescent narrow, less than half as wide as the black behind it; inner webs of the tertials without any black; secondaries and inner webs of tail-feathers without white tips. *Hab.* Southern Rocky Mountains of United States, and mountains of Mexico. (*Mountain Grosbeak.*) var. *montana.*

2. **H. abeillii.** ♂. Head entirely black, sharply defined. ♀. Crown (only) black; no dusky "bridle" on side of throat; upper tail-coverts without white tips. *Hab.* Mountains of Guatemala and Southern Mexico.

GENUS **PINICOLA**, VIEILL. (Page 43.)

P. enucleator. *Male.* Bill and legs black. General color rose-red; the feathers of back with darker centres. Lores, sides, abdomen, and under tail-coverts ashy. Two white bands on wing. *Female.* Ashy-brownish above, yellowish beneath; top of head and rump gamboge-yellow. Length, 8.50; wing, 4.50. Nest on trees, of green moss. Eggs greenish slate-color, blotched with purple and brown. *Hab.* Boreal regions of Northern Hemisphere; occasionally south to Middle United States in winter. (*Pine Grosbeak.*)

GENUS **PYRRHULA**, PALLAS. (Page 43.)

P. cassini. Grayish-ashy above; beneath more cinnamon. Tibiæ, crissum, rump, and patch in terminal half of outer tail-feathers white. Wings, tail (and its upper coverts), top of head, base of bill all round, and chin, lustrous black. A band of ashy-white across ends of greater wing-coverts. Bill black. Length, 6.50; wing, 3.55. Nest and eggs unknown. *Hab.* Alaska near Behring Straits. (*Cassin's Bullfinch.*)

GENUS **CARPODACUS**, KAUP. (Page 44.)

Species and Varieties.

COMMON CHARACTERS. *Males* brown, with forehead, throat, and rump red; this color usually spreading over adjacent regions, so as sometimes to become continuous. *Females* without red. Both sexes more or less streaked. Nest on trees. Eggs blue, sparingly spotted with brown (sometimes also lined) chiefly around the larger end.

A. Culmen only slightly curved. Tail and wing feathers edged with reddish in the male.

a. ♂. Crown much brighter purple than the rump or throat. ♀. Without lighter superoral and maxillary stripes, the whole head being pretty uniformly streaked.

1. **C. cassini.** ♂. Crown bright crimson; rest of head, breast, rump, etc., much lighter purple-pink; lower tail-coverts with a shaft-line of

dusky. Length, 6.50; wing, 3.60. *Hab.* Mountain regions of the Middle Province, south, through the table-lands and alpine regions of Mexico, to Mirador. (*Cassin's Finch*.)

b. ♂. Crown scarcely brighter purple than the rump or throat. ♀. With conspicuous superoral and maxillary stripes.

2. **C. purpureus**. Crown purple; rest of head, breast, rump, etc., nearly similar in tint; *lower tail-coverts* without dusky shaft-lines.

Purple tints of a rosy carmine cast; first quill longer than the fourth. Length, 6.25; wing, 3.34. *Hab.* Eastern Province of North America. (*Purple Finch*.) . . . var. *purpureus*.

Purple tints of a darker purplish-rose cast; first quill shorter than the fourth. Length, 6.20; wing, 3.20. *Hab.* Pacific Province of North America. (*California Purple Finch*.) . . . var. *californicus*.

B. Culmen much curved. Tail and wing feathers edged with grayish in the male.

3. **C. frontalis**. ♂. A frontal and superciliary band of crimson; a patch of same on the rump, and another on the throat and jugulum; abdomen and crissum streaked with dusky. Length about 5.75.

♂. Red restricted to the portions mentioned above.

Red of an intense carmine tint, sharply defined, and strictly restricted within the limits indicated. *Hab.* Plateau of Mexico (*Mexican Purple Finch*.) . . . var. *hæmorrhous*.

Red of a lighter carmine, and with a greater or less tendency to escape its boundaries. Wing, 3.10. *Hab.* Middle Province of the United States. (*House Finch*.) . . . var. *frontalis*.

♂. Red not restricted, but spread over the crown, tingeing the back and other portions, excepting wings and tail.

Red tint varying from scarlet to wine-red. Wing, 3.00. *Hab.* Pacific Province of United States, including the peninsula of Lower California. (*California House Finch*.)

var. *rhodocolpus*.

GENUS **CHRYSOMITRIS**, BOIE. (Page 44.)

Species and Varieties.

COMMON CHARACTERS. Colors generally yellow; the crown, throat, back, wings, and tail black, varied sometimes with white. Females without the bright markings of the male. Nest in bushes or on trees; eggs plain pale-greenish or bluish-white, except in *C. pinus*, where they are decided green and spotted.

A. No streaks anywhere on plumage; base of tail-feathers black or white. Sexes dissimilar. (*Chrysomitris*.)

a. No yellow on the wings.

1. **C. tristis**. Inner webs of tail-feathers always whitish terminally (except in *Juv.*). ♂. Forehead and crown, wings and tail, deep black; rest of plumage, including the back, rich lemon-yellow; tail-coverts white. ♀. Body grayish above, dingy whitish beneath, stained with yellow; no black on head; wings and tail duller black. *Juv.* Fulvous-umber above, with markings of reddish-ochraceous on the wings; beneath, dilute-yellow washed with fulvous. Length, 5.25; wing, 3.00. *Hab.* Whole of temperate North America. (*Yellow-Bird*; *Thistle-Bird*.)

2. **C. psaltria.** Inner webs of tail-feathers never whitish terminally. ♂. Beneath yellow, including the lower tail-coverts; above black, with or without olive-green on the back. ♀. Without any black, the yellow duller.

Tail with white on inner webs; tertials with large white spots.

♂. Auriculars, nape, back, and rump olive-green. Length, 4.25; wing, 2.40. *Hab.* Rocky Mountains of United States. (*Arkansas Siskin.*) var. *psaltria*.

♂. Auriculars black; nape, back, and rump green clouded with black. Length, 4.25; wing, 2.40. *Hab.* Arizona. (*Arizona Siskin.*) var. *arizonæ*.

♂. Auriculars, nape, back, and rump entirely black. Length, 4.12; wing, 2.25. *Hab.* Middle America. (*Mexican Siskin.*) var. *mexicana*.

Tail without any white on inner webs; tertials without white spots.

♂. Auriculars, nape, back, and rump wholly black. *Hab.* Panama and New Granada. (*Colombia Siskin.*) . . . var. *columbiana*.

b. Terminal half of outer webs of wing-coverts and secondaries yellow.

3. **C. lawrencii.** Prevailing color ashy, lighter beneath. ♂. A large patch on the breast, the rump, and most of the outer surface of the wing, yellow; forehead, crown, lores, all round base of bill, chin, wings (beneath the yellow), and tail black. ♀. Lacking the black, and with the yellow only indicated. Length, 4.50; wing, 2.70. *Hab.* California and Southwestern Arizona. (*Lawrence's Goldfinch.*)

B. Whole body and head thickly streaked; bases of tail-feathers yellow. Sexes alike. (*Astragalinus.*)

4. **C. pinus.** Above brownish-gray, beneath white, with conspicuous dusky streaks everywhere; two light bands on the wing; bases of secondaries and primaries yellow. Length, 4.75; wing, 3.00. Nest of pine twigs, etc., lined with fine roots and hair. Eggs green, spotted with rusty-brown, chiefly at larger end. *Hab.* Whole of North America. (*Pine Finch.*)

GENUS **LOXIA**, LINNÆUS. (Page 44.)

Species and Varieties.

COMMON CHARACTERS. *Males* red; *females* greenish-olive; beneath tinged with yellowish. Immature birds somewhat streaked. Nest on trees. Eggs greenish, blotched with brown. American species nest as early as March, while snow is still on the ground.

L. curvirostra. Wings dusky, without white bands.

1. Bill from forehead, .74; wing, 3.90; tail, 2.40. Lower mandible much weaker than the upper. *Hab.* Europe. (*Crossbill.*) . . . var. *curvirostra*.

2. Length, about 6.30. Bill from forehead, .80 or more; wing, 4.00; tail, 2.50. Lower mandible as strong as the upper. *Hab.* Rocky Mountains of United States, and mountainous regions of Mexico. (*Mexican Crossbill.*)

var. *mexicana*.

3. Length 6.00. Bill from forehead, .60 or less; wing, 3.30; tail, 2.20.

Hab. North America generally. (*Common Crossbill.*) . . . var. *americana*.

L. leucoptera. Wings deep black, with two broad white bands.

1. Body and head pomegranate-red; black of scapulars nearly meeting

across lower back. Length, 6.25; wing, 3.50; tail, 2.60. *Hab.* Northern North America; "Himalayas"; "Japan." (*White-winged Crossbill*.)

var. *leucoptera*.

2. Body, etc., cinnabar-red; back nearly wholly red. *Hab.* Europe.

var. *bifasciata*.

GENUS **ZEGIOTHUS**, CABAN. (Page 44.)

Species and Varieties.

COMMON CHARACTERS. *Adult.* Above streaked with dusky upon a brownish, or brown and whitish, ground; wing-coverts tipped with whitish or pale brown. Beneath whitish, streaked on the sides with dusky. An indistinct, lighter superciliary stripe. Nest in trees or bushes, sometimes in grass; full and soft. Eggs bluish-white, dotted with brown. *Male.* Rump tinged with rose-pink. *Female.* Rump not tinged with pinkish. *Juv.* Without any red, and with the whole lower parts thickly streaked.

A. Crown with a square patch of crimson, in adult; throat and chin with a dusky spot; quills and tail-feathers not edged conspicuously with white.

♂ with the breast tinged with red.

1. **A. canescens.** Rump unstreaked white (both sexes, at all seasons); the lower tail-coverts with white shafts; the red tinge on the breast in the ♂, of a delicate pale rosaceous-pink tint. (*Mealy Red-Poll*.)

Bill very short and thick, its height through the base nearly equalling the length of the culmen. Length, 6.00; wing, 3.20; tail, 2.65. Bill: culmen, .35; height, .30. *Hab.* Greenland var. *canescens*.

Bill much smaller, more acute, its height through the base much less than the length of the culmen. Length, 5.50; wing, 3.00; tail, 2.50. Bill: culmen, .30; height, .22. *Hab.* Continental arctic America var. *exilipes*.

2. **A. linarius.** Rump always streaked; lower tail-coverts with dusky shaft-streaks; the red tinge on the breast of the ♂ of a rosaceous-carmine tint. (*Lesser Red-Poll*.)

Bill about .35 in length by .22 in height. Length, 5.50; wing, 2.80; tail, 2.40. *Hab.* Continental arctic and cold temperate North America var. *linarius*.

Bill about .40, or more, in length, by .30 in height. Length, 5.75; wing, 3.20; tail, 2.60. *Hab.* Greenland in summer, and Continental arctic and cold temperate North America in winter var. *holböllii*.

B. Crown without any red; throat and chin without any dusky spot; quills and tail-feathers of adult male edged conspicuously with white. ♂ without red tinge on the breast.

3. **A. flavirostris.** Rump rose-pink in the ♂, brown streaked with dusky in ♀. No red on crown or breast.

♀. Above umber-brown streaked with dusky; ground-color of rump light brown; throat and jugulum strongly ochraceous-buff.

Hab. Europe var. *flavirostris*.

♀. Above olive-brown streaked with dusky; ground-color of rump sulphur-yellow; throat and jugulum faintly sulphur-yellow, tinged with buff. Length about 5.50; wing, 3.00; tail, 2.50.

Hab. Massachusetts. (*Brewster's Linnet*.) . . . var. *brewsteri*.

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GENUS **LEUCOSTICTE**, SWAINSON. (Page 44.)

COMMON CHARACTERS. Body anteriorly chocolate-brown; posteriorly tinged with rose-red. Wing-coverts (broadly) and quills edged with the same. Head above light ashy or silvery-gray, as are also the feathers around the base of upper mandible; the forehead and a patch on crown blackish. Throat dusky. Nest on the ground; eggs unspotted white.

Additional Characters. The chocolate-colored feathers and the secondary quills, sometimes the tail-feathers and greater wing-coverts, edged with pale brownish-white or fulvous; the interscapulars with darker centres. Rose of rump and upper tail-coverts in form of transverse bands at end of feathers, that of abdomen more a continuous wash. Lining of wings and axillars white, tinged with rose at ends of feathers. Feathers of crissum dark brown, edged with whitish, sometimes tinged with rose. Bill generally reddish or yellowish, with blackish tip. Length about 6.50. (Var. *griseinucha* larger.)

A. Auriculars chocolate-brown.

1. Whole side of head below the eye, including the auriculars, chocolate-brown. Chin not bordered anteriorly with ash. In the breeding-season, head darker and ash wanting. Wing, 4.35; tail, 3.00; bill, .44; tarsus, .72. *Hab.* Interior regions of North America. (*Gray-crowned Finch.*) var. *tephrocotis*.

2. Cheeks, lores, and anterior border of the chin ash-color. Wing, 4.00; tail, 2.80; bill, .44; tarsus, .70. *Hab.* Colorado and Wyoming Territories. (*Gray-cheeked Finch.*) var. *campestris*.

B. Auriculars ash-color.

3. Wing, 4.30; tail, 3.00; bill, .40; tarsus (?). Chocolate of the breast, etc., light, exactly as in *tephrocotis*; rose beneath restricted to the abdomen; lores and chin light ash. *Hab.* Northwest coast from Kodiak to Fort Simpson, east to Wyoming Territory. (*Hepburn's Finch.*)
var. *littoralis*.

4. Length, 7.50; wing, 4.60; tail, 3.40; bill, .40; tarsus, .78. Chocolate very dark, inclining to sepia; rose extending forward on to the breast; lores blackish; chin dusky gray. *Hab.* Aleutian Islands (St. George's, Unalashka, and Kodiak). (*Gray-eared Finch.*) var. *griseinucha*.

GENUS **PLECTROPHANES**, MEYER. (Page 44.)

Nest on ground.

Species and Varieties.**A.** Prevailing color white.

1. **P. nivalis.** ♂. Back, scapulars, ends of tertials, alula, terminal half of primaries and the middle tail-feathers, deep black; otherwise pure white. ♀. The black replaced by grayish with black spots; crown grayish spotted with black. Young considerably tinged with ochraceous. Length, 6.75; wing, 4.35. Eggs greenish-white; blotched and lined with various shades of brown. *Hab.* Circumpolar regions; south in winter into the United States. (*Snow Bunting.*)

B. Above brown, spotted with black. ♂. Crown black.

a. Six to ten middle tail-feathers almost wholly black; the rest without black ends. ♂ with a nuchal collar of rufous or buff, and without rufous on the wings.

2. *P. lapponicus*. ♂. Head, all round, and jugulum, deep black; a post-ocular stripe, running downward behind the black jugular patch, and entire lower parts from the jugulum, white. Nuchal collar chestnut-rufous. ♀ with the black areas merely indicated by a dusky clouding, and merely a tinge of rufous round the nape. Length, 6.25; wing, 3.90. Eggs grayish, thickly spotted, sometimes so as to appear quite brown. *Hab.* Circumpolar regions; south in winter into the United States. (*Lapland Longspur*.)

3. *P. pictus*. ♂. Head above and laterally deep black, bordered anteriorly and below with white; a post-ocular stripe, and an ovate auricular spot of the same. Nuchal collar and entire lower surface bright buff. ♀. Pale grayish-buff, darker above; above distinctly, and on the jugulum obsoletely, streaked with black. Length, 5.50; wing, 3.50. Eggs clay-colored, thickly marked with lines and dots, or blotches of brown. *Hab.* Interior plains of North America, north to Arctic Ocean. (*Painted Longspur*.)

4. *P. ornatus*. ♂. Head above, and whole breast and abdomen, black; a superciliary stripe, side of head, chin, throat, anal region and crissum, white; nuchal collar rufous. ♀ hardly distinguishable from that of *P. pictus*. Length, 5.30; wing, 3.40.

a. Lesser wing-coverts brownish-gray; black feathers of breast, etc., without rufous edges. Eggs light stone-color, sparingly marked with blotches of dark brown. *Hab.* Interior plains of United States. (*Chestnut-collared Bunting*.) . . . var. *ornatus*.

b. Lesser wing-coverts black; black feathers of breast, etc., with rufous edges. *Hab.* Southern plains of North America, and tableland of Mexico. (*Black-shouldered Bunting*.) . . . var. *melanopus*.

δ. Only two middle tail-feathers almost wholly black; the rest with black ends. ♂ without a nuchal collar of rufous or buff, and with rufous on the wings.

5. *P. maccowni*. ♂. Crown, and a broad crescent on the jugulum, black; rest of head and neck ashy, approaching white on the throat and over the eye; beneath white, above grayish-brown, streaked with black; middle wing-coverts rufous. ♀. Above yellowish-umber, beneath yellowish-white; thickly streaked above, unstreaked beneath. No rufous on wings, and no black on head or jugulum. Length, 5.50; wing, 3.60. Eggs bluish clay-color, varied with purplish and brown. *Hab.* Plains, from Texas, northward. (*McCown's Bunting*.)

SUBFAMILY PYRGITINÆ. (Page 43.)

GENUS PYRGITA, CUVIER.

General characters those of *Pyrgitince* (p. 43).

P. domestica, Cuv. Above reddish-brown, the back streaked with black, and the crown ashy; sides of occiput chestnut; cheeks white; lores, and patch covering chin, throat, and jugulum, black in ♂, grayish in ♀; beneath whitish, ashy on sides; a white band across middle wing-coverts. Length about 6.00; wing, 2.85. *Hab.* Europe and Asia. Introduced into the Eastern United States, Utah, and Cuba. Nest in thatch, ivy, etc. Eggs ashy, dotted and streaked with brownish. (*House Sparrow*.)

SUBFAMILY **SPIZELLINÆ**. — THE SPARROWS. (Page 43.)

A. Tail small and short; considerably or decidedly shorter than the wings, owing either to the elongation of the wing or the shortening of the tail. Lateral toes shorter than the middle without its claw. Species streaked above and below. (*Passerculeæ*.)

a. Thickly streaked everywhere above, on the sides, and across the breast. Wing pointed; longest primaries considerably longer than the secondaries. Tail forked.

Centronyx. Hind claw very large; rather longer than its digit. The hind toe and claw, together, as long as or longer than the middle toe and claw. Other toes as in *Passerculus*. Claws gently curved. Tertials shorter than the secondaries. Tail forked, but the lateral feathers shorter. (Page 52.)

Passerculus. Hind claw as long as its digit; the toe equal to the middle one without its claw; lateral toes falling considerably short of the middle claw. Wings very long; first primary longest. Tertials as long as the primaries. Tail forked; feathers acute. (Page 52.)

Poocætes. Hind claw shorter than its digit; the whole toe less than the middle toe without its claw. Lateral toes nearly equal to the middle one, without its claw. Tertials but little longer than secondaries. Tail stiffened, forked; feathers acute, outer ones white. (Page 53.)

b. Moderately streaked above, on the sides, and on the breast, the latter sometimes unstreaked; the dorsal streaks broader, the others fainter than in the last. Wings short, reaching a little beyond the base of the tail. Not much difference between the primaries and secondaries. Tail short, graduated, and the feathers lanceolate, acute.

Coturniculus. Bill short; thick. Tertials almost equal to the primaries; truncate at the end. Claws small, weak; hinder one shorter than its digit. Outstretched feet not reaching the tip of the tail. Tail-feathers not stiffened. (In one species tail nearly equal to the wing.) (Page 54.)

Ammodromus. Bill slender, small at base, and elongated. Tertials not longer than the secondaries; rounded at the tip. Claws large, hinder one equal to its digit. Outstretched toes reaching considerably beyond the end of the stiffened, almost scansorial tail. (Page 54.)

B. Tail longer and broader; nearly or quite as long as, sometimes a very little longer than, the wings, which are rather lengthened. The primaries considerably longer than the secondaries. None of the species streaked beneath, and the back alone streaked above. (*Spizelleæ*.)

a. Tail rounded or slightly graduated.

Chondestes. Tail considerably graduated, not emarginated. Lateral toes considerably shorter than the middle toe, without its claw. Wings very long, decidedly longer than the tail, reaching the middle of the tail. First quill longest. Head striped. Back streaked. White beneath. A white blotch on the end of the tail-feathers. (Page 55.)

Zonotrichia. Tail moderately graduated. Wings moderate, about as long as the tail, reaching about over the basal fourth of the tail; first quill less than the second to fourth. Feet large. Head striped with black and white, or with brown and ochraceous. Back streaked. (Page 55.)

Junco. Tail very nearly equal to the wings, slightly emarginate, and decidedly rounded. Outer toe rather longer than inner, reaching the middle claw. No streaks anywhere except in young; black or ash-color above; belly white; with or without a rufous back and sides. Outer tail-feathers white. (Page 56.)

Poospiza. Tail lengthened, slightly graduated; the feathers unusually broad to the end. Bill slender. Wings about as long as the tail, reaching but little beyond its external base. Tertiaries broad, and, with the secondaries, rather lengthened. Second to fifth quills nearly equal, and longest. Bill dark lead-color. Tail black. Uniform ashy-brown above; white beneath. Sides of head with stripes of black and white. (Page 57.)

b. Tail decidedly forked; a little shorter than the wing, sometimes a little longer.

Spizella. Size rather small. Wings long. Lower mandible largest. Uniform beneath, or with a pectoral spot or the chin black. (Page 57.)

C. Tail lengthened and graduated; decidedly longer than the wings, which are very short, scarcely extending beyond the external base of the tail. Feet reaching but little beyond the middle of the tail. Species all streaked above; streaked or nearly unicolor beneath. No white on wings or tail. Outer lateral toe the longer. First quill not the shortest of the primaries. (**Melospizeæ.**)

Melospiza. Culmen and commissure nearly straight. Claws stout; hinder one as large as its digit. Tail-feathers rather broad. Body streaked beneath. (Page 59.) *except in M. palustris,*

Peucæa. Culmen and commissure curved. Claws weak; hinder one not much curved, decidedly shorter than its digit. Tail-feathers narrow. Without streaks beneath, excepting a narrow maxillary stripe. (Page 60.)

D. Tail rather short, and much graduated; longer than the wings; the midrib more median. Culmen curved. Tarsus considerably longer than middle toe. Outer toe longer. But little difference in the length of the quills; the outer ones much rounded; even the second quill is shorter than any other primary except the first.

Embernagra. Color, olive-green above. (Page 61.)

GENUS **CENTRONYX**, BAIRD. (Page 51.)

C. bairdi. Somewhat similar in general appearance to *Passerculus savanna*. Back grayish, streaked with dusky. Crown nearly covered by black streaks, but divided by a broad median band of brownish-yellow. Eyelids and a faint superciliary stripe yellowish-white. Beneath white, with a maxillary blackish stripe and some narrow streaks on the upper part of the breast, and sides of the throat and body. Bend of wing white. Length, 4.75; wing, 2.80; tail, 2.20. Nesting unknown. *Hab.* Mouth of the Yellowstone River. (*Baird's Bunting.*)

GENUS **PASSERCULUS**, BONAP. (Page 51.)

Species and Varieties.

COMMON CHARACTERS. Above grayish-brown, beneath white; whole upper surface, as well as the breast and sides, streaked with dusky. A light superciliary stripe, and a whitish maxillary one, the latter bordered above and below by stripes of coalesced dusky streaks. Nests on the ground.

A. Bill small, the culmen slightly concave in the middle portion; a median light stripe on the crown.

1. **P. savanna.** Superciliary stripe yellow anteriorly; streaks on the back blackish, sharply defined.

Throat and upper part of abdomen unstreaked; vertex-stripe without yellow tinge.

Length, 5.50; bill .34 from forehead and .25 in depth at the base; wing, 2.85; tail, 2.30. Colors deep; outer surface of wing (in spring) decidedly reddish. Eggs greenish-white, usually but not always almost covered with dark blotches. *Hab.* Eastern Province of North America. (*Savanna Sparrow*.) . . . var. *savanna*.

Length, 5.25; bill .32 and .20, or less; wing, 2.75; tail, 2.10. Colors very pale; outer surface of wing (in spring) pale ashy. Eggs like preceding. *Hab.* Western Province of North America, except coast of California, where replaced by var. *anthinus*. (*Western Savanna Sparrow*.) . . . var. *alaudinus*.

Length, 6.12; bill .37 and .27, or considerably more; wing, 3.10; tail, 2.40. Colors as in *savanna*. Eggs unknown. *Hab.* Northwest coast of North America. (*Sandwich Sparrow*.)

var. *sandwichensis*.

Throat and upper part of abdomen streaked; vertex-stripe strongly tinged with yellow.

Length, 5.00; bill .33 and .19; wing, 2.50; tail, 1.90. Eggs much like *savanna*. Colors darker than var. *savanna*, the ground-color more uniform, and the black streaks heavier and more numerous. *Hab.* Coast of California. (*California Savanna Sparrow*.) . . . var. *anthinus*.

2. **P. princeps.** Superciliary stripe white anteriorly; streaks on the back sandy-brown, badly defined. Length, 6.30; wing, 3.25; tail, 2.60; bill .45 and .23; tarsus, .95; middle toe, .80. *Hab.* Eastern Massachusetts (northern regions in summer?). (*Maynard's Sparrow*.)

B. Bill robust, the culmen arched; no median light stripe on the crown.

3. **P. rostratus.** Superciliary stripe white anteriorly; streaks on the back sandy-brown, obsolete.

Length, 5.30; bill .43 and .30; wing, 2.90; tail, 2.25. Ground-color above fulvous-gray, beneath white; the streaks, above and below, sandy-brown. Colors much as in *P. princeps*. Nesting unknown. *Hab.* Coast of California, to the mouth of the Colorado River; Cape St. Lucas in winter. (*Sea-side Sparrow*.) var. *rostratus*.

Length, 5.00; bill .33 and .22; wing, 2.55; tail, 2.00. Ground-color above plumbeous-gray; beneath white; streaks blackish-brown. Nesting unknown. *Hab.* Cape St. Lucas (resident?). (*St. Lucas Sparrow*.) . . . var. *guttatus*.

GENUS **POOCÆTES**, BAIRD. (Page 51.)

P. gramineus. Above grayish, uniformly streaked narrowly with black; lesser wing-coverts sandy-rufous; beneath yellowish-white, the sides of throat, jugulum, and sides sparsely streaked with black. Outer tail-feathers mostly white. Length, about 6.50; wing, 3.10; tail, 2.50. Nest on ground; eggs

bluish-white, stained with lilac and reddish, and sparsely lined with dusky.
(*Grass Finch*.)

Beneath strongly tinged with dingy-buff; bill deep. *Hab.* Eastern Province of United States, west to Great Plains. var. *gramineus*.

Beneath scarcely tinged with buff. Bill ~~deep~~. Above more grayish, the streaks narrower. *Hab.* Western Province of United States. var. *confinis*.

GENUS **COTURNICULUS**, BONAP. (Page 51.)

Species and Varieties.

COMMON CHARACTERS. Crown and back streaked with black upon an ashy, olive, or chestnut ground; beneath whitish, tinged across the breast with ochraceous or ashy, plain, or with blackish streaks on the breast. A light superciliary median stripe. Tail much graduated. Length about 5.00. Nest on ground. Eggs large for size of bird.

a. A dusky streak on each side of the throat, and one above the light ochraceous maxillary stripe.

1. **C. henslowi**. Bill very robust, .35 along culmen by .30 deep at base. Wing, 2.25; tail, 2.20. Head ochraceous or greenish olive, lighter on the throat; a blackish stripe on each side of the crown. Breast streaked with black at all ages. Eggs clear white, finely and rather sparsely blotched, especially around larger end. *Hab.* Eastern Province of United States. (*Henslow's Bunting*.)

b. No dusky streak on side of throat nor above the maxilla.

2. **C. lecontei**. Bill very narrow, only .16 broad by .20 deep at base. Median stripe of the crown ochraceous for anterior third, the remaining part ashy-white; superciliary stripe wholly ochraceous; edge of wing white; breast sparsely streaked in the adult. Wing, 2.15; tail, 2.20. Nesting unknown. *Hab.* Plains west of the Missouri, from Texas to Dakota. (*Leconte's Bunting*.)

3. **C. passerinus**. Bill robust, .23, or more, broad, by .24, or more, deep at base. Median stripe of the crown ochraceous throughout; superciliary stripe yellow anteriorly, ashy posteriorly; edge of wing bright yellow, breast unstreaked in the adult, streaked in the young, in which the head-stripes are ashy, with no yellow on wing or over lore. Eggs brilliant white; varied more coarsely than in *C. henslowi*. (*Yellow-winged Sparrow*.)

Colors dark, the black markings predominating above. *Ad.* Anterior lower parts deep buff at all seasons. *Juv.* Dusky streaks on breast very distinct. Bill, .33 and .30; wing, 2.60; tail, 1.90. *Hab.* Eastern Province of United States, and West Indies. (*Sparrow*) var. *passerinus*.

Colors pale, the light markings predominating above. *Ad.* Buff of the breast scarcely observable in summer. *Juv.* Dusky streaks on breast scarcely appreciable. Bill, .33 and .24; wing, 2.60; tail, 1.90. *Hab.* Western Province of United States. (*Sparrow*) var. *perpallidus*.

GENUS **AMMODROMUS**, SWAINSON. (Page 51.)

COMMON CHARACTERS. Above olivaceous or ashy, the crown washed with brown laterally, the dorsal feathers darker centrally; beneath white, tinged

across the jugulum with ochraceous or ashy; jugulum streaked; a dusky "bridle" on each side of throat; above it a maxillary stripe of ochraceous or white. Nest in tussock or on ground.

1. **A. caudacutus.** *Ad.* Above olive, the dorsal feathers darker and edged with whitish-ochraceous; superciliary and maxillary stripes deep ochraceous; jugulum and sides tinged with the same, and sharply streaked with black. *Juv.* Wholly ochraceous, darker above; crown and back streaked with black, the former divided medially by a pale-brown stripe; breast and sides streaked with black. Length, 5.00; wing, 2.30. Eggs greenish to whitish, thickly and uniformly sprinkled with fine rusty-brown dots. *Hab.* Atlantic coast of United States. (*Sharp-tailed Finch.*)

2. **A. maritimus.** *Ad.* Above ashy, the dorsal feathers obsoletely darker centrally; superciliary stripe yellowish-ashy, bright yellow over the lores; maxillary stripe white; jugulum and sides tinged with ashy, the former obsoletely streaked with dark ashy. *Juv.* Above olivaceous, the crown and back streaked with black, the former not divided by a lighter median line; breast and sides washed with ochraceous and distinctly streaked with black. Length, 6.00; wing, 2.50. Eggs grayish-white, coarsely and uniformly blotched with reddish-brown. *Hab.* Atlantic coast of United States. (*Sea-Side Finch.*)

GENUS **CHONDESTES**, SWAINSON. (Page 51.)

Streaked on the back. Head with well-defined large stripes. Beneath white, with a pectoral spot. Only one species recognized. Nest on ground or on bushes. Eggs white, marbled, dotted, and with tangled waving lines of blackish, as in the Orioles.

C. grammaca. Crown and auriculars chestnut, the former divided by a fulvous stripe; forehead black, divided medially by white; a loreal bar, triangular spot on cheek, stripe on each side of throat, and spot on jugulum, black; rest of head, and beneath, with broad ends of tail-feathers, and two bands on wing, white; above grayish, the back streaked with black. Length about 7.00; wing, 3.30. *Hab.* Pacific coast of United States; east to Wisconsin, Illinois, and Michigan. (*Lark Sparrow.*)

GENUS **ZONOTRICHIA**, SWAINSON. (Page 51.)

COMMON CHARACTERS. Feathers of interscapular region blackish centrally, passing into rufous-brown and edged with paler. Rump and upper tail-coverts uniform olivaceous-ashy brown. Two white bands on the wings; the tertials edged with rufous. Beneath without streaks. Head above marked with black, and generally with white. Cheeks plumbeous. Length about 7 inches; wing about 3.25. Nest on ground. Eggs varied, usually greenish-white, thickly marked with dark blotches.

A. Black of the crown divided by a median light stripe. Jugulum ashy.

a. Throat ashy, uniform with the breast.

1. **Z. leucophrys.** Median stripe of the crown white. A black stripe from behind the eye, and a white superciliary stripe.

A black stripe from the eye to black of forehead, across lore. *Hab.* Eastern Province of North America, west throughout Rocky Mountains; Cape St. Lucas in winter. (*White-crowned Sparrow.*) var. *leucophrys*.

No black streak in front of eye, the lores being wholly ashy. *Hab.* Western Province North America, east to Rocky Mountains. (*Gambel's Finch.*) var. *gambeli*.

2. **Z. coronata.** Median stripe of crown yellow for anterior and ash for posterior half. Black of crown coming down to eye and ear coverts, leaving no light superciliary stripe. Nest in a bush? *Hab.* Pacific Province of North America; accidental east of Sierra Nevada. (*Golden-crowned Sparrow.*)

b. Throat pure white, in sharp contrast with the dark ash of cheeks and jugulum.

3. **Z. albicollis.** Median stripe of crown white. A light superciliary stripe, yellow anterior to the eye, and white behind it; a black streak along upper edge of ear-coverts. *Hab.* Eastern Province of North America. (*White-throated Sparrow.*)

B. Black of the crown not divided, but continuous. Jugulum white.

4. **Z. querula.** Lores, forepart of cheeks, with the chin and throat, deep black; whole side of head behind the eye, ashy. Lower parts pure white. Nesting unknown. *Hab.* Missouri Plains. (*Harris's Finch. Black-faced Finch.*)

GENUS **JUNCO**, WAGLER. (Page 52.)

COMMON CHARACTERS. Prevailing color plumbeous and unstreaked; abdomen, crissum, and lateral tail-feathers white. Length about 6 inches. Iris said to be reddish in some species.

A. Bill entirely light flesh-colored, dusky only at extreme point. Color of jugulum (deep ash or plumbeous-black) abruptly defined against the pure white of the abdomen.

a. Posterior outline of the dark color of the jugulum convex; sides pinkish.

1. **J. oregonus.** Back and wings more or less tinged with dark rusty, in sharp contrast with the black (♂) or ash (♀) of the head and neck. Nest on ground; of grass and hair, lined with moss, etc. Prevailing color of eggs white, sparsely marked with reddish-brown spots, confluent around larger end. *Hab.* Pacific Province of North America, from Sitka southward; east across the Middle Province of United States, to the Rocky Mountains (where mixed with *J. caniceps*), occasionally to the Plains (where mixed with *J. hyemalis*). (*Oregon Snowbird.*)

b. Posterior outline of the dark color of the jugulum concave; sides ashy.

2. **J. hyemalis.** Back and wings without rusty tinge.

Wing without any white; three outer tail-feathers only, marked with white. Bill, .40 and .25; wing, 3.10; tail, 2.80; tarsus, .80. Nest and eggs like *J. oregonus*. *Hab.* Eastern Province North America. Straggling west to Arizona (COUES); in the northern Rocky Mountains, mixed with *J. oregonus*. (*Black Snowbird.*) var. *hyemalis*.

Wing with two white bands (on tips of middle and greater coverts); four outer tail-feathers marked with white. Bill, .50 and .30; wing, 3.40; tail, 3.20. *Hab.* High mountains of Colorado (El Paso Co., AIKEN). (*Aiken's Snowbird.*) var. *aikeni*.

3. **J. caniceps.** Back (interscapulars) rufous; scapulars and wings uniform ashy. Nest and eggs unknown. *Hab.* Central Rocky Mountains of United States. (Along southern boundary mixed with *J. cinereus*.)

B. Bill with the upper mandible black, the lower yellow. Ash of the jugulum fading gradually into the grayish-white of the abdomen.

4. **J. cinereus.** Whole back, scapulars, wing-coverts, and tertials rufous. *Hab.* Mexico and Guatemala. (*Mexican Junco.*)

GENUS **POOSPIZA**, CABANIS. (Page 52.)

COMMON CHARACTERS. Lores and beneath the eye black, a white orbital ring, white spot above the lore (in *bilineata* continued back in a superciliary stripe); a white maxillary stripe. Lateral tail-feathers, with outer web, and terminal border of inner, hoary or pure white. Above uniform, without streaks. Beneath white, with or without a black throat. Nest in bushes, near the ground; eggs differing with the species.

A. Throat black in adult; sides not streaked. A continuous white superciliary stripe.

1. **P. bilineata.** Black patch of throat covering jugulum, with a convex outline behind. Crown and back without streaks, concolored. Wing-coverts without white bands; lesser coverts ash. Length, 5.40; wing, 2.75; tail, 2.85; bill, from nostril, .37; tarsus, .65. Eggs pure white, tinged faintly with blue. *Hab.* Middle Province of United States to Northern Mexico. (*Black-throated Sparrow.*)

B. Throat white; sides streaked. No white superciliary stripe.

2. **P. belli.** A dusky spot in middle of the breast. Upper parts ashy, concolored, with indistinct streaks on the back. Wings somewhat more brownish, the coverts with two indistinct light (not white) bands. Eggs greenish-blue, with reddish-purple spots.

Length, 5.70; wing, 2.50; tail, 2.50; bill, .31; tarsus, .74. Dorsal streaks obsolete. *Hab.* Southern California. (*Bell's Sparrow.*) var. *belli*.

Length, 6.50; wing, 3.20; tail, 3.20; bill, .35; tarsus, .76. Dorsal streaks distinct. *Hab.* Middle Province of United States. (*Sage Sparrow.*) var. *nevadensis*.

GENUS **SPIZELLA**, BONAP. (Page 52.)

COMMON CHARACTERS. Interscapular region with black streaks. Rump and lower parts without streaks (except in young). Wing with two narrow light bands (indistinct in *atrigrularis*). Nest generally on bushes; sometimes on ground, Eggs various.

A. Crown different from the sides of the head, a plain light superciliary stripe. Young with crown and breast streaked.

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

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

1. **S. monticola.** Crown bright rufous, undivided medially; a dusky spot on lore; wing-bands sharply defined, pure white. A black spot on breast; jugulum tinged with ashy. Bill black above, yellow below. Length, 6.25; wing, 3.00. Nest more frequently on ground, always lined with feathers. Eggs light dull greenish; covered uniformly with dots and marblings of foxy-brown. *Hab.* Whole of North America; north of the United States only, in summer. (*Tree Sparrow.*)

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2. **S. pusilla.** Crown dull rufous, indistinctly divided medially; lores entirely whitish; wing-bands not sharply defined, pale brown. No black spot on breast; jugulum tinged with buff. Bill entirely light brownish-red. Length, 5.75; wing, 2.70; tail, 2.80. Nest both on ground and in bushes; of grass, lined with hairs or fine roots. Eggs pale clay-color, with ferruginous blotches. *Hab.* Eastern Province of United States. (*Field Sparrow.*)

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

3. **S. socialis.** Crown bright rufous, not distinctly divided, generally plain. Forehead black, divided medially with white. Streak of black on lore and behind eye. Rump pure bluish-ash. Bill blackish, lower mandible paler. Nest never on ground. Eggs bright bluish-green, sparingly spotted with dusky about larger end.

Auriculars deep ash, in strong contrast with pure white of the superciliary stripe and throat; breast without ashy tinge. Dorsal streaks broad. Length, 5.75; wing, 2.80; tail, 2.30. *Hab.* Eastern Province of United States. (*Chipping Sparrow.*)

var. *socialis.*

Auriculars lighter ash, less strongly contrasted with the white above and below; breast strongly tinged with ash. Dorsal streaks narrow. Length, 6.00; wing, 3.00; tail, 2.90. *Hab.* Western Province of United States, and table-lands of Mexico. (*Arizona Chippy.*)

var. *arizonæ.*

b. Crown light grayish-brown, with distinct black streaks; young differing in streaked under parts.

