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**A HISTORY OF NORTH
AMERICAN BIRDS,
LAND BIRDS. VOLUME
1**

Robert Ridgway

**A History of North American
Birds, Land Birds. Volume 1**

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Spencer Fullerton Baird

A History of North American Birds / Land Birds – Volume 1

PREFACE

The present work is designed to meet the want, which has long been felt, of a descriptive account of the Birds of North America, with notices of their geographical distribution, habits, methods of nesting, character of eggs, their popular nomenclature, and other points connected with their life history.

For many years past the only systematic treatises bearing upon this subject have been “The American Ornithology” of Alexander Wilson, finished by that author in 1814, and brought down to the date of 1827 by George Ord; the “Ornithological Biography” of Audubon, bearing date of 1838, with a second edition, “Birds of America,” embracing a little more of detail, and completed in 1844; and “A Manual of the Ornithology of the United States and Canada,” by Nuttall, of which a first edition was published in 1832 and a second in 1840. Since then no work relating to American Ornithology, of a biographical nature, has been presented to the public, with the exception of some of limited extent, such as those of Giraud, on the “Birds of Long Island,” in 1844; De Kay’s “Birds of New York,” 1844; Samuels’s “Ornithology and Oölogy of New England,” 1868, and a few others; together with quite a number of minor papers on the birds of particular localities, of greater or less moment, chiefly published in periodicals and the Proceedings of Societies. The reports of many of the government exploring parties also contain valuable data, especially those of Dr. Newberry, Dr. Heermann, Dr. J. G. Cooper, Dr. Suckley, Dr. Kennerly, and others.

More recently (in 1870) Professor Whitney, Chief of the Geological Survey of California, has published a very important volume on the ornithology of the entire west coast of North America, written by Dr. J. G. Cooper, and containing much original detail in reference to the habits of the western species. This is by far the most valuable contribution to the biography of American birds that has appeared since the time of Audubon, and, with its typographical beauty and numerous and excellent illustrations, all on wood and many of them colored, constitutes one of the most noteworthy publications in American Zoölogy.

Up to the time of the appearance of the work of Audubon, nearly all that was known of the great region of the United States west of the Missouri River was the result of the journey of Lewis and Clark up the Missouri and across to the Pacific Coast, and that of John K. Townsend and Mr. Nuttall, both of whom made some collections and brought back notices of the country, which, however, they were unable to explore to any great extent. The entire region of Texas, New Mexico, Colorado, Arizona, Nevada, and California was unvisited, as also a great portion of territory north of the United States boundary, including British Columbia and Alaska.

A work by Sir John Richardson, forming a volume in his series of “Fauna Boreali-Americana,” in reference to the ornithology of the region covered by the Hudson Bay Company’s operations, was published in 1831, and has been much used by Mr. Audubon, but embraces little or nothing of the great breeding-grounds of the water birds in the neighborhood of the Great Slave and Bear Lakes, the Upper Yukon, and the shores of the Arctic coast.

It will thus be seen that a third of a century has elapsed since any attempt has been made to present a systematic history of the birds of North America.

The object of the present work is to give, in as concise a form as possible, an account of what is known of the birds, not only of the United States, but of the whole region of North America north

of the boundary-line of Mexico, including Greenland, on the one side, and Alaska with its islands on the other. The published materials for such a history are so copious that it is a matter of surprise that they have not been sooner utilized, consisting, as they do, of numerous scattered biographies and reports of many government expeditions and private explorations. But the most productive source has been the great amount of manuscript contained in the archives of the Smithsonian Institution in the form of correspondence, elaborate reports, and the fieldnotes of collectors and travellers, the use of which, for the present work, has been liberally allowed by Professor Henry. By far the most important of these consist of notes made by the late Robert Kennicott in British America, and received from him and other gentlemen in the Hudson Bay Territory, who were brought into intimate relationship with the Smithsonian Institution through Mr. Kennicott's efforts. Among them may be mentioned more especially Mr. R. MacFarlane, Mr. B. R. Ross, Mr. James Lockhart, Mr. Lawrence Clark, Mr. Strachan Jones, and others, whose names will appear in the course of the work. The especial value of the communications received from these gentlemen lies in the fact that they resided for a long time in a region to which a large proportion of the rapacious and water birds of North America resort during the summer for incubation, and which until recently has been sealed to explorers.

Equally serviceable has been the information received from the region of the Yukon River and Alaska generally, including the Aleutian Islands, as supplied by Messrs. Robert Kennicott, William H. Dall, Henry M. Bannister, Henry W. Elliott, and others.

It should be understood that the remarks as to the absence of general works on American Ornithology, since the time of Audubon, apply only to the life history of the species, as, in 1858, one of the authors of the present work published a systematic account of the birds of North America, constituting Vol. IX. of the series of Pacific Railroad Reports; while from the pen of Dr. Elliott Coues, a well-known and eminent ornithologist, appeared in 1872 a comprehensive volume, entitled "A Key to North American Birds," containing descriptions of the species and higher groups.

The technical, or descriptive, matter of the present work has been prepared by Messrs. Baird and Ridgway, that relating to the *Raptores* entirely by Mr. Ridgway; and all the accounts of the habits of the species are from the pen of Dr. Brewer. In addition to the matter supplied by these gentlemen, Professor Theodore N. Gill has furnished that portion of the Introduction defining the class of birds as compared with the other vertebrates; while to Dr. Coues is to be given the entire credit for the pages embracing the tables of the Orders and Families, as well as for the Glossary beginning on page 535 of Vol. III.

Nearly all the drawings of the full-length figures of birds contained in the work were made directly on the wood, by Mr. Edwin L. Sheppard, of Philadelphia, from original sketches taken from nature; while the heads were executed for the most part by Mr. Henry W. Elliott and Mr. Ridgway. Both series have been engraved by Mr. Hobart H. Nichols of Washington. The generic outlines were drawn by Anton L. Schönborn, and engraved by the peculiar process of Jewett, Chandler, & Co., of Buffalo. All of these, it is believed, speak for themselves, and require no other commendation.

A considerable portion of the illustrations were prepared, by the persons mentioned above, for the Reports of the Geological Survey of California, and published in the volume on Ornithology. To Professor Whitney, Chief of the Survey, acknowledgments are due for the privilege of including many of them in the present History of North American Birds, and also for the Explanation of Terms, page 526 of Vol. III.

A few cuts, drawn by Wolf and engraved by Whympfer, first published in "British Birds in their Haunts," and credited in their proper places, were kindly furnished by the London Society for the Diffusion of Christian Knowledge; and some others prepared for an unpublished volume by Dr. Blasius, on the Birds of Germany, were obtained from Messrs. Vieweg and Son, of Braunschweig.

The volume on the Water Birds is in an advanced state of preparation, and will be published with the least possible delay.

SPENCER F. BAIRD.

Smithsonian Institution, Washington,
January 8, 1874.

INTRODUCTION

The class of Birds (*Aves*), as represented in the present age of the world, is composed of very many species, closely related among themselves and distinguished by numerous characters common to all. For the purposes of the present work it is hardly necessary to attempt the definition of what constitutes a bird, the veriest tyro being able to decide as to the fact in regard to any North American animal. Nevertheless, for the sake of greater completeness, we may say that, compared with other classes,¹ Birds are abranchiata vertebrates, with a brain filling the cranial cavity, the cerebral portion of which is moderately well developed, the corpora striata connected by a small anterior commissure (no corpus callosum developed), prosencephalic hemispheres large, the optic lobes lateral, the cerebellum transversely multifissured; the lungs and heart not separated by a diaphragm from the abdominal viscera; aortic arch single (the right only being developed); blood, with nucleated red corpuscles, undergoing a complete circulation, being received and transmitted by the right half of the quadrilocular heart to the lungs for aeration (and thus warmed), and afterwards returned by the other half through the system (there being no communication between the arterial and venous portions); skull with a single median convex condyle, chiefly on the basi-occipital (with the sutures for the most part early obliterated); the lower jaw with its rami ossifying from several points, connected with the skull by the intervention of a quadrate bone (homologous with the malleus); pelvis with ilia prolonged in front of the acetabulum, ischia and pubes nearly parallel with each other, and the ischia usually separated: anterior and posterior members much differentiated; the former modified for flight, with the humerus nearly parallel with the axis of the body and concealed in the muscles, the radius and ulna distinct, with two persistent carpal bones, and two to four digits; the legs with the bones peculiarly combined, (1) the proximal tarsal bones coalescing with the adjoining tibia, and (2) the distal tarsal coalescing with three (second, third, and fourth) metatarsals (the first metatarsal being free), and forming the so-called tarsometatarsus; dermal appendages developed as feathers: oviparous, the eggs being fertilized within the body, excluded with an oval, calcareous shell, and hatched at a temperature of about 104° F. (generally by the incubation upon them of the mother).²

Such are some of the features common to all the existing species of birds.³ Many others might be enumerated, but only those are given which contrast with the characteristics of the mammals on the one hand and those of the reptiles on the other. The inferior vertebrates are distinguished by so many salient characters and are so widely separated from the higher that they need not be compared with the present class.

Although birds are of course readily recognizable by the observer, and are definable at once, existing under present conditions, as warm-blooded vertebrates, with the anterior members primitively adapted for flight,—they are sometimes abortive,—and covered with feathers, such characteristics do not suffice to enable us to appreciate the relations of the class. The characteristics have been given more fully in order to permit a comparison between the members of the class and those of the mammals and reptiles. The class is without exception the most homogeneous in

¹ We are indebted to Professor Theodore N. Gill for the present account of the characteristics of the class of Birds as distinguished from other vertebrates, pages XI-XV.

² Dr. Coues, in his "Key to North American Birds," gives an able and extended article on the general characteristics of birds, and on their internal and external anatomy, to which we refer our readers. A paper by Professor E. S. Morse in the "Annals of the New York Lyceum of Natural History" (X, 1869), "On the Carpus and Tarsus of Birds," is of much scientific value.

³ Carus and Gerstaecker (Handbuch der Zoologie, 1868, 191) present the following definition of birds as a class:—**Aves.** Skin covered wholly or in part with feathers. Anterior pair of limbs, converted into wings, generally used in flight; sometimes rudimentary. Occiput with a single condyle. Jaws encased in horny sheaths, which form a bill; lower jaw of several elements and articulated behind with a distinct quadrate bone attached to the skull. Heart with double auricle and double ventricle. Air-spaces connected to a greater or less extent with the lungs; the skeleton more or less pneumatic. Diaphragm incomplete. Pelvis generally open. Reproduction by eggs, fertilized within the body, and hatched externally, either by incubation or by solar heat; the shells calcareous and hard.

the animal kingdom; and among the living forms less differences are observable than between the representatives of many natural orders among other classes. But still the differences between them and the other existing forms are sufficient, perhaps, to authorize the distinction of the group as a class, and such rank has always been allowed excepting by one recent naturalist.

But if we further compare the characters of the class, it becomes evident that those shared in common with the reptiles are much more numerous than those shared with the mammals. In this respect the views of naturalists have changed within recent years. Formerly the two characteristics shared with the mammals—the quadrilocular heart and warm blood—were deemed evidences of the close affinity of the two groups, and they were consequently combined as a section of the vertebrates, under the name of Warm-blooded Vertebrates. But recently the tendency has been, and very justly, to consider the birds and reptiles as members of a common group, separated on the one hand from the mammals and on the other from the batrachians; and to this combination of birds and reptiles has been given the name *Sauropsida*.

As already indicated, the range of variation within this class is extremely limited; and if our views respecting the taxonomic value of the subdivisions are influenced by this condition of things, we are obliged to deny to the groups of living birds the right which has generally been conceded of ranking as orders.

The greatest distinctions existing among the living members of the class are exhibited on the one hand by the Ostriches and Kiwis and the related forms, and on the other by all the remaining birds.

These contrasted groups have been regarded by Professor Huxley as of ordinal value; but the differences are so slight, in comparison with those which have received ordinal distinction in other classes, that the expediency of giving them that value is extremely doubtful; and they can be combined into one order, which may appropriately bear the name of *Eurhipidura*.

An objection has been urged to this depreciation of the value of the subdivisions of the class, on the ground that the peculiar adaptation for flight, which is the prominent characteristic of birds, is incapable of being combined with a wider range of form. This is, at most, an explanation of the cause of the slight range of variation, and should not therefore affect the exposition of the *fact* (thereby admitted) in a classification based on morphological characteristics. But it must also be borne in mind that flight is by no means incompatible with extreme modifications, not only of the organs of flight, but of other parts, as is well exemplified in the case of bats and the extinct pterodactyls.

Nor is the class of birds as now limited confined to the single order of which only we have living representatives. In fossil forms we have, if the differences assumed be confirmed, types of two distinct orders, one being represented by the genus *Archæopteryx* and another by the genera *Ichthyornis* and *Apatornis* of Marsh. The first has been named *Saururæ* by Hæckel; the second *Ichthyornithides* by Marsh.

Compelled thus to question the existence of any groups of ordinal value among recent birds, we proceed now to examine the grounds upon which natural subdivisions should be based. The prominent features in the classification of the class until recently have been the divisions into groups distinguished by their adaptation for different modes of life; that is, whether aerial or for progression on land, for wading or for swimming; or, again, into Land and Water Birds. Such groups have a certain value as simply artificial combinations, but we must not be considered as thereby committing ourselves to such a system as a natural one.

The time has scarcely arrived to justify any system of classification hitherto proposed, and we can only have a sure foundation after an exhaustive study of the osteology, as well as the neurology and splanchnology, of the various members. Enough, however, has already been done to convince us that the subdivision of the class into Land and Water Birds does not express the true relations of the members embraced under those heads. Enough has also been adduced to enable us to group many forms into families and somewhat more comprehensive groups, definable by osteological and other characters. Such are the Charadrimorphæ, Cecomorphæ, Alectoromorphæ, Pterocloromorphæ,

Peristeromorphæ, Coracomorphæ, Cypselomorphæ, Celeomorphæ, Aëtomorphæ, and several others. But it is very doubtful whether the true clew to the affinities of the groups thus determined has been found in the relations of the vomer and contiguous bones. The families, too, have been probably, in a number of cases, especially for the passerine birds, too much circumscribed. The progress of systematic ornithology, however, has been so rapid within the last few years, that we may be allowed to hope that in a second edition of this work the means may be furnished for a strictly scientific classification and sequence of the families. (T. N. G.)

A primary division of recent birds may be made by separation of the (*a*) *Ratitæ*, or struthious birds and their allies,—in which the sternum has no keel, is developed from lateral paired centres of ossification, and in which there are numerous other structural peculiarities of high taxonomic import,—from the (*b*) *Carinatae*, including all remaining birds of the present geologic epoch. Other primary divisions, such as that into *Altrices* and *Præcoces* of Bonaparte, or the corresponding yet somewhat modified and improved *Psilopaedes* and *Ptilopaedes* of Sundevall, are open to the serious objections that they ignore the profound distinctions between struthious and other birds, require too numerous exceptions, cannot be primarily determined by examination of adult specimens, and are based upon physiological considerations not necessarily co-ordinate with actual physical structure.

In the following scheme, without attempting to indicate positive taxonomic rank, and without committing myself finally, I present a number of higher groups into which Carinate birds may be divided, capable of approximately exact definition, and apparently of approximately equivalent taxonomic value. Points of the arrangement are freely drawn from the writings of various authors, as will be perceived by those competent to judge without special references. I am particularly indebted, however, to the late admirable and highly important work of Professor Sundevall,⁴ from which very many characters are directly borrowed. The arrangement, in effect, is a modification of that adopted by me in the “Key to North American Birds,” upon considerations similar to those herewith implied. The main points of difference are non-recognition of three leading groups of aerial, terrestrial, and natatorial birds,—groups without morphological basis, resting simply upon teleological modification; a general depreciation of the taxonomic value of the several groups, conformably with the considerations presented in the preceding pages of this work; abolishing of the group *Grallatores*; and recognition of a primary group *Sphenisci*.⁵

A. PASSERES. ⁶ 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.⁷ 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.

⁴ *Methodi naturalis avium disponendarum tentamen*. Stockholm, 1872-73.

⁵ This group is insusceptible of definition. The wading birds, as usually allocated, do not possess in common one single character not also to be found in other groups, nor is the collocation of their characters peculiar.

⁶ Corresponding closely with the Linnæan and earlier Sundevallian acceptance of the term. Equivalent to the later *Oscines* of Sundevall.

⁷ As remarked by Sundevall, exceptions to the diagnostic pertinence of these two characters of hind claw and wing-coverts taken together are scarcely found. For, in those non-passerine birds, as *Raptores* and some *Herodiones*, in which the claw is enlarged, the wing-coverts are otherwise disposed; and similarly when, as in many *Pici* and elsewhere, the coverts are of a passerine character, the feet are highly diverse.

a. **Oscines.**⁸ 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.**⁹ 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.¹⁰ 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 fenestrate. Carotid single or double. Nature completely altricial, but young sometimes hatched with down¹¹ (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

⁸ *Laminiplantares* of Sundevall plus *Alaudidæ*.

⁹ *Scutelliplantares* of Sundevall minus *Alaudidæ*.

¹⁰ Nearly equivalent to the Linnæan *Picæ*. Equal to the late (1873) *Volucres* of Sundevall.

¹¹ A polymorphic group, perfectly distinguished from *Passeres* by the above characters in which, for the most part, it approximates to one or another of the following lower groups, from which, severally, it is distinguished by the inapplicability of the characters noted beyond. My divisions of *Picariæ* correspond respectively to the *Cypselomorphæ*, *Coccygomorphæ*, and *Celeomorphæ* of Huxley, from whom many of the characters are borrowed.

tongue. Feet highly scansorial. Fourth toe permanently reversed; basal phalanges of toes abbreviated. Sternum doubly notched. Salivary glands highly developed. Hyoidean 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 *Cathartidæ*). 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 *Phalaropodidae*). 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 insessorial 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.¹² 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 *Phaenicopterus*). Legs near centre of equilibrium of the body, its axis horizontal

¹² Groups G., H., and I. are respectively equal to the *Charadriomorphae*, *Pelargomorphae*, and *Geranomorphae* of Huxley.

in walking; not lengthened except in *Phaenicopterus*. 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 *Phaenicopterus*); hallux reduced, elevated and free, often independently lobate. Bill lamellate, i. e., furnished along each commissural edge with a regular series of mutually adapted laminæ 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 fossæ 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 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 fenestrated. 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.

Having thus presented and defined an arrangement of the higher groups into which recent Carinate birds are susceptible of division, I next proceed to the consideration of the North American Families of birds which the authors of the present work have provisionally adopted as suitable to the end they had in view. Professor Baird urges the caution that the scheme is intended merely for the convenient determination of the North American species, aware that in many instances diagnoses or antitheses of entire pertinence in such application would fail or be negated by consideration of the exotic forms. The arrangement of the families here adopted is essentially that presented in 1858 in Professor Baird's "Birds of North America," modified somewhat in accordance with more recent views of Professor Sundevall and others. But before proceeding to the analysis of the families, I will introduce an artificial clew to the preceding higher groups as adopted, so far as they are represented by North American species.

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 (*Pici*) *Picariæ*.

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. (*Cuculi* or *Pici*) *Picariæ*.

IV. Toes 4; 3 in front, 1 behind.

1. Toes syndactyle (*Cuculi*) *Picariæ*.

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.

Tibiæ naked below.
Nostrils perforate Alectorides.
Nostrils imperforate.
Tarsi reticulate.
Head bald Herodiones.
Head feathered Limicolæ.
Tarsi scutellate in front Limicolæ.
Tibiæ feathered below.
Nostrils perforate Raptores.
Nostrils imperforate.
Gape reaching below eye. (*Cypseli*) Picariæ.
Gape not reaching below eye Gallinæ.

AA. Hind toe inserted on the level of the rest.

Tibiæ naked below Herodiones.
Tibiæ 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 (*Cypseli*) Picariæ.
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 (*Cypseli*) Picariæ.
Secondaries more than six (*a*) Passeres.
(*a*) Primaries 10; the 1st
more than $\frac{2}{3}$ as long as the longest. (*Clamatores*) Passeres.
Primaries 10; the 1st
not $\frac{2}{3}$ as long as the longest. (*Oscines*) Passeres.
Primaries 9. (*Oscines*) Passeres.

Recurring now to consideration of the North American *Families* of the foregoing higher groups, I take up the latter in the natural order in which they have been presented, giving under head of each such group an analysis of the North American families by which it is represented, reiterating the caution that the characters are drawn up only with reference to the North American genera, and are, consequently, not necessarily or always applicable upon wider considerations. These analyses are

made as nearly natural as the state of the case permits, but I seize upon any obvious external characters which may be afforded, without regard to their morphological significance or taxonomic value.

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; tomia 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 ... *Hirundinidæ*.

cc. Bill variously conico-elongate or slender, or, if depressed, with long rictal bristles; gape not nearly twice as long as culmen; tomia straight or gently curved. Nostrils not obviously nearer culmen than tomia. 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 ... *Motacillidæ*.

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 ... *Sylvicolidæ*.

Bill lengthened, very acute, even decurved. Wings and feet as in the last. Gape constricted; tongue generally deeply bifid or brushy ... *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.¹³

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. Other characters much as in *Sylvicolidæ*. Colors chiefly red and yellow. One genus of ... *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 ... *Fringillidæ*.

¹³ In the true conirostral or fringilliform genera the under mandible has high strong tomia, bent at an angle near the base; the corresponding portion of the upper mandible is deep, so that the nostrils are nearer the culmen than the tomia. The whole bill is more or less bent in its axis from the axis of the cranial base, so that the palate curves down, or is excavated or, as it were, is broken into two planes meeting at an angle,—one plane the anterior hard imperforate roof of the mouth, the other the back palate where the internal nares are situate (Sundevall). The single North American genus of *Tanagridæ* (*Pyrranga*) is here conventionally ranged on account of its high nostrils and conic bill, although it does not show angulation of the tomia. The *Icteridæ*, with obviously angulated tomia, shade into the *Fringillidæ* in shortness and thickness of bill, and into other families in its length and slenderness.

Bill conic, but lengthened, little if any shorter than head; the angulation of the tomtia evident; no notch at end. Nostrils high. No rictal bristles ... *Icteridæ*.

bb. Primaries ten.

Otherwise with characters much as in *Icteridæ* ... *Sturnidæ*.

d. Nostrils concealed with antrorse bristly feathers (except in *Psilorhinus* and *Gymnokitta*).¹⁴

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 ... *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,—under seven inches ... *Paridæ*.¹⁵

dd. Nostrils exposed.

e. Tail scansorial, with rigid acute feathers. Whole bill slender, compressed, acute, decurved, unnotched, unbristled. Outer toe much longer than inner ... *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 ... *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 ... *Troglodytidæ*.

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 ... *Laniidæ*.

eee. Tail not scansorial. First primary less than half as long as the second,¹⁶ 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 at tip ... *Vireonidæ*.

¹⁴ These two genera, *Psilorhinus* and *Gymnokitta*, of the family *Corvidæ*, have naked nostrils, as under *dd*, but otherwise show the characters of *Corvidæ*.

¹⁵ With the *Paridæ* the authors of this work include the Nuthatches as a subfamily *Sittinæ*, which I prefer to dissociate and place as a group of equal grade next to *Certhiidæ*.

¹⁶ In the genus *Ampelis* and part of the *Vireonidæ* it is so extremely short as to appear absent, and is displaced, lying concealed outside the second (apparently first) primary, like one of the primary coverts; however, it may always be detected on close examination, differing from the coverts with which it is associated in some points of size and shape, if not also of color.

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. Gonys less than half the length of the under jaw. Bill triangular, much depressed at base, moderately notched, and hooked at tip¹⁷ ... *Ampelidæ*.

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. Gonys 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*.) ... *Sylviidæ*.

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 ... *Cinclidæ*.

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 ... *Saxicolidæ*.

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 *Miminæ*, booted in *Turdinæ* ... *Turdidæ*.

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 ... *Alaudidæ*.

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 ... *Tyrannidæ*.

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.) ... *Trochilidæ*.

¹⁷ In *Ampelis* there is tendency to subdivision of the lateral plates; in *Myiadestes* the anterior scutella are obsolete.

Secondaries more than six.

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.) ... *Alcedinidæ*.

Feet zygodactyle¹⁸ 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 extensile nor vermiform nor barbed. Salivary glands and hyoidean apparatus not peculiar. No nasal tufts of feathers. Arboreal and terrestrial. (Cuckoos.) ... *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,¹⁹ and barbed. Salivary glands large; hyoidean apparatus peculiar. Nasal tufts usually present. Arboreal. (Woodpeckers.) ... *Picidæ*.

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 ... *Caprimulgidæ*.

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 ... *Cypselidæ*.

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 ... *Psittacidæ*.²⁰

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

¹⁸ Excepting *Picoides*, in which the true hind toe (hallux) is wanting; the outer or fourth toe being, however, reversed as usual, and taking the place of the hind toe.

¹⁹ Excepting *Sphyrapicus*, in which the tongue is not more protrusible than in ordinary birds.

²⁰ Our species falls rather in a restricted family *Aridæ*, as distinguished from *Psittacidæ* proper.

developed with one pair of muscles. Plumage with or without after-shafts. Cœca 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 ... *Strigidae*.

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 ... *Falconidae*.

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. 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 ... *Cathartidae*.

Family of COLUMBÆ

With characters essentially as in *Columbæ* (exclusive of those peculiar to *Diduncudidae* and *Dididae*). 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 *Starnaenas*.) ... *Columbidae*.

Analysis of Families of GALLINÆ

Hind toe lengthened, insistent. Tail-feathers twelve. Sides of head and throat with naked spaces. Color greenish ... *Cracidae*.

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 ... *Meleagrididae*.

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 ... *Tetraonidae*.

Small. Tarsi, toes, and nasal fossæ naked. Head completely feathered. No peculiar feathers or tympanum on sides of neck. No spurs. Plumage not iridescent ... *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 ... *Recurvirostridæ*.

Legs moderate, stout. Tarsus shorter than tail. Bill hard, more or less contracted at base, with short nasal fossa, gonydeal angle, and ascending gonyx, the tip either compressed and truncate or depressed and acute. Feet three-toed and with basal webbing (*Hæmatopus*), or four-toed and cleft (*Strepsilas*) ... *Hæmatopodidæ*.

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 ... *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 ... *Scolopacidæ*.

Toes lobate. Tarsi notably compressed.

General characters of *Scolopacidæ*. Body depressed; the under plumage thickened, duck-like. Habits natatorial ... *Phalaropodidæ*.

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 ... *Ardeidæ*.

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*.) ... *Tantalidæ*.

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 ... *Gruidæ*.

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 ... *Rallidæ*.

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 ... *Phænicopteridæ*.

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 ... *Anatidæ*.

[Pg xxviii] 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. General configuration goose-like ... *Sulidæ*.

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 ... *Pelicanidæ*.

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 ... *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 ... *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 ... *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 ... *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 ... *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 ... *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 ... *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 ... *Podicipidæ*.

Feet three-toed, palmate. Hallux absent. Tail perfect. Head closely feathered or variously crested. Nostrils simple. Bill of indeterminate shape ... *Alcidæ*.

NORTH AMERICAN BIRDS

Family TURDIDÆ.—The Thrushes

The *Turdidæ*, with the *Saxicolidæ* and *Cinclidæ*, form a group closely related, by common characters, and appreciably different from the other *Oscines* with slender bills and specially insectivorous habits, having, like them, ten primaries (the first much shorter than the second, but nearly always appreciable), and the nostrils uncovered. The great family of *Sylvicolidæ*, with similar characters of the bill, never present more than nine primaries. The most striking of these common characters is seen in the deeply cleft toes, of which the outer is united by the basal joint alone to the middle toe, while the inner is separated almost to the very base of its first joint.²¹ The frontal feathers extend, with rare exceptions, to the very nostrils. The bill is elongated and subulate, moderately slender, and usually notched at tip; the culmen moderately curved from the base, and the mouth well provided with bristles, except in a few cases. Usually the scutellæ covering the front and sides of the tarsus are fused into one continuous plate, or else scarcely appreciable, except on the inner edge only; in the Mocking Thrushes they are, however, distinctly marked. The lateral toes are nearly equal, the outer rather the longer. With these as some of the principal characteristics, they may be distinguished from each other as follows:—

Note.—In the present work the length of the tail is measured from the coccyx, inside of the skin, and not, as usually the case, from the base of the quills at their insertion. The wings are measured from the carpal joint, with dividers.

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.

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.

The American *Sylviidæ* are in some respects very closely related to the *Saxicolidæ*, but may be distinguished by their much smaller size, more slender and depressed bill, more strongly bristled

²¹ In a perfectly fresh specimen of *Turdus mustelinus*, the basal half of the first phalanx of the inner toe is connected with the first joint of the middle toe by a membrane which stretches across to within two fifths of the end of the latter; there appears, however, to be no ligamentous adhesion. The basal joint of the outer toe is entirely adherent, and a membrane extends from nearly the basal half of the second joint to the distal end of the first joint of the middle toe. When this connecting membrane becomes dried the division of the toes appears considerably greater. When the toes are all extended in line with the tarsus, the hind claw stretches a little beyond the lateral and scarcely reaches the base of the middle claw. The plates at the upper surface of the basal joints of the toes are quadrangular and opposite each other.

rictus, etc.; on which account they are more strictly “fly-catchers,” taking their prey in great part on the wing.

Of the three families, the *Turdidæ* contain a great variety of forms, and exhibit widely different characters, rendering it exceedingly difficult to arrange them in any systematic or regular sequence, or to accurately define their boundaries. In the *Birds of North America*, the Mocking Thrushes were placed among the Wrens, on account of the distinct tarsal scutellæ, and other characters. We are now, however, inclined to believe, with Dr. Sclater, that their place is with the recognized *Turdidæ*; and, among other reasons, on the ground of their more deeply cleft toes, and greater extension forward of frontal feathers. The following synopsis of the North American forms will serve the purpose of determining the genera, even if these are not arranged or combined in a strictly natural manner.

A. Turdinæ.—Tarsus covered anteriorly with a continuous plate without scales.

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 ... *Turdus*.

B. Miminæ.—Tarsi scutellate anteriorly; scales seven.

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 ... *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.

Scutellæ very distinct; gonys straight, or even declining at tip ... *Mimus*.

Scutellæ more or less obsolete; gonys convex, ascending at tip ... *Galeoscoptes*.

Bill not notched at tip, lengthened; sometimes much decurved ... *Harporhynchus*.

Note.—In the Review of American Birds, I., May, 1866, 409, I have advanced the suggestion that the N. American genus *Myiadestes*, usually placed under the *Ampelidæ*, really belongs under *Turdidæ* in a group *Myiadestinæ*. The relationships are certainly very close, as is shown by the characters given below.

Common Characters.—Tarsi without regular transverse scutellæ, except at lower end. Wings acute, pointed, as long as or longer than tail, which is but slightly graduated. First primary rarely half second, which exceeds the secondaries. Base of quills buffy yellow, as are inner edges. Tail spotted or varied at the end. Young birds with many light spots. Very melodious singers.

Myiadestinæ. Bill short, much depressed; mouth deeply cleft; width at base about equal to the distance from nostril to tip, or greater; commissure more than twice distance from nostrils to tip of bill, and nearly two and a half times length of gonys. Legs weak; tarsi rather longer than middle toe and claw. Tail feathers tapering slightly from base to near tip, giving a slightly cuneate appearance to the tail.

Turdinæ. Bill stouter, more lengthened; narrow at base and more compressed; width at base less than distance from nostril to tip; commissure not more than twice distance from nostrils to tip of bill, and about twice length of gonys. Tarsi stouter, longer than middle toe and claw. Tail feathers widening slightly from base to near tip, giving a parallel-sided or slightly fan-shaped appearance to the tail.

The *Miminæ* differ, as already mentioned, in the scutellate tarsi: more rounded wings, etc.—S. F. B.

Subfamily TURDINÆ

There are several American genera of *Turdinæ* not found north of Mexico as yet, although it is not impossible that one of these (*Catharus*) may hereafter be detected within the limits of the United States. The species of *Catharus* resemble the North American wood-thrushes (*Hylocichla*); but the spurious or first primary quill is longer (from one half to one third the second quill), the wings are rounded, not pointed, the tarsus is longer than the head, and the outstretched toes extend beyond the tail. The species to be looked for are *C. melpomene* and *occidentalis*.²²

The North American species of *Turdinæ*, while retained under the single genus *Turdus*, yet constitute several distinct groups, which we may call subgenera.

Genus TURDUS, Linnaeus

Turdus, Linnaeus, Syst. Nat., ed. 10, 1758, 168. (Type, *Turdus viscivorus* of Europe.)—Baird, Rev. Am. Birds.

Gen. Char. Bill conical, subulate, shorter than the head; the tip gently decurved and notched (except in *Hesperocichla*); the rictus with moderate bristles; the wings rather long and pointed, with small first primary (less than one fourth the second); wings considerably longer than the tail, which is firm, nearly even, with broad feathers. Tarsi variable, seldom as long as the skull, the scutellæ fused into a continuous plate, only in rare individual instances showing indications of the lines of separation.

The genus *Turdus* is very cosmopolitan, occurring nearly throughout the globe, excepting in *Australia*, and embraces species of highest perfection as singers. In the large number of species known there are many variations in external form, but the transition from one to the other is so gradual as to render it very difficult to separate them into different genera. The sections of the group we adopt are the following:—

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.

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?)

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

Sexes dissimilar

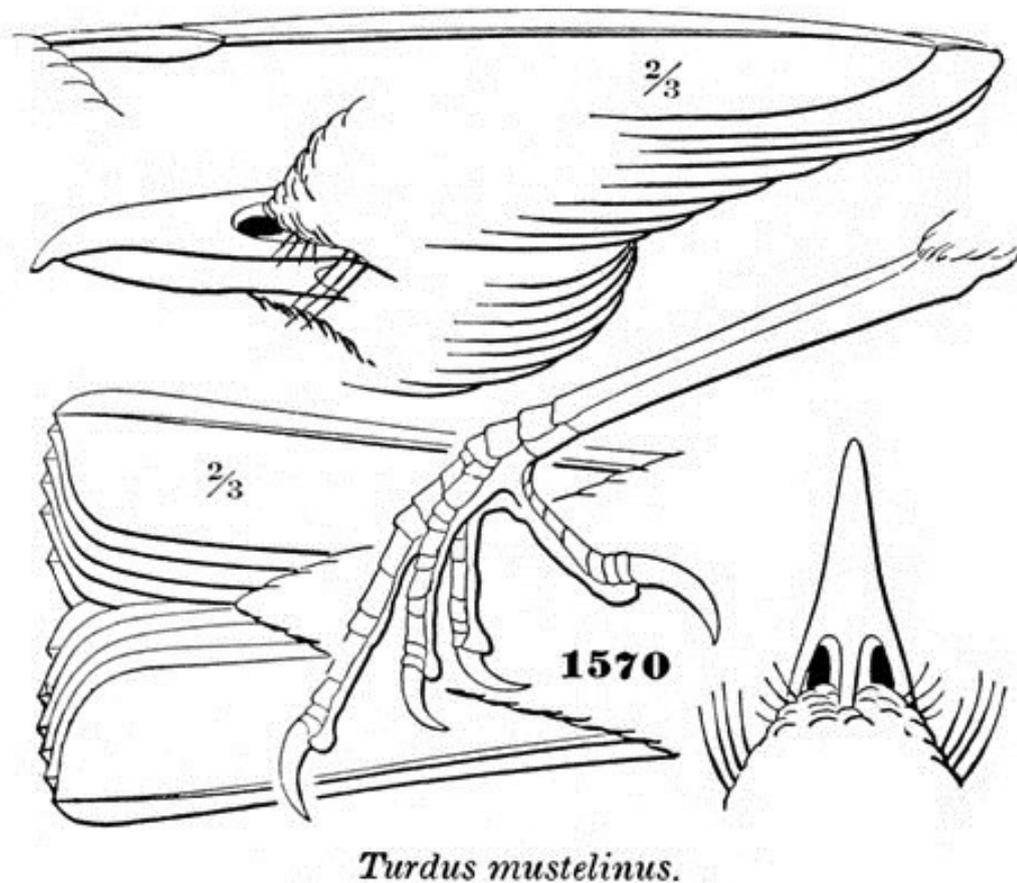
Merula. Similar to *Turdus*. Male usually more or less black, especially on the head; females brownish, often with streaked throats. Bill distinctly notched.

²² See Baird, Review American Birds, I, 1864, 7, 8.

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

Subgenus HYLOCICHLA, Baird

Hylocichla, Baird (s. g.), Rev. Am. Birds, 1864, 12. (Type, *Turdus mustelinus*.)



Turdus mustelinus.
1570

The essential characters of *Hylocichla* have already been given. The subgenus includes the small North American species, with *Turdus mustelinus*, Gm., at the head as type, which are closely connected on the one side with *Catharus*, by their lengthened tarsi, and with *Turdus* by the shape of the wing. The bills are shorter, more depressed, and broader at base than in typical *Turdus*, so much so that the species have frequently been described under *Muscicapa*.

It is not at all improbable that naturalists may ultimately conclude to consider the group as of generic rank.

In this group there appears to be five well-marked forms or "species." They are, *mustelinus*, Gm., *pallasi*, Caban., *fuscescens*, Steph., *swainsoni*, Caban., and *aliciae*, Baird. The first-named is totally unlike the rest, which are more closely related in appearance.

In studying carefully a very large series of specimens of all the species, the following facts become evident:—

1. In autumn and winter the “olive” color of the plumage assumes a browner cast than at other seasons; this variation, however, is the same in all the species (and varieties), so that in autumn and winter the several species differ from each other as much as they do in spring and summer.



Turdus ustulatus.

Of these five species, two only (*pallasi* and *swainsoni*) inhabit the whole breadth of the continent; and they, in the three Faunal Provinces over which they extend, are modified into “races” or “varieties” characteristic of each region. The first of these species, as the *pallasi* var. *pallasi*, extends westward to the Rocky Mountains, and migrates in winter into the South; specimens are very much browner in the winter than in spring; but in the Rocky Mountain region is a larger, grayer race, the var. *auduboni*. This, in its migrations, extends along the central mountain region through Mexico to Guatemala; specimens from the northern and southern extremes of this range are identical in all the specific characters; but the southern specimens, being in the fall and winter dress, are browner in color than northern ones (spring birds); an autumnal example from Cantonment Burgwyn, N. M., is as brown as any Central American specimen. Along the Pacific Province, from Kodiak to Western Mexico, and occasionally straggling eastward toward the Rocky Mountain system, there is the var. *nanus*, a race smaller than the var. *pallasi*, and with much the same colors as var. *auduboni*, though the rufous of the tail is deeper than in either of the other forms. In this race, as in the others, there is no difference in size between specimens from north and south extremes of its distribution, because the breeding-place is in the North, all Southern specimens being winter sojourners from their Northern birthplace.

The *T. swainsoni* is found in abundance westward to the western limit of the Rocky Mountain system; in the latter region specimens at all seasons have the olive of a clearer, more greenish shade than in any Eastern examples; this clearer tint is analogous with that of the Rocky Mountain form of *pallasi* (*auduboni*). In precisely the same region inhabited by the *pallasi* var. *nanus* the *swainsoni* also has a representative form,—the var. *ustulatus*. This resembles in pattern the var. *swainsoni*, but the

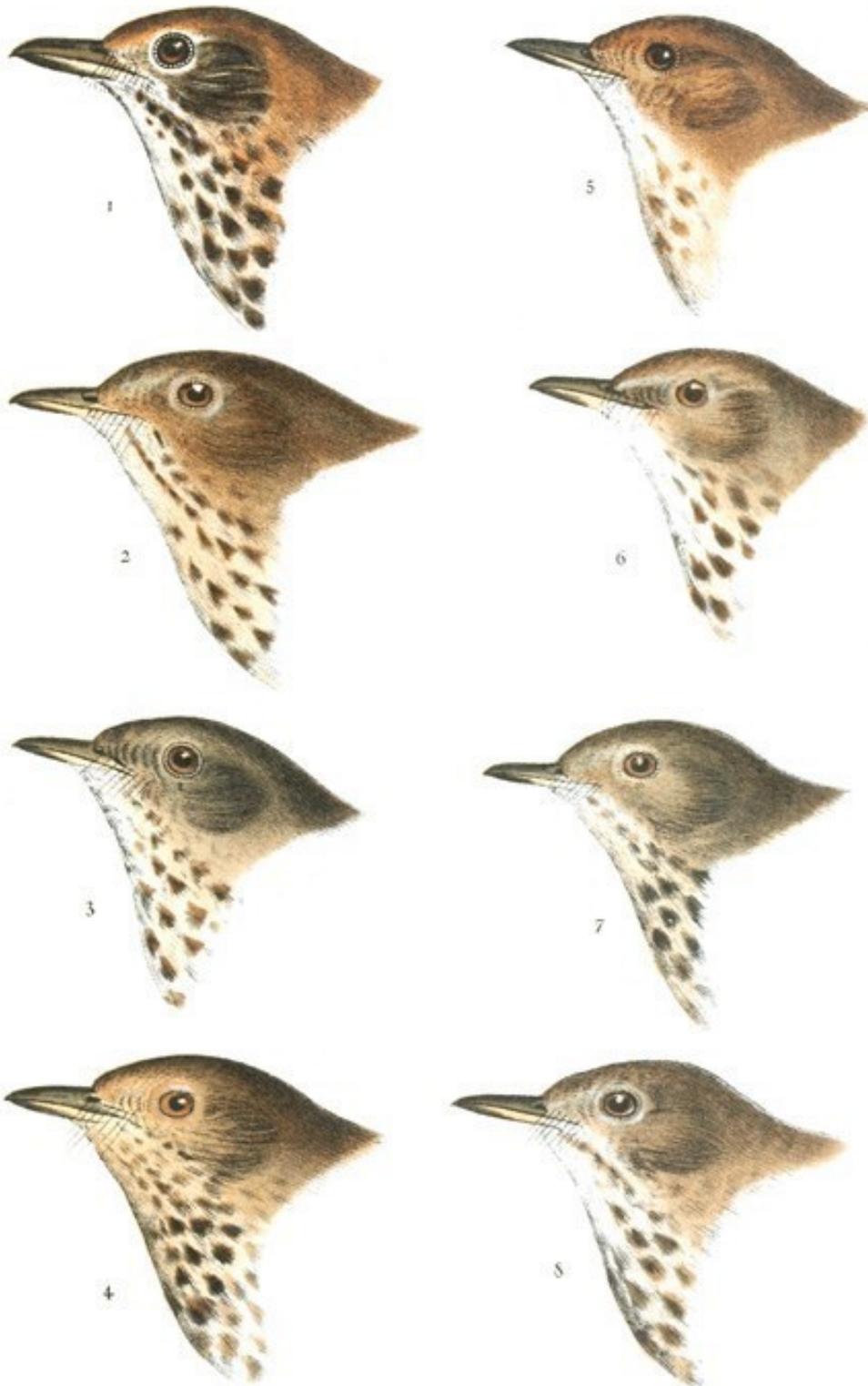
olive above is decidedly more rufescent,—much as in Rocky Mountain specimens of *T. fuscescens*; the spots on jugulum and breast are also narrower, as well as hardly darker in color than the back; and the tail is longer than in Rocky Mountain *swainsoni*, in which latter it is longer than in Eastern examples. The remaining species—*mustelinus*, *fuscescens*, and *aliciae*—extend no farther west than the Rocky Mountains; the first and last only toward their eastern base, while the second breeds abundantly as far as the eastern limit of the Great Basin.

The *T. fuscescens*, from the Rocky Mountains, is considerably darker in color above, while the specks on the throat and jugular are sparser or more obsolete than in Eastern birds.

In *T. mustelinus*, the only two Western specimens in the collection (Mount Carroll, Ills., and Fort Pierre) have the rump of a clearer grayish than specimens from the Atlantic Coast; in all other respects, however, they appear to be identical. Some Mexican specimens, being in winter plumage, have the breast more buffy than Northern (spring or summer) examples, and the rufous of the head, etc. is somewhat brighter.

In *aliciae*, no difference is observed between Eastern and Western birds; the reason is, probably, that the breeding-ground of all is in one province, though their migrations may extend over two. There is, however, a marked difference between the spring and autumn plumage; the clear grayish of the former being replaced, in the latter, by a snuffy brown, or sepia tint,—this especially noticeable on wings and tail.

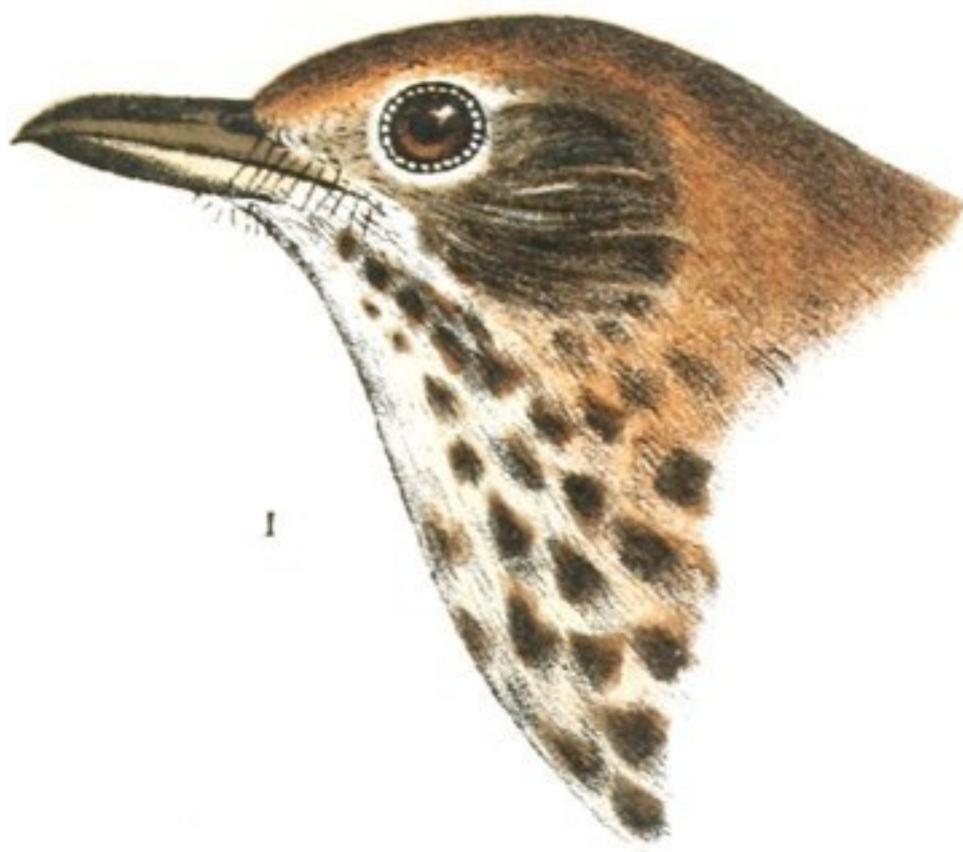
PLATE I.



1. *Turdus mustelinus*, Ga. Penn., 1570.
2. " *astalotus*, Nott. Oregon, 2040.
3. " *allebe*, Baird. Illinois, 10084.
4. " *swainsonii*, Cal. Penn., 981.

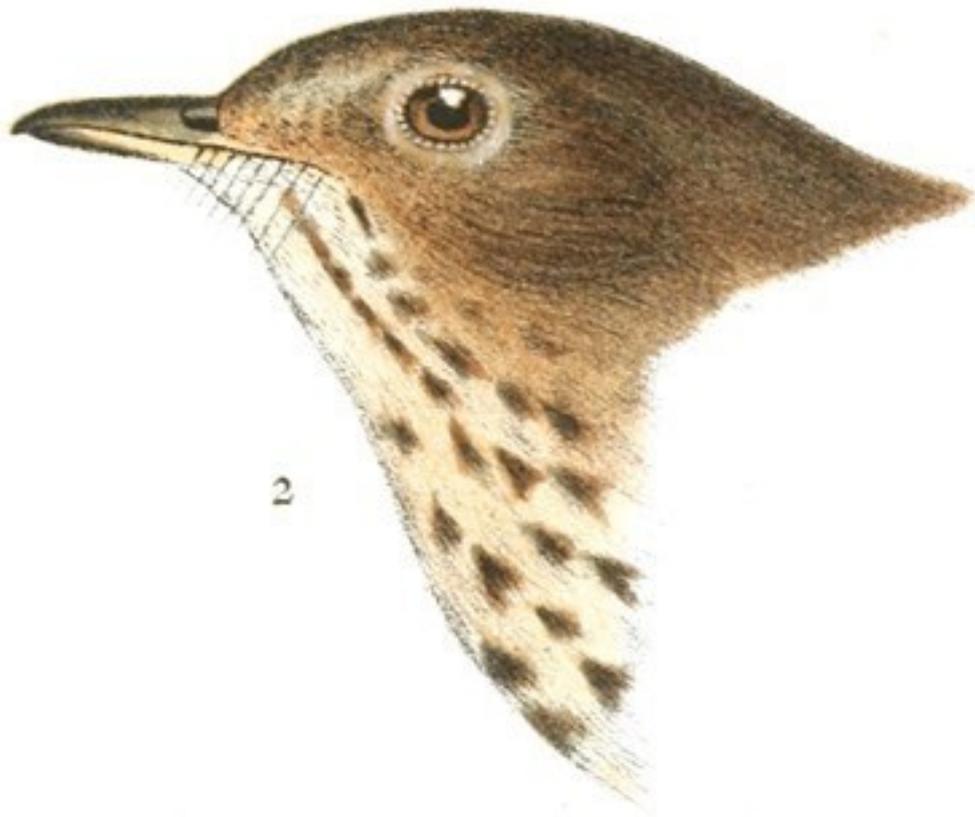
5. *Turdus dussumieri*, Steph. D. C., 2021.
6. " *pallasi*, Cal. Penn., 2146.
7. " *nanus*, Aud. Cal., 12997.
8. " *anteheni*, Baird. Rocky Mts., 10386.

PLATE I.

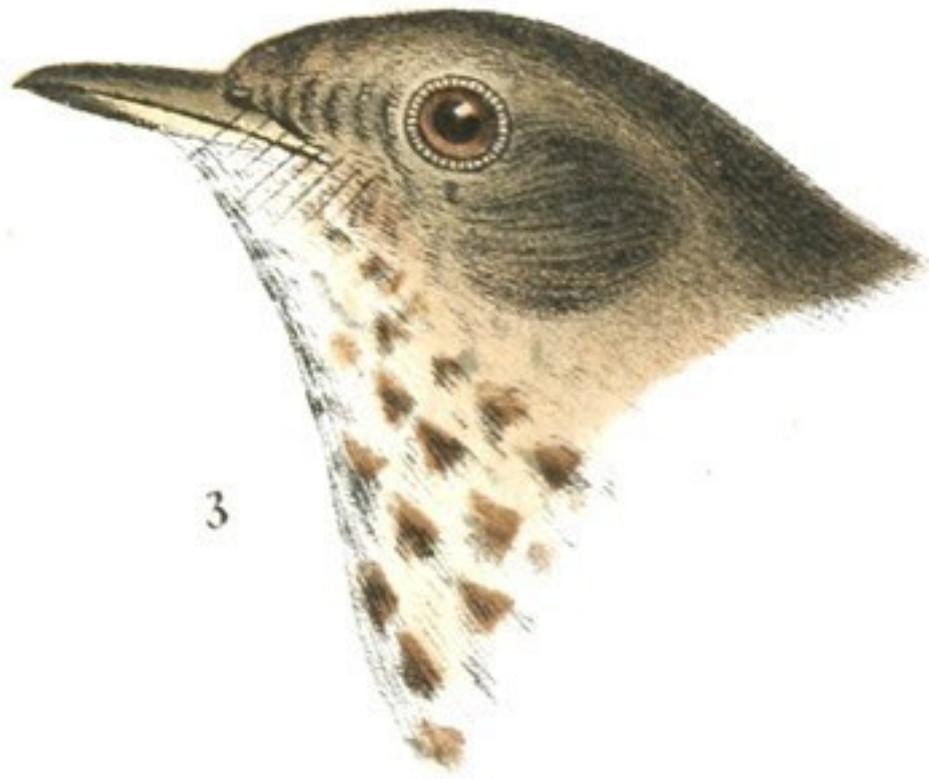


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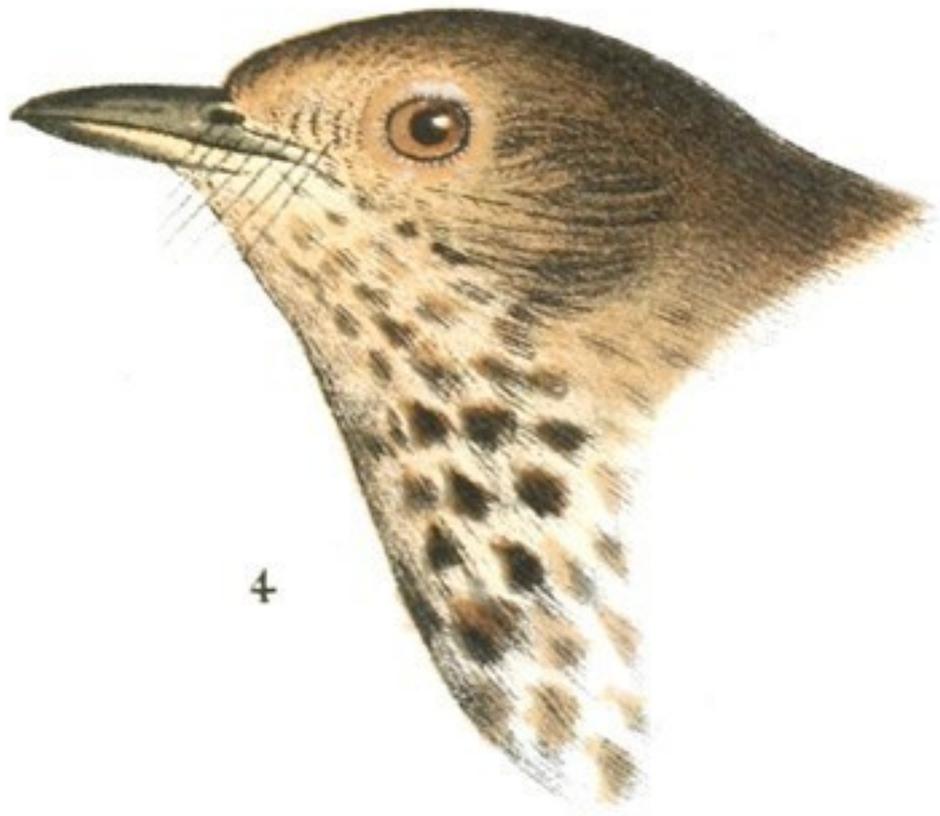
1. *Turdus mustelinus*, *Gm. Pa.*, 1570.



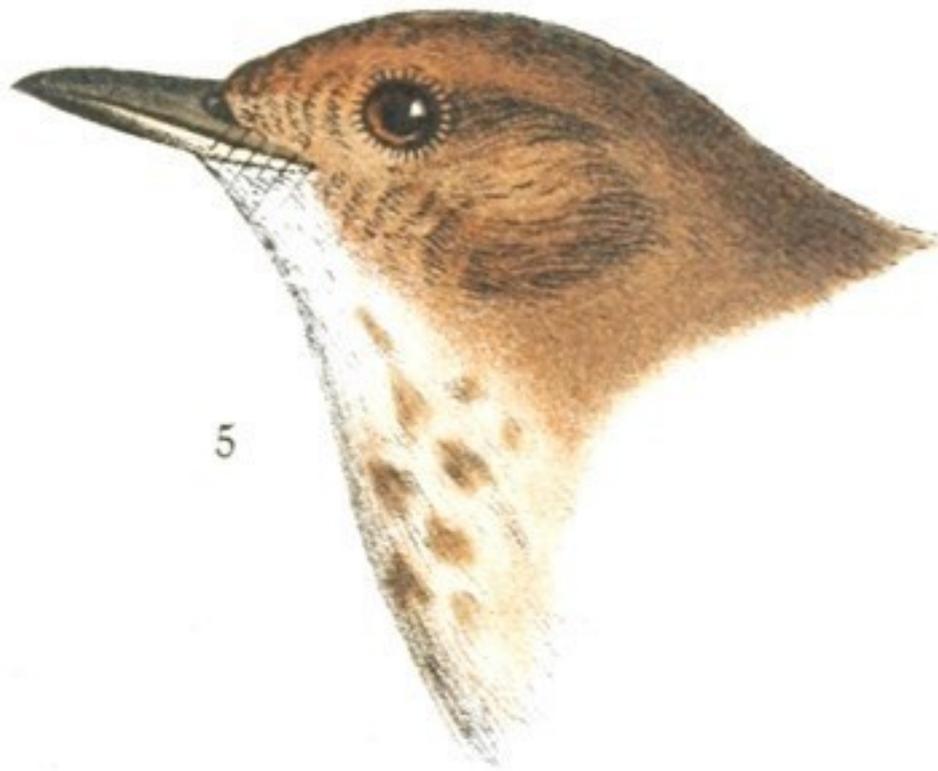
2. *Turdus ustulatus*, *Nutt.* Oregon, 2040.



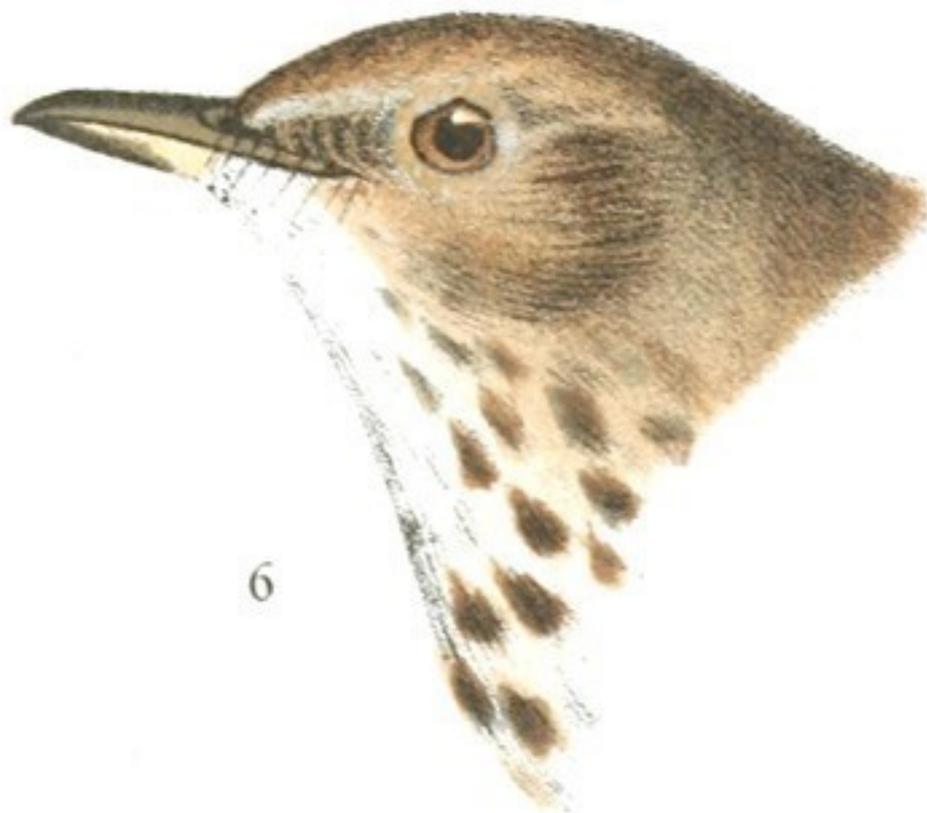
3. *Turdus aliciae*, Baird. Illinois, 10084.



4. *Turdus swainsoni*, *Cab. Penn.*, 981.



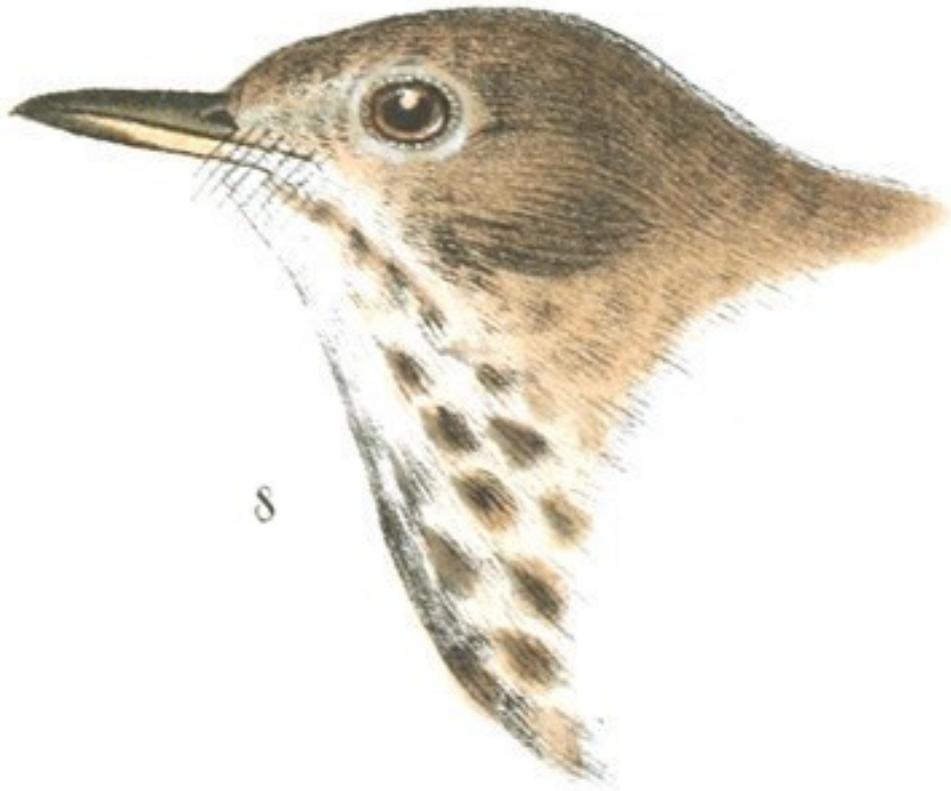
5. *Turdus fuscescens*, *Steph.*, D. C., 28231.



6. *Turdus pallasii*, *Cab. Penn.*, 2146.



7. *Turdus nanus*, *Aud. Cala.*, 17997.



8. *Turdus auduboni*, Baird. Rocky Mts., 10886.

The following synopsis is intended to show the characters of the different 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.

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.

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.

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.

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 North America from shore of Arctic Ocean, Fort Yukon, and Kodiak to Costa Rica. West to Missouri River. Cuba.

b. A conspicuous orbital ring of buff.

4. **T. swainsoni.**

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 ... 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 ... 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 unspotted.

5. **T. pallasi.**

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?) ... 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 ... var. *nanus*.

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 ... var. *auduboni*.