4. **S. pallida.** Nesting and eggs as in *socialis*.

Crown divided medially by a distinct pale stripe; whitish superciliary stripe, and blackish post-ocular streak sharply defined. A dusky sub-maxillary streak. Nape ashy in contrast with the crown and back. Length, 4.75; wing, 2.50; tail, 2.40. *Hab.* Plains of United States, from the Saskatchewan southward. (*Clay-colored Sparrow.*)

var. *pallida.*

Crown without a distinct median stripe. Markings on side of head not sharply defined. No dusky sub-maxillary streak, and nape scarcely different from crown and back. Length, 5.00; wing, 2.50; tail, 2.60. *Hab.* Middle and Western Provinces. (*Brewer's Sparrow.*)

var. *breweri.*

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

5. **S. atrigularis.** Head and neck all round, and rump, uniform dark ash, gradually fading into white on the abdomen; wing-bands indistinct; bill light brownish-red. *Ad.* Lores, chin, and upper part of throat black. *Juv.* without black about the head. Nesting and eggs unknown. Length, 5.50; wing, 2.50; tail, 3.00. *Hab.* Adjacent portions of Mexico and southern Middle Province of United States (Fort Whipple, Arizona, Coues; Cape St. Lucas, XANTUS). (*Black-chinned Sparrow.*)

GENUS **MELOSPIZA**, BAIRD. (Page 52.)

Crown and back similar in color and streaked; beneath thickly streaked. Tail immaculate. Nest on ground; exceptionally on bushes. Eggs greenish-white; thickly marbled and blotched with rusty brown, etc.

A. Lower parts streaked.

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

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

Ground-color above reddish-gray, the interscapulars with the whitish and black streaks about equal, and sharply contrasted. Rump with reddish streaks. Nest usually on ground; more rarely in bushes; of grass-stems and twigs, lined with fine grass. Eggs dirty white; spotted equally and generally closely with brownish; very rarely unspotted. Length, 6.50; wing, 2.70; tail, 2.90; bill, .36 from nostril and .30 deep. *Hab.* Eastern Province of United States, to the Plains on the west and the Rio Grande on the south.

(*Song Sparrow.*) var. *melodia*.

Ground-color above ashy-gray, the interscapulars with the black streaks much broader than their rufous border, and the whitish edges not in strong contrast. Rump without streaks. Nest usually in bushes; with the eggs much as in *melodia*. Length, 6.75; wing, 2.80; tail, 3.15; bill, .33 and .22. *Hab.* Middle Province of United States. (*Western Song Sparrow.*) var. *fallax*.

Ground-color above nearly pure gray, the interscapulars with the black streaks much broader than the rufous, and the edges of the feathers not appreciably paler. Rump without streaks. Nest and eggs as in *melodia*. Length, 6.50; wing, 2.80; tail, 2.85; bill, .32 by .27. *Hab.* California, except along the coast; Sierra Nevada. (*Heermann's Sparrow.*) var. *heermanni*.

Ground-color above grayish-olive, the interscapulars with the black streaks much broader than their rufous border; edges of the feathers scarcely appreciably paler. Rump and tail-coverts, above and below, with distinct broad streaks of black. Nest and eggs as in *melodia*. Length, 5.00; wing, 2.40; tail, 2.50; bill, .37 and .24. *Hab.* Coast region of California. (*Samuel's Sparrow.*) var. *samuelis*.

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

Above rufescent-olive, the darker shades castaneous; streaks beneath castaneous-rufous. Nest and eggs as in *melodia*. Length, 6.75; wing, 2.60; tail, 2.50; bill, .35 and .23. *Hab.* Pacific Province from British Columbia southward. (*Oregon Sparrow.*) var. *guttata*.

Above sepia-plumbeous, the darker shades fuliginous-sepia; streaks beneath fuliginous-sepia. Length, 6.75; wing, 3.00; tail, 3.00; bill, .41 and .25. Nothing known specially of nesting. *Hab.* Pacific Province from British Columbia northward. (*Rusty Sparrow.*)

var. *rufina*.

Above plumbeous, the darker markings dull reddish-sepia in winter, clove-brown in summer; streaks beneath castaneous-rufous in winter, dull sepia in summer. Length, 7.25; wing, 3.40; tail,

3.60; bill, .50 and .30. Nothing known specially of nesting. *Hab.*

Pacific coast of Alaska (Kodiak, etc.). (*Kodiak Sparrow*.) var. *insignis*.

2. **M. lincolni**. White of the lower parts interrupted by a broad pectoral band of buff; streaks on the jugulum, etc., narrow linear. A vertical and superciliary stripe of ashy; a maxillary one of buff. Length, 5.60; wing, 2.60; tail, 2.40; bill, .30 and .25. Nest on ground. Eggs greenish-white, thickly marked with rusty-brown. *Hab.* Whole of North America; south, in winter, to Panama. (*Lincoln's Finch*.)

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

3. **M. palustris**. Jugulum and nape tinged with ashy; outer surface of wings bright castaneous, in strong contrast with the olivaceous of the back; dorsal streaks broad, black, without rufous externally; a superciliary and maxillary stripe of ashy. ♂. Crown uniform chestnut, forehead black. ♀. Crown similar, but divided by an indistinct ashy stripe, and more or less streaked with black (autumnal or winter ♂ similar). *Juv.* Head, back, and jugulum streaked with black on a yellowish-white ground; black prevailing on the crown. Length, 5.75; wing, 2.40. Nest on ground. Eggs light green or clay-color. Marked with brownish spots. *Hab.* Eastern Province of North America. (*Swamp Sparrow*.)

GENUS **PEUCÆA**, AUDUBON. (Page 52.)

With obsolete streaks above; beneath plain whitish or brownish; a streak each side of chin. Crown uniform. Nest on ground; of coarse, wiry grass. Eggs, as far as known, pure and rather brilliant white.

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

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

1. **P. ruficeps**. Above olivaceous-ash, interscapulars with broad streaks of dull rufous, the shafts scarcely blackish. Crown bright rufous. Length, 5.50; wing, 2.40; tail, 2.70; bill, .29 from forehead, .20 deep; tarsus, .70; middle toe without claw, .55. Nest and eggs unknown. *Hab.* California (and Mexico in winter?). (*Rufous-crowned Sparrow*.)

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

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

The bluish-ash and chestnut-rufous streaks above sharply contrasted; black dorsal streaks broad. Length, 6.25; wing, 2.45;

tail, 2.65; bill, .30 and .30; tarsus, .73; middle toe, .60. *Hab.* Southern States, from Florida and Georgia to Southern Illinois. (*Bachman's Sparrow.*) var. *aestivalis*.
 The dull ash and light rufous streaks above not sharply defined; black dorsal streaks narrow. Length, 6.00; wing, 2.65; tail, 3.00; bill, .32 and .25; tarsus, .80; middle toe, .63. *Hab.* Southern border of the Arizona region of Middle Province of United States. (*Arizona Sparrow.*) var. *arizonae*.

3. *P. cassini*. Above marked everywhere with broad short streaks of pale (not reddish) brown streaks, all black medially. Tail-feathers with distinct blackish shaft-stripe, throwing off narrow, obsolete bars toward the edge of the feathers. Outer tail-feathers distinctly tipped (broadly) and edged with dull white. Black marks on upper tail-coverts very large, transverse. Beneath nearly uniform dull white, scarcely darker along sides and across breast; flanks with broad streaks of blackish-brown. Length, 6.00; wing, 2.55; tail, 2.80; bill, .28 and .23; tarsus, .68; middle toe, .55. *Hab.* Rio Grande region (San Antonio and Laredo), north to Kansas (ALLEN). (*Cassini's Sparrow.*)

GENUS **EMBERNAGRA**, LESSON. (Page 52.)

Above olive-green; beneath whitish. Nest and eggs unknown.

E. rufivirgata. Above uniform olivaceous-green. A stripe on each side of the head, and one behind the eye, dull brownish-rufous; an ashy superciliary stripe, whiter anteriorly. Under parts brownish-white. Edge of wing, under coverts, and axillaries bright yellow. Length, 5.50; wing, 2.60; tail, 2.70. *Hab.* Valley of the Rio Grande, and probably of Gila, southward; Mazatlan, Mexico. (*Texas Sparrow.*)

SUBFAMILY **PASSERELLINÆ**. (Page 43.)

GENUS **PASSERELLA**, SWAINSON.

Rufous or slaty above; thickly marked with triangular blotches below, of color of back. Nest on ground or in low bushes. Eggs greenish or whitish, thickly blotched with rusty brown.

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

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

1. *P. iliaca*. Ground-color above ash (more or less overlaid in winter with a rufous wash); wings, dorsal spots, upper tail-coverts, tail, auriculars, and markings of lower parts, bright reddish-rufous. Length, 7.50; wing, 3.50; tail, 2.90; tarsus, .87; middle toe, without claw, .67; hind claw, .35. Nest of dry grass and moss, lined with grass and feathers. Eggs as above. *Hab.* Eastern Province of North America. (*Fox-colored Sparrow.*)

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

2. P. townsendi.

Head and neck above with back, scapulars, and rump rich sepia-brown, almost uniform with wings and tail. Belly thickly spotted; tibiae deep brown; supraloral space not whitish. Length, 7.00; wing, 3.05; tail, 2.85; tarsus, .80; middle toe, .62; hind claw, .43.

Hab. Pacific Province of North America, from Kodiak south to Fort Tejon, Cal. (in winter). (*Townsend's Sparrow.*) var. *townsendi*.

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

Length, 7.00; bill, .34 from nostril, by .25 deep at base; wing, 3.30; tail, 3.50; tarsus, .85; middle toe, .60; hind claw, .45. Nest in clump of willows, of coarse grass, lined with hair and fine grass. Eggs pale green, blotched with brown.

Hab. Middle Province of United States. (*Slaty Sparrow.*)

var. *schistacea*.

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

var. *megarrhynchus*.

SUBFAMILY **SPIZINÆ.** (Page 43.)

A. Wings decidedly longer than the tail. Eggs plain blue or white, unspotted.
a. Feet very stout, reaching nearly to the end of the tail. Species terrestrial.

Calamospiza. Bill moderate, the commissure with a deep angle posteriorly and prominent lobe behind it; anteriorly nearly straight; commissure of lower mandible with a prominent angle. Outer toe longer than the inner, both nearly as long as the posterior. Outer four primaries about equal, and abruptly longer than the rest. Tertials nearly equal to primaries. Tail-feathers broad at tips. Color: black with white spot on wing in ♂, brownish streaks in ♀. Nest on or near ground; eggs plain pale blue. (Page 63.)

Euspiza. Bill weaker, the commissure with a more shallow angle, and much less prominent sinuation behind it; anteriorly distinctly sinuated. Outer toe shorter than inner, both much shorter than the posterior one. First primary longest, the rest successively shorter. Tertials but little longer than secondaries. Tail-feathers attenuated at tips. Color: back brown streaked with black; throat white; jugulum yellow or ashy; with or without black spot on foreneck. A yellow or white superciliary stripe. Nest on or near ground; eggs plain pale blue. (Page 64.)

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

a. *Size large (wing more than 3.50 inches).*

Hedymeles. Upper mandible much swollen laterally. Colors: no blue; upper parts conspicuously different from the lower. Wings and tail with white patches; axillars and lining of wing yellow or red.

Female streaked. Nest in a tree or bush; eggs greenish, thickly spotted. (Page 64.)

Guiraca. Upper mandible flat laterally. Colors: ♂ deep blue, with two rufous bands on wings; no white patches on wings or tail; axillars and lining of wing blue; ♀ olive-brown without streaks. Nest in a bush; eggs plain bluish-white. (Page 64.)

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

Cyanospiza. Similar in form to *Guiraca*, but culmen more curved, mandible more shallow, the angle and sinuations of the commissure less conspicuous. Color: ♂ more or less blue, without any bands on wing (except in *C. amoena* in which they are white); ♀ olive-brown. Nest in a bush; eggs plain bluish-white (except in *C. ciris*, in which they have reddish spots). (Page 64.)

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

Spermophila. Bill very short and broad, scarcely longer than high, not compressed; culmen greatly curved. Color: chiefly black and white, or brown and gray. (Page 65.)

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

C. Wing much shorter than the tail. (Page 65.)

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

Pyrrhuloxia. Bill pyrrhuline, very short, and with the culmen greatly convex; shorter than high. Hind claw less than its digit; not much larger than the middle anterior one. Tarsus equal to the middle toe. Nest in bush or low tree; eggs white, spotted with lilac and olive. (Page 66.)

Cardinalis. Bill coccothraustine, very large; culmen very slightly convex. Wings more rounded. Feet as in the last, except that the tarsus is longer than the middle toe. Nest in bush or low tree; eggs white, spotted with lilac and olive. (Page 66.)

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

Pipilo. Bill moderate; culmen and commissure curved. Hind claw very large and strong; longer than its digit. Tarsus less than the middle toe. Nest on ground or in low bush; eggs white sprinkled with red, or pale blue with black dots and lines round larger end. (Page 66.)

GENUS **CALAMOSPIZA**, BONAP. (Page 62.)

C. bicolor. *Male* black; a broad band on the wing (covering the whole of the greater coverts), with the outer edges of the quills and tail-feathers, white. *Female* pale brown, streaked with darker above; beneath white, spotted and streaked rather sparsely with black on the breast and sides. A maxillary stripe of black, bordered above by white. A broad fulvous white band across the ends of the greater wing-coverts; edge of wing white. Length, 6.50; wing, 3.50; tail, 3.20. Nest on ground, of loose grass; eggs light blue, usually unspotted. *Young.* Similar to the female. (*Lark Bunting.*)

HAB. High Central Plains to the Rocky Mountains.

GENUS **EUSPIZA**, BONAP. (Page 62.)

E. americana. Top and sides of head light slate; forehead tinged with greenish-yellow. A superciliary stripe, a maxillary spot, sides of breast, and middle line of breast and belly, yellow. Chin white, throat black, shoulders chestnut. Female with the black of the throat replaced by a crescent of spots. Length, 6.70; wing, 3.50. Nest usually on ground, sometimes in low bushes; eggs blue, unspotted. *Hab.* Eastern Province of United States; south to New Grenada. (*Black-throated Bunting.*)

E. townsendi. Body throughout (including the jugulum), dark ash, tinged with brownish on the back and wings. Superciliary and maxillary stripe, chin, throat, and middle of belly, white. A maxillary line and a pectoral crescent of black spots. No chestnut shoulders. Length, 5.75; wing, 2.86. *Hab.* Chester Co., Pennsylvania. (*Townsend's Bunting.*)

GENUS **HEDYMELES**, CABANIS. (Page 62.)

COMMON CHARACTERS. ♂. Head and upper parts (except rump) deep black. Two broad bands across coverts, a large patch on base of primaries, and terminal half of inner webs of tail-feathers, pure white. Breast carmine or cinnamon; axillars and lining of wing carmine or gamboge. ♀. Black replaced by ochraceous-brown; other parts more streaked. Length, about 8 inches; wing, 4.20. Nest on trees, loosely built; eggs greenish, thickly and coarsely blotched with reddish-brown.

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

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

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

var. *melanocephalus*.

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

var. *capitalis*.

GENUS **GUIRACA**, SWAINSON. (Page 63.)

G. cærulea. Brilliant blue. Space around base of the bill and lores, with tail-feathers, black. Two bands on the wing across the tips of the secondary coverts, with outer edges of tertiaries, reddish-brown. *Female* yellowish-brown above, brownish-yellow beneath; darkest across the breast. Length of male, 7.25; wing, 3.50; tail, 2.80. Nest in trees or bushes; eggs uniform light blue. *Hab.* More southern United States from Atlantic to Pacific, south to Costa Rica. (*Blue Grosbeak.*)

GENUS **CYANOSPIZA**, BAIRD. (Page 63.)

COMMON CHARACTERS. Size small, scarcely reaching six inches. *Males* red, blue, or green; sometimes varied. *Females* plain olivaceous or brownish; paler beneath. Nest in bushes or in trees; eggs plain pale blue, except in *C. ciris*.

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

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

1. **C. cyanea.** Entirely deep ultramarine-blue, more purplish on the head, somewhat greenish posteriorly. *Female* dull umber above, grayish-white beneath, the breast with obsolete darker streaks. *Hab.* Eastern Province of United States, south, in winter, to Panama. (*Indigo Bird.*)

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

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

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

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

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

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

4. **C. ciris.** Lower parts vermilion-red. Back green, crown blue; rump dull red; eyelids red. *Female* dull green above, light olivaceous-yellow below. Eggs white, with purple and reddish dots and blotches. *Hab.* Gulf States of United States, and whole of Middle America. (*Nonpareil.*)

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

GENUS **SPERMOPHILA**, SWAINSON. (Page 63.)

S. moreleti. The top and sides of the head, back of the neck, a broad band across the upper part of the breast extending all round, the middle of the back, the wings and tail, with the posterior upper coverts, black. The chin, upper throat and neck all round, but interrupted behind, the rump, with the remaining under and lateral portions of the body, white; the latter tinged with brownish-yellow. Two bands on the wing, across the greater and middle coverts, with the concealed bases of all the quills, also white. Length, about 4 inches; wing, 2.05; tail, 1.90. *Female.* Dull yellow; olivaceous above, brownish-yellow beneath. Wings and tail somewhat as in the male. Nesting unknown. *Hab.* Rio Grande of Texas; south to Costa Rica. (*Little Seed-eater.*)

GENUS **PHONIPARA**, BONAP. (Page 63.)

P. zena. Above dull grayish olive-green. ♂. Head and lower parts, especially anteriorly, dull black, mixed with whitish posteriorly. ♀. Head and beneath ashy. Length,

a. Wings and tail grayish-brown.

6. **P. fuscus.** A whitish or ochraceous patch covering the throat contrasting with the adjacent portions, and bounded by dusky specks. Lores and chin like the throat. Length about 8.50; wing, 4.00; tail, 4.60, or less; eggs light blue; rather sparsely blotched and streaked with purplish, etc. *Hab.* Mexico, and United States west of Rocky Mountains. (Five races.) (See Section II. Page 68.)

7. **P. aberti.** Throat concolor with the adjacent portions, and without distinct spots. Lores and chin blackish. Length, 9.00; wing, 3.70; tail, 4.85. Eggs dull white, with heavy dots and hair-like zigzag markings of black. *Hab.* Colorado region of Middle Province, United States. (Only one form known.) (*Abert's Towhee.*)

b. Wings and tail olive-green.

8. **P. chlorura.** Whole pileum (except in young) deep rufous, sharply defined. Whole throat pure white, immaculate; and sharply defined against the surrounding deep ash; a maxillary and a short supraloral stripe of white. Anterior parts of body streaked in young. Length about 7 inches. Nest in bushes, above the ground; eggs bluish-white, finely and obsoletely mottled or dotted with pinkish-drab. *Hab.* Western Province of United States. (One variety only.) (*Blanding's Finch.*)

SECTION I.

I. **P. erythrophthalmus.** (Page 66.)

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

var. *erythrophthalmus.*

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

var. *alleni.*

II. **P. maculatus.** (Page 66.)

A. *Interscapulars with white streaks.*

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

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

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

3. Above almost wholly black, with scarcely any olive tinge, and this only on rump. White spots restricted, and with a distinct black external border. White terminal spot on inner web of lateral tail-feather less than one inch long; outer web almost wholly black. Wing, 3.40; tail, 3.90; hind claw,

.39. *Female* deep umber-brown, instead of black. *Hab.* Pacific Province of United States, south to San Francisco; West Humboldt Mountains. (*Oregon Towhee.*) var. *oregonus*.

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

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

B. Interscapulars without white streaks.

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

SECTION II.

COMMON CHARACTERS. Grayish-brown above, with a more or less appreciable rufous tinge on the crown. A patch covering the throat, ochraceous or white, contrasting with the surrounding portions, and encircled more or less completely, especially posteriorly, by dusky spots; lores like the chin. Crissum deep ochraceous, the lower part of abdomen tinged more or less with the same. No trace of white tips to middle wing-coverts. Throat ochraceous.

Pipilo fuscus. (Page 67.)

a. Crown only faintly tinged with rufous.

1. Abdomen pale grayish-brown; throat and lores deep reddish-ochraceous; the deep ochraceous confined posteriorly to lower tail-coverts. Wing, 3.90; tail, 5.00. *Hab.* California. (*Brown Towhee.*) var. *crissalis*.

2. Abdomen distinctly white centrally, but surrounded by grayish laterally and anteriorly; throat and lores pale ochraceous; deep ochraceous of crissum extending forward over lower part of abdomen. Wing, 3.80; tail, 4.00. *Hab.* Mexico. . . . var. *fuscus*.

b. Crown very distinctly rufous.

3. The ochraceous of posterior under parts spreading over whole lower part of abdomen and flanks. Ochraceous of the throat palest anteriorly, the chin and lores being almost white; it spreads over the jugulum also, outside the series of rather scattered dusky spots. Whole breast white. Wing, 3.80; tail, 4.30. *Hab.* Southern Middle Province of United States. (*Cañon Towhee.*)

var. *mesoleucus*.

4. The ochraceous of under parts confined to crissum and anal region; ochraceous of the throat palest posteriorly, where it is nearly white, and confined within the encircling series of rather coalesced dusky spots. Abdomen, only, white. Wing, 3.80; tail, 4.20. *Hab.* Cape St. Lucas. (*Cape Towhee.*) . . . var. *albigula*.

FAMILY **ALAUDIDÆ.** — THE LARKS.

CHAR. First primary very short or wanting. Tarsi scutellate anteriorly and posteriorly, with the plates nearly of corresponding position and number. Hind claw very long and nearly straight. Bill short, conical, frontal feathers extending along side of the bill; the nostrils concealed by a tuft of bristly feathers directed forward. Tertials greatly elongate beyond the secondaries. Nest on ground.

Audina. Bill stout, short, and conical; nasal fossæ transverse and completely filled by the thick tuft of bristly feathers, and perforated anteriorly by a circular nasal opening. (Old and New World.)

Crown with a depressed soft crest of feathers, of normal structure; a spurious primary; tail deeply emarginate *Alda.*

Crown without a crest, but occiput with an erectile tuft of narrow elongated feathers on each side. No spurious primary; tail square, or slightly rounded *Eremophila.*

GENUS **ALAUDA,** LINN. (Page 69.)

A. arvensis. Above grayish-brown, beneath whitish, with a buffy tinge across jugulum and along sides; every feather above with a medial streak of dusky; sides of throat, sides, and across jugulum streaked with dusky; the outer tail-feathers partly white. Wing, 4.90; tail, 2.80; culmen, .40; tarsus, .80; hind claw, .50. Eggs whitish, very closely sprinkled with dark gray and ashy-brown. *Hab.* Europe; accidental in Greenland and the Bermudas. (*Sky-lark.*)

GENUS **EREMOPHILA,** BOIE. (Page 69.)

E. alpestris. *Adult.* Above pinkish-gray; tail black (except two middle feathers). Beneath white. A frontal band and superciliary stripe, the middle of auriculars, chin, and throat varying from white to deep Naples-yellow; forepart of crown, and "ear-tufts," a patch on lores and cheeks, and a broad crescent across the jugulum, deep black; end of auriculars ashy. Eggs gray to whitish, either finely and closely dotted, or more sparsely blotched with brownish. *Young.* Brownish-black above, more or less mixed with clay-color, and sprinkled with whitish dots; wing-feathers all bordered with whitish. Beneath white. Markings on head and jugulum just merely indicated by dusky cloudings. (*Shore Lark.*)

a. Wing (of adult male), 4.20 to 4.60; tail, 2.90 to 3.16; culmen, .60 to .65. White frontal band, .25 to .30, wide; the black prefrontal patch, .26 to .35 wide. The pinkish above of an ashy-lilac shade.

Throat and forehead white, with only a very faint tinge of yellow; pinkish tinge above more rufous. *Hab.* Interior Northern Plains of the United States var. *occidentalis.*

Throat and forehead pale straw-yellow, or strongly tinged with it; pinkish tinge above varying from ashy-lilaceous to purplish-rufous.

Hab. Northern regions of Old and New Worlds var. *alpestris.*

b. Wing (adult male), 3.80 to 4.10; tail, 2.75 to 2.90; culmen, .53 to .62. White frontal band, .13 to .16 wide; the black prefrontal patch .35 to .50 wide. Pinkish above of a deep cinnamon shade. *Hab.* Desert plains of South Middle Province of United States, and table-lands of Mexico, south to Bogota var. *chrysoloema.*

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FAMILY **ICTERIDÆ**. — THE ORIOLES.

Iris brown or hazel, except in *Quiscalinæ*. Eggs spotted.

Subfamilies.

Agelainæ. Bill shorter than, or about equal to, the head; thick, conical, both mandibles about equal in depth; the outlines all more or less straight, the bill not decurved at tip. Tail rather short, nearly even or slightly rounded. Legs longer than the head, adapted for walking; claws moderately curved. (Page 70.)

Icterinæ. Bill rather slender, about as long as the head; either straight or decurved. Lower mandible less thick than the upper; the commissure not sinuated. Tarsi not longer than the head, nor than middle toe; legs adapted for perching. Claws much curved. (Page 72.)

Quiscalinæ. Tail lengthened, considerably or excessively graduated. Bill as long as, or longer than, the head; the culmen curved towards the end, the tip bent down, the cutting edges inflexed, the commissure sinuated. Legs longer than the head, fitted for walking. Eyes yellow. (Page 74.)

SUBFAMILY **AGELAINÆ**.

A. Bill shorter than the head. Feathers of head and nostrils as in B.

Dolichonyx. Tail-feathers with rigid stiffened acuminate points. Middle toe very long, exceeding the head. (Page 70.)

Molothrus. Tail with the feathers simple; middle toe shorter than the tarsus or head. Construct no nest, but deposit eggs in nest of other birds, by which they are hatched, and the young reared. (Page 71.)

B. Bill as long as the head. Feathers of crown soft. Nostrils covered by a scale which is directed more or less downwards.

Agelaius. First quill shorter than the second and third. Outer lateral claws scarcely reaching to the base of middle; claws moderate. (Page 71.)

Xanthocephalus. First quill longest. Outer lateral claw reaching nearly to the tip of the middle. Toes and claws all much elongated. (South America.)

C. Bill as long as, or longer than, the head. Feathers of crown with the shafts prolonged into stiffened bristles. Nostrils covered by a scale which stands out more or less horizontally.

Sturnella. Tail-feathers acute. Middle toe equal to the tarsus. (Page 72.)

Trupialis. Tail-feathers rounded. Middle toe shorter than the tarsus. South America.

GENUS **DOLICHONYX**, SWAINSON. (Page 70.)

D. oryzivorus. *Male*, in spring black; the nape brownish cream-color; a patch on the side of the breast, the scapulars and rump white. In autumn totally different, resembling the female. *Female*, yellowish beneath; two stripes on the top of the head, and the upper parts throughout, except the back of the neck and rump. The sides sparsely streaked with dark brown, and a similar stripe behind the eye. Nest on ground among the grass; eggs whitish, sometimes drab, spotted and blotched with rufous-brown. A superciliary and a median band of yellow on the head. Length of male, 7.70; wing, 3.83;

tail, 3.15. *Hab.* Eastern United States; north to Selkirk Settlement, and Ottawa, Canada; west to Ruby Valley, Nevada; south to West Indies, Brazil, Paraguay, and Galapagos Island, in winter. (*Reed-Bird*; *Rice-Bird*; *Bobolink*.)

GENUS **MOLOTHRUS**, SWAINSON. (Page 70.)

M. pecoris. *Male* with the head, neck, and anterior half of the breast, light chocolate-brown, rather lighter above; rest of body lustrous black, with a violet-purple gloss next to the brown, of steel-blue on the back, and of green elsewhere. *Female* light olivaceous-brown all over, lighter on the head and beneath. Bill and feet black. Length, 8.00; wing, 4.42; tail, 3.40. Southern-born specimen much smaller. Eggs white, usually covered with fine dottings, sometimes blotches, of ashy and brown; always laid in nests of other birds. *Hab.* United States, from the Atlantic to California; not found immediately on the coast of the Pacific? South into Mexico. (*Cow Blackbird*.)

GENUS **AGELAIUS**, VIEILL. (Page 70.)

COMMON CHARACTERS. *Males* glossy black without distinct bluish lustre, lesser wing-coverts bright red. *Females* without any red, and either wholly black or variegated with light streaks, most conspicuous below. Nest usually in low bushes or reeds in wet places. Eggs bluish or bluish-white, variously blotched or streaked with purple and black, generally at the larger end.

1. **A. phœniceus.** Tail rounded. Red of shoulders a bright scarlet tint. Black of plumage without bluish lustre. *Females* with wing-coverts edged with brownish, or without any light edgings at all.

a. *Female* continuous deep black, unvariegated.

Middle wing-coverts wholly buff in male.

Wing, 4.04; tail, 3.80; culmen, .95; tarsus, 1.00. *Hab.* Cuba.

var. *assimilis*.

b. *Females* striped beneath.

Wing, 4.90; tail, 3.85; culmen, .96; tarsus, 1.10. *Female*. White stripes on lower parts exceeding the dusky ones in width; a conspicuous lighter superciliary stripe, and one strongly indicated on middle of the crown. *Hab.* Whole of North America, south to Guatemala. (*Red-winged Blackbird*.)

var. *phœniceus*.

Middle wing-coverts black, except at base.

Wing, 5.00; tail, 3.90; culmen, .90; tarsus, 1.10. *Female*. White stripes on lower parts narrower than dusky ones; the posterior portion beneath being almost continuously dusky. No trace of median stripe on crown, and the superciliary one indistinct. *Hab.* Pacific Province of United States, south through Western Mexico. (*Red and black shouldered Blackbird*.)

var. *gubernator*.

Middle wing-coverts wholly white in male.

2. **A. tricolor.** Tail square. Red of the shoulders a brownish-scarlet, or burnt-carmine tint. Black of the plumage (both sexes at all ages) with a silky bluish lustre. *Female* with wing-coverts edged with pure white.

Wing, 4.90; tail, 3.70; culmen, .97; tarsus, 1.13. *Female*. Like that of *gubernator*, but with scarcely any brownish tinge to the plumage, and the lesser wing-coverts sharply bordered with pure white. *Hab.* California (only?). (*Red and white shouldered Blackbird*.)

 

GENUS **XANTHOCEPHALUS**, BONAP. (Page 70.)

X. icterocephalus. 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 forepart of the breast, extending some distance down on the median line, and a somewhat hidden space round 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; wing, 5.60; tail, 4.50. Nest as in *Agelaius*. Eggs greenish-white, well covered with blotches and dots of drab and brown. *Hab.* From Texas, Illinois, Wisconsin, and North Red River, to California, south into Mexico; straggles into Atlantic Province. (*Yellow-headed Blackbird.*)

GENUS **STURNELLA**, VIEILLOT. (Page 70.)

S. magna. Above brownish, or grayish, spotted and barred with black; crown divided by a median whitish stripe; side of the head whitish, with a blackish streak along upper edge of the auriculars. Beneath more or less yellowish, with a more or less distinct dusky crescent on the jugulum. Sides, flanks, and crissum whitish, streaked with dusky; lateral tail-feathers partly white. *Adult.* Supraloral spot, chin, throat, breast, and abdomen deep gamboge-yellow; pectoral crescent deep black. *Young.* The yellow only indicated; pectoral crescent obsolete. Length, about 9.00 to 10.50 inches. Sexes similar in color, but female much smaller. Nest on ground, usually domed. Eggs white, with reddish blotches, generally distributed equally. Mottling finest in var. *neglecta.* (*Meadow Lark.*)

a. In spring birds, the lateral stripes of the vertex either continuous black, or with black largely predominating; the black spots on the back extending to the tip of the feather, or, if not, the brown tip not barred (except in winter dress). Yellow of the throat confined between the maxillæ, or just barely encroaching upon their lower edge. White of sides, flanks, and crissum strongly tinged with ochraceous. *Hab.* Eastern United States.

var. *magna.*

b. In spring birds, crown about equally streaked with black and grayish; black spots of back occupying only basal half of feathers, the terminal portion being grayish-brown, with narrow bars of black; feathers of the rump with whole exposed portion thus barred. Yellow of the throat extending over the maxillæ nearly to the angle of the mouth. *Hab.* Western United States and Western Mexico

var. *neglecta.*

SUBFAMILY **ICTERINÆ**. (Page 70.)GENUS **ICTERUS**, AUCT. (Page 70.)

Nest generally more or less pensile, and purse-shaped; entrance sometimes at the side. Eggs varying with the species; but whitish, with spots in straight or zigzag lines (sometimes hair lines) of dark brown or black.

ICTERUS. Head all round deep black, sharply defined against the yellow of the nape; wings black, with or without white markings. Body generally, including lesser wing-coverts, deep greenish-yellow (intense orange-red in some South American species).

1. **I. vulgaris.** Feathers of the throat elongated and lanceolate. Bill longer than head. Back and scapulars black; greater coverts and tertials with much white on outer webs; middle wing-coverts white. Rest of plumage, including lesser coverts, chrome-yellow. Sexes alike. *Hab.* Northern South America. Jamaica? Accidental in southeastern United States?? Several races. (*Common Troupial.*)

2. **I. melanocephalus.** Feathers of the throat not elongate and lanceolate, but soft and normal; bill shorter than head. Back and scapulars greenish-yellow. Rest of plumage, including lesser wing-coverts, gamboge-yellow. Sexes alike. (*Black-headed Oriole.*)

Wings without any white. Wing, 4.00; tail, 4.00; culmen, .95; tarsus, .96. *Hab.* Southern Mexico. . . . var. *melanocephalus*.

Wings with white edgings to greater coverts, secondaries, and tertials. Wing, 4.25; tail, 4.40; culmen, 1.10; tarsus, 1.10. *Hab.* Northern Mexico and Rio Grande Valley of Texas var. *auduboni*.

XANTHORINUS. Back, scapulars, wings, tail, and throat, black; wings and tail with, or without, white. Rest of plumage greenish-yellow, gamboge-yellow, orange, orange-red, or chestnut-rufous.

A. Head and neck, all round, deep black.

a. Tail-feathers wholly black.

3. **I. spurius.** Head, neck, back, scapulars, wings, and tail, deep black; other portions, including lesser and middle wing-coverts, lining of wing, and the tail-coverts, above and below, chestnut-rufous; greater coverts and secondaries edged with dull white, and tail-feathers margined terminally with the same. *Female* greenish-yellow, darker above. *Young male* in second year similar, but with a black patch covering face and throat. Wing, 3.20; tail, 3.20, its graduation, .45; culmen, .73; tarsus, .92. Nest less purse-shaped than in other species. Eggs less marked with lines. *Hab.* Eastern Province of United States; south throughout Middle America, to New Granada. (*Orchard Oriole.*)

b. Tail-feathers (except the two middle ones) with their basal half yellow.

4. **I. parisorum.** Head, neck, jugulum, back, scapulars, wings, and terminal half of tail, deep black; rest of plumage, including lesser and middle wing-coverts, bright lemon-yellow, approaching white on the middle coverts; greater coverts tipped with white, and tertials edged with the same; tail-feathers margined terminally with the same. Sexes very different. *Hab.* Mexico; Rio Grande Valley and Cape St. Lucas. (*Scott's Oriole.*)

B. Crown, occiput, nape, and auriculars, orange; frontlet, lores, cheeks, chin, throat, and jugulum, deep black.

5. **I. cucullatus.** Back, scapulars, wings, and tail, and patch covering jugulum and throat, extending up over lores, around eyes and across frontlet, deep black. Other portions orange. Sexes very different. (*Hooded Oriole.*)

Lesser coverts black; middle coverts white; greater coverts tipped with white, and secondaries, primaries, and tertials edged with the same; tail-feathers with narrow white tips. Wing, 3.30; tail, 4.00; culmen, .80; tarsus, .90. *Hab.* Southern border of Western United States (San Bernardino, California, Camp Grant, Arizona and Rio Grande of Texas), south through Mexico to Guatemala; Cape St. Lucas; Cuba var. *cucullatus*.

The first part of the history of the
people of the world is the history of the
creation of the world and the
creation of man.

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Lesser coverts gamboge-yellow; middle coverts yellow; no white on wings or tail. Wing, 3.50; tail, 3.90; culmen, .85; tarsus, .90.

Hab. New Granada, Venezuela, and Trinidad. . var. *auricapillus*.

HYPHANTES. Crown, back, scapulars, wings, and part of tail, deep black; wing with much white. Other portions orange or yellow. Sexes very different.

6. **I. baltimore.** Head entirely deep black; tail orange, the feathers black at base; greater coverts broadly tipped with white; secondaries and primaries skirted with the same. Other portions rich, mellow orange, the rump as intense as the breast. Wing, about 3.75; tail, 3.50; culmen, .80; tarsus, .97. (*Baltimore Oriole*.)

7. **I. bullocki.** Head mainly black, with an orange or yellow superciliary stripe, and a broader one beneath the eye, cutting off the black of the throat into a narrow strip; tail orange or yellow, the feathers with black at ends; greater coverts with outer webs wholly white, and middle coverts entirely white, producing a large conspicuous longitudinal patch on the wing; tertials and secondaries broadly edged with white, and primaries more narrowly skirted with the same. Other portions rich orange or yellow. (*Bullock's Oriole*.)

Rump grayish-orange; sides and flanks deep orange; forehead and auriculars orange; a broad supraloral stripe of the same. Xanthic tints deep orange, with a reddish tinge on the breast. Wings, 4.00; tail, 3.50; culmen, .80; tarsus, .90. *Hab.* Western Province of United States. var. *bullocki*.

Rump black; sides and flanks black; forehead and auriculars black; no yellow or orange supraloral stripe. Xanthic tint a very intense gamboge, without any shade of orange. Wing, 4.00; tail, 3.50; culmen, .75; tarsus, .85. *Hab.* Mexico. var. *abeillei*.

SUBFAMILY QUISCALINÆ. (Page 70.)

Iris yellow in the North American species.

Scolecophagus. Tail shorter than the wings; nearly even. Bill shorter than the head. (Page 74.)

Quiscalus. Tail longer than the wings; much graduated. Bill as long as or longer than the head. (Page 75.)

GENUS SCOLECOPHAGUS, SWAINSON. (Page 74.)

S. ferrugineus. Nest in bushes or reeds in wet places. Eggs greenish, thickly blotched and dotted with ferruginous and brown.

Bill slender; height at base not $\frac{1}{4}$ the total length. Color of male black, with faint purple reflection over whole body; wings, tail, and abdomen glossed slightly with green. Autumnal specimens with feathers broadly edged with castaneous-rusty. *Female* brownish dusky-slate, without gloss; no trace of light superciliary stripe. Length, 9.50; wing, 4.75; tail, 4.00. *Hab.* North America, except western half of United States. Along Yukon River to Nulato. (*Rusty Blackbird*.) var. *ferrugineus*.

Bill stout; height at base nearly $\frac{1}{2}$ the total length. Color black, with green reflections over whole body. Head only glossed with purple. Autumnal specimens, feathers edged very indistinctly with umber-brown.

Female dusky-brown, with a soft gloss; a decided light superciliary stripe. Length, 10.00; wing, 5.30; tail, 4.40. *Hab.* Middle and Western Provinces of United States. (*Brewer's Blackbird.*) . . . var. *cyanocephalus*.

GENUS **QUISCALUS**, VIEILLOT. (Page 74.)

Nest on trees, sometimes in hollows. Eggs greenish-white to rusty-brown; coarsely and irregularly dashed and streaked with black and brown.

Quiscalus.

1. **Q. purpureus**. Sexes nearly similar in plumage. Color black; each species glossed with different shades of bronze, purple, violet, green, etc. Lateral tail-feathers about .75 the length of central. *Hab.* Eastern United States. Proportion of wing to tail variable. (*Crow Blackbird.*)

a. Body uniform brassy-olive without varying tints. Head and neck steel-blue, more violaceous anteriorly.

Length, 13.50; wing, 5.50 to 5.65; tail, 5.70 to 5.80, its graduation, 1.50; culmen, 1.35 to 1.40. Vivid blue of the neck all round abruptly defined against the brassy-olive of the body. *Female*. Wing, 5.20; tail, 4.85 to 5.10. *Hab.* Interior portions of North America, from Texas and Louisiana to Saskatchewan and Hudson's Bay Territory; New England States; Fort Bridger, Wyoming Territory. (*Bronzed Blackbird.*) . . . var. *æneus*.

b. Body variegated with purple, green, and blue tints. Head and neck violaceous-purple, more blue anteriorly.

Length, 12.50; wing, 5.60; tail, 5.30, its graduation, 1.20; culmen, 1.32. Dark purple of neck all round passing over the breast, and appearing in patches on the lower parts. Wing and tail purplish; tail-coverts reddish-purple. *Female*. Wing, 5.10; tail, 4.50. *Hab.* Atlantic coast of United States. (*Purple Blackbird.*) . . . var. *purpureus*.

Length, 11.75; wing, 4.85 to 5.60; tail, 4.60 to 5.50, its graduation, .90; culmen, 1.38 to 1.66. Dark purple of neck sharply defined against the dull blackish olive-green of the body. Wings and tail greenish-blue; tail-coverts violet-blue. *Female*. Wing, 4.65 to 4.90; tail, 3.80 to 4.60. *Hab.* South Florida; resident. (*Florida Blackbird.*) var. *aglaus*.

Megaquiscalus.

2. **M. major**. Tail longer than wings. Sexes very unlike. *Female* much smaller, and very different in color, being olivaceous-brown, lightest beneath. Male without varying shades of color; lateral tail-feather about .60 the middle, or less.

Culmen strongly decurved terminally; bill robust. *Female* with back, nape, and crown like the wings; abdomen much darker than throat.

Lustre of the plumage green, passing into violet anteriorly on head and neck.

Length, 15.00; wing, 7.50; tail, 7.70, its graduation, 2.50; culmen, 1.60. *Female*. Wing, 5.10. *Hab.* South Atlantic and Gulf coast of United States. (*Boat-tailed Grackle.*) . . . var. *major*.

Lustre, violet passing into green posteriorly.

Length, 14.00; wing, 6.75; tail, 7.20, its graduation, 2.40; culmen, 1.57. *Female*. Wing, 5.30; tail, 5.00. *Hab.* Western Mexico. (Mazatlan, Colima, etc.). (*Swamp Grackle.*) . . . var. *palustris*.

Length, 18.00; wing, 7.70; tail, 9.20, its graduation, 3.50; culmen, 1.76. *Female*. Wing, 5.80; tail, 6.30. *Hab.* From Rio Grande of Texas, south through Eastern Mexico; Mazatlan (accidental?). (*Long-tailed Grackle*). var. *macrurus*.

FAMILY STURNIDÆ. — THE STARLINGS.

GENUS STURNUS, LINNÆUS.

GEN. CHAR. Bill like *Sturnella*, long, conical, much depressed; the culmen, gonys, and commissure nearly straight, the latter angulated at base. Wings, twice length of tail; much pointed, the primaries graduating rapidly from the second, the first being rudimentary, the secondaries much shorter. Tail nearly even; the feathers acuminate. Tarsi short; about equal to middle toe; lateral toes equal. Plumage coarse and stiff, each feather distinctly outlined. Ten primaries; the outer rudimentary.

S. vulgaris. Feathers principally lustrous-black, with purple and green reflections, except at their extremities, which are dull and opaque; brownish above, silvery-white beneath. Bill yellow in spring, brown in autumn. Legs flesh-color. Length about 8.51; wing, 5.11; tail, 2.81; bill above, 1.11, from nostril, .75; gape, 1.15; tarsus, 1.15; middle toe and claw, 1.15. *Female* similar, but less brilliant. Iris brown. Nest in holes of trees, walls, etc., of twigs, grass, etc. Eggs uniform delicate blue. *Hab.* Europe and North Africa, most abundant in Holland. One specimen killed in Greenland, in 1851. (*Starling*.)

FAMILY CORVIDÆ. — THE CROWS.

Iris as far as known hazel or brown. Nest rather bulky and usually on trees; rarely, as sometimes with the Ravens, on the ground or in rocky ledges. Eggs in most species with greenish ground, thickly and uniformly blotched with dusky.

Corvinæ. Bill as long as the head. Tail short, nearly even; wings long and pointed, longer than tail, and nearly reaching its tip; projecting beyond the under tail-coverts, which reach the middle of tail. Tip of wing formed by the third, fourth, and fifth quills, which are longest. (Page 76.)

Garrulinæ. Bill usually shorter than head. Tail lengthened, rounded, and generally longer than the wings, which are short, rounded, and extend scarcely beyond the lower tail-coverts; these not reaching the middle of the tail. Tip of wing formed by the fourth, fifth, and sixth quills, which are longest. (Page 78.)

SUBFAMILY CORVINÆ. (Page 76.)

A. (Corvæ). Bill compressed, much higher than broad; its tip compressed. Size large (i. e. over 15 inches long). Color black, or mainly black.

Color black throughout; bill much compressed, the culmen much arched, and the gonys convex; nasal bristles strong. (Page 77.)

B. (Nucifragæ.) Bill cylindrical, scarcely or not at all higher than broad; its tip depressed. Size small (i. e. less than 15 inches long). Color uniform blue or with ashy on body, and black wings and tail.

Corvus.

Color ashy, with wings and tail mainly black. Culmen convex, gonys slightly concave. Nostrils covered by the short nasal tuft. (Page 77.) *Picicorvus*.

Color uniform blue, brighter on the head; the throat streaked with whitish. Culmen straight; gonys slightly convex. Nostrils completely exposed; no nasal tufts. (Page 78.) *Gymnokitta*.

GENUS **CORVUS**, LINNÆUS. (Page 76.)

RAVENS. Feathers of the chin and throat stiffened, elongated, narrow and lanceolate, with their outlines very distinct.

1. **C. corax**, var. **carnivorus**. Length about 25.00; wing, 17.00; tail, 10.00; graduation of tail, 1.60 to 2.40. Feathers of the neck and breast light gray beneath surface. Nest placed on ledges of rocks, or in high trees. *Hab.* Whole of North America; Guatemala and Mexico. Rare in Eastern United States. (*Raven*.)

2. **C. cryptoleucus**. Length about 21.00; wing, 14.00; tail, 8.50; graduation of tail, about 1.25. Feathers of neck and breast snowy-white beneath surface. Nest in trees. Eggs apparently more finely mottled than in other American species of the genus. (?) *Hab.* Llano Estacado, or Staked Plain of Texas; Valley of Rio Grande and Gila; Colorado. (*White-necked Crow*.)

CROWS. Feathers of chin and throat soft, short, broad, obtuse, and with their webs blended.

A. Angle of mouth feathered — North American Crows.

a. Tarsus longer than the bill. First quill not longer than tenth.

3. **C. americanus**. The gloss of the plumage purplish-violet, and hardly perceptible on head and neck; middle toe and claw rather shorter than tarsus, measured from beginning of scutellæ.

Wing, 12.25; tail, 7.20; culmen, 1.85; tarsus, 2.00; middle toe, 1.45; wing-formula, 4, 3, 5, 6, 2; first quill equal to tenth. *Hab.* North America generally. (*Common Crow*.)

var. *americanus*.

Wing, 12.50; tail, 7.20; culmen, 2.10; tarsus, 2.30; middle toe, 1.60. Wing-formula? *Hab.* South Florida. (*Florida Crow*.) var. *floridanus*.

4. **C. ossifragus**. The gloss of plumage violaceous-blue, almost green' on the head, neck, and breast, where very perceptible. Middle toe and claw longer than tarsus, as above. Wing, 10.50; tail, 6.50; culmen, 1.55; tarsus, 1.65; middle toe, 1.35. Wing-formula, 4, 3, 5; first quill slightly shorter than tenth. *Hab.* Atlantic Coast of the United States. (*Fish Crow*.)

b. Tarsus shorter than the bill. First quill longer than tenth.

5. **C. caurinus**. Gloss of the plumage as in *americanus*, but deeper. Wing, 10.50; tail, 6.40; culmen, 1.95; tarsus, 1.70; middle toe, 1.25. Wing-formula, 4, 3, 5. *Hab.* Northwestern coast of North America. (*Northwest Crow*.)

6. **C. mexicanus**. Plumage highly lustrous, blended. Soft burnished steel-blue, changing to violet on the crown, and with a greenish cast on lower parts. Wing, 9.00; tail, 6.50; culmen, 1.60; tarsus, 1.20; middle toe, 1.10. Wing-formula, 4, 3, 5. First quill very much longer than tenth. *Hab.* Western Mexico (Mazatlan, etc.). (*Mexican Crow*.)

GENUS **PICICORVUS**, BONAP. (Page 76.)

P. columbianus. Color bluish-ash, changing to white on forepart of head. Wings greenish-black, the secondaries and tertials broadly tipped with white; tail white, its central line above black. Axillars plumbeous-black. Length, 12.00; wing, 7.00; tail, 4.30; tarsus, 1.20. *Hab.* From Rocky Mountains to Pacific. East to Fort Kearney, north to Sitka, south to Arizona. (*Clarke's Crow.*)

GENUS **GYMNOKITTA**, PR. MAX. (Page 76.)

G. cyanocephala. Dull blue, paler on the abdomen, the middle of which is tinged with ash; the head and neck of a much deeper and more intense blue, darker on the crown. Chin and forepart of the throat whitish, streaked with blue. Length, 10.00; wing, 5.90; tail, 4.50; tarsus, 1.50. Nesting not known. *Hab.* Rocky Mountains of Colorado, to Cascade Mts. of California and Oregon. Not on the Pacific coast? South to New Mexico and Arizona. (*Maximilian's Jay.*)

SUBFAMILY **GARRULINÆ**. (Page 76.)

A. Nostrils moderate, completely covered by incumbent feathers.

a. Tail much longer than the wings; first primary attenuated, falcate.

Pica. Head without crest. (Page 78.)

b. Tail about as long as the wings; first primary not falcate.

Cyanura. Head with lengthened narrow crest. Wing and tail blue, banded with black. (Page 79.)

Cyanocitta. Head without crest. Above blue, with a gray patch on the back. No bands on wing and tail. (Page 80.)

Perisoreus. Head full and bushy. Bill scarcely half the head, with white feathers over the nostrils. Plumage dull. (Page 82.)

Xanthoura. Head without crest. Color above greenish; the head blue; lateral tail-feathers yellow. (Page 81.)

B. Nostrils very large, naked, uncovered by feathers.

Psilorhinus. Head not crested; tail broad; wings two thirds as long as the tail. (Page 82.)

Calocitta. Head with a recurved crest; wings less than half as long as the tail. (Mexican.)

GENUS **PICA**, CUVIER. (Page 78.)

P. caudata. Head, neck, breast, interscapulars, lining of wing, tail-coverts and tibiae, deep black; wings metallie greenish-blue; tail rich metallie green, the feathers passing through bronze and reddish-violet into violet-blue, at their tips. Scapulars, abdomen, sides, flanks, and inner webs of primaries, pure white. Sexes alike; young similar. Length about 19 inches. Nest enclosed in an immense thorny ball, with an opening on the side. Eggs from six to ten; grayish-white, thickly and closely blotched and dotted with purplish-brown.

a. Bill and bare space around the eye black.

Wing, 7.50; tail, 9.50 or less, its graduation less than half its length, 4.50; culmen, 1.20; tarsus, 1.75; middle toe, 1.05. *Hab.* Europe.

(*Common Magpie.*) var. *caudata.*

Wing, over 8.00 (8.50 maximum); tail over 10.00 (13.50, max., its graduation more than half its length, 7.70); culmen, 1.55; tarsus, 1.75; middle toe, 1.05. *Hab.* Northern and Middle North America, exclusive of the Atlantic Province of United States and California. (*American Magpie*.) var. *hudsonica*.

b. Bill and bare space around the eye yellow.

Wing, 7.50; tail, 10.50; its graduation, 5.00; culmen, 1.50; tarsus, 1.75; middle toe, 1.05. *Hab.* California. (*Yellow-billed Magpie*.)

var. *nuttalli*.

GENUS **CYANURA**, SWAINSON. (Page 78.)

COMMON CHARACTERS. Wings and tail deep blue, the latter, with the secondaries and tertials, sometimes also the greater coverts, barred with black. Nest as in the other genera, except *Pica*, open above, and without thorny walls. Eggs about five or six.

A. Greater coverts, tertials, secondaries, and tail-feathers tipped broadly with white; lower parts generally, including lateral and under parts of head, whitish.

C. cristata. Head above, back, scapulars, lesser wing-coverts, rump and upper tail-coverts, light ashy purplish-blue; a narrow frontal band, a loreal spot, streak behind the eye, and collar round the neck, commencing under the crest, passing down across the end of the auriculars and expanding into a crescent across the jugulum, black; throat tinged with purplish-gray, the breast and sides with smoky-gray; abdomen, anal region, and crissum pure white. Length, 12.25; wing, 5.70; tail, 6.00; bill, 1.25; tarsus, 1.35; middle toe, .85; crest, 2.20. Nest of twigs, lined with dark fibrous roots. Eggs blue, brown, or drab, blotched with darker olive-brown. *Hab.* Eastern Province of North America. (*Blue Jay*.)

B. No white on wing or tail; lower parts deep blue.

C. stelleri. Color deep blue, less intense than on wings and tail, except dorsal region, which may be deep blue, ashy-brown, or sooty-black. Head and neck dark grayish-brown, dusky-blue, or deep black, the throat more grayish. Length about 13.00.

a. No white patch over the eye; throat and chin not abruptly lighter than adjacent parts; secondary coverts not barred with black.

Whole head, neck, jugulum, and dorsal region plain sooty-black; no blue streaks on forehead, or else these only faintly indicated. The blue everywhere of a uniform dull greenish-indigo shade. Depth of bill, .45; crest, 2.60; wing, 6.00; tail, 6.00; culmen, 1.35; tarsus, 1.75; middle toe, 1.00. Nest bulky; of roots and twigs, sometimes with a layer of mud; lined with fibrous roots (Nuttall), with deer's hair (Lord). Eggs pale green, with olive-brown spots. *Hab.* Northwest coast, from Sitka to the Columbia. (*Steller's Jay*.) . var. *stelleri*.

Whole head, neck, jugulum, and dorsal region plumbeous-umber; the forehead conspicuously streaked with blue, and the crest washed with the same. The blue of two very different shades, the wings and tail being deep indigo, the body and tail-coverts greenish cobalt-blue. Depth of bill,

.35; crest, 2.80; wing, 6.00; tail, 6.00; culmen, 1.25; tarsus, 1.55; middle toe, .90. Nest and eggs not described. *Hab.* Sierra Nevada, from Fort Crook to Fort Tejon. (*Sierra Jay*.)

var. *frontalis*.

b. A patch of silky white over the eye; throat and chin abruptly lighter than the adjoining parts; secondary coverts barred distinctly with black.

Whole crest, cheeks, and foreneck deep black; the crest scarcely tinged with blue; dorsal region light ashy-plumbeous; forehead conspicuously streaked with milk-white. The blue contrasted as in var. *frontalis*. Depth of bill, .35; crest, 3.00; wing, 6.10; tail, 6.70; culmen, 1.25; tarsus, 1.65; middle toe, .90. Nest with base of sticks, plastered with mud, and lined with roots. Eggs sea-green, marked with dark olive-brown. *Hab.* Rocky Mountains of United States. (*Long-crested Jay*.)

var. *macrolopha*.

GENUS **CYANOCITTA**, STRICKLAND. (Page 78.)

A. Tail longer than wings. A superciliary stripe of whitish streaks; jugular and pectoral feathers faintly edged with bluish, posteriorly forming an indistinct collar, interrupted medially. Ear-coverts dusky, except in var. *woodhousei*.

a. Forehead and nasal tufts hoary white; the superciliary stripe a continuous wash of the same. Scapulars blue like the wings; dorsal region (the inter-scapulars) as light-colored as the lower parts.

C. floridana. Back and lower parts pale ashy-brown; lower tail-coverts bright blue. Length, 11.00; wing, 4.50; tail, 5.70; bill, 1.20 and .35; tarsus, 1.40; middle toe, .85. Wing-formula, 4, 5, 6, 7, 3, 8, 9, 2, 10; first, 1.80 shorter than longest. Graduation of tail, 1.50. Nest of dry sticks, lined with fibrous rootlets; quite open, allowing the bird to show through from below. Egg bluish-gray, marked at larger end with a few spots of light rufous-brown; sometimes more evenly distributed. *Hab.* Florida (only). (*Florida Jay*.)

b. Forehead and nasal tufts bright blue; superciliary stripe composed of narrow streaks; scapulars ashy like the back; back much darker than the lower parts.

C. californica.

Lower tail-coverts bright blue, dorsal region not well-defined ashy; auriculars bluish, beneath continuous pure ash. Superciliary streak well defined. Length, 11.50; wing, 5.15; tail, 6.00; bill, 1.35 and .30; tarsus, 1.40; middle toe, .85. Wing-formula, fourth, fifth, and sixth equal; 7, 3, 8, 9 = 2; first, 1.80 shorter than longest. Graduation of tail, .90. Nest of twigs, lined with rootlets and horse-hair. Eggs light bluish-green, blotched with reddish-brown. *Hab.* Rocky Mountains and Middle Province of United States. (*Woodhouse's Jay*.) var. *woodhousei*.

Lower tail-coverts pure white; dorsal region well-defined ashy; auriculars blackish; beneath dull white, approaching ash on breast. Superciliary streak sharply defined, conspicuous. Length, 12.25; wing, 5.00; tail, 5.60; bill, 1.20 and .37; tarsus, 1.55; middle toe, .95. Wing-formula, 4, 5, 6, 7, 3, 8, 9, 2, 10; first, 2.10 shorter than longest. Graduation of tail, 1.15. Nest built of twigs, roots,

and grass, sometimes lined with horse-hair. Eggs dark green, with blotches of brown. *Hab.* Pacific Province of United States; Cape St. Lucas. (*California Jay*.) var. *californica*.

B. Tail not longer than wings, or considerably shorter. No superciliary stripe, and no streaks on throat or jugulum. Auriculars blue like the crown.

C. ultramarina. Lower parts whitish, conspicuously different from the upper. Nest and eggs not yet described.

Tail nearly, or perfectly even.

Length, 13.00; tail even; bill, 1.50; tail, 7.00. *Hab.* Mexico.

var. *ultramarina*.

Length, 11.50; tail very slightly rounded (graduation, .25 only); bill, 1.28 and .35; tail, 5.0. Above bright blue, dorsal region obscured slightly with ashy; beneath dull pale ash, becoming gradually whitish posteriorly, the crissum being pure ash. Lores blue. Tarsus, 1.45; middle toe, .95. Wing-formula, 5, 4=6, 7, 3, 8, 9, 10, 2; first, 2.10 shorter than longest. Graduation of tail, .25. *Hab.* Lower Rio Grande. (*Couch's Ultramarine Jay*.) var. *couchi*.

Tail considerably rounded.

Colors as in *couchi*, but dorsal region scarcely obscured by ashy. Lores black. Wing, 7.50; tail, 7.50; bill, 1.30 and .40; tarsus, 1.60; middle toe, .90. Wing-formula, 5, 4, 6, 3=7, 8, 9, 2; first, 2.75, shorter than longest. Graduation of tail, 1.15. *Hab.* Mexico (Orizaba, Mirador, etc.). (*Plain Jay*.) var. *sordida*.

Graduation of the colors as in *sordida*, but the blue, instead of being a bright ultramarine, is very much paler and duller, and with a greenish cast, the whole dorsal region decidedly ashy; ash of the pectoral region much paler, and throat similar, instead of decidedly whitish, in contrast; pure white of posterior lower parts covering whole abdomen instead of being confined to crissum. Length, 13.00; wing, 6.20; tail, 5.70; bill, 1.30 and .40; tarsus, 1.50; middle toe, .97. Wing-formula, fourth, fifth, and sixth equal; 7, 3, 8, 9, 2; first, 2.20, shorter than longest. Graduation of tail, .50. *Hab.* Southern Rocky Mountains (Fort Buchanan, and Copper Mines, Arizona). (*Arizona Jay*.) var. *arizonæ*.

GENUS **XANTHOURA**, BONAP. (Page 78.)

X. incas. Nasal tufts, patch on side of lower jaw and one above eye, (both eyelids,) bright blue; remainder of face and throat black. Back, and upper surface of wings and tail (the four central feathers), green, the latter tinged with blue at end; the rest of tail-feathers bright yellow. Belly and crissum varying from bright yellow to green. Forehead yellowish or whitish.

a. Nasal tufts short, only covering the nostrils; whole top of head (except anteriorly) and nape bright blue. Body beneath, and crissum, green. Length, 11.00; wing, 4.75; tail, 5.40; tarsus, 1.65. Nesting unknown.

Hab. Mexico and Southeast Texas. (*Green Jay*.) var. *luxuosa*.

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GENUS **PERISOREUS**, BONAP. (Page 78.)**P. canadensis.**

A. Dusky nuchal hood reaching forward to, or in front of, the eyes; plumbeous-black.

Dorsal feathers with white shafts in old and young. Tail-feathers not distinctly paler at ends.

1. White frontal patch narrower than length of the bill; blending gradually with the blackish of the crown. Upper parts umber-brownish. Wing, 5.50; tail, 5.40; bill, .90 and .30. *Young.* Entirely plumbeous-brown, feathers of head above bordered with paler. Beneath paler, whitish brown. *Hab.* Oregon, Washington Territory, British Columbia, etc. (*Western Canadian Jay*). var. *obscurus*.

Dorsal feathers without white shafts in old or young. Tail-feathers broadly tipped with dull white.

2. White frontal patch much broader than length of bill; abruptly defined, with a convex outline behind, against the dusky of the occiput. Upper parts plumbeous, with a slight brownish cast. Length, 10.70; wing, 5.75; tail, 5.80; bill, .95 and .35. *Young.* Entirely uniform dark plumbeous. Breeds in March or April. Nest with base of sticks, on which is a structure of fine mosses, etc., lined with feathers. Eggs yellowish-gray; finely marked with slate-color and brown. *Hab.* Canada, Maine, and Labrador to the Yukon. (*Canada Jay*). var. *canadensis*.

B. Dusky nuchal hood not reaching to the eyes, but confined to the nape; bluish-plumbeous.

3. White frontal patch covering whole crown, melting gradually into the ashy of the nape; upper parts bluish-ashy. Wing, 6.00; tail, 6.00; bill, 1.00 and .31. *Young.* Bluish-plumbeous, inclining to ashy-white on the crown and cheeks. *Hab.* Rocky Mountains of United States. (*Mountain Canada Jay*). var. *capitalis*.

GENUS **PSILORHINUS**, RÜPPELL. (Page 78.)

P. morio. Tail much graduated; the lateral feathers about two inches shorter than the secondaries; third and fourth longest. General color dark smoky-brown, becoming almost black on the head; the breast brownish-gray; nearly white about the anus; under tail-coverts tinged with brown; the exposed portion of the tail with a decided gloss of blue; bill and feet, in some specimens, yellow, in others black. Length, 16.00; wing, 8.00; tail, 8.25; tarsus, 1.80. *Hab.* Rio Grande Valley of Northern Mexico; Texas southward to Costa Rica. (*Brown Jay*).

FAMILY **TYRANNIDÆ**. — TYRANT FLYCATCHERS.

Iris brown or hazel in all the North American species. Nest on trees, or in bushes. Eggs white, sometimes tinged with salmon-color, generally blotched, sometimes plain; the markings in *Myiarchus* (which see) very different.

TYRANNI. Size large; colors generally brilliant; crown with a brightly colored crest, usually concealed; outer primaries abruptly contracted or attenuated near the tip; upper scales of tarsus usually continuing round on the outside and behind. Nest in trees, very bulky, containing much downy material; eggs white or pinkish, with ovate dots of rich brown, of various shades.

Milvulus. Tail excessively forked and lengthened; more than twice as long as the wings. (Page 84.)

Tyrannus. Tail moderate; nearly even or slightly forked; less than the wings. (Page 84.)

TYRANNULI. Size generally small; colors usually plain; crown without any colored crest concealed by the tips of the feathers; primaries normal; scales of the upper part of the tarsus usually continuing only to the middle of the outer face, and a second series opposite to them behind.

1. Tail lengthened; about equal to the wings, which reach scarcely to its middle.

Myiarchus. Tarsus equal to the middle toe, which is decidedly longer than the hinder one. Tail even or rounded. Throat pale ash, rest of lower parts yellow generally, the primaries edged with rufous, and inner webs of tail-feathers with more or less of the same color. Nest generally in the hollow of a tree or stump, of loose material, frequently consisting in part of shed skins of snakes. Eggs buff, thickly covered with hair lines or blotchings running from one pole to another, of a purplish shade. (Page 85.)

Sayornis. Tarsus rather longer than the middle toe, which is scarcely longer than the hind toe. Tail slightly forked. Bill very narrow. No light orbital ring, nor distinct bands on wings; both mandibles black. Nest attached to rocks or parts of buildings, very compact and bulky, containing much mud in its composition; eggs pure white, immaculate, or with very minute sparse dots near larger end. (Page 85.)

2. Tail decidedly shorter than the wings, which reach beyond its middle. Tarsus shorter than the middle toe.

Contopus. Hind toe much longer than the lateral. Tail considerably forked. Wings long, pointed; much longer than the tail, reaching beyond the middle of the latter; first quill about equal to the fourth. Bill broad. Color olive-gray, and white, sometimes with a yellowish tinge beneath. Lower mandible pale-colored. Nest saucer-shaped, compact, and very small, saddled very securely upon a thick branch; eggs cream-colored, with a zone of lilac and rich brown blotches round the larger end. (Page 85.)

3. Tail shorter than the wings, as in the last. Tarsus considerably longer than the middle toe; hind toe much longer than lateral. Tail nearly even, sometimes slightly rounded, but little shorter than the wings; first primary much shorter than the fourth.

Empidonax. Head moderately crested; tail about even. Bristles of bill reaching about half-way to tip. Legs stout. A conspicuous light orbital ring, and distinct bands on the wing. More or less tinged with sulphur-yellow on lower parts. Nest variously constructed, deeply cup-shaped, compact or loose, entirely of either grassy or fibrous and downy material, and fixed to slender twigs or lodged in a crotch between thick branches; eggs white, immaculate, or with blotches of brown round larger end. (Page 86.)

Mitrephorus. Head decidedly crested. Tail forked. Bristles of bill

reaching nearly to tip. Legs very weak and slender. Beneath more or less tinged with fulvous or ochraceous. Nesting unknown. (Page 87.)

Pyrocephalus. Head with a full crest. Tarsus but little longer than the middle toe; hind toe not longer than the lateral. Tail broad, even; first quill shorter than the fifth. Beneath, with whole crown bright red (except in *P. obscurus*). Female very different, lacking the red, except posteriorly beneath, and with the breast obsoletely streaked. (Page 87.)

GENUS **MILVULUS**, SWAINSON. (Page 83.)

M. forficatus. Whitish-ash above; rump black. Tail-feathers rose-white with black tips; shoulders, axillars, and belly light vermilion. Length, 13.00; wing, 4.75; tail, 8.50. *Hab.* Middle America, and open portions of Texas, Indian Territory, etc.; accidental in New Jersey.

M. tyrannus. Head above and tail black; the latter edged externally with white. Back ashy. Beneath pure white. Length, 14.00; wing, 4.75; tail, 10.00. *Hab.* Middle America, accidental in Eastern United States.

GENUS **TYRANNUS**, CUVIER. (Page 83.)

A. Under parts whitish, without any shade of yellow. A faint grayish-plumbeous pectoral band.

1. **T. carolinensis.** Tail slightly rounded. Bill much shorter than the head. Above black, shading into dark plumbeous on the back. Tail abruptly and broadly margined and tipped with pure white. Length, 8.50; wing, 4.65; tail, 3.70. (*Tyrannus*.) *Hab.* Whole of North America, north to the British Provinces, and south to Panama. Rare in the Western Province of North America. (*King-Bird*.)

2. **T. dominicensis.** Tail moderately forked. Bill longer than the head. Above gray; the tail and wings brownish. The edges and tips of the tail narrowly margined with soiled white. Length, 8.00; wing, 4.65; tail, 4.00. (*Melittarchus*.) *Hab.* West Indies, New Granada, Panama, Florida, Georgia, and South Carolina. (*Gray King-Bird*.)

B. Above ashy-olive, becoming purer ash on the head. Tail brown or black. Beneath yellow; the chin paler; the breast strongly shaded with olivaceous or ashy. (*Laphytes*.)

a. Tail nearly black; the outer edges of the outer webs of the feathers with the fibres united closely throughout, and colored similarly to the rest of the feathers; beneath sulphur-yellow.

3. **T. verticalis.** Tail slightly forked; external feather with the entire outer web and the outer half of the shaft abruptly yellowish-white. Pectoral band pale ashy, lighter than the back. Length, 8.25; wing, 4.50. *Hab.* Western Province of United States. (*Arkansas Flycatcher*.)

4. **T. vociferans.** Tail nearly even or slightly rounded; external feather with the shaft brown; the outer edge only of the outer web obscurely yellowish-white, and all the feathers fading into paler at the tip. Throat and breast broadly tinged with dark ashy-olive like the back. Length, 8.80; wing, 5.25; tail, 4.25. *Hab.* Plains and southern Middle Province of United States, south into Middle America. (*Cassin's Flycatcher*.)

b. Tail brown, scarcely darker than the wings; outer edges of the outer webs of the tail-feathers olivaceous like the back, in contrast with the brown; the fibres loosened externally; shafts of tail-feathers white beneath. Beneath bright gamboge-yellow.

5. **T. melancholicus**. Tail quite deeply forked (.70 of an inch), brownish-black, the lighter edgings obsolete, and those on wings indistinct. Throat ashy. *Hab.* South America . . . var. *melancholicus*.

Tail moderately forked (.30 of an inch), grayish-brown, the light edges conspicuous, as are also those of the wings. Throat white. Length, 9.00; wing, 5.00; tail, 4.70. *Hab.* Middle America, north to southern boundary of United States. (*Couch's Flycatcher*.) . . . var. *couchi*.

GENUS **MYIARCHUS**, CABANIS. (Page 83.)

M. crinitus. Above brownish-olive; throat ash; rest of under parts yellow. Tail and wings varied with rufous.

Colors deep and intense. Inner web of tail-feathers entirely rufous throughout, or with very narrow line of dusky along the shaft. Width of bill two thirds length of culmen. Length, 8.75; wing, 4.25; tail, 4.10; tarsus, .85. *Hab.* Eastern United States to the Missouri; south in winter to Panama. (*Great-crested Flycatcher*.) . . . var. *crinitus*.

Colors paler. Inner webs of tail-feathers rufous except at the tip, which is dusky, like the outer web; width of bill about one half length of culmen. Tarsus lengthened. Length, 8.00; wing, 4.00; tail, 4.10; tarsus, .90. *Hab.* Pacific Coast of United States from California to Cape St. Lucas, and across by valley of Gila and Rio Grande to Northeastern Mexico; Texas. (*Ash-throated Flycatcher*.) . . . var. *cinerascens*.

GENUS **SAYORNIS**, BONAP. (Page 83.)

1. **S. nigricans**. Sooty-black; abdomen and edge of outer web of lateral tail-feather pure white. Lower tail-coverts pure white. Length, 7.00; wing, 3.60; tail, 3.45. *Hab.* Pacific Province, United States, and Mexico. (*Black Flycatcher*.)

2. **S. fuscus**. Grayish-olive above, and on sides of breast; beneath (including throat) white, tinged with sulphur-yellow. Length, 7.00; wing, 3.40; tail, 3.20. *Hab.* Eastern Province United States; Eastern Mexico. (*Pewee Flycatcher*.)

3. **S. sayus**. Brownish-ashy, the tail and upper tail-coverts black; abdomen and crissum deep ochraceous. Length, 7.00; wing, 4.30; tail, 3.35. *Hab.* Western Province of United States, and whole of Mexico. (*Say's Flycatcher*.)

GENUS **CONTOPUS**, CABANIS. (Page 83.)

A. Wing more than 3.50 long.

a. Rictal bristles very short (only about one fourth the length of the bill). Cottony-white patch on sides of rump greatly developed; lower parts distinctly white medially.

1. **C. borealis**. Above dark slaty-brown, the pileum darker; beneath similar laterally, the medial parts abruptly white. Wing, 4.00 to 4.40; tail, 2.90 to 3.00; culmen, .90; tarsus, .60. *Hab.* Northern portions of

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North America, and south, along the Rocky Mountains, through Mexico, to Costa Rica. (*Olive-sided Flycatcher*.)

b. Rictal bristles strong (one half, or more, the length of the bill). Cottony patch imperfectly developed, concealed; lower parts not distinctly white medially.

2. **C. pertinax.** Above grayish-olive; beneath similar, but somewhat lighter, and paler on the throat and abdomen. Wing, 4.45; tail, 3.90; culmen, .92; tarsus, .70. *Hab.* Mexico generally, north into southern borders of United States (Fort Whipple, Arizona, *Coues*). (*Coues's Flycatcher*.)

B. Wing less than 3.50 long.

3. **C. virens.** Above grayish-olive, the wings and tail darker; beneath grayish-white. Wing, about 3.40; tail, 2.65 to 2.90; culmen, .65 to .70; tarsus, .54 to .56.

Whitish of the medial lower parts not interrupted across the breast.

Hab. Eastern Province of North America. (*Wood Pewee*.) var. *virens*.

Whitish of the medial lower parts interrupted by a grayish wash across the breast. (*Richardson's Pewee*.) . . . var. *richardsoni*.

GENUS **EMPIDONAX**, CABANIS. (Page 83.)

A. Tail even, or slightly rounded.

a. Young with the upper parts transversely mottled with paler.

1. **E. acadicus.** Grayish-green above; wing-bands pale buff (in the adult!); upper mandible brown. Wing, 3.10; tail, 2.50; culmen, .67; breadth of bill, .30; tarsus, .60; middle toe, .34. *Hab.* Eastern Province of United States, and Eastern Mexico. (*Green-crested Flycatcher*.)

b. Young not mottled above.

2. **E. pusillus.** Olive-gray, or brownish-olive above; wing-bands olive or gray (buff in the young); upper mandible black.

Olive-gray above, the wing-bands much lighter, or whitish-gray. Wing, 2.90; tail, 2.70; culmen, .69; breadth of bill, .26; tarsus, .67; middle toe, .40. *Hab.* Western Province of North America, and Western Mexico. (*Little Flycatcher*.) . . . var. *pusillus*.

Brownish-olive above, the wing-bands scarcely paler. Wing, 2.90; tail, 2.50; culmen, .64; breadth of bill, .27; tarsus, .66; middle toe, .38. *Hab.* Eastern Province of North America, and Eastern Mexico. (*Trail's Flycatcher*.) . . . var. *trailli*.

B. Tail more or less emarginated.

b. Olive-green above, yellowish beneath.

3. **E. flaviventris.**

Clear olive-green above, sulphur-yellow beneath; wing-bands greenish-yellow. Tail nearly even. Wing, 2.60; tail, 2.35, or less; culmen, .57; breadth of bill, .27; tarsus, .66; middle toe, .37. *Hab.* Eastern Province of North America, south to Guatemala. (*Yellow-bellied Flycatcher*.) . . . var. *flaviventris*.

Dull olive above, ochraceous-yellow beneath; wing-bands grayish-white. Tail deeply emarginated. Wing, 2.75; tail, 2.60 to 2.75. *Hab.* Western Province of United States, and Western Mexico. (*Western Flycatcher*.) . . . var. *difficilis*.

b. Olive-gray, or grayish-olive, above, whitish beneath.

4. **E. minimus.** Grayish-olive above, the wing-bands grayish-white; beneath white, faintly tinged with yellow posteriorly, and shaded across the breast with grayish; throat distinctly white; bill broad. Wing, 2.70; tail, 2.60; culmen, .57; breadth of bill, .27; tarsus, .64; middle toe, .35. *Hab.* Eastern Province of North America. (*Least Flycatcher.*)

5. **E. hammondi.** Colors much as in *E. minimus*, but wing-bands nearly twice as wide, the posterior lower parts much more strongly yellow, and the anterior portions nearly uniform light grayish. Bill very small. Wing, 2.85; tail, 2.55; culmen, .50; breadth of bill, .20; tarsus, .64; middle toe, .34. *Hab.* Western Province of North America, from Slave Lake to Southwestern Mexico. (*Hammond's Flycatcher.*)

6. **E. obscurus.** Ashy above, with only a slight olivaceous tinge, the wing-bands pale grayish; beneath white, with only a mere trace of a yellowish tinge on the flanks; throat distinctly whitish, and sides of the breast like the back. Outer web of lateral tail-feather grayish-white. Bill very narrow. Wing, 3.00; tail, 2.80; culmen, .64; breadth of bill, .24; tarsus, .77; middle toe, .42. *Hab.* Western Province of United States. (*Wright's Flycatcher.*)

GENUS **MITREPHORUS**, SCLATER. (Page 83.)

M. fulvifrons. Olivaceous above; ochraceous-fulvous beneath; outer web of lateral tail-feather whitish.

Olive of the back of a fulvous cast; wing-bands tinged with ochraceous; lower parts decided ochrey-fulvous. Wing, 2.65; tail, 2.40; tarsus, .61.

Hab. Mexico. var. *fulvifrons*.

Olive of the back of a grayish cast; wing-bands grayish-white; lower parts very pale ochrey-fulvous. Wing, 2.15; tail, 2.00; tarsus, .55.

Hab. Arizona. (*Buff-breasted Flycatcher.*) var. *pallescens*.

GENUS **PYROCEPHALUS**, GOULD. (Page 83.)

P. rubineus. Whole crown, and entire lower parts (except lining of the wing), brilliant scarlet; stripe through the eye, and entire upper parts, sepia-brownish. *Female.* Anterior lower parts whitish, with dusky streaks; posteriorly more or less tinged with red; no red on the crown. *Young,* without any red; feathers of upper parts bordered with lighter.

The brown of a decided grayish cast, edges of the wing-feathers very distinctly paler. Wing, about 2.90; tail, 2.30; culmen, .50 to .60; tarsus, .60. *Hab.* Mexico, and adjacent borders of the United States.

(*Red Flycatcher.*) var. *mexicanus*.

FAMILY **ALCEDINIDÆ.** — THE KINGFISHERS.