Turdus mustelinus, Gmelin

THE WOOD THRUSH

Turdus mustelinus, Gmelin, Syst. Nat. I, 1788, 817.—Audubon, Orn. Biog. I, 1832, 372, pl. 73.—Ib. Birds Am. III, 1841, 24, pl. 144.—D'Orb. La Sagra's Cuba Ois. 1840, 49.—Baird, Birds N. Am. 1858, 212.—Ib. Rev. Am. Birds, 1864, 13.—Sclater, P. Z. S. 1856, 294, and 1859, 325.—Jones, Nat. in Bermuda, 26.—Gundlach, Repertorio, 1865, 228.—Maynard.—Samuels, 146. *Turdus melodus*,

Wils. Am. Orn. I, 1808, 35, pl. ii. *Turdus densus*, Bonap. Comptes Rendus, XXVIII, 1853, 2.—Ib. Notes Delattre, 1854, 26 (Tabasco).

Additional figures: Vieillot, Ois. Am. Sept. II, pl. lxii.—Wilson, Am. Orn. I, pl. ii.

Sp. Char. Above clear cinnamon-brown, on the top of the head becoming more rufous, on the rump and tail olivaceous. The under parts are clear white, sometimes tinged with buff on the breast or anteriorly, and thickly marked beneath, except on the chin and throat and about the vent and tail-coverts, with sub-triangular, sharply defined spots of blackish. The sides of the head are dark brown, streaked with white, and there is also a maxillary series of streaks on each side of the throat, the central portion of which sometimes has indications of small spots. Length, 8.10 inches; wing, 4.25; tail, 3.05; tarsus, 1.26. Young bird similar to adult, but with rusty yellow triangular spots in the ends of the wing coverts.

Hab. U. S. east of Missouri plains, south to Guatemala. Bermuda (not rare). Cuba, La Sagra; Gundlach. Honduras, Moore. Cordova, Scl. Orizaba (winter), Sumichr.

Habits. The Wood Thrush, without being anywhere a very abundant species, is common throughout nearly every portion of the United States between the Mississippi River and the Atlantic. It breeds in every portion of the same extended area, at least as far as Georgia on the south and Massachusetts on the north. Beyond the last-named State, it rarely, if ever, breeds on the coast. In the interior it has a higher range, nesting around Hamilton, C. W. So far as I am aware it is unknown, or very rare, in the States of Vermont, New Hampshire, and Maine.

It makes its appearance early in April in the Middle States, but in New England not until four or five weeks later, appearing about the 10th of May. Their migrations in fall are more irregular, being apparently determined by the abundance of their food. At times they depart as early as the first of September, but sometimes not until the last of October. It winters in Central America, where it is quite abundant at that season.

The favorite localities of the Wood Thrush are the borders of dense thickets, or low damp hollows shaded by large trees. Yet its habits are by no means so retiring, or its nature so timid, as these places of resort would lead us to infer. A small grove in Roxbury, now a part of Boston, in close proximity to a dwelling-house, was for many years the favorite resort of these birds, where several pairs nested and reared their young, rarely even leaving their nests, which were mostly in low bushes, wholly unmindful of the curious children who were their frequent visitors. The same fearless familiarity was observed at Mount Auburn, then first used as a public cemetery. But in the latter instance the nest was always placed high up on a branch of some spreading tree, often in conspicuous places, but out of reach. Mr. J. A. Allen refers to several similar instances where the Wood Thrush did not show itself to be such a recluse as many describe it. In one case a pair built their nest within the limits of a thickly peopled village, where there were but few trees, and a scanty undergrowth. In another a Wood Thrush lived for several successive summers among the elms and maples of Court Square in the city of Springfield, Mass., undisturbed by the passers by or the walkers beneath, or the noise and rattle of the vehicles on the contiguous streets.

The song of this thrush is one of its most remarkable and pleasing characteristics. No lover of sweet sounds can have failed to notice it, and, having once known its source, no one can fail to recognize it when heard again. The melody is one of great sweetness and power, and consists of several parts, the last note of which resembles the tinkling of a small bell, and seems to leave the conclusion suspended. Each part of its song seems sweeter and richer than the preceding.

The nest is usually built on the horizontal branch of a small forest-tree, six or eight feet from the ground, and, less frequently, in the fork of a bush. The diameter is about 5 inches, and the depth $3\frac{3}{4}$, with a cavity averaging 3 inches across by $2\frac{1}{4}$ in depth. They are firm, compact structures, chiefly composed of decayed deciduous leaves, closely impacted together, and apparently thus combined when in a moistened condition, and afterward dried into a firmness and strength like

that of parchment. These are intermingled with, and strengthened by, a few dry twigs, and the whole is lined with fine roots and a few fine dry grasses. Occasionally, instead of the solid frame of impacted leaves, we find one of solidified mud.

The eggs of the Wood Thrush, usually four in number, sometimes five, are of a uniform deep-blue tint, with but a slight admixture of yellow, which imparts a greenish tinge. Their average measurements are 1.00 by .75 inch.

Turdus fuscescens, Stephens

TAWNY THRUSH; WILSON'S THRUSH

Turdus mustelinus, Wilson, Amer. Ornithology, V, 1812, 98, pl. 43 (not of Gmelin).

Turdus fuscescens, Stephens, Shaw's Gen. Zoöl. Birds, X, I, 1817, 182. Cab. Jour. 1855, 470 (Cuba).—Baird, Birds N. Am. 1858, 214.—Ib. Rev. Am. B. 1864, 17.—Gundi. Repertorio, 1865, 228 (Cuba, not rare). Pelzeln, Orn. Bras. II, 1868, 92. (San Vicente, Brazil, December.)—Samuels, 150.—Sclater, P. Z. S. 1859, 326.—Ib. Catal. Am. Birds, 1861, 2, No. 10. *Turdus silens*, Vieill. Encyclop. Méth. II, 1823, 647 (based on *T. mustelinus*, Wils.). *Turdus wilsonii*, Bon. Obs. Wils. 1825, No. 73. *Turdus minor*, D'Orb. La Sagra's Cuba, Ois. 1840, 47, pl. v (Cuba).

Sp. Char. Above, and on sides of head and neck, nearly uniform light reddish-brown, with a faint tendency to orange on the crown and tail. Beneath, white; the fore part of the breast and throat (paler on the chin) tinged with pale brownish-yellow, in decided contrast to the white of the belly. The sides of the throat and the fore part of the breast, as colored, are marked with small triangular spots of light brownish, nearly like the back, but not well defined. There are a few obsolete blotches on the sides of the breast (in the white) of pale olivaceous; the sides of the body tinged with the same. Tibiæ white. The lower mandible is brownish only at the tip. The lores are ash-colored, the orbital region grayish. Length, 7.50; wing, 4.25; tail, 3.20; tarsus; 1.20.

Hab. Eastern North America, Halifax to Fort Bridger, and north to Fort Garry. Cuba, Panama, and Brazil (winter). Orizaba (winter), Sumichrast.

Habits. This species is one of the common birds of New England, and is probably abundant in certain localities throughout all the country east of the Rocky Mountains, as far to the north as the 50th parallel, and possibly as far as the wooded country extends. Mr. Maynard did not meet with it in Northern New Hampshire. Mr. Wm. G. Winton obtained its nest and eggs at Halifax, N. S.; Mr. Boardman found them also on the Gulf of St. Lawrence, and at St. Stephen's, N. B.; Mr. Couper at Quebec; Mr. Kriehoff at Three Rivers, Canada; Donald Gunn at Selkirk and Red River; and Mr. Kumlien and Dr. Hoy in Wisconsin. Mr. McIlwraith also gives it as common at Hamilton, West Canada. It breeds as far south as Pennsylvania, and as far to the west as Utah, and occurs, in the breeding season, throughout Maine, New Brunswick, Nova Scotia, and Canada.

Mr. Ridgway found this thrush very abundant among the thickets in the valleys of the Provo, Weber, and Bear rivers, in Utah, and very characteristic of those portions of the country.

It arrives in Massachusetts early in May, usually with the first blossoms of the pear, ranging from the 5th to the 20th. It is strictly of woodland habits, found almost entirely among clumps of trees, and obtaining its food from among their branches, or on the ground among the fallen leaves. It moves south from the 10th to the 25th of September, rarely remaining till the first week in October.

It is timid, distrustful, and retiring; delighting in shady ravines, the edges of thick close woods, and occasionally the more retired parts of gardens; where, if unmolested, it will frequent the same locality year after year.

The song of this thrush is quaint, but not unmusical; variable in its character, changing from a prolonged and monotonous whistle to quick and almost shrill notes at the close. Their melody is not unfrequently prolonged until quite late in the evening, and, in consequence, in some portions of Massachusetts these birds are distinguished with the name of Nightingale,—a distinction due rather to the season than to the high quality of their song. Yet Mr. Ridgway regards it, as heard by himself in Utah, as superior in some respects to that of all others of the genus, though far surpassed in mellow richness of voice and depth of metallic tone by that of the Wood Thrush (*T. mustelinus*). To his ear there was a solemn harmony and a beautiful expression which combined to make the song of this surpass that of all the other American Wood Thrushes. The beauty of their notes appeared in his ears “really inspiring; their song consisting of an inexpressibly delicate metallic utterance of the syllables *ta-weel’ ah, ta-weel’ ah, twil’ ah, twil’ ah*, accompanied by a fine trill which renders it truly seductive.” The last two notes are said to be uttered in a soft and subdued undertone, producing thereby, in effect, an echo of the others.

The nest is always placed near the ground, generally raised from it by a thick bed of dry leaves or sticks; sometimes among bushes, but never in the fork of a bush or tree, or if so, in very rare and exceptional cases. When incubation has commenced, the female is reluctant to leave her nest. If driven off she utters no complaint, but remains close at hand and returns at the first opportunity.

They construct their nest early in May, and the young are hatched in the latter part of that month, or the first of June. They raise two broods in the season. The nest, even more loosely put together than that of the Ground Swamp Robin (*T. pallasi*), is often with difficulty kept complete. It is about 3 inches in height, 4½ in diameter, with a cavity 1½ inches deep and 3 in width, and composed of dry bark, dead leaves, stems, and woody fibres, intermingled with grasses, caricas, sedges, etc., and lined with soft skeleton leaves. A nest from Wisconsin was composed entirely of a coarse species of *Sparganeum*; the dead stalks and leaves of which were interwoven with a very striking effect.

The eggs, usually four, sometimes five in number, are of a uniform green color, with a slight tinge of blue, and average .94 by .66 of an inch in diameter.

Turdus aliciae, Baird

GRAY-CHEEKED THRUSH; ALICE’S THRUSH

Turdus aliciae, Baird, Birds N. Am. 1858, 217, plate 81, f. 2.—Ib. Review Am. Birds, I, 1864, 21.—Coues, Pr. Ac. N. Sc. Aug. 1861, 217 (Labrador).—Ib. Catal. Birds of Washington.—Gundlach, Repertorio, 1865, 229 (Cuba).—Lawr. Ann. N. Y. Lyc. IX, 91 (Costa Rica).—Dall and Bannister, Birds Alaska.—Ridgway, Report.

Sp. Char. Above nearly pure dark olive-green; sides of the head ash-gray; the chin, throat, and under parts white; purest behind. Sides of throat and across the breast with arrow-shaped spots of dark plumbeous-brown. Sides of body and axillaries dull grayish-olivaceous. Tibiæ plumbeous; legs brown. Length, nearly 8 inches; wing, 4.20; tail, 3.20; tarsus, 1.15.

Hab. Eastern North America to shores of Arctic Ocean, and along northern coast from Labrador to Kodiak, breeding in immense numbers between the mouths of Mackenzie and Coppermine. West to Fort Yukon and Missouri River States. Winters south to Costa Rica. Chiriqui, Salvin; Cuba, Gundlach.

As originally described, this species differs from *swainsoni* in larger size, longer bill, feet, and wings especially, straighter and narrower bill. The back is of a greener olive. The breast and sides of the head are entirely destitute of the buff tinge, or at best this is very faintly indicated on the upper part of the breast. The most characteristic features are seen on the side of the head. Here there is no indication whatever of the light line from nostril to eye, and scarcely any of a light ring round the eye,—the whole region being grayish-olive, relieved slightly by whitish shaft-streaks on the ear-coverts. The sides of body, axillars, and tibiae are olivaceous-gray, without any of the fulvous tinge seen in *swainsoni*. The bill measures .40 from tip to nostril, sometimes more; tarsi, 1.21; wing, 4.20; tail, 3.10,—total, about 7.50. Some specimens slightly exceed these dimensions; few, if any, fall short of them.

In autumn the upper surface is somewhat different from that in spring, being less grayish, and with a tinge of rich sepia or snuff-brown, this becoming gradually more appreciable on the tail.

A specimen from Costa Rica is undistinguishable from typical examples from the Eastern United States.

Habits. This species, first described in the ninth volume of the Pacific Railroad Surveys, bears so strong a resemblance to the Olive-backed Thrush (*T. swainsoni*), that its value as a species has often been disputed. It was first met with in Illinois. Since then numerous specimens have been obtained from the District of Columbia, from Labrador, and the lower Mackenzie River. In the latter regions it was found breeding abundantly. It was also found in large numbers on the Anderson River, but was rare on the Yukon, as well as at Great Slave Lake, occurring there only as a bird of passage to or from more northern breeding-grounds.

In regard to its general habits but little is known. Dr. Coues, who found it in Labrador, breeding abundantly, speaks of meeting with a family of these birds in a deep and thickly wooded ravine. The young were just about to fly. The parents evinced the greatest anxiety for the safety of their brood, endeavoring to lead him from their vicinity by fluttering from bush to bush, constantly uttering a melancholy *pheugh*, in low whistling tone. He mentions that all he saw uttered precisely the same note, and were very timid, darting into the most impenetrable thickets.

This thrush is a regular visitant to Massachusetts, both in its spring and in its fall migration. It arrives from about the first to the middle of May, and apparently remains about a week. It passes south about the first of October. Occasionally it appears and is present in Massachusetts at the same time with the *Turdus swainsoni*. From this species I hold it to be unquestionably distinct, and in this opinion I am confirmed by the observations of two very careful and reliable ornithologists, Mr. William Brewster of Cambridge, one of our most promising young naturalists, and Mr. George O. Welch of Lynn, whose experience and observations in the field are unsurpassed. They inform me that there are observable between these two forms certain well-marked and constant differences, that never fail to indicate their distinctness with even greater precision than the constant though less marked differences in their plumage.

The *Turdus aliciae* comes a few days the earlier, and is often in full song when the *T. swainsoni* is silent. The song of the former is not only totally different from that of the latter, but also from that of all our other Wood Thrushes. It most resembles the song of *T. pallasi*, but differs in being its exact inverse, for whereas the latter begins with its lowest notes and proceeds on an ascending scale, the former begins with its highest, and concludes with its lowest note. The song of the *T. swainsoni*, on the other hand, exhibits much less variation in the scale, all the notes being of nearly the same altitude.

I am also informed that while the *T. swainsoni* is far from being a timid species, but may be easily approached, and while it seems almost invariably to prefer the edges of the pine woods, and is rarely observed in open grounds or among the bare deciduous trees, the habits of the *T. aliciae* are the exact reverse in these respects. It is not to be found in similar situations, but almost always frequents copses of hard wood, searching for its food among their fallen leaves. It is extremely timid and difficult to approach. As it stands or as it moves upon the ground, it has a peculiar erectness of

bearing which at once indicates its true specific character so unmistakably that any one once familiar with its appearance can never mistake it for *T. swainsoni* nor for any other bird.

The nests measure about 4 inches in diameter and $2\frac{3}{4}$ in height. The cavity is 2 inches deep, and its diameter $2\frac{1}{2}$ inches. They are unusually compact for the nest of a thrush, and are composed chiefly of an elaborate interweaving of fine sedges, leaves, stems of the more delicate *Equisetaceæ*, dry grasses, strips of fine bark, and decayed leaves, the whole intermingled with the paniculated inflorescence of grasses. There is little or no lining other than these materials. These nests were all found, with but few exceptions, on the branches of low trees, from two to seven feet from the ground. In a few exceptional cases the nests were built on the ground.

Occasionally nests of this species are found constructed with the base and sides of solid mud, as with the common Robin (*Turdus migratorius*). In these, as also in some other cases, their nests are usually found on or near the ground. So far as I am aware neither its occasional position on the ground, nor its mud frames, are peculiarities ever noticeable in nests of *T. swainsoni*.

The eggs were usually four in number. Their color is either a deep green tint, or green slightly tinged with blue; and they are marked with spots of russet and yellowish-brown, varying both in size and frequency. Their mean length is .92 of an inch, and their mean breadth .64. The maximum length is .94 and the minimum .88 of an inch. There is apparently a constant variation from the eggs of the *T. swainsoni*; those of the *aliciae* having a more distinctly blue ground color. The nests are also quite different in their appearance and style of structure. The *Hypnum* mosses, so marked a feature in the nests of *T. swainsoni*, as also in those of *T. ustulatus*, are wholly wanting in those of *T. aliciae*.

This bird and the robin are the only species of our thrushes that cross the Arctic Circle to any distance, or reach the shore of the Arctic Ocean. It occurs from Labrador, all round the American coast, to the Aleutian Islands, everywhere bearing its specific character as indicated above. It is extremely abundant on and near the Arctic coast, between the mouth of the Mackenzie River and the Coppermine, more than 200 specimens (mostly with their eggs) having been sent thence to the Smithsonian Institution by Mr. MacFarlane. In all this number there was not a single bird that had any approach to the characters of *T. swainsoni*, as just given. From the Slave Lake region, on the other hand, *T. swainsoni* was received in nearly the same abundance, and unmixed during the breeding season with *T. aliciae*.

Turdus swainsoni, Cabanis

OLIVE-BACKED THRUSH; SWAINSON'S THRUSH

Turdus swainsoni, Cab. Tschudi, Fauna Peruana, 1844-46, 188.—? Sclater & Salvin, Ibis, 1859, 6 (Guatemala).—Sclater, P. Z. S. 1858, 451 (Ecuador); 1859, 326.—Ib. Catal. 1861, 2, No. 11.—Baird, Birds N. Am. 1858, 216; Rev. Am. B., 1864, 19.—Gundlach, Cab. Jour. 1861, 324 (Cuba).—Ib. Repert. 1865, 229.—Pelzeln, Orn. Brazil. II. 1868, 92 (Marambitanas, Feb. and March).—Lawr. N. Y. Lyc. IX, 91 (Costa Rica).—Ridgway.—Maynard.—Samuels, 152.—Cooper, Birds Cal. 6.—Dall & Bannister. *Turdus minor*, Gmelin, Syst. Nat. I, 1788, 809 (in part). *Turdus olivaceus*, Giraud, Birds L. Island, 1843-44, 92 (not of Linn.). (?) *Turdus minimus*, Lafresnaye, Rev. Zoöl. 1848, 5.—Sclater, P. Z. S. 1854, 111.—Bryant, Pr. Bost. Soc. VII, 1860, 226 (Bogota).—Lawrence, Ann. N. Y. Lyc. 1863. (Birds Panama, IV, No. 384.)

Sp. Char. Upper parts uniform olivaceous, with a decided shade of green. The fore part of breast, the throat and chin, pale brownish-yellow; rest of lower parts white; the sides washed with

brownish-olive. Sides of the throat and fore part of the breast with sub-rounded spots of well-defined brown, darker than the back; the rest of the breast (except medially) with rather less distinct spots that are more olivaceous. Tibiæ yellowish-brown. Broad ring round the eye, loreal region, and a general tinge on the side of the head, clear reddish buff. Length, 7.00; wing, 4.15; tail, 3.10; tarsus, 1.10.

Hab. Eastern North America; westward to Humboldt Mountain and Upper Columbia; perhaps occasionally straggling as far as California; north to Slave Lake and Fort Yukon; south to Ecuador and Brazil. Cuba, Gundlach; Costa Rica, Lawr.

Specimens examined from the northern regions (Great Slave Lake, Mackenzie River, and Yukon) to Guatemala; from Atlantic States to East Humboldt Mountains, Nevada, and from intervening localities. The extremes of variation are the *brownish*-olive of eastern and the clear *dark* greenish-olive of remote western specimens. There is no observable difference between a Guatemalan skin and one from Fort Bridger, Utah.

Habits. The Olive-backed Thrush, or "Swamp Robin," has very nearly the same habitat during the breeding season as that of the kindred species with which it was so long confounded. Although Wilson seems to have found the nest and eggs among the high lands of Northern Georgia, it is yet a somewhat more northern species. It does not breed so far south as Massachusetts, or if so, the cases must be exceptional and very rare, nor even in Western Maine, where the "Ground Swamp Robin" (*T. pallasi*) is quite abundant. It only becomes common in the neighborhood of Calais. It is, however, most widely distributed over nearly the entire continent, breeding from latitude 44° to high Arctic regions. It winters in Guatemala and southward as far as Ecuador and Brazil.

In its habits this thrush is noticeably different from the *T. pallasi*, being much more arboreal, frequenting thick woods; rarely seen, except during its migrations, in open ground, and seeking its food more among the branches of the trees.

Mr. Ridgway found this species very abundant among the Wahsatch Mountains, where it was one of the most characteristic summer birds of that region. It was breeding plentifully in the cañons, where its song could be heard almost continually. It inhabited an intermediate position between *T. auduboni* and *T. fuscescens*, delighting most in the shrubbery along the streams of the cañons and passes, leaving to the *T. auduboni* the secluded ravines of the pine regions higher up, and to the *T. fuscescens* the willow thickets of the river valleys. He did not meet with it farther west than the East Humboldt Mountains. The song, in his opinion, resembles that of the Wood Thrush (*T. mustelinus*) in modulations; but the notes want the power, while they possess a finer and more silvery tone.

The song of this species has a certain resemblance to that of *T. pallasi*, being yet quite distinct, and the differences readily recognized by a familiar ear. It is more prolonged; the notes are more equal and rise with more regularity and more gradually, are richer, and each note is more complete in itself. Its song of lamentation when robbed of its young is full of indescribable pathos and beauty, haunting one who has once heard it long after.

When driven from the nest, the female always flies to a short distance and conceals herself; making no complaints, and offering no resistance.

These birds, in a single instance, have been known to reach Eastern Massachusetts early in April, in an unusually early season, but they generally pass north a few weeks later. They make no prolonged stay, and are with us rarely more than three or four days. Their return in the fall appears to be, at times, by a more inland route. They are then not so numerous near the coast, but occasionally are abundant.

Their nests in Nova Scotia, wherever observed, were among the thick woods, on horizontal branches of a forest-tree, usually about five feet from the ground. Those observed in the Arctic regions by Mr. Kennicott were frequently not more than two feet from the ground.

The nests average about four inches in diameter and two in height, the cavity being three inches wide by about one and a half deep. They are more elaborately and neatly constructed than those of any other of our thrushes, except perhaps of *T. ustulatus*. conspicuous among the materials are the

Hypnum mosses, which by their dark fibrous masses give a very distinctive character to these nests, and distinguish them from all except those of the *T. ustulatus*, which they resemble. Besides these materials are found fine sedges, leaves, stems of equisetaceous plants, red glossy vegetable fibres, the flowering steins of the *Cladonia* mosses, lichens, fine strips of bark, etc.

The eggs, which are four or five in number, exhibit noticeable variations in size, shape, and shades of coloring, bearing some resemblance to those of *T. ustulatus* and to the eggs asserted to be those of *T. nanus*, but are sufficiently distinct, and are still more so from those of *T. alicia*. They range in length from .83 to .94, with a mean of .88, their mean breadth is .66, the maximum .69, and the minimum .63. Their ground color is usually bluish-green, sometimes light blue with hardly a tinge of green, and the spots are of a yellowish-brown, or russet-brown, or a mixture of both colors, more or less confluent, with marked variations in this respect.

***Turdus swainsoni*, var. *ustulatus*, Nuttall**

OREGON THRUSH

Turdus ustulatus, Nuttall, Man. I, 1840, 400 (Columbia River).—Baird, Birds N. Am. 1858, 215, pl. lxxxii, fig. 1.—Ib. Rev. Am. B. 1864, 18.—Cooper & Suckley, P. R. Rep. XII, II, 1860, 171.—Ridgway, Pr. A. N. S. Philad. 1869, 127.—Dall & Bannister, Tr. Chic. Acad.—Cooper, Birds Cal., 5.

Sp. Char. General appearance of *fuscescens*, but with pattern of *swainsoni*; the buff orbital ring as conspicuous as in latter. The olive above is more *brown* than in this, and less yellowish than in *fuscescens*, becoming decidedly more rufescent on wings and less observably so on tail. Pectoral aspect different from *fuscescens*, the spots narrower and cuneate, sharply defined, and arranged in longitudinal series; in color they are a little *darker* than the crown. Length, 7.50; wing, 3.75; tail, 3.00; tarsus, 1.12.

Hab. Pacific Province of United States. Tres Marias Isl., Guatemala (winter), Mus. S. I.

This well-marked race is to be compared with *swainsoni*, not with *fuscescens*, as has generally been done; the latter, except in shade of colors, it scarcely resembles at all; still greater evidence that such is its affinity is that the *T. ustulatus* builds its nest on a tree, and lays a spotted egg, like *swainsoni*, while *fuscescens* nests on or near the ground, perhaps never in a tree, and lays a plain blue egg. The song of the present bird is also scarcely distinguishable from that of *swainsoni*. Upon the whole, we see no reason why this should not be considered as a Pacific Province form of the *Turdus swainsoni*; at least it becomes necessary to do so, after referring to *T. pallasi* as geographical races, the *T. auduboni* and *T. nanus*.

Habits. So far as we are aware, this thrush has a very limited distribution, being mainly restricted to the Pacific coast region from California to Alaska in the breeding season, though migrating southward in winter to Guatemala. Dr. Kennerly found it in great abundance breeding at Chiloweyuck Depot, July 3, 1859. Dr. Cooper also found it one of the most abundant of the summer residents in Washington Territory, arriving there in May and remaining until the beginning of September. Three specimens of this thrush were obtained at Sitka, by Mr. Bischoff. Mr. Ridgway met with only a single specimen east of the Sierra Nevada, though on that range he found it an abundant summer bird.

In its general appearance it has a marked resemblance to Wilson's Thrush (*T. fuscescens*), but its habits and notes, as well as its nest and eggs, clearly point its nearer affinity to Swainson's Thrush (*T. swainsoni*), its song being scarcely different from that of the latter species. Like this species, it frequents the thickets or brushwood along the mountain streams, and, except just after its arrival, it is not at all shy. In crossing the Sierra Nevada in July, 1867, Mr. Ridgway first met with this species. He

describes it as an exquisite songster. At one of the camps, at an altitude of about 5,000 feet, they were found unusually plentiful. He speaks of their song as consisting of “ethereal warblings,—outbursts of wild melody.” “Although its carols were heard everywhere in the depth of the ravine, scarcely one of the little musicians could be seen.” “The song of this thrush,” he adds, “though possessing all the wild, solemn melody of that of the Wood Thrush (*T. mustelinus*) is weaker, but of a much finer or more silvery tone, and more methodical delivery. It is much like that of the *T. swainsoni*, but in the qualities mentioned is even superior.”

Dr. Cooper found its nests with eggs about the middle of June. These were most usually built on a small horizontal branch, and were very strongly constructed of twigs, grasses, roots, and leaves, usually covered on the outside entirely with the bright green *Hypnum* mosses peculiar to that region, which in the damp climate near the coast continue to grow in that position, and form large masses. The number of eggs is usually five.

Dr. Cooper states that these thrushes sing most in the early morning and in the evening, when numbers may be heard answering one another on all sides. They do not affect the darkest thickets so much as the Hermit Thrush, but are often seen feeding in the gardens in the open sunshine.

Dr. Suckley, who found them quite abundant in the neighborhood of Fort Steilacoom, on the edge of the forest, and in swampy land, describes the song as a low, soft, sad, and lively whistle, confined to one note, and repeated at regular intervals. Mr. Nuttall, the first to describe this form, speaks of it as shy and retiring, and as in the habit of gathering insects from the ground. His ear, so quick to appreciate the characteristics of the songs of birds, which showed a close resemblance between the notes of this bird and that of Wilson’s Thrush (*T. fuscescens*), enabled him to detect very distinct and easily recognizable differences. It is much more interrupted and is not so prolonged. The warble of this bird he describes as resembling *wit-wit t’villia*, and *wit-wit, t’villia-t’villia*. His call when surprised was *wit-wit*.

All the nests of this species that have fallen under my observation are large, compact, strongly constructed, and neat. They measure about 5 inches in their external diameter, with a depth externally of 3; the cavity is comparatively shallow, being rarely 2 inches in depth. The external portions are constructed almost entirely of *Hypnum* mosses, matted together and sparingly interwoven with dry leaves and fine fibrous roots, and are lined with finer materials of the same kind. These nests most nearly resemble in their material and in their position those of Swainson’s Thrush.

Mr. Hepburn found these birds very abundant about Victoria. It does not usually breed there before the last of May, though in one exceptional instance he found a nest with young birds on the 24th of that month.

The eggs vary in size and shape, ranging from .77 to .94 in length, and from .65 to .69 in breadth. They also vary in their ground color and in the tints of the spots and markings. The ground color is light green or light blue, and the markings are variously yellowish-brown and lilac, or dark brown and slate.

Mr. Grayson found this thrush very abundant in the month of January, in the thickest of the woods, in the islands of the Three Marias, on the Pacific coast of Mexico. They were very timid and shy, more so than any bird that he saw on those islands. It frequently uttered a low plaintive whistle, and seemed solitary in its habits.

Turdus pallasi, Cabanis

RUFOUS-TAILED THRUSH; HERMIT THRUSH

Turdus pallasi, Cabanis, Wiegmann's Archiv, 1847 (I), 205.—Baird, Birds N. Am. 1858, 212.—Ib. Rev. Am. B. 1864, 14.—Sclater, P. Z. S. 1859, 325 ??.—Ib. Catal. 1861, 2, No. 7.—Ridgway.—Maynard.—Samuels, 148. *Turdus solitarius*, Wilson, Amer. Orn. V, 1812, 95 (not of Linnæus).—Sclater, P. Z. S. 1857, 212. *Turdus minor*, Bon. Obs. Wilson, 1825, No. 72. *Turdus guttatus*, Cabanis, Tschudi, Fauna Peruana, 1844, 187 (not *Muscicapa guttata* of Pallas).

Additional figures: Aud. Birds Am. III, pl. cxlvi.—Ib. Orn. Biog. I, pl. lviii.

Sp. Char. Tail slightly emarginate. Above light olive-brown, with a scarcely perceptible shade of reddish, passing, however, into decided rufous on the rump, upper tail-coverts, and tail, and to a less degree on the outer surface of the wings. Beneath white, with a scarcely appreciable shade of pale buff across the fore part of the breast, and sometimes on the throat; the sides of the throat and the fore part of the breast with rather sharply defined subtriangular spots of dark olive-brown; the sides of the breast with paler and less distinct spots of the same. Sides of the body under the wings of a paler shade than the back. A whitish ring round the eye; ear-coverts very obscurely streaked with paler. Length, 7.50 inches; wing, 3.84; tail, 3.25; tarsus, 1.16; No. 2,092.

Hab. Eastern North America. Mexico? Not found in Cuba, *vide* Gundlach.

In spring the olive above is very much that of eastern specimens of *swainsoni*; in winter specimens it is much browner, and almost as much so as in *fuscescens*. Young birds have the feathers of the head, back, and wing coverts streaked centrally with drop-shaped spots of rusty yellowish.

Habits. Until quite recently the "Ground Swamp Robin," or Hermit Thrush, has not been distinguished from the closely allied species *T. swainsoni*, and all accounts of writers have blended both in singular confusion. My colleague, Professor Baird, in the summer of 1844, was the first to suggest the distinctness of the two species. By the common people of Maine and the British Provinces this difference has long been generally recognized, this species being known as the "Ground Swamp Robin," and the other as the "Swamp Robin."

The present species is found throughout Eastern North America to the Mississippi, and breeds from Massachusetts to high arctic regions. It is only occasionally found breeding so far south as Massachusetts; through which State it passes in its spring migrations, sometimes as early as the 10th of April; usually reaching Calais, Maine, by the 15th of the same month.

It is a very abundant bird throughout Maine, where it begins to breed during the last week of May, and where it also probably has two broods in a season.

The greater number appear to pass the winter in the Southern States; it being common in Florida, and even occasionally seen during that season as far north as latitude 38° in Southern Illinois, according to Mr. Ridgway.

It rarely, if ever, sings during its migrations; appears in small straggling companies, frequents both thickets and open fields, and is unsuspecting and easily approached.

The song of this species is very fine, having many of the characteristics of that of the Wood Thrush (*T. mustelinus*). It is as sweet, has the same tinkling sounds, as of a bell, but is neither so powerful nor so prolonged, and rises more rapidly in its intonations. It begins with low, sweet notes, and ends abruptly with its highest, sharp ringing notes.

Taken from the nest they are easily tamed, and are quite lively and playful; but their want of cleanliness renders them very undesirable pets. When their nest is visited they make no complaints,

but retire to a distance. Not so, however, when their natural enemy, the hawk, appears; these they at once assail and seek to drive away, uttering loud and clear chirps, and peculiar twittering sounds.

The nest of this thrush is always built on the ground, most generally either under low bushes or in the open ground, rarely, if ever, among thick trees, and for the most part in low swampy places. Both nest and eggs closely resemble those of Wilson's Thrush (*T. fuscescens*). In Parsboro, Nova Scotia, I found one of the nests built in the very midst of the village, close to a dwelling, though on a spot so marshy as to be almost unapproachable. The nests are 3 inches in height and 5 in diameter, with a cavity $3\frac{1}{4}$ inches wide by $1\frac{3}{4}$ deep. They are composed of decayed deciduous leaves, remnants of dried plants, sedges and grasses, intermingled with twigs, and lined with finer grasses, sedges, and strips of bark.

The eggs are of a uniform bluish-green color, and range in length from .88 to .94, with an average of .63 of an inch.

Turdus pallasi, var. nanus, Audubon

DWARF HERMIT THRUSH

Turdus nanus, Aud. Orn. Biog. V, 1839, 201, pl. cci.—Baird, Birds N. A. 1858, 213; Rev. Am. B. 1864, 15.—Sclater, P. Z. S. 1859.—Ib. Catal. 1861.—Dall & Bannister.—Cooper, Birds Cal., p. 4. *Turdus pallasi*, var. *nanus*, Ridgway, Rep. Kings Exped. V, 1872. ? *Turdus aonalaschkæ*, Gmelin, S. N. I, 1788, 808. ?? *Muscicapa guttata*, Pallas, Zoög. Rosso-Asiat. II, 1811, 465.

Sp. Char. Above with the clear dark olive of *swainsoni*, but this even purer and more plumbeous. Upper tail-coverts (but not lower part of rump) becoming more rufous, the tail abruptly darker, richer, and more *purplish*-rufous, approaching to chestnut. The clear olive of the neck passes into brownish-*plumbeous* along sides; pectoral spots more sparse and less pure black than in *T. pallasi*. The white beneath is of an almost snowy purity, appreciably different from the cottony-white of *T. pallasi*. Wing, 3.30; tail, 3.00; bill, .36; tarsus, 1.07.

A very tangible and constant character possessed by this bird is the more slender and depressed bill, as compared with that of *T. pallasi*. Specimens vary only in intensity of colors; these variations very limited, and corresponding with those of *T. pallasi*. In all cases, however, their precise pattern and peculiar distribution is retained.

Hab. Western Province of North America, eastward from Kodiak to Cape St. Lucas. Arizona, Coues.

Habits. This small race of the Hermit Thrush was first noticed by Dr. Pickering, and described by Mr. Audubon from an imperfect skin. It has since been obtained abundantly on the Pacific slope, and Mr. Ridgway procured a specimen as far east as the East Humboldt Mountains, which he considers its eastern limit.

In its habits it is said to be, like *T. pallasi*, almost exclusively terrestrial. Dr. Heermann mentions finding it abundant in California, and breeding among the stunted oaks covering the sand-hills of San Francisco. Dr. Coues found it in Arizona, but speaks of it as rare and migratory, occurring chiefly in spring and autumn, and as a shy and retiring species. Dr. Cooper, in his Report on the Birds of California, describes it as shy and timid, preferring dark and shady thickets, feeding chiefly on the ground, running rapidly, and searching for insects among the leaves.

Near San Diego they began to sing about the 25th of April. The song, consisting of a few low ringing notes, resembles that of Wilson's Thrush (*T. fuscescens*), and also that of *T. ustulatus*, but

is not so loud. Their note of alarm is a loud and ringing chirp, repeated and answered by others at a long distance.

At Santa Cruz, on the first of June, Dr. Cooper met with several of their nests, which, though probably erroneously, he supposed to belong to the Dwarf Hermit Thrush. They were all built in thickets under the shade of cottonwood-trees. Each nest was about five feet from the ground, and all contained eggs, from two to four in number, in differing stages of incubation. The nests were built of dry leaves, roots, fibres, grasses, and bark, without any mud, and were lined with decayed leaves. Their height and external diameter measured 4 inches. The diameter of the cavity was 2½ inches and the depth 2¼. The eggs measured .90 by .70 of an inch. They are of a pale bluish-green, speckled with cinnamon-brown, chiefly at the larger end.

The nest, supposed to be of this species, supplied by Dr. Cooper, is large for the bird; constructed of a base loosely made up of mosses, lichens, and coarse fibres of plants. It is a strong and compact structure of matted leaves, put together when in a moist and decaying condition; with these there are interwoven roots, twigs, and strong fibres, surrounding the nest with a stout band and strengthening the rim. In fact, it corresponds so well—as do the eggs also—with those of *T. ustulatus*, that it is extremely probable that they really belong to that species. The only observable difference is the absence of the *Hypnum* mosses characteristic of northern *ustulatus*.

Dall and Bannister mention in their list of Alaska birds that the species is not common there. It was also taken at Sitka and Kodiak by Bischoff.

The fact that this thrush builds its nest above the ground, and lays spotted eggs, if verified, would at once warrant our giving it independent rank as a species, instead of considering it as a local race of *pallasi*.

Turdus pallasi, var. auduboni, Baird

ROCKY MOUNTAIN HERMIT THRUSH

Turdus auduboni, Baird, Rev. Am. Birds, 1864, 16.—Ridgway, P. A. N. S. 1869, 129.—Elliot, Illust. (fig.). *Merula silens*, Swainson, Philos. Mag. I, 1827, 369 (not *Turdus silens* of Vieillot, Encycl. Méth. II, 1823, 647, based on *T. mustelinus*, Wils. = *T. fuscescens*).—Ib. Fauna Bor.-Amer. II, 1831, 186.—Baird, Birds N. Amer. 1858, 213, and 922.—Sclater, P. Z. S. 1858, 325 (La Parada), and 1859, 325 (Oaxaca).—Ib. Catal. Am. Birds, 1861, 2, No. 9.

Sp. Char. Colors much as in *Turdus nanus*, but the upper tail-coverts scarcely different from the back. Tail yellowish-rufous. Length of wing, 4.18; tail, 3.60; bill from nostril, .45; tarsus, 1.26.

Hab. Rocky Mountains, from Fort Bridger south into Mexico. Orizaba (Alpine regions), Sumichrast.

This is a very distinct race of thrushes, although it may be questioned whether it be truly a species. It is, however, sufficiently distinct from the eastern and western Hermit Thrushes to warrant our giving it a place of some kind in the systems.

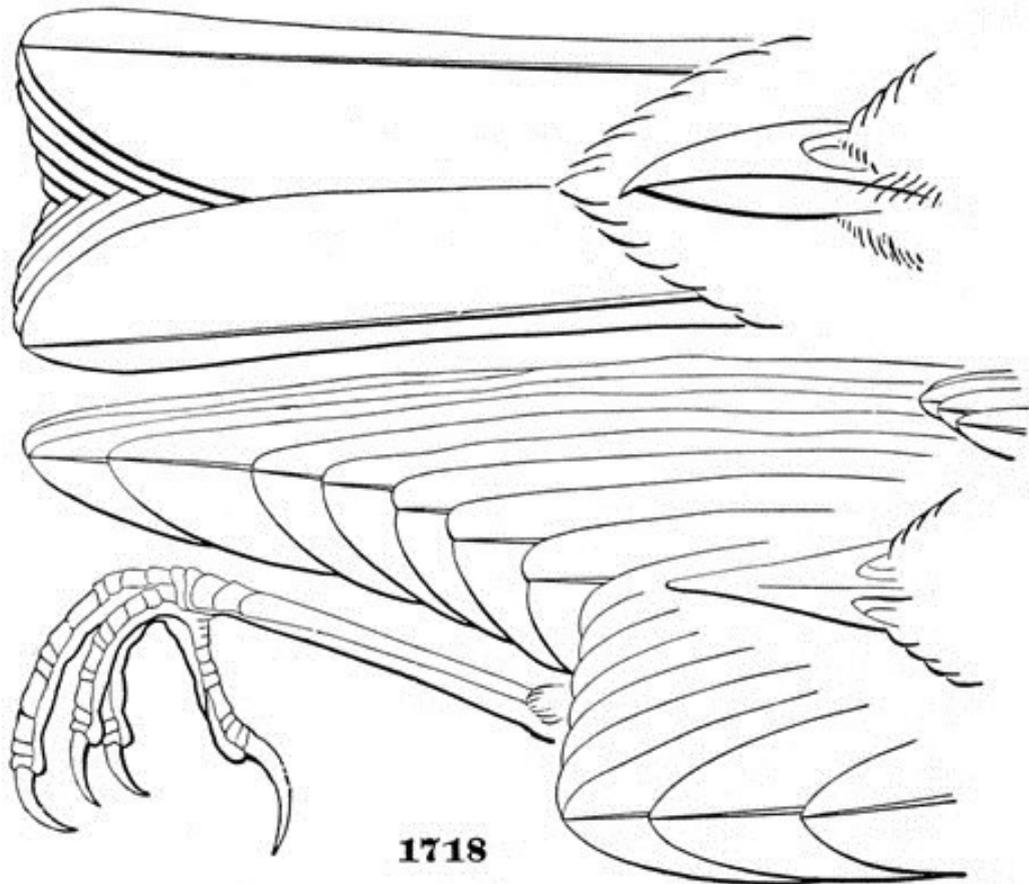
The young plumage differs from that of *pallasi* as do the adults of the two, and in about the same way. The olive is very much purer, with a greenish instead of a brownish cast, and the tail is very much lighter, inclining to dull ochraceous instead of rufous; this yellowish instead of rufous cast is apparent on the wings also. The yellowish “drops” on head, back, etc., are very much narrower than in *pallasi*, while the greater coverts, instead of being distinctly tipped with yellowish, merely just perceptibly fade in color at tips.

Habits. At present we have but little knowledge of the habits of this form of *T. pallasi*, and no information whatever regarding its nesting or eggs.

In its distribution it is confined to the central range of mountains from Fort Bridger to Southern Mexico. This species, there known as “Solitario,” is common in the Alpine region of Vera Cruz (as well as in all the elevated regions of Central Mexico), frequenting the pine woods in the district of Orizaba. Mr. Sumichrast obtained it at all seasons of the year at Moyoapam, in that vicinity; a locality the height of which approximates 2,500 metres. It is also found at a height of 1,200 metres, near the city of Orizaba.

Mr. Ridgway calls this bird the “Rocky Mountain Hermit Thrush.” He states that he found it common in the Wahsatch Mountains, but that, on account of its retiring habits, it was seldom seen. It there lives chiefly in the deep ravines in the pine region, exhibiting an attachment to these solitudes rather than to the thickets along the watercourses lower down; the latter it leaves to the *T. swainsoni*. Owing to the reserved manners of this bird, as well as to the great difficulty of reaching its abode, there were few opportunities presented for learning much concerning its habits, nor did he hear its song. In its flight the pale ochraceous band across the bases of its quills was a very conspicuous feature in the appearance of its species, leading Mr. Ridgway to mistake it at first for the *Myiadestes townsendii*,—also an inhabitant of the same localities,—so much did it look like that bird, which it further resembled in its noiseless, gliding flight.

Subgenus **TURDUS**, Linn



1718

Turdus iliacus.

Turdus iliacus.

1718

Of *Turdus*, in its most restricted sense, we have no purely American representatives, although it belongs to the fauna of the New World in consequence of one species occurring in Greenland, that meeting-ground of the birds of America and Europe; which, however, we include in the present work, as related much more closely to the former.

This Greenland species, *Turdus iliacus*, is closely related to *T. viscivorus*, the type of the genus, and comes much closer to the American Robins (*Planesticus*) than to the Wood Thrushes (*Hylocichla*).

Turdus iliacus, Linn

REDWING THRUSH

Turdus iliacus, Linn. Syst. Nat. 10th ed. 1758, 168, and of European authors.

—Reinhardt, Ibis, 1861, 6 (Greenland). Baird, Rev. Am. B. 1864, 23 (Greenland).

Sp. Char. This species is smaller than our Robin (*T. migratorius*), but of a similar grayish-olive above, including the head. The under parts are white; the feathers of the lower throat and breast streaked with brown. The sides, axillars, and inner wing-covert are reddish-cinnamon. A conspicuous white streak over the eye and extending as far back as the nape. Bill black, yellow at base of lower jaw. Legs pale-colored. Second quill longer than fifth. Length, about 8.25; wing, 4.64; tail, 3.45; bill, from gape, 1.07; from nostril, .44; tarsus, 1.16; middle toe and claw, 1.15. Specimen described: 18,718, ♂, a British specimen received from the Royal Artillery Institution, Woolwich.

Hab. Greenland, in the New World.

The occurrence of this well-known European species in Greenland brings it within the limits of the American Fauna. Two Greenland specimens are recorded by Dr. Reinhardt: one of them shot at Frederickshaab, October 20, 1845.

Habits. The Redwing can probably only claim a place in the fauna of North America as an occasional visitant. Of the two specimens observed in Greenland, one was shot late in October. It is not known to breed there.

This species, during its breeding season, is found only in the more northern portions of Europe; only occasionally, and very rarely, breeding so far south as England. It makes its appearance in that kingdom on its southern migrations, coming in large flocks from Northern and Northeastern Europe, and arriving usually before the end of October. During their stay in England they frequent parks and pleasure-grounds that are ornamented with clumps of trees. During mild and open weather they seek their subsistence in pasture lands and moist meadows, feeding principally on worms and snails. In severe winters, when the ground is closed by frost or covered by snow, the Redwings are among the first birds to suffer, and often perish in large numbers.

During the winter they extend their migrations to the more southern portions of Europe, to Sicily, Malta, and even to Smyrna. In early spring they return to the more central portions of the continent, and leave in May for their more northern places of resort.

They nest in trees in the moist woods of Norway and Sweden. Their nests resemble those of the common Fieldfare, *T. pilaris*. The outside is composed of sticks, weeds, and coarse grass, gathered wet, and matted with a small quantity of moist clay. They are lined with a thick bed of fine grass.

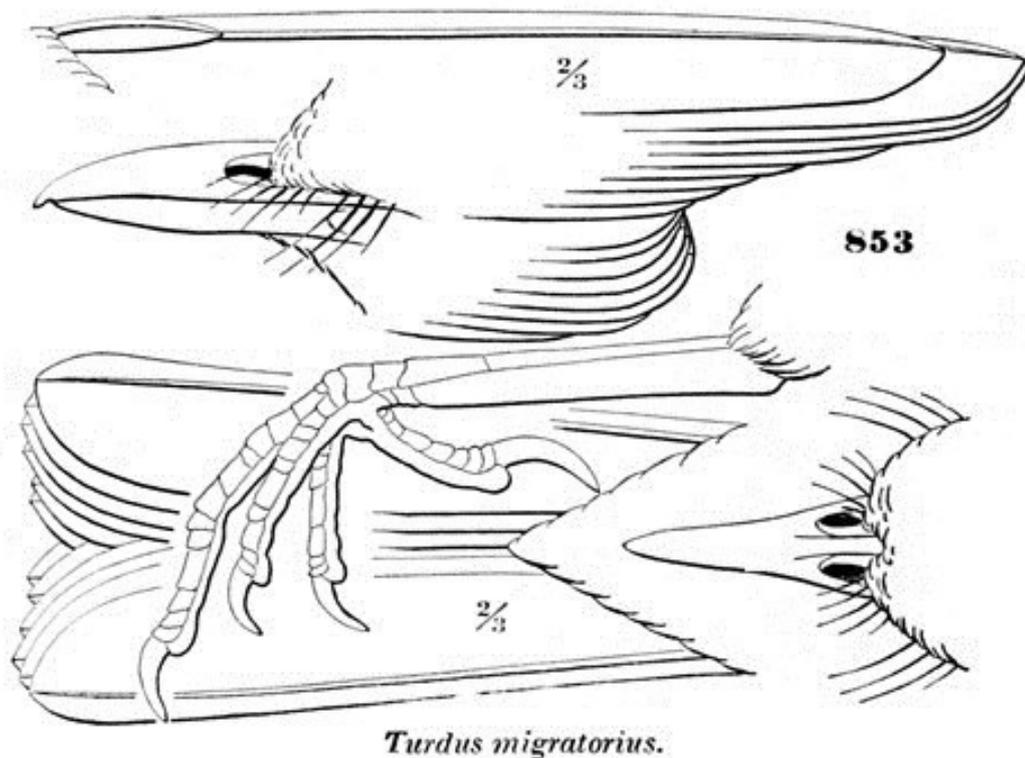
The Redwing is said to possess a delightful note, and is called the Nightingale of Norway. Linnæus, speaking of this bird, claims that its high and varied notes rival even those of that far-famed vocalist.

During the summer the Redwing advances to the extreme north, visiting the Faroe Islands, Iceland, and Northern Russia. The general character of its food, its inability to feed exclusively on berries, and the fact that it perishes from starvation in severe winters, would seem to prove that its occurrence in Greenland so late as October must have been purely accidental. It is not probable that its presence in North America will be found to be a common event.

The eggs measure 1.06 inches in length by .81 in breadth. The ground color is a light green with a bluish tinge thickly covered with russet or reddish-brown spots, confluent at the larger end.

Subgenus **PLANESTICUS**, Bonap

Planesticus, Bonap. Comptes Rendus, 1854. (Type *Turdus jamaicensis*, Gmelin.)



Turdus migratorius.

853

This section of the Thrushes is well represented in America, especially in its middle and southern portions, and its members have a close resemblance to the typical European species in the full form, stout legs, etc., as already stated. The spots on the throat, and their absence elsewhere on the under part of the body, are sufficient to distinguish them.

Of the two North American species one is the well-known Robin, the other a closely related form from Cape St. Lucas; which indeed is probably only a local race or variety, although nothing exactly like it has yet been found away from Lower California. The following diagnosis may serve to distinguish the two birds:—

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. Nest on trees. Eggs plain blue.

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 ... 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 ... var. *confinis*.

Turdus migratorius, var. migratorius, Linn

ROBIN; AMERICAN REDBREAST

Turdus migratorius, Linn. S. N. 12th ed. 1766, 292.—Sclater, P. Z. S. 1856, 294; 1859, 331; 1864, 172.—Ib. Catal. Am. Birds, 1861, 4.—Sclater & Salvin, Ibis, 1860, 396 (Coban).—Baird, Birds N. Am. 1858, 218; Rev. Am. B. 1864, 28.—Cooper & Suckley, P. R. R. R. XII, II, 1859, 172.—Dresser, Ibis, 1865, 475. (Texas, winter).—Coues, Pr. A. N. S. 1866, 64 (Arizona).—Dall & Bannister (Alaska).—Cooper, Birds Cal.—Samuels, 154.

Figures: Vieillot, Ois. Am. Sept. II, pl. lx, lxi.—Wilson, Am. Orn. I, 1808, pl. ii.—Doughty, Cab. N. H. I, 1830, pl. xii.—Audubon, Birds Am. III, pl. cxlii; Orn. Biog. II, pl. cxxxii.

Sp. Char. Tail slightly rounded. Above olive-gray; top and sides of the head black. Chin and throat white, streaked with black. Eyelids, and a spot above the eye anteriorly, white. Under parts and inside of the wings, chestnut-brown. The under tail-coverts and anal region, with tibiae, white, showing the plumbeous inner portions of the feathers. Wings dark brown, the feathers all edged more or less with pale ash. Tail still darker, the extreme feathers tipped with white. Bill yellow, dusky along the ridge and at the tip. Length, 9.75; wing, 5.43; tail, 4.75; tarsus, 1.25.

Hab. The whole of North America; Mexico, Oaxaca, and Cordova; Guatemala; Cuba, very rare, Gundlach; Tobago, Kirk; Bermuda, Jones; Orizaba (Alpine regions, breeding abundantly), Sumichrast.

Young birds have transverse blackish bars on the back, and blackish spots beneath. The shafts of the lesser coverts are streaked with brownish-yellow; the back feathers with white.



Turdus migratorius.

There are some variations, both of color and proportions, between eastern and western specimens of the Robin. In the latter there is a tendency to a longer tail, though the difference is not marked; and, as a rule, they slightly exceed eastern specimens in size. The broad white tip to the lateral tail-feather—so conspicuous a mark of eastern birds—is scarcely to be found at all in any western ones; and in the latter the black of the head is very sharply defined against the lighter, clearer ash of the back, there hardly ever being a tendency in it to continue backward in the form of central spots to the feathers, as is almost constantly seen in eastern examples; of western specimens, the rufous, too, is appreciably lighter than in eastern. As regards the streaks on the throat, the black or the white may either largely predominate in specimens from one locality.

In autumn and winter each rufous feather beneath is bordered by a more or less conspicuous crescent of white; in addition to this, most of the lighter individuals (♀?), at this season, have an ashy suffusion over the breast and flanks; and this, we have observed, is more general and more noticeable in western than in eastern specimens. In fall and winter the color of the bill, too, changes, becoming at this season either partially or wholly dusky, instead of almost entirely yellow, as seen in spring and summer examples.

Mexican specimens, found breeding in the Alpine regions as far south as Orizaba and Mirador, most resemble the western series; one, however (No. 38,120 ♂, Orizaba), but in the autumnal plumage, and therefore very possibly a migrant from the North, is hardly distinguishable from No. 32,206, Georgia; it is about identical in proportions, and the rufous is of a castaneous shade, like the deepest colored eastern examples; the white tip to the outer tail-feather is as broad and conspicuous as is ever seen in the latter.

Habits. Scarcely any American bird has a wider range of geographical distribution, or is more numerous wherever found, than this thrush. From Greenland on the extreme northeast to the plateau of Mexico, and from the Atlantic to the Pacific, the Robin is everywhere a very abundant species. Single specimens have been obtained as far south as Coban, Guatemala. Its distribution in the breeding season is hardly less restricted, occurring alike on the shores of the Arctic Seas and on the high lands of Vera Cruz. In the winter months it is most abundant in the Southern States, while in the Middle and even the Northern States, in favorable localities, it may be found throughout the year; its migrations being influenced more by the question of food than of climate. In the valleys among the White Mountains, where snow covers the ground from October to June, and where the cold reaches

the freezing-point of mercury, flocks of the Robin remain during the entire winter, attracted by the abundance of berries.

On the Pacific Coast the Robin is only a winter visitant in California; a very few remaining to breed, and those only among the hills. They reach Vancouver Island early in March, and are very abundant.

In New England, where the Robins are held in great esteem, and where they exist under very favorable circumstances, their numbers have very largely increased, especially in the villages. They cause not a little annoyance to fruit cultivators by their depredations upon the productions of the garden, especially cherries and strawberries. They are a voracious bird, and no doubt destroy a large quantity of small fruit, but there is abundant evidence that this is more than compensated by their destruction of the most injurious insects, upon which they wage an incessant war. The investigations of Mr. J. W. P. Jenks and Professor Treadwell establish conclusively their great services in this direction.

The experiments of the latter gentleman show that the nestlings of the Robin require a vast amount of animal food, forty per cent more than their own weight being consumed by the young bird within twenty-four hours, and, what is more, demonstrated to be necessary to its existence.

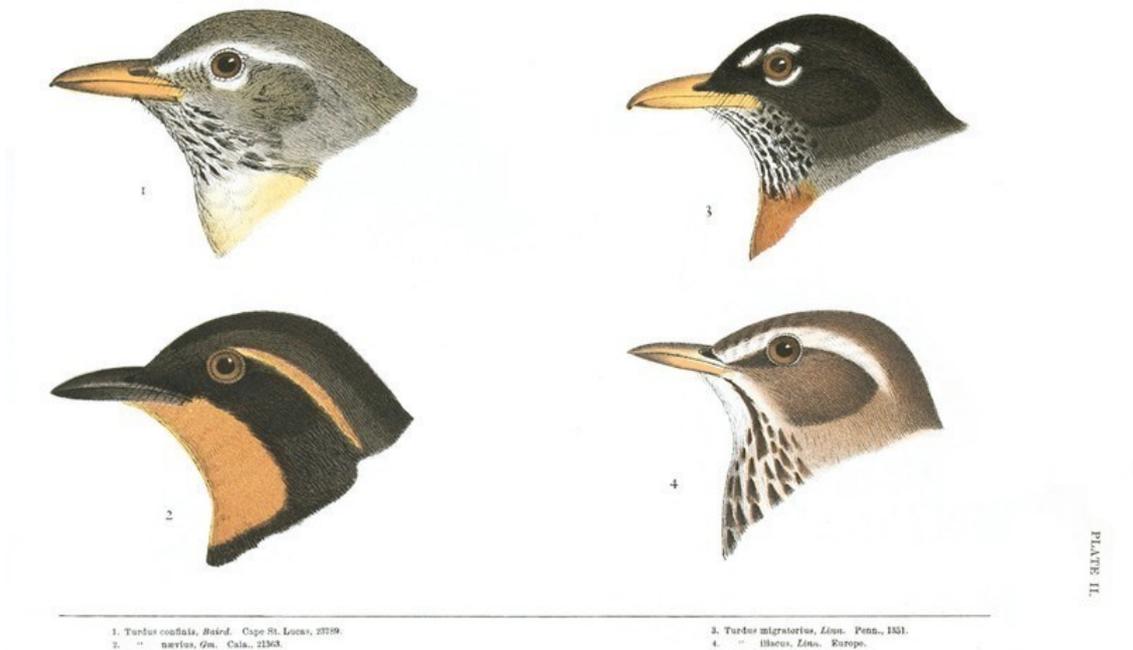


PLATE II.



1. *Turdus confinis*, Baird., Cape St. Lucas, 23789.



2. *Turdus naevius*, Gm. Cala., 21363.



3. *Turdus migratorius*, *Linn.*, Penn., 1851.



4. *Turdus iliacus*, *Linn.*, Europe.

In Massachusetts a few Robins remain throughout the year, but the greater proportion leave early in November, returning late in February or early in March.

The song of the Robin is deservedly popular. While many of our birds possess far superior powers of melody, and exhibit a much greater variety in their song, there are none that exceed it in its duration or extent. It is the first bird in spring to open and one of the last to close the great concert of Nature. Their song is earnest, simple, and thrilling, and is said by Audubon to resemble that of the European Blackbird, *Turdus merula*.

The Robin, when taken young, may be readily tamed, and soon becomes contented and accustomed to confinement. They are devoted to their young, watchful, attentive, and provident. They begin to construct their nest in early spring before the trees put forth their leaves, and often in very exposed positions. The size of the nest, in fact, makes concealment impossible. These nests are sometimes placed in quite remarkable positions, such as the beams of a ship partly finished, and where the carpenters were every day at work, and similar situations indicating a great familiarity. Their favorite place is the horizontal branch of an apple-tree, about ten feet from the ground.

The nest of the Robin is a large and coarsely constructed combination of rude materials. It is composed of a base of straw, leaves, mosses, stems, and dry grasses, upon which a cup-shaped fabric of clay or mud is built. The whole is lined with finer dry grasses and vegetable fibres. They average 5 inches in height and the same in diameter. Their cavity is $2\frac{3}{4}$ inches deep, with a diameter of $2\frac{1}{2}$ inches.

The eggs of the Robin, which are usually five and sometimes six in number, are of a uniform bright greenish-blue color, liable to fade when exposed to light, but when fresh exhibiting a very distinct and bright tint. They vary in size from 1.25 to 1.12 inches in length, and in breadth from .88 to .75 of an inch. Their mean measurement is 1.18 by .81.

***Turdus migratorius*, var. *confinis*, Baird**

CAPE ST. LUCAS ROBIN

Turdus confinis, Baird, Rev. Am. B. 1864, 29.—Elliot, Birds America.—
Cooper, Birds Cal., 9.

Sp. Char. No. 23,789. Entire upper parts and sides of head and neck uniform grayish-ash, with perhaps a faint tinge of olivaceous, less than in eastern specimens of *T. migratorius*. The central portions of the feathers of the top of head are rather darker than the edges, though almost inappreciably so, and not imparting a general dusky appearance. The chin and throat are white, streaked with ashy-brown. The jugulum and breast are pale yellowish-buff; the axillars, inner wing-coverts, and sides of the breast similarly, but rather more decidedly colored. The belly and edges of the crissal feathers are white, the hinder parts of the flanks ashy. There is a distinct whitish stripe from the lores over and a quarter of an inch behind the eye; the lower eyelid is also white. The tail-feathers are worn, but there is an indication of a narrow white tip. The feathers of the jugulum, especially of the sides, are tipped with ashy like the back, as in immature specimens of *T. migratorius*. The greater wing-coverts are tipped with dull white. The bill is yellowish; the upper mandible and the tip of lower tinged with dusky. The feet are pale brown.

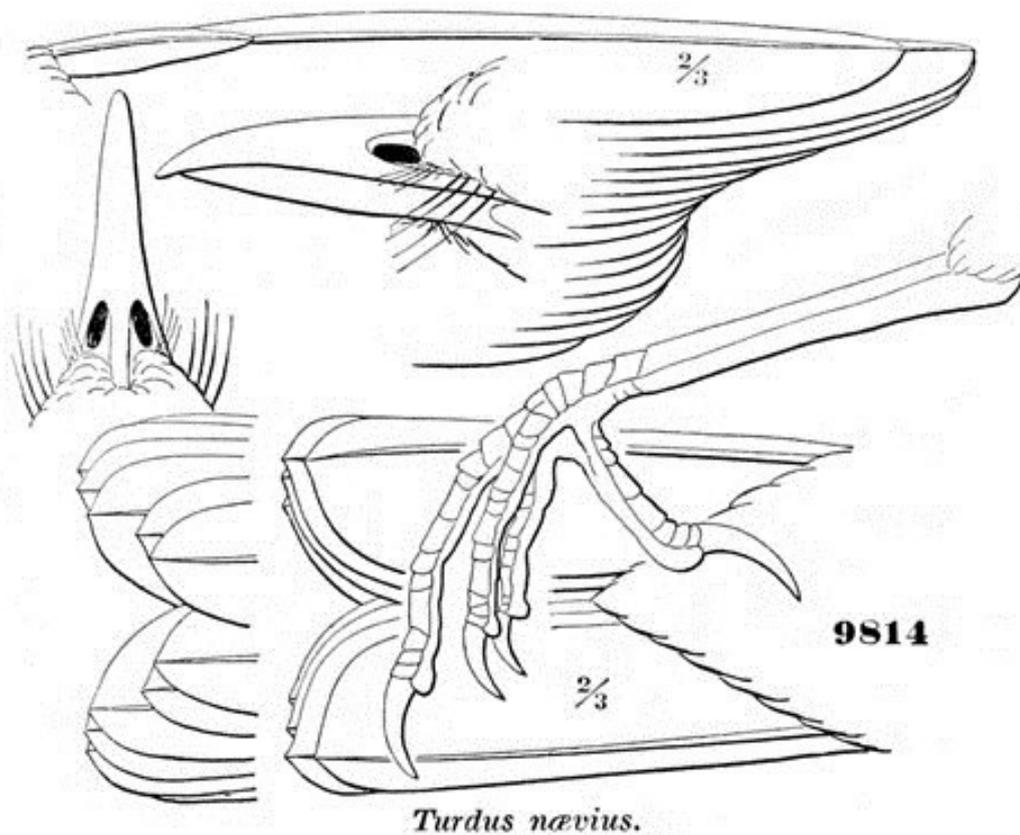
The length cannot be given accurately, as the skin is much drawn up. The wing, however, measures 5.10 inches, its tip reaching 1.40 beyond the longest secondary; tail, 4.10; tarsus, 1.20; middle toe and claw, 1.07; exposed portion of culmen, .92; from tip to open portion of nostrils, .60.