CHAR. Head large; bill long, strong, straight, and sub-pyramidal, usually longer than the head. Tongue very small. Wings short; legs small; the outer and middle toes united to their middle. Toes with the usual number of joints (2, 3, 4, 5). Iris hazel. Eggs white and numerous. Nest usually excavated in the side of a bank of earth.

about 4.00; wing, about 2.00; tail, 1.75. Nest domed, with circular opening on side, placed in shrubbery; eggs white, spotted with red. *Hab.* West Indies and Key West, Florida. (*Black-faced Finch.*)

GENUS **PYRRHULOXIA**, BONAP. (Page 63.)

P. sinuata. General color pale ashy-brown. Hood, sides of neck, and under parts of body, rather paler. Long crest-feathers, bill all round including lores and encircling the eye, wing and tail, dark crimson. Chin and upper part of throat, breast, and median line of the belly, under tail-coverts, tibiae, edge and inner coverts of the wings, bright carmine-red. Bill yellowish. Length, about 9.50; wing, 3.75; tail, 4.50. *Female* similar, with the under part brownish-yellow; middle of belly and throat only tinged with red. Nest and eggs scarcely distinguishable from those of *Cardinalis virginianus*. *Hab.* Valley of the Rio Grande of Texas and westward; Cape St. Lucas; Mazatlan, Mexico. (*Texas Cardinal.*)

GENUS **CARDINALIS**, BONAP. (Page 63.)

C. virginianus. *Male.* Bright vermilion-red; feathers adjoining base of bill black for greater or less extent. *Female.* Above olivaceous, the wings, tail, and crest reddish; beneath olivaceous-whitish, slightly tinged on jugulum with red. Length about 8.50; wing, 4.00; tail, 4.50. Nest in shrubbery, of dry twigs, leaves, etc.; eggs white, thickly and coarsely marked with brown and lavender.

a. Black of the lores passing broadly across forehead. Crest brownish-red. Bill moderate. *Hab.* Eastern Province of United States, south of 40°.

Bermudas. (*Cardinal Grosbeak.*) var. *virginianus*.

b. Black of the lores not meeting across forehead. Crest pure vermilion.

Hab. Cape St. Lucas, and Arizona; Tres Marias Islands. (*Cape Cardinal.*)

var. *igneus*.

GENUS **PIPILO**, VIEILLLOT. (Page 63.)

Iris mostly reddish, yellowish, or even sometimes white.

A. Sides and lower tail-coverts rufous, in sharp contrast with the clear white of the abdomen. Tail-feathers with whitish patch on end of inner webs. Nest on the ground; eggs dull white, with coarse dots and blotches of brown. Iris reddish (white in one variety). Length about 8.75; wing, 3.75; tail, 4.10, or rather less. (See Section I. Page 67.)

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

Black or dusky olive above.

1. **P. erythrophthalmus.** No white spots on wing-coverts, nor on scapulars. A white patch on base of primaries. *Hab.* Eastern Province of United States. (Two races.) (Page 67.)

2. **P. maculatus.** White spots on tips of both rows of wing-coverts, and on scapulars. No white patch on base of primaries. *Hab.* Mexico, and United States west of the Missouri. (Five races.) (Page 67.)

B. Sides ashy or tinged with ochraceous; lower tail-coverts ochraceous, not sharply contrasted with white on the abdomen, or else the abdomen concolor with the side. Head never black, and upper parts usually without light markings.

GENUS **CERYLE**, BOIE.

Streptoceryle. Bill very stout and thick. Tarsus about equal to the hind toe; much shorter than the inner anterior. Plumage without metallic gloss; the occipital feathers much elongated, linear, and distinct.

C. alcyon. Above ashy-blue; beneath with a concealed band across the occiput and a spot anterior to the eye, white. A band across the breast like the back. Tail spotted with white. Female and young with sides and band across the belly chestnut. Length, 12.75; wing, 6.00. *Hab.* All Northern America to Panama; West Indies. (*Belted Kingfisher.*)

Chloroceryle. Bill long, thin. Tarsus longer than hind toe; almost or quite as long as the inner anterior. Plumage with a green metallic gloss above; the occiput with a crest of rather short, indistinct feathers.

C. americana, var. **cabanisi.** Upper parts, a pectoral and abdominal band of blotches, and a line on each side the throat, glossy green. Under parts, a collar on the back of neck, and a double series of spots on the quills, white. *Female*, with a broad band of chestnut across the breast. Length, 8.00; wing, 3.14. *Hab.* Southern Texas, southward, passing gradually into var. *americana*. (*Green Kingfisher.*)

FAMILY **CAPRIMULGIDÆ**. — THE GOATSUCKERS.

CHAR. Bill very short; the gape enormously long and wide, opening to beneath or behind the eyes. Culmen variable. Toes connected by a movable skin; secondaries lengthened; plumage soft, sometimes very full and loose, as in the Owls. Iris hazel or brown. Eggs usually two in number, and laid on the ground; generally marbled: white in *Antrostomus nuttalli*.

SUBFAMILY **CAPRIMULGINÆ**.

Chordeiles. Gape without bristles; tarsi moderate, partly feathered; tail narrow, slightly forked; plumage rather compact. (Page 88.)

Antrostomus. Gape with bristles; tarsi moderate, partly feathered; tail broad, considerably rounded; plumage soft. (Page 89.)

Nyctidromus. Gape with bristles; tarsi lengthened, bare; tail broad, rounded; plumage soft. (Possibly occurring in Texas.)

GENUS **CHORDEILES**, SWAINSON. (Page 88.)

C. popetue. White patch on primaries extending over the five outer quills, anterior to their middle portion. No rufous spots on quills, anterior to the white patch.

a. Dark mottling predominating on upper parts; lower tail-coverts distinctly banded.

Length, 9.50; wing, 8.00; tail, 4.40. *Hab.* Eastern Province of United States and northwest coast. (*Night-Hawk; Bull Bat.*) var. *popetue*.

b. Light mottling predominating on upper parts; lower tail-coverts only very indistinctly and sparsely banded.

Size of var. *popetue*. *Hab.* Middle Province of United States. (*Western Night-Hawk*.) var. *henryi*.

C. acutipennis. White patch on primaries extending over only four outer quills, and beyond their middle portion; distinct rufous spots on quills, anterior to the white patch.

Length, 8.75; wing, 7.00 to 7.30; tail, 4.40 to 4.75. Colors not appreciably different. *Hab.* Middle America, north into southern border of United States. (*Texas Night-Hawk*.) . . . var. *texensis*.

GENUS ANTROSTOMUS, GOULD. (Page 88.)

A. Bristles of gape with lateral filaments. Light tail-spaces confined to inner web of feathers.

Dark markings on crown longitudinal. Ochraceous or white gular collar in form of a narrow band across jugulum. Eggs marbled.

1. **A. carolinensis.** Throat ochraceous, with sparse, narrow, transverse bars of black; jugular collar more whitish, with broader but more distant black bars. Crissum barred, and inner webs of primaries with black prevailing. Length, 12.00; wing, 8.90; tail, 6.30. *Hab.* Louisianian region of the Eastern Province of United States (Florida and the Carolinas to Arkansas). Costa Rica. (*Chuck-will's Widow*.)

B. Bristles of gape without lateral filaments; light tail-spaces covering both webs.

a. Throat black, with sparse, narrow, transverse bars of pale brown. Crissum barred, and inner webs of primaries with black greatly predominating.

2. **A. vociferus.** Crown ash, finely mottled or minutely sprinkled with dusky; lower parts without whitish cloudings. White tail-patch covering more than terminal half, and decreasing in breadth toward the outer feather. Bristles of gape moderate, slender; bill weaker, less compressed, and nostrils smaller. Length, 10.00; wing, 6.40; tail, 5.10; rictal bristles, 1.50 or less. *Hab.* Eastern Province of North America, south to Guatemala. (*Whippoorwill*.)

Dark markings of crown transverse. Gular collar pure white, covering nearly whole throat. Eggs pure white.

b. Throat pure white, without any markings. Crissum immaculate; inner webs of primaries with ochraceous very largely predominating.

3. **A. nuttalli.** White space of tail occupying about the terminal fourth, or less, on three feathers, and gradually decreasing inwardly. Length, 7.25; wing, 5.75; tail, 3.90; rictal bristles less than 1.00. *Hab.* Western Province of United States, from the Plains to the Pacific. (*Poor-will*.)

FAMILY CYPSELIDÆ. — THE SWIFTS.

Eyes brown. Nest of sticks, seeds, pappus, etc., united by a viscid secretion, or else composed entirely of this substance; placed in hollow of trees, in crevices of, or against rocks, etc. Eggs elongated and always white.

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Cypselinæ. Tarsi feathered; phalanges of the middle and outer toes three each (instead of four and five). Hind toe directed either forward or to one side, not backward. (Page 90.)

Tarsi feathered; toes bare; hind toe directed forward *Cypselus*.

Both tarsi and toes feathered; hind toe lateral (Page 90.) *Panyptila*.

Chæturinæ. Tarsi bare; phalanges of toes normal (four middle, five outer). Hind toe directed backwards, though sometimes versatile.

Tarsi longer than middle toe. Tail-feathers spinous. Shafts of tail-feathers projecting beyond the plumage. (Page 90.) *Chætura*.

Similar to last, but shafts of tail-feathers not projecting. *Nephæcetes*.

SUBFAMILY CYPSELINÆ. (Page 90.)

GENUS PANYPTILA, CABANIS. (Page 90.)

P. melanoleuca. Lustreless dull black; no supraloral white spot, but instead a hoary wash; white of throat extending back along middle of abdomen to the vent. Tail moderately forked, the lateral feathers obtuse. Length, 5.50; wing, 5.75; middle tail-feather, 2.30, outer, 2.85. *Hab.* Middle Province of United States, south to Guatemala. (*White-throated Swift*.)

SUBFAMILY CHÆTURINÆ. (Page 90.)

A. Tail forked; spinous points of the feathers not extending far beyond the webs or entirely wanting. Feathering of the sides of the forehead extending forward outside the nostrils nearly to their anterior end. Wing more than 6.00.

a. No trace of spinous points to tail-feathers. Feathering of frontal points almost completely enclosing the nostrils between them. No light collar round the neck; sides of the forehead with a hoary suffusion. (Page 90.) *Nephæcetes*.

B. Tail rounded; spinous points of the feathers much elongated. Feathering of sides of forehead scarcely reaching beyond posterior end of nostril. Wing less than 5.50. (Page 90.) *Chætura*.

GENUS NEPHÆCETES, BAIRD. (Page 90.)

N. niger. General color dark sooty-brown, with a greenish gloss, anteriorly. The feathers on top of the head edged with, light gray, which forms a continuous wash on each side of the forehead above, and anterior to the usual black crescent in front of the eye. Bill and feet black. Length, 6.75; wing, 6.75; tail, 3.00; the depth of its fork about .45 in the male, and scarcely .15 in the female. *Hab.* Washington Territory, Oregon, Nevada, and Orizaba (var. *borealis*); Cuba and Jamaica (var. *niger*). (*Black Swift*.)

GENUS CHÆTURA, STEPHENS. (Page 90.)

C. pelagica. Nearly uniformly dusky grayish-brown, the throat, however, very much lighter, and the rump just appreciably so.

Above glossy dusky-brown, hardly appreciably paler on the rump; * abdomen scarcely paler than the back. Length, 5.25; wing, 5.20.

Nest at the present time usually built against the inside of a chimney.

Hab. Eastern Province North America. (*Chimney Swallow*.) var. *pelagica*.

Above glossy blackish-dusky, very decidedly paler on the rump; abdomen very much paler than the back. Length, 4.50; wing, 4.50.

Hab. Pacific Province of North America, south to Guatemala (from whence specimens are much darker, almost black above, and slightly smaller.) (*Oregon Swift*.) var. *vauxi*.

FAMILY TROCHILIDÆ. — THE HUMMING-BIRDS.

CHAR. Least of all birds; sternum very deep; bill subulate, and generally longer than the head, straight, arched, or upcurved. Tongue composed of two lengthened cylindrical united tubes, capable of great protrusion, and bifid at tip; nostrils basal, linear, and covered by an operculum; wings lengthened, pointed; first quill usually longest except in *Aithurus*, where it is the second; primaries, 10.00; secondaries, 6.00; tail of ten feathers. Tarsi and feet very diminutive, claws very sharp. Iris brown.

Eggs, as far as known, always white, and two in number. Nest generally saddled on top of a branch. Confined entirely to the New World.

Phæthornithinæ. Anterior toes connected at the base. No metallic lustre to the dull plumage.

Trochilinæ. Anterior toes not connected at the base. Plumage brilliant, with more or less of metallic lustre, at least in the males.

SUBFAMILY TROCHILINÆ.

COMMON CHARACTERS. All the North American *Trochilidæ* have metallic green backs, excepting *Selasphorus rufus*, this color extending over the top of head, except in *Calypte* (metallic red and violet) and *Heliopædica* (bluish-black). The latter alone has a white stripe through the eye. *Atthis heloisæ* alone has the tail tipped with white in the male. Females of all the species except *Heliopædica* have tail tipped with white; all have it rounded. All females lack the metallic throat. The males of the several genera belonging to North America may be distinguished as follows:—

I. *Bill covered with feathers between nostrils.*

A. Top of head green.

Feathers of throat not elongated.

Tail rounded or slightly emarginated, the feathers broad, rounded, and metallic rufous-purple, or greenish-blue. Wing more than 2.50 . . . *Lampornis*.

Tail more or less forked; feathers pointed, narrow, and without rufous or blue. Wing much less than 2.00. (Page 92.) *Trochilus*.

Throat-feathers elongated laterally into a kind of ruff. Tail-feathers edged or banded with cinnamon at base.

Tail cuneate, the outer primary attenuated at end. Innermost tail-feather green above.

Tail dusky at end (Page 93.) *Selasphorus*.

Tail tipped with white. (Page 93.) *Atthis*.

Tail nearly even, and emarginated. Outer primary not attenuated at end. Innermost tail-feather brown above. (Page 92.) *Stellula*.

B. Top of head metallic red or violet.

Metallic feathers of side of throat much elongated. (Page 92.) . . . *Calypte*.

- Tail rounded, inner webs of tail-feathers mostly rufous. Lateral tail-feather abruptly narrower than the rest *C. floresii*.
 Tail forked, inner webs of tail-feathers without rufous. Lateral tail-feather abruptly narrower than the others *C. anna*; *C. costæ*.
 Tail emarginated, inner webs of tail-feathers without rufous. Lateral tail-feather not narrower than the others *C. helene*.

II. *Bill bare of feathers between the nostrils.*

C. Top of head bluish-black; a white line through eye.

Metallic feathers of side of throat not elongated.

Tail nearly even, and slightly emarginated. Lateral feathers very broad and obtuse at end *Heliopædica*.

GENUS **STELLULA**, GOULD. (Page 91.)

S. calliope. Above green; beneath white, tinged with rufous laterally. ♂. Throat-feathers elongated, the terminal half violet-red, the basal portion pure white. Tail-feathers plain dusky, edged with rufous toward the base. ♀. Throat white, sometimes spotted dull-green. Tail-feathers greenish toward base, and tipped with white. Wing, about 1.60; tail, .90; bill, .55. *Hab.* Western Province of United States, from Pacific coast (Fort Tejon to British Columbia), eastward to East Humboldt Mountains. (*Mountain Star*.)

GENUS **TROCHILUS**, LINNÆUS. (Page 91.)

COMMON CHARACTERS. Above and on the sides metallic green. A ruff of metallic feathers from the bill to the breast, behind which is a whitish collar, confluent with a narrow abdominal stripe; a white spot behind the eye. Tail-feathers without light margins.

T. colubris. Tail of ♀ deeply forked (.30 of an inch). Throat bright coppery-red from the chin. Tail of ♀ rounded, emarginated. Length, 3.25; wing, 1.60; bill, .65. *Hab.* Eastern North America, south to Brazil. (*Ruby-throated Humming-Bird*.)

T. alexandri. Larger. Tail of ♂ slightly forked (.10 of an inch). Throat gorget with violet, steel green or blue reflections behind; anteriorly opaque velvety-black. Tail of ♀ graduated; scarcely emarginated. Length, 3.30; wing, 1.70; bill, .75. *Hab.* Western United States, from Pacific coast to Wahsatch Mountains. (*Black-chinned Hummer*.)

GENUS **CALYPTE**, GOULD. (Page 91.)

A. No rufous on tail-feathers; tail forked or emarginated.

Lateral tail-feather abruptly narrower than the others. Rump and middle tail-feathers green.

1. **C. anna.** Length, 3.60; wing, 2.00; bill, .82. Outer tail-feather with a double curve, the end inclining outward. Metallic hood and ruff of the male purplish-red. *Hab.* Mexico and California. (*Anna Humming-Bird*.)

2. **C. costæ.** Length, 3.20; wing, 1.75; bill, .68. Outer tail-feather with a simple curve, the end inclining inward. Metallic hood and ruff of the male violet-blue. *Hab.* Mexico into Southern Arizona and California. (*Ruffed Humming-Bird*.)

GENUS **SELASPHORUS**, SWAINSON. (Page 91.)

A. Feathers of the metallic gorget not elongated laterally.

S. platycercus. Above continuous metallic-green; tail-feathers merely edged with rufous. Gorget purplish-red. (*Broad-tailed Humming-Bird.*)

Length, 3.60; wing, 1.90; tail, 1.40; bill (from forehead), .66. Gorget rich solferino-purple, the feathers grayish-white beneath the surface. Outer primary with its attenuated tip turned outward. *Hab.* Rocky Mountains and Middle Province of United States, south to Guatemala.

B. Feathers of the metallic gorget much elongated laterally.

S. rufus. Above chiefly rufous, overlaid by green; tail-feathers rufous with a shaft-streak of dusky. Gorget fiery red. Attenuated tip of outer primary curved inwards. (*Rufous Humming-Bird.*)

Length, 3.50; wing, 1.60; tail, 1.30; bill, .65. *Hab.* Western Province of North America, from East Humboldt Mountains to the Pacific. North to Sitka, south to Mirador.

GENUS **ATTHIS**, REICHENBACH. (Page 91.)

A. heloisæ. Above bright golden-green; beneath white, the sides strongly rufous. Tail-feathers (of both sexes?) black, white at the tip, and rufous at the base, the intermediæ entirely green. ♂. Throat-feathers very elongated laterally, and entirely deep violet-purple, except at extrem base. ♀. Throat white, speckled with dull green. Wing, about 1.50; tail, 1.00; bill, .50. *Hab.* Eastern Mexico, and Guatemala; El Paso, Texas. (*Heloisæ Humming-Birds.*)

GENUS **HELIOPÆDICA**, GOULD. (Page 92.)

COMMON CHARACTERS. Above metallic green; tail plain black or chestnut, glossed with green, and without white in either sex. A conspicuous white post-ocular stripe, and a blackish auricular one beneath it; beneath with more or less green. ♂. Forehead, chin, and side of head deep black or metallic dark blue; throat and jugulum brilliant green. ♀. Front dull brownish-green; chin, throat, and jugulum white or ochraceous, with or without a green gloss.

H. melanotis. *Male.* Belly white, glossed with green; tail black beneath; base of bill, all round, brilliant blue; white cheek-stripe beginning back of the eye. *Female.* Beneath white glossed with green; tail bluish-black. *Hab.* Guatemala and table-lands of Mexico.

H. xantusi. *Male.* Belly cinnamon; tail beneath purplish-cinnamon; chin black; white cheek-stripe beginning at the bill. *Female.* Beneath plain pale rufous; tail deep rufous. Length, 3.50; wing, 2.10; tail, 1.40. *Hab.* Cape St. Lucas. (*Xantus's Humming-Bird.*)

The three families next in order are those generally known as the *Zygodactyli*, in their more restricted sense, that is, having the toes arranged in pairs, two before and two behind. In the present case the anterior toes are the inner and the middle (the second and third), the posterior being the hinder and outer (the first and fourth); where, as is sometimes the case, a hind toe is wanting, it is the first, or hind toe proper.

A. Upper mandible not movable nor hinged. Tarsus with transverse scutellæ. Bill without a naked skin, or cere, at the base; lower mandible much longer than deep, the end not truncated.

a. Tongue short, and not extensible; not barbed at the point.

Bill hooked or curved at tip; not constructed for hammering. No nasal tufts. (Page 94.) *Cuculidæ.*

b. Tongue long and cylindrical, and generally capable of great extension; barbed at the point.

Bill not hooked, but nearly straight; strong, and constructed for hammering. Thick nasal tufts at base of the bill (except in the *Nudinares*). (Page 95.)

Picidæ.

B. Upper mandible movable or hinged. Tarsus without transverse scutellæ. Bill with a naked skin, or cere, at the base; lower mandible not longer than deep, its end truncated.

c. Tongue short and thick, fleshy.

Bill enormously large, much curved, the upper mandible hooked, both much arched. (Page 100.) *Psittacidæ.*

FAMILY CUCULIDÆ. — THE CUCKOOS.

CHAR. Bill compressed, usually more or less lengthened and with decurved culmen. Rictal bristles few or none. Nostrils exposed, no nasal tufts. Tail long and soft, of eight to twelve feathers. Toes in pairs, deeply cleft or not united, the outer anterior toe usually versatile, but directed rather laterally than backward. Eyes brown or hazel.

Coccyginæ. Face covered with feathers; bill elongated, more or less cylindrical, straight or curved. Tail of ten feathers.

Bill about the length of the head, or not longer; curved. Loral feathers soft. Legs weak, tarsus shorter than the toes. Arboreal. Nest on trees. Eggs bluish-green, without calcareous coating. (Page 95.) . *Coccyus.*

Bill longer than the head; straight. Loral feathers stiff, bristly. Tarsi much longer than the toes. Terrestrial. Nest near the ground. Eggs white. (Page 94.) *Geococcyx.*

Crotophaginæ. Face naked. Bill much compressed, with a sharp crest. Tail of, eight feathers.

Bill shorter than and nearly as high as the head. Nest very large; near the ground. Eggs greenish-blue, with white chalky coating, easily removed when fresh and revealing the blue beneath. (Page 95.) . *Crotophaga.*

SUBFAMILY COCCYGINÆ.

GENUS **GEOCOCCYX**, WAGLER. (Page 94.)

G. californianus. Feathers above bronzed-brown and green; nearly all with opaque white edges; beneath white, with black streaks on the sides of neck and breast; the feathers with broad white tips. Length, 20.00; wing, 6.50; tail, 12.00.

Bill above, about 2.00; gape nearly straight to near tip; nostril behind middle of gape. Feathers of throat and upper part of breast light brownish, with shaft-streaks of black. *Hab.* Southwestern United States, from Cape St. Lucas and Southern California to Texas. (*Chaparral Cock.*)

C. californianus.

GENUS **COC CYGUS**, VIEILLOT. (Page 94.)

A. Tail-feathers except two middle ones black, with broad, sharply defined terminal spaces of white. Lower mandible yellow.

1. **C. americanus.** Beneath pure white, with an ashy shade across the jugulum. Inner webs of primaries mostly rufous. Auriculars nearly concolor with the nape. Length, 12.00; wing, 5.95; tail, 6.35. *Hab.* United States (very rare in the Western Province), Jamaica, Porto Rico. (*Yellow-billed Cuckoo*.)

2. **C. minor.** Beneath ochraceous, generally paler anteriorly. Inner webs of primaries without any rufous. Auriculars blackish, conspicuously different from the nape. Length, 12.00; wing, 5.30; tail, 7.50; graduation of tail, 2.75. Tail-spots about 1.00 long. *Hab.* West Indies, and northern and eastern South America, Southern Florida. (*Mangrove Cuckoo*.)

B. Tail-feathers all grayish-brown, with narrow terminal, obscure spots of white. Lower mandible blackish like the upper (pale blue in life?).

3. **C. erythrophthalmus.** No rufous on primaries, except in young (which have black bill, brown tail-feathers, etc.). Beneath continuous white, with a faint ashy-buff shade across the jugulum; above grayish-brown. Bare eyelids bright red in the adult. Length, 12.00; wing, 5.00; tail, 6.50. *Hab.* Eastern Province of the United States, south through eastern Middle America to Bogota. (*Black-billed Cuckoo*.)

GENUS **CROTOPHAGA**, LINNÆUS. (Page 94.)

C. ani. Feathers entirely black; those on the head and neck with a peculiar stiffened metallic or scale-like border. Length, 13.00 to 15.00; wing, 6.00; culmen gently curved from base. Bill smooth or with a few transverse wrinkles. *Hab.* Northeastern South America, West Indies, and South Florida. (*The Savanna Blackbird*.)

FAMILY **PICIDÆ**. — THE WOODPECKERS.

CHAR. Outer toe turned backwards permanently, not versatile laterally, the basal portion of the tongue capable of great protrusion. (Least so in *Sphyrapicus*.)

Picinæ. Tail-feathers pointed, and lanceolate at end; the shafts very rigid, thickened and elastic. (Page 95.)

Picumninæ. Tail soft and short, about half the length of wing; the feathers without stiffened shafts, rather narrow, linear, and rounded at end.

Yunginæ. Tail soft and rather long, about three fourths the length of wing; the feathers broad, and obtusely rounded at end. (Last two not North American.)

SUBFAMILY **PICINÆ**.

Nest in holes excavated in trees by the birds themselves. Eggs always crystalline white and lustrous; generally numerous. Color of eyes differing with species.

Piceæ. Bill variable in length; the outlines above and below nearly straight; the ends truncated; a prominent ridge on the side of the man-

CHAPTER IV. THE UNITED STATES IN 1792.

The year 1792 was a year of great importance in the history of the United States. It was the year in which the Constitution was ratified, and the first Congress assembled. It was also the year in which the French Revolution broke out, and the United States declared its neutrality.

The first Congress assembled on September 17, 1789, in the City of New York. It was composed of representatives from all the States, and was the first Congress since the Declaration of Independence.

The first Congress passed the Bill of Rights, which guaranteed the rights of the people. It also passed the Judiciary Act, which established the Supreme Court.

The French Revolution broke out in 1789, and the United States declared its neutrality in 1793. The United States was the only country in the world that remained neutral during the French Revolution.

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dible springing from the middle of the base, or a little below, and running out either on the commissure, or extending parallel to and a little above it to the end, sometimes obliterated or confluent with the lateral bevel of the bill. Nostrils considerably overhung by the lateral ridge, more or less linear, and concealed by thick bushy tufts of feathers at the base of the bill. Outer posterior toe generally longer than the anterior. (Page 96.)

Centurææ. Bill rather long; the outlines, that of the culmen especially, decidedly curved. The lateral ridge much nearest the culmen, and, though quite distinct at the base, disappearing before coming to the lower edge of the mandible; not overhanging the nostrils, which are broadly oval, rounded anteriorly, and not concealed by the bristly feathers at the base. Outer pair of toes nearly equal; the anterior rather longer. (Page 99.)

Colapteaæ. Bill rather long, much depressed, and the upper outline much curved to the acutely pointed (not truncate) tip. The commissure considerably curved. Bill without any ridges. The nostrils broadly oval, and much exposed. Anterior outer toe longest. (Page 100.)

SECTION PICEÆ. (Page 95.)

A. Posterior outer toe longer than the anterior outer one. (Fourth toe longer than third.)

a. Lateral ridge starting above the middle of the base of the bill, and extending to the tip.

1. **Campephilus.** Lateral ridge above the middle of the lateral profile of the bill when opposite the end of the nostrils, which are ovate, and rounded anteriorly. Bill much depressed, very long; gonys very long. Posterior outer toe considerably longer than the anterior. Primaries long, attenuated towards the tip. Spurious quill nearly half the second. Shafts of four middle tail-feathers remarkably stout, of equal size, and abruptly very much larger than the others; two middle tail-feathers narrower towards bases than towards end. A pointed occipital crest. Iris bright yellow. (Page 97.)

2. **Picus.** Lateral ridge in the middle of the lateral profile opposite the end of the nostrils, which are ovate and sharp-pointed anteriorly. Bill moderate, nearly as broad as high. Outer hind toe moderately longer than the outer fore toe. Primaries broad to the tip, and rounded. Spurious primary not one third the second quill. Iris reddish-brown. (Page 97.)

3. **Picoides.** Lateral ridge below the middle of the profile, opposite the end of the ovate acute nostrils, which it greatly overhangs. Bill greatly depressed; lower mandible deeper than the upper. Inner hind toe wanting, leaving only three toes. Tufts of nasal bristles very full and long. Iris brown. (Page 99.)

b. Lateral ridge starting below the middle of the base of the bill, and running as a distinct ridge into the edge of the commissure at about its middle; the terminal half of the mandible rounded on the sides, although the truncate tip is distinctly bevelled laterally.

4. **Sphyrapicus.** Nostrils considerably overhung by the lateral ridge, very small, linear. Gonys as long as the culmen, from the nostrils. Tips of tail-feathers elongated and linear, not cuneate. Wings very long; exposed portion of spurious primary about one fourth that of second quill. Iris brown. (Page 99.)

B. Posterior outer toe considerably shorter than the anterior outer one. (Fourth toe shorter than third).

5. Hylotomus. Bill depressed. Lateral ridge above the middle of the lateral profile near the base. Nostrils elliptical, wide, and rounded anteriorly. Tail almost as in *Sphyrapicus*. A pointed occipital crest, as in *Campephilus*, and not found in the other genera. Iris yellow. (Page 100.)

== GENUS **CAMPEPHILUS**, GRAY. (Page 96.) ==

COMMON CHARACTERS. Bill ivory-white. Body entirely glossy blue-black. A scapular stripe, secondaries, ends of inner primaries, and under wing-coverts, white. Crest scarlet in the male, black in the female.

C. principalis. A white stripe on each side of the neck. Bristly feathers at the base of the bill white.

White neck-stripe not extending to the base of the bill. Black feathers of crest longer than the scarlet. Length, 21.00; wing, 10.00; culmen, 2.60. *Hab.* Gulf region of United States. (*Ivory-billed Woodpecker.*) var. *principalis*.

White stripe reaching the base of the bill. Scarlet feathers of crest longer than the black. Wing, 9.50; culmen, 2.40. *Hab.* Cuba. var. *bairdi*.

== GENUS **PICUS**, LINNÆUS. (Page 96.) ==

A. Black above, and white beneath. Wings spotted with white; a black maxillary stripe.

a. Two white stripes on the side of the head, one above, and the other below, the ear-coverts, which are mostly black. First quill shorter than sixth. Tail-feathers broad and obtuse at ends, the narrowed tips of middle feathers very short.

DRYOBATES, BOIE. Middle of back streaked longitudinally and continuously with white. Maxillary and auricular black stripes not confluent; the latter running into the black of the nape. Beneath white without spots. Red of head confined to a narrow nuchal band. Length, 11.00 to 7.00.

1. P. villosus. Outer tail-feathers immaculate white, great variation in size with latitude. Length, 7.00 — 10.00 inches.

All the quills, with middle and greater wing-coverts, with large white spots. *Hab.* Eastern North America. (*Hairy Woodpecker.*) var. *villosus*.

Innermost quills and some of the coverts entirely black, or unspotted with white. Remaining spots reduced in size. (Var. *jardini* similar, but much smaller, 7.00, and lower parts smoky-brown.) *Hab.* Middle and western North America, and south to Costa Rica. (*Harris Woodpecker.*) . var. *harrisi*.

2. P. pubescens. Outer tail-feather white, with transverse black bands. Length about 6.25.

All the quills, with middle and greater wing-coverts, with large white spots. *Hab.* Eastern North America. (*Downy Woodpecker.*) var. *pubescens*.

Innermost quills and some of the coverts entirely black; remaining white spots reduced in size. *Hab.* Western North America. (*Gairdner's Woodpecker.*) . . . var. *gairdneri*.

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DYCTIOPICUS, BON. Whole back banded transversely with black and white. Beneath white, with black spots on sides. Maxillary and auricular black stripes confluent at their posterior ends, the latter not running into the nape. In the males at least half of top of head red. Length, about 6.50.

3. **P. scalaris**. Anterior portion of the back banded with white; lores and nasal tufts smoky-brown. Black stripes on sides of the head very much narrower than the white ones, and not connected with the black of the shoulders. *Male* with the whole crown red.

Outer web of lateral tail-feathers barred with black to the base. White bands on back exceeding the black ones in width; red of the crown very continuous, on the forehead predominating over the black and white. (Sometimes the black at base of inner web of lateral tail-feather divided by white bars.) *Hab.* Southern and Eastern Mexico, and Rio Grande region of United States. (*Ladder-backed Woodpecker*.)

var. *scalaris*.

Outer web of lateral tail-feather barred with black only toward end. Red of crown much broken anteriorly, and in less amount than the black and white mixed with it. White bands of the back not wider, generally much narrower, than the black ones.

Bill, .90; tarsus, .70. Red of crown extending almost to the bill. *Hab.* Western Mexico, up to Western Arizona. (*Grayson's Woodpecker*.)

var. *graysoni*.

Bill, 1.10; tarsus, .75. Red of crown disappearing about on a line above the eye. *Hab.* Cape St. Lucas. (*Lucas Woodpecker*.)

var. *lucasanus*.

4. **P. nuttalli**. Anterior portion of back not banded with white; lores and nasal tufts white. Black stripes on side of the head very much broader than the white ones, and connected by a narrow strip with the black of the shoulders. *Male* with only the nape and occiput red. *Hab.* California (only). (*Nuttall's Woodpecker*.)

b. One white stripe, only, on side of head, and this occupying whole auricular region. Tail-feathers narrowed at ends, the points of the middle ones much elongated. First quill longer than sixth. Bill very small, much shorter than head.

PHRENOPICUS, BONAP. Back and wings transversely banded with black and white, and sides spotted with black, as in *Dyctiopicus*.

5. **P. borealis**. Red of male restricted to a concealed narrow line on each side of the occiput, at the junction of the white and black. Maxillary black stripe very broad and conspicuous, running back to the series of black spots on sides of breast. Three outer tail-feathers more or less white, with a few bars of black near their ends, principally on inner webs. Length, 7.25; wing, 4.50. *Hab.* South Atlantic States. (*Red-cockaded Woodpecker*.)

B. Body entirely continuous black; head all round immaculate white. First quill shorter than sixth.

XENOPICUS, BAIRD. Tail and primaries as in "A," but much more lengthened. Bill as in *Dryobates*, but more slender.

6. **P. albolarvatus**. Red of male a narrow transverse occipital crescent, between the white and the black. Basal half, or more, of

primaries variegated with white, this continuous nearly to the end of outer webs; inner webs of secondaries with large white spots toward their base. Length, about 9.00; wing, 5.25. *Hab.* Sierra Nevada and Coast Ranges, Pacific Province, United States. (*White-headed Woodpecker.*)

GENUS **PICOIDES**, LACEP. (Page 96.)

COMMON CHARACTERS. Black above and white beneath; the crown with a square yellow patch in the male; a white stripe behind the eye, and another from the loreal region beneath the eye; the quills (but not the coverts) spotted with white; the sides banded transversely with black.

P. arcticus. Dorsal region without white markings; no supraloral white stripe or streak, nor nuchal band of white. Entire sides heavily banded with black; sides of the breast continuously black. ♂. Crown with a patch of yellow, varying from lemon, through gamboge, to orange, and not surrounded by any whitish markings or suffusion. ♀. Crown lustrous black, without any yellow, and destitute of white streaks, or other markings. Wing, 4.85 to 5.25; tail, 3.60; culmen, 1.40 to 1.55. *Hab.* Northern parts of North America. In winter just within the northern border of the United States, but farther south on high mountain-ranges. (*Black-backed Three-toed Woodpecker.*)

P. tridactylus. Dorsal region with white markings, of various amount and direction; a more or less distinct supraloral white streak or stripe, and a more or less apparent nuchal band of the same. Sides always with black streaks or markings, but they are sometimes very sparse; crissum banded with black, or immaculate; sides of the breast not continuously black. ♂. Crown with a patch of gamboge, amber, or sulphur-yellow, surrounded by a whitish suffusion or markings. ♀. Crown without any yellow, but distinctly streaked, speckled, or suffused with whitish (very seldom plain black). Wing, 4.40 to 5.10; tail, 3.40 to 3.70; culmen, 1.10 to 1.25.

Back transversely barred with white. *Hab.* Hudson's Bay region, and adjoining parts of British America; northern border of Eastern States in winter. (*Banded Three-toed Woodpecker.*) . var. *americanus*.

Back longitudinally striped with white. *Hab.* Rocky Mountain region of United States, northward to Alaska. (*Mountain Three-toed Woodpecker.*) var. *dorsalis*.

GENUS **SPHYROPICUS**, BAIRD. (Page 96.)

A. Wing with a white patch on the middle and greater coverts. Markings along the sides with a longitudinal tendency.

1. **S. varius.** Back variegated medially with brownish-white; secondaries with transverse rows of white spots.

I. *White and black stripes on side of head sharply defined, as is also the black pectoral crescent. Red confined to isolated patches, — two large ones, one on the crown and one on the throat; when there is more, only a tinge on the auriculars, and a crescent on nape.*

Crown sometimes glossy black without a trace of red on the female; no tinge of scarlet on the nape. Red of the throat entirely confined

within the broad, continuous black maxillary stripe. *Female* with the throat wholly white. Length, 8.25; wing, 4.75; tail, 3.30. *Hab.* Eastern Province North America, south in winter into West Indies, and over whole of Mexico, to Guatemala. (*Yellow-bellied Woodpecker.*) var. *varius*.

Crown always red in adult. A nuchal crescent of scarlet in both sexes. Red of the throat not confined by the black maxillary stripe, which is interrupted by it in the middle, allowing the red to touch the white stripe; a tinge of red on the auriculars. *Female* always with more or less red on lower part of the throat. Length nearly as in *varius*. *Hab.* Rocky Mountains and Middle Province of United States. (*Red-naped Woodpecker.*) var. *nuchalis*.

II. *White and black stripes on side of head obsolete, as is also the black pectoral crescent, caused by being overspread by a continuous red wash extending over whole head, neck, and breast.*

Whole head, neck, and breast red, with the light and dark stripes of the normal pattern only faintly traceable. Sexes similar. Length much as in *varius*. *Hab.* Pacific Province of United States, north to British Columbia. (*Red-breasted Woodpecker.*) var. *ruber*.

2. **S. williamsoni.** Back unvariegated; secondaries without bands of white spots.

Whole crown and upper parts (except lower part of rump and upper tail-coverts, and wing-patch), a stripe on side of head, a broader one on side of the throat, and the whole jugulum and sides of the breast, unbroken glossy black; abdomen bright lemon-yellow. *Male* with a narrow stripe of scarlet on middle of the throat. *Female* with it white. Length, 9.00; wing, 5.00; tail, 4.70. *Young* like the adult. *Hab.* Western Province of United States. (*Williamson's Woodpecker.*)

B. Wing without a white patch. Markings on sides regularly transverse.

3. **S. thyroideus.** Head all round light brown; abdomen bright lemon-yellow; rump and upper tail-coverts white. Entire upper surface, with sides, regularly and continuously barred with black and white, in nearly equal amount; the black bars usually coalesced on the jugulum into a more or less extensive patch. *Male* with the throat tinged medially with scarlet. *Female* without any red. Size of *S. varius*. *Hab.* Western Province of United States. (*Brown-headed Woodpecker.*)

GENUS **HYLOTOMUS**, BAIRD. (Page 97.)

H. pileatus. Dull black; the lining of the wing, and bases of the quills white, tinged with sulphur-yellow; crest scarlet; throat, post-ocular, and rictal stripe, continuing down side of neck to the axillars, white. ♂. Whole forehead, and crown scarlet; maxillary patch carmine. ♀. Forehead and crown dusky; maxillary patch dusky (crest, only, scarlet). Length, 16.00 to 19.00; wing, about 9.50. *Hab.* Densely wooded regions of North America, from the Atlantic to the Pacific. (*Pileated Woodpecker*; *Black Woodcock.*)

SECTION **CENTURÆ**. (Page 96.)

The United States genera of this section are very similar to each other, and may be most easily distinguished by color, as follows:—

Centurus. Back and wings banded transversely with black and white. Crown more

or less red; rest of head with under parts grayish, and with red or yellow tinge on the middle of the abdomen. Rump white. Iris red. (Page 101.)

Melanerpes. Upper parts uniform black, without bands, with or without a white rump; variable beneath, but without transverse bands. Iris brown, except in *M. formicivorus*. (Page 101.)

GENUS **CENTURUS**, SWAINSON. (Page 100.)

C. carolinus. Middle of belly reddish; whole crown and nape red in male. Nape, only, red in female.

Forehead reddish; beneath soiled ashy-white; abdomen pinkish-red; crissum with sagittate marks of dusky. Wing, 5.25; tail, 3.80; bill,

1.30. *Hab.* Eastern Province United States. (*Red-bellied Woodpecker.*) var. *carolinus*.

C. aurifrons. Middle of belly yellowish; red of crown, in male, confined to an ovoid vertical patch. Nape and forehead gamboge-yellow; white of rump and upper tail-coverts immaculate. *Female* without any red on the crown.

Inner webs of middle tail-feathers unvariegated black. Lower parts dirty ashy-whitish, abdomen dilute gamboge-yellow. Wing, 5.20; tail, 3.60; bill, 1.50. *Hab.* Eastern Mexico, north to the Rio Grande.

(*Yellow-bellied Woodpecker.*) var. *aurifrons*.

C. uropygialis. Middle of the belly yellowish. Nape and forehead soft smoky grayish-brown. *Female* without red or yellow on head. White of rump and upper tail-coverts with transverse dusky bars. Inner webs of middle tail-feathers spotted with white. Wing, 5.30; tail, 3.70; bill, 1.35. *Hab.* Western Mexico, north into Colorado, region of Middle Province of United States. (*Gila Woodpecker.*)

GENUS **MELANERPES**, SWAINSON. (Page 101.)

A. Sexes similar. *Young* very different from the adult.

M. torquatus. Feathers of the lower parts, as well as of frontal, lateral, and under portions of the head, with the fibres bristle-like. (*Asyndesmus*, COUES.) Upper parts wholly uniform, continuous, very metallic blackish-green. *Adult.* Forehead, lores, cheeks, and chin deep crimson, of a burnt-carmine tint; jugulum, breast, and a ring entirely around the nape, grayish-white; abdomen light carmine. Back glossed with purplish-bronze. *Young* without the red of the head, and lacking the grayish nuchal collar; abdomen only tinged with red, no purple or bronze tints above. Iris reddish-brown. Length, 10.50; wing, 6.70; tail, 4.50. *Hab.* Western Province of the United States, from the Black Hills to the Pacific. (*Lewis Woodpecker.*)

M. erythrocephalus. Feathers generally soft, blended; those of the whole head and neck with stiffened and bristle-like fibres in the adult. Secondaries, rump, and upper tail-coverts, with whole lower parts from the neck, continuous pure white. Two lateral tail-feathers tipped with white. *Adult.* Whole head and neck bright venous-crimson or blood-red, with a black convex posterior border across the jugulum; back, wings, and tail glossy blue-black. *Young.* Head and neck grayish, streaked with dusky; back and scapulars grayish, spotted with black; secondaries with two or three black bands; breast tinged with grayish, and with sparse dusky streaks.

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Iris brown or hazel. Length, 9.75; wing, 5.90; tail, 3.90. *Hab.* Eastern Province of the United States, west to the Rocky Mountains. (*Red-headed Woodpecker.*)

B. Sexes dissimilar; young like the adult.

M. formicivorus. Forehead and a broad crescent across the middle of the throat (the two areas connected by a narrow strip across the lore) white, more or less tinged with sulphur-yellow. Rump, upper tail-coverts, abdomen, sides, and crissum, with patch on base of primaries, pure white, the sides and breast with black streaks. Other portions glossy blue-black.

♂. Whole crown and nape carmine. ♀ with the occiput and nape alone red. More than the anterior half of the pectoral band immaculate.

♀ with the white frontal black coronal and red occipital bands of about equal width. Forehead and throat only slightly tinged with sulphur-yellow. Iris varying from white to red, blue, yellow, ochraceous, and brown. Length, 9.50; wing, 5.80; tail, 3.90; bill, 1.27. *Hab.* Pacific Province of United States, and Northern and Western Mexico. (*California Woodpecker.*) . . . var. *formicivorus*.

♀ with the white frontal band only about half as wide as the black coronal, which is only about half as wide as the red occipital band or patch. Forehead and throat bright sulphur-yellow. Iris probably as in the last. Length, 8.00; wing, 5.40; tail, 3.65; bill, 1.23. *Hab.* Lower California. (*Narrow-fronted Woodpecker.*)

var. *angustifrons*.

SECTION COLAPTEÆ. (Page 96.)

GENUS COLAPTES, SWAINSON.

COMMON CHARACTERS. Head and neck ashy or brown, unvaried except by a black or red malar patch in the male. Back and wings brown, banded transversely with black; rump and upper tail-coverts white. Beneath whitish, with circular black spots, and bands on crissum; a black pectoral crescent. Shafts and under surfaces of quills and tail-feathers either yellow or red. Iris brown or hazel.

A. Mustache red; throat ash; no red nuchal crescent.

a. Under surface and shafts of wings and tail red.

1. **C. mexicanus.** Hood ashy-olivaceous, more rufescent anteriorly, light cinnamon on lores and around eyes; feathers of mustache light ash below surface. Upper parts umber-brown, barred with black, the black only about one fourth as wide as the brown. Shafts, etc., fine salmon-red, or pinkish orange-red. Rump unspotted; black terminal zone of tail broad, sharply defined. Length, 13.00; wing, 6.70; tail, 5.00; bill, 1.60. *Hab.* Middle and Western Province of United States, south into Eastern Mexico to Mirador and Orizaba, and Jalapa. (*Red-shafted Flicker.*)

b. Under surface and shafts of wings and tail gamboge-yellow.

2. **C. chrysoides.** Hood uniform light cinnamon; upper parts raw umber with sparse, very narrow and distant, bars of black. Rump immaculate; black terminal zone of tail occupying nearly the terminal half, and very sharply defined. Length, 1.50; wing, 5.90; tail, 5.70;

bill, 1.80. *Hab.* Colorado and Cape St. Lucas region of Southern Middle Province of United States. (*The Cape-Flicker.*)

B. Mustache black; a red nuchal crescent. Throat pinkish, hood ashy.

3. **C. auratus.** Shafts, etc., gamboge-yellow; upper parts olivaceous-brown, with narrow bars of black, about half as wide as the brown.

Rump immaculate; black terminal zone of under surface of tail broad, more than half an inch wide on outer feather. Edges of tail-feathers narrowly edged, but not indented, with whitish. Outer web of lateral feathers without spots of dusky. Length, 12.50; wing, 6.10; tail, 4.80; bill, 1.58. *Hab.* Eastern Province of North America. (*Yellow-shafted Woodpecker, Flicker, Yellow-hammer, High-holder.*) var. *auratus.*

FAMILY PSITTACIDÆ. — THE PARROTS.

CHAR. Bill greatly hooked; the maxilla movable and with a cere at the base. Nostrils in the base of the bill. Feet scansorial, covered with granulated scales. Nesting generally in hollow trees; the eggs white. The American subfamilies are distinguished as follows, both having the head plain or without crest.

I. **Sittacinæ.** Tail long, or lengthened, wedge-shaped or graduated.

II. **Psittacinæ.** Tail short or moderate, straight or rounded.

SUBFAMILY SITTACINÆ.

Sittace. Culmen flattened. Face naked, except in *S. pachyrhyncha*. Tail as long as or longer than wings. Mexico and Southwest.

Conurus. Culmen rounded. Face entirely feathered, except a curve around the eye. Tail shorter than wings.

GENUS CONURUS, KUHL.

C. carolinensis. ♂. Green; outer webs of primaries yellow at base; edge of wing yellow, tinged with red; tibiæ yellow. Bill white; legs flesh-color. Head and neck all round gamboge-yellow; forehead and sides of head red. ♀ differs in absence of yellow on head, tibiæ, and edge of wing. Young without red. Iris brown. Length, 13.00; wing, 7.50; tail, 7.10. *Hab.* Southern and Southwestern States; extending up the Mississippi Valley. (*Carolina Parrot, Parakeet.*)

FAMILY COLUMBIDÆ.—THE PIGEONS.

CHAR. The basal portion of the bill covered by a soft skin, in which are situated the nostrils, overhung by an incumbent fleshy valve, the apical portion hard and convex. The hind toe on the same level with the rest; the anterior toes without membrane at the base. Tarsi more or less naked; covered laterally and behind with hexagonal scales. Nest variable, usually on trees, sometimes on ground, generally loosely put together. Eggs always white; usually two in number, rarely three or one.

Columbinæ. Tarsus shorter than the lateral toe; feathered above. (Page 104.)

Zenaidinæ. Tarsus longer than the lateral toes; entirely bare of feathers. (Page 105.)

SUBFAMILY COLUMBINÆ.

Columba. Head large; tail short, broad, and rounded.

Ectopistes. Head very small; tail much lengthened, cuneate. (Page 105.)

GENUS COLUMBA, LINNÆUS. (Page 105.)

A. Tail with a broad terminal band abruptly lighter in color than the basal portion, and with a more or less well-defined blackish band across the middle. Nape with metallic reflections.

a. A narrow nuchal band of white; the metallic feathers beneath this, with their outlines distinct, producing a squamate appearance.

1. **C. fasciata.** Blackish band across the middle of the tail narrow, and badly defined, and concealed by the coverts; terminal portion of the tail much lighter than the basal part. Bill yellow, tipped with black. Legs yellow; crissum whitish; hood and anterior lower parts ashy vinaceous-purple; dorsal region ashy. Iris carmine, edged with gold. Length, 15.00; wing, 8.80; tail, 6.10; tarsus, 1.13. *Hab.* Pacific Province of the United States, south to Guatemala. (*Band-tailed Pigeon.*) var. *fasciata.*

B. Tail of a uniform shade throughout.

b. A metallic "cape" on the nape, each feather bordered with black, producing a conspicuously squamate appearance; above this, a broad, transverse, crescentic patch of dark maroon color. No vinaceous tints on the body.

2. **C. leucocephala.** Hood white; metallic cape brassy-green; throat, cheeks, etc., dark plumbeous-slate, like the rest of the plumage. Bill yellow only at the tip. Iris white or yellow. Length, 13.50; wing, 7.70; tail, 5.50; culmen, .66; tarsus, 1.00; middle toe, 1.25; outer, .85; inner, .83. *Hab.* Cuba, and south Florida. (*White-headed Pigeon.*)

c. No metallic reflections on the nape.

3. **C. flavirostris.** Head and neck, all round, lower parts to the anal region, and a patch on the lesser wing-coverts, reddish chocolate-purple. Rest of plumage slaty-blue, darker on tail and primaries, and more olivaceous on the dorsal region. Feathers of the forehead reaching forward to the anterior end of the nasal lobe, and wholly covering the cere on top. Culmen much arched. Bill and claws yellow in skin;

said to be purple in life. Iris purple. Length, 14.00; wing, 7.80; tail, 5.40; culmen, .52; tarsus, 1.03; middle toe, 1.15; outer, .82; inner, .75. *Hab.* Middle America, and southern borders of Middle Province of United States, from Arizona and the Rio Grande; south to Costa Rica. (*Red-billed Pigeon*; *Red Dove*.)

GENUS **ECTOPISTES**, SWAINSON. (Page 104.)

E. migratoria. Prevailing color blue; beneath purplish-red, passing into bluish-white on the under tail-coverts; sides of neck glossed with metallic reddish-purple. Blue-black spots on wings (not on quills) partially concealed. Tail-feather white on inner web, with a rufous and black patch. Bill black; feet red; iris red. Length, 17.00; wing, 8.50; tail, 8.40. *Female.* Smaller and duller, ashy beneath. *Hab.* North America to high central plains, Nevada; Cuba. (*Wild, or Passenger Pigeon*.)

SUBFAMILY **ZENAIDINÆ**. (Page 104.)

Zenaideæ. Size moderate. Wings lengthened, acute, the primaries much longer than the secondaries. Tarsus scutellate anteriorly. A blackish spot beneath the auriculars; tail-feathers tipped with white, and with a blackish subterminal bar. Sides of the neck with a metallic gloss.

Bill lengthened, much depressed. A white patch on the wing; no black spots on the scapulars; plumage ashy, lighter beneath. Tail of twelve feathers, rounded. Iris purple. (Page 106.) *Melopelia.*

Bill smaller, more compressed. No white patch on the wing; scapulars with black spots, and black spots below the ear. Above olivaceous, beneath vinaceous. Sides of body and inside of wings blue. Iris brown.

Tail of twelve feathers rounded. (Page 106.) *Zenaida.*

Tail of fourteen feathers, graduated or embeate. (Page 106.) *Zenaidura.*

Chamæpelieæ. Size very small. Wings rounded, the primaries scarcely longer than the tertials. Tarsus scutellate anteriorly. No blackish spot beneath the auriculars; no metallic gloss on sides of the neck. Tail of twelve feathers. Iris purple or red.

Tail lengthened (much longer than wings), doubly rounded, the lateral feathers much shorter; the three outer pairs with white terminally. (Page 106.) *Scardafella.*

Tail short (much less than wings), simply rounded, the lateral feathers only slightly shorter; outer feathers without white terminally, or with only a slight edging. Wing-coverts with oblique black spots, and body without transverse blackish bars. Outside of the tarsus without a feathered strip; lining of the wing wholly rufous. (Page 106.) *Chamæpelia.*

Starnœnadeæ. Size moderate (generally a little larger than *Zenaida*); form robust, or quail-like. Legs very stout; tarsi decidedly longer than the middle toe, variously scaled anteriorly. Wings short, very broad, and much rounded, but the primaries decidedly longer than the secondaries.

Legs very stout; tarsi covered with hexagonal scales; crown blue; a black gular patch, bordered below by white. Iris "brown." (Page 107.)

Starnœnas.

Legs moderate; tarsi covered anteriorly with transverse scutellæ. Crown never blue, and throat without black or white markings. Iris "carmines." (Page 107.) *Oreopeleia.*

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GENUS **MELOPELIA**, BONAP. (Page 105.)

M. leucoptera. Light ashy; olivaceous above; anal region whitish. A large patch on wing-coverts and ends of secondaries, white. Tail-feathers with a subterminal blackish band. A steel blue-black spot below the ears. Bill black; iris and legs purple. Length, 11.00; wing, 6.80; tail, 5.10. *Hab.* Southern borders of United States to Lower California, south to Costa Rica; Cuba and Jamaica. * (*White-winged Dove*.)

GENUS **ZENAIDA**, BONAP. (Page 105.)

Z. amabilis. Reddish all over; olivaceous above. Inside of wings, sides, and upper surface of tail-feathers except median, blue. Secondaries tipped with white. Tail-feathers with subterminal band of black, the tips whitish. Bill black; feet red; iris brown. Length, 10.00; wing, 6.00; tail, 4.00. *Hab.* Florida Key and West Indies. (*Zenaida Dove*.)

GENUS **ZENAIDURA**, BONAP. (Page 105.)

Z. carolinensis. Above bluish, washed with olive; beneath vinaceous, tinged with purple on the breast; sides of neck glossed with metallic purple, crissum nearly white. Tail with fourteen tail-feathers, which are dusky, and mostly with a subterminal blackish bar. Secondaries not tipped with white. Bill black; legs red. Iris hazel. Length, 3.00; wing, 5.90; tail, 6.00. *Hab.* Whole of North America, south to Panama; West Indies. (*Carolina Dove*.)

GENUS **SCARDAFELLA**, BONAP. (Page 105.)

S. inca. Brownish-gray above, paler, and with a vinaceous cast anteriorly, beneath. Each feather with a terminal dusky crescentic bar, producing a squamate appearance; inner webs of quills chestnut; axillars black; about terminal half of three outer tail-feathers white. No white patch on wings; abdomen and crissum pale ochraceous. Black bars very faint on breast, obsolete on throat. Bill black; legs and eyes purple. Length, 8.50; wing, 3.75; tail, 4.40. *Hab.* Mexico and Guatemala; Rio Grande of Texas, to Cape St. Lucas. (*Inca Dove*.)

GENUS **CHAMÆPELIA**, SWAINSON. (Page 105.)

C. passerina. Above grayish-olive; forehead, sides of head and neck, lesser upper coverts and beneath, purplish-red; feathers of head, neck, and fore-breast margined with dusky. Tail-feathers black (except middle), the outer edged towards tip with white; outside of wing with black, violet, and blue blotches. Bill, feet, and iris red. *Female* duller and more ashy. Length, 6.30; wing, 3.50; tail, 2.80. *Hab.* Southern Atlantic and Gulf States, whole of Mexico (including Lower California), Central America, New Granada, Venezuela, and West Indies. (*Ground Dove*.)

GENUS **OREOPELEIA**, REIS. (Page 105.)

O. martinica. Above chestnut-rufous, the crown and nape with purplish-green, the lower part of nape with golden-green, the back with violet, the other upper parts with bright purplish-red reflections; beneath pinkish-white, more purplish on the jugulum. A distinctly marked light stripe on the cheek, bordered below by one of purplish-red. Eye carmine. Length, 10.70; wing, 6.20; tail, 5.75. *Hab.* Key West, Florida, (?) Cuba, and Martinique. (*Key West Pigeon*.)

GENUS **STARNÆNAS**, BONAPARTE. (Page 105.)

S. cyanocephala. Above olivaceous-chocolate; beneath red; crown blue; chin and throat black, bordered below by white; a white line from chin under the eye to the occiput; the side of head above this, and forehead, black. Bill blue; carmine at base. Legs carmine. Iris brown. Length, 10.70; wing, 5.40; tail, 4.35. *Hab.* West Indies; very occasional in Keys of South Florida. (*Blue-headed Pigeon.*)

FAMILY **CRACIDÆ.** — THE CURASSOWS.

CHAR. Body large, but rather slender; bill more or less arched; tail lengthened; legs long, robust, without any spur. Toes moderate, slender, the hinder scarcely elevated. Naked spaces frequently occurring on the head and throat.

Penelopinae. Upper mandible broader than high; culmen depressed. Top of head covered with feathers; space between the nostrils naked; nostrils exposed.

GENUS **ORTALIDA**, MERREM.

No fold of skin along central line of throat, which, however, is naked, with a central stripe of bristly feathers. Outer quills entire, not emarginated. Nest usually in a hole scratched in the ground and lined with leaves; eggs six to eight, yellowish-white, with a granulated shell. Habits arboreal.

O. vetula, var. **maccalli.** Body above dark greenish-yellow, tinged with olive. Head and upper part of neck plumbeous. Tail-feathers lustrous green, all tipped with white except the middle one. Feathers along the middle of the throat black; outer edge of primaries tinged with gray. Eyes brown. Bill and feet lead-colored. Length, 23.50; wing, 8.50; tail, 11.00. *Hab.* Valley of the Rio Grande, and southward to Guatemala. (*Chacalaca*; *Texas Guan.*)

FAMILY **MELEAGRIDÆ.** — THE TURKEYS.

CHAR. Bill moderate; the nasal fossæ bare. Head and neck without feathers, but with scattered hairs, and more or less carunculated. An extensible fleshy process on the forehead, but no development of the bone. Tarsus armed with spurs in the male. Hind toe elevated. Tail nearly as long as the wing, truncate, of more than twelve feathers.

GENUS **MELEAGRIS**, LINNÆUS.

GEN. CHAR. Legs with transverse scutellæ before and behind; reticulated laterally. Tarsi with spurs. Tail rounded, rather long, usually of eighteen feathers. Forehead with a depending fleshy cone. Head and the upper half of the neck without feathers. Breast of male in most species with a long tuft of bristles. Eggs cream-color, quite uniformly spotted with brown.

M. gallopavo. Head livid blue, legs red, general color copper-bronze, with copper and green reflections, each feather with a velvet-black margin; all the quills brown, closely barred with white. Tail-feathers chestnut, narrowly barred with black; the tip with a very broad subterminal black bar. Bill and

iris brown; legs red; naked skin of head and neck blue; the wattles red. Length, 48.00 - 50.00; wing, 21.00; tail, 18.50; weight, 16 - 30 pounds. *Female*. Weight 12 pounds; smaller and less brilliant.

Tail-coverts dark purplish-chestnut throughout, with the tips not lighter.

Tip of tail-feathers scarcely paler chestnut than the ground-color. *Hab.*

Eastern Province of United States. (*American Wild Turkey*.) var. *gallopavo*.

Tail-coverts chestnut, the tips much paler, sometimes almost white. Tip of tail-feathers light brownish-yellow or white; sometimes with the coverts broadly whitish. *Hab.* Southern portion of Western Province of United

States, from Texas to Arizona. Table-lands of Mexico, south to Orizaba, Mirador, etc. (*Mexican Wild Turkey*.) var. *mexicanus*.

FAMILY TETRAONIDÆ. — THE GROUSE.

CHAR. Tarsi densely feathered; sometimes the toes also. Nasal fossæ filled by feathers which conceal the nostrils. Tail variable; feathers sixteen to twenty. A bare space about the eyes. Frequently with an inflatable air-sac on the sides of the neck. Iris brown or hazel. Nest placed on the ground. Eggs numerous; six to fourteen; small for the size of the bird; their color varying with the species.

A. Legs feathered to and on the basal membrane of the toes, which are themselves bare. No ruff on the side of the neck, which, however, has an extensible bare space.

Canace. Tail broad, nearly even, or truncate, and rounded laterally, two thirds the wing; no crest or lengthened feathers. Nasal fossæ scarcely half the culmen. Western races with more even tails. (Page 109.)

Centrocerus. Tail excessively lengthened and cuneate; longer than the wings. Nasal fossæ two thirds the culmen. Shafts of feathers on the lower throat very spinous. (Page 110.)

Pediceetes. Tail very short, but graduated, and with the two middle feathers (perhaps tail-coverts) lengthened beyond the rest, and two thirds as long as the wing; the next longest half the wing. Nasal fossæ not half the length of culmen. Shafts of throat-feathers normal. (Page 110.)

B. Legs feathered to the lower end of tarsus. A pointed ruff on each side of neck.

Cupidonia. Tail very short, truncate, but laterally graduated; half the wings. Sides of neck with long, pointed, or lanceolate, stiff feathers. Nasal fossæ scarcely one third the culmen. (Page 111.)

C. Legs feathered to the claws. No ruff.

Lagopus. Tail about two thirds the wing, truncate; of sixteen to eighteen feathers. Most species becoming white in winter; none of the other genera exhibiting this peculiarity. (Page 111.)

D. Lower half of tarsi bare, with two rows of scutellæ anteriorly. A broad ruff.

Bonasa. Sides of neck with a ruff of broad, truncate, soft feathers. Tail very broad, square, as long as the wings. (Page 112.)

GENUS CANACE, REICHENBACH. (Page 108.)

Canace. Tail of sixteen feathers; no air-sac on side of the neck. Size small.

Dendragapus. Tail of twenty feathers; an inflatable air-sac on side of the neck. Size large.

SUBGENUS **CANACE**, REICHENBACH. (Page 108.)

C. canadensis. Above distinctly barred with plumbeous and black; beneath black, with a white border to the throat, a white pectoral band, and white markings on the sides. *Female* barred with ochraceous, gray and black above, and with orange-ochraceous and black on the lower parts. Length, about 16.25; wing, 7.00; tail, 5.50. Eggs ochrey-cream color, coarsely blotched with chestnut-brown, about 1.75 by 1.20.

Tail rounded, tipped with rufous; upper tail-coverts tipped narrowly with deep ash. *Hab.* British America, east of the Rocky Mountains, from Alaska (Yukon region) to northern border of United States. (*Canada Grouse*; *Spruce Partridge*.) . . . var. *canadensis*.

Tail nearly even, black to the tip, or else with a narrow white terminal bar; upper tail-coverts broadly tipped with pure white. *Hab.* Northern Rocky Mountains to the Pacific coast. (*Franklin's Grouse*.)
var. *franklini*.

SUBGENUS **DENDRAGAPUS**, ELLIOT. (Page 108.)

C. obscurus. Above nearly uniform plumbeous-dusky, minutely mottled on the wings. Tail uniform black, with or without a lighter terminal band, and sometimes finely and obscurely mottled above. Lower parts nearly uniform clear plumbeous, or blackish-dusky; a dusky half-collar on the throat; chin and throat white, variegated with dusky. Length, about 20.50; wing, 9.40; tail, 7.45. *Female* smaller, the colors more variegated, with the dusky less continuous, and less in amount. Eggs pale cream-color, rather finely marked with small rounded spots of reddish-brown, most decided towards larger end.

A. Tail rounded, with a distinct terminal band of clear plumbeous.

Above brownish-ashy, minutely mottled (transversely) with dusky and, to a less extent, with yellowish-brown. Beneath fine pure ashy. *Hab.* Sierra Nevada (from Fort Crook southwards) and Rocky Mountains, from the Hellgate region to New Mexico. Eggs about 1.95 by 1.45. (*Dusky Grouse*; *Blue Grouse*.) . . . var. *obscurus*.

Above brownish-black, minutely and sparsely mottled with slate and rusty-brown. Beneath dark plumbeous. (In northern specimens, especially in females from Sitka, much washed with dark castaneous-rusty.) *Hab.* Northwest coast mountains, from Oregon to Sitka. (*Sooty Grouse*.) . . . var. *fuliginosus*.

B. Tail nearly even, and without any terminal lighter band, or else having it badly defined.

Colors, in other respects, of var. *obscurus*, but cheeks, etc., less dusky. *Hab.* Rocky Mountains of British America, south to the Yellowstone and Hellgate region of United States (where grading into var. *obscurus*.) Eggs smaller than in var. *obscurus*, about 1.75 by 1.35. (*Richardson's Grouse*.) . . . var. *richardsoni*.

GENUS **CENTROCERCUS**, SWAINSON. (Page 108.)

C. urophasianus. Tail-feathers twenty. Above varied with black, grayish-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. *Male*. Length, 33.00; wing, 13.00; tail, 13.00. *Female*. Length, 21.50; wing, 10.75; tail, 7.50. *Chick*. Upper surface brownish-gray, lower grayish-white. Above irregularly and coarsely marbled with black, the markings most conspicuous on the head. Bill black. Eggs drab, thickly freckled with small rounded spots of reddish-brown and dark chestnut, 2.20 by 1.50. *Hab*. Plains of the northwest. (*Sage-Cock*; *Cock of the Plains*.)

GENUS **PEDICECETES**, BAIRD. (Page 108.)

P. phasianellus. Above variegated with transverse spots of yellowish-brown and black; wing-coverts with large, roundish white spots; outer webs of primaries with quadrate white spots. Beneath white anteriorly and along the sides, with V-shaped marks of brown or dusky. Sexes alike in color and size. Average length, 18.00; wing, 8.50; tail, 5.50. (*Sharp-tailed Grouse*.)

Above blackish-dusky, variegated transversely with yellowish-brown; scapulars with broad white medial longitudinal streaks of white. Markings below clear, uniform blackish-dusky. Toes entirely hidden by the long hair-like feathers of the tarsus. Head and neck with the ground-color white, the throat heavily spotted with dusky. Eggs rather dark clay-color; sometimes finely speckled with brown; about 1.80 by 1.31. *Hab*. British America to Arctic regions. (*Hudson Sharp-tail*.) var. *phasianellus*.

Above yellowish-brown, mixed with reddish, and variegated transversely with black; scapulars without white longitudinal spots. Markings beneath clear pale brown, with dusky borders. Toes entirely bare. Head and neck deep buff, the throat not spotted. Eggs similar, but of lighter ground. *Hab*. Prairies and plains of northern U. S., from Wisconsin and Illinois to Oregon. (*Columbia Sharp-tail*.)

var. *columbianus*.

GENUS **CUPIDONIA**, REICHENBACH. (Page 108.)

C. cupido. Ground-color above yellowish-brown, tinged with grayish and reddish; beneath white; whole upper and lower parts variegated with transverse bands, — those beneath regular, broad, sharply defined, and plain dusky-brown, those above more broken, broader, and deep black. Head buff, with a broad vertical stripe, a broad one beneath the eye from bill to ears, and a patch on lower side of auriculars, brownish-black. Eggs clay-color; generally uniform or unspotted, sometimes finely dotted, about 1.70 by 1.25. (*Prairie Chicken*; *Pinnated Grouse*.)

Tarsi clothed with long hair-like feathers, the bare posterior face entirely hidden. Dark bars above, .30 or more in width, deep black; those beneath, about .20 wide, and dark brown. Top of head nearly uniformly blackish; face-stripes dusky-black. Length, 16.50; wing, 9.00; tail, 4.70. Bill, .40 deep, .50 long. *Hab*. Prairies of the Mississippi Valley; south to Louisiana; formerly eastward to Long Island and Pennsylvania var. *cupido*.

Tarsi clothed with short feathers, the bare posterior face conspicuously exposed. Dark bars above less than .20 in width, dark grayish-brown; those beneath about .10 wide, and pale grayish-brown. Top of head

with only a slight spotting of blackish; face-markings reddish-brown. Length, 14.50; wing, 8.30; tail, 4.15. Bill, .35 deep, .55 long. from nostril. *Hab.* Southwestern prairies (Texas?) . var. *pallidicinctus*.

GENUS **BONASA**, STEPHENS. (Page 108.)

B. umbellus. Rump with cordate light spots; sides with transverse dark spots. Tail with two gray bands (one terminal), with a broad blackish zone between them. Cervical tufts glossy black or dark brown, with a semi-metallic steel-blue or green border. Eggs generally uniform yellowish-brown or cream color, occasionally sparsely spotted or blotched.

Prevailing color bright ochraceous-rufous; tail always rufous in the Middle and Southern States, occasionally gray on the Alleghany Mountains, and in New England States; usually gray in Eastern British America. Length, 18.00; wing, 7.20; tail, 7.00. *Hab.* Eastern Province of North America. (*Partridge*; *Pheasant*; *Ruffed Grouse*.) var. *umbellus*.

Prevailing color bluish-ashy; tail always pale ash. *Hab.* Rocky Mountains of United States, and interior regions of British America, to the Yukon. (*Gray Grouse*.) var. *umbelloides*.

Prevailing color dark ferruginous; tail always dark ferruginous near the coast, occasionally dark gray in mountainous regions. *Hab.* Northwest coast region (Oregon, Washington, British Columbia, etc.). (*Oregon Grouse*.) var. *sabini*.

GENUS **LAGOPUS**, VIEILLOT. (Page 108.)

COMMON CHARACTERS. Plumage of various shades of gray, brown, or rufous during summer; in winter very generally becoming pure white, with or without a black loreal stripe and black tail-feathers. Eggs strongly marked, of a deep reddish or reddish-cream color, with well-marked crowded blotches of dark purple, claret, or brown (sometimes wood-brown); eggs perhaps more gray in *leucurus*. Iris brown. Females considerably smaller than males.

A. Tail-feathers always with more or less black.

1. **L. albus.** Bill large, stout; the length from the nasal groove less, or not more, than the height through the base. Male in winter without black stripe on lores.

Summer. Male (Fort Anderson, September 8). Head, neck, and jugulum deep cinnamon-rufous; whole upper parts (except wings) paler, more fulvous, brown broadly and closely barred with black. Top of head spotted with black, and the jugulum and neck with scattered bars of the same. Length, 15.50; wing, 7.50; bill, .40 from nostril, and .35 deep. *Female* (Fort Anderson, June, 1865). Entire plumage (except wings, tail, and legs) fulvous-buff, heavily spotted and barred above, and regularly barred beneath, with black. *Hab.* Northern Europe and northern North America. (*Willow Grouse*; *White Partridge*.) var. *albus*.

2. **L. mutus.** Bill small, slender, the length from the nasal groove to the tip decidedly more than the height through the base. Male in winter with a black stripe on the lores.

♂ in summer with uniform black feathers on the breast; autumnal plumage bluish-gray, mottled. *Hab.* Northern Europe. (*Piarmigan*.)

var. *mutus*.

♂ in summer without uniform black feathers on the breast. Autumnal plumage orange-rufous.

Male. In summer the feathers of back black, banded distinctly with yellowish-brown and tipped with white. Size considerably less than that of *L. albus*. Length, about 14.50; wing, 7.50; tail, 4.50.

Female in summer (Barren Grounds, June 29, 1864). Wings (except upper coverts) and legs white; tail (except intermediae) black, narrowly tipped with white. Rest of plumage light ochraceous or buff, some feathers tipped with white, and all with broad transverse bars of black, this color prevailing on the dorsal region. On the lower surface the buff bars exceed the black ones in width. *Hab.* Arctic America. (*Rock Grouse.*) var. *rupestris*.

B. Tail-feathers entirely pure white.

3. **L. leucurus.** Winter plumage wholly white.

Summer. Wings, tail, abdomen, crissum, and legs immaculate snowy-white. Ground-color of rest of plumage grayish-white on head and neck and ashy buff on other portions, finely, and rather sparsely, sprinkled with black, — more in form of ragged transverse bars anteriorly and on sides. Length, 13.00; wing, 6.70; tarsus, 1.00; middle toe, 1.00; bill, .35 by .20. *Hab.* Alpine summits of the Western mountain-ranges, from Colorado to Oregon and Washington, and north into British America. (*White-tailed Ptarmigan.*)

FAMILY PERDICIDÆ. — THE PARTRIDGES.

SUBFAMILY ORTYGINÆ.

CHAR. Bill stout, the lower mandible more or less bidentate on each side near the end. Iris varying with the species. Eggs varying in color with species.

a. Head without crest.

Ortyx. Tail not much more than half the wings; outstretched feet reaching beyond the tail. Eyes brown. Eggs pure white. (Page 113.)

b. Head with a crest of a few long, narrow, erect, and keel-shaped feathers.

Oreortyx. Crest-feathers very long, linear; tail scarcely more than half the wings; bill stout; claws blunt, the lateral not reaching the base of the middle claw. Toes of the outstretched foot reaching beyond the tail. Iris "red" (*Aud.*). Eggs uniform creamy-fulvous. (Page 113.)

Lophortyx. Crest-feathers widening much terminally, and recurved at the ends. Tail nearly or quite as long as wings. Bill rather small. Claws acute, the lateral reaching to the base of middle one. Toes not reaching the tip of tail. Iris brown or whitish. Eggs variable, always strongly blotched. (Page 114.)

c. Crest soft, full, and tufted; composed of short, broad, and depressed feathers.

Callipepla. Crest springing from the crown. Wing-coverts normal. Tail stiffened, nearly as long as the wings. Claws small, acute; outstretched feet not reaching the tip of tail. Iris brown. Eggs creamy-white, minutely freckled with specks of pale drab. (Page 114.)

Cyrtonyx. Crest occipital. Wing-coverts greatly developed. Tail very small and soft; half as long as the wings. Toes short; claws very long, blunted; outstretched feet reaching much beyond the tip of the tail. Iris brown. Eggs unknown. (Page 114.)

GENUS **ORTYX**, STEPHENS. (Page 112.)

O. virginianus. Head longitudinally striped, with a dark superior and lateral stripe, a light superciliary stripe (continuing down the side of the neck), and a light gular patch; these stripes blackish and pure white in the male, and rusty and ochraceous in the female. Above mottled with rusty and grayish; the latter prevailing posteriorly, the former anteriorly. Upper part of the rump, scapulars, and upper wing-coverts more or less blotched with black. Beneath white, with transverse, somewhat V-shaped bars of black; sides striped with rufous; lower tail-coverts rufous, with black medial arrow-head, and both webs tipped with roundish spots of rusty white. In the female the white markings of head replaced by brownish-yellow, the black ones with brownish.

Reddish tints prevailing; these nearly continuous on the upper parts, where the mottlings are minute. Distinct black blotches on the scapulars, tertials, and upper part of rump. Length, 10.00; wing, 4.25 (Southern Illinois, Missouri, etc.) to 4.80 (northeastern United States). *Hab.* Eastern Province of the United States; Jamaica? (*Virginia Partridge*; *Quail*; *Bob-White*). . . . var. *virginianus*.

Grayish tints prevailing; no continuous color on the upper parts, where the mottlings are coarse and general. No distinct black blotches on the scapulars, etc. Gular black collar narrower. Length, 9.00; wing, 4.10 to 4.50. *Hab.* Plains, from Texas to Kansas (where it grades into *virginianus*). (*Texas Quail*). . . . var. *texanus*.

Smaller, with larger bill; colors darker, the black more extended. Wing, about 4.25. *Hab.* Florida. (*Florida Quail*). . . . var. *floridanus*.

GENUS **OREORTYX**, BAIRD. (Page 112.)

O. pictus. Length, about 11.00; wing, 5.25. Head with a crest of two very long, linear, nearly straight black feathers, springing from the middle of the crown. Above olive, the tertials bordered with white internally; head and breast plumbeous. A patch covering cheeks and throat rich chestnut, bordered by a white stripe; posterior half of the body beneath rich chestnut, the sides and flanks with broad transverse bars of black and white; femorals rufous; crissum black. Sexes alike.

Pure ash confined to the pectoral region; the russet-brown or rusty-olivaceous of the upper parts covering whole neck and crown; forehead entirely ashy. ♂. Length, 10.50; wing, 5.25; tarsus shorter than middle toe (1.27; middle toe, 1.30). *Hab.* Washington Territory, Oregon, and upper coast region of California. (*Mountain Quail*). . . . var. *pictus*.

Pure ash covering whole pectoral region, and crown, nape, and upper part of back; the grayish-olivaceous above confined to the posterior parts. Forehead distinctly whitish. Wing, 5.25; tarsus longer than middle toe, (1.27; middle toe, 1.25). *Hab.* Sierra Nevada, and Southern California to Cape St. Lucas. (*Plumed Quail*). . . . var. *plumiferus*.

GENUS **LOPHORTYX**, BONAPARTE. (Page 112.)

COMMON CHARACTERS. Anterior half of the body, and the upper parts generally, plumbeous; the feathers of neck above, and on the sides, pointed and margined with black. There is a white bar across the head above, between the eyes, which, passing backwards, is bordered behind and internally by black; a second commences at the posterior border of the eye and then borders the black of the chin and throat laterally and behind, the black reaching up to the eye and bordered anteriorly by a white line from eye to bill; belly pale buff, with a large spot in the centre; the flanks streaked with white. Length, 9.50; wing, 4.32; tail, 4.12.

L. californicus. Vertex and occiput light smoky olive-brown; forehead whitish; patch in the middle of the belly orange-chestnut; feathers of breast with narrow black edges; sides of body olivaceous-plumbeous. "Iris hazel" (AUD.). Eggs creamy-white, freckled or blotched, finely or coarsely, with drab to chestnut-brown. *Hab.* Pacific slope of United States; south to Cape St. Lucas. (*California Quail*.)

L. gambeli. Vertex and occiput clear chestnut-brown; forehead blackish; patch in middle of belly black; none of the belly-feathers with black edges; sides of body bright chestnut. Iris reddish-white (COUES); "brown" (COUES and POPE). Eggs creamy-white, with blotches of drab chestnut. *Hab.* Colorado Valley of United States, north to Southern Utah, and east to Western Texas.