Hab. Todos Santos, Cape St. Lucas.

The specimen with a general resemblance to an immature *T. migratorius* (especially the western variety) in the white superciliary streak and general markings, is much lighter beneath than in any of the many skins of *T. migratorius* examined; there being none of the dark chestnut or cinnamon shade, but rather a light buff; the belly and flanks are much more purely white. The superciliary stripe extends farther behind the eye; indeed, in most specimens of *migratorius* the white is nearly confined to the eyelids. The bill and wings are rather longer than usual in *migratorius*; the middle toe, on the other hand, appears shorter. Nothing is on record in regard to the habits of this bird.

Subgenus HESPEROCICHLA, Baird

Hesperocichla, Baird, Rev. Am. Birds, I, 1864, 12. (Type *Turdus naevius*, Gm.)



Turdus naevius.
9814

The single species of this subgenus differs in form from the Robins (*Planesticus*), in the more awl-shaped bill, the curved commissure, and the absence of a notch at the end; the longer, slenderer, and straighter claws; and in the dissimilarity in color of the sexes. In the latter respects it agrees with *Merula* of Europe and Middle America; in which, however, the bill is distinctly notched, and less attenuated. The tail is shorter and broader than in *Planesticus*, more as in true *Turdus* or *Hylocichla*.

Turdus naevius, Gmel

OREGON ROBIN; VARIED THRUSH

Turdus naevius, Gm. S. N. I, 1788, 817.—Sclater, P. Z. S. 1857, 4; 1859, 331.—Baird, Birds N. Am. 1858, 219; Rev. Am. B. 1864, 32.—Cooper & Suckley, P. R. R. R. XII, II, 1859, 172.—Coues, Pr. A. N. S. 1866, 65. (Quotes occurrence on Colorado River, above Fort Mohave, as exceptional.)—Maynard (Massachusetts!).—Turnbull (N. Jersey!).—Dall & Bannister (Alaska).—Cooper, Birds Cal. 10. *Orpheus meruloides*, Rich. F. B. A. II, 1831, 187, pl. xxxviii.

Other figures: Vieillot, Ois. Am. Sept. II, 1807, pl. lxvi.—Aud. Orn. Biog. IV, 1838, pl. ccclxix, and ccccxliii.—Ib. Birds Am. III, pl. cxliii.

Sp. Char. Tail nearly even; the lateral feather shorter. Above, rather 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. Most of tail feathers with a terminal patch of brownish white. Bill black. Feet yellow. Female more olivaceous above; the white of the abdomen more extended; the brown beneath paler; the pectoral band obsolete. Length, 9.75 inches; wing, 5.00; tail, 3.90; tarsus, 1.25.

Young (45,897, Sitka, Aug. 1866; F. Bischoff). Exactly resembling the adult female, *having no spots* other than seen in the adult plumage; but the pectoral collar is composed only of badly defined blackish transverse crescents, and the upper parts anterior to the rump are of an umber brown tint. The markings about the head and on the wings are precisely as in the adult.

This species does not appear to be liable to any noticeable variation.

Hab. West coast of North America, from Behring Straits to California; straggling to Great Bear Lake. Accidental on Long Island (Cab. G. N. Lawrence), New Jersey (Cab. Dr. Samuel Cabot), and Ipswich, Mass. (Cab. Boston Society Natural History); Iowa (Allen).



Turdus naevius.

Habits. The accidental occurrence of a few specimens of this well-marked bird in the Eastern States is its only claim to a place in that fauna, it being strictly a western species, belonging to the Pacific Coast. It was first discovered by the naturalists of Captain Cook's expedition, who met with it as far to the north as Nootka Sound. It is only very recently that we have become possessed of reliable information in regard to its breeding and its nest and eggs. Sir John Richardson was informed that it nested in bushes in a manner similar to that of the common robin.

Nuttall and Townsend found it abundant among the western slopes of the Rocky Mountains, near the Columbia River, in October. In the winter it became still more numerous, passing the season in that region as well as in more southern localities, associating with the robin. From this bird it may be readily distinguished by the difference of its notes, which are louder, sharper, and delivered with greater rapidity. In the spring, before leaving for their breeding-places, they are described as having a very sweet warble.

On the Columbia River they were not resident, arriving there in October, continuing throughout the winter, and leaving early in May. During their stay they moved through the forest in small flocks, frequenting low trees, and for the most part keeping perfect silence. They were timorous and difficult of approach.

Its habits are said to resemble those of the robin, but in some of them the descriptions given appear to correspond more with those of the Fieldfares and Redwings of Europe. Like those species it is a summer resident of high northern latitudes, affects secluded forests and thickets bordering upon streams, and is found only in unfrequented localities.

Dr. Cooper was of the opinion that a few of these thrushes remained in Washington Territory throughout the summer, as he frequently met with them in the dark spruce forests of that region as late as June and July. He describes the song as consisting of five or six notes in a minor key, and in a scale regularly descending. It was heard continually throughout the summer, among the tops of the trees, but only in the densest forests. Dr. Suckley states that after a fall of snow they would be found along the sandy beaches near the salt water, where they were both abundant and tame. We are indebted to Mr. W. H. Dall for our first authentic knowledge of its nest and eggs. The former measures 6 inches in diameter with a depth of 2½ inches. It has but a very slight depression, apparently not more than half an inch in depth. The original shape of the nest had, however, been somewhat flattened in transportation. The materials of which it was composed were fine dry mosses and lichens impacted together, intermingled with fragments of dry stems of grasses.

A nest of this thrush obtained by Dr. Minor, in Alaska, is a much more finished structure. Its base and periphery are composed of an elaborate basket-work of slender twigs. Within these is an inner nest consisting of an interweaving of fine dry grasses and long gray lichens.

The eggs in size, shape, ground color, and markings are not distinguishable from those of the *Turdus musicus* of Europe. They measure 1.13 inches in length by .80 in breadth, are of a light blue with a greenish shading, almost exactly similar to the ground color of the *T. migratorius*. They are very distinctly marked and spotted with a dark umber-brown approaching almost to blackness.

Mr. Dall informs us that the nest found by him was built in a willow bush, about two feet from the ground, and on the top of a large mass of rubbish lodged there by some previous inundation. Other nests of the same species were met with in several places between Fort Yukon and Nulato, always on or near a river-bank and in low and secluded localities.

They arrive at Nulato about May 15, and prefer the vicinity of water, frequenting the banks of small streams in retired places. Mr. Dall states that he has seen the male bird on a prostrate log near the nest, singing with all his might, suddenly cease and run up and down the log for a few minutes, strutting in a singular manner, then stopping and singing again; and keeping up this curious performance. Specimens were received from Sitka, Kodiak, Cook's Inlet and Admiralty Islands.

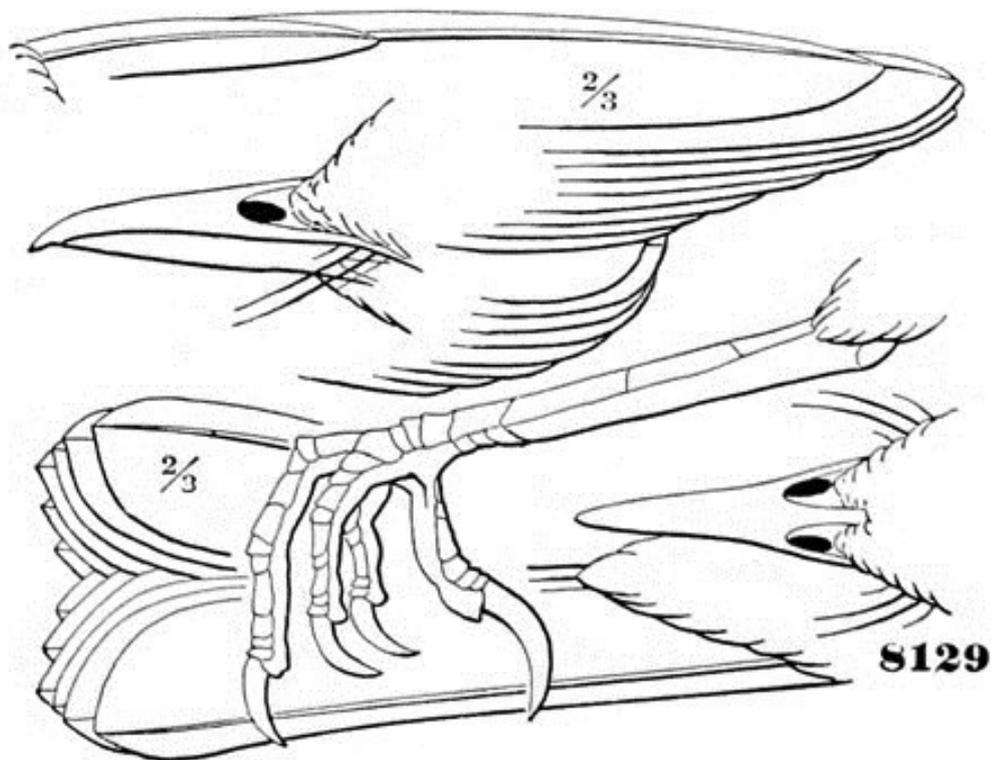
Subfamily MIMINÆ

Birds of this section have a somewhat thrush-like appearance, but (except in *Oreoscoptes*) with longer, much more graduated, and broader tail; short concave wings, about equal to or shorter than the tail, usually lengthened, sometimes decurved bill without notch, and strongly marked scutellæ on the anterior face of the tarsus. The loreal feathers are soft, and not ending in bristly points. The colors are dull shades of brown, gray, or plumbeous. Most of the species, in addition to a melodious native song, possess the power of imitating the notes of other birds; sometimes, as in the American Mocking Bird, to an eminent degree. All are peculiar to the New World, and the species are much less vagrant than those of the *Turdinæ*,—those of the United States scarcely going beyond its northern boundary; others, again, restricted to small islands in the West Indies or in the Pacific Ocean.

Genus OREOSCOPTES, Baird

Oreoscoptes, Baird, Birds N. Am. 1858, 346. (Type *Orpheus montanus*, Towns.)

Oreoscoptes, Baird, Rev. Am. Birds, 42.



Oreoscoptes montanus.

Oreoscoptes montanus.

8129

Sp. Char. Bill shorter than the head, without distinct notch. Bristles prominent, their tips reaching beyond the nostrils. Wings pointed, equal to, or a little longer than the tail. First quill not

half the second, about two fifths the longest; third, fourth, and fifth quills equal and longest; second between sixth and seventh. Tail but slightly graduated; the feathers narrow. Tarsus longer than middle toe and claw by an additional claw; scutellæ distinct anteriorly.

Of this genus only one species is at present known. This belongs to the Middle and Western provinces of the United States and extends from the Pacific coast eastward to Fort Laramie and the Black Hills (in winter to San Antonio, Texas); south to Fort Yuma and Cape St. Lucas.

Oreoscoptes montanus, Baird

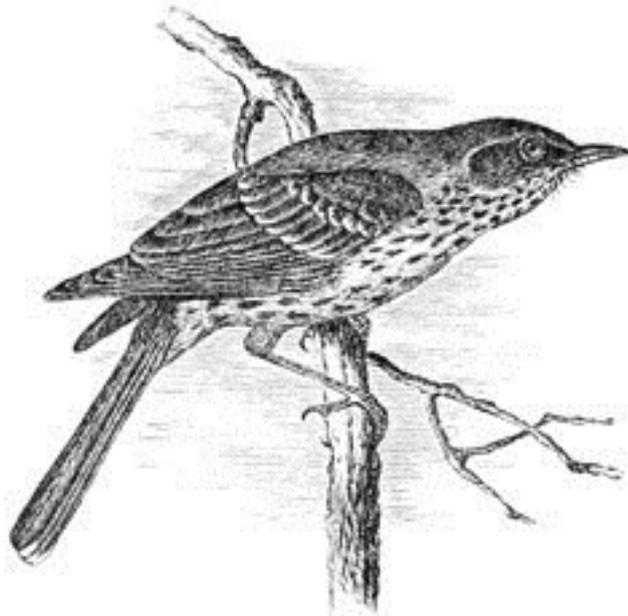
SAGE THRASHER; MOUNTAIN MOCKER

Orpheus montanus, Townsend, Jour. Acad. Nat. Sci. Phila. VII, II, 1837, 192.
—Aud. Birds Amer. II, 1841, 194, pl. cxxxix. *Turdus montanus*, Aud. Orn. Biog. IV, 1838, 437, pl. ccclxix, fig. 1. *Mimus montanus*, Bonap. Consp. 1850, 276.
Oreoscoptes montanus, Baird, Birds N. Amer. 1858, 347; Rev. Am. B. 1864, 42.—
Sclater, P. Z. S. 1859, 340.—Ib. Catal. 1861, 8, No. 30.—Cooper, Birds Cal. 1, 12.

Sp. Char. First quill rather shorter than the sixth. Tail slightly graduated. Above brownish-ash; each feather obsolete 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.

Young. Similar, but spots beneath less sharply defined, and the upper parts quite conspicuously streaked with dusky.

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



Oreoscoptes montanus.

The careful observations of Mr. Robert Ridgway have led him to the conviction that the name bestowed upon this species of "Mountain Mocking-Bird" is doubly a misnomer. It is not at all imitative

in its notes, and it is almost exclusively a resident of the artemisia plains. It seems to be chiefly confined to the great central plateau of North America, from Mexico almost to Washington Territory. Specimens have been procured from Cape St. Lucas, the Lower Colorado, Mexico, and Texas, on the south, and Nuttall met with it nearly as far north as Walla-Walla. It probably occupies the whole extent of the Great Basin.

Dr. Kennerly, who met with it while crossing the arid *mesas* west of the Rio Grande, says that while singing it was usually perched upon some bush or low tree. It was frequently seen seeking its food upon the ground, and when approached, instead of flying away, it ran very rapidly, and disappeared among the low bushes.

During the winter months it was observed near San Antonio, Texas, by Mr. Dresser; and was also found by him to be common about Eagle Pass. He noticed the same peculiarity of their running instead of their flying away when disturbed. They preferred the flat, bush-covered plains. A few remained to breed, as he obtained the eggs there, although he did not himself meet with one of the birds in summer.

It is generally represented as keeping chiefly on the ground, and obtaining its food in this position. General Couch speaks of it as Sparrow-like in its habits.

Mr. Nuttall describes its song as cheering, and the notes of which it is composed as decidedly resembling those of the Brown Thrush (*Harporthynchus rufus*). He claims for it some of the imitative powers of the Mocking-Bird (*Mimus polyglottus*), but in this he is not supported by the observations of others. He met with its nest in a wormwood (*Artemisia*) bush on the border of a ravine; it contained four eggs of emerald green, spotted with dark olive, the spots being large, roundish, and more numerous at the larger end. The nest was composed of small twigs and rough stalks, and lined with strips of bark and bison-wool. The female flew off to a short distance, and looked at her unwelcome visitors without uttering any complaint.

The nests of this bird, so far as I have seen them, are all flat, shallow structures, with very slight depression, and loosely and rudely constructed of an intermingling of strips of bark with rootlets and the finer stems of herbaceous plants. Their eggs, usually four in number, do not vary essentially in size, shape, or marking. They measure 1 inch in length, and from .73 to .75 in breadth. Their ground color is a bright greenish-blue, marked with deep olive-brown spots, intermingled with blotches of a light lilac. There are slight variations in the proportion of green in the shade of the ground color, and also in the number and size of the spots, but these variations are unimportant.

The following are Mr. Ridgway's observations upon the habits of this species. They are full, valuable, and very carefully made:—

The *Oreoscoptes montanus* is a bird peculiar to the artemisia wastes of the Great Basin, being a characteristic species of the region between the Sierra Nevada and the Rocky Mountains. It is exclusively an inhabitant of the "sage brush," and is partial to the lower portions of the country, though it is not unfrequent on the open slope of the mountains. A more unappropriate term than "Mountain Mocking-Bird" could hardly have been chosen for this species, as its predilection for the valleys, and the fact that its song is *entirely* its own, will show. In my opinion, the term "Sage Thrasher" would be more appropriate.

In the neighborhood of Carson City, Nevada, these birds arrived about the 24th of March, and immediately upon their arrival began singing. At this time, with the *Sturnella neglecta* and *Poospiza belli*, they made sweet music in the afternoon and early morning, in the open wastes of "sage brush," around the city. The birds when singing were generally seen sitting upon the summit of a "sage" bush, faintly warbling, in the course of the song turning the head from side to side in a watchful manner. Upon being approached, they would dart downward, seemingly diving into the bush upon which they had perched, but upon a close search the bird could not be found, until it was heard again singing a hundred yards or more in the direction from which I had approached. This peculiar, circuitous, concealed flight is a very characteristic trait of this bird, and one sure to excite attention.

As the season advanced, or about the 10th of April, when the pairing season was at hand, the songs of the males became greatly improved, increasing in sweetness and vivacity, and full of rapturous emotion; their manners, also, became changed, for they had lost all their wariness. In paying their attentions to their mates, the males would fly from bush to bush, with a peculiar, tremulous fluttering of the wings, which, when the bird alighted, were raised above the back apparently touching each other; all the while vibrating with the emotion and ecstasy that agitated the singer.

The song of this bird, though very deficient in power,—in this respect equalling no other species of *Mimicæ* with which I am acquainted,—is nevertheless superior to most of them in sweetness, vivacity, and variety. It has a wonderful resemblance to the beautiful subtle warbling of the *Regulus calendula*, having in fact very much the same style, with much of the tone, and about the power of the song of the *Pyrranga rubra*.

When the birds are engaged in incubation, the males become very silent, and one not familiar with their habits earlier in the season would think they never had a voice; in fact, they make no protestations even when the nest is disturbed, for, while blowing the eggs, I have had the parent birds running around me, in the manner of a robin, now and then halting, stretching forward their heads, and eyeing me in the most anxious manner, but remaining perfectly silent. When the young are hatched the parents become more solicitous, signifying their concern by a low, subdued *chuck*. At all times when the nest is approached, the bird generally leaves it slyly before one approaches very near it.

The nest is very bulky, composed externally of rough sticks, principally the thorny twigs of the various “sage bush” plants. Nearer the centre the principal material is fine strips of inner bark of these plants; and the lining consists of finer strips of bark, mingled with fine roots, and bits of rabbit fur. The situation of the nest varies but little, being generally placed near the middle of a bush, that is, about eighteen inches from the ground. It is generally supported against the main trunk, upon a horizontal branch. Several were found upon the ground beneath the bush, one, in fact, embedded in the soil, like that of a *Pipilo*; or as sometimes the case with the *Harpornhynchus rufus*, others, again, were found in brush-heaps. In all cases, the nest was very artfully concealed, the situation being so well selected.

This bird is almost equally common in all parts of its habitat, within the limits indicated. In June, we found it abundant on the large islands in the Great Salt Lake, where many nests were found.

In autumn, it feeds, in company with many other birds, upon berries, “service berries” being its especial favorite.

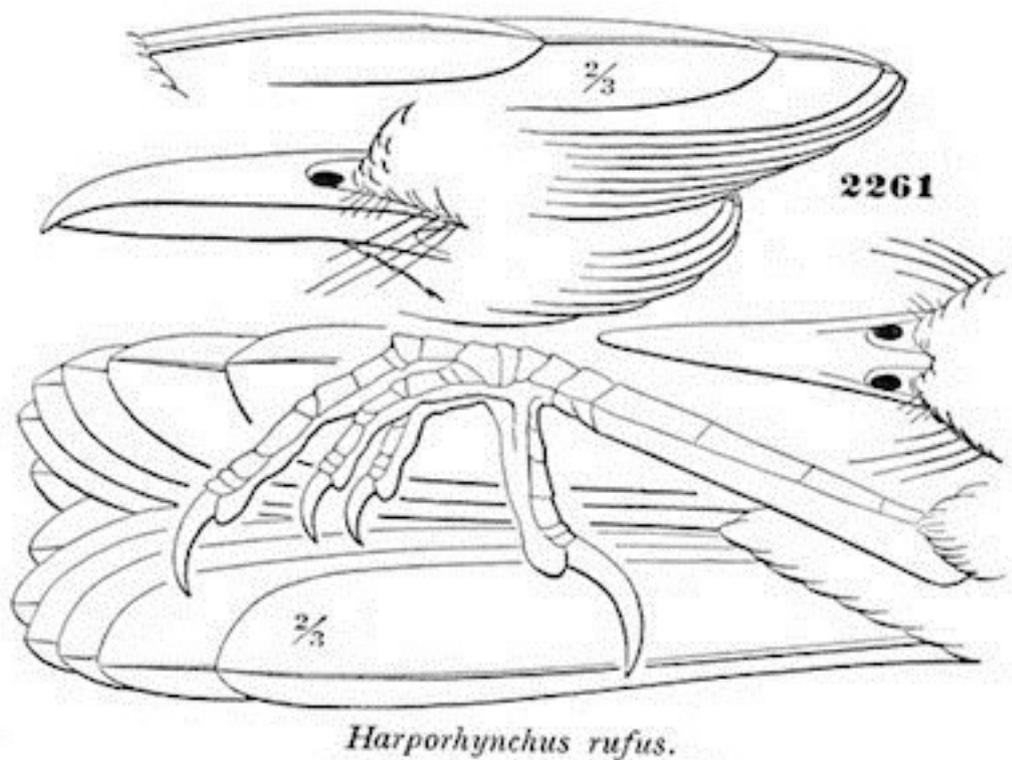
Genus HARPORNHYNCHUS, Cabanis

Toxostoma, Wagler, Isis, 1831, 528. (Type *T. vetula*, Wagl., not *Toxostoma*, Raf. 1816.)

Harpes, Gambel, Pr. A. N. S. Phila. II. 1845, 264. (Type *Harpes redivivus*, Gamb., not of Goldfuss, 1839.)

Harpornhynchus, Cabanis, Archiv f. Naturg. 1848, I. 98. (Type *Harpes redivivus*, Gamb.)

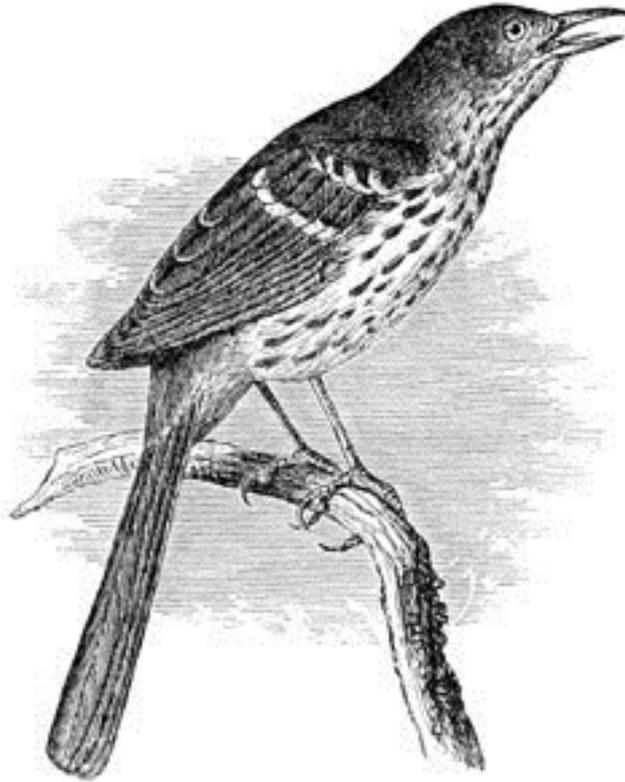
Methriopterus, Reich. Av. Syst. Nat. 1850, pl. iv. (Type said by Gray to be *H. rufus*.)



Harporhynchus rufus.
2261

Gen. Char. Bill from forehead as long as, or much longer than the head; becoming more and more decurved in both jaws as lengthened. No indication of a notch. Rictus with the bristles extending beyond the nostrils. Tarsus long and stout, appreciably exceeding the middle toe and claw, strongly scutellate anteriorly. Wings considerably shorter than tail, much rounded; the first quill more than half the second; fourth or fifth longest. Tail large, much graduated; the feathers firm.

The species of this genus are all of large size, in fact, embracing the largest of the American slender-billed oscine birds. All the species differ in structure, varying especially in the length of the bill, as above stated.



Harporhynchus rufus.

It is useless to attempt a division of this genus, for there is such a gradual chain of characters between the two extremes of form (*rufus* and *crissalis*), that they even seem almost one species, when the numerous intermediate forms, shading so insensibly into each other, are considered. However, as this view would be rather extreme, in view of the really great difference of form between the species mentioned, we may consider the following as good species, several of them with one or more varieties: *rufus*, with *longicauda* and *longirostris* as varieties, the former scarcely appreciably different, the latter ranking as a permanent race; *ocellatus*, *cinereus*, *curvirostris*, the latter with one well-marked variety, *palmeri*; *redivivus*, with most probably *lecontei* as a well-marked variety, and *crissalis*.

The seasonal differences in the plumage often make it difficult to determine these several forms; but if the following facts are borne in mind, the trouble will be greatly lessened. In every species there is a more or less decided ochraceous tinge to the crissal region (sometimes extending forward over the flanks); except in *crissalis*, in which the lower tail-coverts and anal region are deep chestnut. In autumn and winter this ochraceous tint becomes very much deeper, as well as more prevalent, than in spring and summer; the whole plumage becomes softer, the colors more pronounced, and the markings more distinct, than when faded and worn in summer.

Synopsis of Species of Harporhynchus

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.). *Hab.* Eastern Province United States ... 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 ... 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.) *Hab.* Eastern Mexico, north to Rio Grande of Texas ... var. *longirostris*.

2. **H. ocellatus.**²³ 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.

3. **H. cinereus.** The markings deltoid; wing bands narrow, but sharply defined.

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). *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). *Hab.* from Rio Grande valley in Texas to Cordova, Orizaba, Oaxaca, Colima, and Mazatlan ... 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, slender, moderately curved; tarsus, 1.30; middle toe, 1.00 (8,128 ♂ “New Mexico”—probably Eastern Arizona). *Hab.* Arizona (Camp Grant) ... 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) ... 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). *Hab.* Coast region of California ... var. *redivivus*.

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

²³ *Harporhynchus ocellatus*, Sclater, P. Z. S. 1862, p. 18, pl. iii.

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). *Hab.* Region of Gila River to Rocky Mountains; north to Southern Utah (St. George, breeding; Dr. Palmer).

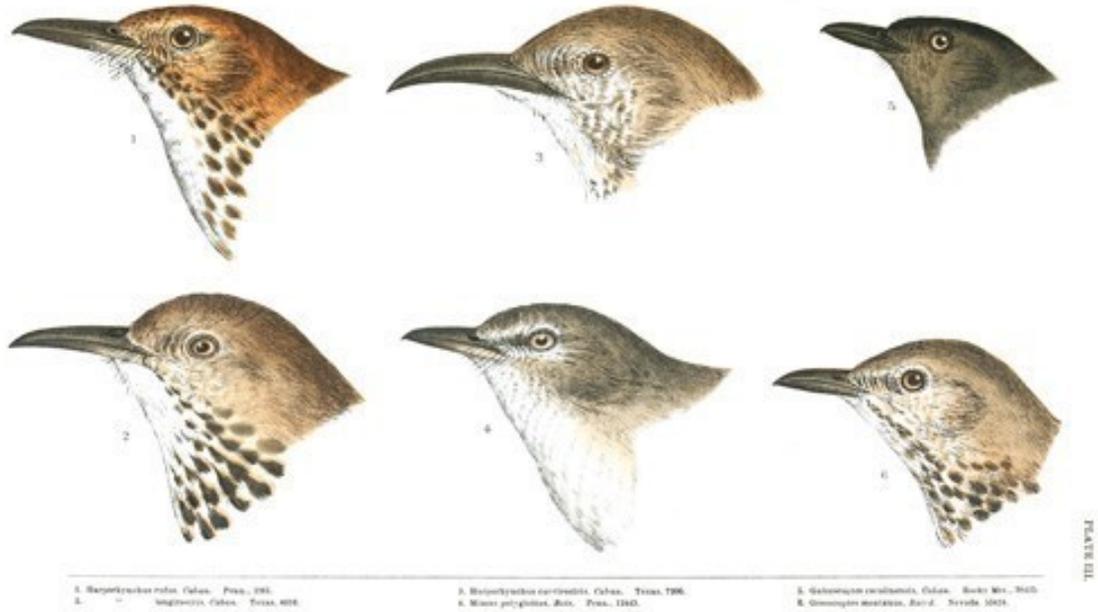
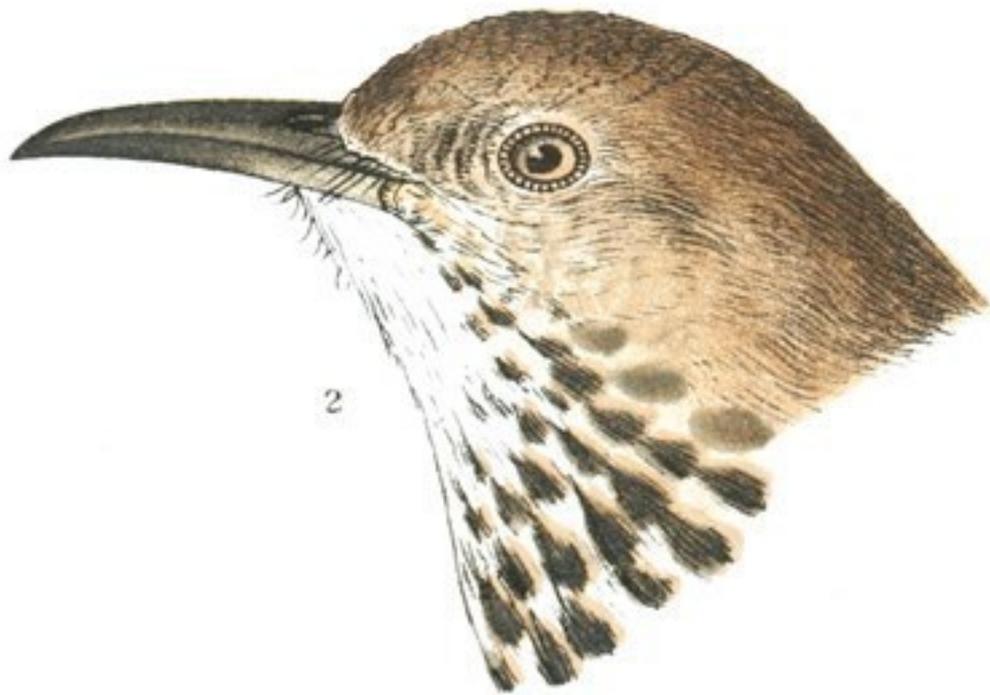


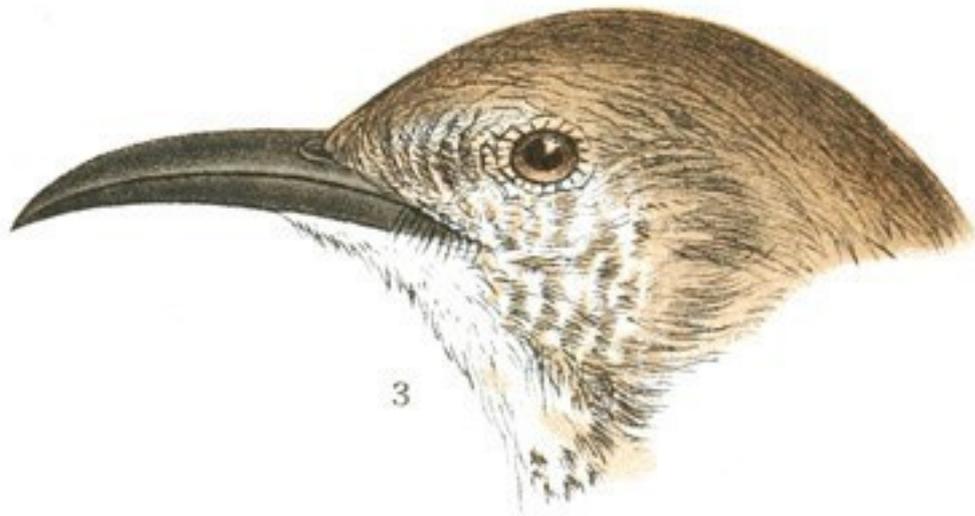
PLATE III.



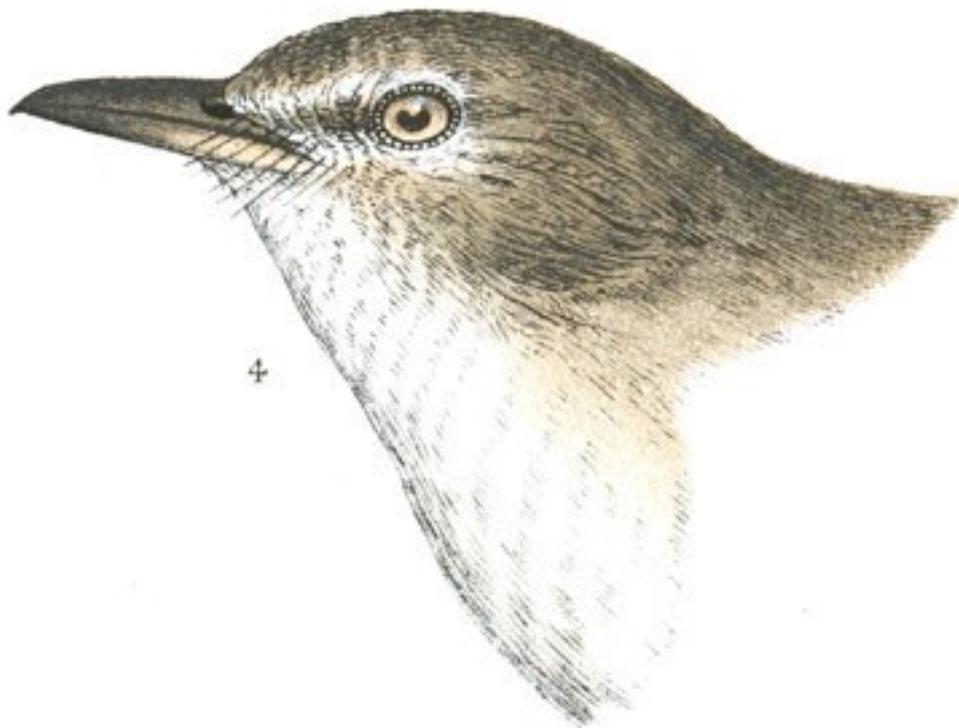
1. *Harporhynchus rufus*, *Caban. Penn.*, 2261.



2. *Harporhynchus longirostris*, *Caban. Texas*, 4016.



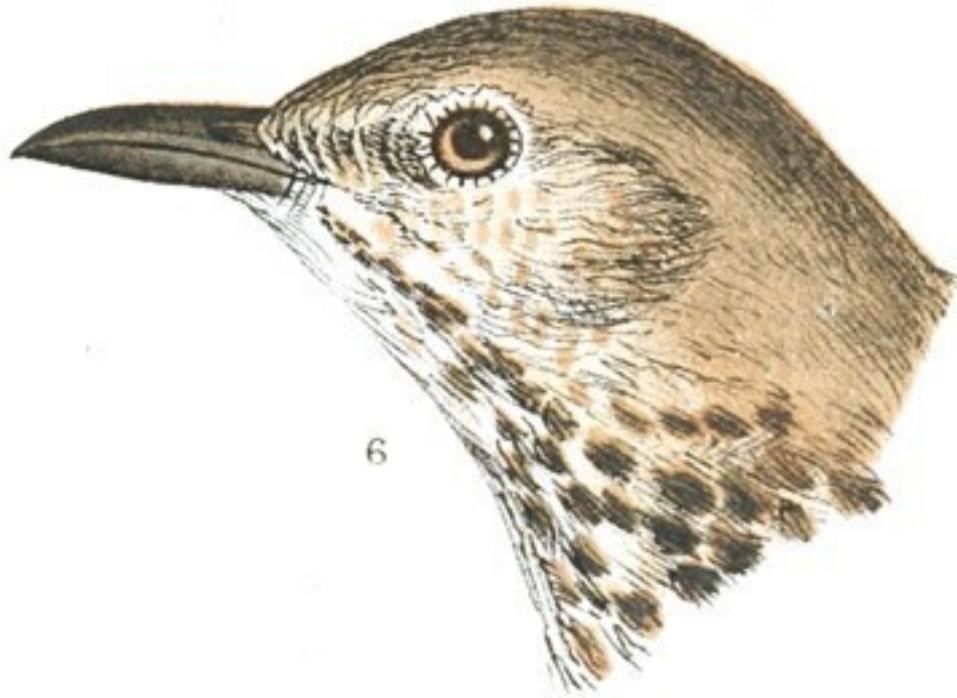
3. *Harporhynchus curvirostris*, *Caban.* Texas, 7200.



4. *Mimus polyglottus*, *Boie.* Penn., 12445.



5. *Galeoscoptes carolinensis*, *Caban.* Rocky Mts., 38425.



6. *Oreoscoptes montanus*, *Baird.* Nevada, 53424.

Harporhynchus rufus, Cabanis

BROWN THRASHER

Turdus rufus, Linn. Syst. Nat. 10th ed. 1758, 169, based on Catesby, tab. 19.—Ib. Syst. Nat. I, 1766, 293.—Gätke, Naumannia, 1858, 424 (Heligoland, Oct. 1837). *Harporhynchus rufus*, Cab. Mus. Hein. 1850, 82.—Baird, Birds N. Am. 1858, 353.—Ib. Rev. Am. Birds, 44.—Sclater, P. Z. S. 1859, 340.—Ib. Catal. 1861, 8, no. 48.—Samuels, 163. *Mimus rufus*, Pr. Max. Cab. Jour. 1858, 180.

Figures: Vieillot, Ois. Am. Sept. II, pl. lix.—Wilson, Am. Orn. II, pl. xiv.—Aud. Orn. Biog. pl. cxvi.

Sp. Char. Exposed portion of the bill shorter than the head. Outline of lower mandible straight. Above light cinnamon-red; beneath pale rufous-white with longitudinal streaks of dark brown, excepting on the chin, throat, middle of the belly, and under tail-coverts. These spots anteriorly are reddish-brown in their terminal portion. The inner surface of the wing and the inner edges of the primaries are cinnamon; the concealed portion of the quills otherwise is dark brown. The median and greater wing-coverts become blackish-brown towards the end, followed by white, producing two conspicuous bands. The tail-feathers are all rufous, the external ones obscurely tipped with whitish; the shafts of the same color with the vanes. Length, 11.15; wing, 4.15; tail, 5.20; tarsus, 1.30.

Hab. Eastern North America to Missouri River, and perhaps to high central plains United States, east of Rocky Mountains, north to Lake Winnipeg.

As stated in "Birds of North America" some specimens (var. *longicauda*) from beyond the Missouri River are larger than eastern birds, with longer tails, more rufous beneath; the breast spots darker. But, in passing from east to west, the change is so insensible that it is impossible to divide the series.

Habits. This Thrush is a common species throughout a widely extended area, from the Rocky Mountains to the Atlantic, and from the Red River country, in British America, to the Rio Grande. And nearly throughout this entire territory it also resides and breeds, from Texas to the 54th parallel of latitude.

It reaches New England early in May and leaves it in the latter part of September or the first week of October, its stay varying with the season and the supply of its food. It is somewhat irregularly distributed, common in some portions of this section, and rare or even unknown in others. It is not found near the sea-coast beyond Massachusetts. It passes the winter in the Southern States, even as far to the north as Virginia, and is in full song in the neighborhood of Savannah as early as the first of March.

The song of this Thrush is one of great beauty, and is much admired by all who appreciate woodland melody of the sweetest and liveliest type. It is loud, clear, emphatic, full of variety and charm. Its notes are never imitative and cannot be mistaken by any one who is familiar with them, for those of any other bird, unless it may be some one of its western congeners. It is a very steady performer, singing for hours at a time. Its notes are given in a loud tone, and its song may often be heard to quite a distance.

In obtaining its food the Brown Thrush is at times almost rasorial in its habits. In the early spring it scratches among the leaves of the forest for worms, coleopterous grubs, and other forms of insect food. By some it is charged with scratching up the hills of early corn, but this is not a well-founded accusation. Berries of various kinds also form a large part of its food, and among these the small fruit of our gardens must be included.

This Thrush is a very affectionate and devoted bird, especially to its young. It is also prompt in going to the assistance of others of its species when in trouble. Whenever intruders approach their nests, especially if their young are far advanced, they manifest the deepest anxiety, sometimes even making a vigorous defence. The writer has a very distinct recollection of having encountered, together with a younger brother, an ignominious defeat, when making his first attempt to inspect the nest of one of these birds.

The Brown Thrush is jealous of the intrusion of other birds of its own species to a too close proximity to its nesting-place, and will assert its love of seclusion by stout battles. In Louisiana the construction of the nest is commenced quite early in March; in Pennsylvania, not until May; and in the New England States in the latter part of that month. The nest is usually not more than two or three feet from the ground. It is built in a low bush, on a cluster of briars or among vines. I have known it to be placed in the interior of a heap of brushwood loosely thrown together. I have never met with the nest built upon the ground, but in Springfield, and in other dry and sandy localities, this is by no means an uncommon occurrence. These nests are frequently placed in close proximity to houses, and sometimes in the very midst of villages.

The nest of the Thrasher is large, and roughly but strongly built. The base is usually made of coarse twigs, sticks, and ends of branches, firmly interwoven. Within this is constructed an inner nest, composed of dried leaves, strips of bark, and strong black fibrous roots. These are lined with finer roots, horse-hair, an occasional feather, etc.

The eggs are usually four, sometimes five, and rarely six, in number. They vary both in the tints of the ground color, in those of their markings, and slightly in their shape. Their length varies from .99 to 1.12 inches, with a mean of 1.05. Their breadth ranges from .76 to .87 of an inch; mean breadth, .81. The ground color is sometimes white, marked with fine reddish-brown dots, confluent at the larger end, or forming a broad ring around the crown. In others the markings have a yellowish-brown tint. Sometimes the ground color is a light green.

Harporynchus rufus, var. longirostris, Caban.,

TEXAS THRASHER

Orpheus longirostris, Lafr. R. Z. 1838, 55.—Ib. Mag. de Zool. 1839, Ois. pl. i.
Toxostoma longirostre, Cab. Wieg. Arch. 1847, I. 207. *Mimus longirostris*, Sclater,
P. Z. S. 1856, 294 (Cordova). *Harporynchus longirostris*, Cab. Mus. Hein. 1850,
81.—Baird, Birds N. Am. 1858, 352, pl. lii.—Ib. Rev. 44.—Sclater, P. Z. S. 1859,
339; Ib. 1864, 172 (City of Mex.); Ib. Catal. 1861, 8, No. 47.

Sp. Char. Similar to *H. rufus*, the rufous of back much darker. Wings much rounded; second quill shorter than the secondaries. Exposed portion of the bill as long as the head; the lower edge decidedly decurved or concave. Above rather dark brownish-rufous; beneath pale rufous-white; streaked on the sides of the neck and body, and across the breast, with very dark brownish-black, nearly uniform throughout, much darker than in *rufus*. Two rather narrow white bands on the wings. The concealed portion of the quills dark brown. Length, 10.50; wing, 4.00; tail, 5.00; tarsus, 1.40.

Hab. Eastern Mexico; north to Rio Grande, Texas. Cordova, Scl. Orizaba (temperate region), Sumichrast.

Specimens from the Rio Grande to Mirador and Orizaba are quite identical, with, of course, differences among individuals. This "species" is not, in our opinion, separable from the *H. rufus* specifically; but is a race, representing the latter in the region given above, where the *rufus* itself is never found. The relations of these two forms are exactly paralleled in the *Thryothorus ludovicianus*

and *T. berlandieri*, the latter being nothing more than the darker Southern representation of the former.

The Texas Thrasher appears to belong only to the Avifauna of the Southwest. It first appears as a bird of the valley of the Rio Grande, and extends from thence southward through Eastern Mexico to Cordova and Orizaba. In Arizona it is replaced by *H. palmeri*, *H. lecontei*, and *H. crissalis*, in California by *H. redivivus*, and at Cape St. Lucas by *H. cinereus*, while in the United States east of the Rocky Mountains it is represented by its nearer ally *H. rufus*.

Habits. The eggs of this species are hardly distinguishable from those of the common Brown Thrasher (*H. rufus*), of the Atlantic States. The color of their ground is a greenish-white, which is thickly, and usually completely, covered with fine markings of a yellowish-brown. They have an average length of 1.13 inches, by .79 in breadth. So far as I have had an opportunity of observing, they do not vary from these measurements more than two per cent in length or one per cent in breadth. Their nests are usually a mere platform of small sticks or coarse stems, with little or no depression or rim, and are placed in low bushes, usually above the upper branches.

In regard to the distinctive habits of this species I have no information.

Harporhynchus cinereus, Xantus

CAPE ST. LUCAS THRASHER

Harporhynchus cinereus, Xantus, Pr. A. N. Sc. 1859, 298.—Baird, Ib., 303; Review, 46.—Sclater, Catal. 1861, 8, No. 49.—Elliot, Illust., I. pl. i.—Cooper, Birds Cal. 1, 19.

Sp. Char. Bill as long as the head; all the lateral outlines gently decurved from the base. Bristles not very conspicuous, but reaching to the nostrils. Wings considerably shorter than the tail, much rounded. First primary broad, nearly half the length of the second; the third to the seventh quills nearly equal, their tips forming the outline of a gentle curve; the second quill shorter than the ninth. Tail considerably graduated, the lateral feathers more than an inch the shorter. Legs stout; tarsi longer than middle toe, distinctly scutellate, with seven scales.

Above ashy brown, with perhaps a tinge of rusty on the rump; beneath fulvous-white, more fulvous on the flanks, inside of wing, and crissum. Beneath, except chin, throat, and from middle of abdomen to crissum, with well-defined V-shaped spots of dark brown at the ends of the feathers, largest across the breast. Loral region hoary. Wings with two narrow whitish bands across the tips of greater and middle coverts; the quills edged externally with paler. Outer three tail-feathers with a rather obsolete white patch in the end of inner web, and across the tips of the outer.

Spring specimens are of rather purer white beneath, with the spots more distinct than as described.

Length of 12,960 (skin), 10.00; wing, 4.10; tail, 4.65; first primary, 1.60; second, 2.50; bill from gape, 1.40, from above, 1.15, from nostril, .90; tarsus, 1.26; middle toe and claw, 1.12; claw alone, .30.

Hab. Cape St. Lucas, Lower California.

This species is curiously similar in coloration to *Oreoscoptes montanus*, from which its much larger size, much longer and decurved bill, and the graduated tail, of course readily distinguish it. It agrees in some respects with *H. rufus* and *H. longirostris*, but is smaller, the bill longer and more curved; the upper parts are ashy olivaceous-brown instead of rufous, etc.

Habits. So far as is at present known in regard to this species it appears to be confined exclusively to the peninsula of Lower California. It has, at least, been met with nowhere else. Mr.

Xantus found it quite numerous in the vicinity of Cape St. Lucas, in a region which, as he describes it, was singularly unpropitious. This was a sandy shore, extending about a quarter of a mile inland, whence a cactus desert stretched about six miles up to a high range of mountains. Throughout this tract the ground is covered with a saline efflorescence. There is no fresh water within twenty-eight miles.

Mr. Xantus speaks of the habits of this bird as being similar to those of the *Oreoscoptes montanus*. It was a very abundant species at this cape, where he found it breeding among the cactus plants in large numbers. He mentions that as early as the date of his arrival at the place, April 4, he found them already with full-fledged young, and states that they continued to breed until the middle of July.

He was of the impression that the eggs of this species more nearly resemble those of the common Mocking-Bird than any others of this genus. The aggravatingly brief notes that accompanied his collections show that the general position of the nest of this species was on low trees, shrubs, and most usually, cactus plants, and in no instance at a greater elevation from the ground than four feet. Their nests were flat structures, having only a very slight depression in or near their centre. They were about 5 inches in diameter, and were very little more than a mere platform.

The eggs vary somewhat in their ground color, but exhibit only slight variations in size or shape. Their greatest length is 1.13 inches, and their average 1.12 inches. Their mean breadth is .77 inch, and their maximum .79 inch. The ground color is a greenish-white, profusely marked with spots of mingled purple and brown. In others the ground color is a bluish-green. In some specimens the spots are of a yellowish-brown, and in some the markings are much lighter.

Harporhynchus curvirostris, Caban

GRAY CURVE-BILL THRASHER

Orpheus curvirostris, Swainson, Philos. Mag. 1827, 369 (Eastern Mexico).—M'Call, Pr. A. N. Sc. May, 1848, 63. *Mimus curvirostris*, Gray, Genera, 1844-49. *Toxostoma curvirostris*, Bonap. Conspectus, 1850, 277.—Sclater, P. Z. S. 1857, 212. *Harporhynchus curvirostris*, Cab. Mus. Hein. I. 1850, 81.—Baird, Birds N. Am. 1858, 351, pl. li.; Ib. Rev. 45.—Heermann, P. R. R. Rep. X, Parke's Rep. 1859, 11.—Sclater, P. Z. S. 1859, 339; Ib. Catal. 1861, 7, No. 46.—Dresser, Ibis, 1865, 483. *Pomatorhinus turdinus*, Temm. Pl. Col. 441. ? *Toxostoma vetula*, Wagler, Isis, 1831, 528.

Sp. Char. Exposed portion of the bill about as long as the head; considerably decurved. Above uniform grayish-brown, or light ash; beneath dull white; the anal region and under tail-coverts tinged with brownish-yellow. The under parts generally, except the chin, throat, middle of the belly, and under coverts, with rounded sub-triangular, quite well-defined spots, much like the back. These are quite confluent on the breast. Two narrow bands on the wing-coverts, and the edges of primaries and alulae, are white. The tail-feathers, except the middle, are conspicuously tipped with white. Length of female, 10 inches; wing, 4.00; tail, 4.55; tarsus, 1.20.

Hab. Adjacent regions of United States and Mexico, southward. Cordova, Orizaba, Mirador; Mazatlan, Colima, Oaxaca.

Specimens from the Rio Grande across to Mazatlan represent one species; but those from the latter locality are somewhat darker in colors, though this may be owing, in part, to the fact that they are winter birds. Considerable differences in proportions may often be noticed between individuals, but nothing strikingly characteristic of any particular region.

The specimens of the Mazatlan series (37,326 ♂, 51,523, and 51,525 ♂) have tails considerably longer than any of those from the Rio Grande, the excess amounting in the longest to nearly an inch; but one from the same locality has it *shorter* than any of the Texas specimens.

In its perfect plumage, this species has both rows of coverts distinctly tipped with white; but in the faded condition of midsummer, the bands thus produced are hardly discernible, and the spots below become very obsolete.

Habits. This interesting species appears to be common in Western Texas, the valley of the Rio Grande, and Western Mexico. It was met with in these regions on the several railroad surveys, and is described by Dr. Heermann as possessing musical powers surpassed by few other birds. When alarmed it immediately hides itself in a thick covert of underbrush, whence it is almost impossible to dislodge it. Its food consists of fruit and berries when in their season, of insects and their larvæ, and of worms. These it collects both among the trees and from the ground, on the latter of which it spends much of its time. Mr. J. H. Clark states that the nest of this bird is very similar to that of the Mocking-Bird, but is finer and much more compact. He adds that it is oftener found among the *Opuntia* than elsewhere. It is a quiet bird, rather shy, and keeps closely within the clumps of the chaparral. For a bird of its size it makes an unusual noise in flying. At Ringgold Barracks Mr. Clark's tent was pitched under a como-tree in which there was a nest of these birds. They were at first shy and seemed quite disposed to abandon their nest, but, however, soon became accustomed to their new neighbor, and went on with their parental duties. The position of their nest had been very judiciously selected, for it was during the season of the black fruit of the como, which is somewhat in the shape and size of a thimble, with a pleasant milky pulp. These constituted their principal food. The eggs in this nest were five in number. Lieutenant Couch met with it from Brownsville to Durango, where it had already paired as early as February. He describes it as exceedingly tame and gentle in its habits, and with a song remarkably melodious and attractive. Perched on the topmost bough of a flowering mimosa, in the presence of his consort, the male will pour forth a volume of most enchanting music. Their nest is generally very nearly flat, measuring nearly six inches in circumference, and scarcely more than an inch in its greatest thickness. It has hardly any distinct cavity, and hollows but very slightly from the rim to the centre, its greatest depression having barely the depth of half an inch. The nests are composed of long coarse fibrous roots, rudely, but somewhat compactly interwoven. The inner framework is constructed of the same materials intermixed with the finer stems of grasses.

Mr. H. E. Dresser states that in the vicinity of Matamoras these birds are fond of frequenting small villages, and that he frequently found their nests within the gardens and court-yards of the houses, and near the road.

The eggs of this Thrush vary considerably in size, ranging from 1.20 to 1.03 inches in length, and from .84 to .77 of an inch in breadth. Their mean length is 1.12 inches, and their average breadth .80. They have a light green ground-color, generally, though not thickly, covered with fine brown spots.

Harporhynchus curvirostris, var. palmeri, Ridgway

PALMER'S THRASHER

Harporhynchus curvirostris, var. palmeri, Ridgway, Report King's Expedition, V, 1872.

Sp. Char. Bill slender, moderately curved; fifth quill longest; fourth and sixth just perceptibly shorter, and equal; second equal to ninth; first 1.55 shorter than longest. General plumage uniform grayish-umber, paler below, becoming almost dirty whitish on the throat and abdomen; lower part

of the breast and abdomen with a very few just discernible irregular specks of a darker tint; lower tail-coverts dilute isabella-brown, more ochraceous at their margins; anal region and lower part of abdomen light ochraceous. No bands on wings, and tail-feathers only diluted at the tips. Maxillary stripe whitish with transverse bars of dusky. "Iris orange."

♂ (No. 8,128, "New Mexico" = Arizona, Dr. Heermann): wing, 4.30; tail, 5.00; bill (from nostril), 1.00; tarsus, 1.30; middle toe (without claw), 1.00. ♀(49,723, Camp Grant, Tucson, Arizona, March 12, 1867; Dr. E. Palmer; with eggs): wing, 4.15; tail, 4.85; bill, .95; tarsus, 1.25; middle toe, .90.

Hab. Eastern Arizona (Tucson).

This very curious race seems to unite the characters of *curvirostris* and *lecontei*; in fact, it is so exactly intermediate between the two, that we are almost in doubt as to which it is most nearly related. Having the stout form and larger size, as well as the spots on the abdomen, of the former, it has also the uniform colors and general appearance of *lecontei*. Were it not that the nest and eggs, with the parent accompanying, had been received from Dr. Palmer, we might be tempted to consider it a hybrid between these two species, its habitat being exactly between them, too. We have great pleasure in dedicating this curious form to Dr. Edward Palmer, who has added very much to our knowledge of the Natural History of the interesting region where the present bird is found.

Description of nest and eggs.—(13,311, Camp Grant, Arizona; Dr. E. Palmer).

Nest very bulky,—9 inches in height by 6 in width. Very elaborately constructed. The true nest, of symmetrical form, and composed of thin grass-stalks and flax-like fibres, is enclosed in an outer case of thorny sticks, thinly but strongly put together. This inner nest has a deep cavity measuring 4 inches in diameter by 3 in depth.

Eggs (two in number) measure 1.16 by .85; in shape exactly like those of *C. curvirostris*; pale blue (deeper than in *curvirostris*), rather thinly sprinkled with minute, but distinct dots of pale sepia-brown. Markings more distinct than those of *curvirostris*. R. R.

The nest was situated in a cactus-bush, four and a half feet above the ground.

Dr. Palmer remembers nothing special concerning its habits, except that the bird was very shy, and kept much on the ground, where it was seen running beneath the bushes.

Harporynchus redivivus, var. lecontei, Bonap

LECONTE'S THRASHER

Toxostoma lecontei, Lawr. Ann. N. Y. Lyc. V, Sept. 1851, 109 (Fort Yuma).

Harporynchus lecontei, Bonap. C. R. XXVIII, 1854, 57.—Ib. Notes Delattre, 39.

—Baird, Birds N. Am. 1858, 350, pl. 1; Ib. Review, 47.—Cooper, Birds Cal. 1, 17.

Sp. Char. Bill much curved. Second quill about equal to the tenth; exposed portion of the first more than half the longest; outer tail-feather an inch shortest. General color above light grayish-ash, beneath much paler; the chin and throat above almost white; the sides behind brownish-yellow or pale rusty-yellow ash, of which color is the crissum and anal region. Tail-feathers rather dark brown on the under surface, lighter above; the outer edges and tips of exterior ones obscurely paler. Quills nearly like the back.

Hab. Gila River; Fort Yuma; Fort Mojave.

Since the description of the type, a second specimen (40,718 ♂, Fort Mojave, 20 miles from Colorado River, Sept. 30, 1865) has been obtained by Dr. Coues. This skin differs slightly from the

type in size, being somewhat larger, measuring, wing 3.90, tail 5.30, bill (from nostril) 1.05; while the other measures, wing 3.70, tail 4.70, bill .98. This difference in size very probably represents that between the sexes, the type most likely being a female, though the sex is not stated. Owing to the different seasons in which the two specimens were obtained, they differ somewhat in plumage also. Dr. Coues's specimen is somewhat the darker, and the plumage has a softer, more blended aspect, and a more ashy tinge of color; the ochraceous of the crissal region is also slightly deeper. No other differences are appreciable.

Habits. Leconte's Thrasher is a new and comparatively little known species. A single specimen was obtained by Dr. Leconte near Fort Yuma, and described by Mr. Lawrence in 1851, and remained unique for many years. In 1861 Dr. Cooper presented a paper to the California Academy of Sciences, in which this bird is given among a list of those new to that State. He then mentions that he found it common about the Mojave River, and that he procured two specimens.

Dr. Coues, in his valuable paper on the birds of Arizona, speaks of obtaining, in 1865, a specimen of this rare species on a dry plain covered thickly with mesquite and cactus, near Fort Mojave. This bird was very shy and restless, fluttered hurriedly from one cactus to another, until he at last shot it where it seemed to fancy itself hidden among the thick fronds of a large yucca. Its large stout feet admirably adapt it for its partially terrestrial life, and it apparently spends much of its life upon the ground, where it runs rapidly and easily. Its flight he describes as swift but desultory, and accompanied by a constant flirting of the tail. He considers this species as inhabiting the whole valley of the Colorado and Gila, and thinks that it does not leave the vicinity of these streams for the mountains.

Dr. Cooper found a nest of this species, but without eggs, built in a yucca, and similar to that of *H. redivivus*. In his Report on the Birds of California, Dr. Cooper speaks of finding this bird common on the deserts, along the route between the Colorado Valley, wherever there was a thicket of low bushes surrounded by sand-hills. Its notes, habits, and general appearance were like those of *H. redivivus*.

Harporhynchus redivivus, Caban

CALIFORNIA THRASHER

Harpes rediviva, Gambel, Pr. A. N. S. II, Aug. 1845, 264. *Toxostoma rediviva*, Gambel, J. A. N. Sc. 2d ser. I, 1847, 42.—Cassin, Illust. I, 1855, 260, pl. xlii. *Harporhynchus redivivus*, Cabanis, Archiv Naturg. 1848, 98.—Baird, Birds N. Am. 1858, 349; Rev. 48.—Sclater, P. Z. S. 1859, 339.—Cooper, Birds Cal. 1, 15.

Sp. Char. Wing much rounded; the second quill shorter than the secondaries. Tail much graduated. Bill much decurved, longer than the head. Above brownish-olive, without any shade of green; beneath pale cinnamon, lightest on the throat, deepening gradually into a brownish-rufous on the under tail-coverts. The fore part of the breast and sides of the body brown-olive, lighter than the back. An obscure ashy superciliary stripe, and another lighter beneath the eye. Ear-coverts and an indistinct maxillary stripe dark brown; the shafts of the former whitish. Ends and tips of tail-feathers obsoletely paler. Length, 11.50 inches; wing, 4.20; tail, 5.75; tarsus, 1.55.

Hab. Coast region of California.

Habits. The California Thrasher appears to have a somewhat restricted distribution, being confined to the coast region of California, where, however, it is quite abundant. It was first met with by Dr. Gambel, near Monterey. The specimens were obtained on the ground where they were searching for coleopterous insects. Dr. Heermann afterwards found this bird abundant in the southern

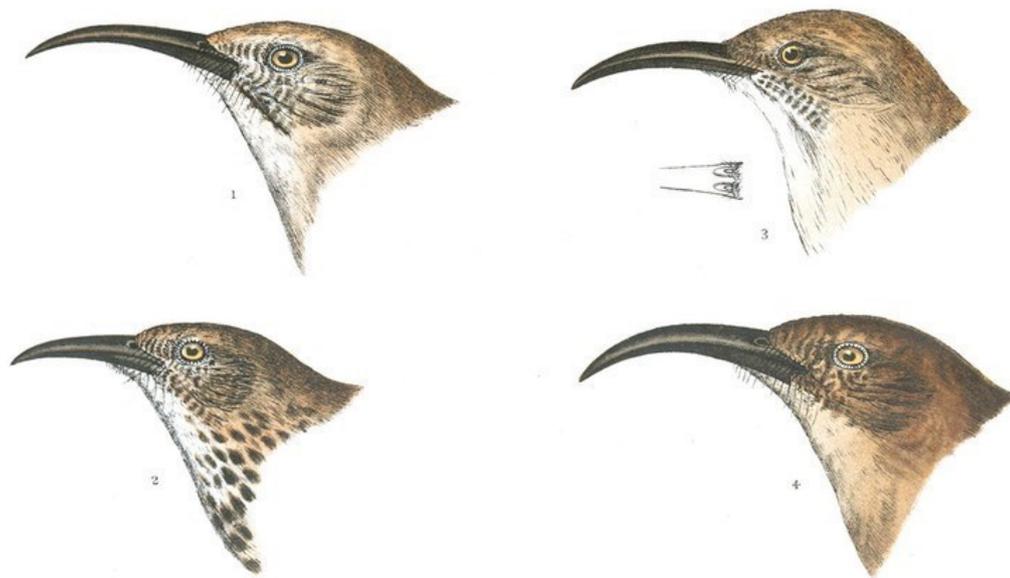
part of California. It was difficult of approach, diving into the thick bushes, running some distance on the ground, and becoming afterwards unapproachable. He speaks of its song as a flood of melody equalled only by the song of the Mocking-Bird (*Mimus polyglottus*). Colonel McCall also describes its song as of exquisite sweetness, "placing it almost beyond rivalry among the countless songsters that enliven the woods of America." He also states that it is as retiring and simple in its manners as it is brilliant in song.