GENUS **CALLIPEPLA**, WAGLER. (Page 112.)

C. squamata. The single United States species is of a bluish tint, without any marked contrast of color. The feathers of the neck, breast, and belly have a narrow edging of black. Length, about 9.50; wing, 4.80. Head with a soft short crest of white feathers springing from the crown. Head plain light brownish-gray, paler on the throat; neck and breast light bluish-plumbeous, lighter and more glaucous beneath, each feather conspicuously bordered terminally with black, producing a scaly appearance; flanks grayish-brown, streaked with white. Body above, with wings and tail, plain brownish-gray, the tertials bordered internally with white. Abdomen sometimes with a patch of dark rusty. Sexes alike. Length, 9.50; wing, 4.80; tail, 4.10. *Hab.* Valley of Rio Grande, and west to Tucson. (*Blue or Scaled Partridge*.)

GENUS **CYRTONYX**, GOULD. (Page 113.)

C. massena. *Male.* Head striped with white, black, and lead-color; chin black. Feathers above streaked centrally with whitish, those on the outer surface of the wings with two series of rounded black spots. Central line of breast and belly dark chestnut; the abdomen, thighs, and crissum black; the sides of breast and body lead-color, with round white spots. Legs blue. Length, 8.75; wing, 7.00; tail, 2.50.

Female. Prevailing color light vinaceous-cinnamon, the upper parts barred and streaked as in the male. Head without white or black stripes. Sides with a few narrow, irregular streaks of black.

Young. Somewhat similar to the adult female, but lower parts whitish; the feathers, especially on the breast, with transverse blackish spots on both webs.

HAB. Rio Grande region (occasional near San Antonio) and table-lands of Mexico. Tucson and Fort Whipple, Arizona. Eggs unknown. (*Massena Quail*.)

RAPTORES. Bill hooked, the upper mandible furnished at the base with a soft skin, or cere, in which the nostrils are situated. Toes three before and one behind.

Strigidæ. Eyes directed forwards, and surrounded by radiating feathers, which are bounded, except anteriorly, by a circle, or rim, of differently formed, stiffer feathers. Outer toe reversible. Claws much hooked and very sharp. Legs and toes usually feathered, or at least coated with bristles. Eggs always white. (Page 115.)

Falconidæ. Eyes lateral, and not surrounded by radiating feathers. Head more or less completely feathered. Outer toe not reversible (except in *Pandion*). Claws usually hooked and sharp, but variable. Eggs variable in color. (Page 123.)

Cathartidæ. Eyes lateral; whole head naked. Outer toe not reversible; claws slightly curved, blunt. Eggs variable in color. (Page 123.)

FAMILY STRIGIDÆ. — THE OWLS.

A. Inner toe equal to the middle in length; inner edge of middle claw pectinated. First quill longer than the third; all the quills with their inner webs entire, or without emargination. Tail emarginated. Feathers of the posterior face of the tarsus recurved, or pointed upwards. Eggs always white.

1. **Strix.** No ear-tufts; bill light-colored; eyes black; tarsus nearly twice as long as middle toe; toes scantily haired. Size medium. Ear-conch nearly as long as the height of the skull, with an anterior operculum for only a portion of its length; symmetrical. (Page 117.)

B. Inner toe decidedly or much shorter than the middle; inner edge of middle claw not pectinated. First quill shorter than the third; one to six outer quills with their inner webs emarginated. Tail rounded. Feathers of the posterior face of the tarsus not recurved, but pointed downwards.

I. Nostril open, oval, situated in the anterior edge of the cere, which is not inflated.

a. Cere, on top, equal to, or exceeding, the chord of the culmen; much arched. Ear-conch nearly as long as the height of the skull, with the operculum extending its full length; asymmetrical.

2. **Otus.** One or two outer quills with their inner webs emarginated. With or without ear-tufts. Bill blackish; iris yellow. Size medium. (Page 117.)

Ear-tufts well developed; only one quill emarginated. (Page 117.)

Ear-tufts rudimentary; two quills emarginated. (Page 118.) *Otus.*

b. Cere, on top, less than the chord of the culmen; gradually ascending basally, or level (not arched). Ear-conch nearly the height of the skull, with the operculum extending only a part of its full length, or wanting entirely.

† Anterior edge of the ear-conch with an operculum; the two ears asymmetrical. *Brachyotus.*

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3. **Syrnium.** Five to six outer quills with their inner webs emarginated. Top of cere more than half the culmen. Without ear-tufts. Bill yellow; iris yellow or black. Size medium or large. (Page 118.)

Six quills emarginated; toes densely feathered, the terminal scutellæ concealed; iris yellow. Size very large.

(Page 118.) *Scotiapter.*

Five quills emarginated; toes scantily feathered, the terminal scutellæ exposed; iris black. Size medium.

(Page 118.) *Syrnium.*

4. **Nyctale.** Two outer quills with inner webs emarginated. Top of cere less than half the culmen, level. Without ear-tufts. Bill yellow or blackish; iris yellow. Size small. (Page 119.)

† Anterior edge of the ear-conch without an operculum. The two ears symmetrical. Tail slightly rounded, only about half as long as the wing.

5. **Scops.** Two to five quills with inner webs emarginated; second to fifth longest. Bill weak, light-colored; iris yellow. Ear-conch elliptical, about one third the height of the head, with a slightly elevated fringed anterior margin. Size small; ear-tufts usually well developed, sometimes rudimentary. (Page 119.)

6. **Bubo.** Two to four outer quills with inner webs emarginated; third to fourth longest. Bill robust, black; iris orange-yellow. Ear-conch elliptical, simple, from one third to one half the height of the skull. Size large. Ear-tufts well developed or rudimentary. (Page 120.)

Ear-tufts well developed. Two to three outer quills with inner webs emarginated; lower tail-coverts not reaching end of the tail. Toes covered with short feathers, the claws exposed, and bill not concealed by the loreal feathers. (Page 120.)

Bubo.

Ear-tufts rudimentary. Four outer quills with their inner webs emarginated; lower tail-coverts reaching end of the tail. Toes covered with long feathers, which hide the claws, and bill nearly concealed by the loreal feathers. (Page 121.)

Nyctea.

†† Similar to the last, but the tail graduated, nearly equal to the wing.

7. **Surnia.** Four outer quills with inner webs emarginated. Third quill longest. Bill strong, yellow; iris bright yellow. Ear-conch simple, oval, less than the diameter of the eye. Size medium; no ear-tufts. (Page 121.)

II. Nostril, a small circular opening into the surrounding inflated membrane of the cere. Ear-conch small, simple, oval, or nearly round, without an operculum.

First quill shorter than the tenth.

8. **Glaucidium.** Third to fourth quills longest; four emarginated on inner webs. Tarsus about equal to the middle toe, densely feathered. Tail much more than half the wing, rounded. Bill and iris yellow. Size very small. (Page 121.)

9. **Microthene.** Fourth quill longest; four emarginated on inner webs. Tarsus a little longer than middle toe, scantily haired. Tail less than half the wing, even. Bill light (greenish?); iris yellow. Size very small. (Page 122.)

First quill longer than sixth.

10. **Spectyto.** Second to fourth quills longest; three emarginated on inner webs. Tarsus more than twice as long as middle toe, closely feathered in front to the toes, naked behind. Tail less than half the wing, slightly rounded. Bill yellowish; iris yellow. Size small. (Page 122.)

GENUS **STRIX**, SAVIGNY. (Page 115.)

S. flammea. Face varying from pure white to delicate claret-brown; facial circle varying from pure white, through ochraceous and rufous, to deep black. Upper parts with the feathers ochraceous-yellow basally; this overlaid, more or less continuously, by a grayish wash, usually finely mottled and speckled with dusky and white. Primaries and tail barred transversely, more or less distinctly, with distant dusky bands, of variable number. Beneath, varying from pure snowy-white to tawny-rufous, immaculate or speckled. Wing, 10.70–13.50. Nest placed in hollow trees, old buildings, crevices of wall, excavations in banks, etc. (never built externally in trees, or on bare ground?).

Wing, 10.70–12.00; tail, 4.80–5.50; culmen, .75–.80; tarsus, 2.05–2.15; middle toe, 1.25–1.30. Tail with four dark bands, and sometimes a trace of a fifth. *Hab.* Europe and Mediterranean region of Africa. var. *flammea*.

Wing, 12.50–14.00; tail, 5.70–7.50; culmen, .90–1.00; tarsus, 1.55–3.00. Tail with four dark bands, and sometimes a trace of a fifth. Colors lighter than in var. *flammea*. *Hab.* Southern North America and Mexico. (*American Barn Owl*) var. *pratinctola*.

GENUS **OTUS**, CUVIER. (Page 115.)

A. Otus, Cuvier. Ear-tufts well developed; outer quill only with inner web emarginated.

Colors blackish-brown and buffy-ochraceous, — the former predominating above, where mottled with whitish; the latter prevailing beneath, and variegated with stripes or bars of dusky. Tail, primaries, and secondaries transversely barred (obsoletely in *O. stygius*).

O. vulgaris. Ends of primaries normal, broad; toes feathered; face ochraceous.

Dusky of the upper parts in form of longitudinal stripes, contrasting conspicuously with the paler ground-color. Beneath with ochraceous prevalent; the markings in form of longitudinal stripes, with scarcely any transverse bars. *Hab.* Europe and large part of the Old World var. *vulgaris*.

Dusky of the upper parts in form of confused mottling, not contrasting conspicuously with the paler ground-color. Beneath with the ochraceous overlaid by the whitish tips to the feathers; the markings in form of transverse bars, which are broader than the narrow medial streak. Wing, 11.50–12.00; tail, 6.00–6.20; culmen, .65; tarsus, 1.20–1.25; middle toe, 1.15. Wing-formula, 2, 3–4–1. Nests external, in trees; frequently an old nest of

Crow or other bird made use of; sometimes in cleft of rocks.

Hab. North America. (*Long-Eared Owl*) . . . var. *wilsonianus*.

B. BRACHYOTUS, Gould. Similar to *Otus*, but ear-tufts rudimentary, and the second quill as well as the first with the inner web emarginated.

Colors ochraceous, or white, and clear dark brown, without shadings or middle tints. Beneath with narrow longitudinal dark stripes upon the whitish or ochraceous ground-color; crown and neck longitudinally striped with dark brown and ochraceous.

O. brachyotus. Wings and tail nearly equally spotted and banded with ochraceous and dark brown. Tail with about six bands, the ochraceous terminal. Face dingy ochraceous, blackish around the eyes. Wing, about 11.00–13.00; tail, 5.75–6.10; culmen, .60–.65; tarsus, 1.75–1.80; middle toe, 1.20. Nest always on the ground. *Hab.* Whole world (except Australia?). (*Short-Eared Owl*; *Marsh Owl*.)

GENUS **SYRNIUM**, SAVIGNY. (Page 116.)

Scotiaptex. Six outer quills with their inner webs emarginated. Toes completely concealed by dense long hair-like feathers. Iris yellow. (Type, *S. cinereum*.)

Syrnium, SWAINSON. Five outer quills with their inner webs emarginated. Toes not completely concealed by feathers; sometimes nearly naked; terminal scutellæ always (?) exposed. Iris blackish. (Type, *S. aluco*.)

a. *Scotiaptex*, SWAINS.

1. **S. cinereum**. Iris yellow; bill yellow. Dusky grayish-brown and grayish-white, the former prevailing above, the latter predominating beneath. The upper surface with mottlings of a transverse tendency; the lower surface with the markings in the form of ragged longitudinal stripes, which are transformed into transverse bars on the flanks, etc. Face grayish-white, with concentric rings of dusky. Wing, 16.00–18.00; tail, 11.00–12.50.

Light markings predominating. *Hab.* Northern portions of the Palaearctic Realm var. *lapponicum*.

Dark markings predominating. Nest always in top of trees. *Hab.* Northern portions of the Nearctic Realm. (*Great Gray Owl*; *Cinereous Owl*.) var. *cinereum*.

b. *Syrnium*, SAV.

COMMON CHARACTERS. Liver-brown or umber, variously spotted and barred with whitish or ochraceous. Bill yellow; iris brownish-black.

2. **S. nebulosum**. Lower parts striped longitudinally. Head and neck with transverse bars.

Colors reddish-umber and ochraceous-white. Face with obscure concentric rings of darker. Wing, 13.00–14.00; tail, 9.00–10.00. Nest usually external, and built in trees; said to be sometimes placed in hollow limbs. *Hab.* Eastern region of United States. (*Barred Owl*) var. *nebulosum*.

Colors blackish-sepia and clear white. Face without any darker concentric rings. Wing, 14.80; tail, 9.00. *Hab.* Eastern Mexico (Mirador) var. *sartorii*.

Colors tawny-brown and bright fulvous. Face without darker concentric rings (?). Wing, 12.50, 12.75; tail, 7.30, 8.50. *Hab.* Guatemala var. *fulvescens*.

3. **S. occidentale.** Lower parts transversely barred. Head and neck with roundish spots. Wing, 12.00–13.10; tail, 9.00. Nesting unknown. *Hab.* Southern California (Fort Tejon, XANTUS) and Arizona (Tucson, Nov. 7, BENDIRE.) (*Spotted Owl.*)

= GENUS **NYCTALE**, BREHM. (Page 116.) =

COMMON CHARACTERS. Above umber, or chocolate, brown, spotted with white (more or less uniform in the young); beneath white with longitudinal stripes of reddish-brown (adult), or ochraceous without markings (young).

A. Nostril sunken, elongate-oval, obliquely vertical, opening laterally; cere not inflated. Tail considerably more than half the wing. Bill yellow.

1. **N. tengmalmi.** Wing, 7.20; tail, 4.50; culmen, .60; tarsus, 1.00; middle toe, .67 (average).

Legs white, almost, or quite, unspotted; lower tail-coverts with narrow shaft-streaks of brown. (Light tints generally predominating.) *Hab.* Northern portions of Palearctic Realm. var. *tengmalmi*.

Legs ochraceous, thickly spotted with brown; lower tail-coverts with broad medial stripes of brown. (Dark tints generally predominating.) Nest built in trees, sometimes in a hollow. *Hab.* Northern portions of Nearctic Realm. (*Richardson's Owl.*)

var. *richardsoni*.

B. Nostril prominent, nearly circular, opening anteriorly; cere somewhat inflated. Tail scarcely more than half the wing. Bill black.

2. **N. acadica.** Wing, 5.25 to 5.80; tail, 2.60 to 3.00; culmen, .50; tarsus, .80; middle toe, .60. *Juv.* Face dark brown; forehead and crown brown; occiput brown; eyebrows and sides of chin white; throat and breast umber-brown. (= "*albifrons*," Shaw = "*kirtlandi*," Hoy.) Nest in hollow trees or stumps, sometimes in old deserted nests of other birds. *Hab.* Cold temperate portions of Nearctic Realm. (*Acadian Owl*; *Saw-whet.*)

= GENUS **SCOPS**, SAVIGNY. (Page 116.) =

COMMON CHARACTERS. Plumage brown, gray, or rufous, and whitish, finely mottled above; lower parts transversely barred, and with dark shaft-streaks. Outer webs of lower scapulars light-colored (white or ochraceous) and without markings. Tail crossed by rather obscure mottled light and dark bars of nearly equal width. Outer webs of primaries with nearly equal bands of whitish and dusky.

1. **S. asio.** Toes covered (more or less densely) with bristles, or hair-like feathers. Wing, 5.50–7.80; tail, 3.20–4.10; culmen, .50–.70; tarsus, 1.00–1.70; middle toe, .70–.80. Ear-tufts well developed; facial circle black.

Colors smoky-brown and pale fulvous, with little or none of pure white. Outer webs of the scapulars pale ochraceous-fulvous. Wing, 6.90–7.30; tail, 3.50–4.50. *Hab.* North Pacific region, from Western Idaho and Washington Territory, northward to Sitka. (*Kennicott's Owl.*) var. *kennicotti*.

Colors ashy-gray and pure white, with little or none of fulvous. Outer webs of the scapulars pure white. Varying to bright brick-red, or lateritious-rufous.

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Mottlings coarse, the blackish median streaks above not sharply defined, and the bars beneath heavy and distinct.

Wing, 6.10 - 7.75; tail, 3.30 - 4.35. In the red plumage, white prevailing on the lower parts, where the red markings are not broken into transverse bars. Nest in hollow trees or stumps. *Hab.* United States; except the Southern Middle Province, the northwest region, and Florida. (*Screech-Owl.*)

var. *asio*.

Wing, 5.50 - 6.00; tail, 2.75 - 3.10. In the red plumage, red prevailing on the lower parts, where the markings are much broken into transverse bars. *Hab.* Florida and Southern Georgia. (*Florida Owl.*)

var. *floridanus*.

Wing, 5.50 - 5.80; tail, 3.20 - 3.30. Gray plumage, like var. *asio*, but the mottling above much coarser, and the nape with a strongly indicated collar of rounded white spots in pairs, on opposite webs. Red plumage not seen. *Hab.* Eastern Mexico and Guatemala

var. *enano*.

Mottlings fine, the blackish median streaks above very sharply defined and conspicuous; bars beneath delicate and indistinct.

Wing, 6.20 - 6.50; tail, 3.35 - 3.50. *Hab.* Southern Middle Province, and Southern California; Cape St. Lucas. (*McCall's Owl.*)

var. *macalli*.

2. *S. flammeola*. Toes perfectly naked, the feathering of the tarsus terminating abruptly at the lower joint. Wing, 5.40; tail, 2.80; culmen, .35; tarsus, .90; middle toe, .55. Ear-tufts short, or rudimentary. Facial circle rusty. Outer webs of the scapulars rusty-ochraceous, in striking contrast to the grayish of the wings and back. Other markings and colors much as in *asio*. Nesting unknown. *Hab.* Mountain regions of Mexico and California, from Guatemala to Fort Crook, Northern California. (*Feilner's Owl.*)

GENUS **BUBO**, DUM. (Page 116.)

Bubo. Two or three outer quills with their inner webs emarginated. Ear-tufts well developed; loreal feathers not hiding the bill, and the claws and terminal scutellæ of the toes exposed. Lower tail-coverts not reaching the end of the tail. (Type, *B. maximus*.)

Nyctea. Four outer quills with their inner webs emarginated. Ear-tufts rudimentary; loreal feathers hiding the bill, and claws and entire toes concealed by long hair-like feathers. Lower tail-coverts reaching to end of the tail. (Type, *N. scandiaca*.)

SUBGENUS **BUBO**. (Page 120.)

1. *B. virginianus*. Lower parts transversely barred with black, and without longitudinal stripes. Above without longitudinal stripes on the anterior portions. Nest in top of trees; sometimes deserted nest of other birds; occasionally in hollow of trees, or in fissures of rocks.

a. A conspicuous patch of white on the jugulum; lining of the wing immaculate, or only faintly barred. Wing, 14.00 - 16.00; tail, 8.00 - 10.00; culmen, 1.10 - 1.20; tarsus, 2.00 - 2.20; middle toe, 1.95 - 2.10.

Rufous tints of the plumage prevailing; face dingy rufous. *Hab.* Atlantic Province of North America. (*Great Horned Owl.*)

var. *virginianus*.

Lighter tints of the plumage prevailing; face dirty or fulvous white. All the colors lighter. *Hab.* Western Province of United States, and interior regions of British America. Upper Mississippi Valley in winter (Wisconsin, Hor; Pekin, Illinois, Museum, Cambridge). (*Western Horned Owl*) var. *arcticus*.

Dusky tints of the plumage prevailing; face dull grayish, barred with dusky. All the colors darker, chiefly brownish-black and grayish-white, with little or no rufous. *Hab.* Littoral regions of northern North America, from Oregon northward, and around the northern coast to Labrador. (*Pacific Horned Owl*) var. *pacificus*.

b. No conspicuous patch of white on the jugulum, which, with the lining of the wing, is distinctly barred with blackish. Wing, 12.00; tail, 7.50; culmen, 1.00; tarsus, 2.10; middle toe, 1.85.

Colors much as in var. *virginianus*, but more densely barred beneath, the dark bars narrower and closer together. *Hab.* South America.

var. *magellanicus*.

SUBGENUS **NYCTEA**, STEPHENS. (Page 116.)

N. scandiaca. *Adult.* Color pure white, more or less barred transversely with clear dusky, or brownish-black. *Male* sometimes almost pure white. *Downy young*, sooty slate-color. Wing, 16.00–18.00; tail, 9.00–10.00. Nest generally on the ground, or in ledges, exceptionally on trees?

Dusky bars sparse, narrow, umber-brown. *Hab.* Northern parts of Palearctic Realm var. *scandiaca*.

Dusky bars more numerous, broader, and clear brownish-black. *Hab.* Northern parts of Nearctic Realm. (*American Snow Owl*) . var. *arctica*.

GENUS **SURNIA**, DUMÉRIL. (Page 116.)

S. ulula. Above dark vandyke-brown, the head above dotted with white, and the scapulars spotted with the same. Beneath transversely barred with vandyke-brown and white, the bars regular, continuous, and sharply defined. Head and neck with two lateral and one posterior medial stripes of brownish-black, the space between them with white prevailing. Bill and iris yellow. Wing, about 9.00; tail, 6.80–7.00.

White spotting prevailing. *Hab.* Palearctic Realm var. *ulula*.

Brown spotting prevailing. Nest in top of pine-trees, or on stumps (sometimes on cliffs?). *Hab.* Nearctic Realm. (*Hawk Owl*) var. *hudsonia*.

GENUS **GLAUCIDIUM**, BOIE. (Page 116.)

COMMON CHARACTERS. Above brown, varying from nearly gray to bright ferruginous, in some species this color interrupted by a more or less distinct whitish nuchal collar, with an adjacent blackish spot (sometimes concealed) on each side of the neck. Tail with narrow bands. Beneath white, the sides striped with brown or blackish. Throat and jugulum white, with a dusky collar between. Crown speckled or streaked with lighter; wings more or less spotted with the same.

A. Markings on the crown circular, or dot-like.

1. **G. passerinum.** Tail with six to eight narrow white bands. Upper

parts varying from brownish-gray to chocolate-brown. Ground-color of the lower parts pure white.

Tail, and stripes on sides, not darker than the back; tail-bands six, and continuous; toes rather thickly feathered. *Hab.* Europe.

var. *passerinum*.

Tail, and stripes on sides, much darker than the back; tail-bands 7 (♂) - 8 (♀), not continuous; toes only scantily haired. Wing, 3.50 - 4.00; tail, 2.50 - 2.80; culmen, .43 - .48; tarsus, .60; middle toe, .55. Nest in hollow trees; perhaps also external. *Hab.* Western Province of North America. Table-lands of Mexico. (*Pygmy Owl*) var. *californicum*.

B. Markings on the crown longitudinal and linear.

2. *G. infuscatum*. Tail dark brown, crossed by six to seven non-continuous bands of white, narrower than the dark ones. Above varying from grayish-brown to reddish-umber and sepia. Beneath white, the stripes on the sides grayish-brown or dark brown, like the back.

Above dark sepia, or blackish-brown. Tail brownish-black or deep black. Wing, 3.70 - 3.90; tail, 2.50 - 2.90; culmen, .45; tarsus, .65 - .80; middle toe, .65 - .70. *Hab.* Eastern South America var. *infuscatum*.

Above grayish, or reddish-umber. Tail clear dark brown, or grayish-umber.

Wing, 3.60 - 3.90; tail, 2.35 - 2.75; culmen, .45 - .50; tarsus, .65 - .80; middle toe, .60 - .70. *Hab.* Middle America, from the Rio Grande (probably in Texas) to Panama var. *gnoma*.

3. *G. ferrugineum*. Tail crossed by seven to nine continuous bands of dark brown and bright rufous, of nearly equal width. Above varying from grayish-brown to bright ferruginous; beneath varying from pure white to pale rufous, the stripes on the sides like the back. Wing, 3.70 - 4.15; tail, 2.20 - 2.90; culmen, .45 - .50; tarsus, .70 - .80; middle toe, .70 - .75. Nesting unknown. *Hab.* Tropical America, from southern border of United States to Southern Brazil. (*Little Red Owl*)

GENUS **MICRATHENE**, COUES. (Page 117.)

M. whitneyi. Above grayish olive-brown, sprinkled with small, rather obscure, spots of pale rusty, and interrupted by a whitish nuchal collar; outer webs of the lower series of scapulars pure white. Wings spotted with white and pale fawn-color; tail grayish-brown, crossed by five to six narrow interrupted bands of pale fawn-color. Eyebrows and lores pure white; a cravat of the same on the chin. Beneath white, marked with large, rather longitudinal, ragged blotches of pale rusty, mottled with dusky. Bill pale greenish; iris yellow. Length, 5.50 - 6.25; extent of wings, 14.25 - 15.25 (measurements of freshly killed specimens). Wing, 4.00 - 4.40; tail, 1.90 - 2.30. Nesting unknown. *Hab.* Fort Mohave, California (April), and Socorro Island, west coast of Mexico. (*Whitney's Owl*.)

GENUS **SPEOTYTO**, GLOGER. (Page 117.)

S. cunicularia. Colors umber-brown and ochraceous-white, the former predominating above, the latter prevailing below. Upper parts spotted with

whitish; lower parts transversely barred with brown on the breast and sides, and sometimes on the abdomen. A white gular patch, and jugular collar, with a brown band between them. Legs, crissum, anal and femoral regions, always immaculate. Nest in excavation in the ground; usually those made by mammals, sometimes by themselves.

Primaries with broad regular bars of ochraceous-white on both webs; primary coverts with large spots of the same. Brown markings on the lower parts regularly transverse, and not ragged. White spots on the upper parts much less than the brown in extent.

Wing, 6.40–7.00; tail, 3.00–3.30; culmen, .50–.60; tarsus, 1.50–1.70; middle toe, .80. Outer tail-feathers and inner webs of the primaries with the white less in extent than the brown (never continuous along outer webs of the primaries). *Hab.* Middle America, and Western Province of North America. (*Burrowing Owl*) . . . var. *hypogæa*.

FAMILY FALCONIDÆ.—THE FALCONS.

Genera.

A. Nasal bones almost completely ossified, the nostril being a small orifice, with a conspicuous central bony tubercle; its form nearly or quite circular, or linear and oblique (in *Polyborus*), with its upper end the posterior one. (Page 126.) (*Falconinæ*).

1. Falco. Nostril circular. Commissure with a prominent tooth and notch; lower mandible abruptly truncated and notched. Primaries stiff and hard, and more or less pointed, the first to the second longest, and the outer one or two with their inner webs cut, the angular emargination being near the end of the quill. Middle toe much more than half as long as the tarsus; claws strongly curved, very acute. Iris said to be generally brown (yellow in *F. anatum*, according to Richardson). Eggs very thickly and closely marked and mottled with brown and chocolate, generally nearly concealing the cream-colored ground. Nest usually on cliffs; exceptionally on trees.¹ (Page 126.)

2. Polyborus. Nostril linear, oblique, the upper end the posterior one; commissure without prominent tooth nor notch; lower mandible not distinctly truncated or notched. Primaries soft, obtuse, the third longest, and the outer four or five with their inner webs cut, the shallow sinuation being toward the middle of the quill. Middle toe less than half the tarsus; claws weakly curved, very obtuse. Face and cheeks naked, and scantily haired. Iris brown. Markings of eggs generally much as in *Falco*, sometimes showing much more of the ground-color. Nest placed on low trees or bushes. (Page 131.)

B. Nasal bones very incompletely ossified, the nostril being a large, more or less oval, opening, of oblique direction, its lower end being invariably the posterior one; without a bony tubercle, and never perfectly circular. (Page 131.) (*Buteoninæ*).

¹ The statements as to the color of the iris are intended to apply only to the North American species. Accurate indications are still wanting for many of our *Falconidæ*.

a. Sides of the head densely feathered close up to the eyelids.

3. **Pandion**. Outer toe reversible; claws contracted and rounded on their under surface, and not graduated in size. Wing long, third quill longest; outer four with inner webs emarginated. Tail rather short, rounded. Iris yellow or orange. Eggs generally much as in *Fulco*; usually blotched with dark wine-color; the ground often tinged with the same. Nest usually on trees, occasionally on cliffs, especially in Europe. (Page 131.)

4. **Nauclerus**. Outer toe not reversible; claws not contracted or rounded on under side, and graduated in size. Wing long, third quill longest; outer two with inner webs sinuated. Tail excessively lengthened and forked, the lateral pair of feathers more than twice as long as the middle pair. Iris reddish-brown (DRESSER) with blue edges (AUD.) Eggs rather thickly blotched with dark brown, especially at larger end. Nest on trees. (Page 132.)

b. Sides of the head with a more scantily feathered orbital space, with a projecting superciliary "shield" covered with a naked skin.

* A well-developed membrane, or "web," between the outer and middle toes at the base.

† Tarsus about equal to the middle toe.

§ Claws short and robust; two outer quills with their inner webs cut.

5. **Ictinia**. Commissure irregularly toothed and notched; front of tarsus with transverse scutellæ. Tail emarginated; third quill longest. Iris blood-red. Eggs white. Nest on trees. (Page 132.)

6. **Elanus**. Commissure without irregularities; front of tarsus with minute roundish scales. Tail double-rounded; second quill longest. Iris brownish-red. Eggs sparsely spotted. Nest on trees. (Page 132.)

§§ Claws long and slender; five outer quills with inner webs cut.

7. **Rostrhamus**. End of bill bent downward, with a long pendent hook; inner edge of middle claw slightly pectinated, or serrated. Tail emarginated; third or fourth quill longest. Eggs blotched quite thickly and uniformly, on dead white, little apparent ground. Nest on low trees. (Page 133.)

†† Tarsus very much longer than the middle toe.

‡ Front of tarsus unfeathered, and, with the posterior face, covered with a continuous series of broad transverse scutellæ.

a. Form very long and slender, the head small, the tail and legs long and claws excessively acute; bill weak, compressed, very high through the base, the culmen greatly ascending basally, and the cere much arched; commissure usually with a very prominent "festoon."

8. **Circus**. Face surrounded by a "ruff" of stiffened, differently formed feathers, as in the Owls. Tarsus more than twice as long as the middle toe. Wing very long, hardly concave beneath; third to fourth quill longest; outer four with inner webs sinuated. Iris probably brown in young, yellow in adult. Eggs white; occasionally obsoletely blotched with brown. Nest on ground. (Page 133.)

9. **Nisus**. Face not surrounded by a ruff. Tarsus less than twice as long as the middle toe. Wing short, very concave beneath, the outer quill much bowed; third to fifth quills longest; outer five with inner webs sinuated. Eggs white in some species,

blotched in others, especially in *N. fuscus*. Iris in adult yellow to orange. Nest in trees. (Page 134.)

β. Form short and heavy, the head larger, the tail shorter, the legs more robust. Bill stronger, less compressed, lower through the base, the upper outline less ascending basally, and the cere less arched. Commissure variable.

10. Antenor. Form heavy, the wings and tail moderately long, and feet very robust; bill rather elongated, the commissural lobe prominent, and the base of the culmen somewhat depressed. Fourth quill longest; outer five with inner webs cut. Lores naked, and almost destitute of bristles. Eggs white. Nest on bushes. (Page 136.)

11. Onychotes. Outstretched feet reaching beyond end of tail; tibial plumes short, close, not reaching below the joint. Wing short, rounded, very concave beneath, the fourth quill longest; outer five with inner webs sinuated. Tail short, but little more than half the wing, slightly rounded. Claws very long, and extremely acute. Eggs and nesting unknown. (Page 136.)

12. Asturina. Bill and feet as in *Antenor*; lores densely bristled; wing short, rounded, concave beneath, the third to fourth quills longest; outer four with their inner webs cut. Iris brown (COUES). Eggs bluish-white; nest on trees. (Page 135.)

13. Buteo. Form of *Antenor*, but primaries longer and more pointed, the fourth usually longest, and the outer three or four with inner webs cut. Bill and feet as in *Asturina*. Tail moderate, or rather short, nearly even, or slightly rounded. Iris probably brown in young, yellow in adult. Eggs usually blotched; sometimes markings of one or more eggs of a set obsolete. Nest on trees. (Page 136.)

†† Front of the tarsus densely feathered down to the base of the toes.

14. Archibuteo. Feathering of the tarsus interrupted behind by a bare strip along the full length; middle toe less than half as long as the tarsus. Nostril broadly oval, obliquely horizontal; bill weak, the upper outline of the cere much ascending basally. Feathers of the nape normal, blended. Third to fourth quills longest; outer four or five with inner webs cut. Iris yellowish-gray (SUCKLEY). Eggs and nesting as in *Buteo*. (Page 139.)

15. Aquila. Feathering of the tarsus uninterrupted behind; middle toe more than half as long as the tarsus. Nostril narrowly oval, obliquely vertical; bill strong, the upper outline of the cere nearly parallel with the lower. Feathers of the nape lanceolate, distinct. Fourth quill longest; five to six with inner webs cut. Iris brown. Eggs usually thickly blotched, markings occasionally obsolete. Nest almost always on cliffs; exceptionally on trees. (Page 140.)

****** No trace of membrane between outer and middle toes.

16. Haliaetus. Tarsus feathered in front one third, or more, of the way down; the naked portion with an imperfectly continuous frontal, and less well defined posterior, series of transverse plates, and covered elsewhere with roundish granular scales. Feathers of the neck, all round, lanceolate, distinct. Bill very large, the chord of the culmen more than twice as long as the cere on top; nostril oval, obliquely vertical. Third to fifth quills longest; outer six

with inner webs cut. Tail rounded or cuneate, sometimes consisting of fourteen feathers. Iris brown in young, yellow in adult. Eggs always (?) white and unspotted in American species, the nest nearly always on trees. (Page 140.)

SUBFAMILY **FALCONINÆ**.

GENUS **FALCO**, AUCT. (Page 123.)

- a.* Only one primary with inner web emarginated; first to second longest; first longer than fourth.

Tarsus longer than middle toe, and feathered far below the knee; first quill shorter than third. Coloration of the sexes alike; old and young slightly different in pattern and tints. Size large. (Page 126.) . *Hierofalco*.

Tarsus not longer than middle toe, and scarcely feathered below the knee; first quill equal to or longer than the third. Coloration of the sexes alike; old and young very different in pattern and tints. . Size, very small to large. (Page 128.) *Falco*.

- b.* Two primaries with inner webs emarginated; second to third longest; first shorter than fourth.

Basal joint of toes without transverse scutellæ; tarsus about equal to middle toe.

Coloration of the sexes in adult plumage very different in tints; in the young alike, the young ♂ resembling the adult ♀. Size small. (Page 129.) *Æsalon*.

Basal joint of toes with transverse scutellæ; tarsus longer than middle toe.

Coloration of the sexes very different, in pattern and tints, at all ages; old and young alike. Scutellæ of the toes and tarsus interrupted at the digito-tarsal joint; tarsus much longer than middle toe. Bill small, the cere on top less than one fourth the culmen. Size small. (Page .) *Tinnunculus*.

Coloration of the sexes alike at all ages; old and young slightly different in pattern and tints. Scutellæ of tarsus and toes uninterrupted from "knees" to claws; tarsus but little longer than middle toe. Bill large, the cere on top about one third the culmen. Size medium; form very slender. (Page .) . . . *Rhynchofalco*.

SUBGENUS **HIEROFALCO**, CUVIER. (Page 126.)

1. F. gyrfalco. Wing, 13.00–17.00; tail, 8.50–11.50; culmen, .85–1.05; tarsus, 2.10–3.00; middle toe, 1.80–2.25. Ground-color varying from entirely pure white to wholly dusky, but generally bluish (in adult) or grayish-brown (in young) above, and white beneath. *Adult.* All the markings transverse. No lighter nuchal band. *Young.* Markings of the lower surface longitudinal, the upper parts without transverse bars (except on the tail).

- a.* Lower parts with white predominating, or wholly white.

Lower tail-coverts never with markings. No tinge of blue anywhere on the plumage, the ground-color of which is entirely pure white at all ages.

1. Adult. Upper parts, excepting head and neck, with transverse crescentic bars of dark plumbeous; lower parts immaculate, or

♀. Above fulvous-rufous, the whole breast and sides with longitudinal dashes of a lighter tint of the same. *Hab.* Continent of North America, north of Panama (except Caribbean and Gulf coast.) (*Sparrow Hawk.*) var. *sparverius*.

♂. Head above, and wings, dark bluish-plumbeous; several outer tail-feathers variegated. Vertex without any rufous. Anterior portions beneath deep ochraceous, without spots. Tail without indication of bars anterior to the subterminal one; black bars above confined to larger scapulars. ♀. Above ferruginous, with the black bars broader and blacker than in either of the preceding. *Hab.* Gulf, Caribbean, and Atlantic coasts of tropical continental America (Florida to Cayenne). (*Florida Sparrow Hawk.*)

var. *isabellinus*.

GENUS **POLYBORUS**, VIEILLOT. (Page 123.)

P. tharus. Wing, 14.50–17.70; tail, 8.50–10.00; culmen, 1.20–1.48; tarsus, 3.20–4.20; middle toe, 1.75–2.30.

Adult. Forehead, crown, occiput, back, rump, abdomen, sides, and tibiae, and terminal zone of the tail, dull black. Neck, breast, tail-coverts, and tail, dingy-whitish. Interscapulars, breast, and tail with transverse dusky bars.

Young. Blackish areas and markings replaced by dull brown; region of the transverse bars marked, instead, with longitudinal stripes.

Adult. Whole body, with middle wing-coverts, variegated with transverse bars of black and white; tail-coverts barred. Terminal zone of the tail about 2.00 wide. *Young.* Longitudinal stripes over the whole head and body, except throat, cheeks, and tail-coverts; tail-coverts transversely barred. *Hab.* South America. (*Caracara Eagle.*) var. *tharus*.

Adult. Transverse bars confined to the breast and interscapulars; rest of body continuous black; tail-coverts without bars; wing-coverts unvariegated. Terminal zone of tail about 2.50 wide. *Young.* Longitudinal stripes confined to the breast and interscapulars; rest of the body continuous brown. Tail-coverts without bars. *Hab.* Middle America, and southern border of United States, from Florida to Cape St. Lucas. (*King Buzzard.*)

var. *auduboni*.

SUBFAMILY **BUTEONINÆ**.

GENUS **PANDION**, SAVIGNY. (Page 124.)

P. haliaëtus. Second or third quills longest. Above clear dark grayish-brown, inclining to brownish-black, plain, or variegated with white. Tail brownish-gray (the inner webs almost entirely white), narrowly tipped with white, and crossed by about six or seven nearly equal bands of dusky-black. Head, neck, and entire lower parts, snowy-white; the breast with or without brown spots or wash. A dusky stripe on side of head (from

United States National Museum.

(D)

MEMORANDUM.

Pages 127-130, and plates iv + vi missing.
Have searched everywhere I can think of for
them, but am unable to find them.

P. R.

Nov. 21, 1883.

lores across the ear-coverts), and top of head more or less spotted, or streaked, with the same. *Adult*. Upper parts plain. *Young*. Feathers of the upper parts bordered terminally with white. Sexes alike (?).

Wing, 17.50–21.50; tail, 8.70–10.50; culmen, 1.25–1.40; tarsus, 2.00–2.40; middle toe, 1.70–2.00. Second and third quill longest. Breast often entirely without spots; top of head and nape usually with dark streaks predominating. Tail with six to seven narrow black bands, continuous across both webs. *Hab*. Northern Hemisphere of the New World. (*Fish-Hawk*) var. *carolinensis*.

GENUS **NAUCLERUS**, VIGORS. (Page 124.)

N. forficatus. Head, neck, entire lower surface, and band across the rump, immaculate snowy-white; upper surface plain polished blackish, with varying lights of dark purplish-bronze (on the back and shoulders) and bluish-slaty, with a green reflection in some lights. *Young*, with dusky shaft-streaks on the head and neck, and the feathers of the upper parts margined with white. Wing, 15.40–17.70; tail, 12.50–14.50; culmen, .70–.80; tarsus, 1.00–1.30; middle toe, 1.15–1.20. *Hab*. The whole of tropical, subtropical, and warm temperate America. Accidental in England. (*Swallow-tailed Hawk or Kite*.)

GENUS **ELANUS**, SAVIGNY. (Page 124.)

Above pearly-ash, becoming white or whitish on the head and tail, with a large black patch covering the lesser-covert region. Lower surface continuous pure white; a black spot on front of, and partly around, the eye.

E. leucurus. A large black patch on the lining of the wing, restricted to the primary coverts. Lesser coverts, on outer surface, not conspicuously bordered anteriorly with white. First quill very much shorter than the third; second quill longest; first shorter than, equal to, or longer than the fourth.

Above deep bluish-ash, with the inner webs of the secondaries appreciably paler, sometimes abruptly white. Wing, 11.60–12.65; tail, 6.80–7.80; culmen, .65–.80; tarsus, 1.20–1.50; middle toe, .94–1.20. *Hab*. Tropical and subtropical America. (*Black-shouldered Kite*) var. *leucurus*.

GENUS **ICTINIA**, VIEILLOT. (Page 124.)

Adult. Uniform plumbeous, becoming lighter (whitish) on the head, and darker (blackish) on the primaries and tail. Inner webs of primaries with more or less rufous. *Young*. Beneath whitish, striped longitudinally with brownish; above much variegated; tail with several narrow whitish bands.

I. mississippiensis. *Adult*. Wings lighter than the tail, the secondaries hoary whitish; inner webs of primaries with only obscure spots of rufous, the outer webs with a very obscure stripe of the same. Tail wholly black. *Young*. Stripes beneath reddish-umber; lower tail-coverts with longitudinal shaft-streaks of the same. Second to third quills longest; first

shorter than seventh and longer than sixth. Wing, 10.60–12.30; tail, 6.00–7.00; culmen, .60–.65; tarsus, 1.30–1.55; middle toe, 1.00–1.10. *Hab.* Prairies and savannas of the southern United States and Northern Mexico, from Wisconsin and Georgia to Mirador. (*Mississippi Kite*.)

GENUS **ROSTRHAMUS**, LESSON. (Page 124.)

Adult. Prevailing color plumbeous-black, or bluish-plumbeous; the tail and primaries black. Entirely concolored, or with white tail-coverts. Cere and feet orange-red. *Young.* Spotted with blackish-brown and ochraceous, the former prevailing above, the latter beneath.

R. sociabilis. Tail-coverts, with terminal and basal zones of the tail, white; that of the tail more or less shaded with grayish-brown. *Adult.* Uniform blackish-plumbeous, darker on the head, quills, and tail. Plumbeous of a glaucous cast, the head dark plumbeous, and the wing-coverts lighter, inclining to grayish-brown. Wing, 13.26–15.50; tail, 6.75–8.25; bill, .85–1.04; tarsus, 1.70–2.40; middle toe, 1.40–1.55. *Hab.* Florida and West Indies. (*Everglade Kite*.) var. *plumbeus*.

GENUS **CIRCUS**, LACÉPÈDE. (Page 124.)

C. cyaneus. *Adult male.* Above pearly-ash, with a bluish cast in some parts; breast similar; beneath white, with or without rufous markings. *Adult female.* Above brown, variegated with ochraceous on the scapulars and wing-coverts; beneath yellowish-white or pale ochraceous, with a few longitudinal stripes of brown. *Young* (of both sexes). Like the adult female, but darker brown above, the spotting deeper ochraceous, or rufous; beneath pale rufous, the stripes more distinct.

Tail and secondaries with a subterminal band of dusky; lower parts with rufous markings. Wing, 12.90–16.00; tail, 9.00–10.50; culmen, .65–.75; tarsus, 2.90–3.25; middle toe, 1.20–1.55. Lower parts with scattered irregular specks, or small cordate spots, of reddish-rufous.

Hab. North and Middle America. (*Marsh-Hawk*.) var. *hudsonius*.

GENUS **NISUS**, CUVIER. (Page 124.)

Less than one third of the upper portion of the tarsus feathered in front, the feathering widely separated behind; frontal transverse scutellæ of the tarsus and toes uninterrupted in the neighborhood of the digito-tarsal joint, but continuous from knees to claws. Tarsal scutellæ sometimes fused into a continuous plate

Nisus.

More than one third (about one half) of the upper portion of the tarsus feathered in front, the feathering scarcely separated behind; frontal transverse scutellæ of the tarsus and toes interrupted in the region of the digito-tarsal joint, where replaced by irregular small scales. Tarsal scutellæ never fused

Astur.

1. La première partie de l'ouvrage est consacrée à l'étude de la langue et de la littérature de la région. L'auteur y expose les caractéristiques de la langue locale, les particularités de la syntaxe, de la morphologie et de la phonétique. Il y analyse également les œuvres littéraires les plus importantes de la région, en soulignant les thèmes, les motifs et les styles.

2. La deuxième partie de l'ouvrage est consacrée à l'étude de la culture et de la société de la région. L'auteur y expose les coutumes, les traditions, les rites et les fêtes de la région. Il y analyse également les relations sociales, les structures de pouvoir et les valeurs de la région.

3. La troisième partie de l'ouvrage est consacrée à l'étude de l'histoire et de la géographie de la région. L'auteur y expose les événements historiques les plus importants de la région, les batailles, les révoltes et les transformations politiques. Il y analyse également les caractéristiques géographiques de la région, les reliefs, les rivières, les forêts et les climats.

4. La quatrième partie de l'ouvrage est consacrée à l'étude de l'économie et de la vie quotidienne de la région. L'auteur y expose les activités économiques les plus importantes de la région, l'agriculture, l'élevage, l'artisanat et le commerce. Il y analyse également les conditions de vie, les modes de consommation et les préoccupations de la population.

5. La cinquième partie de l'ouvrage est consacrée à l'étude de la religion et de la spiritualité de la région. L'auteur y expose les croyances, les pratiques religieuses, les rites et les fêtes de la région. Il y analyse également les influences religieuses sur la culture, la société et l'histoire de la région.

6. La sixième partie de l'ouvrage est consacrée à l'étude de la langue et de la littérature de la région. L'auteur y expose les caractéristiques de la langue locale, les particularités de la syntaxe, de la morphologie et de la phonétique. Il y analyse également les œuvres littéraires les plus importantes de la région, en soulignant les thèmes, les motifs et les styles.

7. La septième partie de l'ouvrage est consacrée à l'étude de la culture et de la société de la région. L'auteur y expose les coutumes, les traditions, les rites et les fêtes de la région. Il y analyse également les relations sociales, les structures de pouvoir et les valeurs de la région.

SUBGENUS **NISUS**, CUVIER. (Page 124.)

COMMON CHARACTERS. *Adult.* Above bluish slate-color; the tail with obscure bands of darker, and narrowly tipped with white. Beneath transversely barred with white and pinkish-rufous; the anal region and crissum immaculate white. *Young.* Above grayish umber-brown, the feathers bordered more or less distinctly with rusty; scapulars with large white spots, mostly concealed; tail-bands more distinct than in the adult. Beneath white, longitudinally striped with dusky-brown.

1. **N. fuscus.** Middle toe shorter than the bare portion of the tarsus, in front; tarsal scutellæ fused into a continuous plate in the adult male. Tail nearly even. Top of head concolor with the back; tail merely fading into whitish at the tip. Concealed white spots of the scapulars very large and conspicuous. Wing, 6.45–8.80; tail, 5.70–8.20; culmen, .40–.60; tarsus, 1.85–2.25; middle toe, 1.10–1.55. Eggs white, strongly blotched with brown. *Hab.* Whole of North America and Mexico. (*Sharp-shinned Hawk.*)

2. **N. cooperi.** Middle toe longer than the bare portion of the tarsus, in front; tarsal scutellæ never fused. Tail much rounded. Top of the head much darker than the back; tail distinctly tipped with white; concealed white spots of the scapulars very small, or obsolete. Eggs generally dull bluish-white, very rarely more or less obsoletely blotched with yellowish-brown. Wing, 8.50–11.00; tail, 7.50–10.50; culmen, .60–.80; tarsus, 2.10–2.75; middle toe, 1.30–1.85.

Adult. Rufous markings beneath, in form of detached bars, not exceeding the white ones in width; dark slate of the pileum and nape abruptly contrasted with the bluish-plumbeous of the back; upper tail-coverts narrowly tipped with white; scapulars with concealed spots of white. *Young.* White beneath pure; tibiae with narrow longitudinal spots of brown. Wing, 9.00–11.00; tail, 8.00–9.80; culmen, .65–.80; tarsus, 2.45–2.75; middle toe, 1.55–1.85. *Hab.* Eastern region of North America. (*Cooper's Hawk.*) var. *cooperi*.

Adult. Rufous markings beneath, in form of broader bars, connected along the shaft, almost uniform on the breast; black of the pileum and nape fading gradually into the dusky plumbeous of the back; upper tail-coverts not tipped with white, and scapulars without concealed spots of the same. *Young.* White beneath strongly tinged with ochraceous; tibiae with broad transverse spots of brown. Wing, 8.50–10.60; tail, 7.50–10.50; culmen, .60–.75; tarsus, 2.10–2.75; middle toe, 1.30–1.75. *Hab.* Western region of North America, Mexico. (*Blue-backed Hawk.*) var. *mexicanus*.

SUBGENUS **ASTUR**, LACÉPEDE. (Page 125.)

A. palumbarius. *Adult.* Above, continuously uniform bluish slate-color; the tail with several more or less distinct broad bands of darker, and narrowly tipped with white. Top of the head blackish; a streaked whitish superciliary stripe. *Young.* Above much variegated with brown and pale ochraceous; bands on the tail more sharply defined. Beneath pale ochraceous, with longitudinal stripes of dark brown.

Above with conspicuous darker shaft-streaks; top of the head deep black; markings on the lower parts in the form of irregularly defined, narrow, zigzag bars, or fine lines, of a bluish-slaty tint; throat not barred. Tail with only about four indistinct bands of blackish. Wing, 12.00–14.70; tail, 9.50–12.75; culmen, .80–1.00; tarsus, 2.70–3.20; middle toe, 1.70–2.00. Eggs bluish-white. *Hab.* Northern portion of North America. (*American Goshawk.*) . . . var. *atricapillus*.

GENUS **ASTURINA**, VIEILLOT. (Page 125.)

A. nitida. Wing, 9.80–11.50; tail, 6.70–8.00; culmen, .80–1.00; tarsus, 2.50–2.90; middle toe, 1.40–1.75. *Adult.* Above clear ash, paler on the head and darker on the rump; the general surface with more or less appreciable transverse bars, or indications of bars, of a paler shade, and with darker shafts. Upper tail-coverts immaculate white. Tail deep black, fading into pale grayish-brown at the end, narrowly tipped with white, and crossed by two to three white bands. Lower parts, including the tibiae, axillars, and throat, regularly barred with deep ash and white, the two colors about equal in extent; chin and crissum immaculate white. *Young.* Above blackish-brown, variegated with pinkish-ochraceous. Tail umber, tipped with pinkish-brown or dull whitish, and crossed by six to seven narrow bands of black. Beneath white, sometimes tinged with ochraceous; the breast, abdomen, and sides with longitudinal tear-shaped spots of black.

Adult. Upper surface distinctly barred, the lighter bars predominating; the top of the head as distinctly barred as the lower parts.

Young. Tibiæ immaculate white or pale ochraceous. Culmen, .80–.90.

Hab. South America, from S. E. Brazil and W. Ecuador, to Panama.

var. *nitida*.

Adult. Upper surface only obsoletely barred, or almost uniform; the top of the head without any bars. *Young.* Tibiæ transversely barred with dusky. Culmen, .75–.80. *Hab.* Middle America, north to the southern border of the United States; straying northward in the Mississippi Valley, to Southern Illinois. (*Mexican Hawk.*) . var. *plagiata*.

GENUS **ANTENOR**, RIDGWAY. (Page 125.)

A. uncinatus. Wing, 11.65–14.60; tail, 9.00–11.00; culmen, .82–1.10; tarsus, 2.78–3.75; middle toe, 1.52–2.00. *Adult.* General color brownish-black or blackish-brown, uniform, or slightly variegated by light spotting; the lesser wing-coverts and tibiae deep rufous, or chestnut. Tail black; the end and base white, as are also the tail-coverts. *Young.* Plumage greatly variegated. Above blackish-brown, the feathers edged with rusty; head and neck streaked with pale ochraceous. Lower parts pale ochraceous or yellowish-white, the breast and abdomen with longitudinal ovoid spots of blackish; tibiae with transverse bars of dark rusty; lower tail-coverts with black shaft-streaks. Lesser wing-covert region only washed with rufous. Tail grayish-brown, whitish at the tip, and crossed by narrow bands of dusky.

Adult with the blackish much broken up by lighter spotting. Wing, 11.65–14.60; tail, 9.00–10.50; culmen, .82–1.02; tarsus, 2.78–3.40; middle toe, 1.52–1.85. *Hab.* South America . . . var. *uncinatus*.

Adult with the blackish continuous and uniform. Wing, 12.35–14.50; tail, 9.80–11.00; culmen, .90–1.10; tarsus, 3.15–3.75; middle toe, 1.65–2.00. *Hab.* Middle America, north into southern border of United States. (*Harris's Buzzard.*) var. *harrisi*.

GENUS **ONYCHOTES**, RIDGWAY. (Page 125.)

O. gruberi. Wing, 10.10; tail, 6.50; culmen, about .80; tarsus, 2.70; middle toe, 1.45; posterior claw 1.00, its digit .80. *Immature* (?). Uniform grayish-umber, tinged with dull rufous on the neck; lining of the wing and tibiae dull grayish-cinnamon. Primaries inclining to black, and showing just discernible, obscure hoary bars on their basal half. Tail brownish-gray, with a hoary cast nearer the shaft (not paler at the tip), and crossed with nine or ten narrow bars of dusky, these becoming hardly distinguishable basally and terminally. Inner webs of the primaries plain white anterior to their emargination. Head laterally and beneath obsoletely streaked with whitish. *Hab.* "California." (*Gruber's Hawk.*)

GENUS **BUTEO**, CUVIER. (Page 125.)

A. Three outer primaries with their inner webs cut or emarginated.

1. **B. pennsylvanicus.** Wing, 9.85–11.40; tail, 6.30–8.00; culmen, .70–.80; tarsus, 2.15–2.80; middle toe, 1.20–1.40. Third to fourth quill longest; first shorter than seventh. *Adult.* Tail dull black, paler at the tip, crossed by two to four bands of dilute umber, or brownish-white, varying in width, but the last always broadest. Upper tail-coverts tipped and barred with white. Lower parts dull rufous-brown, nearly unbroken on the breast, but posteriorly much variegated with roundish transverse spots of white, forming broad transverse bars, interrupted by the dusky shaft. Upper parts dark umber, darker on the back. *Young.* Tail dull grayish-umber, growing darker terminally, narrowly tipped with whitish, and crossed by about six narrow and indistinct bands of dusky; these gradually becoming obsolete basally, the last much broader. Lower parts white, or light ochraceous, with longitudinal spots of dark brown or blackish on the sides of the breast and abdomen, and roundish or transversely cordate ones on the sides, flanks, and tibiae. A conspicuous "mustache" on the cheeks, from the rictus down. Upper parts much as in the adult. *Hab.* Eastern North America, and Middle America, south to Bogota and Caraccas. (*Broad-winged Hawk.*)
2. **B. swainsoni.** Wing, 12.00–17.00; tail, 6.50–9.00; culmen, .80–.95; tarsus, 2.95–2.70; middle toe, 1.50–1.70. Third to fourth (usually third) quills longest; first usually longer than seventh. *Adult.* Tail dark grayish-brown, sometimes with a hoary cast, crossed by five to seven, or more, narrow bands of dusky, usually very obscure, and becoming obsolete basally. Colors of other portions extremely variable; the upper parts, however, continuous, unvariegated, dark brown, or blackish; the lower parts sometimes also entirely dusky, except the tail-coverts, which are always (?) barred with white. *Normal plumage.* A dark area covering the jugulum and breast, dull rufous in the ♂, and dark grayish-brown in the ♀. Other lower parts whitish, sometimes pure, and nearly immaculate, but usually more or less tinged with ochraceous and rufous, and transversely

barred with various shades of brown. *Young.* Tail hoary brownish-gray, crossed by numerous, very indistinct, narrow bands of darker, and faintly tipped with whitish. Ground-color of the head, neck, and lower parts, light ochraceous, or cream-color (sometimes nearly white), the anterior upper parts with large longitudinally ovate spots of black; these assuming the form of streaks on the head and neck. Sides of the breast with an aggregation of larger spots of the same, and sides with sparser hastate or deltoid spots. Upper parts purplish-black, more or less variegated with ochraceous; the relative proportion of the two colors varying with the individual.

Wing, 14.40–17.00; tail, 8.00–9.50; culmen, .80–.95; tarsus, 2.30–2.70; middle toe, 1.50–1.70. Weight $1\frac{1}{2}$ – $3\frac{1}{4}$ lbs. *Hab.* Western Province of North America, from the Mississippi Valley, and the region of the Great Lakes (Michigan, Wisconsin, Iowa, to Arkansas, also Canada and Massachusetts) to the Pacific. (*Swainson's Hawk.*)

var. *swainsoni*.

Wing, 12.00–15.30; tail, 6.50–9.00; culmen, .85–.90; tarsus, 1.95–2.60; middle toe, 1.50–1.60. Colors similar, but the young paler than that of var. *swainsoni*. Adult unknown. *Hab.* Middle and South America, and southern border of the western United States, from New Mexico to Buenos Ayres (two specimens, Costa Rica, and Buenos Ayres, Mus. S. I.) (*Sharp-winged Hawk.*) . . . var. *oxypterus*.

B. Four outer primaries with their inner webs cut or emarginated.

a. Form light, the legs slender; tail of adult without a subterminal band of black more distinct than the others.

3. **B. zonocercus.** Wing, 15.50–17.40; tail, 8.50–10.75; culmen, .90; tarsus, 2.50–2.80; middle toe, 1.60–1.85. Entirely deep black, with more or less concealed pure white spotting. *Adult.* Tail carbonaceous-black, with three very broad zones of pure white on inner webs and ash on the outer webs. *Young.* Tail dark brown, the inner webs more or less, sometimes entirely, white, crossed by numerous oblique bands of black. *Hab.* Mexico (chiefly western?) and adjacent southwestern portions of the United States (Arizona, COUES; Southern California, San Diego, COOPER). (*Band-tailed Black Hawk.*)

4. **B. lineatus.** Wing, 11.25–14.25; tail, 8.00–10.00; culmen, .75–.90; tarsus, 2.70–3.25; middle toe, 1.30–1.50. Fourth to fifth quill longest; first shorter than seventh. Outer webs of the primaries with quadrate spots of whitish; lesser wing-coverts dark rufous; lower parts rufous more or less barred with whitish, or whitish spotted longitudinally with dusky. *Adult.* Head, neck, lesser wing-coverts, and lower parts deep rufous, the lower parts more or less barred posteriorly with whitish. Primaries and tail black; the former with quadrate spots of pure white on the outer webs, and the latter crossed by six narrow bands of pure white, and tipped with the same. *Young.* Head, neck, and lower parts whitish, usually more or less tinged with ochraceous, and with longitudinal markings of dusky. Primaries and tail dusky; the former mostly ochraceous anterior to the situation of their outer webs, the latter crossed by numerous narrow bands of pale grayish-brown, these becoming paler and more ochraceous toward the base. Lesser wing-coverts more or less dark tinged with rufous.

Adult. Lower parts light rufous barred with white. *Young.* White prevailing on the lower parts. *Hab.* Eastern Province of the United States. (*Red-shouldered Hawk.*) . . . var. *lineatus*.

Adult. Lower parts deep dark rufous, almost free from bars, except posteriorly. *Young.* Dark spotting on the lower parts predominating. *Hab.* Pacific Province, and southern Western Province, of the United States. (*Western Red-shouldered Hawk.*)

var. *elegans*.

b. Form robust and heavy, the tarsus stout; tail of the adult with a sub-terminal band of black broader than the other.

5. **B. borealis.** Wing, 13.25–17.75; tail, 8.50–11.30; culmen, .90–1.15; tarsus, 2.70–3.40; middle toe, 1.60–1.95. Weight, 2½ to 4 pounds. Third to fifth quill longest; first shorter than seventh and shorter than tenth. Colors extremely variable, ranging from entirely pure white beneath, through various shades of ochraceous and rusty, and greater or less amount of darker spots and bars, to an entirely uniform brownish-black. *Adult.* Tail deep rufous, generally paler at the tip; with or without black bars. *Young.* Tail grayish-brown, crossed by nine or ten bands of black, much narrower than the gray ones. Lower parts always with white predominating.

Tibiae and lower tail-coverts without transverse bars, at any age. Lower parts with white always predominating. Tail never with more than one bar of black.

Feathers of the head and neck edged laterally with rufous; scapulars and wing-coverts much variegated with whitish; upper tail-coverts white, barred with rufous. Throat with blended streaks of blackish, this usually predominating; tibiae and lower tail-coverts plain yellowish-white. *Hab.* Eastern Province of North America, to the Missouri plains. (*Red-tailed Hawk.*) var. *borealis*.

Similar, but colors much paler, the lower parts entirely pure white, with little or no spotting on the abdomen. Tail usually destitute of the black subterminal band. *Hab.* Plains, from Texas to Minnesota. (*Krider's Red-tail.*) var. *krideri*.

Similar to the last, but lower parts strongly tinged with rufous on the tibiae, and upper parts much darker. Tail always destitute of the subterminal black band. *Young* not distinguishable from that of var. *calurus*. *Hab.* Cape St. Lucas. (*Lucas Red-tail.*) var. *lucasanus*.

Whole head, neck (except the throat), and upper parts, continuously uniform unvariegated brownish-black; that of the neck meeting narrowly across the lower part of the throat, leaving the whole throat almost immaculate white. Posterior lower parts fine, deep pinkish-ochraceous; tibiae deep reddish-ochraceous; upper tail-coverts plain rufous. *Hab.* Central America (from Tres Marias, Western Mexico, to Costa Rica and Veragua). (*Costa Rica Red-tail.*) var. *costaricensis*.

Tibiae and lower tail-coverts always with distinct transverse bars. Tail often with more or less complete transverse bars of black to the base. Lower parts with an excess of ochraceous and darker markings, frequently wholly blackish.

Varying, from individuals distinguishable from the darker examples of var. *borealis* only by the presence of bars on the tibiae and crissum, through others with various degrees of rufous tinge and dusky spotting and barring beneath, to a per-

fectly melanistic condition, in which the bird is almost uniformly black, and the tail with continuous, regular bars of black to the base. *Hab.* Western Province of North America, from the Rocky Mountains to the Pacific. (*Black Red-tail.*)

var. *calurus*.

6. **B. harlani.** Wing, 15.00–16.20; tail, 8.80–10.50; culmen, 1.00; tarsus, 2.75–2.90; middle toe, 1.50–1.70. Lateral toes nearly equal; tibial plumes much developed, reaching below the bases of the toes. Entirely brownish-black (except the tail), the concealed bases of the feathers snowy-white. *Adult.* Tail confusedly mottled with dusky and white, upon a grayish ground; sometimes more or less tinged with rufous. *Young.* Tail grayish-brown, with nine very regular, sharply defined bands of brownish-black, about equal in width to the gray ones. Lower parts wholly dusky. *Hab.* Southwestern United States, east of the Rocky Mountains, from Kansas to Texas. (*Harlan's Buzzard.*)

7. **B. cooperi.** Wing, 15.75; tail, 9.10; culmen, 1.10; tarsus, 3.25; middle toe, 1.70. *Adult.* Head, neck, and beneath, pure white, the head above and nape streaked with dusky; lining of the wing white, with a large black patch. Above nearly uniform dusky, the primaries plumbeous. Tail longitudinally mottled with light rufous, cinereous, and dusky; the former prevailing. *Hab.* Santa Clara County, California. (*Cooper's Buzzard.*)

GENUS **ARCHIBUTEO**, BREHM. (Page 125.)

COMMON CHARACTERS. Tail more or less white basally; inner webs of the primaries white, without bars, anterior to their emargination. Head and neck with longitudinal streaks of whitish and dusky (except in melanistic individuals of *lagopus* var. *sancti-johannis*).

1. **A. ferrugineus.** Wing, 15.90–19.60; tail, 9.50–11.00; culmen, 1.00–1.20; tarsus, 3.10–3.45; middle toe, 1.40–1.65. Bill wide, the base very broad and depressed. Beneath, continuous pure white, without conspicuous spots, except sometimes a few scattered ones along the sides and across the abdomen; breast immaculate, or with only narrow shaft-streaks. Upper parts always with more or less rufous. *Adult.* Upper parts and tibiae fine rufous, the former with longitudinal spots, the latter with transverse bars, of blackish. Secondaries and primaries plumbeous, the latter with a hoary cast. Tail white, washed with pale ash, and more or less stained along the edges of the feathers (longitudinally) with light rufous; sometimes with a badly defined indication of a dusky subterminal bar. *Young.* Above dark grayish-brown, with only the borders of the feathers rufous or ochraceous; tibiae white, with sparse transverse spots of dark brown. Tail white only on basal third, and on inner webs, the remaining portion brownish-ashy, with several more or less distinct darker bands. *Hab.* Western North America, from Arizona, California, and Oregon, east to the Great Plains. (*California Squirrel-Hawk.*)

2. **A. lagopus.** Wing, 15.75–18.20; tail, 8.70–10.50; culmen, .80–1.00; tarsus, 2.30–2.80; middle toe, 1.30–1.50. Bill narrow, compressed; beneath more or less spotted with dusky, which usually predominates; breast with large spots of dusky; no rufous on upper parts, nor on tibiae. *Adult.*

Whitish, with transverse dusky spots. On the lower parts, the dusky spots or cloudings largest and most suffused anteriorly (on the jugulum and breast). Terminal portion of the tail with several irregular dusky bands. (Sometimes almost entirely black, varying in shade from a brownish to a carbonaceous tint!) *Young*. Above grayish-brown, longitudinally spotted with dusky, and more or less edged with pale ochraceous, or rusty whitish. Beneath ochraceous-white, with the spots largest and most suffused posteriorly, forming a wide, more or less continuous, belt across the abdomen; markings on the jugulum and breast longitudinal. Terminal portion of the tail without transverse bars.

Spots on the jugulum, in the adult, suffused into a nearly uniform patch. Never melanistic (?). *Hab.* Europe. (*Rough-Legged Hawk*.)

var. *lagopus*.

Spots on the jugulum, in the adult, scattered. Frequently melanistic. *Hab.* North America. (*American Rough-Leg*)

var. *sancti-johannis*.

GENUS **AQUILA**, AUCTORUM. (Page 125.)

A. chrysaetus. Wing, 23.00–27.00; tail, 14.00–16.00; culmen, 1.50–1.90; tarsus, 3.40–4.20; middle toe, 2.40–3.10. Third to fifth quill longest; first shorter than seventh or eighth. Color blackish-brown, or umber-brown, nearly uniform, except on the tail; nuchal cape of lanceolate feathers, and tarsi of a paler and more tawny tint. Bill black; iris brown. *Adult*. Tail transversely clouded with ashy, and not white at the base; feathers of the body not distinctly white beneath the surface. *Young*. Tail with the basal half plain white, the terminal portion plain blackish; feathers of the body distinctly white beneath the surface. *Hab.* The Northern Hemisphere.

Tarsi of adult pale umber; of young, dirty whitish. *Hab.* Northern and temperate parts of Old World. (*European Golden Eagle*.)

var. *chrysaetus*.

Tarsi of adult deep umber; of young, light brown. Length of male, 30 to 35 inches; of female, 33 to 40. *Hab.* Northern and Middle North America, especially in the mountainous regions. (*American Golden Eagle*; *Mountain Eagle*.)

var. *canadensis*.

GENUS **HALIÆTUS**, SAVIGNY. (Page 125.)

COMMON CHARACTERS. *Adult*. Bill, cere, and iris yellow. Tail, and sometimes the head and neck, white. *Young*. Bill and cere black; iris dark brown. Tail, head, and neck, blackish.

A. Tail of fourteen feathers, cuneate, or graduated, for nearly half its length. Nostril with its lower end acute, bevelled gradually to the level of the cere; upper outline of the cere very convex; lore naked.

1. **H. pelagicus**. Length of female, 45 inches; wing, 26; tail, 16. *Hab.* Kamtschatka and adjacent regions of Eastern Asia.

B. Tail of twelve feathers, only slightly rounded. Lower end of the nostril rounded, opening more abruptly inward; upper outline of the cere nearly straight; lores scantily feathered.

2. **H. albicilla**. Length of male, 31 to 34 inches; female, 35 to 40; young larger than adult. Wing, 23.00–28.00; tail, 11.50–16.00;

culmen, 2.05–2.20; tarsus, 3.30–3.80; middle toe, 2.50–2.95; depth of bill about 1.45; cere, on top, .85. *Adult.* Head and neck pale grayish-fulvous, or dirty yellowish-gray, not abruptly lighter than the body. Tail, only, pure white. Rest of the plumage, including the tail-coverts, dark grayish-brown, inclining to blackish on the primaries. *Young.* Prevailing tint of the upper parts light isabella-color, or pale grayish-cinnamon, each feather having a terminal triangular spot of blackish-brown. Breast soiled white, with broad stripes of brownish-black; rest of the lower parts nearly uniform fulvous-brown, the tibiae darker. *Hab.* Europe; Egypt; Greenland. (*White-tailed Eagle*; *Sea-Eagle*.)

3. *H. leucocephalus*. Length of male, 30 to 34 inches; female, 35 to 40; young and immature bird larger than the adult. Wing, 20.00–26.00; tail, 10.50–15.50; culmen, 1.85–2.20; tarsus, 2.65–3.70; middle toe, 2.35–3.10; depth of bill about 1.30; cere, on the top, .80. *Adult.* Head and neck, tail and tail-coverts, pure white, immaculate (except in transition dress). Rest of the plumage brownish-black. *Young.* Brownish-black, showing much concealed white at the bases of the feathers; ground-color inclining to umber-brown on the upper surface; on the lower parts, the basal white much exposed and predominating, the blackish forming longitudinal, tear-shaped spots. Head and neck brownish-black, the penicillated feathers of the nape seldom with whitish points. Tail-feathers and primaries black, the inner webs usually more or less marked, longitudinally, with buffy-whitish. *Hab.* The whole of North America. (*White-headed Eagle*; *Bald Eagle*.)

FAMILY CATHARTIDÆ. — THE AMERICAN VULTURES.

CHAR. Whole head, and sometimes the neck, naked; eyes prominent, and not shaded by a superciliary shield. Cere much elongated, much depressed anteriorly below the very arched culmen; nostrils longitudinal, horizontal, the two confluent or perforate. Middle toe very long, and the hind one much abbreviated. A web between the base of the inner and middle toes.

A. Crop naked. *Male* with a fleshy crest, or lobe, attached to the top of the cere. Bill very robust and strong, its outlines very convex; cere much shorter than the head. Embraces the genus *Sarcorhamphus* peculiar to Middle and South America.

B. Crop feathered. *Male* without a fleshy crest, or other appendages, on the head. Bill less robust, variable as to strength, its outlines only moderately convex; cere nearly equal to the head in length. Sexes alike.

a. Entire neck bare; plumage commencing abruptly in a ruff of lanceolate, or penicillate feathers, these continued on the breast and abdomen. Head much elongated, the upper outline a slightly convex plane, the forehead depressed below the level of the very elevated dorsal outline of the cere. Posterior claw very thick and strongly curved. Iris dark hazel (Aud.); pale red (DOUGLASS). Eggs white, unspotted. Nest on ground.

1. *Pseudogryphus*. Nostril occupying only the posterior third of the nasal orifice, its anterior end acute. Bill weak, the terminal hook only slightly developed, the mandibles broader than deep, the lower as deep

 

[illegible]

 

as the upper. Head and neck without corrugations or caruncles. Tarsus slightly longer than the middle toe; fourth or fifth quill longest; extremities of the quills reaching to or beyond the end of the tail. Tail even; iris "carmine"; eggs white. (*P. californianus*.) (Page 142.)

b. Only the upper half, or less, of the neck bare; plumage commencing gradually with normal, broad feathers; feathers of breast and abdomen broad and normal. Head only moderately elongated, the upper outline irregular, the forehead elevated above the dorsal outline of the cere. Bill strong, the terminal hook well developed. Posterior claw weaker, less curved. Iris brown. Eggs white, strongly blotched with brown. Nest on ground or stumps.

2. **Rhinogryphus.** Nostril occupying the whole of the nasal cavity, its anterior end broadly rounded; cere as deep as broad, the upper and lower outlines divergent posteriorly, the former considerably arched; lower mandible much less deep than the upper. Skin of the neck without corrugations; a semicircular tuft of antrorse radiating bristles in front of the eye. Wing very long, the primaries reaching to or beyond the end of the tail. Tail much rounded. (*R. aura* and *R. burrovianus*.) (Page 142.)

3. **Catharista.** Nostril occupying only the posterior half of the nasal cavity, its anterior end contracted and acute; cere depressed, much wider than deep, its upper and lower outlines parallel, the former not perceptibly arched; lower mandible as deep as the upper; skin of the neck transversely corrugated; no tuft of bristles in front of the eye. Wing short, the primaries reaching scarcely to the middle of the tail. Tail even, or slightly emarginate. (*C. atrata*.) (Page 143.)

GENUS **PSEUDOGRYPHUS**, RIDGWAY. (Page 141.)

P. californianus. Wing, 30.00–35.00; tail, 15.00–18.00. Total length, 45 to 50 inches; extent of wings, about 9 or 10 feet.

Adult. Bill yellowish-white; naked skin of the head and neck orange and red; iris carmine (authors). General plumage dull black, the upper surface with a faint bluish lustre, the feathers (excepting the primary coverts, secondary coverts, and remiges) passing into dull brownish on their margins, producing a squamate appearance. Scapulars and (more appreciably) the secondaries and their coverts with a hoary grayish cast, the latter white for most of their exposed portions (producing a band across the wing), the white following the edges of the secondaries nearly to their ends; primaries and tail-feathers, with their shafts, uniform deep black. Whole lining of the wing (except the outer border) and axillars pure white. Lower parts continuous dull carbonaceous-black, the tips of the penicillate feathers with a hoary or chalky tinge.

Young. Bill dusky; naked skin of the head and neck dusky, and more or less covered with soft, grayish down. Plumage duller black, with the white wholly absent.

HAB. Pacific Coast region from mouth of the Colorado to the Columbia? Southern Utah (HENSHAW). (*California Condor*; *California Vulture*.)

GENUS **RHINOGRYPHUS**, RIDGWAY. (Page 142.)

COMMON CHARACTERS. General plumage nearly uniform blackish; no white.

Adult. Bill white; head reddish. *Young.* Bill and head dusky, or blackish.

1. **R. aura.** Upper half of the neck bare all round. Feathers of the upper surface with brown borders. Length about 26 inches; extent of wings about 6 feet. Wing, 20.00–23.00; tail, about 12.00. *Hab.* Entire continent and islands of America, except the colder portions. (*Turkey-Buzzard.*)

2. **R. burrovianus.** Only the head and throat naked, the feathers of the neck extending up to the occiput. Feathers of the upper surface without brown borders. Length about 22 inches. Wing, 18.00–18.50; tail, 9.00. *Hab.* Eastern Tropical America (Brazil; Eastern Mexico ??). (*Burroughs's Buzzard.*)

GENUS **CATHARISTA**, VIEILLLOT. (Page 142.)

C. atrata. Form heavy; the wings and tail short, the latter square; the remiges and rectrices very hard and stiff. Bill strong, the mandibles broader than deep, and of about equal depth, the terminal hook well developed; upper and lower outlines of the cere parallel, and nearly straight. Nostril narrow, its anterior end contracted and pointed. Length about 23 inches; extent, 54. Wing, 17.00–17.50; tail, 7.50–8.50; culmen, .90–.95; tarsus, 3.00; middle toe, 2.90; outer, 1.90; inner, 1.50; posterior, .75. *Adult.* Bill blackish, the point horny-white; naked skin of the head and upper part of the neck blackish. Entire plumage continuous, perfectly uniform dull black; primaries becoming grayish basally (more hoary whitish on their under surface), their shafts pure white for their whole length. *Hab.* Tropical and subtropical portions of America, especially near the coast. [(*Black Vulture*; *Carrión Crow.*)]

APPENDIX.

Harporynchus bendirei, COUES. Similar in colors to *H. curvirostris*, var. *palmeri*, but much smaller, with smaller and very differently formed bill. Wing, 3.80-4.10; tail, 4.40-4.50; culmen, 1.15; tarsus, 1.15-1.20; middle toe, .88. Eggs like those of *H. cinereus*! *Hab.* Tucson, Arizona.

Leucosticte tephrocotis, var. **australis**, ALLEN. Differing from var. *tephrocotis* in lacking entirely the ash of the head; bill deep black, and the red of a harsh intense carmine tint, and usually tingeing the throat. Wing, 4.00-4.20; tail, 3.00-3.10; culmen, .45; tarsus, .70; middle toe, .60. *Hab.* High peaks of Colorado, above the timber-line.

Dolichonyx oryzivorus, var. **albinucha**, RIDGWAY. Differing from var. *oryzivorus* in nearly pure white, unclouded, occipital patch, intenser and more uniform black, and deep blue-black bill and black feet. *Hab.* Rocky Mountain region of United States, from the Plains to the eastern border of the Great Basin.

Peucea carpalis, COUES. Crown and lesser wing-coverts rufous, the former divided by a medial stripe of pale grayish. Above grayish, streaked, except on rump, with dusky. Beneath ashy-white, the throat bordered by a conspicuous "bridle" of black. Wing, 2.50; tail, 2.75; culmen, .45; tarsus, .80; middle toe, .55. *Hab.* Tucson, Arizona.

Ammodromus maritimus, var. **nigrescens**, RIDGWAY. Above brownish-black, obscurely edged with olive-brown; beneath pure white, sharply and heavily streaked with deep black; supraloral stripe and bend of the wing gamboge-yellow. Wing, 2.40; tail, 2.50; culmen, .55; tarsus, .95; middle toe, .55. *Hab.* Indian River, Florida.

Zonotrichia leucophrys. The two Western races distinguished as follows:—

Dorsal streaks sooty-black; ashy portions with a sombre brownish cast; edge of wing somewhat tinged with sulphur-yellow. *Hab.* Pacific Province of the United States var. *gambeli*.

Dorsal streaks chestnut-brown; ashy portions of a fine clear tint; edge of wing never tinged with yellow. *Hab.* Middle Province of United States, north to Alaska var. *intermedia*.

ANALYTICAL TABLE OF THE HIGHER GROUPS.

BY ELLIOTT COUES, M. D., U. S. A.