In the character of its flight it is said to strongly resemble the Brown Thrasher (*H. rufus*) of the Eastern States. Their harsh, scolding notes, when their nest is approached, their motions and attitudes, are all very similar to those of *H. rufus* under like circumstances. Colonel McCall ranks the song of this species as far superior to that of any other Thrush. Without possessing the powerful voice or imitative faculties of the Mocking-Bird, its notes are described as having a liquid mellowness of tone, with a clearness of expression and volubility of utterance that cannot be surpassed.

A nest of this bird found by Dr. Heermann was composed of coarse twigs, and lined with slender roots, and not very carefully constructed. Mr. Hepburn writes that a nest found by him was in a thick bush about five feet from the ground. It was a very untidy affair, a mere platform of sticks, almost as carelessly put together as that of a pigeon, in which, though not in the centre, was a shallow depression about 4 inches in diameter, lined with fine roots and grass. It contained two eggs with a blue ground thickly covered with soot-colored spots confluent at the larger end, and in coloring not unlike those of the *Turdus ustulatus*. The eggs measured 1.19 inches by .81 of an inch. Dr. Cooper gives their measurement as 1.10 of an inch by .85. Two eggs belonging to the Smithsonian Institution (2,040, *a* and *b*) measure, one 1.19 by .81, the other 1.14 by .93. The former has a bluish-green ground sparsely spotted with olive-brown markings; the other has a ground of a light yellowish-green, with numerous spots of a russet brown.

The general character of their nest is, as described, a coarse, rudely constructed platform of sticks and coarse grass and mosses, with but a very slight depression. Occasionally, however, nests of this bird are more carefully and elaborately made. One (13,072) obtained near Monterey, by Dr. Canfield, has a diameter of 6 inches, a height of 3, with an oblong-oval cavity 2 inches in depth. Its outside was an interweaving of leaves, stems, and mosses, and its lining fine long fibrous roots.

These birds are chiefly found frequenting the dense chaparral that lines the hillsides of California valleys, forming thickets, composed of an almost impenetrable growth of thorny shrubs, and affording an inviting shelter. In such places they reside throughout the year, feeding upon insects, for the procuring of which their long curved bills are admirably adapted, as also upon the berries which generally abound in these places. Their nests usually contain three eggs. Dr. Cooper states that their loud and varied song is frequently intermingled with imitations of other birds, though the general impression appears to be that they are not imitative, and do not deserve to be called, as they often are, a mocking-bird.



1. *Harporhynchus crissalis*, Henry. Cal., 11533.
2. " *crissalis*, Xanthus. C. St. L., 26343.

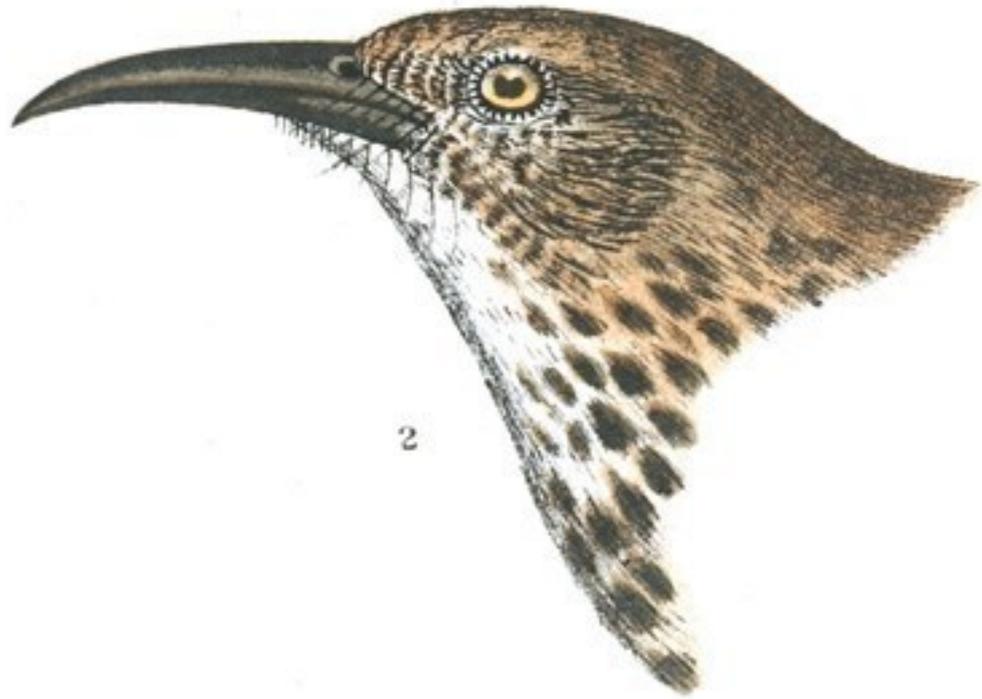
3. *Harporhynchus lecontei*, Boscq. Ariz., 40116.
4. " *redivivus*, Caban. Cal., 3132.

PLATE IV.

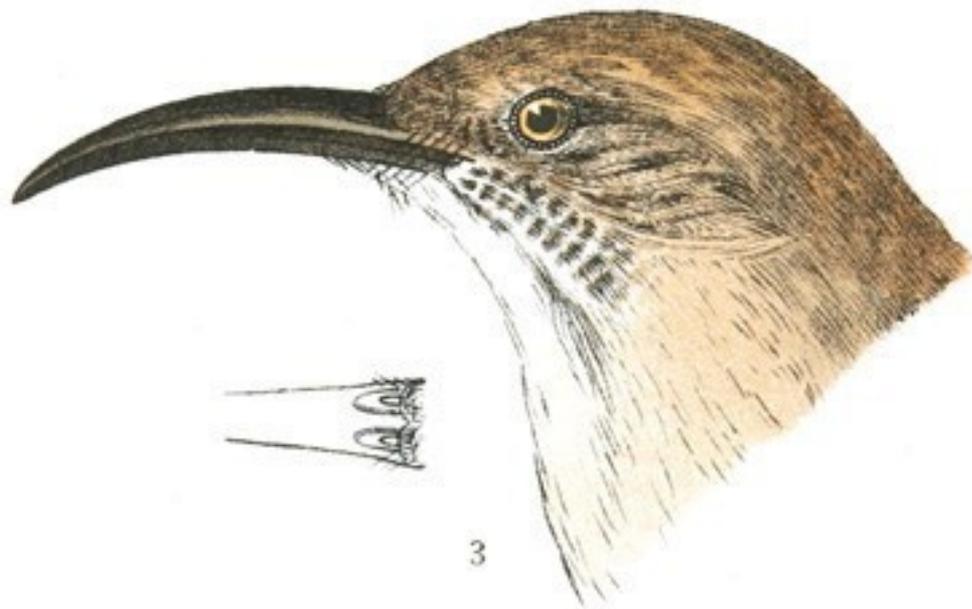
PLATE IV.



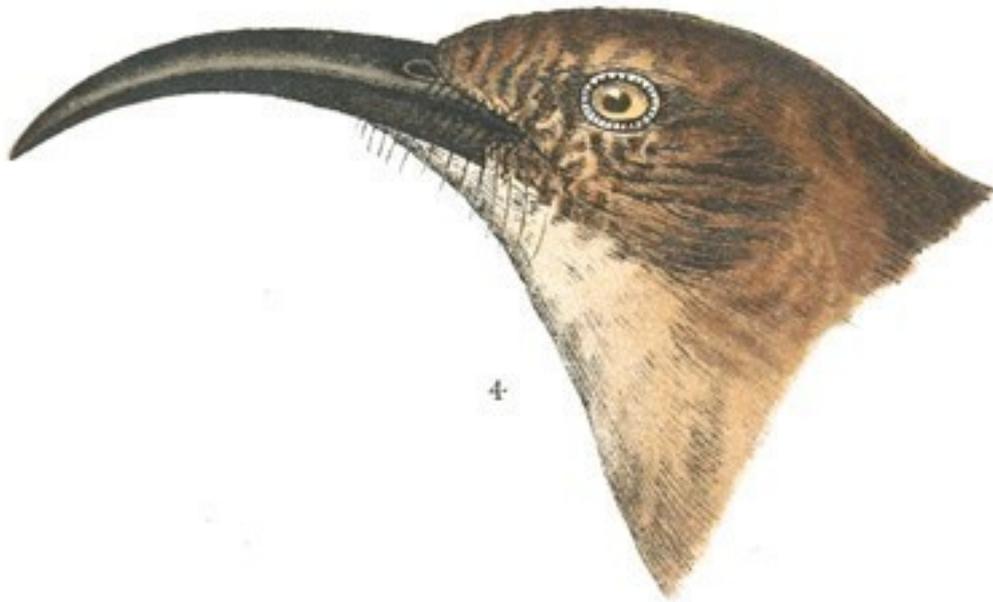
1. *Harporhynchus crissalis*, Henry. Cal., 11533.



2. *Harporhynchus cinereus*, *Xantus*. C. St. L., 26343.



3. *Harporhynchus lecontei*, *Bonap*. Ariz., 40718.



4. *Harporhynchus redivivus*, *Caban. Cal.*, 3732.

***Harporhynchus crissalis*, Henry**

RED-VENTED THRASHER

Harporhynchus crissalis, Henry, Pr. A. N. Sc. May, 1858.—Baird, Birds N. Am. 1858, 350, pl. lxxxii; Review, 47.—Cooper, Birds Cal. 1, 18.

Sp. Char. Second quill about as long as the secondaries. Bill much curved; longer than the head. Above olive-brown, with a faint shade of gray; beneath nearly uniform brownish-gray, much paler than the back, passing insensibly into white on the chin; but the under tail-coverts dark brownish-rufous, and abruptly defined. There is a black maxillary stripe cutting off a white one above it. There do not appear to be any other stripes about the head. There are no bands on the wings, and the tips and outer edges of the tail-feathers are very inconspicuously lighter than the remaining portion. Length, 11 inches; wing, 4.00; tail, 5.80; tarsus, 1.25.

Hab. Region of the Gila River, to Rocky Mountains; Southern Utah (St. George, Dr. Palmer).

A second specimen (11,533) of this rare species is larger than the type, but otherwise agrees with it. Its dimensions are as follows:—

Length before skinning, 12.50; of skin, 12.50; wing, 3.90; tail, 6.50; its graduation, 1.45; first quill, 1.50; second, .41; bill from forehead (chord of curve), 1.65, from gape, 1.75, from nostril, 1.30; curve of culmen, 1.62; height of bill at nostril, .22; tarsus, 1.30; middle toe and claw, 1.12.

The bill of this species, though not quite so long as in *redivivus*, when most developed, is almost as much curved, and much more slender,—the depth at nostrils being but .22 instead of .26. The size of this specimen is equal to the largest of *redivivus* (3,932); the tail absolutely longer. The feet are, however, considerably smaller, the claws especially so; the tarsus measures but 1.30, instead of 1.52;

the middle claw .29, instead of .36. With these differences in form, however, it would be impossible to separate the two generically.

A third specimen (No. 60,958 ♀, St. George, Utah, June 9, 1870), with nest and eggs, has recently been obtained by Dr. Palmer. This specimen, being a female, is considerably smaller than the type, measuring only: wing, 3.90; tail, 6.00; bill, from nostril, 1.15. The plumage is in the burnt summer condition, and has a peculiar reddish cast.

Habits. Of this rare Thrush little is known. So far as observed, its habits appear to be nearly identical with those of the Californian species (*H. redivivus*). It is found associated in the same localities with *H. lecontei*, which also it appears to very closely resemble in all respects, so far as observed. The first specimen was obtained by Dr. T. C. Henry, near Mimbres, and described by him in May, 1858, in the Proceedings of the Philadelphia Academy of Sciences. A second specimen was obtained by H. B. Möllhausen, at Fort Yuma, in 1863. Dr. Coues did not observe it at Fort Whipple, but thinks its range identical with that of *H. lecontei*.

Dr. Cooper found this species quite common at Fort Mojave, but so very shy that he only succeeded in shooting one, after much watching for it. Their song, general habits, and nest he speaks of as being in every way similar to those of *H. redivivus*.

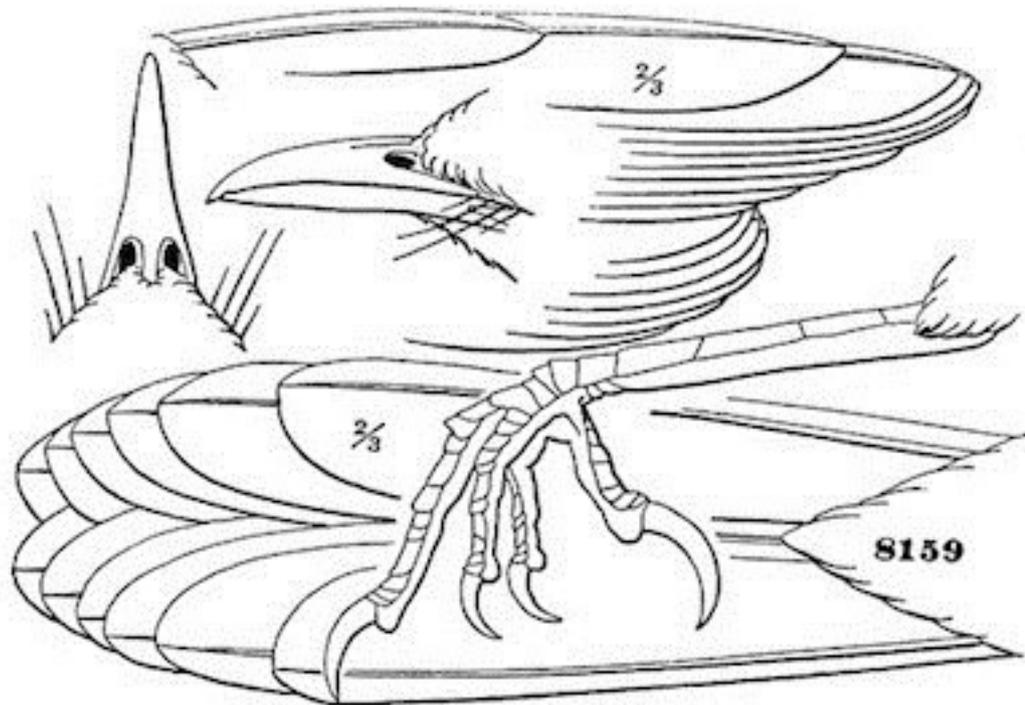
The eggs remained unknown until Dr. E. Palmer had the good fortune to find them at St. George, Southern Utah, June 8, 1870. The nest was an oblong flat structure, containing only a very slight depression. It was very rudely constructed externally of coarse sticks quite loosely put together; the inner nest is made of finer materials of the same. The base of this nest was 12 inches long, and 7 in breadth; the inner nest is circular, with a diameter of 4½ inches.

The eggs are of an oblong-oval shape, one end being a little less obtuse than the other. In length they vary from 1.15 to 1.12 inches, and in breadth from .84 to .82 of an inch. They are of a uniform blue color, similar to the eggs of the common Robin (*Turdus migratorius*), only a little paler or of a lighter tint. In the total absence of markings they differ remarkably from those of all other species of the genus.

Genus MIMUS, Boie

Mimus, Boie, Isis, Oct. 1826, 972. (Type *Turdus polyglottus*, Linn.)

Orpheus, Swainson, Zoöl. Jour. III, 1827, 167. (Same type.)



Mimus polyglottus.
8159

Gen. Char. Bill not much more than half the length of the head; gently decurved from the base, notched at tip; commissure curved. Gonys straight, or slightly concave. Rictal bristles quite well developed. Wings rather shorter than the tail. First primary about equal to, or rather more than, half the second; third, fourth, and fifth quills nearly equal, sixth scarcely shorter. Tail considerably graduated; the feathers stiff, rather narrow, especially the outer webs, lateral feathers about three quarters of an inch the shorter in the type. Tarsi longer than middle toe and claw by rather less than an additional claw; tarsi conspicuously and strongly scutellate; broad plates seven.

Of this genus there are many species in America, although but one occurs within the limits of the United States.

The single North American species *M. polyglottus* is ashy brown above, white beneath; wings and tail black, the former much varied with white.

Mimus polyglottus, Boie

MOCKING-BIRD

Turdus polyglottus, Linn. Syst. Nat. 10th ed. 1758, 169; 12th ed. 1766, 293.
—*Mimus polyglottus*, Boie, Isis, 1826, 972.—Sclater, P. Z. S. 1856, 212.—Ib. 1859, 340.—Ib. Catal. 1861, 8, No. 51.—Baird, Birds N. Am. 1858, 344.—Ib. Rev. 48.
—Samuels, 167.—Cooper, Birds Cal. 1, 21.—Gundlach, Repertorio, 1865, 230 (Cuba).—Dresser, Ibis, 1865, 230.—Coues, Pr. A. N. Sc. 1866, 65 (Arizona).—?
Orpheus leucopterus, Vigors, Zoöl. Beechey, 1839.

Figures: Wilson, Am. Orn. II, 1810, pl. x, fig. 1.—Aud. Orn. Biog. I, 1831, pl. xxi.—Ib. Birds Amer. II, 1841, pl. 137.

Sp. Char. Third and fourth quills longest; second about equal to eighth; the first half or more than half the second. Tail considerably graduated. Above ashy brown, the feathers very obsoletely darker centrally, and towards the light plumbeous downy basal portion (scarcely appreciable, except when the feathers are lifted). The under parts are white, with a faint brownish tinge, except on the chin, and with a shade of ash across the breast. There is a pale superciliary stripe, but the lores are dusky. The wings and tail are dark brown, nearly black, except the lesser wing-coverts, which are like the back; the middle and greater tipped with white, forming two bands; the basal portion of the primaries white; most extended on the inner primaries. The outer tail-feather is white, sometimes a little mottled; the second is mostly white, except on the outer web and towards the base; the third with a white spot on the end; the rest, except the middle, very slightly or not at all tipped with white. The bill and legs are black. Length, 9.50; wing, 4.50; tail, 5.00.



Mimus polyglottus.

Young. Similar, but distinctly spotted with dusky on the breast, and obsoletely on the back.

Hab. North America, from about 40° (rare in Massachusetts, Samuels), south to Mexico. Said to occur in Cuba.

The Mocking-Birds are closely allied, requiring careful comparison to distinguish them. A near ally is *M. orpheus*, of Jamaica, but in this the outer feather is white, and the 2d, 3d, and 4th tail-feathers are marked like the 1st, 2d, and 3d of *polyglottus*, respectively.

We have examined one hundred and fourteen specimens, of the present species, the series embracing large numbers from Florida, the Rio Grande, Cape St. Lucas, and Mazatlan, and numerous specimens from intermediate localities. The slight degree of variation manifested in this immense series is really surprising; we can discover no difference of color that does not depend on age, sex, season, or the individual (though the variations of the latter kind are exceedingly rare, and when noticed, very slight). Although the average of Western specimens have slightly longer tails than Eastern, a Florida example (No. 54,850, ♂, Enterprise, Feb. 19), has a tail as long as that of the longest-tailed Western one (No. 8,165, Fort Yuma, Gila River, Dec.). Specimens from Colima, Mirador, Orizaba, and Mazatlan are quite identical with Northern ones.

Habits. The Mocking-Bird is distributed on the Atlantic coast, from Massachusetts to Florida, and is also found to the Pacific. On the latter coast it exhibits certain variations in forms, but hardly enough to separate it as a distinct species. It is by no means a common bird in New England, but instances of its breeding as far north as Springfield, Mass., are of constant occurrence, and a single individual was seen by Mr. Boardman near Calais, Me. It is met with every year, more or less frequently, on Long Island, and is more common, but by no means abundant, in New Jersey. It is found abundantly in every Southern State, and throughout Mexico. It has also been taken near Grinnell, Iowa.

A warm climate, a low country, and the vicinity of the sea appear to be most congenial to their nature. Wilson found them less numerous west of the Alleghany than on the eastern side, in the same parallels. Throughout the winter he met with them in the Southern States, feeding on the berries of the red cedar, myrtle, holly, etc., with which the swampy thickets abounded. They feed also upon winged insects, which they are very expert in catching. In Louisiana they remain throughout the entire year, approaching farmhouses and plantations in the winter, and living about the gardens and outhouses. They may be frequently seen perched upon the roofs of houses and on the chimney-tops, and are always full of life and animation. When the weather is mild the old males may be heard singing with as much spirit as in the spring or summer. They are much more familiar than in the more northern States. In Georgia they do not begin to sing until February.

The vocal powers of the Mocking-Bird exceed, both in their imitative notes and in their natural song, those of any other species. Their voice is full, strong, and musical, and capable of an almost endless variation in modulation. The wild scream of the Eagle and the soft notes of the Bluebird are repeated with exactness and with apparently equal facility, while both in force and sweetness the Mocking-Bird will often improve upon the original.

The song of the Mocking-Bird is not altogether imitative. His natural notes are bold, rich, and full, and are varied almost without limitation. They are frequently interspersed with imitations, and both are uttered with a rapidity and emphasis that can hardly be equalled.

The Mocking-Bird readily becomes accustomed to confinement, and loses little of the power, energy, or variety of its song, but often much of its sweetness in a domesticated state. The mingling of unmusical sounds, like the crowing of cocks, the cackling of hens, or the creaking of a wheelbarrow, while they add to the variety, necessarily detracts from the beauty of his song.

The food of the Mocking-Bird is chiefly insects, their larvæ, worms, spiders, etc., and in the winter of berries, in great variety. They are said to be very fond of the grape, and to be very destructive to this fruit. Mr. G. C. Taylor (*Ibis*, 1862, p. 130) mentions an instance that came to his knowledge, of a person living near St. Augustine, Florida, who shot no less than eleven hundred Mocking-Birds in a single season, and buried them at the roots of his grape-vines.

Several successful attempts have been made to induce the Mocking-Bird to rear their young in a state of confinement, and it has been shown to be, by proper management, perfectly practicable.

In Texas and Florida the Mocking-Bird nests early in March, young birds appearing early in April. In Georgia and the Carolinas they are two weeks later. In Pennsylvania they nest about the 10th of May, and in New York and New England not until the second week of June. They select various situations for the nest; solitary thorn-bushes, an almost impenetrable thicket of brambles, an orange-tree, or a holly-bush appear to be favorite localities. They often build near the farm-houses, and the nest is rarely more than seven feet from the ground. The base of the nest is usually a rudely constructed platform of coarse sticks, often armed with formidable thorns surrounding the nest with a barricade. The height is usually 5 inches, with a diameter of 8. The cavity is 3 inches deep and 5 wide. Within the external barricade is an inner nest constructed of soft fine roots.

The eggs, from four to six in number, vary in length from .94 to 1.06 inches, with a mean length of .99. Their breadth varies from .81 to .69 of an inch, mean breadth .75. They also exhibit great variations in the combinations of markings and tints. The ground color is usually light greenish-blue,

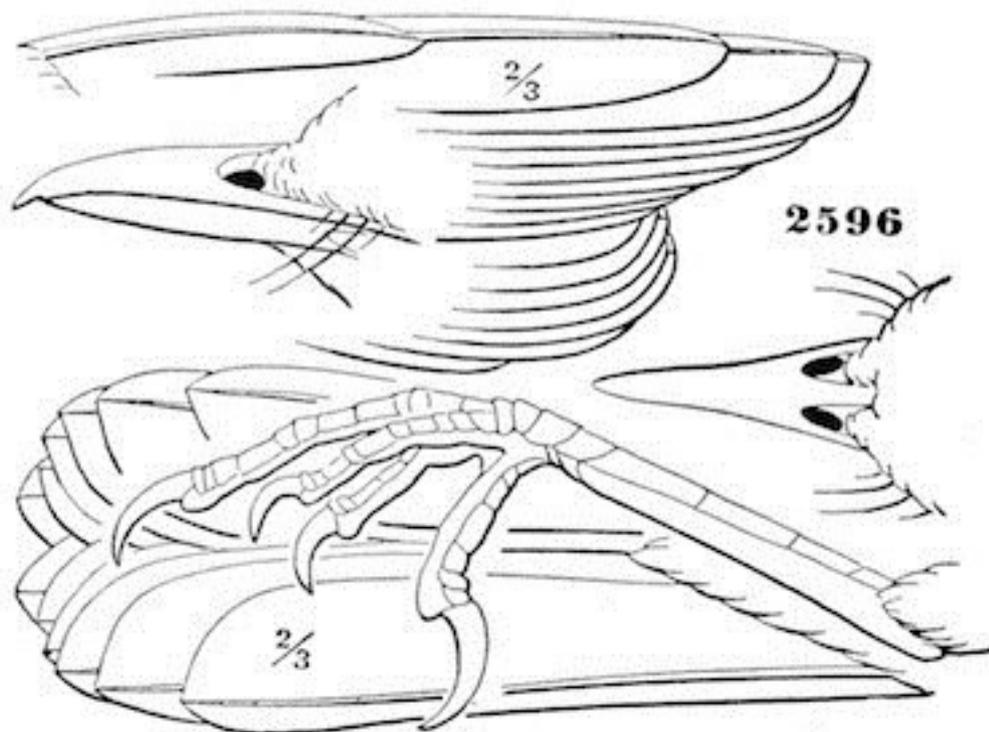
varying in the depth of its shade from a very light tint to a distinct blue, with a slight greenish tinge. The markings consist of yellowish-brown and purple, chocolate-brown, russet, and a very dark brown.

Genus GALEOSOPTES, Cabanis

Galeoscoptes, Cabanis, Mus. Hein. I, 1850, 82. (Type *Muscicapa carolinensis*, L.)

Gen. Char. Bill shorter than the head, rather broad at base. Rictal bristles moderately developed, reaching to the nostrils. Wings a little shorter than the tail, rounded; secondaries well developed; fourth and fifth quills longest; third and sixth little shorter; first and ninth about equal, and about the length of secondaries; first quill more than half the second, about half the third. Tail graduated; lateral feather about .70 shorter than the middle. Tarsi longer than middle toe and claw by about an additional half-claw; scutellate anteriorly, more or less distinctly in different specimens; scutellæ about seven.

The conspicuous naked membranous border round the eye of some Thrushes, with the bare space behind it, not appreciable.



Galeoscoptes carolinensis.

2596

There is little difference in form between the single species of *Galeoscoptes* and *Mimus polyglottus*, beyond the less degree of definition of the tarsal plates; and but for the difference in coloration (uniform plumbeous instead of gray above and white beneath), we would hardly be inclined to distinguish the two generically.

The single species known is lead-colored, with black cap, and chestnut-red under tail-coverts.

Galeoscoptes carolinensis, Caban

THE CATBIRD

Muscicapa carolinensis, Linn. Syst. Nat. I, 1766, 328. *Turdus carolinensis*, Licht. Verz. 1823, 38.—D'Orbigny, La Sagra's Cuba, Ois. 1840, 51. *Orpheus carolinensis*, Jones, Nat. Bermuda, 1859, 27 (breeds). *Mimus carolinensis*, Gray, Baird, Birds N. Am. 1859, 346.—Bryant, Pr. Bost. Soc. 1867, 69 (Inagua).—Lord, Pr. R. Art. Inst. (Woolwich), IV, 1864, 117 (east of Cascade Mts.). *Galeoscoptes carolinensis*, Cab. Mus. Hein. I, 1850, 82 (type of genus).—Ib. Jour. Orn. 1855, 470 (Cuba).—Gundlach, Repert. 1865, 230 (Cuba, very common).—Sclater, Catal. Birds, 1861, 6, no. 39.—Scl. & Salv. Pr. 1867, 278 (Mosquito Coast).—Baird, Rev. 1864, 54.—Samuels, 172.—Cooper, Birds Cal. 1, 23.

Figures: Aud. B. A. II, pl. 140.—Ib. Orn. Biog. II, pl. 28.—Vieillot, Ois. Am. Sept. II, pl. lxxvii.—Wilson, Am. Orn. II, pl. xiv, f. 3.

Sp. Char. Third quill longest; first shorter than sixth. Prevailing color dark plumbeous, more ashy beneath. Crown and nape dark sooty-brown. Wings dark brown, edged with plumbeous. Tail greenish-black; the lateral feathers obscurely tipped with plumbeous. The under tail-coverts dark brownish-chestnut. Female smaller. Length, 8.85; wing, 3.65; tail, 4.00; tarsus, 1.05.



Galeoscoptes carolinensis.

Hab. United States, north to Lake Winnipeg, west to head of Columbia, and Cascade Mountains (Lord); south to Panama R. R.; Cuba; Bahamas; Bermuda (breeds). Accidental in Heligoland Island, Europe. Oaxaca, Cordova, and Guatemala, Sclater; Mosquito Coast, Scl. & Salv.; Orizaba (winter), Sumichrast; Yucatan, Lawr.

Western specimens have not appreciably longer tails than Eastern. Central American examples, as a rule, have the plumbeous of a more bluish cast than is usually seen in North American skins.

Habits. The Catbird has a very extended geographical range. It is abundant throughout the Atlantic States, from Florida to Maine; in the central portion of the continent it is found as far north as Lake Winnepeg.

On the Pacific coast it has been met with at Panama, and also on the Columbia River. It is occasional in Cuba and the Bahamas, and in the Bermudas is a permanent resident. It is also found during the winter months abundant in Central America, It breeds in all the Southern States with possibly the exception of Florida. In Maine, according to Professor Verrill, it is as common as in Massachusetts, arriving in the former place about the 20th of May, about a week later than in the vicinity of Boston, and beginning to deposit its eggs early in June. Near Calais it is a less common visitant.

The Northern migrations of the Catbird commence early in February, when they make their appearance in Florida, Georgia, and the Carolinas. In April they reach Virginia and Pennsylvania, and New England from the 1st to the 10th of May. Their first appearance is usually coincident with the blossoming of the pear-trees. It is not generally a popular or welcome visitant, a prejudice more or less wide spread existing in regard to it. Yet few birds more deserve kindness at our hands, or will better repay it. From its first appearance among us, almost to the time of departure in early fall, the air is vocal with the quaint but attractive melody, rendered all the more interesting from the natural song being often blended with notes imperfectly mimicked from the songs of other birds. The song, whether natural or imitative, is always varied, attractive, and beautiful.

The Catbird, when once established as a welcome guest, soon makes itself perfectly at home. He is to be seen at all times, and is almost ever in motion. They become quite tame, and the male bird will frequently apparently delight to sing in the immediate presence of man. Occasionally they will build their nest in close proximity to a house, and appear unmindful of the presence of the members of the family.

The Catbird's power of mimicry, though limited and imperfectly exercised, is frequently very amusing. The more difficult notes it rarely attempts to copy, and signally fails whenever it does so. The whistle of the Quail, the cluck of a hen calling her brood, the answer of the young chicks, the note of the Pewit Flycatcher, and the refrain of Towhee, the Catbird will imitate with so much exactness as not to be distinguished from the original.

The Catbirds are devoted parents, sitting upon their eggs with great closeness, feeding the young with assiduity, and accompanying them with parental interest when they leave the nest, even long after they are able to provide for themselves. Intruders from whom danger is apprehended they will boldly attack, attempting to drive away snakes, cats, dogs, and sometimes even man. If these fail they resort to piteous cries and other manifestations of their great distress.

Towards each other they are affectionate and devoted, mutually assisting in the construction of the nest; and as incubation progresses the female, who rarely leaves the nest, is supplied with food, and entertained from his exhaustless vocabulary of song, by her mate. When annoyed by an intruder the cry of the Catbird is loud, harsh, and unpleasant, and is supposed to resemble the outcry of a cat, and to this it owes its name. This note it reiterates at the approach of any object of its dislike or fear.

The food of the Catbird is almost exclusively the larvæ of the larger insects. For these it searches both among the branches and the fallen leaves, as well as the furrows of newly ploughed fields and cultivated gardens. The benefit it thus confers upon the farmer and the horticulturist is very great, and can hardly be overestimated.

The Catbird can with proper painstaking be raised from the nest, and when this is successfully accomplished they become perfectly domesticated, and are very amusing pets.

They construct their nests on clusters of vines or low bushes, on the edges of small thickets, and in retired places, though almost always near cultivated ground. The usual materials of their nests are dry leaves for the base, slender strips of long dry bark, small twigs, herbaceous plants, fine roots, and finer stems. They are lined with fine dry grasses, and sedges. Their nests average 4 inches in height by 5 in diameter. The diameter and depth of the cavity are 3½ inches. The eggs are of a uniform deep bluish-green, and measure .97 in length and .69 of an inch in breadth.

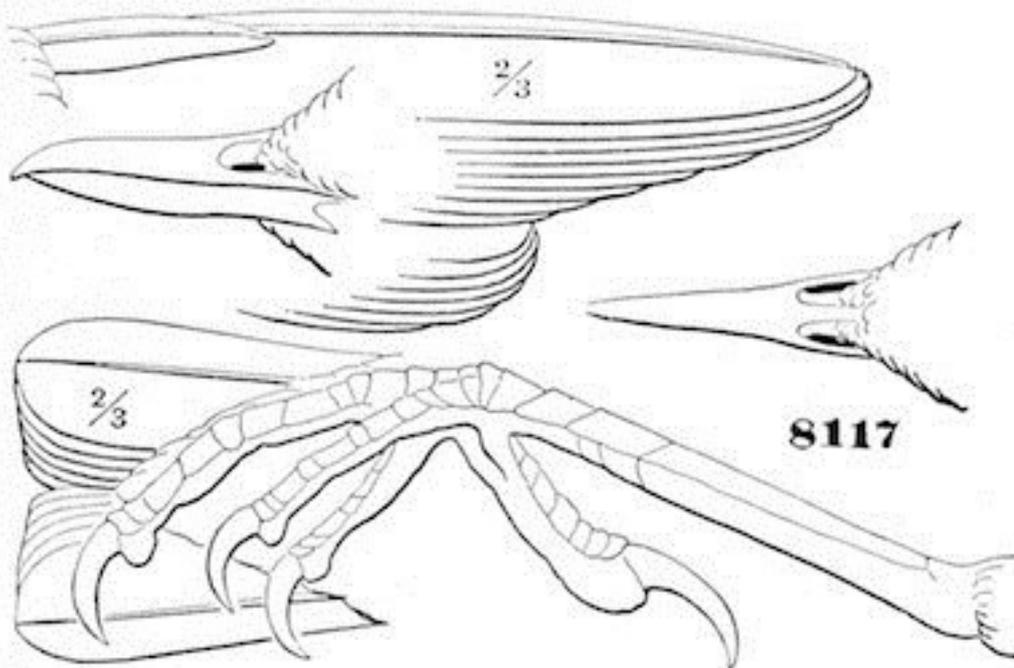
Family CINCLIDÆ.—The Dippers

On [page 2](#) will be found the characteristics of this family, which need not be here repeated. There is only a single genus, *Cinclus*, with four American species, and several from Europe and Asia.

Genus CINCLUS, Bechstein

Hydrobata, Vieillot, Analyse, 1816 (Ag.).—Baird, B. N. A. 229.

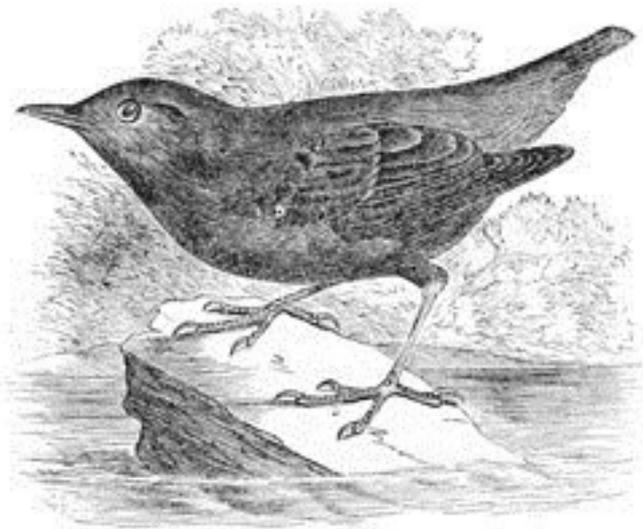
Cinclus, Bechstein, Gemein. Naturg. 1802. (Not of Moehring, 1752. Type *Sturnus cinclus*, L.)—Salvin, Ibis, 1867, 109. (Monograph.)



Cinclus mexicanus.

8117

Gen. Char. Bill without any bristles at the base; slender, subulate; the mandible bent slightly upward; the culmen slightly concave to near the tip, which is much curved and notched; the commissural edges of the bill finely nicked towards end. Feet large and strong, the toes projecting considerably beyond the tail; the claws large. Lateral toes equal. Tail very short and even; not two thirds the wings, which are concave and somewhat falcate. The first primary is more than one fourth the longest. Eggs white.



Cinclus mexicanus.

The slightly upward bend of the bill, somewhat as in *Anthus*, renders the culmen concave, and the commissure slightly convex. The maxilla at base is nearly as high as the mandible; the whole bill is much compressed and attenuated. The lateral claws barely reach the base of the middle one, which is broad; the inner face extended into a horny lamina, with one or two notches or pectinations somewhat as in *Caprimulgidae*. The stiffened sub-falcate wings are quite remarkable. The tail is so short that the upper coverts extend nearly to its tip.

The species are all dull-colored birds, usually brown, sometimes varied with white on the head, back, or throat. They inhabit mountainous subalpine regions abounding in rapid streams, and always attract attention by their habit of feeding under water, searching among the gravel and stones for their insect prey.

The only other species at all allied to the single North American one are the *C. ardesiacus* of Central America, and *C. pallasi* of Eastern Asia. They may be easily distinguished by the following characters:—

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. Mountains of Middle Province from Sitka, south to Guatemala ... 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 ... var. *ardesiacus*.²⁴

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*.²⁵

²⁴ *C. ardesiacus*, Salvin, Ibis, N. S. III, 121, pl. ii.

²⁵ *C. pallasi*, Temm. Man. d'Orn. I, p. 177.—Salvin, Ibis, III, 1867, 119. (*Sturnus cinclus*, var. Pallas, Zoögr. R.-As. I, 426.)

Cinclus mexicanus, Swains

AMERICAN DIPPER; WATER OUZEL

Cinclus pallasi, Bon. Zoöl. Jour. II, 1827, 52 (not the Asiatic species).
Cinclus mexicanus, Sw. Phil. Mag. 1827, 368.—Sclater, Catal. 1861, 10.—Salvin, Ibis, 1860, 190; 1867, 120 (Guatemala).—Baird, Review, 60.—Dall & Bannister (Alaska).—Cooper, Birds Cal. 1, 25. *Hydrobata mexicana*, Baird, Birds N. Am. 1858, 229.—Cooper & Suckley, Rep. P. R. R, XII, II, 1859, 175 (nest). *Cinclus americanus*, Rich. F. B. A. II, 1831, 273. *Cinclus unicolor*, Bon.; *C. mortoni*, Towns.; *C. townsendi*, “Aud.” Towns.

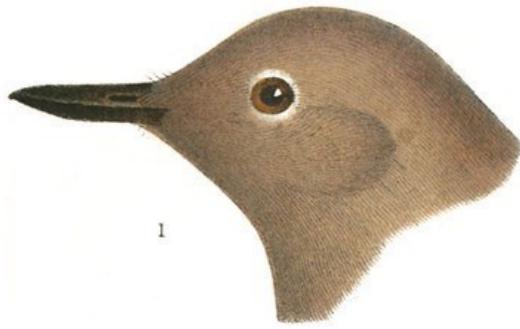
Figures: Bonaparte, Am. Orn. II, 1828, pl. xvi, fig. 1.—Aud. Orn. Biog. pl. ccclxx, 435.—Ib. Birds Amer. II, pl. cxxxvii.

Sp. Ch. Above dark plumbeous, beneath paler; head and neck all round a shade of clove or perhaps a light sooty-brown; less conspicuous beneath. A concealed spot of white above the anterior corner of the eye and indications of the same sometimes on the lower eyelid. Immature specimens usually with the feathers beneath edged with grayish-white; the greater and middle wing-coverts and lesser quills tipped with the same. The colors more uniform. Length, 7.50; wing, 4.00; tail, 2.55.

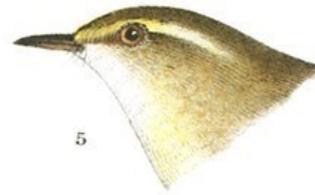
Young. Similar to the adult, but much mixed with whitish medially beneath; this in form of longitudinal suffusions.

Autumnal and winter specimens have numerous transverse crescents of whitish on lower parts and wings,—these very especially conspicuous posteriorly; the secondaries are also conspicuously terminated with a white crescent. Bill brown, paler toward base of lower mandible. In spring and summer the bill entirely black, and the whitish markings almost entirely disappear; the young bird has a greater amount of white beneath than the adult in winter dress, and this white is disposed in longitudinal, not transverse, suffusions. The color of the legs appears to be the same at all seasons.

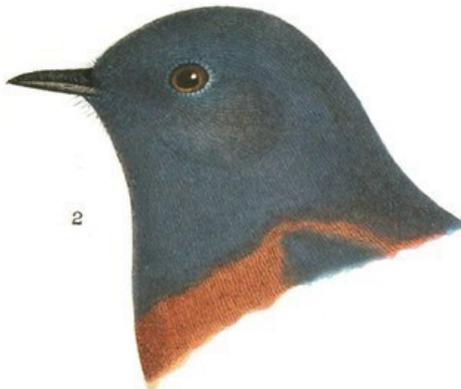
PLATE V.



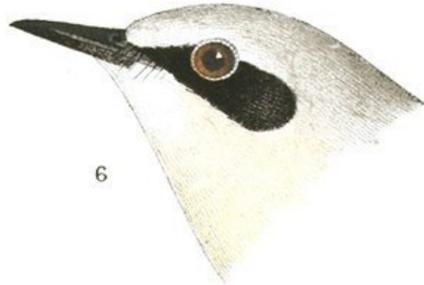
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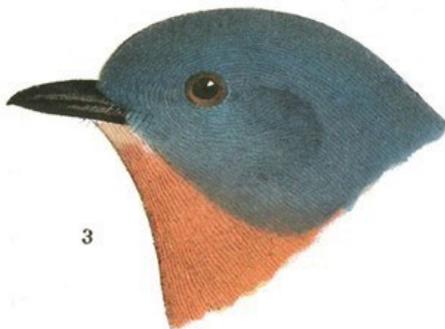
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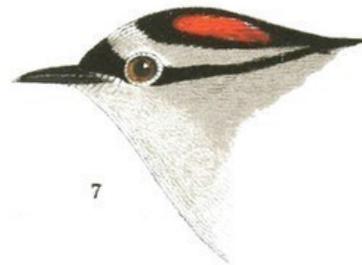
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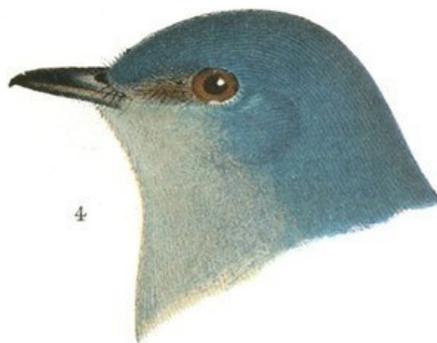
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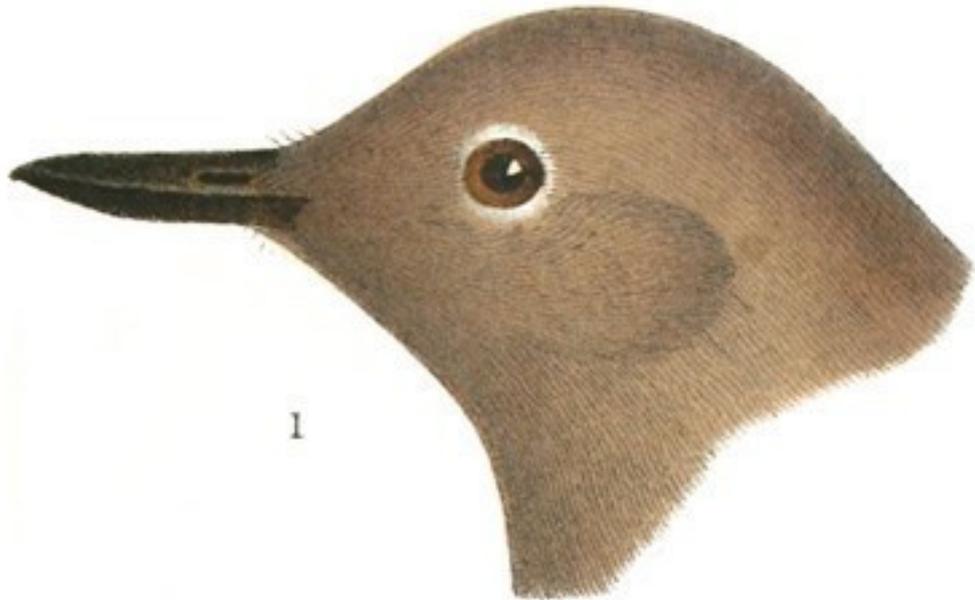


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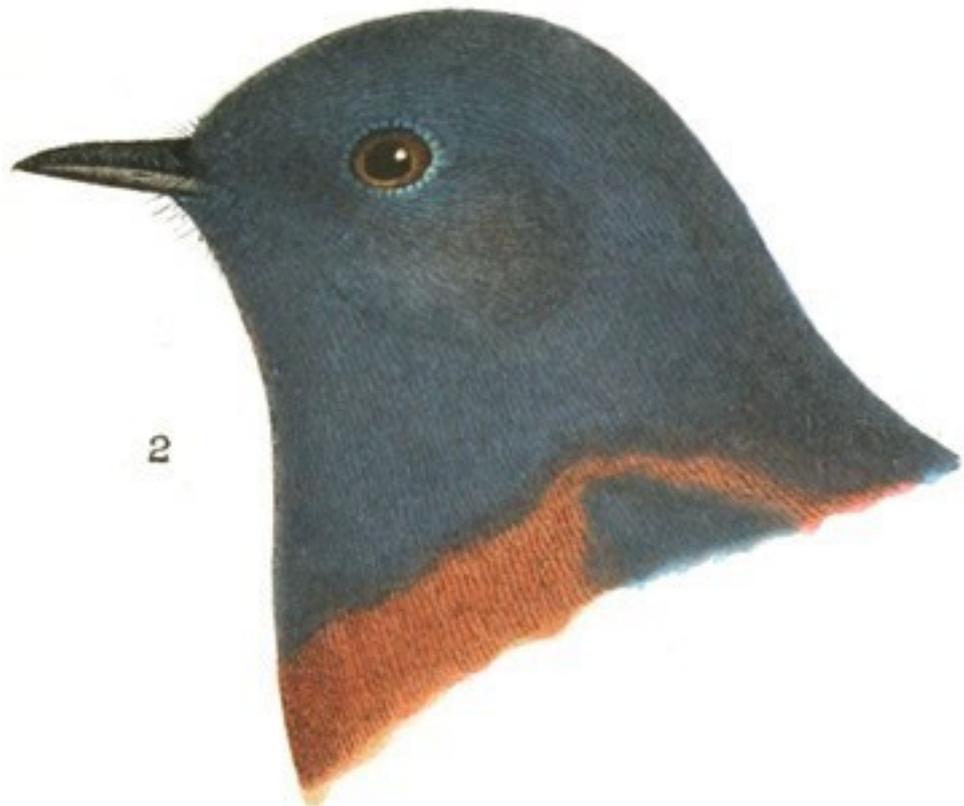
1. *Cinclus mexicanus*, Sw. N. M., 8496.
2. *Sialia mexicana*, Sw. Cal., 10623.
3. " *sialis*, Baird. D. C., 28245.
4. " *arctica*, Sw. Rocky Mts., 18319.

5. *Phyllopeuste borealis*. Alaska, 43009.
6. *Saxicola oenanthe*. Bechst. France, 18959.
7. *Regulus cuvieri*, Aud. (From Aud.'s plate.)
8. " *satrapa*, Licht. D. C., 1160.
9. " *calendula*, Licht. Penn., 736.

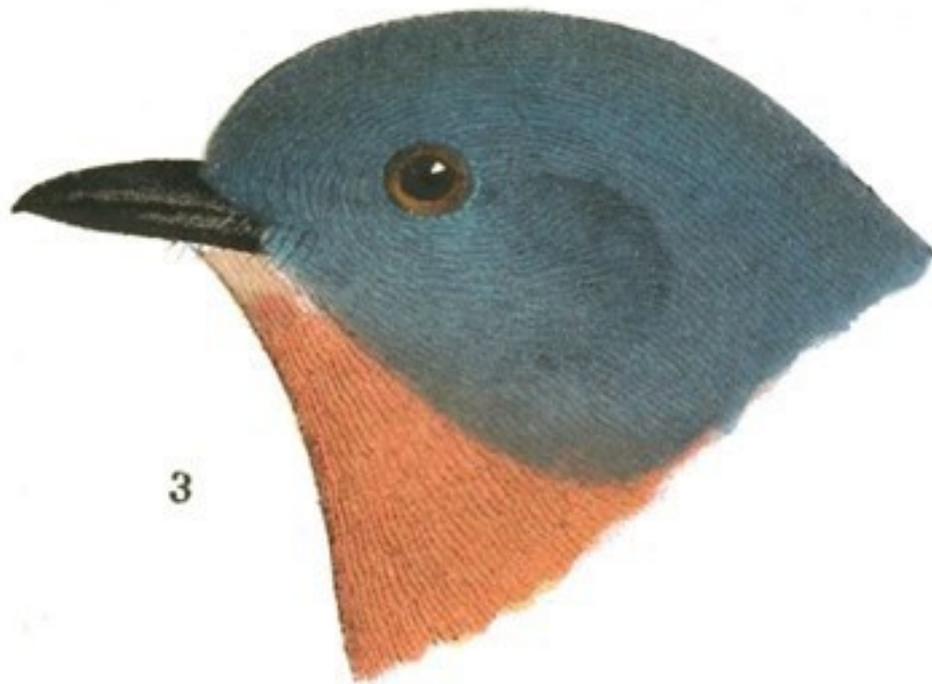
PLATE V.



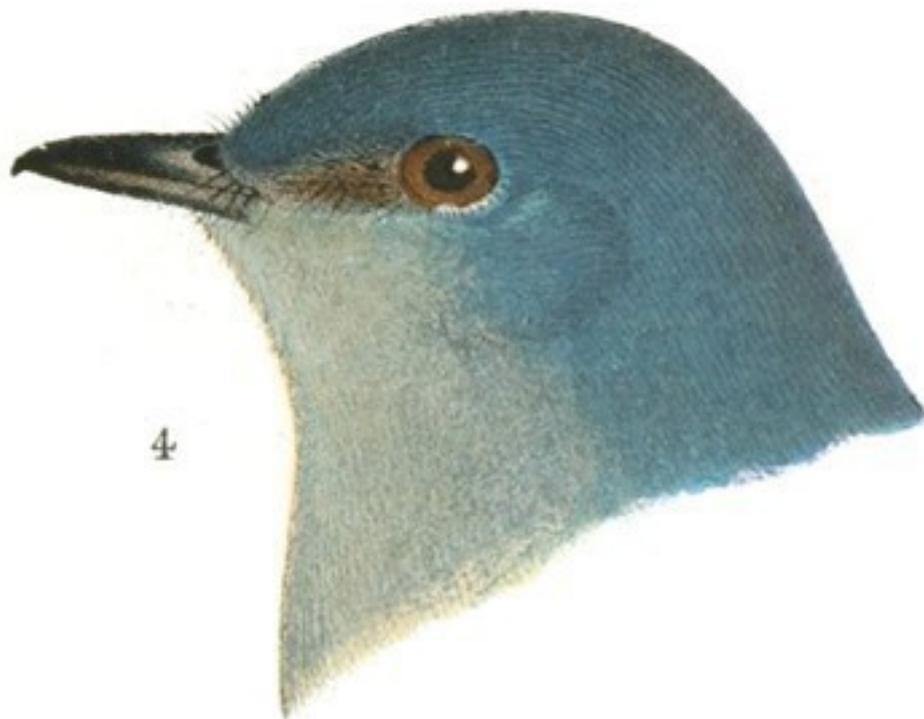
1. *Cinclus mexicanus*, Sw. N. M., 8496.



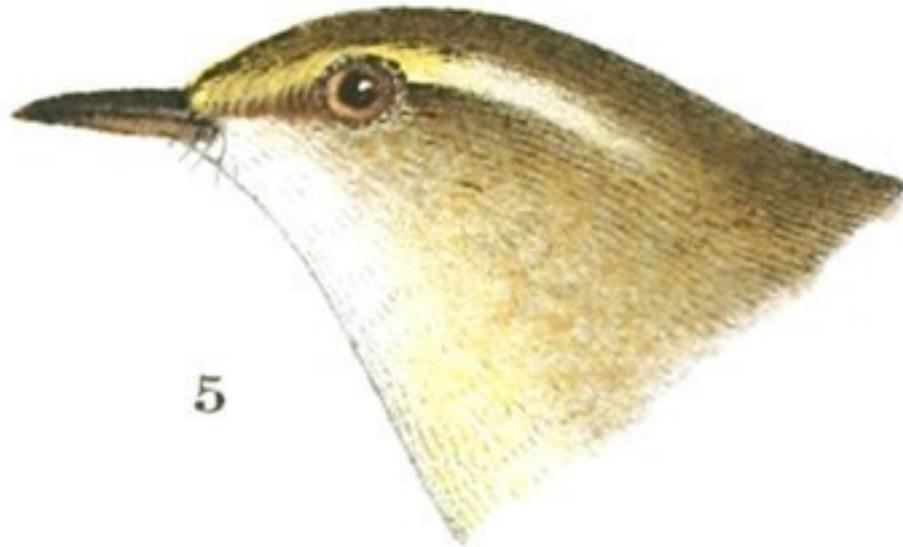
2. *Sialia mexicana*, Sw. Cal., 10623.



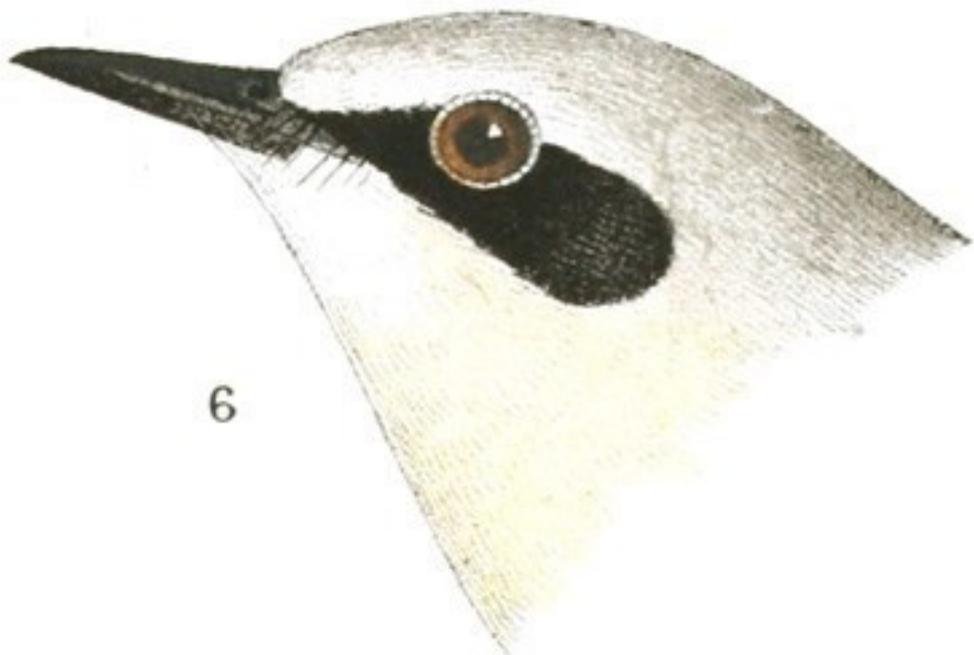
3. *Sialia sialis*, Baird. D. C., 28245.



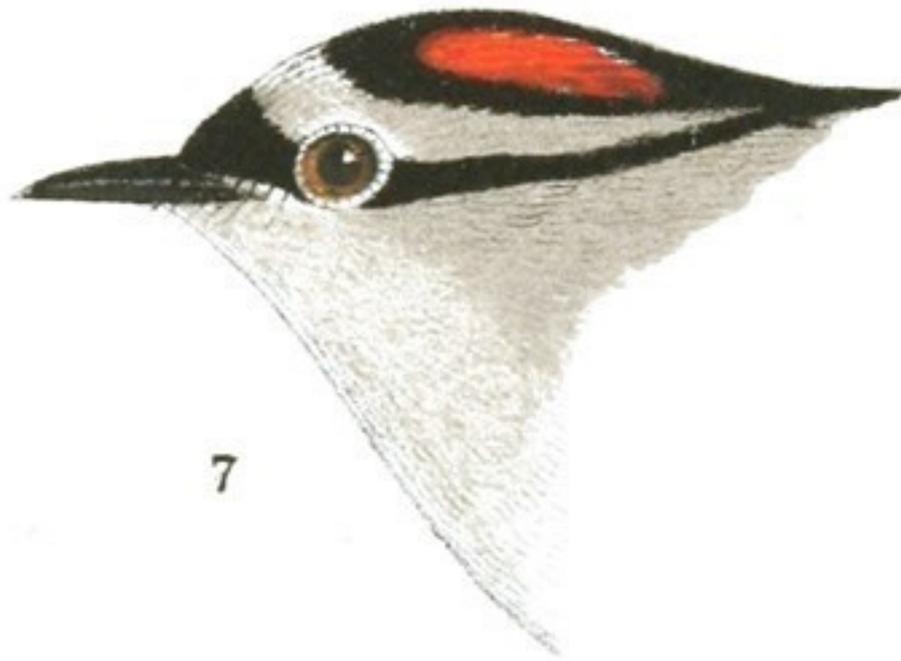
4. *Sialia arctica*, Sw. Rocky Mts., 18319.



5. *Phyllopneuste borealis*, Alaska, 45909.



6. *Saxicola oenanthe*, *Bechst.* France, 18959.



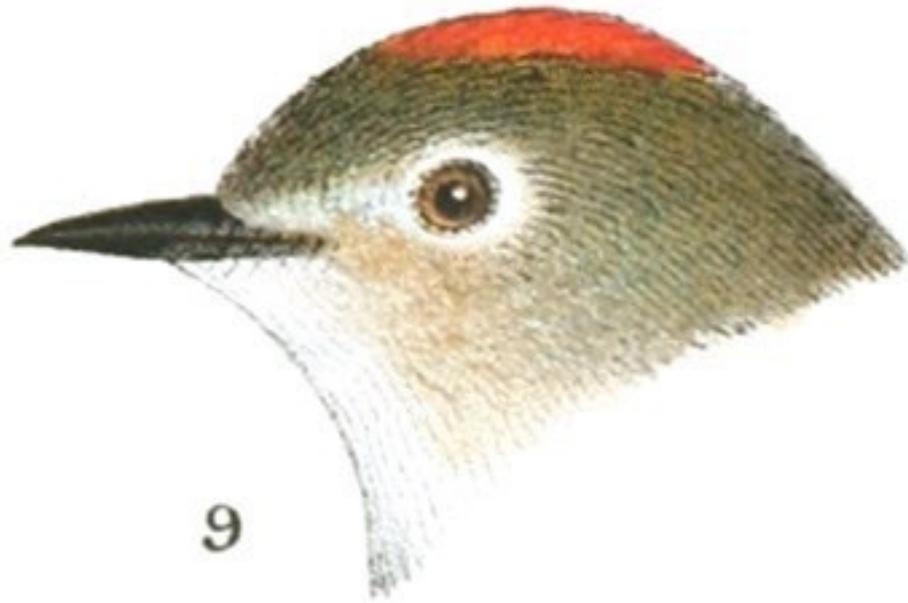
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7. *Regulus cuvieri*, *Aud.* (From *Aud.*'s plate.)



8

8. *Regulus satrapa*, *Licht.* D. C., 1160.



9. *Regulus calendula*, *Licht. Penn.*, 736.

Specimens, of any age, from the coast of Oregon and the Cascade Mountains, have the head more deeply brownish than those from other regions.

Hab. Found through the mountainous region of the central and western part of North America, from Fort Halkett south into Mexico and Guatemala. Orizaba (Alpine region) Sumich. None received from the coast region of California. Abundant on the N. W. coast, Laramie Peak and Deer Creek, Neb.

This species has a wide range along the mountainous region of North and Middle America. Mexican specimens are darker.

Habits. This interesting bird inhabits exclusively the mountainous portions of North America west of the Mississippi from Alaska south to Guatemala. It does not appear to have been obtained on the coast of California, nor in the valley of the Mississippi. In the British Possessions specimens have been procured on Fraser's River, at Fort Halkett, and at Colville. At the latter place Mr. J. K. Lord states that a few remain and pass the winter. They are found among the mountain streams of Vera Cruz, and probably throughout Mexico, and no doubt may be met with in all the highlands between these extreme points. Dr. Newberry met with it in the rapid streams of the Cascade Mountains. He describes it as flitting along in the bed of the stream, from time to time plunging into the water and disappearing, to appear again at a distant point, up or down the stream, skipping about from stone to stone, constantly in motion, jerking its tail and moving its body somewhat in the manner of a wren.

Dr. Cooper observed this species both on the Columbia and its tributaries, and also among the mountain streams of the Coast Range west of Santa Clara. At the latter place he found a pair mated as early as March 16th. At sunset he heard the male singing very melodiously, as it sat on one of its favorite rocks in the middle of the foaming rapids, making its delightful melody heard for quite a long distance above the sound of the roaring waters.

"This bird," adds Dr. Cooper, "combines the form of a sandpiper, the song of a canary, and the aquatic habits of a duck. Its food consists almost entirely of aquatic insects, and these it pursues under water, walking and flying with perfect ease beneath a depth of several feet of water." He also states that they do not swim on the surface, but dive, and sometimes fly across streams beneath the

surface; that their flight is rapid and direct, like that of a sandpiper; also that they jerk their tails in a similar manner, and generally alight on a rock or log.

Dr. Cooper on the 5th of July found a nest of this bird at a saw-mill on the Chehalis River, built under the shelving roots of an enormous arbor-vitæ that had floated over, and rested in a slanting position against the dam. The floor was of small twigs, the sides and roof arched over it like an oven, and formed of moss, projecting so as to protect and shelter the opening, which was large enough to admit the hand. Within this nest was a brood of half-fledged young. The parents were familiar and fearless, and had become accustomed to the society of the millers. They had previously raised another brood that season.

The same observant naturalist, some time afterwards, in May, found the nest of another pair, a few miles north of Santa Clara. This was built near the foot of a mill-dam, resting on a slight ledge under an overhanging rock, from which water was continually dropping. It was, in shape, like an oven, with a small doorway, and it was built externally of green moss, which, being still living, prevented the easy discovery of the nest. It was lined with soft grass, and contained young.