A. PASSERES. Hallux invariably present, completely incumbent, separately movable by specialization of the *flexor hallucis longus*, with enlarged base and its claw larger than that of the middle digit. Neither second nor fourth toe versatile; joints of toes always 2, 3, 4, 5, from first to fourth. Wing-coverts comparatively short and few; with the exception of the least coverts upon the *plica alaris*, arranged in only two series, the greater of which does not reach beyond the middle of the secondary remiges. Rectrices twelve (with rare anomalous exceptions). Musical apparatus present in greater or less development and complexity. Palate ægithognathous. Sternum of one particular mould, single-notched. Carotid single (sinistra.) Nature highly altricial and psilopædic.

a. Oscines. Sides of the tarsus covered in most or all of their extent with two undivided horny plates meeting behind in a sharp ridge (except in *Alaudidæ*; one of the plates imperfectly divided in a few other forms). Musical apparatus highly developed, consisting of several distinct pairs of syringeal muscles. Primaries nine only, or ten with the first frequently spurious, rarely over two thirds the length of the longest, never equalling the longest.

b. Clamatores. Sides of the tarsus covered with divided plates or scales variously arranged, its hinder edge blunt. Musical apparatus weak and imperfect, of few or incompletely distinguished syringeal muscles (as far as known). Primaries ten with rare exceptions, the first usually equalling or exceeding the rest.

B. PICARIÆ. Hallux inconsiderable, weak or wanting, not always incumbent, not separately movable by distinction of a special muscle, its claw not longer than that of the middle toe unless of exceptional shape (e. g. *Centropus*). Second or fourth toe frequently versatile; third and fourth frequently with decreased number of joints. Wing-coverts for the most part larger and in more numerous series than in *Passeres*, the greater series reaching beyond the middle of the secondary quills (except in many *Pici* and some others). Rectrices commonly ten (eight to twelve). Primaries always ten, the first only exceptionally short (as in *Pici*). Musical apparatus wanting, or consisting of a muscular mass, or of not more than three pairs of syringeal muscles. Palate desmognathous or ægithognathous. Sternum of non-passerine character, its posterior border entire or doubly notched or fenestrated. Carotid single or double. Nature completely altricial, but young sometimes hatched with down (e. g. *Caprimulgidæ*).

a. Cypseli. Palate ægithognathous. Wings lengthened in their terminal portions, abbreviated basally, with the first primary not reduced. Tail of ten rectrices. Bill fissirostral or tenuirostral. Feet never zygodactyle nor syndactyle, small, weak, scarcely fitted for locomotion; hallux often elevated or lateral or reversed; front toes usually webbed

at base, or with abnormal ratio of phalanges in length and number, or both. Sternum deep-keeled, usually entire or else doubly notched or perforate. Syringeal muscles not more than one pair.

b. Cuculi. Palate desmognathous. Wings not peculiar in brevity of proximal or length of distal portions, and with first primary not reduced. Tail of eight to twelve rectrices. Bill of indeterminate form, never cered; tongue not extensile. Feet variously modified by versatility or reversion of either first, second, or fourth toes, or by cohesion for a great distance of third and fourth, or by absence or rudimentary condition of first or second; often highly scansorial, rarely ambulatorial. Syringeal muscles two pairs at most.

c. Pici. Palate "exhibiting a simplification and degradation of the ægithognathous structure" (Huxley); wings bearing out this passerine affinity in the common reduction of the first primary and the restriction of the greater coverts. Tail of ten perfect rectrices and usually a supplementary pair. Rostrum hard, straight, narrow, subequal to head, with commonly extensile and vermiform but not furcate tongue. Feet highly scansorial. Fourth toe permanently reversed; basal phalanges of toes abbreviated. Sternum doubly notched. Salivary glands highly developed. Hyoid apparatus peculiar.

C. PSITTACI. Bill enormously thick, short, high, much arched from the base, the upper mandible strongly hooked at the end, cered at base, and freely movable by complete articulation with the forehead, the under mandible with short, broad, truncate symphysis. Feet permanently zygodactyle by reversion of the fourth toe, which articulates by a double facet. Tarsi reticulate. Syrinx peculiarly constructed of three pairs of intrinsic muscles. Tongue short, thick, fleshy. Sternum entire or fenestrate. Clavicles weak, defective, or wanting. Orbit more or less completed by approach or union of postorbital process and lachrymal. Altricial; psilopædic.

D. RAPTORES. Bill usually powerful, adapted for tearing flesh, strongly decurved and hooked at the end, furnished with a cere in which the nostrils open. Feet strongly flexible, with large, sharp, much curved claws gradually narrowed from base to tip, convex on the sides, that of the second toe larger than that of the fourth toe, and the hinder not smaller than the second one. Feet never permanently zygodactyle, though fourth toe often versatile; anterior toes commonly with one basal web; hallux considerable and completely incumbent (except *Cathartidae*). Legs feathered to the suffrago or beyond. Rectrices twelve (with rare exceptions); primaries sinuate or emarginate (with rare exceptions). Sternum singly or doubly notched or fenestrate. Palate desmognathous. Carotids double. Syrinx wanting or developed with only one pair of muscles. Altricial; the young being weak and helpless, yet ptilopædic, being downy at birth.

E. COLUMBÆ. Bill straight, compressed, horny at the vaulted tip, which is separated by a constriction from the soft membranous basal portion. Nostrils beneath a soft, tumid valve. Tomia of the mandibles mutually apposed. Frontal feathers sweeping in strongly convex outline across base of upper mandible. Legs feathered to the tarsus or beyond. Hallux incumbent (with few exceptions), and front toes rarely webbed at base. Tarsus with small scutella in front, or oftener reticulate, the envelope rather membranous than corneous. Head very small. Plumage without after-shafts. One pair of syringeal muscles. Sternum doubly notched, or notched and fenestrate on each side. Carotids double. Palate schizognathous. Monogamous, and highly altricial and psilopædic.

F. GALLINÆ. Bill generally short, stout, convex, with an obtuse vaulted tip, corneous except in the nasal fossa, and without constriction in its continuity. Nostrils scaled or feathered. Tomia of upper mandible overlapping. Frontal feathers forming re-entrant outline at the base of upper mandible. Legs usually feathered to the tarsus or beyond. Hallux elevated, with few exceptions (e. g. *Cracidæ* and *Megapodidæ*), smaller than the anterior toes, occasionally wanting (as in the Hemipods). Tarsus, when not feathered, generally broadly scutellate. Front toes commonly webbed at base. Claws blunt, little curved. Wings strong, short, and concavo-convex. Rectrices commonly more than twelve. Head small. Plumage usually after-shafted. Carotids double (except *Turnicidæ* and *Megapodidæ*). No intrinsic syringeal muscles. Sternum very deeply, generally doubly, notched. Palate schizognathous. Chiefly polygamous. Præcocial and ptilopædic.

G. LIMICOLÆ. Tibiæ bare of feathers for a variable (sometimes very slight) distance above the suffrago. Legs commonly lengthened, sometimes excessively so, and neck usually produced in corresponding ratio. Tarsi scutellate or reticulate. Toes never coherent at base; cleft, or united for a short distance by one or two small movable basal webs (palmate only in *Recurvirostra*, lobate only in *Phalaropodidæ*). Hallux always reduced, obviously elevated and free, or wanting; giving a foot of cursorial character. Wings, with few exceptions, lengthened, pointed, and flat; the inner primaries and outer secondaries very short, forming a strong re-entrance on the posterior border of the wing. Tail shorter than the wing, of simple form, and of few feathers, except in certain Snipes. Head globose, sloping rapidly down to the contracted base of the bill, completely feathered (except *Philomachus* ♂). Gape of bill short and constricted; tip usually obtuse; bill weak and flexible. Rostrum commonly lengthened, and more or less terete and slender; membranous wholly or in great part, without hard cutting edges. Nostrils narrow, placed low down, entirely surrounded with soft skin; nasal fossæ extensive. Palate schizognathous. Sternum usually doubly, sometimes singly, notched. Carotids double. Pterylosis of a particular pattern. Nature præcocial and ptilopædic. Comprising the "Plover-Snipe" group; species of medium and small size, with never extremely compressed or depressed body; more or less aquatic, living on plains and in open places, usually near water, nesting on the ground, where the young run freely at birth.

H. HERODIONES. Tibiæ naked below. Legs and neck much lengthened in corresponding ratio. Toes long, slender, never coherent at base, where cleft, or with movable basal webbing. Hallux (as compared with that of the preceding and following group) lengthened, free, and either perfectly incumbent or but little elevated, with a large claw, giving a foot of insectorial character. Wings commonly obtuse, but broad and ample, without marked re-entrance on posterior border, the intermediate remiges not being much abbreviated. Tail short and few-feathered. Head narrow, conico-elongated, gradually contracting to the large, stout base of the bill; the loreal and orbital region, or the whole head, naked. Gape of the bill deeply fissured; tip usually acute; tomia hard and cutting. Bill conico-elongate, always longer than the head, stout and firm. Nostrils small, placed high up, with entirely bony and horny, or only slightly membranous, surroundings. Pterylosis nearly peculiar in the presence, almost throughout the group, of powder-down tracts, rarely found elsewhere; pteryllæ very narrow. Palate desmognathous. Carotids double. Altricial. Comprising the Herons,

Storks, Ibises, etc. (not Cranes). Species usually of large stature, with compressed body and very long S-bent neck; perching and nesting usually in trees, bushes, or other high places near water; young hatching weak, scarcely feathered, and reared in the nest.

I. ALECTORIDES.¹ Tibiæ naked below. Neck, legs, and feet much as in the last group, but hallux reduced and obviously elevated, with small claw, the resulting foot cursorial (natatorial and lobate in *Fulica*). Wings and tail commonly as in *Herodiones*. Head less narrowed and conic than in the last, fully feathered or with extensive baldness (not with definite nakedness of loreal and orbital regions). Bill of various shape, usually lengthened and obtuse, never extensively membranous. Rictus moderate. Nostrils lower than in *Herodiones*. Pterylosis not peculiar. Palate schizognathous. Carotids double. Nature præcocial and ptilopædic. Comprising the Cranes and Rails and their allies; the former agreeing with the *Herodiones* superficially in stature, etc., but highly diverse in the schizognathous palate, præcocial nature, etc.

J. LAMELLIROSTRES. Feet palmate; tibiæ feathered (except *Phænicopterus*). Legs near centre of equilibrium of the body, its axis horizontal in walking; not lengthened except in *Phænicopterus*. Knee-joint rarely exerted beyond general skin of the body. Wings moderate, reaching when folded to, but not beyond, the usually short and rounded (exceptionally long and cuneate) tail. Feet tetradactyle (except sometimes in *Phænicopterus*); hallux reduced, elevated and free, often independently lobate. Bill lamellate, i. e., furnished along each commissural edge with a regular series of mutually adapted laminae or tooth-like processes, with which correspond certain lacinate processes of the fleshy tongue, which ends in a horny tip. Bill large, thick, high at base, depressed towards the end, membranous to the broad obtuse tip, which is occupied by a horny "nail" of various shape. Nostrils patent, never tubular; nasal fosse slight. No gular pouch. Plumage dense, to resist water. Eyes very small. Head high, compressed, with lengthened, sloping frontal region. Palate desmognathous. Reproduction præcocial; young ptilopædic. Eggs numerous. Carotids double. Sternum single-notched. Comprising Flamingoes and all the Anserine birds.

K. STEGANOPODES. Feet totipalmate; hallux lengthened, nearly incumbent, semilateral, completely united with the second toe by a full web. Tibiæ feathered; position of legs with reference to axis of body variable, but generally far posterior; knee-joint not free. Wings and tail variable. Bill of very variable shape, never lamellate, wholly corneous; its tomia often serrate; external nares very small or finally abortive. A prominent naked gular pouch. Tarsi reticulate. Sternum entire or nearly so; furculum confluent with its keel. Carotids double. Palate highly desmognathous. Reproduction altricial; young psilopædic or ptilopædic. Eggs three or fewer.

L. LONGIPENNES. (To most of the characters of the group here given the genus *Halodroma* is a signal exception, though unquestionably belonging here.) Feet palmate. Tibiæ feathered. Legs at or near centre of equilibrium, affording horizontal position of axis of body in walking. Knee scarcely buried in common integument; tibia sometimes with a long apophysis. Hallux elevated, free, functionless; very small, rudimentary, or

¹ Groups G., H., and I. are respectively equal to the *Charadriomorphæ*, *Pelargomorphæ*, and *Geranomorphæ* of Huxley.

wanting. Rostrum of variable shape, usually compressed and straight to the hooked end, sometimes entirely straight and acute, commonly lengthened, always corneous, without serration or true lamellæ. Nostrils of various forms, tubular or simply fissured, never abortive. No gular pouch. Wings very long and pointed, surpassing the base and often the end of the large, well-formed, few-feathered tail. Carotids double. Palate schizognathous. Reproduction altricial; young ptilopædic. Eggs three or fewer. Habit highly volucral.

M. PYGOPODES. Feet palmate or lobate. Tibiæ feathered, often with a long apophysis, always buried in common integument nearly to the heel-joint, necessitating a more or less erect posture of the body on land, where progression is difficult. Hallux small, elevated or wanting; feet lobate or palmate. Bill of indeterminate shape, wholly corneous, never lamellate or serrate, nor with gular pouch. Nostrils not abortive. Wings very short, reaching scarcely or not to the base, never to the tip, of the short, sometimes rudimentary, tail. Palate schizognathous. Carotid usually double, sometimes single (in *Podiceps* and *Mergulus*). Nature altricial or præcocial; young ptilopædic. Highly natatorial.

N. SPHENISCI. With general characters of the last group, but distinguished by unique ptilosis and wing-structure, etc. Plumage without apteria, of singularly modified scale-like feathers on most parts; no developed remiges. Wings unfit for flight, insusceptible of perfect flexion or extension, very short, with peculiarly flattened bones and stable articulations. Skeleton non-pneumatic. Many bones, terete in ordinary birds, here flattened. Metatarsal bone flattened transversely, doubly fenestrate. Hallux elevated, lateral, minute, free. No free pollex. Two anconal sesamoids; patella from double centres; tibia without apophysis; a free tarsal ossicle. Sternum with long lateral apophyses. Pelvic connections unstable. Carotids double. Comprising only the Penguins. Confined to the Southern Hemisphere.

ARTIFICIAL KEY TO THE FOREGOING HIGHER GROUPS,

By means of which any North American bird may be readily referred to that group to which it is held to belong.

I.	Toes 3 ; 2 in front, 1 behind	(<i>Pici</i>)	PICARLÆ.
II.	Toes 3 ; all in front. Toes cleft or semipalmate		LIMICOLÆ.
	Toes palmate. Nostrils tubular		LONGIPENNES.
	Nostrils not tubular		PYGOPODES.
III.	Toes 4 ; 2 in front, 2 behind. Bill cered and hooked		PSITTACI.
	Bill neither cered nor hooked. (<i>Cuculi</i> or <i>Pici</i>)		PICARLÆ.
IV.	Toes 4 ; 3 in front, 1 behind.		
	1. Toes syndactyle	(<i>Cuculi</i>)	PICARLÆ.
	2. Toes totipalmate (all four full-webbed)		STEGANOPODES.
	3. Toes palmate. Bill curved up		LIMICOLÆ.
	Bill not curved up ; lamellate		LAMELLIROSTRES.
	not lamellate ; hallux lobate		PYGOPODES.
	hallux not lobate		LONGIPENNES.
	4. Toes lobate. Tail rudimentary		PYGOPODES.
	Tail perfect. A horny frontal shield		ALECTORIDES.
	No horny frontal shield		LIMICOLÆ.
	5. Toes semipalmate ; joined by evident movable basal web (A).		
	6. Toes cleft to the base, or there immovably coherent (B).		

A. Hind toe elevated above the level of the rest.

Tibiae naked below.	Nostrils perforate						ALECTORIDES.
	Nostrils imperforate.	Tarsi reticulate.	Head bald				HERODIONES.
			Head feathered				LIMICOLÆ.
		Tarsi scutellate in front					LIMICOLÆ.
Tibiae feathered below.	Nostrils perforate						RAPTORES.
	Nostrils imperforate.	Gape reaching below eye.	(<i>Cypseli</i>)				PICARIE.
		Gape not reaching below eye					GALLINÆ.

AA. Hind toe inserted on the level of the rest.

Tibiae naked below							HERODIONES.
Tibiae feathered below.	Bill cered and hooked						RAPTORES.
	Bill not cered.	Nasal membrane soft and tumid					COLUMBÆ.
		Nasal scale hard and flat					GALLINÆ.

B. Hind toe elevated above the level of the rest.

Gape reaching below eye						(<i>Cypseli</i>)	PICARIE.
Gape not below eye.	First primary emarginate or about equal to 2d						LIMICOLÆ.
	First primary not emarginate and much shorter than 2d,						ALECTORIDES.

BB. Hind toe inserted on the level of the rest.

Nostrils opening beneath soft swollen membrane							COLUMBÆ.
Nostrils otherwise.	Bill cered and hooked						RAPTORES.
	Bill otherwise.	Secondaries only six				(<i>Cypseli</i>)	PICARIE.
		Secondaries more than six (a)					PASSERES.
(a) Primaries 10; the 1st more than $\frac{2}{3}$ as long as the longest.		(<i>Clamatores</i>)					PASSERES.
Primaries 10; the 1st not $\frac{2}{3}$ as long as the longest.						(<i>Oscines</i>)	PASSERES.
Primaries 9.							

ANALYSIS OF THE FAMILIES OF **PASSERES.**

A. Oscines. Musical apparatus highly developed. Back of tarsus undivided, or formed of a few scutella distinct from those lapping over the front. First primary wanting, spurious, or at most not over two thirds the length of the longest.

a. Each side of tarsus covered with a plate undivided in most or all of its length, and meeting its fellow in a sharp ridge behind.

b. Primaries only nine.

c. Bill triangular, depressed, about as wide at base as long; the gape twice as long as the culmen, reaching to about opposite the eyes; tomlia straight or gently curved. No obvious rictal bristles. Tarsi not longer than the lateral toe and claw. Wings long and pointed, the first primary equal to or longer than the second. Central tail-feathers not half as long as the wing . . . XI. *Hirundinidae.*

cc. Bill variously conico-elongate or slender, or, if depressed, with long rictal bristles; gape not nearly twice as long as culmen; tomlia straight or gently curved. Nostrils not obviously nearer culmen than tomlia. Tarsus longer than lateral toe and claw.

Bill very slender, acute; culmen rather concave at base. Longest secondary acuminate, nearly or quite equal to the primaries in the closed wing. Hind claw little curved, about twice as long as the middle claw. Hind toe and claw longer than middle toe and claw . . . IX. *Motacillidae.*

Bill variously conico-elongate and acute; culmen not concave at base. Longest secondary not acuminate, falling far short of primaries in the closed wing. Hind claw well curved, not nearly

twice as long as middle claw; hind toe and claw not longer than middle toe and claw. Gape ample; tongue slightly bifid or brushy, if at all X. *Sylviolidæ*.✓

Bill lengthened, very acute, even decurved. Wings and feet as in the last. Gape constricted; tongue generally deeply bifid or brushy XV. *Cærebidæ*.✓

ccc. Bill more or less truly conic, usually short, thick; commissure usually more or less evidently abruptly angulated near the base, or with lobe or tooth further forward. Nostrils obviously nearer culmen than tomia. Tarsus longer than lateral toe and claw.

Bill stout, tumid, convex in nearly all its outlines; tomia not angulated, but with one or more lobes or nicks in advance of the base. Nostrils placed very high. Otherwise much as in *Sylviolidæ*. Colors chiefly red and yellow. One genus. XVI. *Tanagridæ*.✓

Bill truly conic, much shorter than head, usually with the angulation evident; no lobe along middle of tomia, but usually a notch at end. Nostrils placed very high. Rictal bristles usually obvious XVII. *Fringillidæ*.✓

Bill conic, but lengthened, little if any shorter than head; the angulation of the tomia evident; no notch at end. Nostrils high.

No rictal bristles XIX. *Icteridæ*.✓

bb. Primaries ten.

Otherwise with characters much as in *Icteridæ* XX. *Sturnidæ*.✓

d. Nostrils concealed with antrorse bristly feathers (except in *Psilorhinus* and *Gymnokitta*).

Base of bill sheathed with antrorse bristly feathers, having lateral branches to their very ends; its tip mostly notched. Basal joint of middle toe united only half-way to the lateral. Sides of tarsus occupied by a lateral groove, mostly filled in with small plates. First primary more than half as long as second. Large, — over seven inches XXI. *Corvidæ*.✓

Base of bill with two tufts of bristly feathers, ending in simple filaments without lateral branches, its tip mostly unnotched. Basal joint of middle toe united nearly all its length with the lateral. Sides of tarsus ungrooved. First primary less than half as long as second. Small. VI. *Paridæ*.✓

dd. Nostrils exposed.

e. Tail scansorial, with rigid acute feathers. Whole bill slender, compressed, acute, decurved, unnotched, unbristled. Outer toe much longer than inner VII. *Certhiidæ*.✓

ee. Tail not scansorial, graduated. First primary not less (generally more) than half as long as the second, and inner toe united to the middle by at least one half (usually more) of the length of its basal joint.

Tarsus with few obscure scutella. Rictal bristles present. Bill stout, but not toothed nor hooked. Wing excessively rounded (fifth, sixth, and seventh primaries longest), much shorter than the long graduated tail. Size small. Plumage brown, unbanded V. *Chamæadæ*.✓

Tarsus distinctly scutellate. Nostrils wholly exposed, scaled. No rictal bristles, but loral feathers with bristly points. Bill slender, not notched nor hooked. Wings

and tail moderately rounded; neither very much shorter than the other. Size small. Color brown, etc., the wings and tail barred or undulated . . . VIII. *Troglodytidae*. ✓

Tarsus distinctly scutellate. Nostrils overhung (not concealed) with bristly feathers. Rictal bristles present, strong. Bill powerful, compressed, strongly notched, toothed, and hooked. Wings and tail moderate. Large.

Colors black, white, and gray . . . XIV. *Laniidae*. ✓

eee. Tail not scansorial. First primary less than half as long as the second, or about half as long, in which case the inner toe is cleft nearly to its base (*f* and *ff*).

f. Basal joint of middle toe united some distance with the inner, and for half or more of its length with the outer toe.

Basal joint of middle toe shorter than that of inner toe, and wholly adherent to both inner and outer toes. Tarsus longer than middle toe and claw. Gonyes more than half the length of the lower jaw. Bill stout, high, compressed; notched and abruptly hooked. XII. *Vireonidae*. ✓

Basal joint of middle toe not shorter than that of inner toe; united to the outer for about two thirds, to the inner for about one half, its length. Tarsus not longer than the middle toe and claw. Gonyes less than half the length of the under jaw. Bill triangular, much depressed at base, moderately notched, and hooked at tip . . . XIII. *Ampelidae*. ✓

Basal joint of middle toe shorter than that of the inner toe, united to the outer for about two thirds, to the inner for about one half, its length. Tarsus longer than middle toe and claw. Gonyes more than half the length of the under jaw. Bill very weak and slender, little decurved or notched at tip. Very small, — under six inches long. (Tarsi booted in *Regulus*, distinctly scutellate in *Polioptila*.) . . . IV. *Sylviidae*. ✓

ff. Basal joint of middle toe quite free from the inner, and not united with the outer more than half-way.

Nostrils linear, low. No bristles or bristly points whatever about the mouth. Wings short, rounded, concavo-convex. Tail very short, nearly concealed by its coverts. Tarsi booted . . . II. *Cinclididae*. ✓

Nostrils oval. Bristles or bristly points about the mouth. Wings very long and pointed, reaching, when folded, beyond the middle of the short, square, or emarginate tail, and one and a half times or more the length of the latter; tip formed by second, third, and fourth quills; outer secondary reaching only about two thirds way to end of longest primary; spurious quill very short. Tarsi booted. III. *Saxicolidae*. ✓

Nostrils oval. Bristles or bristly points about the mouth. Wings moderate, not reaching, when folded, beyond the middle of the tail, and not over one and a third times as long as the latter; tip formed by third

to sixth quill; outer secondary reaching in closed wing three fourths or more the length of the longest primary. Spurious quill longer, sometimes one half the second. Tarsi scutellate in *Miminae*, booted in *Turdinae* I. *Turdidae*. ✓

aa. Outside of tarsus covered with two series of scutella, — one lapping entirely around in front, the other entirely around behind, and meeting at a groove on the inside; hind edge blunt. First primary spurious or apparently wanting. Hind claw much lengthened, scarcely curved. Nostrils with antrorse bristly feathers. Bill conico-elongate XVIII. *Alaudidae*. ✓

B. Clamatores. Outside of tarsus covered with a series of plates variously arranged, lapping entirely around in front and behind, to meet at a groove on the inner side.

First primary lengthened, often longest, at least over two thirds as long as the longest. Bill broad at the base, much depressed, tapering to a fine point, which is abruptly decurved; culmen rounded or flattened; gonys flattened; commissure straight, or nearly so, to the tip. Nostrils small, circular, basal; overhung, but not concealed by bristles. Mouth capacious, with broad and deeply fissured rictus, beset with numerous long strong bristles. Feet small, weak. Tail of twelve feathers XXII. *Tyrannidae*. ✓

ANALYSIS OF THE FAMILIES OF PICARIÆ.

Secondaries only six.

Bill tenuirostral, longer than head, nearly cylindrical. Gape constricted. Tongue filiform, extensile, bi-tubular. Wings long in terminal portion, abbreviated proximally, acute. Plumage compact, of metallic sheen. Size smallest of all birds. (Humming-Birds.) XXVI. *Trochilidae*. ✓

Secondaries more than six.

Feet neither syndactyle nor zygodactyle.

Feet semipalmate, of normal ratio of phalanges. Anterior toes connected at base by movable webbing. Hind toe very small, elevated, semilateral. Middle toe produced, its large claw pectinate. Bill fissirostral, with very small, triangular, depressed horny part and immense rictus, reaching below the eyes, furnished with bristles. Rather large. Plumage soft and lax, much variegated XXIV. *Caprimulgidae*. ✓

Feet scarcely or not semipalmate, of frequently abnormal ratio of phalanges (middle or outer toe, or both, with fewer joints than usual among birds). Hallux very small, elevated, frequently lateral or versatile. Middle toe not produced nor its claw pectinate. Bill much as in the last, but rictus unbristled. Small. Plumage compact, of few simple subdued colors XXV. *Cypselidae*. ✓

Feet syndactyle by connation of outer and middle toes.

Outer toe much longer than the inner, united for half its length with the middle, forming a broad sole. Tibiæ naked below. Bill longer than head, straight, acute, with hard cutting edges and ample rictus. Tongue rudimentary, fixed. Wings pointed, much longer than the short square tail. Tail-feathers twelve. Plumage compact, oily. (Kingfishers.) XXIII. *Alcedinidae*. ✓

Feet zygodactyle by reversion of outer or fourth toe.

Not scansorial; tail of eight or ten long soft feathers. Bill with decurved tip, not fitted for hammering; rictus ample. Tongue not ex-

tensile nor vermiform nor barbed. Salivary glands and hyoidean apparatus not peculiar. No nasal tufts of feathers. Arboreal and terrestrial. (Cuckoos.) XXVII. *Cuculidæ*.✓

Highly scansorial; tail of twelve rigid acuminate feathers, whereof the outer pair are short and spurious, concealed between bases of next two pairs. Bill stout, straight, with the tip truncate or acute, not decurved, — an efficient chisel for hammering and boring wood. Tongue vermiform, extensile,¹ and barbed. Salivary glands large; hyoidean apparatus peculiar. Nasal tufts usually present. Arboreal. . . . XXVIII. *Picidæ*.✓

FAMILY OF PSITTACI.

To characters of *Psittaci* add: Cere feathered, concealing the nostrils. Feet granular, rugose. Wings pointed. Tail cuneate. Plumage coarse and dry. Head feathered. Colors green, with yellow and blue . . . XXIX. *Psittacidæ*.✓

ANALYSIS OF FAMILIES OF RAPTORES.

Feet highly raptorial, with large, strong, sharp, curved, contractile claws, adapted for grasping. Hallux perfectly incumbent, lengthened (more than half as long as the fourth toe), with large claw. Front toes with slight basal webbing between outer or middle ones, or none; outer toe often reversible. Nostrils imperforate. Bill short, stout, not notably contracted in its continuity, with strongly hooked tip; tomia often once-twice toothed or lobed. Head feathered wholly or in greatest part. Lower larynx developed with one pair of muscles. Plumage with or without after-shafts. Cæca present, as a rule, if not always.

Physiognomy peculiar by reason of great lateral expansion and lengthwise shortening of the cranium, causing the eyes to be directed forward. Eyes surrounded by a disc of radiating bristly feathers, in front closely appressed to and hiding the base of the bill, elsewhere bounded by a rim of differently formed feathers. Tomia never toothed or lobed. Nostrils usually at the edge of the cere. Outer toe completely versatile, shorter than the inner toe. Basal phalanx of middle toe not longer than the second, and much shorter than the next. Legs commonly feathered or bristly to or on the toes. Plumage peculiarly soft and lax, without after-shafts; flight perfectly noiseless. Cranial walls widely separated by intervention of spongy diploë. Sternum commonly doubly notched. Chiefly nocturnal. . . . XXX. *Strigidæ*.✓

Physiognomy not peculiar in any lateral expansion of the cranium; the eyes lateral in direction. No complete facial disc; base of bill not hidden by appressed bristles. Nostrils wholly in the cere. Outer toe rarely versatile, except *Pandion*, etc.; not shorter than the inner. Basal phalanx of middle toe longer than the second. Legs commonly naked and scutellate or reticulate in some portion of their length; toes always bare and scaly. Plumage compact, usually with after-shafts; flight audible. Cranial walls with little diploë. Sternum commonly single-notched or fenestrate, sometimes entire. Diurnal. XXXI. *Falconidæ*.✓

Feet scarcely raptorial, with lengthened, little curved or contractile, weak, short claws. Hallux elevated, shortened, not more than half as long as the fourth toe, with small claw. Front toes all webbed at base; middle toe lengthened; outer not reversible. Basal phalanx of middle toe longer than either of the succeeding.

¹ Excepting *Sphyrapicus*, in which the tongue is not more protrusible than in ordinary birds.

Nostrils perforate. Bill lengthened and comparatively weak, little hooked, contracted in its continuity; tomia not toothed or lobed. Head naked of feathers in greatest part; sparsely bristly. No lower larynx developed. No cœca. After-shafts absent XXXII. *Cathartidæ*.✓

FAMILY OF COLUMBÆ.

With characters essentially as in *Columbæ* (exclusive of those peculiar to *Dunculidæ* and *Dididæ*). Plumage without after-shafts; the feathers with thickened, spongy rhachis loosely inserted in the skin. Head small, completely feathered, excepting sometimes a circumorbital space. Tarsi naked or only feathered a little way above. Tail of twelve feathers, or lengthened, cuneate, and of fourteen. (Hallux not perfectly incumbent in *Starnænas*.) . XXXIII. *Columbidæ*.✓

ANALYSIS OF FAMILIES OF GALLINÆ.

Hind toe lengthened, insistent. Tail-feathers twelve. Sides of head and throat with naked spaces. Color greenish XXXIV. *Cracidæ*.✓

Hind toe shortened, elevated. Tail-feathers usually fourteen or more. No green.

Large. Tarsi, toes, and nasal fossæ naked. Head bare of feathers, sparsely bristly, with wattles and caruncles. A pectoral tuft of bristly feathers. Tarsi usually spurred in the male. Plumage iridescent . XXXV. *Meleagrididæ*.✓

Medium. Tarsi wholly or in great part, sometimes also the toes, and always the nasal fossæ, feathered. Head completely feathered, excepting a definite papillate strip over the eye. Tail-feathers sixteen or more. Sides of neck usually with lengthened feathers, or a naked distensible area, or both. No spurs. Plumage without iridescence XXXVI. *Tetraonidæ*.✓

Small. Tarsi, toes, and nasal fossæ naked. Head completely feathered. No peculiar feathers or tympanum on sides of neck. No spurs. Plumage not iridescent XXXVII. *Perdicidæ*.✓

ANALYSIS OF FAMILIES OF LIMICOLÆ.

Toes not lobate. Tarsi not notably compressed.

Legs extremely long; the tarsus equalling or exceeding the tail, and feet either four-toed and palmate (*Recurvirostra*) or three-toed and semipalmate (*Himantopus*); with the bill much longer than the head, very slender, acute, and curved upward XXXVIII. *Recurvirostridæ*.

Legs moderate, stout. Tarsus shorter than tail. Bill hard, more or less contracted at base, with short nasal fossa, gonydeal angle, and ascending gonys, the tip either compressed and truncate or depressed and acute. Feet three-toed and with basal webbing (*Hematopus*), or four-toed and cleft (*Strepsilas*). XXXIX. *Hematopodidæ*.

Legs moderate. Tarsus shorter than tail, reticulate. Hind toe wanting (except in *Squatarola*, where very small, and in *Aphriza*). Bill short, straight, — not exceeding the head (generally shorter), — shaped like a pigeon's, with short, broad, soft nasal fossæ separated by a constriction from the enlarged, obtuse, horny terminal part. Head large, globose, contracting suddenly to the bill. Neck short XL. *Charadriidæ*.

Legs moderate. Tarsus shorter than tail, scutellate. Hind toe present. Bill long, — equalling, or oftener exceeding, frequently several times longer

than, the head; softish and membranous to the very tip, without constriction in its continuity; straight or variously curved . . . XLI. *Scolopacidae*.
Toes lobate. Tarsi notably compressed.

General characters of *Scolopacidae*. Body depressed; the under plumage thickened, duck-like. Habits natatorial . . . XLII. *Phalaropodidae*.

ANALYSIS OF FAMILIES OF **HERODIONES**.

Hallux lengthened, perfectly incumbent, with large claw. Tarsi scutellate. Middle claw pectinate. Bill perfectly straight, tapering, acute. Loral region definitely naked, continuous with covering of the bill. Head narrow, elongate, tapering . . . XLIII. *Ardeidae*.

Hallux somewhat reduced, less perfectly incumbent. Tarsi commonly reticulate. Middle claw not pectinate. Lores, gular space and usually more of the head, naked. Bill variously curved or with expanded tip. (Genera *Tantalus*, *Ibis*, *Mycteria*, and *Platalea*.) . . . XLIV. *Tantalidae*.

ANALYSIS OF FAMILIES OF **ALECTORIDES**.

Of great stature, with extremely long neck and legs. Part or all of the head bare. Toes much shorter than the tarsi; with basal webbing, but without lobation; hallux very short, highly elevated. Bill equalling or exceeding the head, compressed, perfectly straight, contracted about the middle, with enlarged acute terminal portion; nasal fossæ wide and deep, with large perforate nostrils XLV. *Gruidae*.

Size moderate and small; neck and legs comparatively short. Head completely feathered, excepting, in the Coots and Gallinules, a broad horny frontal plate. Toes equalling or exceeding the tarsi, simple or lobate. Bill not constricted in the middle, rather shorter than the head, straight and quite stout; or much longer, regularly slender and decurved, with long nasal fossæ. Nostrils incompletely or not perforate . . . XLVI. *Rallidae*.

ANALYSIS OF FAMILIES OF **LAMELLIROSTRES**.

Of great stature, with extraordinarily lengthened neck and legs. Bill of unique shape, bent abruptly down from the middle. Tibiæ naked below. Hind toe minute or absent. Wings rounded. Red the chief color . . . XLVII. *Phenicopteridae*.

Of moderate size; the neck short, or, when lengthened, not accompanied by co-ordinately lengthened legs, these being always shorter than the wing. Bill straight. Tibiæ feathered below. Hind toe present; well developed and functional, though short . . . XLVIII. *Anatidae*.

ANALYSIS OF FAMILIES OF **STEGANOPODES**.

Bill rather longer than head, cleft to eyes, very stout at base, tapering to the decurved, but not hooked, tip. Nostrils abortive. Gular sac moderate, naked. Wings rather long, pointed. Tail long, stiff, cuneate, twelve to fourteen feathered. Feet nearly beneath centre of equilibrium . . . XLIX. *Sulidae*.

Bill several times longer than head, slender but strong, depressed, perfectly straight, with small distinct hooked nail at end. Nostrils very small. Gular sac enormous. Mandibular rami meeting only at tip. Wings extremely long, with upward of forty remiges. Tail short, rounded, of twenty or more feathers. Legs beneath centre of equilibrium, extremely short and stout . . . L. *Pelicanidae*.

Bill about as long as head, stout, straight, scarcely tapering, strongly hooked. Nostrils abortive. Gular sac moderate, but evident; mostly naked. Wings short. Tail large, fan-shaped, scansorial, of twelve to fourteen broad stiff feathers, exposed to the base. Legs inserted far behind centre of equilibrium LI. *Graculidæ*.

Bill rather longer than head, slender, perfectly straight, tapering to an acute tip. Gular sac small. Nostrils minute. Wings and tail, and general configuration, as in the last LII. *Plotidæ*.

Bill much longer than head, straight, stout, strongly hooked. Nostrils very small. Gular sac well developed. Wings exceedingly long, strong, and pointed. Tail exceedingly long, deeply forked. Feet extraordinarily short; tarsi partly feathered LIII. *Tachypetidæ*.

Bill about as long as head, straight, stout, tapering to an acute tip. Nostrils small. Gular sac rudimentary, feathered. Wings moderate, pointed. Tail short, but with two central feathers extraordinarily prolonged and filamentous. Feet small, beneath centre of equilibrium LIV. *Phæthontidæ*.

ANALYSIS OF FAMILIES OF **LONGIPENNES**.

Nostrils not tubular, lateral, perforate. Bill with continuous covering, or only broken by a sort of cere, hooked or straight to the end. Hallux small and elevated, but always present LV. *Laridæ*.

Nostrils tubular, disjoined and lateral, or oftenest superior and united in one double-barrelled tube. Covering of bill in several pieces; bill always hooked. Hallux minute, rudimentary, or absent LVI. *Procellariidæ*.

ANALYSIS OF FAMILIES OF **PYGOPODES**.

Feet four-toed, palmate. Hallux lobate, connected at base with base of inner toe. Tail perfect. Head closely and completely feathered. Nostrils with a depending lobe or flap. Bill straight, compressed, acute LVII. *Colymbidæ*.

Feet four-toed, lobate. Hallux lobate, free. Tail rudimentary. Head with a naked loreal strip and bristly or variously lengthened feathers. Nostrils simple. Bill straight or decurved at end, compressed, acute LVIII. *Podicipidæ*.

Feet three-toed, palmate. Hallux absent. Tail perfect. Head closely feathered or variously crested. Nostrils simple. Bill of indeterminate shape LIX. *Alcidæ*.

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 " III. **Saxicolidæ.** *Saxicola cinerascens*, 18075.
 " IV. **Sylviidæ.** *Regulus satrapa*, 28784.
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 " XXVI. *Trochilidae*. *Trochilus colubris*, 1100.
 " XXVII. *Cuculidae*. *Coccyzus americanus*, 1541.

Family XXVIII. *Picidae*. *Picus villosus*, 884.
 " XXIX. *Psittacidae*. *Conurus carolinensis*, 1228.

Fig. 3.

Fig. 4.

Family XXXV. Meleagridæ. Meleagris gallopavo.
 " XXXVI. Tetraonidæ. Bonasa umbellus, 32312.
 " XXXVII. Perdiciidæ. Ortyx virginianus, 22248.

Family XXXVII. Perdix cinerea (European partridge). Fig. 3.
 " " Coturnix communis (European quail). Fig. 4.

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