These birds are found singly or in pairs, and never more than two together. They are never found near still water, and frequent only wild mountain-streams, cascades, eddies, and swift currents.

According to Mr. Dall's observations in Alaska, the species is essentially solitary. He obtained several specimens in January, February, and March, always near some open, unfrozen spots in the Nulato River. It was only found in the most retired spots, and almost invariably alone. When disturbed, it would dive into the water, even in midwinter.

Mr. Ridgway describes the Dipper as remarkably quick, as well as odd, in its movements,—whether walking in the shallow bed of the stream, or standing on a stone along the edge, continually tilting up and down, now chattering as it flies rapidly along the stream, again alighting into the water, in which it wades with the greatest facility. Its flight is remarkably swift and well sustained, and in manner is very unusual, the bird propelling itself by a rapid buzzing of the wings, following in its flight every undulation in the course of the stream into which it drops suddenly. Its song is described as remarkably sweet and lively, in modulation resembling somewhat that of the *Harporhynchus rufus*, but less powerful, though sweeter in effect.

Dr. E. Baldamus, of Halle, who possesses specimens of the eggs of this species, describes them as pure white in color, oval in shape, and hardly distinguishable from those of the European *C. aquaticus*.

A nest of this bird obtained by Mr. J. Stevenson, of Hayden's Expedition, in Berthoud's Pass, Colorado, is a hemisphere of very uniform contour built on a rock, on the edge of a stream. Externally it was composed of green moss, in a living state; within is a strong, compactly built apartment, arched over, and supported by twigs, with a cup-like depression at the bottom, hemispherical and composed of roots and twigs firmly bound together. The structure is 7 inches in height externally, and has a diameter of 10½ inches at the base. Within, the cavity has a depth of 6 inches; the entrance, which is on one side, is 3½ in breadth by 2½ in height. The eggs were three in number, uniform, dull white, and unspotted. They measure 1.04 inches by .70. They have an elongated oval shape, and are much pointed at one end.

Family SAXICOLIDÆ.—The Saxicolas

The general characters of this family have already been given on p. 2, as distinguished from the *Turdidæ*. The relationships are very close, however, and but little violence would be done by making it a subfamily of *Turdidæ* or even a group of *Turdinæ*, as was done in the “Birds of North America.”

While the group is very well represented in the Old World, America has but one peculiar genus *Sialia*, and another *Saxicola*, represented by a single species, a straggler, perhaps, from Greenland on the one side and Siberia on the other. The diagnostic characters of these are as follows, including *Turdus* to show the relationships of the three genera:—

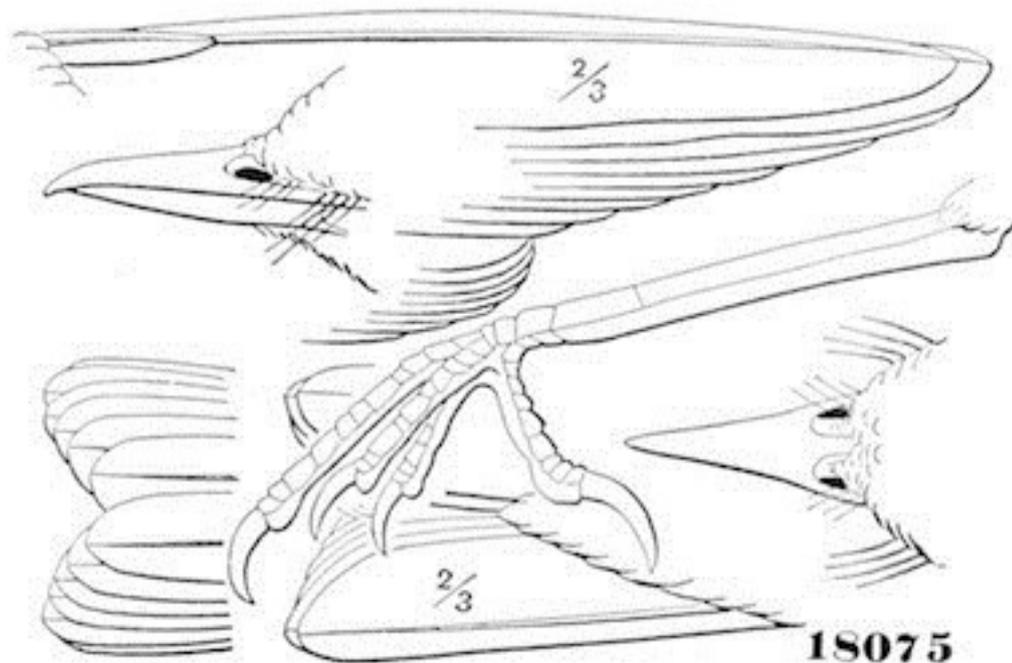
Turdus. Tarsi long, exceeding the middle toe; wings reaching to the middle of the tail, which is about four fifths the length of the wings. Bill stout; its upper outline convex toward the base. Second quill shorter than fifth.

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.

Sialia. Tarsi short; about equal to the middle toe. Wings reaching beyond the middle of the tail. Bill thickened.

Genus SAXICOLA, Bechstein

Saxicola, Bechstein, Gemeinnützige Naturg. 1802. (Type, *S. œnanthe*.)



Saxicola œnanthe, Bechst.

18075

Gen. Char. Commissure slightly curved to the well-notched tip. Culmen concave for the basal half, then gently decurving. Gonyx straight. Bill slender, attenuated; more than half the length of

head. Tail short, broad, even. Legs considerably longer than the head; when outstretched reaching nearly to the tip of tail. Third quill longest; second but little shorter. Claws long, slightly curved; hind toe rather elongated.

As already stated, America possesses but a single member of this group of birds, so well represented in the Old World. The color is bluish-gray, with wings, a stripe through the eye, and the middle of exposed tail-feathers black.

Saxicola œnanthe, Bechst

THE WHEAT-EAR

Motacilla œnanthe, Linn. Syst. Nat. I, 1758, 186. *Saxicola œnanthe*, Bechst. "Gemein. Naturg. 1802," and of European authors.—Holböll, Orn. Grœn. (Paulsen ed.), 1846, 23 (Greenland).—Baird, Birds N. Am. 1858, 220 (Europe); Review, 61.—Jones, Nat. Bermuda, 1859, 28 (Bermuda).—Coues, Pr. A. N. S. 1861, 218 (Labrador).—Reinhardt, Ibis, 1861, 5 (Greenland).—Dall & Bannister (Alaska). *Saxicola œnanthoides*, Vigors, Zoöl. Blossom, 1839, 19 (N. W. America).—Cassin, Ill. I, 1854, 208, pl. xxxiv (Nova Scotia).

Sp. Char. (Description from European specimen.) Male in spring, forehead, line over the eye, and under parts generally white; the latter tinged with pale yellowish-brown, especially on the breast and throat. A stripe from the bill through, below, and behind the eye, with the wings, upper tail-coverts, bill and feet, black. Tail white, with an abrupt band of black (about .60 of an inch long) at the end, this color extending further up on the middle feather. Rest of upper parts ash-gray; quills and greater coverts slightly edged with whitish. Length, 6.00; wing, 3.45; tail, 2.50; tarsus, 1.05.

Autumnal males are tinged with rusty; the black markings brown. The female in spring is reddish-gray; lores and cheeks brown; the black markings generally brownish, and not well defined. Eggs pale light blue. Nest on ground.

Hab. An Old World species (Europe, Northern Africa, and Asia), abundant in Greenland, found probably as an autumnal migrant in Labrador, Canada, Nova Scotia, Bermuda, etc. Occurs also on Norton Sound, near Behring's Straits. Very occasional in the Eastern States: Long Island.



Saxicola oenanthe.

This bird appears to be abundant in Norton Sound, from which region Mr. Dall has recently brought specimens in full spring plumage. These are decidedly smaller than birds from Labrador and Greenland, but not distinguishable, and seem to agree precisely with skins from Central Europe.

Habits. The well-known Wheat-ear is entitled to a place in our fauna, not only as an accidental visitor, but also as an occasional resident. Dr. H. R. Storer, of Boston, found them breeding in Labrador in the summer of 1848, and procured specimens of the young birds which were fully identified by Dr. Samuel Cabot as belonging to this species. In the following year Andrew Downs, of Halifax, gave me the specimen described and figured by Mr. Cassin. This was secured late in the summer near Cape Harrison, Labrador, where it had evidently just reared its brood. In 1860 Mr. Elliott Coues obtained another specimen on the 25th of August, at Henley Harbor. It was in company with two others, and was in immature plumage. Its occurrence in considerable numbers on the coast of Labrador is further confirmed by a writer ("W. C.") in "The Field," for June 10, 1871, who states that when in that region during the months of May and June he saw a number of "White Ears," the greater proportion of them being males. He inferred from this that they breed in that country, the apparent scarcity of females being due to their occupation in nesting. Mr. Lawrence has one in his cabinet from Long Island, and the Smithsonian Institution one from Quebec. Specimens have also been obtained in the Bermudas.

Holböll, in his paper on the fauna of Greenland, is of the opinion that the individuals of this species that occur there come from Europe, make their journey across the Atlantic without touching at Iceland, and arrive in South Greenland as early in the season as it does at the former place, the first of May. It reaches Godhaven a month later, at times when all is snowbound and the warmth has not yet released the insects on which it feeds. It is found as far north as the 73d parallel, and even beyond. In September it puts on its winter dress and departs.

Mr. Dall states that several large flocks of this species were seen at Nulato, May 23 and 24, 1868, and a number of specimens obtained. They were said to be abundant on the dry stony hill-tops, but were rare along the river.

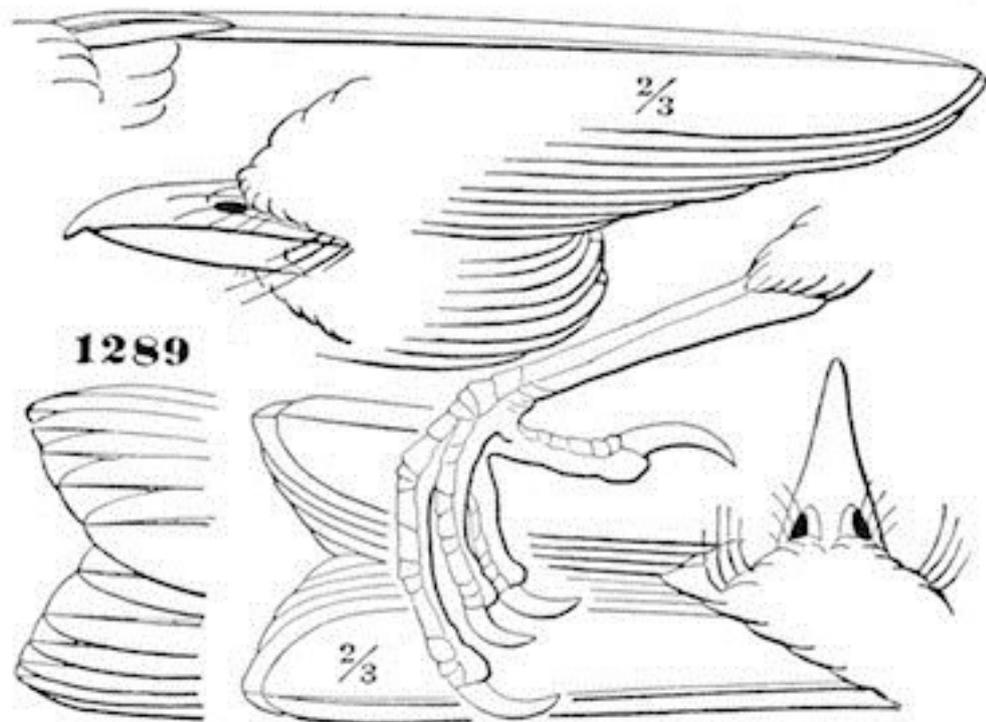
The Wheat-ear is one of the most common birds of Europe, and is found, at different seasons, throughout that continent as well as in a large portion of Western Asia. It breeds throughout the British Islands as well as in the whole of Northern Europe and Asia.

Its food is principally worms and insects, the latter of which it takes upon the wing, in the manner of a fly-catcher. The male bird is said to sing prettily, but not loudly, warbling even when on the wing, and hovering over its nest or over its partner. In confinement its song is continued by night as well as by day.

The Wheat-ear begins to make its nest in April, usually concealing it in some deep recess beneath a huge stone, and often far beyond the reach of the arm. Sometimes it is placed in old walls, and is usually large and rudely constructed, made of dried bents, scraps of shreds, feathers, and rubbish collected about the huts, generally containing four pale blue eggs, uniform in color, and without spots, which measure .81 of an inch in length by .69 in breadth.

Genus SIALIA, Swainson

Sialia, Swainson, Zoöl. Jour. III, Sept. 1827, 173. (Type *Motacilla sialis*, L.)



Sialia sialis.

1289

Gen. Char. Bill short, stout, broader than high at the base, then compressed; slightly notched at tip. Rictus with short bristles. Tarsi not longer than the middle toe. Claws considerably curved. Wings much longer than the tail; the first primary spurious, not one fourth the longest. Tail moderate; slightly forked. Eggs plain blue. Nest in holes.

The species of this genus are all well marked, and adult males are easily distinguishable. In all, blue forms a prominent feature. Three well-marked species are known, with a fourth less distinct. The females are duller in color than the males. The young are spotted and streaked with white.

Synopsis of 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 tails only blue, the head and anterior parts of body with numerous whitish spots.

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*.²⁶

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.

Sialia sialis, Baird

EASTERN BLUEBIBD

Motacilla sialis, Linn. S. N. 1758, 187 (based on Catesby, I, pl. xlvii). *Sialia sialis*, Baird, Birds N. Am. 1858, 222; Rev. 62.—Boardman, Pr. Bost. Soc. 1862, 124 (Calais, Me.; very rare).—Dresser, Ibis, 1865, 465 (Texas, winter).—Samuels, B. N. Eng., 175. *Sialia wilsoni*, Swainson, Zoöl. Jour. III, 1827, 173.—Cab. Jour. 1858, 120.—Gundlach, Cab. Jour. 1861, 324; Repertorio, 1865, 230.—Jones, Nat. Bermuda, 1859, 28, 66 (resident in Bermuda). *Sylvia sialis*, Lath.; *Ampelis sialis*, Nutt.; *Erythraca wilsoni*, Sw.

Figures: Vieillot, Ois. Am. Sept. II, pl. ci, cii, ciii.—Wils. I, pl. iii.—Aud. Orn. Biog. II, pl. cxiii.—Ib. B. A. II, pl. cxxxiv.—Doughty, Cab. I, pl. xii.

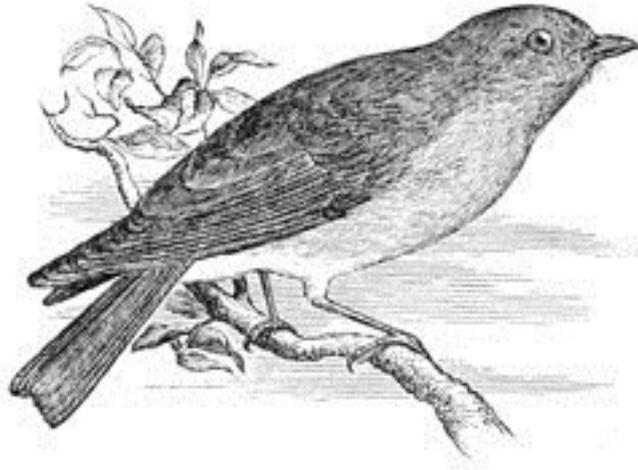
Sp. Char. Entire upper parts, including wings and tail, continuous and uniform azure-blue; the cheeks of a duller tint of the same. Beneath reddish-brown; the abdomen, anal region, and under tail-coverts white. Bill and feet black. Shafts of the quills and tail-feathers black. Female with the blue lighter, and tinged with brown on the head and back. Length, 6.75; wing, 4.00; tail, 2.90.

Young. Males of the year dull brown on head and back; and lesser coverts streaked, except on head, with white. Throat and fore part of breast streaked with white. Tertiaries edged with brown. Rest of coloration somewhat like adult.

Hab. Eastern United States; west to Fort Laramie, Milk River; north to Lake Winnipeg; resident in Bermuda; Cuba (rare), Gundlach.

²⁶ *S. azurea*, Baird, Rev. Am. Birds, 1864, 62. (*S. azurea*, Swainson.)

A specimen from Guatemala (50,411 ♂, Van Patten) referrible to the var. *azurea* is undistinguishable in color from North American examples; the wings and tail are longer, however, measuring respectively 4.20 and 3.00.



Sialia sialis.

Habits. The Bluebird is abundant throughout the eastern portion of North America, breeding in nearly every part, from Georgia and Louisiana to the Arctic regions, with only this exception, that near the seaboard its migrations do not extend so far to the north as in the interior. It is very rarely to be met with beyond the Penobscot, although Professor Verrill mentions it as very common in the western part of Maine. It is found throughout the year in the Bermudas, and occasionally in Cuba. The Selkirk Settlement is the most northern locality to which it has been traced. It is not known to occur farther west than the highlands west of the Mississippi.

Through all the Eastern States the Bluebird is one of the most familiar and welcome of the earliest visitors of spring, usually making its appearance as early as the first of March. In mild seasons they come in the latter part of February, long before there is any apparent relaxation of the severity of winter. In 1857, in consequence of the unusual mildness of the season, Bluebirds appeared in large numbers as early as the 15th of February, and remained apparently without suffering any inconvenience, although the weather subsequently became quite severe. In 1869 their first appearance was observed as early as the 28th of January, the earliest period of which I can find any record.

In the Middle States, with every mild winter's day, the Bluebirds come out from their retreats, and again disappear on the return of severer weather. Later in the season, or early in March, they return and make a permanent stay.

When well treated, as the Bluebirds almost universally are, they return year after year to the same box, coming always in pairs. The marked attentions of the male bird are very striking, and have been noticed by all our writers. He is very jealous of a rival, driving off every intruder of his own species who ventures upon the domain he calls his own. Occasionally the pair suffer great annoyance from vexatious interferences with their domestic arrangements by the house wren, who unceremoniously enters their homestead, despoils it of its carefully selected materials, and departs. At other times the wren will take possession of the premises and barricade the entrance, making the return of its rightful owners impossible.

The song of the Bluebirds is a low warble, soft and agreeable, repeated with great constancy and earnestness, and prolonged until quite late in the season. Just before their departure, late in October, the sprightliness of their song nearly ceases, and only a few plaintive notes are heard instead.

The food of the Bluebird consists principally of the smaller coleopterous insects, also of the larvæ of the smaller lepidoptera. In the early spring they are very busy turning over the dry leaves, examining the trunks and branches of trees, or ransacking posts and fences for the hiding-places of their prey. In the fall their food partakes more of a vegetable character.

The Bluebird selects as a suitable place for its nest a hollow in the decayed trunk of a tree, or boxes prepared for its use. Their early arrival enables them to select their own site. The nest is loosely constructed of soft materials, such as fine grasses, sedges, leaves, hair, feathers, etc. These are rarely so well woven together as to bear removal. The eggs are usually five and sometimes six in number. There are usually three broods in a season. Before the first brood are able to provide for themselves, the female repairs her nest and commences incubation for a second family. The young birds are, however, by no means left to shift for themselves. The male bird now shows himself as devoted a parent as in the earlier spring he had proved himself an attentive mate. He watches over the brood even after the second family appears and claims his attention. We often find him dividing his cares in the latter part of the season with two broods, and at the same time supplying his mate with food, and occasionally taking her place on the nest.

The eggs of the Bluebird are of a uniform pale blue, measuring about .81 of an inch in length by .62 in breadth.

In Guatemala is found a local race differing in its lighter under colors and in the greenish tinting of its blue (*S. azurea*). The *S. sialis* is also found in the more open districts of the elevated regions where it is numerous. It is there known as “*El azulejo*.”

***Sialia mexicana*, Swains**

CALIFORNIA BLUEBIRD

Sialia mexicana, Sw. F. B. Am. II, 1831, 202.—Sclater, P. Z. S. 1856, 293 (Cordova); 1857, 126 (California); 1859, 362 (Xalapa).—Ib. Catal. 1861, 11, No. 66.—Baird, Birds N. Am. 1858, 223; Review, 63.—Cooper & Suckley, P. R. R. XII, II, 1859, 173.—Cooper, Birds Cal. 1, 28. *Sialia occidentalis*, Towns., Aud.; *Sialia cæruleocollis*, Vigors.

Figures: Aud. B. A. II, pl. cxxxv.—Ib. Orn. Biog. V, pl. cccxciii.—Vigors, Zoöl. Beechey's, Voy. 1839, pl. iii.

Sp. Char. Bill slender. Head and neck all round, and upper parts generally bright azure blue. Interscapular regions, sides and fore part of the breast, and sides of the belly, dark reddish-brown. Rest of under parts (with tail-coverts) pale bluish, tinged with gray about the anal region. Female duller above; the back brownish; the blue of the throat replaced by ashy-brown, with a shade of blue. Length, 6.50; wing, 4.25; tail, 2.90.

Young. Tail and wing as in adult; head, neck, back, and breast, dull brown; each feather, except on the crown, streaked centrally with white.

Hab. Western United States, from the Rocky Mountains to Pacific. Not noticed on the Missouri plains, Central British America, or at Cape St. Lucas. Found at Xalapa and Cordova, Mex., Sclater. Popocatepetl (Alpine region), Sumichrast.

As in the others, the colors of this species are much duller in fall and winter. No. 53,319, ♂ (Carson City, Nevada, Feb. 21) differs from others in the following respects: there is hardly any chestnut on the back, there being only just a tinge along each side of the interscapular region; that on the breast is interrupted in the middle, and thrown into a patch on each side of the breast, thus connecting the blue of the throat and abdomen; the blue of the throat is unusually deep.

Habits. This Bluebird belongs to western North America, its proper domain being between the Rocky Mountains and Pacific, from Mexico to Washington Territory. Mr. Nuttall first met with this species among the small rocky prairies of the Columbia. He speaks of its habits as exactly similar to those of the common Bluebird. The male is equally tuneful throughout the breeding-season, and his song is also very similar. Like the common species he is very devoted to his mate, alternately feeding and caressing her and entertaining her with his song. This is a little more varied, tender, and sweet than that of the Eastern species, and differs in its expressions.

Nuttall describes this as an exceedingly shy bird, so much so that he found it very difficult to obtain a sight of it. This he attributes to the great abundance of birds of prey. Afterwards, in the vicinity of the village of Santa Barbara, Mr. Nuttall again saw them in considerable numbers, when they were tame and familiar.

Dr. Cooper states that these Bluebirds seem to prefer the knot-holes of the oaks to the boxes provided for them. He does not confirm Mr. Nuttall's description of its song, which he regards as neither so loud nor so sweet as that of the Eastern species. He describes it as a curious performance, sounding as if two birds were singing at once and in different keys.

Many of this species remain in Washington Territory during the winter, where Dr. Cooper met with them in December. They associated in flocks, frequented roadsides and fences, and fed upon insects and berries.

Dr. Gambel found this species throughout the Rocky Mountains, and always in company with the *Sialia arctica*, being by far the more abundant species.

Dr. Kennerly mentions finding this species very abundant during his march up the Rio Grande. Through the months of November, December, and January they were always to be seen in large flocks near small streams.

The Western Bluebird constructs a nest usually of very loose materials, consisting chiefly of fine dry grasses. These are not woven into an elaborate nest, but are simply used to line the hollows in which the eggs are deposited. Near San Francisco Mr. Hepburn found a pair making use of the nest of the *Hirundo lunifrons*. On another occasion the Bluebirds had not only taken possession of the nest of this swallow, but actually covered up two fresh eggs with a lining of dry grasses, and laid her own above them.

The eggs, usually four in number, are of uniform pale blue of a slightly deeper shade than that of the *S. sialis*. They measure .87 of an inch in length by .69 in breadth.

Dr. Cooper's subsequent observations of this species in California enabled him to add to his account of it in his report on the birds of that State. He found it abundant in all the wooded districts, except high in the mountains, and thinks they reside through the summer even in the hot valley of the Rio Grande, where he found them preparing a nest in February. On the coast they are numerous as far north as the 49th parallel. He found a nest under the porch of a dwelling-house at Santa Barbara, showing that, like our Eastern species, they only need a little encouragement to become half domesticated. They raise two broods in a season, the first being hatched early in April.

At Santa Cruz he found them even more confiding than the Eastern species, building their nests even in the noisiest streets. One brood came every day during the grape season, at about noon, to pick up grape-skins thrown out by his door, and was delightfully tame, sitting fearlessly within a few feet of the open window.

In regard to their song Mr. Ridgway states that he did not hear, even during the pairing season, any note approaching in sweetness, or indeed similar to, the joyous spring warble which justly renders our Eastern Bluebird (*S. sialis*) so universal a favorite.

The two Western species of *Sialia*, though associating during the winter in the region along the eastern base of the Sierra Nevada, are seldom seen together during the breeding-season; the *S. arctica* returning to the higher portions of the thinly wooded desert mountains, while the *S. mexicana*

remains in the lower districts, either among the cottonwoods of the river valleys or among the pines around the foot-hills of the Sierra.

***Sialia arctica*, Swains**

ROCKY MOUNTAIN BLUEBIRD

Erythraca (Sialia) arctica, Swains. F. B. A. II, 1831, 209, pl. xxxix. *Sialia arctica*, Nuttall, Man. II, 1832, 573.—Baird, Birds N. Am. 1858, 224; Rev. 64.—Sclater, Catal. 1861, 11, No. 67.—Dresser, Ibis, 1865, 478. (Texas, winter, very abundant.)—Cooper, Birds Cal. 1, 29. *Sialia macroptera*, Baird, Stansbury's Rept. 1852, 314 (larger race with longer wings).

Sp. Char. Greenish azure-blue above and below, brightest above; the belly and under tail-coverts white; the latter tinged with blue at the ends. Female showing blue only on the rump, wings, and tail; a white ring round the eye; the lores and sometimes a narrow front whitish; elsewhere replaced by brown. Length, 6.25; wing, 4.36; tail, 3.00. (1875.)

Young. Male birds are streaked with white, as in *S. sialis*, on the characteristic ground of the adult.

Hab. Central table-lands of North America, east to mouth of Yellowstone. One individual collected at Fort Franklin, Great Bear Lake. Not common on the Pacific slope; the only specimens received coming from Simiahmoo, Fort Crook, and San Diego. Not recorded as found in Mexico. W. Arizona, Coues.

As already stated, the blue of this species is greener, more smalt-like than in *sialis*. The females are distinguished from those of the other species by the greener blue, entire absence of rufous, and longer wings.

In autumn and winter the blue of the male is much soiled by amber-brown edges to the feathers, this most conspicuous on the breast, where the blue is sometimes almost concealed; the plumage of the female, too, at this season is different from that of spring, the anterior lower parts being soft isabella-color, much less grayish than in spring.

Habits. This Bluebird belongs chiefly to the Central fauna, and occupies a place in the Eastern only by its appearance on its borders. It was first procured by Sir John Richardson, at Fort Franklin, in July, 1825. It is abundant throughout the central table-lands of North America, between the Pacific and the mouth of the Yellowstone, from Great Bear Lake to the lower portions of California. In the latter State it is not common.

Mr. Nuttall met with this species in the early part of June, northwest of Laramie Fork. The female uttered a low complaint when her nest was approached. This was constructed in a hole in a clay cliff. Another was found in the trunk of a decayed cedar. In one of these the young were already hatched. The nest was composed of dried grasses, but in very insignificant quantity. Mr. Nuttall found them much more shy than the common species, and describes them as feeding in very nearly the same manner. He afterwards found a nest of the same species in a cliff of the Sandy River, a branch of the Colorado. Both parents were feeding their brood. The female was very uneasy at his approach, chirping, and at intervals uttering a plaintive cry. He states that the male bird has a more plaintive and monotonous song than that of the common Bluebird, and that it has the same warbling tone and manner. He afterwards observed the same species in the winter, at Fort Vancouver, associating with the Western Bluebird.

Dr. Woodhouse found the Arctic Bluebird quite common in the vicinity of Santa Fé, in New Mexico, where they breed about the houses in boxes put up for them by the inhabitants for the purpose.

Mr. Townsend found this species in the vicinity of the Platte River, near the Black Hills, and also on the banks of the Columbia. They confined themselves to the fences in the neighborhood of settlements, occasionally lighting upon the ground and scratching for minute insects. He describes their song as a delightful warble. Its notes resemble those of the common Bluebird, but are so different as to be easily recognized; they are equally sweet and clear, but have much less power.

Neither Dr. Gambel nor Dr. Heermann found this species in California excepting during the winter, and were of the opinion that none remain there to breed.

Dr. Kennerly observed them at different points among the Rocky Mountains, where they frequented the vicinity of his camp early in the morning, at some times in pairs and at others in flocks of four or five.

Mr. J. K. Lord states that he found this Bluebird very abundant between the Cascades and the Rocky Mountains, where they arrive in June and leave in September. After nesting they assembled in large flocks, and fed on the open plains.

The eggs are of a very light blue, paler than those of the other species. They measure .89 of an inch in length by .66 in breadth.

Mr. Ridgway states that he found the Rocky Mountain Bluebird nesting in Virginia City in June. Its nests were built about the old buildings, and occasionally in the unused excavations about the mines. At Austin he also found it common in July, in similar localities. On the East Humboldt Mountains it was very numerous, especially on the more elevated portions, where it nested among the rocks and, though more rarely, in the deserted excavations of woodpeckers in the stunted piñon and cedar trees. He describes it as generally very shy and difficult to obtain, seldom permitting a very near approach. In its habits it is much less arboreal than either *S. mexicana* or *S. sialis*, always preferring the open mountain portions in the higher ranges of the Great Basin.

In regard to its notes Mr. Ridgway says: "The common note of this species would, from its character, be at once recognized as that of a Bluebird. Its autumnal note, however, lacks entirely the peculiar plaintiveness so characteristic of that of our Eastern species, and is much more feeble, consisting of a simple weak *chirp*. Like the *S. mexicana*, the *S. arctica* was also never heard to give utterance to anything resembling the lovely spring warbling of the *S. sialis*."

Family SYLVIIDÆ.—The Sylvias

Char. Bill much shorter than head, slender, broad, and depressed at the base, distinctly notched and decurved at the tip. Culmen sharp-ridged at base. Frontal feathers reaching to the nostrils, which are oval, with membrane above, and overhung—not concealed—by a few bristles or by a feather. Rictal bristles extending beyond nostrils. Tarsi booted or scutellate. Basal joint of middle toe attached its whole length externally, half-way internally. Primaries ten; spurious primary about half the second, which is shorter than the seventh. Lateral toes equal.

The birds of this family are readily distinguished from the *Paridæ* by the slender bill, notched and decurved at tip; much bristled gape, sharp-ridged culmen, exposed oval nostrils, less adherent toes, etc. They are much smaller than the *Turdidæ* and *Saxicolidæ*, with much more slender, depressed bill, longer rictal bristles, etc. The short outer primary, with the primaries ten in number, distinguish them from the *Sylvicolidæ*.

The following synopsis will serve to characterize the American forms of their respective subfamilies. The species are all among the most diminutive in size with the exception of the Humming-Birds:—

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 ...
Sylviinæ.

Nostrils overhung by bristly feathers. Scutellæ of tarsus not appreciable. Head with a colored central crest ... *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 ... *Polioptilinæ*.

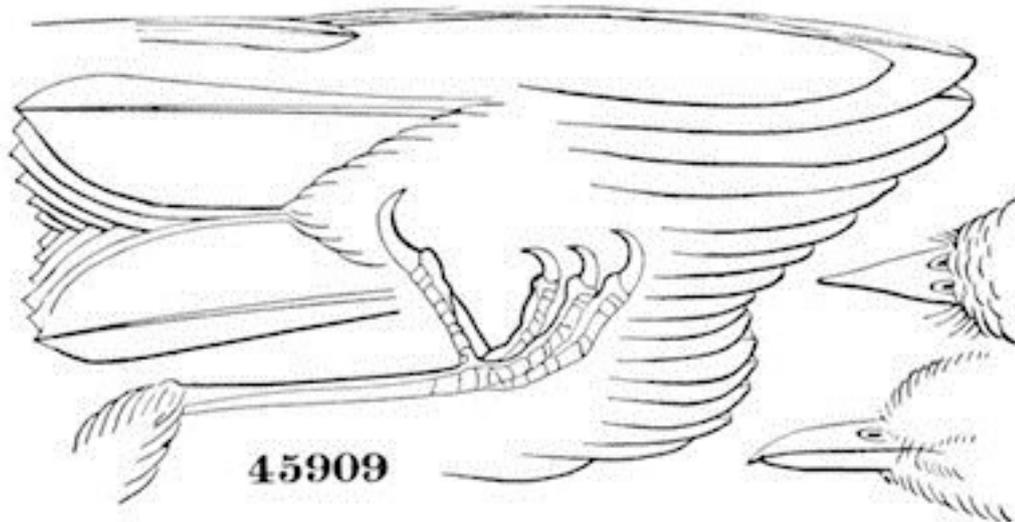
Subfamily SYLVIINÆ

Char. Size and form of *Sylvicolinæ*, but with a spurious first primary about one third the second quill. Wings considerably longer than the nearly even or emarginate tail. Feathers of frontal region with bristly points; but not covering the nostrils. Tarsi scutellate anteriorly, but indistinct externally. (Characters drawn with reference to the American form.)

The introduction of this subfamily into the present work is required to accommodate a species of *Phyllopneuste* collected on the Yukon by the Russian Telegraph Expedition, the first known instance of the existence in North America of a group of birds characteristic of the northern parts of the Old World. Among the smallest of the class, they are eminently sociable, and feed entirely on insects, which they capture mostly on the wing, like flycatchers. The nest is placed on the ground, and is of an oval or spherical form with a round opening on one side. The sexes are similar, and the young differ very little from the parents.

Genus PHYLLOPNEUSTE, Meyer & Wolf

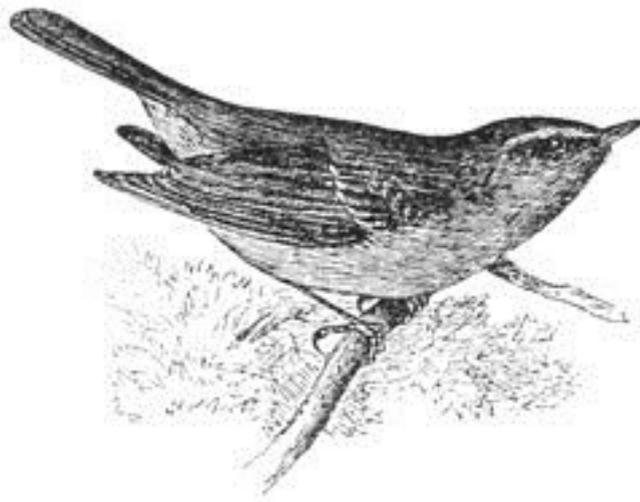
Phyllopneuste, Meyer & Wolf, Taschenbuch, 1822.—Degland et Gerbe, Ornith. Europ. I, 1867, 543.



Phyllopneuste borealis.

45909

Gen. Char. Bill shorter than the head; straight, slender, and depressed, notched at tip. Nostrils open. Tarsi lengthened; exceeding the middle toe; scutellate anteriorly, but with the plates indistinct, claws short, much curved. Wings pointed, longer than tail, and reaching at least to its middle; spurious quill extending farther than the upper covert. Tail emarginate. Olivaceous above; yellowish or whitish beneath.



Phyllopneuste borealis.

For the purpose of distinguishing this genus from any other North American, it is enough to say that, of the general appearance of the warblers, it has a short spurious first primary, as in the Thrushes, and some *Vireonidæ*. The single species found as yet within our limits resembles at first sight an immature *Dendroica aestiva*, but is easily distinguished by the wing formula, the yellowish stripe over the eye, and the brown tail-feathers.

Phyllopneuste borealis, Blas

ALASKA WILLOW WARBLER

Phyllopneuste borealis, Blas. Ibis, 1862, 69. *Phyllopneuste*, Kenn., Baird, Trans. Chicago Acad. Sci. I, ii, p. 313, pl. xxx, fig. 2, 1869.

Sp. Char. (Description of specimen No. 45,909.) Plumage in August: above olive-green, with a slight shade of brown on top of head, rather lighter behind; beneath white, tinged with greenish-yellow; more olive on the throat and breast; and more yellow behind, inside the wing and on thighs; axillars purer yellow. A well-marked greenish-yellow line from nostrils over the eye to the nape (extending behind the eye nearly as far as from eye to tip of bill), beneath this an olivaceous streak through the eye, running into the mixed olive and yellowish of the cheeks. Quills and tail-feathers brown, edged with olivaceous; the outer edges of primaries more yellowish than those of secondaries; the greater coverts tipped externally with greenish-yellow, so as to form a distinct band across the wing. Bill rather dark brown; paler beneath. Legs dark olive; toes not sensibly different. Nest probably on ground, and domed. Eggs white, spotted with pink.

Spurious quill in length about one fourth the second, which about equals the sixth, or very slightly exceeds it; third and fourth longest; fifth a little shorter.

Dimensions (fresh specimen before being skinned): total length, 4.75; expanse of wings, 6.00; wing from carpal joint, 2.50.

Dimensions (prepared specimen): total length, 4.60; wing, 2.40; tail, 2.00. Exposed portion of first primary, 0.42; of second, 1.56; of longest (measured from exposed base of first primary), 1.85. Bill: length from above, 0.38; from nostril, 0.29; along gape, 1.55. Legs: tarsus, 0.66; middle toe and claw, 0.55; claw alone, 0.16; hind toe and claw, 0.36; claw alone, 0.20.

Hab. Northeast Asia (China, East Siberia); adjacent to Behring's Straits and Alaska.

This species, in general appearance, apparently comes nearer to *P. trochilus* than to any other of its congeners. It is, however, more olivaceous-green above, and more yellow beneath, and has a distinct band across the wing. The superciliary light stripe is more distinct and longer; the bill and legs are darker, and the toes not sensibly different in color from the tarsus. The proportion of the quills is much the same, except that the interval between the tips of the fifth and sixth quills is greater, and the second is almost inappreciably longer than the latter, not reaching nearly midway between the two. The first or spurious quill is rather shorter.

A single specimen of this species was obtained August 16, 1866, on St. Michael's Island, in Norton Sound, Alaska, by Mr. Charles Pease. Mr. Bannister met with no other specimen in that locality, and from this it is inferred that this is not an abundant species there. It was described as a new species under the name of *P. kennicottii* (Baird), but has been ascertained by Mr. Tristram, to whom it was sent for examination, (Ibis, 1871, p. 231,) to be identical with *P. borealis* of Blasius.

Dr. Blasius also states (Naumannia, 1858, p. 303) that a specimen of this species has been obtained on the island of Heligoland, showing it to be also an accidental visitant to Western Europe.

Habits. Mr. R. Swinhoe, who describes this among the birds of Formosa as *P. sylvicultrix*, states it to be a summer visitant to Southern China, passing in large numbers through Amoy in its autumnal migrations southeastward, probably to the Philippine Islands, touching at Southwestern Formosa and Twaiwanfoo, where he found them abundant. This was for a few days in October, but he neither saw any before nor afterwards, nor did he meet with any at Tamsuy (Ibis, 1863, p. 307). The same writer (Ibis, 1860, p. 53) speaks of this bird as very abundant in Amoy during the months of April and May, but passing farther north to breed.

We have no information in reference to its habits, and nothing farther in regard to its distribution. As it bears a very close resemblance to the Willow Wren of Europe, *P. trochilus*, it is quite probable that its general habits, nest, and eggs will be found to correspond very closely with those of that bird.

The European warblers of the genus *Phyllopneuste* are all insect-eating birds, capturing their prey while on the wing, and also feeding on their larvæ. They frequent the woodlands during their breeding-season, but at all other times are much more familiar, keeping about dwellings and sheepfolds.

The *P. trochilus* is a resident throughout the entire year in Southern Europe and in Central Asia. That species builds at the foot of a bush on the ground, and constructs a domed nest with the entrance on one side. Their eggs are five in number, have a pinkish-white ground, and are spotted with well-defined blotches of reddish-brown, measuring 0.65 by 0.50 inch, and are of a rounded oval shape.

Subfamily REGULINÆ

Char. Wings longer than the emarginated tail. Tarsi booted, or without scutellar divisions. This subfamily embraces but a single well-defined North American genus.

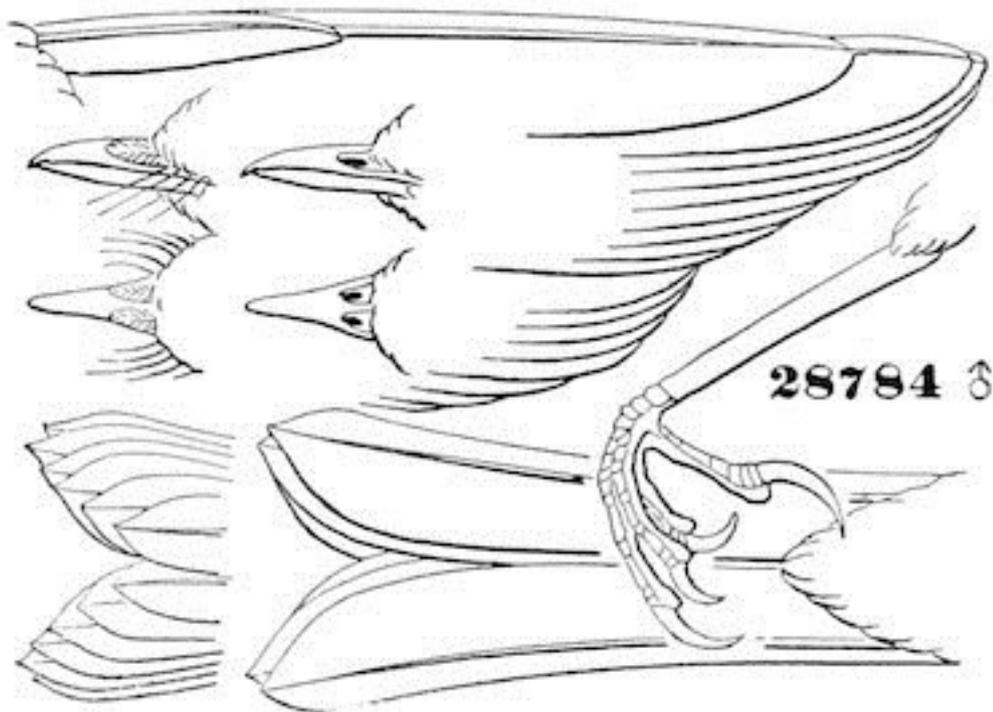
Genus REGULUS, Cuv

Regulus, Cuv. "Leçons d'Anat. Comp. 1799, 1800." (Type *Motacilla regulus*, Linn.)

Reguloides, Blyth. 1847. (Type "*R. proregulus*, Pall." Gray.)

Phyllobasileus, Cab. Mus. Hein. I, 1850, 33. (Type *Motacilla calendula*, Linn.)

—*Corthylio*, Cab. Jour. Orn. I, 1853, 83. (Same type.)



Regulus satrapa.
28784. ♂

Gen. Char. Bill slender, much shorter than the head, depressed at base, but becoming rapidly compressed; moderately notched at tip. Culmen straight to near the tip, then gently curved. Commissure straight; gonys convex. Rictus well provided with bristles; nostril covered by a single bristly feather directed forwards (not distinct in *calendula*). Tarsi elongated, exceeding considerably the middle toe, and without scutellæ. Lateral toes about equal; hind toe with the claw, longer than the middle one by about half the claw. Claws all much curved. First primary about one third as long as the longest; second equal to fifth or sixth. Tail shorter than the wings, moderately forked, the feathers acuminate. Colors olive-green above, whitish beneath. Size very small.

We are unable to appreciate any such difference between the common North American *Reguli* as to warrant Cabanis in establishing a separate genus for the *calendula*. The bristly feather over the nostril is perhaps less compact and close, but it exists in a rudimentary condition.

The following synopsis will serve as diagnoses of the species:—

Head with entire cap in adult plain olivaceous, with a concealed patch of crimson. *Hab.* Whole of North America; south to Guatemala; Greenland ... *calendula*.

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 ... *satrapa*.

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 ... *cuvieri*.

Regulus satrapa, Licht

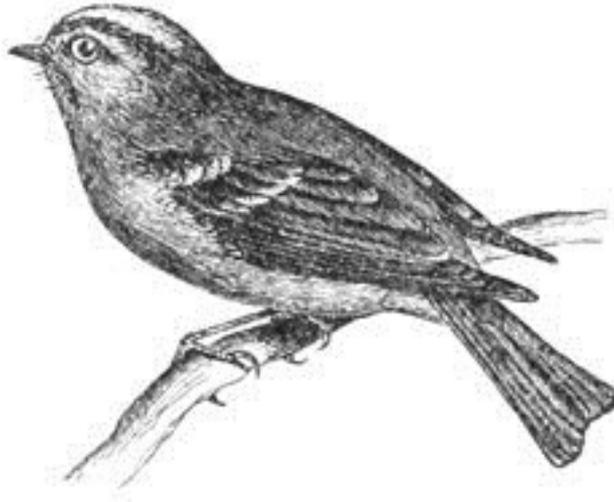
GOLDEN-CROWNED KINGLET

Regulus satrapa, Licht. Verz. 1823, No. 410.—Dall & Bannister (Alaska).—Lord (Vancouver Isl.).—Baird, Birds N. Am. 1859, 227; Review, 65.—Sclater, P. Z. S. 1857, 212 (Orizaba).—Bædeker, Cab. Jour. IV, 33, pl. i, fig. 8 (eggs, from Labrador).—Pr. Max. Cab. Jour. 1858, 111.—Cooper & Suckley, P. R. R. R. XII, II, 1859, 174 (winters in W. Territory).—Lord, R. Art. Inst. Wool. 1864, 114 (nest?).—Dresser, Ibis, 1865, 476 (Texas, winter).—Samuels, 179.—Cooper, Birds Cal. 1, 32. *Sylvia regulus*, Wils.; *Regulus cristatus*, Vieill.; *R. tricolor*, Nutt., Aud.

Figures: Aud. Birds Am. II, pl. cxxxii.—Ib. Orn. Biog. II, pl. clxxxiii.—Vieill. Ois. Am. Sept. II, pl. cvi.

Sp. Char. Above olive-green, brightest on the outer edges of the wing; tail-feathers tinged with brownish-gray towards the head. Forehead, a line over the eye and a space beneath it, white. Exterior of the crown before and laterally black, embracing a central patch of orange-red, encircled by gamboge-yellow. A dusky space around the eye. Wing-coverts with two yellowish-white bands, the posterior covering a similar band on the quills, succeeded by a broad dusky one. Under parts dull whitish. Length under 4 inches; wing, 2.25; tail, 1.80. *Female* without the orange-red central patch. Young birds without the colored crown.

Hab. North America generally. On the west coast, not recorded south of Fort Crook. Orizaba, Sclater; W. Arizona, Coues.



Regulus satrapa.

Specimens of this bird from the far West are much brighter and more olivaceous above; the markings of the face are also somewhat different in showing less dusky about the eye. These may form a variety *olivaceus*.

The *Regulus cristatus* of Europe, a close ally of our bird, is distinguished by having shorter wings and longer bill; the flame-color of the head is more extended, the black border is almost wanting anteriorly. The back and rump, too, are more yellow.

Habits. The Golden-crested Kinglet, or Wren, as it is often called, occurs over nearly the whole of the North American continent. It is abundant from the Atlantic to the Pacific, and throughout the British Provinces, where it chiefly occurs in its breeding-season. In Massachusetts it is a winter resident from October until May. In Maine it is met with in spring and fall, chiefly as a migratory visitor; a few also remain, and probably breed, in the dense *Thuja* swamps of that State. They are most abundant in April, and again in October. In the vicinity of Calais the Golden-crest is a common summer resident, and, without doubt, breeds there.

Dr. Woodhouse mentions finding this species in abundance in New Mexico and Texas, associated with Nuthatches and Titmice. Dr. Cooper found it abundant in Washington Territory, particularly in the winter, and ascertained positively that they breed there, by seeing them feeding their young near Puget Sound, in the month of August. According to Mr. Ridgway it is much less numerous in the Great Basin than the *R. calendula*.

The food of this lively and attractive little bird during the summer months is almost exclusively the smaller winged insects, which it industriously pursues amid the highest tree-tops of the forest. At other seasons its habits are more those of the titmice, necessity leading it to ransack the crevices of the bark on the trunks and larger limbs of the forest-trees. It is an expert fly-catcher, taking insects readily upon the wing.

But little is known with certainty regarding its breeding-habits, and its nest and eggs have not yet been described. The presumption, however, is that it builds a pensile nest, not unlike the European congener, and lays small eggs finely sprinkled with buff-colored dots on a white ground, and in size nearly corresponding with those of our common Humming-Bird. We must infer that it raises two broods in a season, from the fact that it spends so long a period, from April to October, in its summer abode, and still more because while Mr. Nuttall found them feeding their full-fledged young in May, on the Columbia, Dr. Cooper, in the same locality, and Mr. Audubon, in Labrador, observed them doing the same thing in the month of August.

According to the observations of Mr. J. K. Lord, this species is very common on Vancouver's Island and along the entire boundary line separating Washington Territory from British Columbia, where he met with them at an altitude of six thousand feet. He states that they build a pensile nest suspended from the extreme end of a pine branch, and that they lay from five to seven eggs. These he does not describe.

Most writers speak of this Kinglet as having no song, its only note being a single chirp. But in this they are certainly greatly in error. Without having so loud or so powerful a note as the Ruby-crown (*R. calendula*), for its song will admit of no comparison with the wonderful vocal powers of that species, it yet has a quite distinctive and prolonged succession of pleasing notes, which I have heard it pour forth in the midst of the most inclement weather in February almost uninterruptedly, and for quite an interval.

Bischoff obtained a large number of this species at Kodiak, and also at Sitka, where it seemed to replace the Ruby-crown.

Regulus cuvieri, Aud

CUVIER'S KINGLET

Regulus cuvieri, Aud. Orn. Biog. I, 1832, 288, pl. lv, etc.—Baird, Birds N. Am. 1859, 228; Rev. Am. Birds, 66.

Sp. Char. Size and general appearance probably that of *R. satrapa*. A black band on the forehead passing back, through and behind the eye, separated by a grayish band from another black band on the crown, which embraces in the centre of the crown an orange patch. Length, 4.25 inches; extent of wings, 6.

Hab. "Banks of Schuylkill River, Penn. June, 1812." Aud.

This species continues to be unknown, except from the description of Mr. Audubon, as quoted above. It appears to differ mainly from *R. satrapa* in having two black bands (not one) on the crown anteriorly, separated by a whitish one; the extreme forehead being black instead of white, as in *satrapa*. The specimen was killed in June, 1812, on the banks of the Schuylkill River, in Pennsylvania.

Regulus calendula, Licht

RUBY-CROWNED KINGLET

Motacilla calendula, Linn. Syst. Nat. I, 1766, 337. *Regulus calendula*, Licht. Verz. 1823, No. 408.—Baird, Birds N. Am. 1858, 226; Rev. 66.—Sclater, P. Z. S. 1857, 202.—Ib. 1858, 300 (mountains of Oaxaca).—Ib. 1859, 362 (Xalapa).—Ib. 1864, 172 (City of Mex.).—Samuels, 178.—Dall & Bannister (Alaska).—Cooper, Birds Cal. 1, 33.—Ib. Ibis, I, 1859, 8 (Guatemala).—Cooper & Suckley, P. R. R. XII, II, 1859, 174.—Reinhardt, Ibis, 1861, 5 (Greenland).—Dresser, Ibis, 1865, 475 (Texas, winter). *Corthylio calendula*, Cab. Jour. Orn. I, 1853, 83 (type of genus). *Regulus rubineus*, Vieill. Ois. Am. Sept. II, 1807, 49, pl. civ, cv.

Other figures: Wils. Am. Orn. I, 1808, pl. v, fig. 3.—Doughty, Cab. II, pl. vi. —Aud. Orn. Biog. II, pl. cxv.—Ib. Birds Am. II, pl. cxxxiii.

Sp. Char. Above dark greenish-olive, passing into bright olive-green on the rump and outer edges of the wings and tail. The under parts are grayish-white tinged with pale olive-yellow, especially behind. A ring round the eye, two bands on the wing-coverts, and the exterior of the inner tertials white. *Male*. Crown with a large concealed patch of scarlet feathers, which are white at the base. Female and young without the red on the crown. Length, 4.50; wing, 2.33; tail, 1.85.

Hab. Greenland; whole of North America, and south to Guatemala. Oaxaca (high region, November), Sclater. Xalapa and Guatemala, Sclater.

This species of *Regulus* appears to lack the small feather which, in *satrapa*, overlies and conceals the nostrils, which was probably the reason with Cabanis and Blyth for placing it in a different genus. There is no other very apparent difference of form, however, although this furnishes a good character for distinguishing between young specimens of the two species.

Habits. Much yet remains to be learned as to the general habits, the nesting, and distribution during the breeding-season of the Ruby-crowned Kinglet. It is found, at varying periods, in all parts of North America, from Mexico to the shores of the Arctic seas, and from the Atlantic to the Pacific; and, although its breeding-places are not known, its occurrence in the more northern latitudes, from Maine to the extreme portions of the continent, during the season of reproduction, indicate pretty certainly its extended distribution throughout all the forests from the 44th parallel northward. None of our American ornithologists are known to have met with either its eggs or its nest, but we may reasonably infer that its nest is pensile, like that of its European kindred, and from being suspended from the higher branches, from its peculiar structure and position has thus far escaped observation.

In the New England States they are most abundant in the months of October and April. A few probably remain in the thick evergreen woods throughout the winter, and in the northern parts of Maine they are occasionally found in the summer, and, without doubt, breed there. In the damp swampy woods of the islands in the Bay of Fundy, the writer heard their remarkable song resounding in all directions throughout the month of June.

The song of this bird is by far the most remarkable of its specific peculiarities. Its notes are clear, resonant, and high, and constitute a prolonged series, varying from the lowest tones to the highest, terminating with the latter. It may be heard at quite a distance, and in some respects bears more resemblance to the song of the English Skylark than to that of the Canary, to which Mr. Audubon compares it.

Their food appears to be chiefly the smaller insects, in pursuit of which they are very active, and at times appear to be so absorbed in their avocation as to be unmindful of the near presence of the sportsman or collector, and unwarned by the sound of the deadly gun. They are also said by Wilson to feed upon the stamens of the blossoms of the maple, the apple, peach, and other trees. Like the other species, they are expert insect-takers, catching them readily on the wing. They are chiefly to be met with in the spring among the tree-tops, where the insects they prefer abound among the expanding buds. In the fall of the year, on their return, they are more commonly met with among lower branches, and among bushes near the ground.

Although presumed to be chiefly resident, during the summer months, of high northern regions, Wilson met with specimens in Pennsylvania during the breeding-season; and it is quite probable that they may occur, here and there, among the high valleys in the midst of mountain ranges, in different parts of the country.

In the winter it is most abundant in the Gulf States, and especially in that of Louisiana. Dr. Woodhouse found it quite abundant throughout Texas, New Mexico, and the Indian Territory. Dr. Cooper found it in Washington Territory, but did not there meet with it in summer. Dr. Suckley, however, regarded it as a transient visitor, rather than a winter resident of that region, and far more abundant from about the 8th of April to the 20th of May, when it seemed to be migrating, than at any other time.

Dr. Kennerly found these birds in abundance near Espia, Mexico, and afterwards, during January, among the Aztec Mountains, and again, in February, along the Bill Williams Fork. He describes them as lively, active, and busy in the pursuit of their insect food. They seem to be equally abundant at this season in California, Arizona, and Colorado.

Mr. Ridgway found them common in June and July among the coniferous woods high upon the Wahsatch Mountains in Utah, and has no doubt that they breed there.

Mr. Dall found this species abundant at Nulato, Alaska, in the spring of 1868, preferring the thickets and alder-bushes away from the river-bank. They appeared very courageous. A pair that seemed about to commence building a nest in a small clump of bushes tore to pieces one half finished, belonging to a pair of *Scolecophagus ferrugineus*, and, on the blackbirds' return, attacked the female and drove her away. This was early in June, and Mr. Dall was compelled to leave without being able to witness the sequel of the contest.

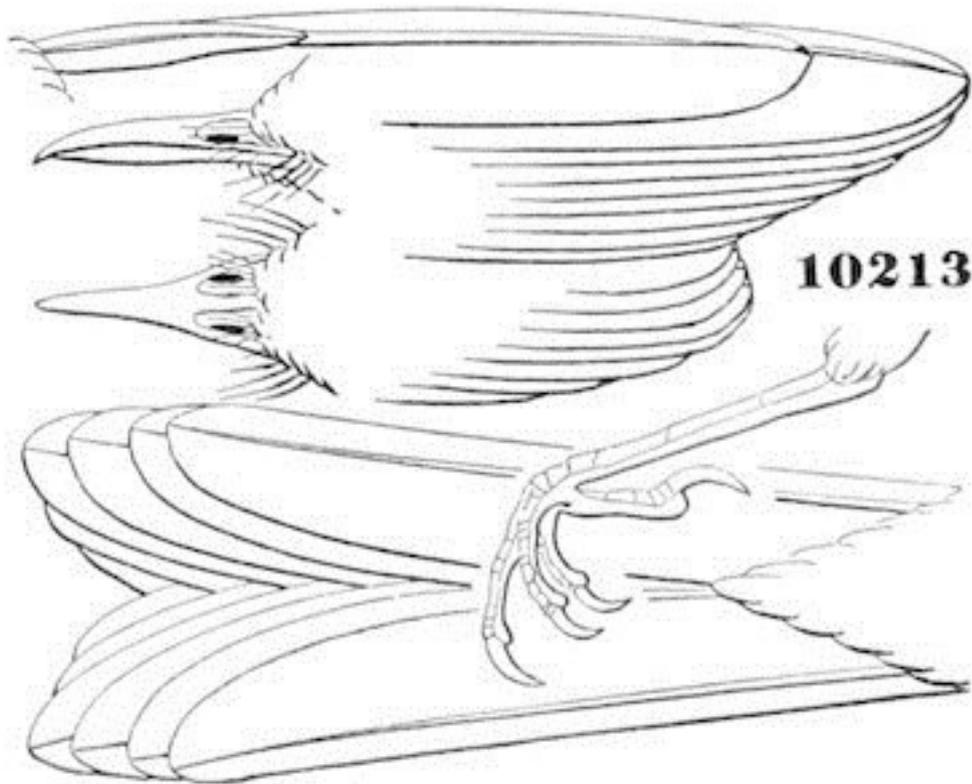
A straggling specimen of this bird was taken in 1860 at Nenortatik, in Greenland, and sent in the flesh to Copenhagen.

Subfamily POLIOPTILINÆ

The characters of this subfamily will be found on [page 69](#).

Genus POLIOPTILA, Sclat

Polioptila, Sclater, Pr. Zoöl. Soc. 1855, 11. (Type, *Motacilla cærulea*.)



Polioptila cærulea.

10213

Char. Bill slender, attenuated, but depressed at the base; nearly as long as the head, distinctly notched at the tip, and provided with moderate rictal bristles. Nostrils rather elongated, not concealed, but anterior to the frontal feathers. Tarsi longer than the middle toe, distinctly scutellate; the toes small; the hinder one scarcely longer than the lateral; its claw scarcely longer than the middle. Outer lateral toe longer than the inner. First primary about one third the longest; second equal to the seventh. Tail a little longer than the wings, moderately graduated; the feathers rounded. Nest felted and covered with moss or lichens. Eggs greenish-white, spotted with purplish-brown.

The species all lead-color above; white beneath, and to a greater or less extent on the exterior of the tail, the rest of which is black. Very diminutive in size (but little over four inches long).

Synopsis of Species

Top of head plumbeous

Two outer tail-feathers entirely white. A narrow frontal line, extending back over the eye, black. *Hab.* North America ... *P. caerulea*.

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. *Hab.* Arizona ... *P. plumbea*.

Top of head black

Edge only of outer web of outer tail-feather white. Entire top of head from the bill black. *Hab.* Rio Grande and Gila ... *P. melanura*.

Species occur over the whole of America. One, *P. lembeyi*, is peculiar to Cuba, and a close ally of *P. caerulea*.

Polioptila caerulea, Sclat

BLUE-GRAY GNATCATCHER; EASTERN GNATCATCHER

Motacilla caerulea, Linn. Syst. Nat. I, 1766, 337 (based on *Motacilla parva caerulea*, Edw. tab. 302). *Culicivora caerulea*, Cab. Jour. 1855, 471 (Cuba).—Gundlach, Repert. 1865, 231. *Polioptila caerulea*, Sclater, P. Z. S. 1855, 11.—Baird, Birds N. Am. 1858, 380.—Ib. Rev. 74.—Dresser, Ibis, 1865, 231.—Cooper, Birds Cal. 1, 35. *Motacilla cana*, Gm. S. N. I, 1788, 973. ? *Culicivora mexicana*, Bon. Consp. 1850, 316 (not of Cassin), female. *Polioptila mexicana*, Sclater, P. Z. S. 1859, 363, 373.

Figures: Vieill. Ois. II, pl. lxxxviii.—Wilson, Am. Orn. II, pl. xviii, fig. 3.—Aud. Orn. Biog. I, pl. lxxxiv; Ib. Birds Am. I, pl. lxx.

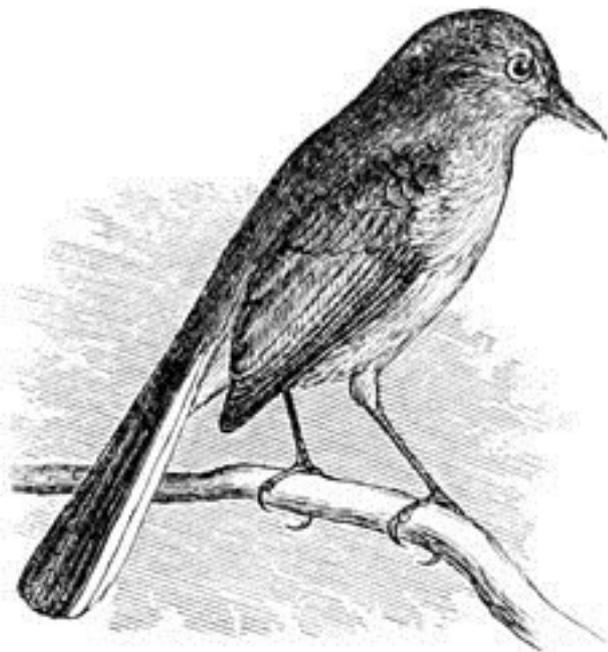
Sp. Char. Above grayish-blue, gradually becoming bright blue on the crown. A narrow frontal band of black extending backwards over the eye. Under parts and lores bluish-white tinged with lead-color on the sides. First and second tail-feathers white except at the extreme base, which is black, the color extending obliquely forward on the inner web; third and fourth black, with white tip, very slight on the latter; fifth and sixth entirely black. Upper tail-coverts blackish-plumbeous. Quills edged

externally with pale bluish-gray, which is much broader and nearly white on the tertials. Female without any black on the head. Length, 4.30; wing, 2.15; tail, 2.25. (Skin.)

Hab. Middle region of United States, from Atlantic to Pacific, and south to Guatemala; Cape St. Lucas. Cuba, Gundlach and Bryant. Bahamas, Bryant.

Habits. The Blue-gray Flycatcher is a common species from the Atlantic to the Pacific coast, although not met with in the New England States. It is less abundant on the coast than at a distance from it, and has a more northern range in the interior, being met with in Northern Ohio, Michigan, and the British Provinces. Specimens occur in the Smithsonian Institution collection from New York to Mexico and Guatemala, and from Washington Territory to California.

They appear in Pennsylvania early in May, and remain there until the last of September. They are observed in Florida and Georgia early in March, but are not known to winter in that latitude. All the specimens in the Smithsonian collection were obtained between April and October, except one from Southern California, which was taken in December.



Poliophtila cærulea.

Near Washington, Dr. Coues states the Blue-gray Gnatcatcher to be a summer resident, arriving during the first week of April, and remaining until the latter part of September, during which time they are very abundant. They are said to breed in high open woods, and, on their first arrival, to frequent tall trees on the sides of streams and in orchards.

In California and Arizona this species occurs, but is, to some extent, replaced by a smaller species, peculiarly western, *P. melanura*. There they seem to keep more about low bushes, hunting minute insects in small companies or in pairs, and their habits are hardly distinguishable from those of Warblers in most respects.

The food of this species is chiefly small winged insects and their larvæ. It is an expert insect-catcher, taking its prey on the wing with great celerity. All its movements are very rapid, the bird seeming to be constantly in motion as if ever in quest of insects, moving from one part of the tree to the other, but generally preferring the upper branches.

Nuttall and Audubon, copying Wilson, speak of the nest of this Gnatcatcher as a very frail receptacle for its eggs, and as hardly strong enough to bear the weight of the parent bird. This,

however, all my observations attest to be not the fact. The nest is, on the contrary, very elaborately and carefully constructed; large for the size of the bird, remarkably deep, and with thick, warm walls composed of soft and downy materials, but abundantly strong for its builder, who is one of our smallest birds both in size and in weight. Like the nests of the Wood Pewee and the Humming-Bird, they are models of architectural beauty and ingenious design. With walls made of a soft felted material, they are deep and purse-like. They are not pensile, but are woven to small upright twigs, usually near the tree-top, and sway with each breeze, but the depth of the cavity and its small diameter prevent the eggs from rolling out. Externally the nest is covered with a beautiful periphery of gray lichens, assimilating it to the bark of the deciduous trees in which it is constructed.

Occasionally these nests have been found at the height of ten feet from the ground, but they are more frequently built at a much greater elevation, even to the height of fifty feet or more. They are made in the shape of a truncated cone, three inches in diameter at the base and but two at the top, and three and a half inches in height. The diameter of the opening is an inch and a half. In Northern Georgia they nest about the middle of May, and are so abundant that the late Dr. Gerhardt would often find not less than five in a single day, and very rarely were any of them less than sixty feet from the ground. Dr. Gerhardt, who was an accurate and careful observer, speaks of these as the best built nests he had met with in this country, both in regard to strength and its ingeniously contrived aperture, so narrowed at the top that it is impossible for the eggs to roll out even in the severest wind. They have two broods in the season in the Southern States, one in April and again in July.

This Flycatcher lays usually five eggs. These are of a short oval form, somewhat pointed at one end and rounded at the other, and measure .56 of an inch in length by .44 in breadth. Their ground-color is a greenish-white, marked and dotted with small blotches and spots of varying and blending shades of reddish-brown, lilac, and slate.

Polioptila plumbea, Baird

LEAD-COLORED GNATCATCHER; ARIZONA GNATCATCHER

Polioptila plumbea, Baird, Pr. A. N. Sc. VII, June, 1854, 118.—Ib. Birds N. Am. 1858, 382, pl. xxxiii, fig. 1; Review, 74.—Cooper, Birds Cal. 1, 37.

Sp. Char. Above bluish-gray; the forehead uniform with the crown. Eyelids white. A pale grayish-white line over the eye, above which is another of black, much concealed by the feathers, and which does not reach to the bill. Lower parts dull white, tinged with bluish on the sides and with brownish behind. Tail-feathers black; the first and second edged and tipped with white, involving the entire outer web of the first, and most of that of the second; the third with only a very faint edging of the same. Female duller, without the black superciliary line. Length, 4.40; wing, 1.80; tail, 2.30 (7,189).

Hab. Arizona.

This species differs from *P. caerulea*, in having the ash above less bluish, especially on the forehead; the black superciliary streak is only a horizontal bar, not reaching the bill, whereas in *caerulea* it not only reaches the bill, but also extends across the forehead; the light superciliary stripe is more distinct. The tail is entirely different, the lateral feathers being almost entirely black, instead of the reverse.

From immature specimens of *P. melanura* it may be distinguished by larger size and purer white lower parts, and greater amount of white on outer webs of lateral tail-feathers.

Habits. But little is known in regard to the distribution or history of this species. It appears to be peculiar to Arizona and Mexico. There is no good reason to suppose that it differs materially in

any of its habits from the other species of this genus. Dr. Cooper, who observed this species at Fort Mojave, states that it is a winter resident of that region in small numbers; and, so far as he observed, is undistinguishable either in habit or general appearance from either of the other species which at that season are also found there. Its cry of alarm resembles that of the common wren.

Polioptila melanura, Lawr

BLACK-CAPPED GNATCATCHER

Culicivora atricapilla, Lawrence, Ann. N. Y. Lyc. V, Sept. 1851, 124 (not of Swainson). *Culicivora mexicana*, Cassin, Illust. I, 1854, 164, pl. xxvii (not of Bon.). *Polioptila melanura*, Lawrence, Ann. N. Y. Lyc. VI, Dec. 1856, 168.—Baird, Birds N. Am. 1858, 382; Review, 68.—Heermann, P. R. R. vol. X (Williamson), 1859, 39.—Cooper, Birds Cal. 1, 37.

Sp. Char. Above plumbeous-blue. Whole crown, to bill and eyes, with tail, lustrous blue-black. Beneath pale bluish-gray, almost white on chin and anal region; the flanks and crissum tinged with brown. Edge of eyelids, and margin and tip of outer web of first and second lateral tail-feathers, white. Female and young without the black of the crown. Length, 4.15; wing, 1.85; tail, 2.10.

Hab. San Diego to Fort Yuma and Cape St. Lucas. Arizona, Coues.

Specimens of this species from Cape St. Lucas differ from those of San Diego described in the P. R. R. Report (7,191) in having the whole of the outer web of the outer tail-feather white, and in a rather larger white tip. The colors beneath are a little less ashy, though not of a pure white. The ash of the back is rather lighter and purer. The lores are rather lighter. The first primary is a little larger and broader.

It is possible that the restriction of the white of the outer web of the exterior tail-feather to the outer half only is an unusual circumstance, as both Mr. Cassin and Mr. Lawrence, in their descriptions, speak of the entire outer web being white,—the second feather being of the former character. Under these circumstances there will be little specific difference between the tails of *P. melanura* and *plumbea*. The female birds will then be separated by the light superciliary line and much shorter tarsi of *P. plumbea*,—the latter measuring .63 instead of nearly .70 of an inch.

Habits. This species was first noticed as belonging to the North American fauna by Captain McCown, who obtained it near Ringgold Barracks in 1850. It has since been noticed at Fort Yuma and at San Diego, and obtained in greater abundance at Cape St. Lucas. It is also found in Mexico. Dr. Cooper says that it is common all winter both at San Diego and at Fort Mohave. It has been traced as far north as latitude 30° in the Sierra Nevada. Its song he describes as a harsh ditty of five parts, something like a wren's song, with notes like those of a swallow, and also closely resembling the song of *Vireo belli*. Their scolding note is a faint mew, like that of a cat.

The habits of this species appear to be not unlike those of the peculiar family to which it belongs. All its members are among our smallest birds, are almost exclusively inhabitants of woods, and resemble the *Reguli* in their restless activity in pursuit of the smallest insects on which they feed. This bird is described as particularly active, quick in its movements, searching with great activity for its food, and preferring low trees and bushes. At times it will dart about in the air in pursuit of small insects.

Mr. John Xantus found these birds to be quite abundant at Cape St. Lucas, and obtained several of their nests. They were generally built among the interlacing tendrils of a wild vine (*Antigonon leptopus*), and so closely interwoven with the smaller branches as to be inseparable. The nests, like those of all this family, are structures of great beauty and delicacy. They have a height and an external

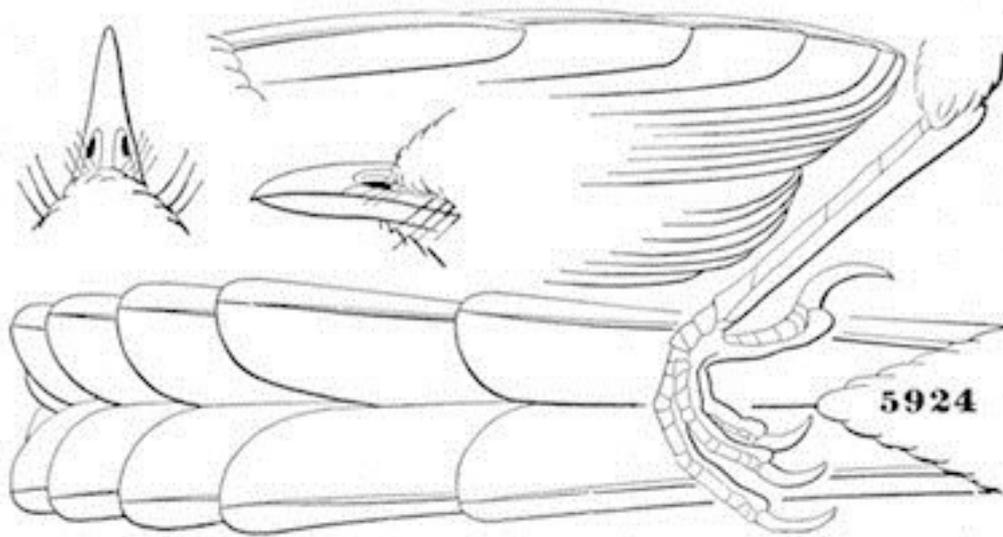
diameter of about $2\frac{1}{4}$ inches. The cavity is $1\frac{1}{2}$ inches wide at the rim, and fully two inches deep. This great proportionate depth of the nest seems to be characteristic of this genus. The external portion of this nest is composed of a composite blending of various vegetable materials, fine hempen fibres of plants, strips of delicate bark from smaller shrubs, silken fragments of cocoons and downy cotton-like substance, all very closely impacted and felted together, somewhat after the manner of the Humming-Bird. The whole is very softly and warmly lined with a beautifully interwoven and silky fabric composed of the soft down of various plants.

The walls of the nest, though of the softest materials, are so thick and so firmly impacted as to make it a structure remarkably firm and secure against accidents.

The eggs, four in number, measure .55 of an inch in length by .45 in breadth. They are of an oblong-oval shape, their ground-color is a pale greenish-white sprinkled over the entire surface with fine dottings of purple, reddish-brown, and black.

Family CHAMÆADÆ.—The Ground-Tits

Char. Bill compressed, short, rather conical, not notched nor decurved. Culmen sharp-ridged. Nostrils linear, with an incumbent scale. Rictal bristles reaching beyond nostrils, which are scantily overhung by bristly feathers. Loral feathers bristly and directed forwards. Tarsi booted, or covered with a continuous plate anteriorly, with faint indications of scutellæ on the inner side. Basal joint of middle toe attached for about half its length on either side. Primaries ten; sixth quill longest. Plumage very lax.



Chamæa fasciata.

5924

We have found it impossible to assign the genus *Chamæa* to any recognized family of American birds, and have accordingly been obliged to give it independent rank in this respect, although it may properly belong to some Old World group with which we are not acquainted. In its general appearance it approaches the *Paridæ* in loose plumage, bristly lores, want of notch to bill, etc.; but differs in the very much bristled rictus, sharp-ridged culmen, linear nostrils, booted tarsi, less amount of adhesion of the toes, etc. It approaches the *Sylviidæ* in the sharp-ridged culmen and bristly gape, but is otherwise very different. The excessively rounded wing is a peculiar feature, the sixth primary being the longest.



Chamæa fasciata.

The family may, perhaps, be best placed between the *Sylviidæ* and *Paridæ*.

This family has but one representative (*Chamæa fasciata*), and this confined to the coast region of California. The characters of the genus are those of the family.

Genus CHAMÆA, Gambel

Chamæa, Gambel, Pr. A. N. Sc. Phil. III, 1847, 154. (Type, *Parus fasciatus*.)

But one species of this genus has as yet been described.

***Chamæa fasciata*, Gamb**

GROUND-TIT; WREN-TIT

Parus fasciatus, Gambel, Pr. A. N. Sc. Aug. 1845, 265 (California). *Chamæa fasciata*, Gambel, Pr. A. N. Sc. III, 1847, 154.—Ib. J. A. N. Sc. 2d series, I, 1847, 34, pl. viii, fig. 3.—Cabanis, Wiegmann's Archiv, 1848, I, 102.—Cassin, Illust. I, 1853, 39, pl. vii.—Baird, Birds N. Am. 1858, 370.—Ib. Review, 76.—Cooper, Birds Cal. 1, 39.

Sp. Char. Wings scarcely two thirds the length of the tail; both very much graduated. Upper and outer parts generally (including the whole tail) olivaceous-brown, tinged with gray on the head; beneath pale brownish-cinnamon, with obsolete streaks of dusky on the throat and breast. Sides and under tail-coverts tinged with olive-brown. Lores and a spot above the eye obscurely whitish. Tail-feathers with obsolete transverse bars. Total length, 6.20; wing, 2.30; tail, 3.50, graduation, 1.20; exposed portion of first primary, .85, of second, 1.30, of longest, sixth (measured from exposed base of first primary), 1.80; length of bill from forehead, .52, from nostril, .30; along gape, .60; tarsus,

1.05; middle toe and claw, .78; claw alone, .23; hind toe and claw, .55; claw alone, .30. Eggs light blue, unspotted; nest on low bushes.

Hab. Coast region of California.

Habits. This very interesting species, which seems to combine within itself the principal characteristics of the Wren and the Titmouse, was first described by the late Dr. Gambel of Philadelphia. So far as is now known, it is confined to the coast country of California, from Fort Tejon to the shore and from San Diego to the Sacramento. Dr. Gambel's attention was first directed to it by the continued sound of a loud, crepitant, grating scold which he was constantly hearing in fields of dead mustard-stalks and other similar places. He at last discovered it to be this species, which from its peculiar habits he called a Wren-tit. It kept close to the ground, was difficult to be seen, and eluded pursuit by diving into the thickest bunches of weeds, uttering, when approached, its peculiar grating wren-like notes. When quietly watched it could be seen to search for insects, climbing twigs and dry stalks sideways, jerking its long tail, or holding it erect in the manner of a wren, which, in this position, it very much resembles. He describes it as at times uttering a slow, monotonous singing note like a chick-a-dee, represented by *pee-pee-pee-peep*. At other times its song is a varied succession of whistling. In spring it was heard, in pairs, calling and answering, in a less solemn strain, and in a manner not unlike a sparrow, with a brief *pit-pit-pit*, ending with a prolonged trill. If disturbed, they at once resumed their usual scolding cries.

Mr. Bell found this species chiefly frequenting damp places, and speaks of it as of pert habit, and not easily frightened. Its white iris, when observed in its native retreats, makes it easily recognized. This feature is as conspicuous in this bird as it is in the White-eyed Vireo. Its skin is remarkably strong, the muscles of the thighs powerful and well developed, and its whole muscular system exhibits an unusual strength and firmness.

Dr. Cooper's observations in regard to this bird are a little different in some respects. He found it common everywhere west of the Sierra Nevada on dry plains and hillsides, among the shrubby undergrowth, but not in the forests. Instead of preferring damp places, he found it living where there is no water, except occasional fogs, for six or eight months at a time. Their movements can be observed by patient watching and keeping perfectly quiet, when they seem attracted by curiosity to such a degree as to approach one within a few feet, and fearlessly hop round him as if fascinated.

Dr. Cooper found their nests near San Diego built about three feet from the ground in low shrubs. They were composed of straw and twigs mixed with feathers and firmly interwoven. The cavity, about two inches wide and an inch and three fourths deep, is lined with grass and hair. The eggs, three or four in number, are of a pale greenish-blue, and measure .70 by .52 of an inch.

Family PARIDÆ.—The Titmice

Char. Bill generally short, conical, not notched nor decurved at tip. Culmen broad and rounded, not sharp-ridged at base. Nostrils rounded, basal, and concealed by dense bristles or bristly feathers. Loral feathers rough and bristly, directed forwards. Tarsi distinctly scutellate; basal joints of anterior toes abbreviated, that of middle toe united about equally for three fourths its length to the lateral: in *Parinæ* forming a kind of palm for grasping; outer lateral toe decidedly longer than the inner. Primaries ten, the first much shorter than the second. Tail-feathers with soft tips. Nest in holes of trees; eggs white, spotted with reddish.

With Cabanis we include the Nuthatches in the same family with the Titmice, and have prepared the above diagnosis to embrace both groups. They agree in having a conical bill, not notched nor decurved, with much rounded culmen, and nearly straight commissure, and rounded nostrils covered with dense bristles. These characters will readily distinguish them, in connection with the ten primaries, and tarsi with scutellæ on the anterior half only (as compared with *Alaudidæ*), from any other American *Oscines*.

The two subfamilies may be thus distinguished:—

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.

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.

Subfamily PARINÆ

The characters of the subfamily will be found sufficiently detailed above. The genera are as follows:—

Bill with curved outlines

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

Body full and large. Tail about equal to wings ... *Lophophanes*.

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

Body full. Tail about equal to wings; rounded ... *Parus*.

Body slender. Tail much longer than wings; much graduated ... *Psaltriparus*.

Bill with outlines nearly straight

Head with compact feathers. Wings pointed.

Body slender. Tail rather shorter than the wings; nearly even ... *Auriparus*.

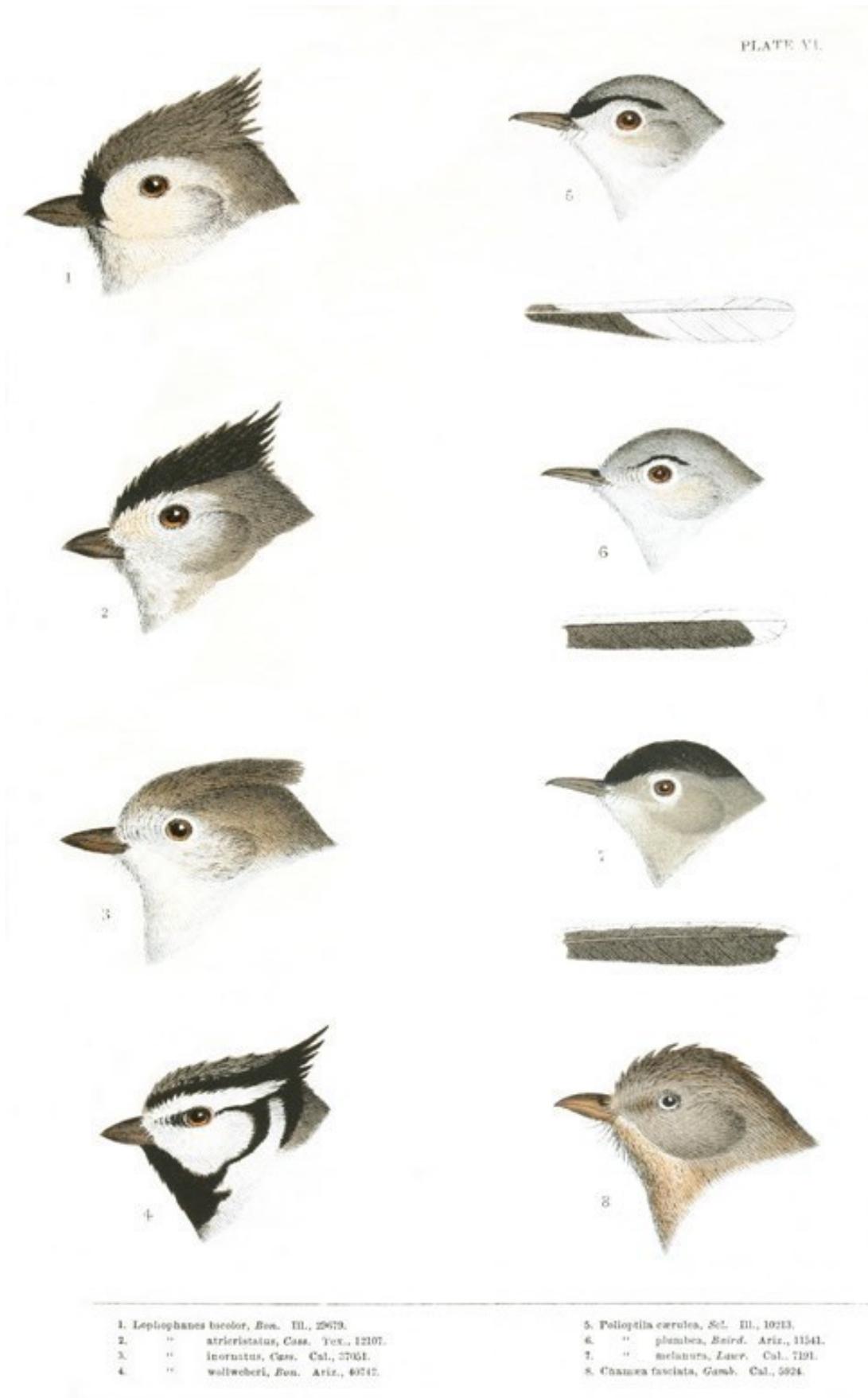


PLATE VI.



1. *Lophophanes bicolor*, *Bon. Ill.*, 29679.



2. *Lophophanes atricristatus*, Cass. Tex., 12107.



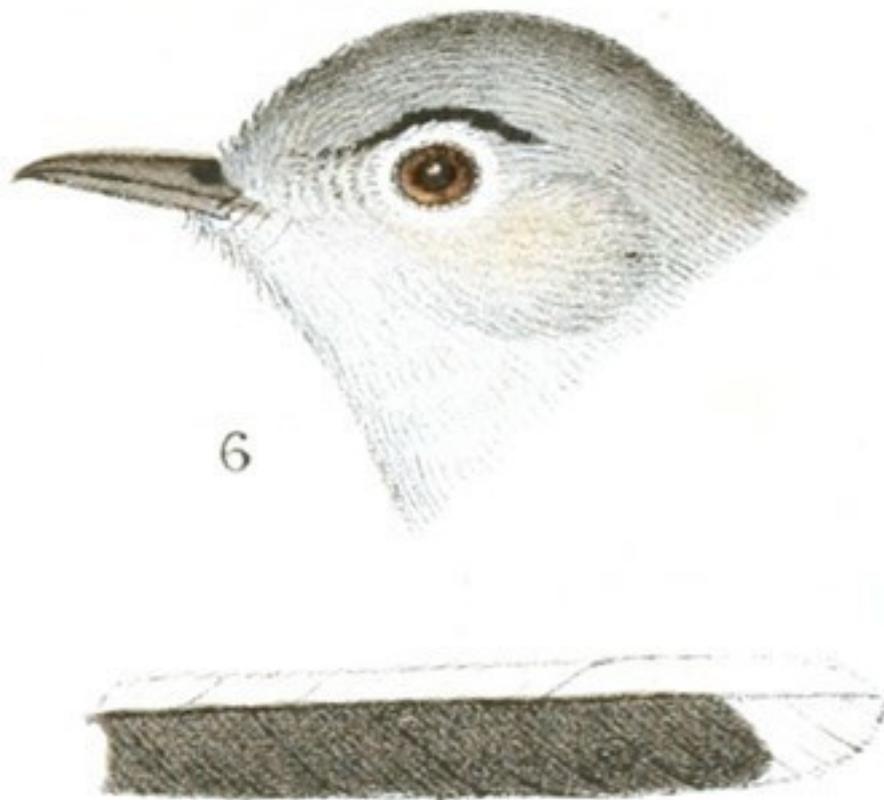
3. *Lophophanes inornatus*, Cass. Cal., 37051.



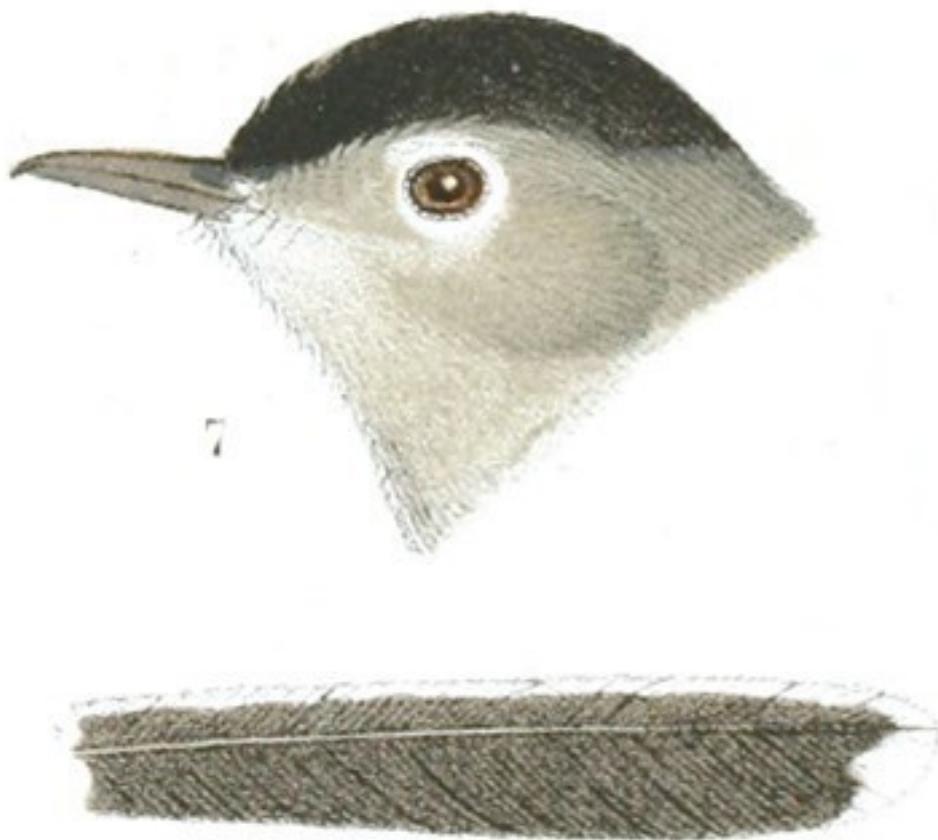
4. *Lophophanes wollweberi*, Bon. Ariz., 40742.



5. *Polioptila caerulea*, *Sci. Ill.*, 10213.



6. *Polioptila plumbea*, Baird. Ariz., 11541.



7. *Polioptila melanura*, *Lawr. Cal.*, 7191.



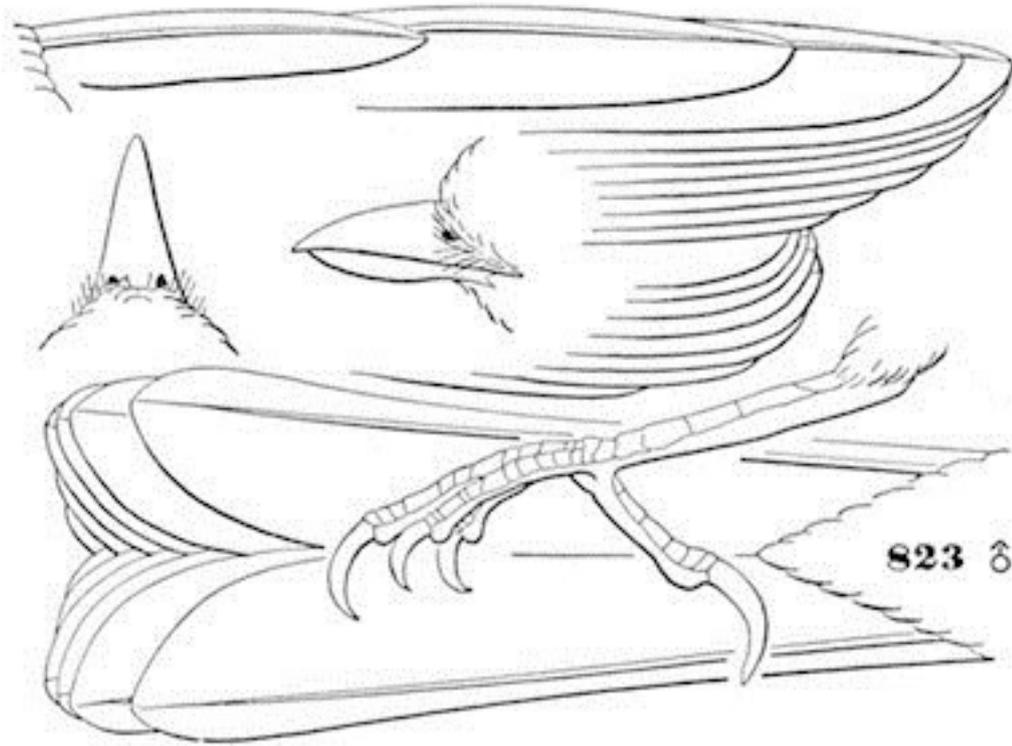
8. *Chamæa fasciata*, *Gamb. Cal.*, 5924.

Genus LOPHOFHANES, Kaup

Lophophanes, Kaup, *Entw. Gesch. Europ. Thierwelt*, 1829. (Type, *Parus cristatus*.)

Bæolophus, Cabanis, *Mus. Hein.* 1850, 1851, 91. (Type, *Parus bicolor*, L.)

Gen. Char. Crown with a conspicuous crest. Bill conical; both upper and lower outlines convex. Wings graduated; first quill very short. Tail moderately long and rounded. Nests in hollow trees; eggs white with fine red dottings.



Lophophanes bicolor.
823 ♂

Of this genus there are several North American species, all agreeing in general characters. One of these, the *L. wollweberi*, is given by Cabanis as typical, while he separates the *L. bicolor* generically under the name of *Bæolophus*, as having a rather different form of crest, stouter bill and feet, and longer wings. All of our species, however, vary in these characters, each one showing a different combination, so that we prefer to consider all as belonging to the same genus with *P. cristatus*.

The species, all of which have the under parts uniform whitish, may be arranged as follows:—

L. bicolor. Above plumbeous; forehead black; crown much like the back. *Hab.* Eastern Province United States.

L. atricristatus. Above plumbeous; forehead whitish; crown black. *Hab.* East Mexico, north to Rio Grande.

L. inornatus. Above olivaceous; forehead and crown like the back. *Hab.* South of Middle and Western Provinces of United States.

L. wollweberi. Sides of head banded black and white; crown ash; throat black. *Hab.* S. Rocky Mountains of United States; Mexico to Oaxaca.

Lophophanes bicolor, Bonap

TUFTED TITMOUSE; BLACK-FRONTED TITMOUSE

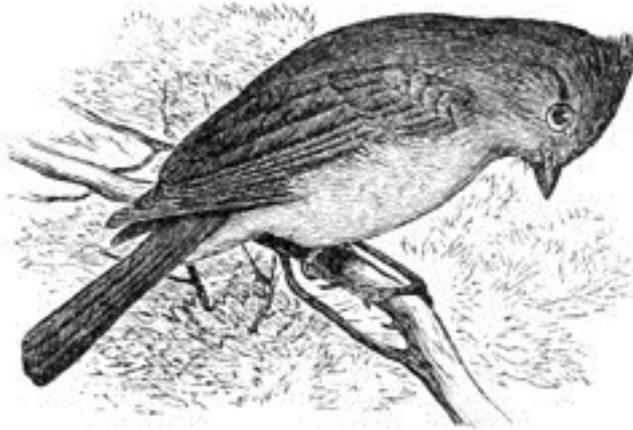
Parus bicolor, Linn. Syst. Nat. 12th ed. I, 1766, 340 (based on *Parus cristatus*, Catesby, I, pl. lvii).—Pr. Max. Cab. Jour. VI, 1858, 118. *Lophophanes bicolor*, Bon. List Birds Europe, 1842.—Baird, Birds N. Am. 1858, 384; Review, 78.—Sclater, Catal. 1861, 14, No. 87. *Bæolophus bicolor*, Cab. Mus. Hein. I, 1850, 91 (type

of genus). *Lophophanes missouriensis*, Baird, Birds N. Am. 1858, 384 (var. from Missouri River).

Figures: Wilson, Am. Orn. I, pl. viii, fig. 5.—Aud. Orn. Biog. I, pl. ccci; Ib. Birds Am. II, pl. cxxv.

Sp. Char. Above ashy; a black frontal band. Beneath dull whitish; sides brownish-chestnut, of more or less intensity. Length, 6.25 inches; wing, 3.17.

Hab. United States, from Missouri Valley eastward.



Lophophanes inornatus.

Feathers of the crown elongated into a flattened crest, which extends back as far as the occiput. Bill conical; lower edge of upper mandible nearly straight at the base. Fourth and fifth quills equal; third a little shorter than seventh; second rather shorter than the secondaries. Tail nearly even, the outer about .20 of an inch shorter than the longest. Upper parts ash-color, with a tinge of olivaceous. Forehead dark sooty-brown. The feathers of the upper part of the head and crest obscurely streaked with lighter brown. Under parts of head and body, sides of head, including auriculars, and a narrow space above the eye, dirty yellowish-white, tinged with brown; purest on the side of head, the white very distinct in the loreal region, and including the tuft of bristly feathers over the nostrils, excepting the tips of those in contact with the bill, which are blackish. The sides of the body and the under tail-coverts are tinged with yellowish-brown. The quills and tail-feathers are edged with the color of the back, without any whitish. Bill black. Feet lead-color.

Specimens from the West are larger, the colors all more strongly marked.

Habits. The Tufted Titmouse is a common and well-known species in the Southern States, from the seaboard to the Rocky Mountains. Its northern limits are in Pennsylvania, Missouri, and Kansas. Farther north than this its occurrence appears to be only occasional and accidental. The statement of Mr. Audubon that they are found in the Northern States, even to Nova Scotia, was evidently a mistake. They do not occur in Massachusetts, nor, so far as I am aware, have they been met with in any part of New England.

They are abundant in Northern Georgia, where, according to the observations of Dr. Gerhardt, they are among the first birds to breed, having fledglings fully grown as early as the first of May. Dr. Woodhouse found them very common in the Indian Territory, but none of the other exploring parties met with it farther west, where it is replaced by its kindred species.

It is perhaps the most abundant bird in Southern Illinois, where it is resident, being excessively numerous in winter, and in that season often a positive nuisance from their impertinent vehement scolding as they appear to follow the hunter in troops through the woods. In winter it is a constant

inhabitant of the door-yards and shrubbery, particularly fruit-trees in the towns, where it is associated with the Carolina Chickadee (*Parus carolinensis*) and other winter birds, but exceeding them all in familiarity and boldness. (Ridgway.)

Mr. Nuttall, who never met with this bird north of Pennsylvania, found it very common in the winter and spring in the Southern States, where it displayed all the habits and uttered the usual notes of the family. In the dreariest solitudes of the Southern States these birds were his constant and amusing companions. Their sprightly movements and their varied musical talents made it even more peculiarly interesting at a time when all the other tenants of the forest were silent. The notes of this bird, which, when expressed by this writer on paper, seem only quaint and eccentric articulations, were characterized by him as lively, cheering, and varied, delivered with a delicacy, energy, pathos, and variety of expression to which it was far beyond the power of description to do justice.

These notes, at times, even partook of the high-echoing and clear tones of the Oriole. The usual song of this Titmouse is presented by Mr. Nuttall by the following characteristics: “*Whip-tom-killy-killy-dāy-dāy-dā-it-tshica-dēē-dee,*” varied with “*Kāī-tee-did-did-did,*” etc., etc. Later in the season, under the milder influences of spring, these Titmice pursued the insects from branch to branch, calling restlessly and with loud and echoing voices, *peto-peto-peto*, with frequent quaint variations too numerous to be repeated. Their song even consisted of successions of playful, pathetic, or querulous calls, never exhibiting any trills after the manner of the Warblers, yet the compass and tones of their voice, their capricious variety, and their general effect are described as quite as pleasing as the more exquisite notes of our summer songsters.

When wounded this Titmouse resists with great spirit any attempt to take him alive, but soon becomes tame and familiar in confinement, subsisting on seeds, broken nuts, etc. Impatient of restraint, it incessantly attempts to work its way out of its cage.

The general habits of these birds correspond closely with those of the large family to which they belong. They move usually in small flocks of from five to ten through the branches of trees and bushes in quest of insects, examine the cracks and crevices of the bark, hang on the under side of small branches, move sideways around the trunks of trees, probe the openings in acorns, pine-cones, nuts, etc., for its food, and retain apparently the family group until the spring, when they separate into pairs.

One of these birds kept in confinement by Dr. Bachman of Charleston was in the habit of hiding its food in the corner of its cage, in a small crevice, and of creeping at night into a small box, where it lay doubled up like a ball till the first light of the morning, when it resumed its restless habits.

The Tufted Titmouse passes its nights and days, when the weather is inclement, in the hollows of decayed trees or the deserted holes of the woodpeckers. In such places it also builds its nests. It has been known to excavate a hole for itself even in hard sound wood. Its nest is simply a rude lining of the selected cavity, composed of various soft and warm materials. In this are deposited from six to eight eggs. But a single brood is raised in a season. The young birds, as soon as they are fledged, hunt in company with their parents, and remain associated with them until the following spring. The eggs of this bird have a length of .75 of an inch and a breadth of .56. They are of a rounded oval in shape, and are thickly sprinkled with fine rust-colored dots, intermingled with a few larger markings of lilac, on a white ground.

Lophophanes atricristatus, Cassin

BLACK-TUFTED TITMOUSE; TEXAS TITMOUSE

Parus atricristatus, Cassin, Pr. A. N. Sc. Phil. V, 1850, 103, pl. ii (Texas).
Lophophanes atricristatus, Cassin, Ill. Birds Texas, etc. I, 1853, 13, pl. iii.—Baird,
Birds N. Am. 1858, 385; Review, 78.—Cooper, Birds Cal. 1, 43.

Sp. Char. Crest very long and pointed (1.25 inches). Above ash-colored. A broad band on the forehead dirty white, rest of head above, with crest, black, tinged with ash on the sides. Color of the back shading insensibly into the dull ashy-white of the under parts. Sides of body pale brownish-chestnut. Female with the crest duller black. Iris dark brown. Length, about 5.25 inches; wing, 3.00.

Hab. Valley of Rio Grande, south, into Mexico. San Antonio. Texas. Vera Cruz, Sclater.

This species is not rare in Texas, where it has been noticed as far east as San Antonio.

Habits. So far as known, the Black-crested Titmouse is restricted in its distribution to the valley of the Rio Grande, including portions of Mexico and Western Texas. It was first met with in the latter State by John W. Audubon, and described by Mr. Cassin in the Proceedings of the Philadelphia Academy.

In its general appearance and in all its habits it is mentioned as having so close a resemblance to the common Tufted Titmouse as to be hardly distinguishable from that bird. Dr. Woodhouse met with this species near San Antonio, Texas, in March, 1851. While his party was encamped on the Rio Salado he observed these birds busily engaged in capturing insects among the trees on the banks of the stream. Like all the members of this family, it was incessantly in motion and very noisy. Later in the season, on the 8th of May, the same party, when encamped on the Quihi, again found this species very abundant among the oaks. The young males, then fully grown, closely resembled the adult females, both wanting the black crest that distinguishes the mature male. He afterward noticed this species occurring at intervals along his route as far as the head waters of the Rio San Francisco in New Mexico. He observed it almost exclusively among the trees that bordered streams of water. The females and the young males invariably had crests of the same cinereous color as their general plumage, but in the latter slightly tinged with brown. They occurred in small parties, were very lively and sociable in their habits, and in their general appearance and even in their notes so very closely resembled the Eastern species as, at a short distance, to be hardly distinguishable from it.

Dr. Heermann, in his report on the birds of Lieutenant Parke's survey, mentions having first observed this species near Fort Clarke, in Texas, where it was very abundant. He describes it as sprightly and active in its movements, searching with great assiduity for insects in the crevices of the bark and among the branches of trees. While thus engaged it keeps up a chattering note, varied with an occasional low and plaintive whistle. Its habits appeared to him to resemble most those of the common *Parus atricapillus*. Dr. Heermann states that it builds its nest in the hollow of trees, and that it lays from twelve to sixteen eggs. He does not, however, say that he ever met with its eggs, nor does he give any description of them. The nest, he states, is composed of fine dry grasses, feathers, wool, mosses, etc.

General Couch's description of this species and its habits is very similar. He observed it in the province of New Leon, in Mexico, where he found it very abundant along the San Juan into the Sierra Madre. He describes it as a very lively bird, with a very perfect whistle of a single note.

Mr. Henry A. Dresser sought very diligently for its nest and eggs near San Antonio and Houston, in Texas, where he found the bird very common, and where he was sure many pairs remained to breed, but its nest was very hard to find, and the birds very wary. He succeeded in finding one nest,

in a hollow tree, near the head springs of the San Antonio River, but it contained young. The nest he does not describe, nor does he mention the number of young it contained.

Lophophanes inornatus, Cassin

GRAY-TUFTED TITMOUSE; CALIFORNIA TITMOUSE

Parus inornatus, Gambel, Pr. A. N. Sc. Phil. Aug. 1845, 265 (Upper California).—Ib. J. A. N. Sc. new ser. I, 1847, 35, pl. vii. *Lophophanes inornatus*, Cassin, Ill. 1853, 19.—Baird, Birds N. Am. 1858, 386; Review, 78.—Sclater, Catal. 1861, 14, no. 88.—Elliot, Illust. I, pl. iii.—Cooper, Birds Cal. 1, 42.

Sp. Char. Crest elongated. Color above olivaceous-ashy, beneath whitish. Sides of body and under tail-coverts very faintly tinged with brownish, scarcely appreciable. Sides of head scarcely different from the crown. Forehead obscurely whitish. Length, 5 inches; wing, 2.55.

Hab. Southern United States, from Rocky Mountains to Pacific; Western Nevada (Ridgway). W. Arizona (Coues).

The bill and feet of this species are lead-color. The third, fourth, and fifth quills are longest; the third and eighth about equal; the second is shorter than the shortest primaries. The lateral tail-feathers are a little shorter than the others.

A specimen from Fort Thorn has the crest longer than in other specimens before me, measuring 1.35 inches from base of bill to its tip. This may be a characteristic of the male, the sexes being otherwise alike.

Habits. The Gray Titmouse belongs essentially to the Pacific coast, coming eastward only as far as the banks of the Rio Grande in Texas. It was first discovered and described by Dr. Gambel, in his Birds of California. It has since been met with not only throughout California, but also in all the southern portions of the Rocky Mountains, in New Mexico, and from Mimbres to the Rio Grande.

Dr. Woodhouse met with this species in the San Francisco Mountains, near the Little Colorado River, New Mexico. He found it very abundant, feeding among the tall pines in company with the *Sitta pygmaea*, *S. aculeata*, and *Parus montanus*.

Dr. Gambel first noticed this species near Monterey on the 20th of November. It was flitting actively about among the evergreen oaks of that vicinity in company with large flocks of several kindred species. They were all in restless activity, searching every branch for insects. As well as he could distinguish its notes among those of the busy throng in the midst of which he observed it, they appeared to resemble very closely those of the common *P. atricapillus*. Upon his following it up, it would utter a loud scolding outcry, erect its high and pointed crest, and appear as angry as possible at the intrusion. He found it very common, frequenting tall bushes in small flocks, searching branches of low trees, uttering weak and slender cries, resembling the syllables *tsēē dāy-dāy*.

Dr. Heermann found it one of the most common of the birds of California, where it is resident throughout the year. He describes their notes as possessing an almost endless variety, so much so that he was repeatedly prompted to follow it as a new species. He met with a nest of this bird in a deserted woodpecker's hole, which contained young.

Dr. Cooper has met with this species in February near San Diego, but not on the Colorado. They seem to prefer the evergreen-oak groves toward the middle of the State, but are not found in the higher Sierra Nevada. They are residents throughout the year in the evergreen oaks near San Francisco. He adds that they are seen in small parties, scattered about the trees, and calling to each other with a variety of sweet and loud notes, some of which are said to equal those of our best singers. It also has certain powers of imitation like the Eastern crested species and the same cry of *pēto-pēto*.

It feeds on acorns as well as insects, and often goes to the ground in search of them. It cracks the acorns with its bill, and hammers at bark and decayed wood with the industry of a woodpecker.

Mr. Ridgway met with this species among the pines of the eastern slope of the Sierra Nevada, but nowhere in abundance. Among the cedars it was almost the only bird seen. He describes its manners as greatly resembling those of the other species. Its notes, though differing from those of the Eastern *L. bicolor*, being weaker and less distinct, retain its vehement and characteristic manner of utterance.

Lophophanes wollweberi, Bonap

WOLLWEBER'S TITMOUSE; STRIPED-HEADED TITMOUSE

Lophophanes wollweberi, Bon. C. R. XXXI, Sept. 1850, 478.—Westermann, Bijdr. Dierkunde, III, 1851, 15, plate.—Baird, Birds N. Am. 1858, 386, pl. liii, fig. 1; Review, 79.—Sclater, P. Z. S. 1858, 299 (Oaxaca, high lands).—Ib. Catal. 1861, 14, No. 89.—Cooper, Birds Cal. 1, 43. *Parus annexus*, Cassin, Pr. A. N. Sc. V, Oct. 1850, 103, pl. i. *Lophophanes galeatus*, Cabanis, Mus. Hein. 1850, 1851, 90.

Sp. Char. Central portion of crest ash, encircled by black, commencing as a frontal band, and passing over the eye. Chin, throat, and a line from behind the eye and curving round the auriculars to the throat (bordered behind by white), as also some occipital feathers, black. A white line from above the eye margining the crest, with the cheeks below the eye and under parts generally white. A black half-collar on the nape. Upper parts of body ashy. Length, about 4.50; wing, 2.50.

Hab. Southern Rocky Mountains of United States, and along table-lands through Mexico, to Oaxaca (high regions, Sclater). Orizaba (Alpine regions, Sum.).

Habits. Wollweber's Titmouse, so far as its distribution is known, is a bird of Western Texas, the high table-lands of Mexico, and of the whole of New Mexico. It was described by Bonaparte and by Cassin nearly simultaneously, in 1850. It bears a very close resemblance to the *Lophophanes cristatus* of Europe.

Although comparatively nothing is known in reference to the specific habits of this species, they may be very readily inferred from those of the other members of this genus, whose characteristics are all so well marked and so uniform. Dr. Kennerly is the only one of our naturalists who has mentioned meeting the species in its living form. In his Report upon the Birds of Lieutenant Whipple's Survey he states that he found it in the thick bushes along the Pueblo Creek. Wherever noticed it was constantly in motion, hopping from twig to twig in search of its food. He also found it among the pines of the Aztec Mountains. No mention is made of its nest or eggs, and its nidification remains to be ascertained.

Genus PARUS, Linnaeus

Parus, Linnaeus, Syst. Nat. 1735. (Type, *P. major*.)

Gen. Char. Head not crested. Body and head full. Tail moderately long, and slightly rounded. Bill conical, not very stout; the upper and under outlines very gently and slightly convex. Tarsus but little longer than middle toe. Head and neck generally black or brown, with sides white. Nest in holes. Eggs white, sprinkled with red.

In the group, as defined above, are embraced several genera of modern systematists. The true black-capped American Titmice belong to the section *Pæcile* of Kaup, and exhibit but three well-marked forms; one, *P. montanus*, with a white stripe over the eye; one, *atricapillus*, without it, with

black head; and one, *hudsonicus*, also without it, and with brown head. The species may be arranged as follows:—

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.

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° ... 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. (3704 ♂? Salt Lake City, Utah.) *Hab.* Region of Missouri River and Rocky Mountains ... 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. (6762 ♂? Fort Vancouver, Washington Territory.) *Hab.* Pacific Province of North America ... var. *occidentalis*.

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

3. **P. meridionalis.**²⁷ 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.

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°.

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.

²⁷ *Parus meridionalis*, Sclater, P. Z. S. 1856, 293.—Baird, Rev. 81.

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).

7. **P. sibiricus.**²⁸ 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.

Parus montanus, Gambel

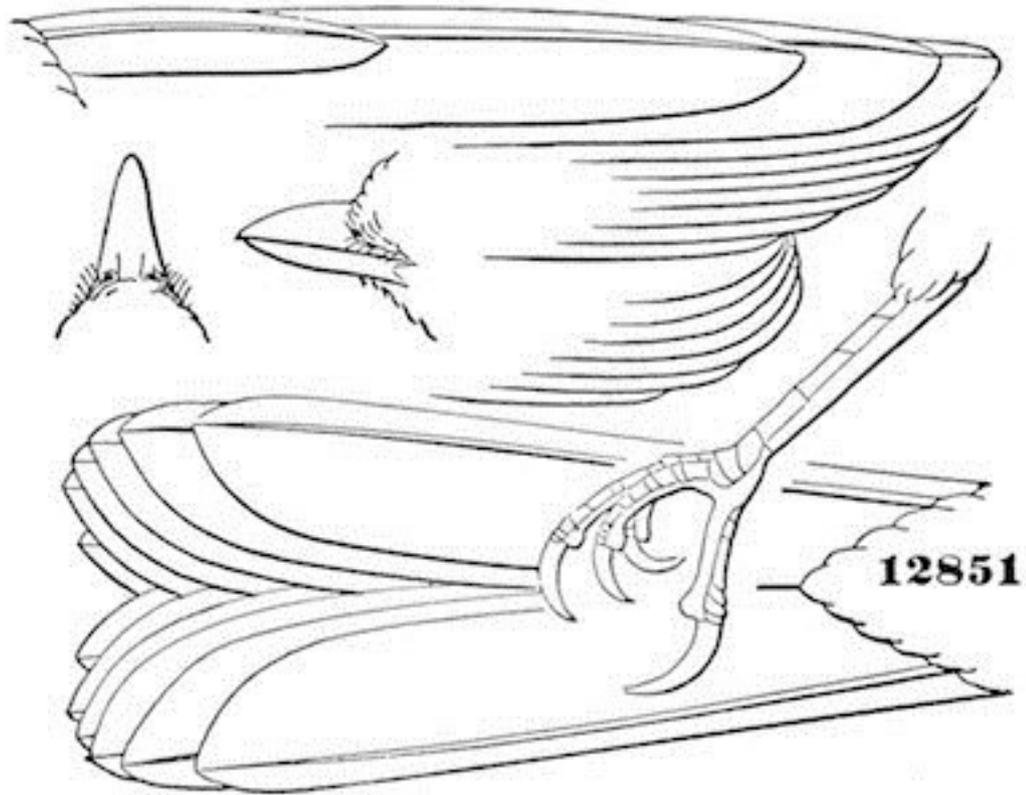
MOUNTAIN CHICKADEE: WHITE-BROWED CHICKADEE

Parus montanus, Gambel, Pr. A. N. S. Phila. April, 1843, 259; Journ. A. N. Sc. 2d Series, I, 1847, 35, pl. viii, f. 1.—Baird, B. N. A. 1858, 394; Review Am. B. I, 1864, 82.—Elliot, Illust.—Cooper, Birds Cal. 1, 46.

Sp. Char. Head and neck above, with under part of head and throat, glossy black; forehead, stripe above the eye and band below it, involving the auriculars, white. These stripes embracing between them a black band through the eye and confluent with the black of the head. Above ashy; beneath similar, but paler; the upper part of breast and middle line of belly white. Length about 5 inches; wing, 2.60; tail, 2.40.

Hab. Mountain region of Middle and Western United States.

²⁸ *Parus sibiricus*, Gmel. S. N. 1788, p. 1013.



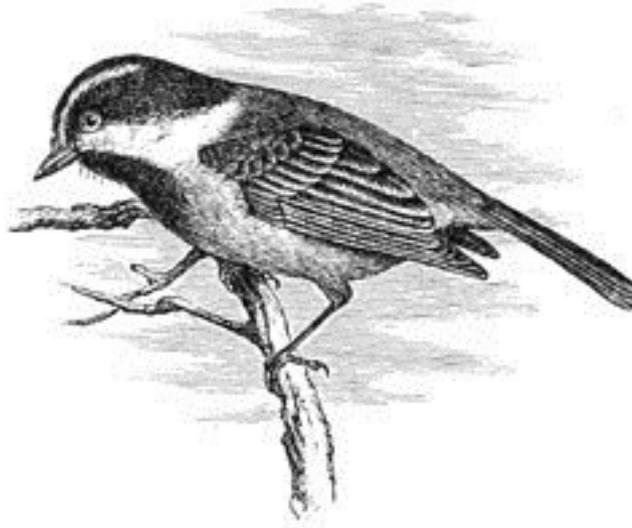
Parus atricapillus.

12851

Habits. The Mountain Chickadee was first met with by Dr. Gambel in journeying westward from Santa Fé, in New Mexico, and from thence was found in all the ranges of the Rocky Mountains nearly to California. Its notes and habits are said to closely resemble those of the common Chickadee, but weaker and more varied. It keeps more in low bushes, where it moves from branch to branch with untiring activity, searching each minutely for small insects. It also frequently descends to the ground to pick up small seeds. While thus occupied it will occasionally stop, look round, and, uttering a slender *te-de-de*, and then its usual note, *to-de-de-dait*, will fly to another bush.

On the Rio Colorado they kept chiefly among the cotton-wood trees that grew along its banks, and its familiar notes were almost the only sounds heard. They were observed in large and busy flocks along the smaller streams in company with the Least Tit and the *Reguli*. Dr. Gambel did not find them, however, so abundant on the California sides of the ridge, where other species took their place.

Dr. Heermann found this Titmouse abundant among the mountains surrounding the Volcano in the southern mines, and subsequently met with them on the summit of the Tejon Pass. He thinks their notes and habits very similar to those of the *atricapillus*. Dr. Suckley obtained a single specimen at Fort Dalles, but regarded it as extremely rare in that locality. Dr. Woodhouse found it quite abundant in the San Francisco Mountains of New Mexico, where it was feeding among the tall pines in company with kindred species.



Parus montanus.

Mr. Ridgway found this species in great abundance among the pines on the eastern slope of the Sierra Nevada Mountains, as well as in all the extensive cedar-groves on the mountains to the eastward. Around Carson City this species was found throughout the winter. In its manners and notes, particularly the latter, it was hardly distinguishable from *P. carolinensis*. The notes are described as louder and more distinct, though their calls in spring are rather less clearly articulated.

***Parus atricapillus*, Linn**

EASTERN CHICKADEE; BLACK-CAPPED TITMOUSE

Parus atricapillus, Linn. Syst. Nat. I, 1766, 341 (based on *Parus atricapillus canadensis*, Brisson, III, 553, tab. xxix, fig. 1).—Baird, Birds N. Am. 1858, 390; Review, 80.—Sclater, Catal. 1861, 13, No. 80.—Dall & Bannister (Alaska).—Samuels, 182. *Pæcile atricapilla*, Bon. Consp. 1850, 230. *Parus palustris*, Nutt. Man. I, 1832, 79.

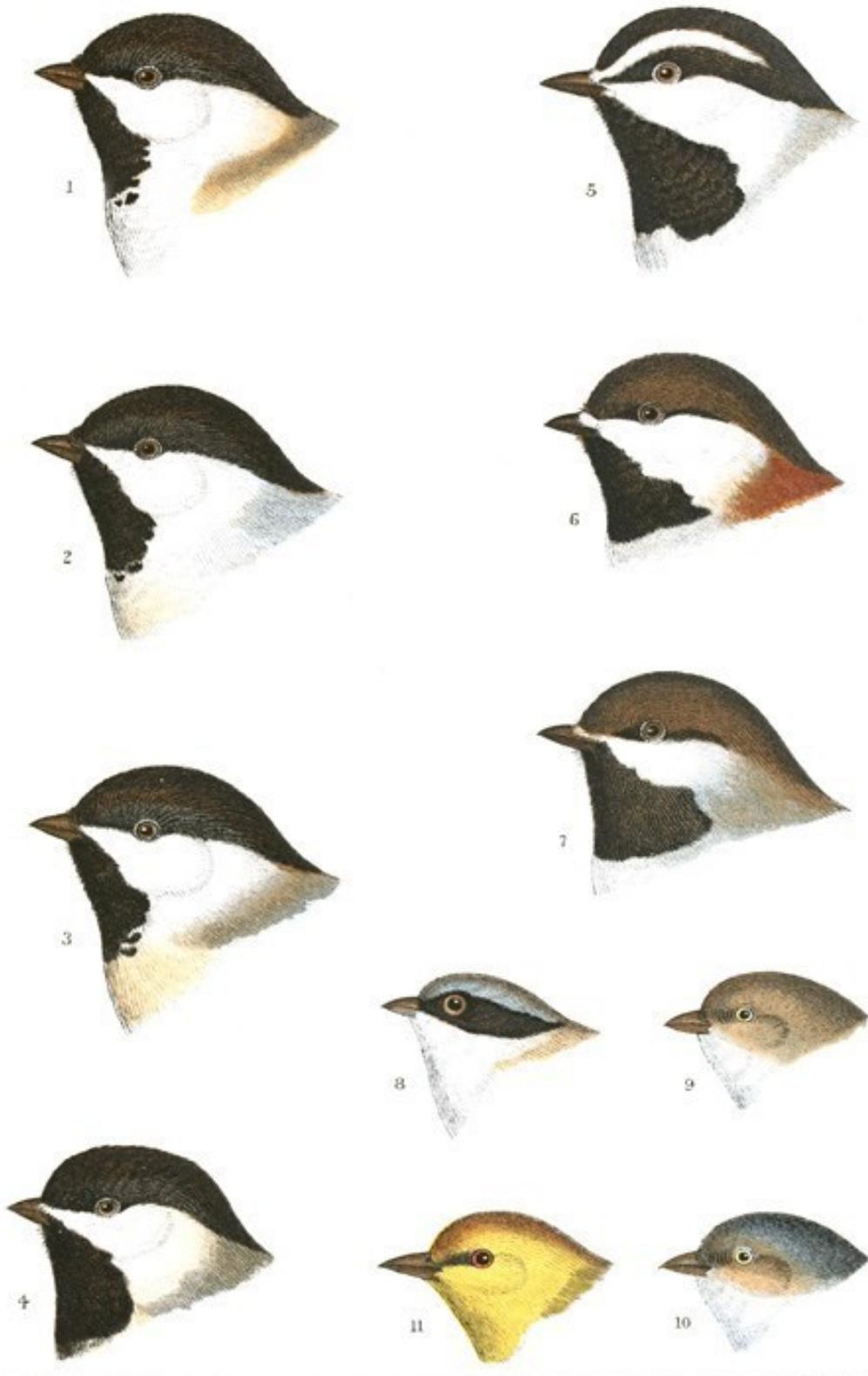
Figured by Audubon, Wilson, etc.

Sp. Char. Second quill as long as the secondaries. Tail very slightly rounded; lateral feathers about .10 shorter than middle. Back brownish-ashy. Top of head and throat black, sides of head between them white. Beneath whitish; brownish-white on the sides. Sides of outer tail-feathers, some of primaries, and secondaries conspicuously margined with white. Length, 5.00; wing, 2.50; tail, 2.50.

Hab. Eastern North America, north of 39th parallel.

In this species the first quill is spurious; the fourth quill is longest; the fifth and sixth successively a little shorter; the third is about equal to, or a little shorter than, the eighth; the second is a very little longer than the secondaries. The tail is a little rounded, the innermost feather longest, the rest successively a little shorter. The greatest difference in length of tail-feathers amounts to .30 of an inch.

PLATE VII.



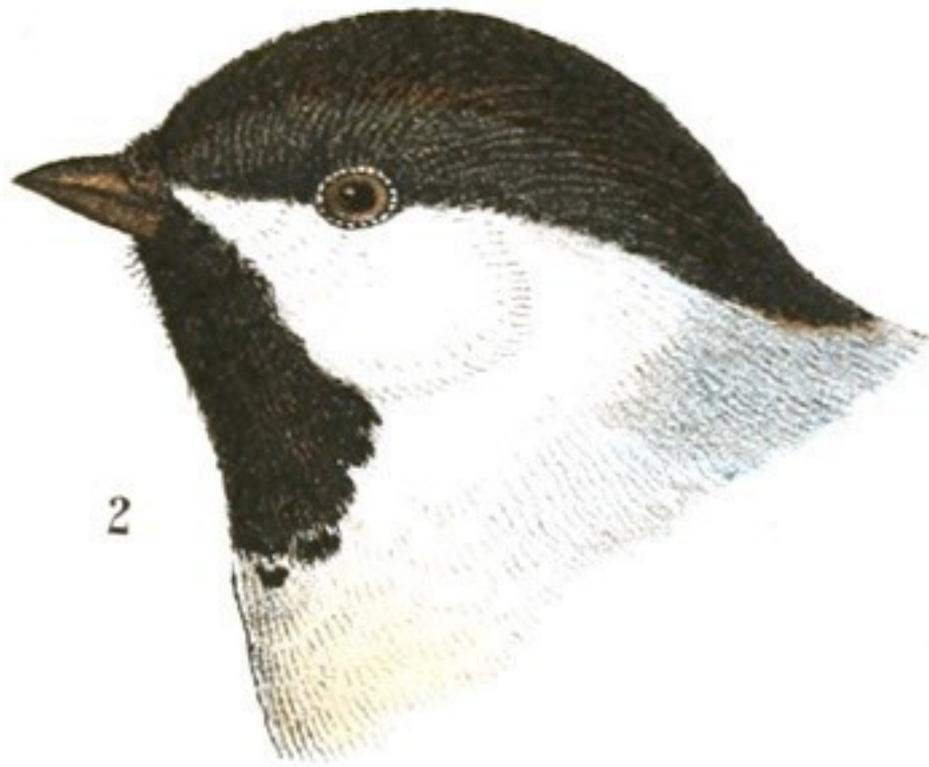
1. *Parus atricapillus*, Linn. ♂ N. York, 1851.
 2. " var. *septentrionalis*, Harris. Mission Valley.
 3. " var. *occidentalis*, Baird. Washington Territory.
 4. " *carolinensis*, Aud. ♂ D. C., 1796.
 5. " *montanus*, Gambel. Nevada, 53456.
 6. " *rufescens*, Towns. Pacific coast, 43946.

7. *Parus hudsonicus*, Forst. N. Scotia.
 8. *Psaltriparus melanotis*, Bon. Mexico.
 9. " *minimus*, Towns. Cal., 72417.
 10. " var. *plumbeus*, Baird. Arizona.
 11. *Auriparus flaviceps*, Sund. 42210.

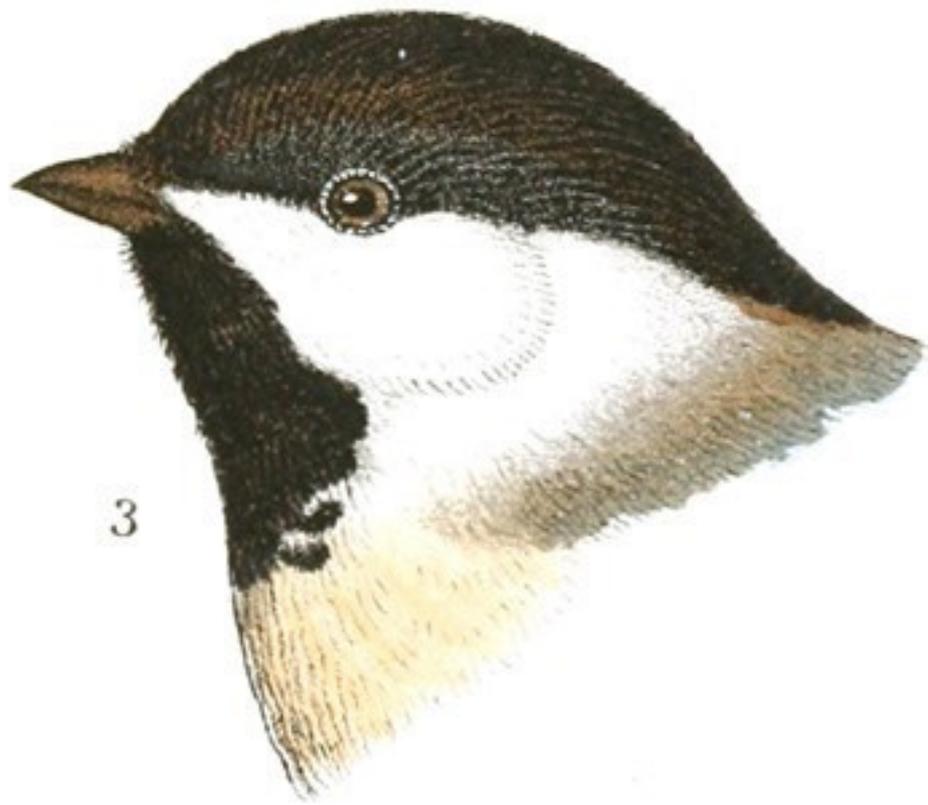
PLATE VII.



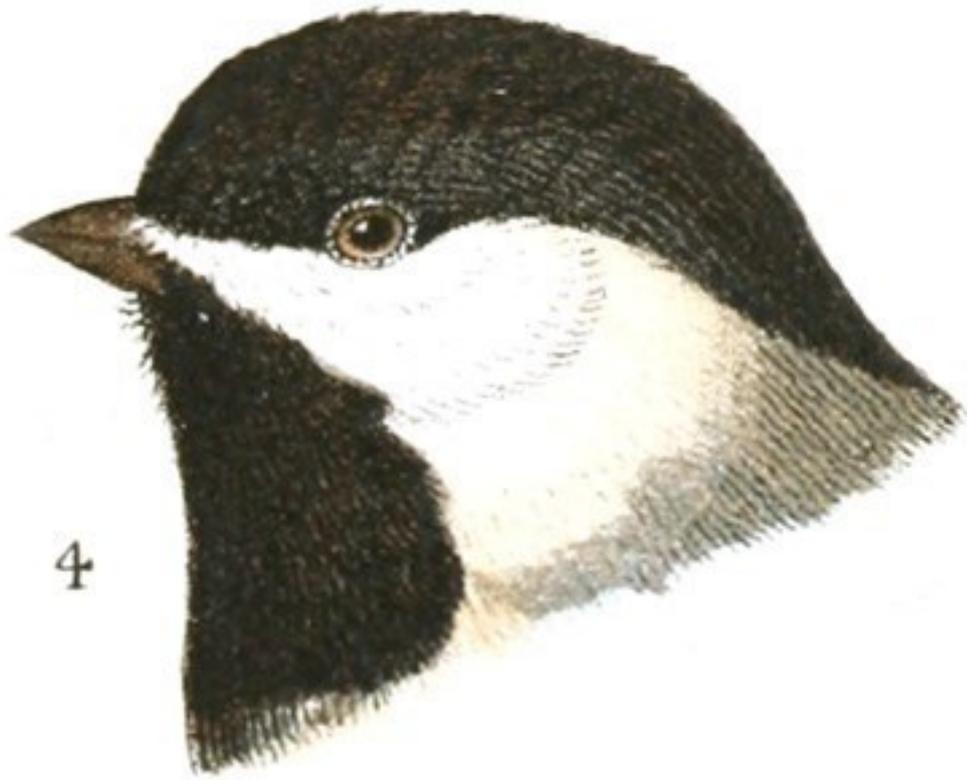
1. *Parus atricapillus*, *Linn.* ♂ N. York, 12851.



2. *Parus var. septentrionalis*, *Harris*. Mission Valley.



3. *Parus var. occidentalis*, Baird. Washington Territory.



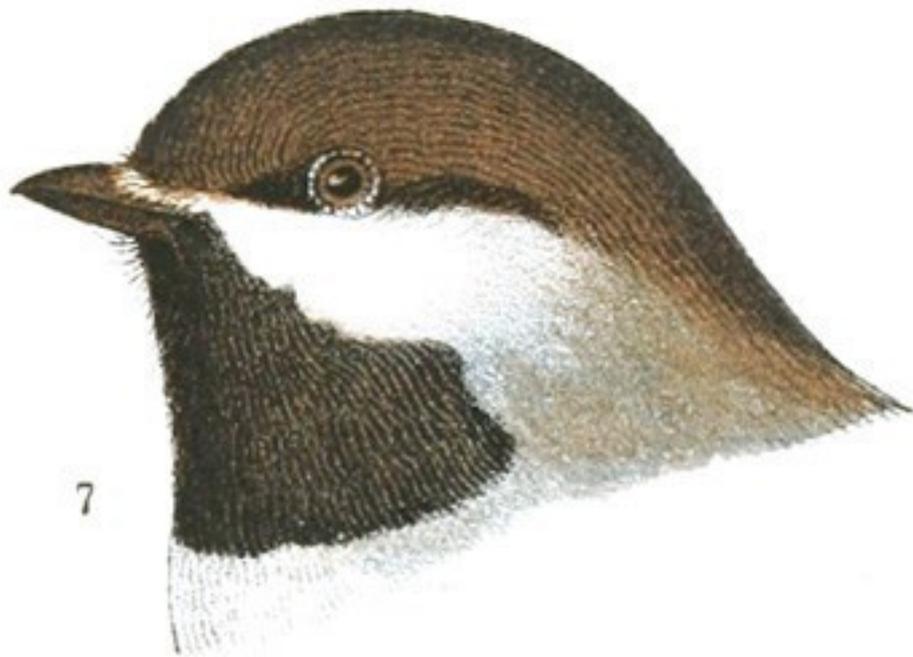
4. *Parus carolinensis*, Aud. ♂ D. C., 706.



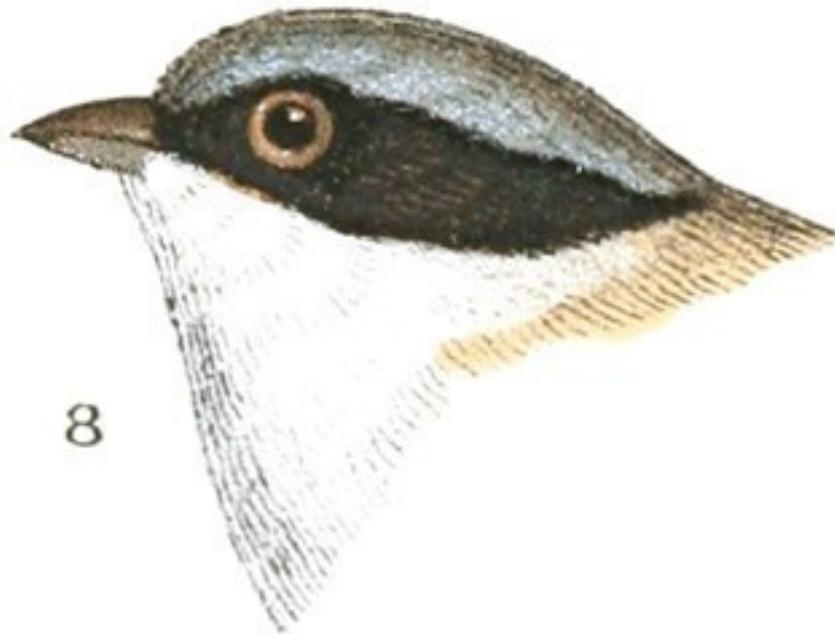
5. *Parus montanus*, *Gambel*. Nevada, 53456.



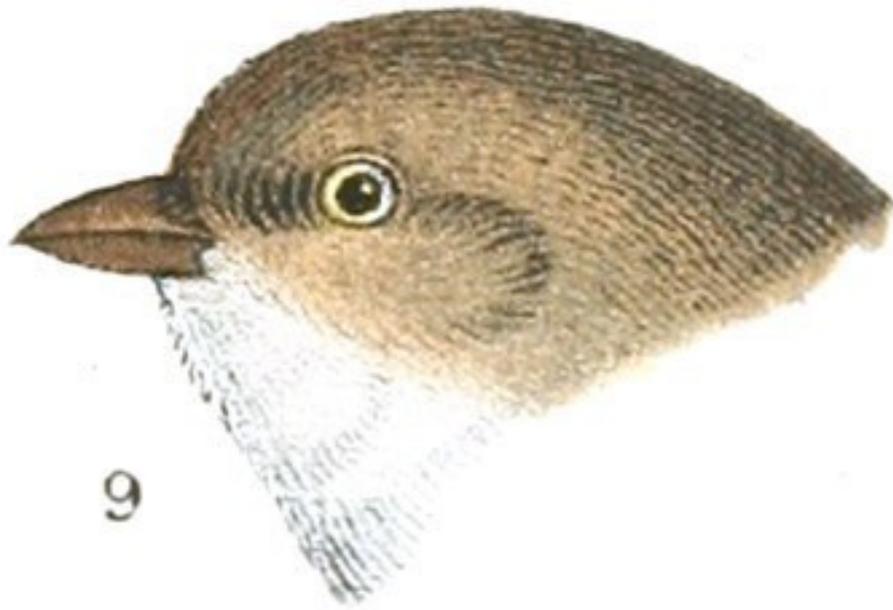
6. *Parus rufescens*, *Towns*. Pacific coast, 45946.



7. *Parus hudsonicus*, *Forst.* N. Scotia.



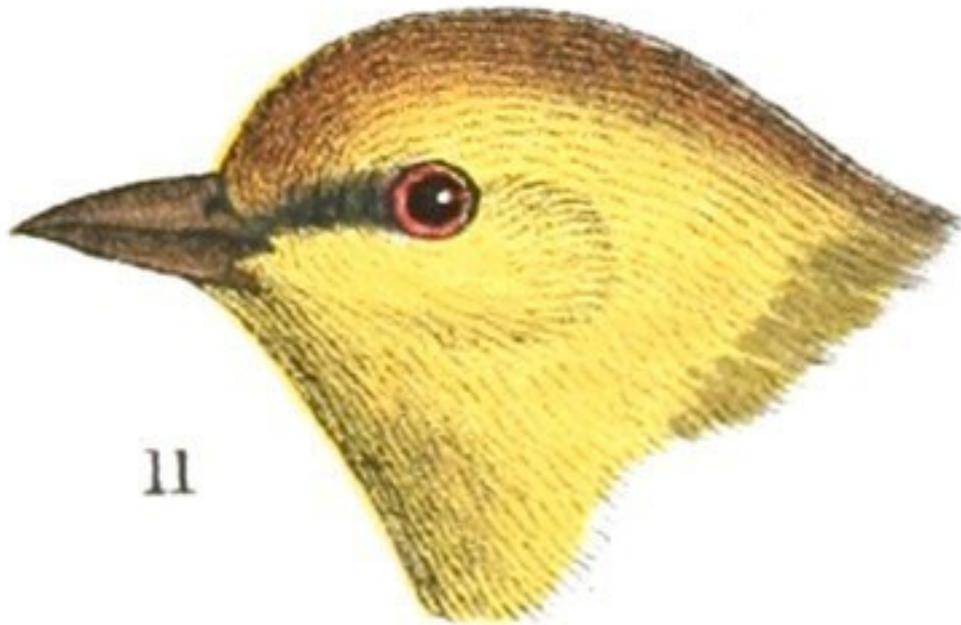
8. *Psaltriparus melanotis*, *Bon.* Mexico.



9. *Psaltriparus minimus*, *Towns.* Cal. 22417.



10. *Psaltriparus var. plumbeus*, *Baird.* Arizona.



11. *Auriparus flaviceps*, *Sund.* 42210.

The entire crown, from the bill to the upper part of the back, coming down on the sides to the lower level of the eye, is pure black, although the edge alone of the lower eyelid is of this color. A second black patch begins at the lower mandible and occupies the entire under surface of the head and throat, but not extending as far back within a quarter of an inch as that on the upper part of the neck. The space between these two patches, on the sides of the head and neck, is white, this color extending along the black of the back of the neck as far as its truncated extremity, but not bordering it behind. The middle of the breast and belly, as far as the vent, is dull white, that immediately behind the black of the throat a little clearer. The sides of the breast and body under the wings, with the under tail-coverts, are pale, dull brownish-white. The back, rump, and upper tail-coverts are of a dirty bluish-ash, washed with yellowish-brown, especially on the rump. The wings are brown; the outer edges of the third to the seventh primaries narrowly edged with whitish; the innermost secondaries more broadly and conspicuously edged with the same; larger coverts edged with dirty whitish. Outer webs of tail-feathers edged with white, purest and occupying half the web in the external one, narrowing and less clear to the central feathers, the basal portions, especially, assuming more the color of the back.

Habits. The common Chickadee or Black-capped Titmouse is so well known throughout the greater portion of the United States as to be generally accepted, by common consent, as the typical representative of its numerous family. Until recently it has been supposed to be universally distributed over the continent, and while this is now questioned, it is not quite clear where its limits occur. In Eastern Maine the *Parus hudsonicus* and this species meet. In the District of Columbia it crosses the northern limits of *P. carolinensis*, and in the northern Mississippi Valley it mingles with the var. *septentrionalis*. It remains to be ascertained how far the species exceeds these bounds.

A few individuals of this species were observed by Mr. Dall, December 12, at Nulato, where, however, it was not common. They were also obtained by Bischoff at Sitka and Kodiak.

As in very many essential respects the whole family of *Paridae* are alike in their characteristics of habits, their manner of collecting food, their restless, uneasy movements, the similarity of their cries, their residence in hollow trees or branches, and their nesting in similar places, with the exception

only of a few species that construct their own pouch-like nests, we have taken the best known as the common point of comparison. Except in the variations in plumage, the points of difference are never great or very noticeable.

In New England the Black-Cap is one of our most common and familiar birds. In the vicinity of Calais, Mr. Boardman speaks of it as resident and abundant. The writer did not meet with it in Nova Scotia, nor even in the islands of the Bay of Fundy, where the *hudsonicus* is a common bird.

It is a resident species, nesting early in May, and having full-fledged nestlings early in June. While it seems to prefer the edges of woods as best affording the means of food and shelter, it by no means confines itself to these localities, not only appearing familiarly around the dwellings in the winter season, but also occasionally breeding in open and exposed places. A hollow post of a fence in the midst of open cultivated fields, a decayed stump near the side of a public highway, a hollow log in a frequented farmyard, and even the side of an inhabited dwelling, are localities these birds have been known to select in which to rear their young. In the winter they not unfrequently extend their visits, in search of food, into the very heart of large and crowded cities, where they seem as much at home and as free from alarm as in the seclusion of the forest, searching every crack where insect larvæ or eggs can be hid. On one occasion a pair had built its nest over a covered well which connects with the dwelling by a side door, through which water was drawn at all hours of the day by means of buckets and a rope, the wheel for which was in close proximity to their nest. They manifested, however, no uneasiness, and even after the young were ready to fly, the whole family would return to the place for shelter at night and during inclement weather.

Their courage and devotion to their young is a remarkable trait with the whole race, and with none more than with the present species. On one occasion a Black-Cap was seen to fly into a rotten stump near the roadside in Brookline. The stump was so much decayed that its top was readily broken off and the nest exposed. The mother refused to leave until forcibly taken off by the hand, and twice returned to the nest when thus removed, and it was only by holding her in the hand that an opportunity was given to ascertain there were seven young birds in her nest. She made no complaints, uttered no outcries, but resolutely and devotedly thrust herself between her nestlings and the seeming danger. When released she immediately flew back to them, covered them under her sheltering wings, and looked up in the face of her tormentors with a quiet and resolute courage that could not be surpassed.

The nest of the Chickadee is usually a warm and soft felted mass of the hair and fur of the smaller quadrupeds, downy feathers, fine dry grasses and mosses, lining the cavity in which it is placed and contracting it into a deep and purse-like opening if the cavity be larger than is necessary. Usually the site selected is already in existence, and only enlarged or altered to suit the wishes of the pair. But not unfrequently, at some pains, they will excavate an opening for themselves, not only in decaying wood, but even into limbs or trunks that are entirely sound.

These birds in winter collect around the camps of the log-cutters, become very tame, and seek on all occasions to share with their occupants their food, often soliciting their portion with plaintive tones. Though nearly omnivorous in the matter of food, they prefer insects to everything else, and the amount of good conferred by them on the farmers and the owners of woodlands in the destruction of insects in all their forms—egg, caterpillar, larva, or imago—must be very great. No chrysalis is too large to resist their penetrating bill, and no eggs so well hidden that they cannot find them out. I have known one to attack and fly off with the chrysalis of a “Woolly-bear” or salt-marsh caterpillar (*Leucarctia acraea*). When thus foraging for their food they seem totally unconscious of the near presence of man, and unmindful of what is passing around them, so intent are they upon the object of their pursuit.

The notes of the Chickadee exhibit a great variety of sounds and combinations. As they roam through the country in small flocks in quest of food, their refrain is a continued and lively succession of varying notes sounding like a quaint chant. When annoyed by any intrusion, their cry is louder and harsher. They are rarely thus disturbed by the presence of man, and even when their nest is

approached by him they present only a passive and silent resistance. Not so when a cat or a squirrel is observed in unwelcome vicinity. These are pursued with great and noisy pertinacity and hoarse cries of *dāy, dāy, dāy*, in which they are often joined by others of the same species.

So far as we have observed them, they are apparently affectionate, gentle, and loving to each other. We utterly discredit the accusation that they will treacherously beat out the brains of feeble birds of their own race. It is unsupported by testimony, and in the instance cited by Wilson he gives no evidence that this injury may not have been done by some other species, and not by one of its own kindred.

Their nest is usually near the ground, and the number of eggs rarely if ever exceeds eight. They are said to have two broods in the season, but this statement seems to be contradicted by their continued presence after June in small flocks, evidently the parents and their first and only brood, who apparently remain together nine or ten months.

The eggs of this species vary somewhat in regard to the distribution and number of the reddish-brown markings with which their white ground is more or less sprinkled. In some they are chiefly gathered in a ring about the larger end; in others they are distributed over the entire egg. Their eggs are smaller and a little less spherical in shape than those of the *septentrionalis*, averaging .58 by .47 of an inch.

Parus atricapillus, var. septentrionalis, Harris

LONG-TAILED CHICKADEE

Parus septentrionalis, Harris, Pr. A. N. Sc. II, 1845, 300.—Cassin, Illust., 1853, 17, 80, pl. xiv.—Baird, Birds N. Am. 1858, 389; Review, 79.—Sclater, Catal. 1861, 14, No. 82. *Parus septentrionalis*, var. *albescens*, Baird, Birds N. Am. 1858, xxxvii. ? *Parus atricapillus*, Pr. Max. Cab. Jour. VI, 1858, 119.

Sp. Char. Length about 5.50 inches; wing, 2.70; tail about 3 inches. Head above and below black, separated by white on the sides of the head; back brownish-ash. Beneath white, tinged with pale brownish-white on the sides. Outer tail-feathers, primaries, and secondaries broadly edged with white, involving nearly the whole outer web of outer tail-feather. Tail much graduated; the outer feather about .50 of an inch shorter than the middle. Second quill about as long as the secondaries.

Hab. Region of Missouri River to Rocky Mountains.

This race is very similar to the *P. atricapillus*, but differs from it somewhat as *atricapillus* does from *carolinensis*. Its size is much greater; the tail proportionally longer, and much more graduated; the white of wing and tail purer and more extended. The bill appears to be stouter and more conical. The back has, perhaps, a little more yellowish. The spurious or first primary is larger.

It will be a difficult matter to retain this as a species distinct from *atricapillus*, in view of the insensible gradation from one form to the other; and it may be looked upon, with scarcely a doubt, as simply a long-tailed Western variety of the common species. *P. occidentalis*, and, probably, even *P. carolinensis*, may even fall under the same category, their peculiarities of color and size being precisely such as would *a priori* be expected from their geographical distribution.

Habits. The Long-tailed Titmouse appears to have an extended distribution between the Mississippi Valley and the Rocky Mountains, from Texas into the British Possessions, specimens having been received from Fort Simpson and Lake Winnipeg. Among the notes of the late Robert Kennicott is one dated Lake Winnipeg, June 6, mentioning the dissection of a female of this species found to contain a full-sized egg. A memorandum made by Mr. Ross, dated at Fort William, May 15, speaks of this bird as abundant at Fort Simpson, from August until November, the last having

been seen November 10. One was shot, June 2, on Winnipeg River, “a female, who was about to lay her egg.”

In regard to its distinct individual history but little is as yet known. It was discovered and first described by the late Edward Harris, of New Jersey, who accompanied Mr. Audubon in his expedition to the upper branches of the Missouri River, and who obtained this bird on the Yellowstone, about thirty miles above its junction with the Missouri, on the 26th of July. He describes its notes as similar to those of the common *atricapillus*, but less harsh and querulous, and more liquid in their utterance. Subsequently specimens were obtained by Mr. Kern, artist to the exploring expedition under Fremont in 1846.

It is the largest species of this genus in America. In its breeding-habits it is not different from the Eastern representatives. Mr. B. F. Goss found this species breeding abundantly at Neosho Falls, in Kansas. They nest in decayed stumps, hollow trees, branches, logs, etc., after the manner of the *atricapillus*. The excavation is usually ten or twelve inches, and even more, in depth. The nest is warmly made of a loose soft felt composed of the fur and fine hair of small quadrupeds, feathers, and the finer mosses.

The eggs, usually five, occasionally eight, in number, are of a rounded oval shape, measuring .60 by .50 of an inch. They have a pure dull-white ground, and the entire egg is very uniformly and pretty thickly covered with fine markings and small blotches of red and reddish-brown intermingled with a few dots of purplish.

Parus atricapillus, var. occidentalis, Baird

WESTERN CHICKADEE

Parus occidentalis, Baird, Birds N. Am. 1858, 391 (W. Territory); Review, 81.—Sclater, Catal. 1861, 14, No. 82.—Elliot, Illust. 1, pl. viii.—Cooper, Birds Cal. 1, 45.

Sp. Char. Tarsi lengthened. Tail graduated; outer feather about .25 of an inch shorter than the middle. Above dark brownish-ash; head and neck above and below black, separated on the sides by white; beneath light, dirty, rusty yellowish-brown, scarcely whiter along the middle of body. Tail and wings not quite so much edged with whitish as in *P. atricapillus*. Length about 4.75; wing, 2.40; tail, 2.40.

Hab. Northwest coast region of the United States.

This race is of the same size as *P. atricapillus*, and resembles it in its markings; the ashy of the back is, however, washed with a darker shade of yellowish-brown. The brown of the under parts is so much darker as to cause the predominant color there to be a pale yellowish-brown, instead of brownish-white. The fourth quill is longest; the fifth and sixth a little shorter than the third; the second is about as long as the secondaries. The tail is rounded, rather more so than in most *atricapillus*, the difference in the lengths of the feathers amounting to about .25 of an inch. The amount of light margining to the quills and tail-feathers is much as in *atricapillus*, but rather less, perhaps, on the tail.

This seems to be the Pacific coast representative of the *P. atricapillus*, as *septentrionalis* belongs to the middle region, corresponding in its differences with other Western representatives of Eastern species.

Habits. Dr. Cooper, in his Birds of Washington Territory, says of this variety: “The common Black-capped Chickadee, so abundant in the Eastern States, is, in Washington Territory, represented by the Western Titmouse, frequenting the low thickets and trees, where it is always busily employed seeking food.” He observed its nest near Puget Sound, burrowed in soft rotten wood. Dr. Suckley

found it quite abundant in the valley of the Willamette, and also at Fort Vancouver during winter. In habits it closely resembles the Black-Cap of the Eastern States.

It is chiefly found in Oregon and Washington Territory, visiting the northern part of California in winter, when it is also abundant near the Columbia River. At this season it is generally found among the deciduous trees along streams and oak groves, seeking its food among the branches. It feeds on seeds and insects, and is very fond of fresh meat, fat, and crumbs of bread. They migrate but little, remaining at the Columbia River even when the ground is covered with snow. The eggs are as yet unknown, but without doubt they closely resemble those of the Eastern species.

Parus carolinensis, Audubon

SOUTHERN CHICKADEE

Parus carolinensis, Aud. Orn. Biog. II, 1834, 474, pl. clx.—Ib. Birds Am. II, 1841, 152, pl. cxxvii.—Baird, Birds N. Am. 1858, 392; Review, 81.—Sclater, Catal. 1861, 13, No. 81. *Pæcile carolinensis*, Bon. Consp. 1850, 230.

Sp. Char. Second quill appreciably longer than secondaries. Tail very little rounded. Length about 4.50 inches; wing less than 2.50; tail, 2.40. Back brownish-ash. Head above, and throat, black, separated on sides of head by white. Beneath white; brownish-white on sides. Outer tail-feathers, primaries, and secondaries, not edged with white.

Hab. South Atlantic and gulf region of United States, north to Washington, D. C., Texas and the Mississippi Valley; north to Central Illinois; the only species in the southern portion of the latter State.

This species is, in general, rather smaller than *P. atricapillus*, although the tail and wing appear to be of much the same size. The body and feet are, however, smaller, and the extent of wing is three quarters of an inch less. The bill is apparently shorter and stouter.

The primaries are proportionally and absolutely considerably longer than the secondaries in the present species, the difference being .55 of an inch, instead of .45. The tail is rather more rounded, the feathers narrower.

The tail is considerably shorter than the wing, instead of longer; the black of the throat extends much farther back, is more dense and more sharply defined behind, than in *atricapillus*. Taking into view these differences, and others of color, we feel justified in retaining this as a species distinct from *atricapillus*, and, in fact, having *meridionalis* as its nearest relative (see Synoptical Table). Both this species and *atricapillus* are found together in the Middle States, each preserving its characteristics.

Habits. South of the once famous line of Mason and Dixon this smaller counterpart of the Chickadee seems to entirely replace it, although in New Jersey and Pennsylvania, and occasionally even as far to the north as New York City, the two occur together. Its range is presumed to be all the States south of the Potomac and the Ohio, as far to the west as the Rio Grande. It was probably this species, and not the *atricapillus*, which was met with by Dr. Woodhouse in the Indian Territory. Without much doubt it breeds in all the States south of Pennsylvania.

In Southern Illinois, as far north in the Wabash Valley as the mouth of White River, this is the only species, unless the *P. atricapillus* occasionally occurs in winter. Specimens from this region are undistinguishable from those taken in Georgia and the extreme Southern States, and do not present the peculiar features of *P. atricapillus*. It is a very abundant species, and resident, being in winter one of the most common, as well as one of the most familiar birds, inhabiting *all* localities, giving preference neither to swampy woods nor to door-yards, for it is as often seen in one place as another. It is never gregarious, though many may often be seen or heard at the same moment. It begins incubation early in April, generally selecting the wild plum and red-bud trees in the woods. This species very

often constructs its own nesting-places, and the soft wood of these trees is very easily excavated. The excavation is generally made in a horizontal dead limb, with the opening on the under side; this is neat and regular, and as elaborate as those of any of the woodpeckers. Sometimes, however, a natural cavity is selected, frequently in a prostrate stump or “snag.” The nest is almost always a very elaborate structure, being a strong compact cup or bed of “felt,” whose main material is rabbit-fur and cow-hair.

In its habits it seems to resemble more closely the *P. palustris* of Europe than the *atricapillus*, being generally found only in the immediate vicinity of ponds and deep, marshy, moist woods. It is also rarely found other than singly or in pairs, the parent birds, unlike most of this family, separating from their young soon after the latter are able to provide for themselves. It rarely or never moves in flocks.

Their notes are said to be less sonorous and less frequent than those of our Black-capped Titmouse. In the winter a portion retire from the coast in South Carolina into the interior of the State and into Florida, where Mr. Audubon found them, in the winter of 1831 and 1832, much more abundant than he had ever seen them elsewhere. He found them breeding as early as February, occasionally in the nests deserted by the Brown-headed Nuthatch. A nest obtained by Dr. Bachman from a hollow stump, about four feet from the ground, was in form cup-shaped, measuring two inches internally in diameter at the mouth, and three externally, with a depth of two inches. It was constructed of cotton, fine wool, a few fibres of plants, and so elaborately felted together as to be of uniform thickness throughout.

Mr. Audubon was in error in regard to the eggs, which he describes as pure white. Their ground-color is of pure crystalline whiteness, but they are freely and boldly marked all over with deep reddish-brown and red spots. These, so far as we have compared the eggs, are larger, more numerous, and more deeply marked than are any eggs of the *atricapillus* we have ever met with.

According to the observations of the late Dr. Alexander Gerhardt of Whitfield County, Georgia, these birds usually breed in holes that have been previously dug out by the *Picus pubescens*, or in decaying stumps not more than five or six feet from the ground. He never met with its nest in living trees. The eggs are from five to seven in number, and are usually deposited in Georgia from the 10th to the last of April.

The eggs of this species are slightly larger than those of the *atricapillus*, and the reddish-brown blotches with which they are profusely covered are much more distinctly marked. They are of a spheroidal oval in shape, have a pure white ground, very uniformly and generally sprinkled with blotches of a reddish-brown. They measure .60 by .50 of an inch.

Parus rufescens, Towns

CHESTNUT-BACKED CHICKADEE

Parus rufescens, Townsend, J. A. N. Sc. Phil. VII, II, 1837, 190.—Aud. Orn. Biog. IV, 1838, 371, pl. cccliii.—Ib. Birds Am. 1841, 158, pl. cxxix.—Baird, Birds N. Am. 1858, 394; Review, 83.—Cooper & Suckley, P. R. R. Rep. XII, II, 1859, 194 (nesting).—Sclater, Catal. 1861, 14, No. 86.—Dall & Bannister (Alaska).—Cooper, Birds Cal. 1, 47. *Pæcile rufescens*, Bonap. Consp. 1850, 230.

Sp. Char. Whole head and neck above, and throat from bill to upper part of breast, sooty blackish-brown. Sides of head and neck, upper part of breast, and middle of body, white; back and sides dark brownish-chestnut. Length, 4.75 inches; wing, 2.36; tail, 2.16.

Hab. Western United States, near Pacific coast.

Habits. The Chestnut-backed Titmouse was first obtained by Townsend on the banks of the Columbia River, and described in the Journal of the Philadelphia Academy. It is a resident, throughout the year, of the forests of the Columbia, and is found throughout California. Like all of this familiar family, they may be seen in small flocks, of all ages, in the autumn and winter, moving briskly about, uttering a number of feeble querulous notes, after the manner of the *atricapillus*, but never joining in anything like the quaint and jingling song of that bird. They occasionally have a confused warbling chatter. These busy little groups may be often seen in company with the *Parus occidentalis* and the *Regulus satrapa*, moving through the bushes and thickets, carefully collecting insects, their larvæ and eggs, for a few moments, and then flying off for some other place. They are supposed to rear their young in the midst of the densest forests.

Mr. Nuttall states that when the gun thins their ranks the survivors display surprising courage and solicitude, following their destroyer with wailing cries, entreating for their companions.

Dr. Gambel found the young of this species in great abundance around Monterey in the fall and winter months. Dr. Heermann saw them in June, 1852, feeding their young in the vicinity of San Francisco, where, however, they are rare.

In Washington Territory, Dr. Cooper found this the most abundant species. It preferred the dense evergreens, where large parties could be found at all seasons busily seeking food among the leaves and branches, ascending even to the highest tops. They were usually in company with the *Reguli* and the other Titmice. Mr. Bischoff found them abundant at Sitka.

They nest, like all the others of this genus, in holes in soft decayed trunks and large limbs of trees a few feet from the ground. Their eggs are not as yet known.

Parus hudsonicus, Forst

HUDSON'S BAY CHICKADEE; BROWN-CAPPED CHICKADEE

Parus hudsonicus, Forster, Philos. Trans. LXII, 1772, 383, 430.—Aud. Orn. Biog. II, 1834, 543, pl. cxciv.—Ib. Birds Am. II, 1841, 155, pl. cxxviii.—Baird, Birds N. Am. 1858, 395; Review, 82.—Samuels, 185.—Dall & Bannister (Alaska).
Parus hudsonicus var. *littoralis*, Bryant, Pr. Bost. Soc. N. H. IX. 1863, 368.

Sp. Char. Above yellowish olivaceous-brown; top of head purer brown, not very different in tint. Chin and throat dark sooty-brown. Sides of head white. Beneath white; sides and anal region light brownish-chestnut. No whitish on wings or tail. Tail nearly even, or slightly emarginate and rounded. Lateral feathers about .20 shortest. Length about 5 inches; wing, 2.40; tail, 2.66.

Hab. Northern portions of North America, from Atlantic to Pacific.

Specimens from the most northern localities appear larger than those from Maine and Nova Scotia (*P. littoralis*, Bryant), with proportionally longer tails (3.00 inches, instead of 2.40). We can, however, detect no other difference.

The *Parus sibiricus* of Europe is very similar in coloration and characters to the *P. hudsonicus*. The principal difference is seen in the cheeks, which in *sibiricus* are pure white, this color extending along the entire side of the neck, widening behind, and extending round towards the back. In *hudsonicus* the cheeks behind the eyes and sides of the neck are ash-gray, the white being confined to the region below or near the eye. The smoky-gray of the upper part of head and neck in *sibiricus* is in a stronger contrast with the brighter rufescent-gray of the back, and is separated from it by an obscure, concealed, whitish dorsal half-collar, represented in *hudsonicus* only by a dull grayish shade in the plumage.

Habits. This interesting species, one of the liveliest and most animated of its family, belongs to the northern and eastern sections of North America. It is found in the eastern and northern portions of Maine, and probably also in the northern parts of New York, Vermont, and New Hampshire. In the heavily wooded mountain-valley of Errol, in the latter State, Mr. Maynard met with this bird in the latter part of October, in company with the common *atricapillus*. In the same month he also obtained two birds in Albany, in the northwestern corner of Maine. A single specimen was taken at Concord, Massachusetts, October 29, by Mr. William Brewster.

Near Calais it is resident, but not common. It is more abundant in the islands of the Bay of Fundy, where it takes the place, almost exclusively, of the *atricapillus*. The writer first met with these lively little wood-sprites in 1850, in the thick swampy woods which cover one of the small islands near Grand Menan. Their general appearance as they flitted through the woods, or rustled restlessly among the tangled débris of decaying trees and underbrush with which the forest was choked, was not unlike that of our common Black-Cap. Yet there was an indescribable something both in their cries and in their manners that at once suggested a difference of species. To my ear their cries were sharper, clearer, and a trifle harsher. There was none of that resonant jingle so full of charm in the Chickadee. Their notes, too, were more articulate, more like distinct words, and were brought out at certain times with an emphasis the effect of which was very striking. Beginning with *tschā-dēē*, the *dēē-dēē-dēē* was reiterated with an almost incessant volubility.

It seemed to be a more retiring bird, never frequenting the houses, but keeping closely to thick and retired woods. Yet it is not a timid species, but seemed entirely unmindful of our presence, or, when mindful of it, to resent it as an impropriety, rather than to fear it as a danger. They apparently had nests or young at the time of my visit, though I could not detect their locality. One pair became at last so annoyed at my prolonged presence as to manifest their uneasiness by keeping within a few feet of my head, following me wherever I went, and without ceasing from their close surveillance until I finally left their grove and emerged into the open country. All the time they brought out the cry of *dēē-dēē* with a clear, ringing emphasis that was almost startling.

A few days later, being at Halifax, Mr. Andrew Downes, the naturalist, took me to the nest of these birds in a small grove in the vicinity of that city. The nest was in a small beech-tree, and had been cut through the living wood. The excavation, which was not more than two feet from the ground, was about ten inches in depth, was in a horizontal position only about two inches, where it turned abruptly downward, and from a width of an inch and a half assumed a width of three, and a depth of seven or eight inches. This was warmly lined with feathers and soft fur. The nest contained young birds. These particulars we only ascertained when we had laid bare the excavation by a sharp hatchet. Though disappointed in our search for eggs, yet we witnessed a very touching manifestation of devotion on the part of the parents, and of neighborly solicitude in various other inmates of the grove, which was at once most interesting and a scene long to be remembered.

With all the self-sacrificing devotion of the Black-Cap, these birds displayed a boldness and an aggressive intrepidity that at once commanded our respect and admiration. I never witnessed anything quite equal to it. They flew at our faces, assailed our arms as we wielded the invading hatchet, and it was difficult not to do them even unintentional injury without abandoning our purpose. Before we could examine the nest they had entered, and had to be again and again removed. As soon as we were satisfied that the nest of this heroic pair did not contain what we sought, we left them, and turned to look with equal admiration upon the indignant assembly of feathered remonstrants by which we were surrounded. The neighboring trees swarmed with a variety of birds, several of which we had never before seen in their summer homes. There were the Red-Poll Warbler, the Black and Yellow Warbler, and many others, all earnestly and eloquently crying out shame upon our proceedings.

Dr. Bryant, in his Notes on the Birds of Yarmouth, N. S., etc., mentions finding quite a number of this species on Big Mud Island, near that place. A pair of these birds with their young were seen by him near Yarmouth on the 3d of July. Their habits seemed to him identical with those of the Black-

Cap. The young were fully grown and could fly with ease, yet their parents were so solicitous about their safety that he could almost catch them with his hand. Their notes appeared to him similar to those of our common species, but sharper and more filing, and can be readily imitated by repeating, with one's front teeth shut together, the syllables *tzēē-dēē-dēē-dēē*.

Mr. Audubon found a nest of this Titmouse in Labrador. It was built in a decayed stump about three feet from the ground, was purse-shaped, eight inches in depth, two in diameter, and its sides an inch thick. It was entirely composed of the finest fur of various quadrupeds, chiefly of the northern hare, and all so thickly and ingeniously matted throughout as to seem as if felted by the hand of man. It was wider at the bottom than at the top. The birds vehemently assailed the party.

Mr. Ross, in notes communicated to the late Mr. Kennicott, mentions that specimens of this species were shot at Fort Simpson, October 13, in company with *P. septentrionalis*, and others were afterwards seen towards the mountains. The notes he describes as harsher than those of the *septentrionalis*. The Smithsonian museum contains specimens from Fort Yukon and Great Slave Lake, besides the localities already referred to. Mr. Dall found it the commonest Titmouse at Nulato, abundant in the winter, but not present in the spring.

The eggs of this species measure .56 by .47 of an inch, are of a rounded oval shape, and with a white ground are somewhat sparingly marked with a few reddish-brown spots. These are usually grouped in a ring around the larger end.

Genus PSALTRIPARUS, Bonap

Psaltriparus, Bonap. Comptes Rendus, XXXI, 1850, 478. (Type, *P. melanotis*.)

Ægithaliscus, Cabanis, Museum Heineanum, 1851, 90. (Type, *Parus erythrocephalus*.)

Psaltria, Cassin, Ill. N. Am. Birds, 1853, 19.

Gen. Char. Size very small and slender. Bill very small, short, compressed, and with its upper outline much curved for the terminal half. Upper mandible much deeper than under. Tail long, slender, much graduated; much longer than the wings; the feathers very narrow. Tarsi considerably longer than the middle toe. No black on the crown or throat. Eyes white in some specimens, brown in others. Nest purse-shaped; eggs unspotted, white.

No bird of this genus belongs to the eastern portion of the United States. The three species may be defined as follows:—

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*.

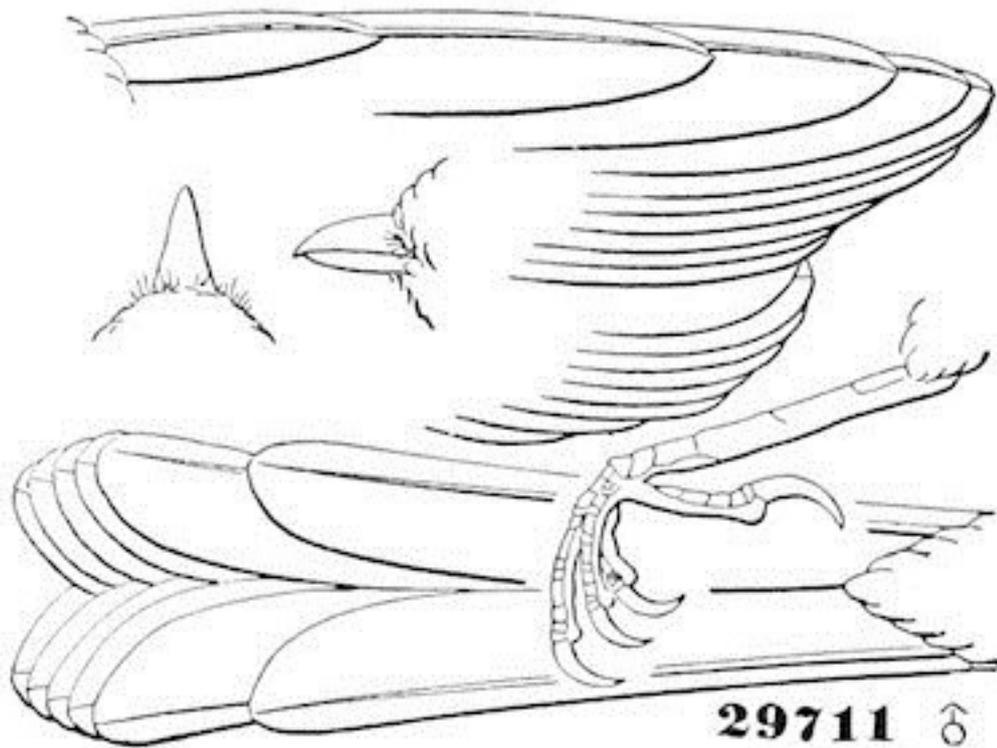
Psaltriparus melanotis, Bonap

BLACK-EARED BUSH-TITMOUSE

Parus melanotis, Hartlaub, Rev. Zoöl. 1844, 216. *Pæcile melanotis*, Bp. Consp. 1850, 230. *Ægithaliscus melanotis*, Cab. Mus. Hein. I, 1850, 1851, 90. *Psaltria melanotis*, Westermann, Bijd. Dierk. 1851, 16, plate. *Psaltriparus melanotis*, Bonap. C. R. XXXVIII, 1854.—Sclater, P. Z. S. 1858, 299.—Ib. 1864, 172 (City Mex.).—Salvin, Ibis, 1866, 190 (Guatemala).—Baird, Birds N. Am. 1858, 386, pl. liii, fig. 3; Review, 84. *Psaltriparus personatus*, Bonap. C. R. XXXI, Sept. 1850, 478.

Sp. Char. A black patch on each cheek, nearly meeting behind. Crown and edges of the wing and tail ash-gray; rest of upper parts yellowish-brown, lighter on the rump. Beneath whitish; anal region tinged with yellowish-brown. Length about 4 inches; wing, 1.90; tail, 2.30.

Hab. Eastern Mexico; south to Guatemala; Oaxaca (high region), Sclater. East Humboldt Mountains, Nevada? Ridgway.



Psaltriparus minimus.

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Habits. In regard to the specific peculiarities and the distinct individual habits of the members of this pretty little species, little is at present known. Its mode of nesting has not been observed, and no mention is made, by those who have met with it, of its peculiarities of song, nor have we any information in regard to any of its habits. Its geographical distribution, so far as ascertained, is from the south side of the valley of the Rio Grande of Mexico to Guatemala, and there is no

reliable evidence of its crossing the United States boundary line, unless Mr. Ridgway is correct in his assurance that he saw it in the East Humboldt Mountains of Nevada, near Fort Ruby. It was first described from Guatemalan specimens. Mr. O. Salvin (*Ibis*, 1866, p. 190) states that on more than one occasion he observed what he believed to be this species, in the pine-woods of the mountains near Solola, and above the lake of Atitlan.

***Psaltriparus minimus*, var. *minimus*, Bonap**

LEAST BUSH-TITMOUSE

Parus minimus, Townsend, J. A. N. Sc. VII, ii, 1837, 190.—Aud. Orn. Biog. IV, 1838, 382, pl. ccclxxxii, figs. 5, 6.—Ib. Birds Am. II, 1841, 160, pl. cxxx. *Pæcile minima*, Bon. Consp. 1850, 230. *Psaltria minima*, Cassin, Illust. 1853, 20. *Psaltriparus minimus*, Bon. C. R. XXXVIII, 1854, 62.—Baird, Birds N. Am. 1858, 397; Review, 84.—Cooper & Suckley, P. R. R. Rep. XII, ii, 1859, 195.—Cooper, Birds Cal. 1, 48.

Sp. Char. Tail long, feathers graduated. Above rather dark olivaceous-cinereous; top and sides of head smoky-brown. Beneath pale whitish-brown, darker on the sides. Length about 4 inches; wing, 1.90; tail, 2.25.

Hab. Pacific coast of United States.

There is quite an appreciable difference between specimens of this species from Washington Territory and California; the latter are smaller, the under parts paler. In the series before us, however, we see no grounds for specific distinction.



Psaltriparus minimus.

Habits. This interesting little species was first added to our fauna by the indefatigable Mr. Townsend in 1837. It is abundant throughout the Pacific coast from Fort Steilacoom to Fort Tejon. Dr. Gambel found it exceedingly abundant both in the Rocky Mountains and throughout California. During the winter the otherwise cheerless woods were alive with the busy and noisy troops of these restless and industrious birds, gleaning their scanty fare in company with the *Reguli*, in every possible position and manner, from bush and tree. He describes their anxious solicitous search for food as quite curious. They kept up a continual twittering, and so intent were they in their employment that

they appeared to lose sight of all danger, and it was by no means unusual to be so surrounded by a flock as almost to render it possible to catch them in the hand.

Dr. Cooper found this species abundant in Washington Territory, but never met with it north of the Columbia River. Dr. Suckley says it is quite common at Fort Steilacoom. He could not, however, detect any difference in its habits from those of other species of this family. He saw none in Washington Territory during the winter, and presumes they all migrate to the South, though the *rufescens* and the *occidentalis* are found there throughout the winter. Townsend, however, speaks of it as a constant resident about the Columbia River, hopping around among the bushes, hanging from the twigs in the manner of other Titmice, twittering all the while with a rapid enunciation resembling the words *thshish tshist-tsee-twee*.

Mr. Nuttall first observed their arrival on the banks of the Wahlamet River about the middle of May. They were very industriously engaged in quest of insects, and were by no means shy, but kept always in the low bushes in the skirts of the woods. On one occasion the male bird was so solicitous in regard to the safety of the nest as to attract him to the place where, suspended from a low bush, about four feet from the ground, hung their curious home. It was formed like a long purse, with a round hole for entrance near the top, and made of moss, down, lint of plants, and lined with feathers. The eggs were six in number, pure white, and already far gone toward hatching. In the following June, in a dark wood near Fort Vancouver, he saw a flock of about twelve, which, by imitating their chirping, he was able to call around him, and which kept up an incessant and querulous chirping.

A nest of this bird presented by Mr. Nuttall to Audubon was cylindrical in form, nine inches in length and three and a half in diameter. It was suspended from the fork of a small twig, and was composed externally of hypnum, lichens, and fibrous roots so interwoven as to present a smooth surface, with a few stems of grasses and feathers intermingled. The aperture was at the top, and did not exceed seven eighths of an inch in diameter. The diameter of the internal passage for two thirds of its length was two inches. This was lined with the cottony down of willows and a vast quantity of soft feathers. The eggs were nine in number, pure white, .56 of an inch by .44 in their measurement.

Dr. Cooper found them throughout the year near San Francisco. He found one of their nests at San Diego as early as the first of March. The nest is so large, compared with the size of the birds, as to suggest the idea that the flock unite to build it. He gives the measurements as eight inches in length and three in diameter, outside; the cavity five inches long, one and a half in diameter. It was cylindrical, and suspended by one end from a low branch.

When one of these birds is killed, Dr. Cooper says that the others come round it with great show of anxiety, and call plaintively until they find it will not follow them, becoming so fearless as almost to allow of their being taken by the hand.

***Psaltriparus minimus*, var. *plumbeus*, Baird**

LEAD-COLORED BUSH-TITMOUSE

Psaltria plumbea, Baird, Pr. A. N. S. VII, June, 1854, 118 (Little Colorado).

Psaltriparus plumbeus, Baird, Birds N. Am. 1858, 398, pl. xxxiii, fig. 2; Review, 84.

—Sclater, Catal. 1861, 398, No. 77.—Cooper, Birds Cal. 1, 49.

Sp. Char. Tail long, feathers graduated. Above rather light olivaceous-cinereous. Top of head rather clearer; forehead, chin, and sides of head, pale smoky-brown. Beneath brownish-white, scarcely darker on the sides. Length about 4.20 inches; wing, 2.15; tail, 2.50.

Hab. Southern Rocky Mountain region of United States, from mountains of West Arizona to Green River, Wyoming; west to Carson City, Nevada (Ridgway).

This variety is very similar to the *Psaltriparus minimus* of the west coast, which it represents in the Rocky Mountain region. It is, however, appreciably larger, the wings and tail proportionally longer. The top of the head is plumbeous, uniform with the back, instead of smoky-brown. The back is a paler ash, the under parts darker.

Habits. Of the history of this variety but little is known. It is found in the southern portion of the Rocky Mountain regions, within the United States, in Arizona and New Mexico. The extent of its area of distribution remains to be ascertained. Dr. Kennerly met with it on Little Colorado River, where he observed it among the scattered bushes along the banks of the river, occurring in large flocks. These passed rapidly from place to place, uttering their short, quick notes. He afterward met with them along the head waters of Bill Williams Fork, inhabiting the tops of the cotton-wood trees. When attracted to them by their notes, they could only be seen after a very careful search. He obtained no knowledge as to their mode of nesting, and no information, so far as we are aware, has been obtained in regard to their eggs. It may, however, be safely conjectured that they are white, and hardly distinguishable from those of the *minimus*. Dr. Coues found them common near Fort Whipple, Arizona.

Mr. Ridgway met with this bird in especial abundance among the cañons of West Humboldt Mountains in September. He found it also in all suitable places westward to the very base of the Sierra Nevada Mountains. It was met with principally in the thick brushwood bordering the streams, in ever-restless companies, continually twittering as they flew from bush to bush, in single rows. Mr. Ridgway describes these birds as remarkably active in their movements. If unmolested, they were exceedingly unsuspecting and familiar. During November he found them inhabiting the cedars, always associating in scattered flocks.

Genus AURIPARUS, Baird

Auriparus, Baird, Rev. Am. Birds, 1864, 85. (Type, *Ægithalus flaviceps*, Sund.)

Gen. Char. Form sylvicoline. Bill conical, nearly straight, and very acute; the commissure very slightly and gently curved. Nostrils concealed by decumbent bristles. Wings long, little rounded; the first quill half the second; third, fourth, and fifth quills nearly equal, and longest. Tail slightly graduated. Lateral toes equal, the anterior united at the extreme base. Hind toe small, about equal to the lateral. Tarsus but little longer than the middle toe.

This genus is closely allied to *Paroides* of Europe, as shown in Birds of North America (p. 399), though sufficiently different. It is much more sylvicoline in appearance than the other American *Paridæ*.

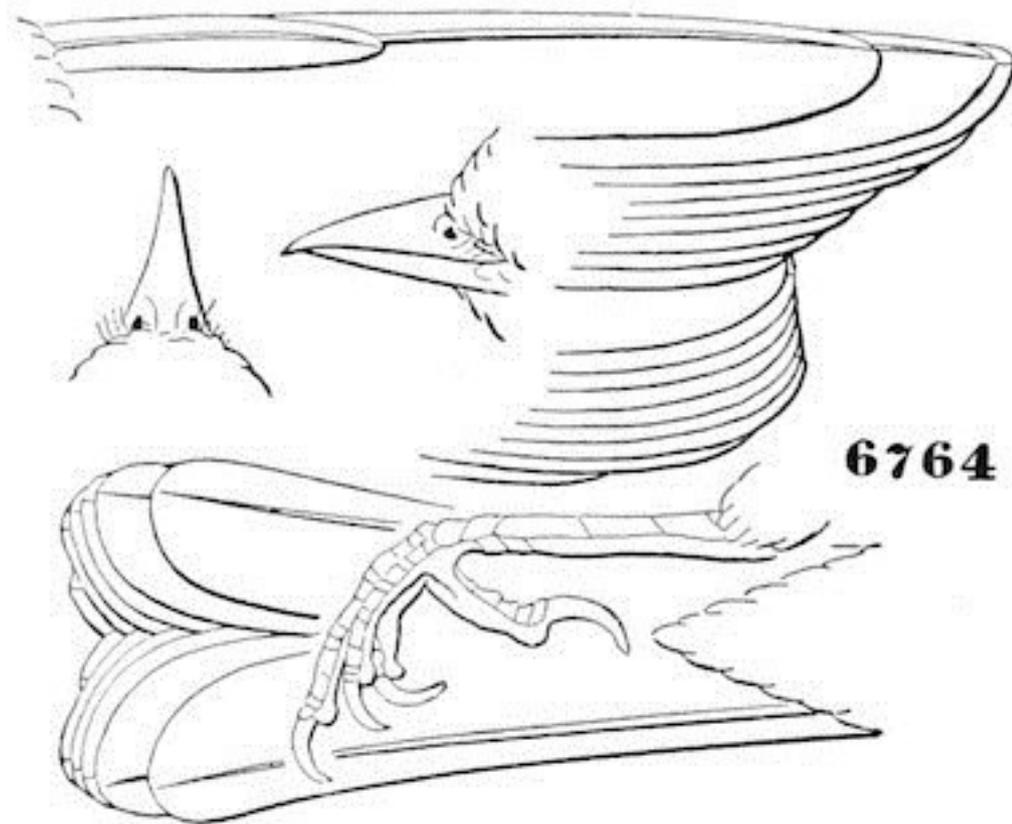
Auriparus flaviceps, Baird

YELLOW-HEADED BUSH-TITMOUSE; VERDIN

Ægithalus flaviceps, Sundevall, Ofversigt af Vet. Ak. Förh. VII, v, 1850, 129. *Psaltria flaviceps*, Scl. P. Z. S. XXIV, March, 1856, 37. *Psaltriparus flaviceps*, Scl. Catal. Am. Birds, 1861, 13, No. 79. *Paroides flaviceps*, Baird, Birds N. Am. 1858, 400, pl. liii, fig. 2. *Auriparus flaviceps*, Baird, Review, 1864, 85.—Cooper, Birds Cal. 1, 51. *Conirostrum ornatum*, Lawrence, Ann. N. Y. Lyc. May, 1851, 113, pl. v, fig. 1 (Texas).

Sp. Char. Above cinereous; head, all round, yellow; lesser wing-coverts chestnut; beneath brownish-white. Length, 4.50 inches; wing, 2.16; tail, 2.35.

Hab. Valleys of the Rio Grande and Colorado; Cape St. Lucas.



Auriparus flaviceps.

6764

Habits. This new and interesting little species was first added to our fauna by Mr. Lawrence in 1851, only a year after its first description as a bird of Mexico. Notwithstanding the abundance in which it has been in certain localities, less has been developed in regard to its habits and specific characteristics than we seem to have had a right to anticipate.

It was found in Western Texas, in Mexico, in the lower valleys of New Mexico and Arizona, and is very abundant at Cape St. Lucas. Of the eighteen species of birds found by Mr. John Xantus breeding in the last-named locality, this one was regarded as the most abundant. In a letter from that gentleman, written in August, 1859, he mentioned that he had collected over one hundred eggs of this species, during that season, in the immediate vicinity of Cape St. Lucas.



Auriparus flaviceps.

Dr. Heermann, in his report on the birds observed in Lieutenant Williamson's explorations, states that he first discovered this species in Southern California, at the terminus of the Mohave River. Owing to their extreme wildness, he was not able to obtain any specimens. In searching for their food, he states that they often remained suspended with their backs downward, after the manner of the Titmice. He found their nests quite abundant, though from the lateness of the season few of the birds were remaining, in the neighborhood of Fort Yuma. Dr. Heermann describes their nests as spherical, formed of twigs, and having the entrance on one side. The interior was lined with down and feathers, and contained usually from four to six eggs. These he describes as having, when fresh, a ground-color of pale blue, dashed all over with small black spots.

Dr. Kennerly, in his Report on the Birds of the Mexican Boundary Survey, states that he met with this species in the vicinity of the Rio Grande. They were very wild, flew rapidly, and to quite a distance before they alighted. They seemed to frequent the low mezquite-bushes on the hillsides.

Mr. Xantus found this species, when he first arrived at San Lucas, on the 4th of April, with young birds already fully fledged, although others were still breeding and continued to breed until the middle of July. Two fifths of all the eggs he collected that season, he writes, were of this species. This may, however, have been in part owing to the conspicuous prominence of their nests, as well as to their abundance. Xantus found the nest in various positions. In one instance it was suspended from a leafless branch not three feet from the ground, with its entrance nearly to the ground. In another instance it was on an acacia twenty feet from the ground. For the most part they are hung from low acacia-trees, on the extreme outer branches. In all cases the entrance to the nest was from the lower end, or towards the ground.

Dr. J. G. Cooper, in his History of the Birds of California, speaks of finding a large number of this beautiful little bird during the whole winter frequenting the thickets of algarobia and other shrubs, and with habits intermediate between those of Titmice and Warblers, corresponding with their intermediate form. Their song resembles that of the Chickadee, and they also uttered a loud cry, as they sat on high twigs, with a triple lisping note resembling *tzee-tee-tee*. Dr. Cooper found a pair building on the 10th of March. They first formed a wall, nearly spherical in outline, of the thorny twigs of the algarobia, in which tree the nest was usually built. They then lined it with softer twigs, leaves, the down of plants, and feathers. They covered the outside with thorns, until it became a mass as large as a man's head, or nine inches by five and a half on the outside. The cavity is four and a half inches by two, with an opening on one side just large enough for the bird to enter. On the 27th of March, Dr. Cooper found the first nest containing eggs. These were in all instances four in number, pale blue, with numerous small brown spots, chiefly near the larger end, though some had

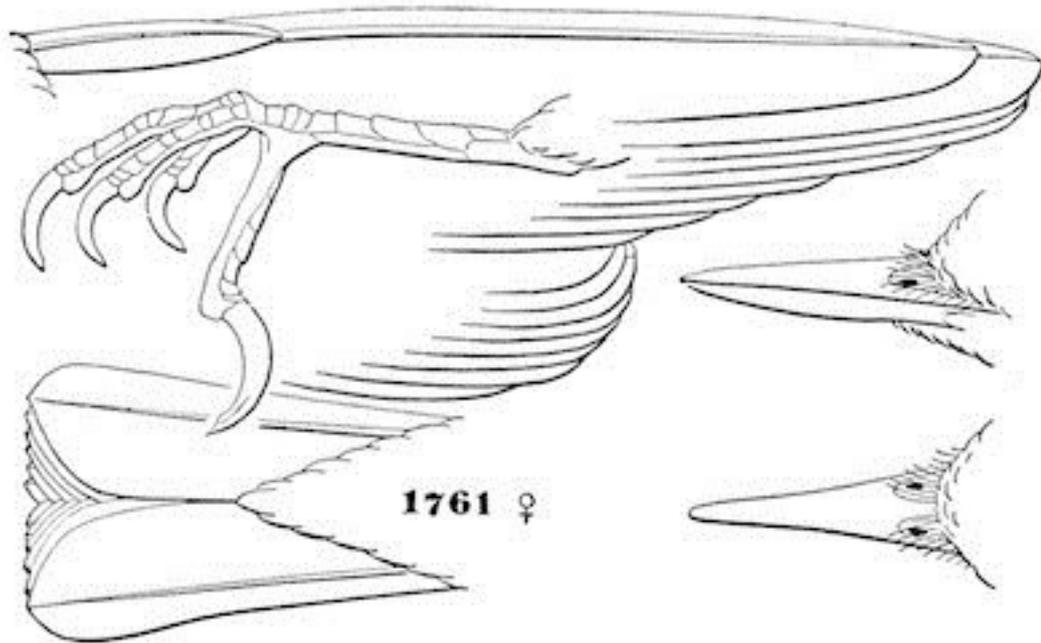
very few spots and were paler. Their size he gives as .60 by .44 of an inch. In one nest, which he closely observed, the eggs were hatched after about ten days' incubation, and in two weeks more the young were ready to leave their nest.

Subfamily SITTINÆ

The characters of the *Sittinæ* are expressed with sufficient detail on [page 86](#). The section is represented in America by a single genus, confined mainly to the northern portion.

Genus SITTA, Linnæus

Sitta, Linnæus, Syst. Nat. 1735. (Agassiz.)



Sitta carolinensis.

1761 ♀

Gen. Char. Bill subulate, acutely pointed, compressed, about as long as the head; culmen and commissure nearly straight; gonys convex and ascending; nostrils covered by a tuft of bristles directed forward. Tarsi stout, scutellate, about equal to the middle toe, much shorter than the hinder, the claw of which is half the total length. Outer lateral toe much longer than inner, and nearly equal to the middle. Tail very short, broad, and nearly even; the feathers soft and truncate. Wings reaching nearly to the end of the tail, long and acute, the first primary one third of (or less) the third, or longest. Iris brown. Nest in holes of trees. Eggs white, spotted with reddish.

The North American species may be arranged as follows:—

A. Crown black.

S. carolinensis. Belly white; no black stripe through eye.

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. *Hab.* Whole of North America.

B. Crown not black.

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

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

Sitta carolinensis, var. carolinensis, Lath

WHITE-BELLIED NUTHATCH

Sitta europæa, var. γ , *carolinensis*, Gm. S. N. I, 1788, 440. *Sitta carolinensis*, Lath. Ind. Orn. I, 1790, 262; also of all other American writers.—Reichenbach, Handbuch, Abh. II., 1853, 153, tab. dxiii, figs. 3563, 3564.—Baird, Birds N. Am. 1858, 374, pl. xxxiii, fig. 4; Review, 86.—Max. Cab. Jour. VI, 1858, 106. *Sitta melanocephala*, Vieill. Gal. I, 1834, 171, pl. clxxi.

Other figures: Wilson, Am. Orn. I, pl. ii, fig. 3.—Aud. Orn. Biog. II, pl. clii.—Ib. B. A. IV, pl. ccxlvii.

PLATE VIII.



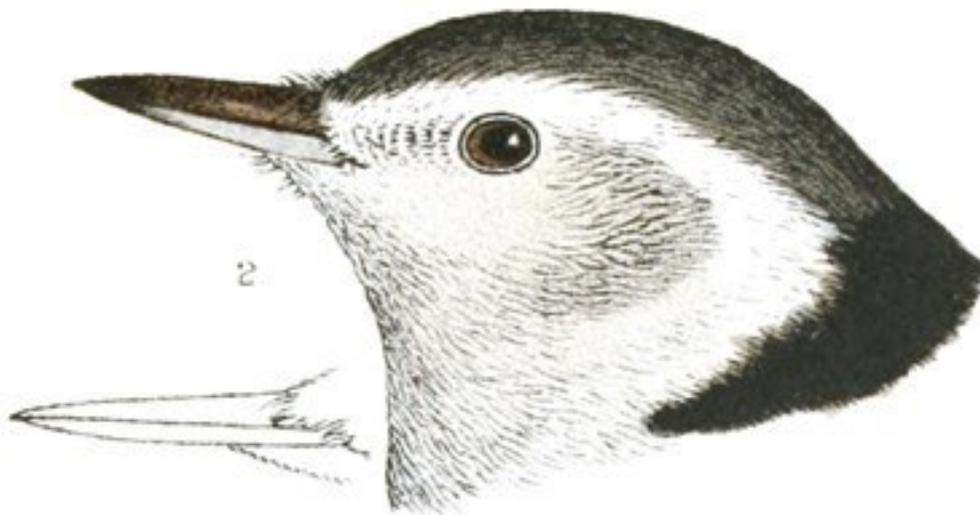
1. *Sitta carolinensis*, Gm. ♂ Pa., 59324.
2. " " " ♀
3. *Salpinctes obsoletus*, Say. Cal., 7157.
4. *Catherpes mexicanus*, Sw., var. Mex., 53425.
5. *Campylorhynchus brunnicapillus*, Lafr. ♂ Cal., 7149.
6. " adonis, Xantus. ♂ Cape St. Lucas, 12965.

7. *Sitta canadensis*, Linn. ♂ Pa., 818.
8. " " " ♀ Pa., 2073.
9. " *pusilla*, Lath. Ga., 1925.
10. " *pygmaea*, Vig. Cal., 3342.
11. *Certhia americana*, Bon. ♂ Pa., 827.

PLATE VIII.



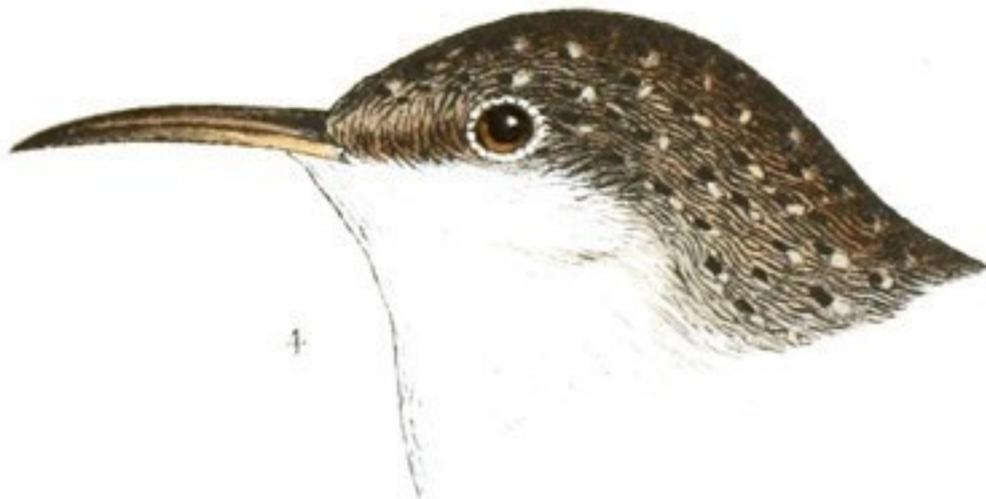
1. *Sitta carolinensis*, *Gm.* ♂ Pa., 59324.



2. *Sitta carolinensis*, *Gm.* ♀



3. *Salpinctes obsoletus*, Say. Cal., 7157.



4. *Catherpes mexicanus*, Sw., var. Mex., 53425.



5. *Campylorhynchus brunneicapillus*, *Lafr.* ♂ Cal., 7149



6. *Campylorhynchus affinis*, *Xantus.* ♂ Cape St. Lucas, 12965



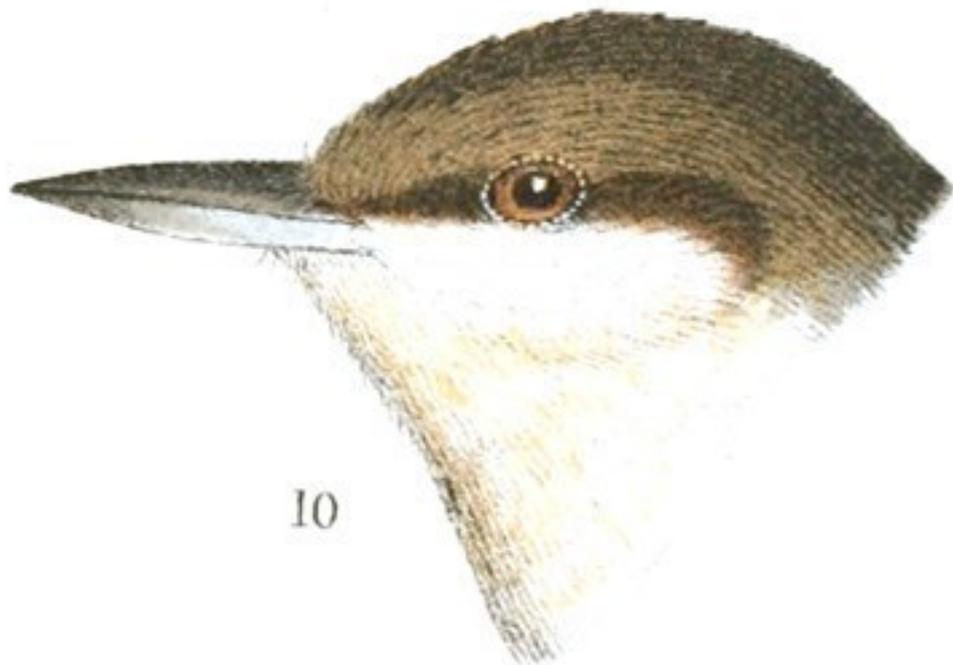
7. *Sitta canadensis*, *Linn.* ♂ Pa., 818



8. *Sitta canadensis*, *Linn.* ♀ Pa., 2073.



9. *Sitta pusilla*, *Lath. Ga.*, 1925.



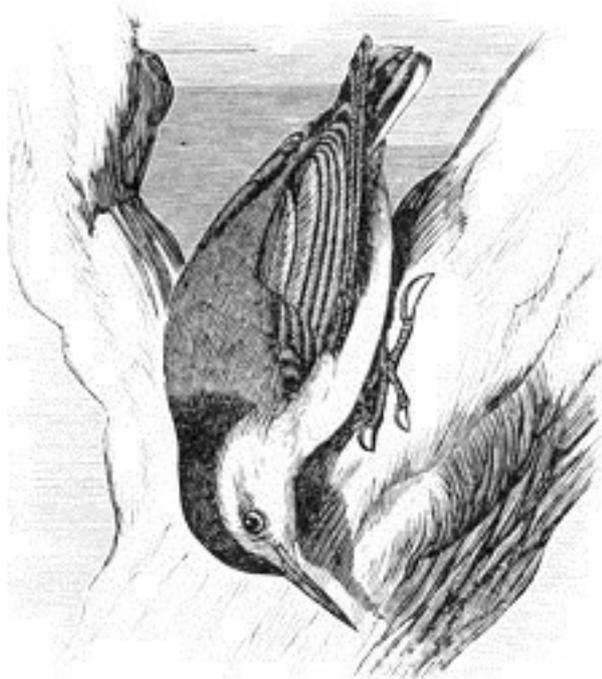
10. *Sitta pygmæa*, *Vig. Cal.*, 3342.



11. *Certhia americana*, *Bon. ♂ Pa.*, 827.

Sp. Char. Above ashy-blue. Top of head and neck black. Under parts and sides of head to a short distance above the eye white. Under tail-coverts and tibial feathers brown; concealed primaries white. Bill stout. Female with black of head glossed with ashy. Length about 6 inches; wing about 3.75.

Hab. United States and British Provinces; west to the Valley of the Missouri.



Sitta aculeata.

Habits. The common White-bellied Nuthatch has an extended distribution throughout nearly the whole of Eastern North America, from the Atlantic to the Rocky Mountains. West of the great central plains it is replaced by the var. *aculeata*. It has not been met with, so far as I am aware, farther north than Nova Scotia. It is a resident of Eastern Maine, and is quite common in the southern and western portions of the same State. In Massachusetts it is rather common than abundant, and more plentiful in the western than in the eastern portions of that State.

The habits of this and the other species of Nuthatches partake somewhat of those of the smaller Woodpeckers and of the Titmice. Without the noisy and restless activity of the latter, they seek their food in a similar manner, and not unfrequently do so in their company, moving up or down the trunks and over or under the branches of trees, searching every crack and crevice of the bark for insects, larvæ, or eggs. Like the Woodpeckers, they dig industriously into decayed branches for the hidden grub, and like both Woodpeckers and Chickadees they industriously excavate for themselves a place for their nests in the decayed trunks of forest trees. Their nest, however, is usually at a greater elevation, often some twenty or thirty feet from the ground. The European Nuthatch is said to plaster up the entrance to its nest, to contract its opening and lessen the dangers of unfriendly intrusion. This habit has never been observed in any of the American species.

All our ornithological writers have noticed the assiduities of the male bird to his sitting mate, and the attention with which he supplies her with food. He keeps ever in the vicinity of the nest, calls her from time to time to come to the mouth of the hole to take her food, or else to receive his endearments and caresses, and at the approach of danger fearlessly intervenes to warn her of it. When feeding together, the male bird keeps up his peculiar nasal cry of *hönk-hönk*, repeating it from time to time, as he moves around the trunk or over the branches.

Their favorite food is insects, in every condition. With this, when abundant, they seem content, and rarely wander from their accustomed woods in summer. In winter, when snow or ice covers the branches or closes against them the trunks of trees, they seek the dwellings and out-houses for their necessary food, and will even alight on the ground in quest of seeds. In searching for food among the trees, they move as readily with their heads downward as in any other position. Their motion is a uniform and steady progression, somewhat in the manner of a mouse, but never, like the Woodpecker, by occasional hops.

The European species collect and store away the fruit of the hazel and other nut-bearing trees. Our bird has been supposed to do the same thing, but this is by no means an indisputable fact.

In some parts of the country absurd prejudices prevail against these interesting little birds. They are indiscriminately confounded with the smaller Woodpeckers, called, with them, Sap-Suckers, and because in the spring and fall they frequent old orchards are most unwisely, as well as unjustly, persecuted. They are among the most active and serviceable of the fruit-grower's benefactors. His worst enemies are their favorite food. It is to be hoped that soon a better-informed public opinion will prevail, cherishing and protecting, rather than seeking to destroy, this useful, affectionate, and attractive species.

Interesting accounts are given in English works of the confiding tameness of the European species. When kindly treated, it will come regularly for its food, approaching within a foot or two of the hand of its benefactor, and catching with its bill the food thrown to it before it can reach the ground.

The pair work together in constructing the perforation in which they make their nest. When the excavation has been well begun, they relieve each other at the task. The one not engaged in cutting attends upon its mate, and carries out the chips as they are made. These nesting-places are often quite deep, not unfrequently from fifteen to twenty inches. Audubon states that they build no nest, but this does not correspond with my observations. In all the instances that have come to my knowledge, warm and soft nests were found, composed of down, fur, hair, or feathers loosely thrown together, and, though not large in bulk, yet sufficient for a lining for the enlarged cavity that completes their

excavation. Soon after they are hatched, the young climb to the opening of the nest to receive their food, and, before they are ready to fly, venture out upon the trunk to try their legs and claws before their wings are prepared for use, retiring at night to their nest. In the Southern States they are said to have two broods in a season.

The eggs of this Nuthatch measure .80 by .62 of an inch. Their ground-color is white, but when the egg is fresh it has a beautiful roseate tinge, and generally receives an apparently reddish hue from the very general distribution of the spots and blotches of rusty-brown and purplish with which the eggs are so closely covered. These markings vary greatly in size, from fine dots to well-marked blotches. Their color is usually a reddish-brown; occasionally the markings are largely intermixed with purple.

***Sitta carolinensis*, var. *aculeata*, Cass**

SLENDER-BILLED NUTHATCH

Sitta aculeata, Cassin, Pr. A. N. Sc. VIII, Oct. 1856, 254.—Baird, Birds N. Am. 1858, 375, pl. xxxiii, fig. 3; Review, 86.—Cooper, Orn. Cal. 1, 1870, 54. ?
Sitta carolinensis, Sclater, P. Z. S. 1856, 293 (Cordova); 1858, 300 (Oaxaca); 1859, 363 (Xalapa), 373 (Oaxaca).

Sp. Char. Very similar to *carolinensis*; but upper secondaries with only obscure blackish blotches, instead of sharply defined longitudinal spots of clear black. Bill slenderer and more attenuated.

Hab. Western and Middle Provinces of the United States, south to Cordova, Mex. Orizaba (Alpine regions), Sumich.

The characters given above express the essential differences between this and the Eastern race of *S. carolinensis*. In the present form, the depth of the bill opposite its base is .14, the width .17, and .80 or more in length from the forehead; while these same measurements in var. *carolinensis* are .17, .22, and .70. The obsolete character of the black spots on the secondaries is a persistent feature in the var. *aculeata*.

Habits. This bird chiefly differs from its eastern congener in its more slender bill. There appears to be no difference in regard to their habits, at least none have been noticed, and it is probable there is none other than trivial changes caused by its opportunities of procuring food, and the kinds upon which it subsists. It is supposed to be distributed throughout Western North America, from the British Possessions to Mexico, though Dr. Cooper thinks that it is not a common bird south of San Francisco, and only to be seen there in the colder months. It has been met with at San Diego in February. He did not observe any in the Coast Mountains, near Santa Cruz, but northward they are numerous in the summer, frequenting chiefly the groves of the deciduous oaks, creeping constantly about their trunks and branches in search of insects, which they also occasionally seek on the roofs and walls of houses. Their habits are similar to those of *S. canadensis*, but their movements are said to be slower, and their note is a single harsh call, uttered occasionally, and responded to by their comrades. Dr. Cooper found them quite common in Washington Territory and at Puget Sound. Dr. Suckley also mentions their great abundance.

Dr. Kennerly met with this species a hundred miles west of Albuquerque, New Mexico, and quite abundant among the pines of the Sierra Madre. He speaks of its note as being peculiar.

Mr. J. K. Lord states that this species remained about Colville during the winter, when the thermometer was 30° below zero. He also mentions that he found them nesting, in June, in the branches of the tallest pine-trees, so high up as to render the obtaining their eggs almost an impossibility.

Mr. Ridgway found the Slender-billed Nuthatch abundant, throughout the year, in the vicinity of Carson City, among the pines on the Sierra Nevada Mountains. He noted its great similarity in manners to the *carolinensis*; at the same time the well-marked difference in the notes did not escape his attention. These notes are much weaker, and are uttered in a finer tone, and some of them are said to be entirely different.

Sitta canadensis, Linn

RED-BELLIED NUTHATCH

Sitta canadensis, Linn. Syst. Nat. I, 1766, 177.—Aud. Orn. Biog. II, 1834, pl. cviii.—Ib. Birds Am. IV, pl. ccxlviii.—Reich. Handb. Abh. II, 1853, 152, tab. dxiii, figs. 3561, 3562.—Baird, Birds N. Am. 1858, 376; Review, 87.—Sclater, Catal. 1861, 15, No. 91.—Cooper, Orn. Cal. 1, 1870, 54. *Sitta varia*, Wils. Am. Orn. I, 1808, 40, pl. ii.

Sp. Char. Above ashy-blue. Top of head black; a white line above and a black one through the eye. Chin white; rest of under parts brownish-rusty. Length about 4.50 inches; wing, 2.66. Female with the black of head mixed with ashy; beneath paler, more of a muddy-white.

Hab. Whole United States and British Provinces. North to Lake Winnipeg.

Habits. The common Red-bellied Nuthatch, though nowhere a very abundant species, is found throughout the whole of North America, from Florida to high northern regions, and from ocean to ocean. The Smithsonian Institution possesses specimens from Georgia, Selkirk Settlement, California, and Washington Territory. Mr. Gambel found them quite common in the mountains in the interior of California, in October, roving in company with busy flocks of the *Parus montanus*.

Dr. Cooper met with them abundantly in Washington Territory, where they preferred the oaks and other deciduous trees, and never frequented the interior of the dense forest. He observed this bird and the Slender-billed Nuthatch, along the 49th parallel, east of the Cascade Mountains, as late as the middle of October. Dr. Suckley also met both birds west of the same mountains.

This Nuthatch was observed by Mr. Ridgway among the aspen groves bordering the streams that flow from the East Humboldt Mountains. In that locality it was common through the month of September, though not abundant. It was again seen in June among the pine-woods of the Wahsatch Mountains, but it was not common.

While a few of these birds are resident of the Northern States, they are, to a considerable extent, of migratory habits. Wilson observed them leaving in large numbers for the Southern States in October, and returning again in April. On the 20th of May, 1867, the writer observed a small flock in Eastern Massachusetts, evidently just arrived from the South. They were apparently fatigued and hungry, and paid no attention to the near presence of workmen engaged in setting bean-poles. They visited and carefully examined each pole, and bored holes into several in search of hidden larvæ, often within a few feet of persons at work.

While on the Pacific coast they are said to prefer the forests of deciduous trees, and to be rarely found in the dark evergreen forests, in the Eastern States they seem to be particularly fond of the seeds of pine-trees, and in the winter are seldom found in the woods of deciduous trees.

They feed in pairs and climb about in all directions, usually in company with the white-breasted species, Chickadees, and the smaller Woodpeckers. They are restless and rapid in their motions, and have a voice at least an octave higher than any other of this family. The note is a monotone, and is unmusical. Mr. Nuttall represents their cry as consisting of three syllables, represented by *dāy-dāy-dāit*, and compares it to the sound of a child's trumpet.

Those wintering at the North occasionally visit farm-yards and orchards, and examine the eaves of outbuildings for food.

Audubon found this species more plentiful in the woods of Maine and Nova Scotia than anywhere else. He never met any south of Maryland, saw none in Newfoundland, and only met with one in Labrador. At Eastport he found a pair breeding as early as the 19th of April, before the Bluebirds had made their appearance, and while ice was still remaining on the northern exposures. An excavation had been made in a low dead stump, less than four feet from the ground, both male and female birds working by turns until they had reached the depth of fourteen inches. The eggs, four in number, were of a white ground-color, tinged with a deep blush when fresh, and sprinkled with reddish dots. They raise but a single brood in a season.

C. S. Paine, of East Bethel, Vt., found a nest of this species about the middle of May, in a small beech-tree, the excavation having been made at the height of twelve feet from the ground. The hole was about as large as that made by the Downy Woodpecker. When first noticed, the bird was looking out of the hole. Having been started out, she flew to a limb close by and watched the party some time. When she flew back, she buzzed before the hole in the manner of a Humming-Bird, and then darted in. While Mr. Paine was looking on, the male came several times to feed his mate, who would meet him at the opening with a clamorous noise, to receive his bounty. The nest contained five eggs.

In Western Massachusetts, Mr. Allen speaks of this species as chiefly a winter resident, appearing the first week in October, and leaving the last of April.

The eggs of this species measure .62 by .48 of an inch, and are of an oblong-oval shape. Their ground-color is a clear crystal white, marked principally about the larger end with a wreath of purple and roseate markings.

***Sitta pygmæa*, Vig**

PIGMY NUTHATCH

Sitta pygmæa, Vigors, Zoöl. Beechey's Voy. 1839, 25, pl. iv.—Aud. Orn. Biog. V, 1839, pl. ccccxv.—Ib. Birds Am. IV, pl. ccl.—Reich. Handb. 1853, 153, tab. dxiv, figs. 3365, 3366.—Newberry, P. R. R. Rep. VI, IV, 1857, 79.—Baird, Birds N. Am. 1858, 378; Review, 88.—Sclater, P. Z. S. 1859, 363 (Xalapa).—Ib. Catal. 1861, 15, No. 93.—Cooper, Orn. Cal. 1, 1870, 55.

Sp. Char. Above ashy-blue; head and upper part of neck greenish ashy-brown, its lower border passing a little below the eye, where it is darker; nape with an obscure whitish spot. Chin and throat whitish; rest of lower parts brownish-white; the sides and behind like the back, but paler. Middle tail-feather like the back; its basal half with a long white spot; its outer web edged with black at the base. Length about 4 inches; wing, 2.40.

Hab. Western and Middle Provinces of United States; south to Xalapa.

This species is closely related to *Sitta pusilla* of the Southern States. The brown of the head has, however, an olivaceous-green tinge not seen in the other; the white spot on the nape less distinct. The middle tail-feather has its basal half white and the outer web edged with black at the base. This black edging is never seen in the other, and the white patch is reduced to a faint trace, only visible in very highly plumaged specimens.

Habits. This diminutive species of Nuthatch is found throughout our Pacific coast and on the western slope of the Rocky Mountains, from Washington Territory to Southern California. It is also to be found in New Mexico, and specimens have been procured from Mexico.

Dr. Kennerly found them quite abundant in the Sierra Madre and San Francisco Mountains, even as high up as the snow-line, seeking their insect food among the tops of the lofty pines. Dr. Newberry frequently met with these Nuthatches in the most wooded places on his route, where water was near and any considerable amount of animal life visible. He, however, never met with them in the forests of yellow pines. Dr. Gambel mentions their almost extraordinary abundance, in the winter months, in Upper California. Around Monterey, at times, the trees appeared almost alive with them, as they ran up and down and around the branches and trunks, uttering their monotonous and querulous cries. Their note he describes as a repeated whistling *wit-wit*. When one utters this cry, the rest join in. They also have a whistling trill while they are busily searching the tree in every part, and they never leave till they have pretty thoroughly searched every crack.

Dr. Cooper only met with this Nuthatch in the open pine-forests about Fort Colville, near the 49th parallel. They were associated in small flocks about the 20th of October, when there were heavy frosts at night. The chirping noise they made resembled the cries of young chickens. Their habits were very similar to those of the *Psaltriparus minimus*.

Mr. J. K. Lord found this Nuthatch an abundant bird along the entire length of the boundary line from the coast to the Rocky Mountains. It was also common on Vancouver Island. They were seen in large flocks in company with the Chickadees, except during the nesting-time, which is in June. A few were winter residents at Colville, but the greater number left in November. He describes it as a very active bird, always on the move. After nesting they congregate in large flocks and move about from tree to tree, twittering a low sweet note as if singing to themselves, now climbing back downwards along the under sides of the topmost branches of tall pines, searching into every crevice for insects, or, descending to the ground, clinging to the slender flower-stalks for other insects. They nest in June, make a hole in the dead branch of a pine, and deposit their eggs on the bare chips of the wood. This account does not agree with the experience of California ornithologists, who have found a loose nest within the excavation.

Mr. Ridgway found this Nuthatch abundant among the pines of the Sierra Nevada, in the vicinity of Carson City. They were found generally in pairs. Its note is said to greatly resemble the vociferous peeping of some of the small Sandpipers, being sharp, loud, and distinct, and vigorously and continuously uttered, whether climbing or flying. He found it exceedingly hard to discover this bird among the branches, or even when flying, owing to the swiftness and irregularity of its flight. When the female of a pair had been killed, the male bird was extremely loud in his lamentations. Diminutive as this bird is, Mr. Ridgway states that it is also the noisiest of all the feathered inhabitants of the pines, though it is less active in the pursuit of insects than the larger species.

Nests of this bird obtained near Monterey appear to be as well made as those of any of this genus, lining the cavity in which they are placed and conforming to it in size and shape, the materials sufficiently interwoven to permit removal and preservation, and warmly constructed of feathers, wool, vegetable down, hair, and the silky efflorescence of seeds.

Their eggs, seven in number, resemble those of the *S. canadensis*, but are of smaller size and a little more pointed at one end. Their ground-color is crystalline-white. This is covered more or less thickly with red spots, most numerous at the larger end. Their measure varies from .65 by .50 to .60 by .47 of an inch. The first eggs of this bird brought to the notice of naturalists were procured at Fort Crook on the Upper Sacramento of California, and not far from Mount Shasta, by Sergeant John Feilner, U. S. A., forming part of a very extensive collection of birds and eggs transmitted by him to the Smithsonian Institution. Promoted to a lieutenantancy for gallant conduct, this gentleman finally attained the rank of captain of cavalry, and was killed by the Sioux during an exploring expedition into Dacotah under General Sully.

Sitta pusilla, Lath

BROWN-HEADED NUTHATCH

Sitta pusilla, Lath. Ind. Orn. I, 1790, 263.—Wils. Am. Orn. II, 1810, 105, pl. XV.—Aud. Orn. Biog. II, 1834, pl. cxxv.—Ib. Birds Am. IV, pl. ccxlix.—Reich. Handb. 1853, 153, tab. dxiv, figs. 3567, 3568.—Baird, Birds N. Am. 1858, 377; Review, 88.—Sclater, Catal. 1861, 15.

Sp. Char. Above ashy-blue; top of head and upper part of neck rather light hair-brown, divided on the nape by white. Eye involved in the brown, which is deeper on the lower border. Beneath muddy-whitish; sides and behind paler than the back. Middle tail-feathers almost entirely like the back. Length of female, 4 inches; wing, 2.50.

Hab. South Atlantic and Gulf States. Ohio! Kirtland.

Habits. The Brown-headed Nuthatch has a much more restricted distribution than the other members of this family in this country. The specimens in the Smithsonian Museum are chiefly from Georgia. Wilson met with it in Virginia, and states that it is found in the other Southern States. I have received its eggs from Cheraw, S. C., and from Florida.

Wilson's description of its habits makes them almost identical with those of *Sitta canadensis*, while its notes are more shrill and chirping. Like that bird, it is very fond of the seeds of the pines. Wherever found, it is a constant resident, and does not migrate.

Audubon states that this bird never goes farther north than Maryland, and that it is the most abundant in Florida, Georgia, and the Carolinas. In Louisiana it is rare, and it is not found in Kentucky. Its notes, he states, are several octaves higher than those of the *carolinensis*, and more shrill, and at least an octave and a half higher than those of the *canadensis*.

Although apparently preferring pines and pine barrens, it by no means confines itself to them, but is not unfrequently seen on low trees and fences, mounting, descending, and turning in every direction, and with so much quickness of motion as to render it difficult to shoot it. It examines every hole and every crevice in the bark of trees, as well as their leaves and twigs, among which it finds abundance of food at all seasons. During the breeding-season they go about in pairs and are very noisy. Their only note is a monotonous cry, described as resembling *dënd, dënd*. Mr. Audubon further states that when the first brood leaves the nest, the young birds keep together, moving from tree to tree with all the activity of their parents, who join them when the second brood is able to keep them company. In Florida they pair in the beginning of February, having eggs as early as the middle of that month. In South Carolina they breed one month later. Their nest is usually excavated by the birds themselves in the dead portion of a low stump or sapling, sometimes only a few feet from the ground, but not unfrequently at the height of thirty or forty feet. Both birds are said to work in concert with great earnestness for several days, until the hole, which is round, and not larger at the entrance than the body of the bird, is dug ten or twelve inches deep, widening at the bottom. The eggs, according to Mr. Audubon, are laid on the bare wood. This, however, is probably not their constant habit. The eggs, from four to six in number, and not much larger than those of the Humming-Bird, have a white ground, thickly sprinkled with fine reddish-brown dots. They are said to raise two, and even three, broods in a season. According to the observations of the late Dr. Gerhardt of Northern Georgia, the Brown-headed Nuthatch breeds in that part of the country about the 19th of April.

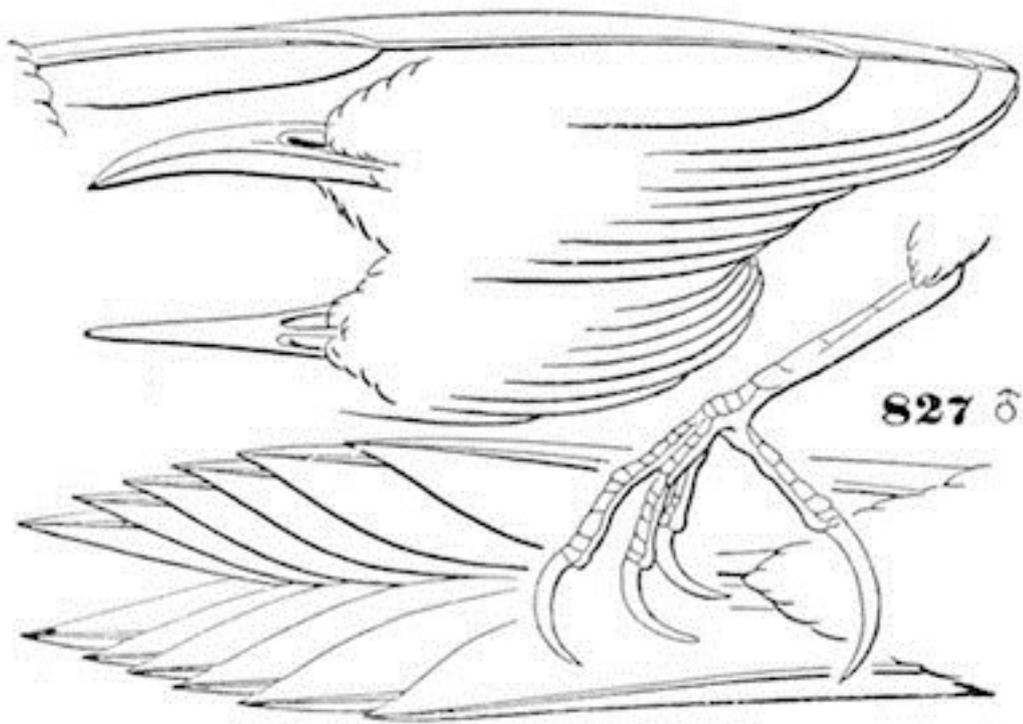
The eggs of this Nuthatch are of a rounded oval shape, measuring .60 by .50 of an inch. Their white ground-color is so completely overlaid by a profusion of fine dottings of a dark purplish-brown as to be entirely concealed, and the egg appears almost as if a uniform chocolate or brown color.

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.

Genus CERTHIA, Linn

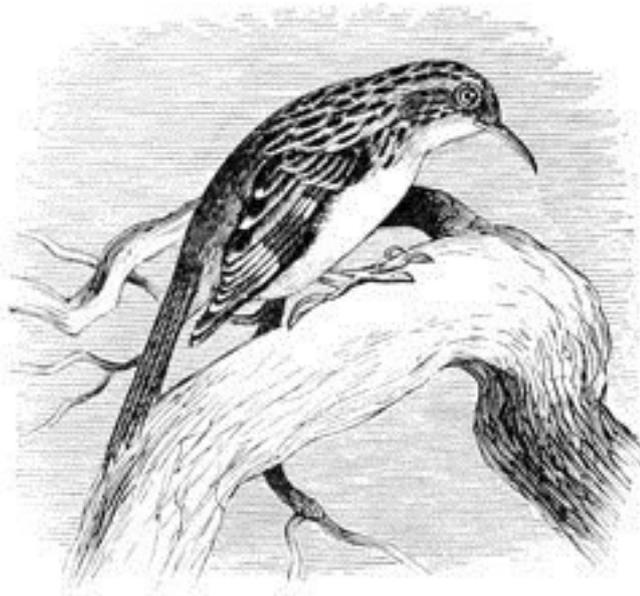
Certhia, Linnæus, Syst. Nat. ed. 10th, 1758, 112. (Type, *C. familiaris*.) (See Reichenbach, Handbuch, I, II, 1853, 256, for a monograph of the genus.)



Certhia americana.

827 ♂

Gen. Char. Plumage soft and loose. Bill as long as head, not notched, compressed; all its lateral outlines decurved. Nostrils not overhung by feathers, linear, with an incumbent thickened scale, as in *Troglodytes*. No rictal bristles, and the loreal and frontal feathers smooth, without bristly shafts. Tarsus scutellate anteriorly, shorter than middle toe, which again is shorter than hind toe. All claws very long, much curved and compressed; outer lateral toe much the longer; basal joint of middle toe entirely adherent to adjacent ones. Wings rather pointed, about equal to the tail, the feathers of which are much pointed, with stiffened shafts. Primaries ten; first less than half the second. Nest in holes of trees; eggs white, sprinkled with reddish.



Certhia americana.

Of the *Certhiadae* but one genus belongs to America,—*Certhia*, with its one small species of considerable variability with locality. The characters above given include both family and generic characters, derived from this one genus. This is readily distinguished by the decurved, compressed bill; absence of notch and bristles; exposed linear nostrils with incumbent scales; connate middle toe, very long claws, short tarsi, pointed and stiffened tail-feathers, etc.

The American and European varieties (they can scarcely be called species) resemble each other very closely, though they appear to be distinguished by such differences as the following:—

The two European races, *C. familiaris* and *C. costae*, both differ from all the American varieties in having the crissum scarcely tinged with yellowish. *C. familiaris* is more ashy beneath than any others, and *C. costae* is purest white beneath of all. Nearest *C. familiaris*, in the American series, as regards tints of the upper parts, are the Pacific coast specimens of *C. americana*,—while the latter are most like the Atlantic region specimens of the same. *C. mexicana* is to be compared only with the North American forms, though it is the only one approaching *familiaris* in the ashy lower parts.

C. familiaris is at once separated from the rest by having the tail shorter than the wing.

C. costae is almost precisely like Eastern specimens of *C. americana* in colors, but is absolutely pure white below, and without the distinctly yellowish crissum of the American bird. The bill and claws, however, are considerably longer than in Eastern *americana*, though their size is almost equalled by those of Western specimens; the colors are, however, more decidedly different.

There is never any deviation from the generic *pattern* of coloration; but the variation, *among individuals of each form*, in length of the bill and claws, as well as the tail, is remarkable.

***Certhia familiaris*, var. *americana*, Bonap**

BROWN CREEPER

Certhia fusca, Barton, Fragments of the Natural History of Pennsylvania, 1799, II. *Certhia familiaris*, Vieill. Ois. Am. Sept. II, 1807, 70 (not the European bird); also of Wilson and Audubon.—Maynard, Birds E. Mass. 1870, 93. *Certhia*

americana, Bonap. Comp. List. 1838.—Reich. Handb. I, 1853, 265, pl. dcxv, figs. 4102, 4103.—Baird, Birds N. Am. 1858, 372; Review, 89.—Max. Cab. Jour. 1858, 105.—Cooper & Suckley, P. R. R. Rep. XII, II, 1859, 192.—Hamlin, Pr. Bost. Soc. N. H. 1864—66, 80. *Certhia mexicana*, Cooper, Orn. Cal. 1, 1870, 58.

Sp. Char. Bill about the length of the head. Above dark brown, with a slightly rufous shade, each feather streaked centrally, but not abruptly, with whitish; rump rusty. Beneath almost silky-white; the under tail-coverts with a faint rusty tinge. A white streak over the eye; the ear-coverts streaked with whitish. Tail-feathers brown centrally, the edges paler yellowish-brown. Wings with a transverse bar of pale reddish-white across both webs. Length, 5.50; wing, 2.60; tail, 2.90. (No. 827.)

Young. (5945, Steilacoom, W. T.; Dr. J. S. Cooper.) Resembling the adult, but streaks above indistinct, and the feathers there tipped indistinctly with blackish; the rufous restricted to the upper tail-coverts. Breast and jugulum with very minute blackish wavings or indistinct bars.

Hab. Whole of United States, to Red River Settlement.

Specimens from the far west are purer white beneath, much as in *costæ*, but those from the northwest coast have the white tinged with light rusty. Though purer white below, these specimens are much browner above than Eastern ones,—sometimes more so than in *familiaris*, but then there is the yellowish crissum never seen in this “species,” and the proportions are quite different. Thus it will be seen the *C. americana* may always be distinguished from the other forms; when most resembling *costæ* in the grayish tints of the upper plumage (as in Eastern examples), the lower parts are less purely white, and the bill and claws smaller; when like it in the proportions and pure white of the lower parts (as in Western specimens), the colors above are altogether more brown. The yellowish crissum of *americanus* will also distinguish them. Though often resembling *familiaris* in the colors of the upper parts, the latter may always be distinguished by its ashy lower parts without yellowish crissum, the shorter tail, with its less acute feathers, and stouter bill.

C. mexicanus is still more different in colors, for which see that variety.

Habits. Our common Creeper, so closely resembling the Creeper of Europe as by many to be supposed identical with it, is distributed over the whole of North America, from the Gulf of Mexico to high northern latitudes. At different seasons it may be found in every one of the several States and Territories, yet it is never very abundant. The Smithsonian possesses specimens from various parts of the country, from Georgia to Fort Steilacoom on the Pacific, but of these none appear to have been secured during the period of reproduction. Dr. Heermann found them very common in the more mountainous districts of California. Dr. Cooper found these birds abundant in the forests of Washington Territory, but difficult to detect from the similarity of their color to that of the bark over which they crept. They were apparently constant residents in that Territory. Dr. Suckley, who obtained several specimens of this species in the oak groves in the vicinity of Fort Steilacoom, states that in their habits the Western birds resemble those of the Atlantic States.

Mr. Ridgway found this Creeper inhabiting both the pine forests of the Sierra Nevada, where it was the more common, and also, in winter, among the willows of the river valleys. He did not meet with it east of the Truckee River, nor until he had reached the Wahsatch Mountains.

Dr. Woodhouse found the Brown Creeper generally distributed throughout the Indian Territory, Texas, New Mexico, and California, and adds that it was especially abundant in the San Francisco Mountains of New Mexico.

Dr. Cooper states that he has met with this form in the winter throughout the higher mountains and among the Coast Range as far south as Santa Cruz. He found them chiefly frequenting the coniferous trees, creeping up and down their trunks and branches, searching for insects in their crevices, and so nearly resembling the bark in their general color, that they can be detected only with great difficulty, except when in motion.

He adds that their notes are shrill and wiry, and are often heard when the bird is scarcely visible, without a careful search, their cry appearing to be from a greater distance than the real performer. In

March, Dr. Cooper heard them giving out a faint but sharp-toned song, resembling that of a Wren. If Dr. Cooper is correct in his account of the notes, they do not correspond with those of our Eastern bird.

Dr. Kennerly, in his Report on the birds observed by him near the 35th parallel, states that he found our common Creeper very abundant among the rough-barked cedars in the Aztec Mountains. It usually attracted notice, and its place of retreat was discovered, by his hearing its quick and sharp notes. A close and careful search generally enabled him to perceive it proceeding leisurely upward and downward, in straight or spiral lines, toward the top of the tree, dodging dexterously to the opposite side from the observer, and only resuming its occupation when assured of solitude and safety.

The observations of Dr. Kennerly, if they are to be received as characteristic of the Western Creepers, do not correspond with those of our Eastern birds, as far as we have observed them. None of our birds are more easily approached, and when they are pursuing their search for food, none are more regardless of observation. The statement that our Creeper, when watched, moves to the opposite side of the tree from the looker-on, has found a certain currency in our books. We are, however, of the opinion that this is owing to its restless activity, prompting it to constant changes of place and position, and not to its timidity or caution. We have uniformly found them either unconscious or regardless of our near presence.

They are solitary in their habits, and frequent, especially in the summer, deep woods, searching for their favorite food in high places where it is difficult to reach them, but this is no necessary evidence of their shyness. They often hunt for their food in very exposed places, with equal courage and recklessness. It is an active, restless bird, associating with Titmice and the smaller Woodpeckers, moving with great rapidity from side to side and from place to place. They breed in hollow trees, in the deserted holes of the Woodpeckers, and in the decayed stumps and branches of trees. Their nest is a loose aggregation of soft, warm materials, not interwoven, but simply collected with regard to no other requisite than warmth.

In the summer of 1851 our party, in their visit to one of the smaller Grand Menan Islands, was so fortunate as to meet with the nest of this bird. It was built in a decayed birch-tree, only a few feet from the ground, and contained five eggs nearly ready to hatch. This was on the 20th of June. The nest was an intermingling of decayed wood, the fur of small quadrupeds, and feathers, but with so little adherence or consistency of form that it was impossible to retain the materials in position after removal.

So far from evincing any timidity, the birds refused to leave their nest, and could hardly be prevented from following it when removed from the woods to a house on the island. One of our companions, returning to the woods in order to secure the birds for the sake of identification, found the pair still lingering round the place of their rifled nest. Upon his approach they began to circle round his head with reproachful cries, and continued to keep so close to him that it was impossible to shoot one without mutilating it. At length one of the birds alighted on a small branch held over his head by a lad who accompanied him, and in this position was secured by shooting it with a pistol loaded with the finest shot. Its mate could have been secured, as she persisted in pursuing them, but she was not molested. Throughout there was not a trace of timidity on the part of either bird, but the most reckless and daring devotion.

Besides the single call-note or the sharp outcry with which the Creepers signalize their movements, and which they utter from time to time as they rapidly and busily move up and down the trunks and limbs, or flit from tree to tree, they have been generally regarded as having no song. But this is not the fact. The careful observations of Mr. William Brewster of Cambridge have satisfied him that these birds have a very distinct and varied song. During the winter these birds are not uncommon in the vicinity of Boston, coming about the houses with all the tameness and confidence of the *Parus atricapillus*, and permit a very near approach. They are very easily attracted by suspending from a piazza a piece of fat meat. Mr. Brewster has observed them commence singing as early as the 14th

of March. Their notes are varied and warbling and somewhat confused; some of them are loud, powerful, and surpassingly sweet, others are more feeble and plaintive; their song usually ends with their accustomed cry, which may be represented by *crēē-crēē-crē-ēp*. Mr. Brewster, besides repeatedly hearing them sing in Massachusetts in the early spring, has also listened to their song in Maine in the month of June.

Their eggs are small in proportion to the size of the bird, are nearly oval in shape, with a grayish-white ground, sparingly sprinkled with small, fine, red and reddish-brown spots. They measure .55 by .43 of an inch.

***Certhia familiaris*, var. *mexicana*, Glog**

MEXICAN CREEPER

Certhia mexicana, "Gloger, Handbuch," Reichenbach, Handbuch, I, 1853, 265, pl. dlxii, figs. 3841, 3842.—Sclater, P. Z. S. 1856, 290; 1858, 297; 1859, 362, 372.—Salvin, Ibis, 1866, 190 (Volcan de Fuego, Guat.).—Baird, Birds N. Am. 1858, 373 (under *C. americana*), pl. lxxxiii, fig. 2; Review, 90.

Sp. Char. Ground-color above very dark sepia-brown, each feather with a sharply defined medial streak of grayish-white, these streaks becoming broader posteriorly, where they are discontinued at the beginning of the rump. Whole rump and upper tail-coverts chestnut-rufous. Beneath pale ashy, becoming almost white on the throat; crissal feathers deep ochraceous except at the tips, which are whitish. Markings of the wings as usual. Measurements (8176, Mexico): wing, 2.50; tail, 2.70; bill (from nostril), .48; hind claw, .30.

Hab. Guatemala and Mexico; probably extending along the table-lands into the United States.

This is one of the best marked of the various races that have been discussed (see [p. 124](#)). The ground-color of the upper parts is altogether darker than in any of the others, and the streaks are more sharply defined and narrower; the rufous of the rump is of a castaneous, instead of yellowish cast; the wings appear more uniform with the back, owing to the dark color of the latter, and their pale markings have little of that yellowish tinge so noticeable in the others. In the ashy tinge of the lower parts there is a resemblance to *familiaris* of Europe; but the latter has not the ochraceous crissum so noticeable in the present bird. There is little resemblance to Western and Rocky Mountain specimens of the *C. americana* and if these are to be considered as separable from the Eastern (which, however, would not, in our opinion, be advisable) they must not be referred to *mexicana*.

The Mexican Creeper is introduced here on account of the probability of its occurrence in the Southern Rocky Mountains.

Habits. Mr. Salvin found the Mexican Tree-Creeper by no means uncommon in the pine forests of the upper zone of the Volcan de Fuego. He also observed it frequenting pine-trees in the district of Chilasco, Vera Paz, at about 6,000 feet above the sea.

Family TROGLODYTIDÆ.—The Wrens

Char. Rictal bristles wanting; the loreal feathers with bristly points; the frontal feathers generally not reaching to nostrils. Nostrils varied, exposed or not covered by feathers, and generally overhung by a scale-like membrane. Bill usually without notch (except in some Middle American genera). 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.

The impossibility of defining any large group of animals, so as to separate it stringently and abruptly from all others, is well understood among naturalists; and the *Troglodytidae* form no exception to the rule. Some bear so close a resemblance to the Mocking Thrushes as to have been combined with them; while others again exhibit a close approximation to other subfamilies. The general affinities of the family, however, appear to be to the *Turdidae*, and one of the best characters for separating the two families appears to exist in the structure of the feet.

In the *Turdidae* the basal joint of the outer lateral toe is united to the middle toe, sometimes only a part of it; and the inner toe is cleft almost to its very base, so as to be opposable to the hind toe, separate from the others. In the *Troglodytidae*, on the contrary, the inner toe is united by half its basal joint to the middle toe, sometimes by the whole of this joint; and the second joint of the outer toe enters wholly or partially into this union, instead of the basal joint only. In addition to this character, the open, exposed nostrils, the usually lengthened bill, the generally equal lateral toes, the short rounded wings, the graduated tail, etc., furnish points of distinction.

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.**

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.**

B. Lateral toes equal.

c. Length about 8 inches. **Campylorhynchus.**

d. Length less than 6 inches.

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

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

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

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

Back without streaks. No distinct superciliary stripe. **Troglodytes.**

Bill curved, sub-conical. Tail as long as wing ... Subgenus *Troglodytes.*

Bill straight, subulate. Tail much shorter than wing ... Subgenus *Anorthura.*

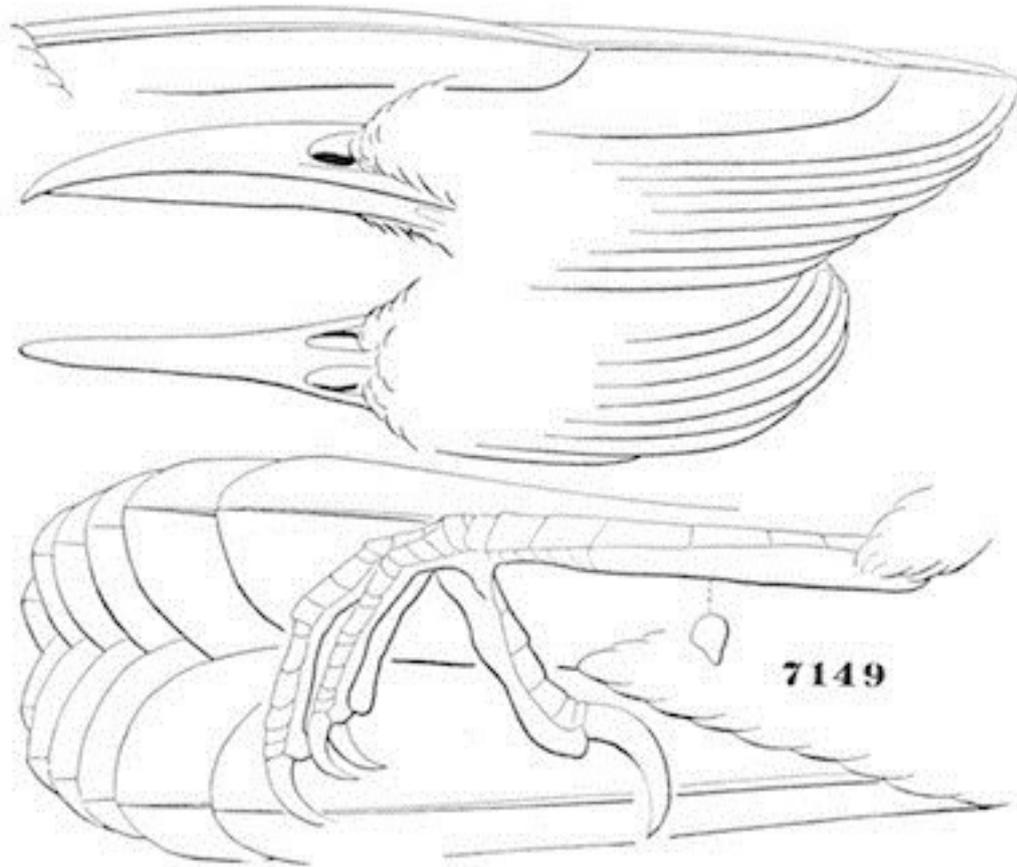
Back streaked with black and white. **Cistothorus.**

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

Campylorhynchus, Spix, Av. Bras. I, 1824, 77. (Type, *C. scolopaceus*, Spix = *Turdus variegatus*, Gmel.)



Campylorhynchus brunneicapillus.

7149

Gen. Char. Bill stout, compressed, as long as, or longer than the head, without notch or rictal bristles; culmen and commissure curved; gonys nearly straight. Nostrils in the antero-inferior part of nasal groove, in advance of the frontal feathers, with an overhanging scale with thickened edge, as in *Thryothorus*; sometimes, as in the type, reduced to a slight ridge along the upper side of the nasal groove. Lateral septum not projecting below or anteriorly into the nasal cavity, but concealed by the nasal scale. Tarsus a little longer than middle toe and claw; claws strong, much curved, and very sharp; middle toe with basal joint adherent almost throughout. Wings and tail about equal, the latter graduated; the exterior webs of lateral feathers broad.

This genus embraces the largest species of the family, and is well represented in Middle and South America, two species only reaching into North America, which may be distinguished as follows:

—
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 ... *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 ... *affinis*.

Campylorhynchus brunneicapillus, Gray

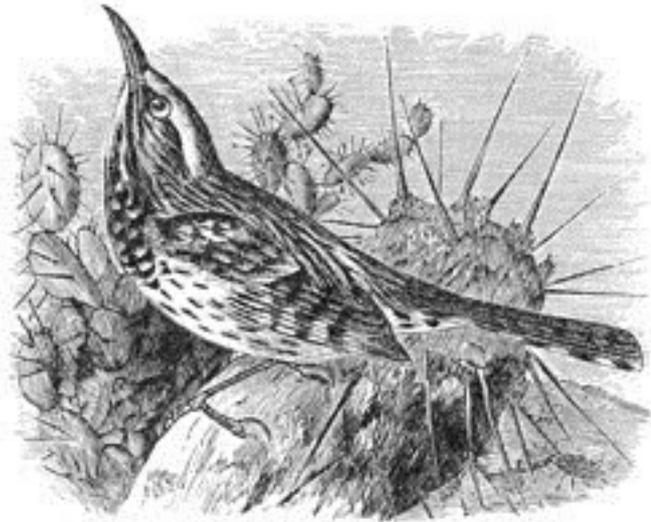
CACTUS WREN

Picolaptes brunneicapillus, Lafresnaye, Mag. de Zool. 1835, 61, pl. xlvii.—Lawr. Ann. N. Y. Lyc. V, 1851, 114.—Cassin, Birds Cal. Tex. 1854, 156, pl. xxv.—Heermann, J. A. N. Sc. II, 1853, 263. *C. brunneicapillus*, Gray, Genera, I, 1847, 159.—Bp. Consp. 1850, 223.—Sci. P. A. N. S. 156, 264.—Baird, Birds N. Am. 1858, 355; Pr. Phil. Acad. 1859, 3, etc.; Rev. 99.—Heermann, P. R. R. X, 1859.—Dresser, Ibis, 1865, 482 (Texas).—Cooper, Orn. Cal. 1, 1870, 61.

Sp. Char. Bill as long as the head. Above brown; darkest on the head, which is unspotted. Feathers on the back streaked centrally with white. Beneath whitish, tinged with rusty on the belly; the feathers of the throat and upper parts, and under tail-coverts, with large rounded black spots; those of the remaining under parts with smaller, more linear ones. Chin and line over the eye white. Tail-feathers black beneath, barred subterminally (the outer one throughout) with white. Iris, reddish-yellow. Length, 8 inches; wing, 3.40; tail, 3.55.

Hab. Adjacent borders of the United States and Mexico, from the mouth of the Rio Grande to the Valley of the Colorado, and to the Pacific coast of Southern California. Replaced at Cape St. Lucas by *C. affinis*.

This species is found abundantly along the line of the Rio Grande and Gila, extending northward some distance, and everywhere conspicuous by its wren-like habits and enormous nest.



Campylorhynchus brunneicapillus.

Habits. The Brown-headed Creeper is a comparatively recent addition to the fauna of the United States, but appears to be common along the southwestern borders of the United States, from the valley of the Rio Grande to San Diego, in California. In Lower California it is replaced by the *C. affinis*.

It was first added to our avifauna by Mr. Lawrence in 1851, on the strength of a specimen obtained in Texas by Captain McCown.

Dr. Heermann, in his paper on the Birds of California, speaks of finding it in the arid country back of Guymas, on the Gulf of California. This country, presenting only broken surfaces and a confused mass of volcanic rocks, covered by a scanty vegetation of thorny bushes and cacti, among other interesting birds, was found to contain this species in abundance. He describes it as a lively, sprightly species, uttering, at intervals, clear, loud, ringing notes. Its nest, composed of grasses and lined with feathers, was in the shape of a long purse, enormous for the size of the bird, and laid flat between the forks or on the branches of a cactus. The entrance was a covered passage, varying from six to ten inches in length. The eggs, six in number, he described as being of a delicate salmon-color, very pale, and often so thickly speckled with ash and darker salmon-colored spots as to give quite a rich cast to the whole surface of the egg.

Lieutenant Couch met with these birds near Monterey. He states that they have a rich, powerful song. Of the nest he gives substantially the same description as that furnished by Dr. Heermann.

The eggs are of an oblong-oval shape, slightly more pointed at one end, and are so equally and generally covered, over a white ground, with fine salmon-colored spots, as to present a uniform and almost homogeneous appearance. They vary in length from an inch to 1.02 inches, and have an average breadth of .68 of an inch.

***Campylorhynchus affinis*, Xantus**

THE CAPE CACTUS WREN

Campylorhynchus affinis, Xantus, Pr. A. N. Sc. 1859, 298 (Cape St. Lucas).
—Baird, Pr. A. N. Sc. 1859, 303; Rev. 100.—Sci. Catal. 1861, 17, No. 108.—
Elliot, Illust. B. N. A. I, IV.—Cooper, Orn. Cal. 1, 1870, 62.

Sp. Char. Cap of head reddish-brown; the concealed centres of feathers dusky. Rest of upper parts grayish-brown, all the feathers of body and scapulars with broad central or shaft streaks of whitish edged with black; the streaks irregular in outline, on some feathers nearly linear, in others widening at intervals along the shaft. Outer webs of the wing-feathers crossed by about seven rows of whitish semicircular spots, with corresponding series of more circular ones on the inner web. Tail-feathers black, all of them with a series of about eight quadrate white spots on each web, which are alternate to each other, not opposite, and extend from or near the black shaft to the edge; the extreme tips of the feathers black; the two central feathers, however, more like the back, with irregular mottling of grayish and black. Upper tail-coverts barred transversely with black.

Under parts white, faintly tinged with rusty posteriorly; each feather spotted with black, excepting on the immaculate chin. These spots are rather larger and more quadrate on the jugulum, where they are sometimes on the sides of the feathers (on one or both sides); posteriorly, however, they are elongated or tear-shaped, and strung along the shaft, one or two on each. On the crissum they are large and much rounded, three or four on each longer feather. Legs rather dusky. Bill lead-color, pale at the base below; iris reddish-brown. A broad white stripe from bill over the eye and nape; edged above and below with black; line behind the eye like the crown; cheek-feathers white, edged with blackish.

Immature specimens exhibit a tendency to a whitish spotting in the ends of the feathers of the cap. A very young bird does not, however, differ materially, except in having the spots less distinct beneath, the white streaks less conspicuous above, the white of the wings soiled with rufous. Specimens vary considerably in the proportional as well as absolute thickness and length of the bill; thus, No. 32,167 measures .80 from nostril to end of bill, instead of .60, as given below for No. 12,965.

12,965. Total length, 7.50; wing, 3.30; tail, 3.40; its graduation, .45; exposed portion of first primary, 1.42, of second, 2.15, of longest, or fourth (measured from exposed base of first primary), 2.45; length of bill from forehead, .90, from nostril, .60; along gape, 1.07; tarsus, 1.02; middle toe and claw, .90; claw alone, .25; hind toe and claw, .76; claw alone, .35.

Hab. Only observed at Cape St. Lucas, Lower California.

This species is most nearly allied to *C. brunneicapillus*; the most apparent difference at first sight being in the greater concentration of black on the throat and jugulum in *brunneicapillus*, and the much smaller size of the remaining spots on the under parts, with the decided light-cinnamon of the posterior portion of the body. The outer and central tail-feathers alone are marked as in *C. affinis*, the intermediate ones being entirely black, with the exception of a white subterminal band.

This is one of the most characteristic birds constituting the isolated fauna of Cape St. Lucas. Like nearly all the species peculiar to this remarkable locality, it is exceedingly abundant, breeding in immense numbers. It has not yet been detected elsewhere, though it may possibly be found on the Lower Colorado.

Habits. This recently described species was first discovered by Mr. Xantus, and has, so far as is known, a somewhat restricted locality, having been met with only at the southern extremity of Lower California, where it is an exceedingly abundant bird. Mr. Xantus has published no observations in regard to its habits, which, however, are probably very nearly identical with those of the more common species. From the brief memoranda given by him in the general register of his collections, made at Cape St. Lucas, we gather that their nests were built almost exclusively in opuntias, cacti, and the prickly pear, and were generally only four or five feet from the ground, but occasionally at the height of ten feet.

The nests are large purse-shaped collections of twigs and coarse grasses, very similar to, and hardly distinguishable in any respect from, those of the more northern species. The eggs vary from 1.05 to 1 inch in length, and from .65 to .70 of an inch in breadth, and have a reddish-white ground very uniformly dotted with fine markings of reddish-brown, purple, and slate.

Subgenus SALPINCTES, Cabanis

Salpinctes, Cabanis, Wiegmann's Archiv, 1847, I, 323. (Type, *Troglodytes obsoletus*, Say.)

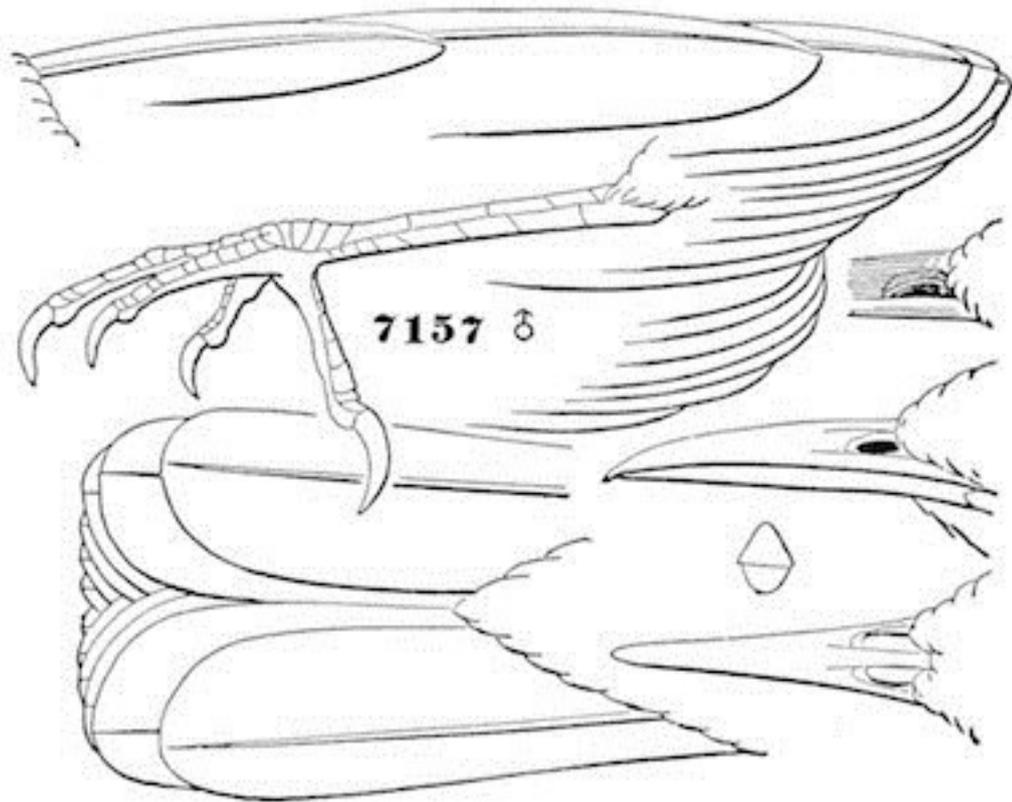
Gen. Char. Bill as long as the head; all the outlines nearly straight to the tip, then decurved; nostrils oval. Feet weak; tarsi decidedly longer than the middle toe; outer lateral toe much longer, reaching to the base of the middle claw, and equal to the hinder. Wings about one fifth longer than the tail; the exposed portion of the first primary about half that of the second, and two fifths that of the fourth and fifth. Tail-feathers very broad, plane, nearly even or slightly rounded; the lateral moderately graduated.

Of this genus but one species is so far known in the United States, the Rock Wren of the earlier ornithologists. It is peculiar among its cognate genera by having the two continuous plates on each side the tarsus divided into seven or more smaller plates, with a naked interval between them and the anterior scutellæ. Other characters will be found detailed in the Review of American Birds, p. 109.

Salpinctes obsoletus, Caban

ROCK WREN

Troglodytes obsoletus, Say, Long's Exped. II, 1823, 4 (south fork of Platte).—Aud. Orn. Biog. IV, pl. ccclx.—Ib. B. A. II, pl. cxvi.—Newberry, P. R. R. Rep. VI, IV, 1857, 80.—Heermann, P. R. R. Rep. X, 1859, 41. *Salpinctes obsoletus*, Cab. Wiegmann's Archiv, 1847, I, 323.—Baird, Birds N. Am. 1858, 357; Rev. 110.—Sclater, P. Z. S. 1859, 371 (Oaxaca).—Cooper, Orn. Cal. 1, 1870, 64. ? *Troglodytes latifasciatus*, Licht. Preis-Verzeich. 1831, No. 82.



Salpinctes obsoletus.

7157 ♂

Sp. Char. Plumage very soft and lax. 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 (seen also on the tips of the secondaries). 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. Iris brown. Length, 5.70; wing, 2.82; tail, 2.40. Young not marked or banded beneath. Eggs white, spotted with red.

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