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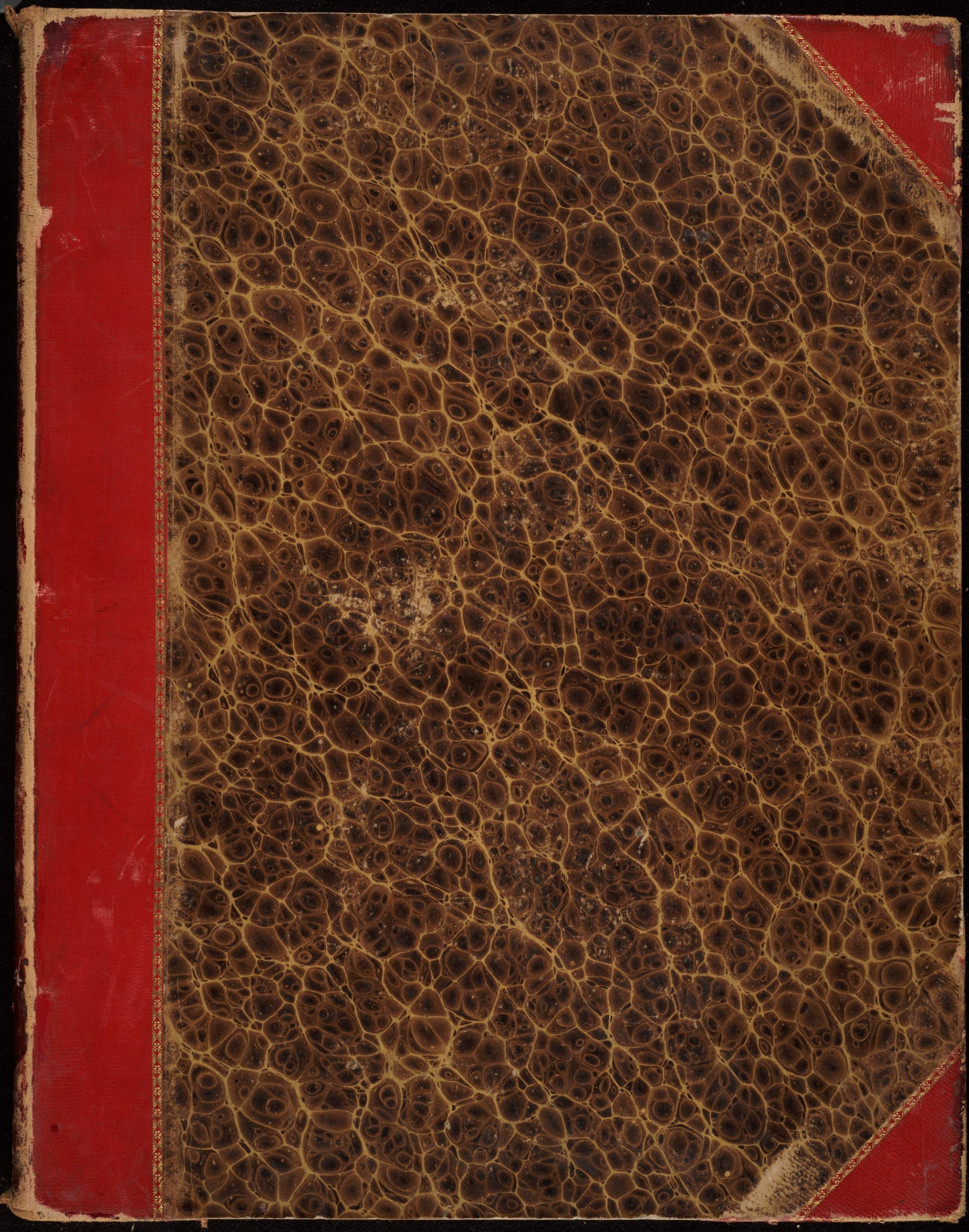
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CHARLES LUCIEN JULES LAURENT BONAPARTE, prince de Canino.

AMERICAN

ORNITHOLOGY;

OR,

THE NATURAL HISTORY

OF

BIRDS INHABITING THE UNITED STATES,

NOT GIVEN BY WILSON.

WITH FIGURES DRAWN, ENGRAVED, AND COLOURED, FROM NATURE.

BY

CHARLES LUCIAN BONAPARTE.

VOL. III.

PHILADELPHIA:

CAREY, LEA & CAREY—CHESNUT STREET.

LONDON:—JOHN MILLER, 40 PALL MALL.

WILLIAM BROWN, PRINTER.

1828.

Eastern District of Pennsylvania, to wit :

***** BE IT REMEMBERED, That on the twentieth day of May, in the fifty-second year of the
* SEAL. * Independence of the United States of America, A. D. 1828, CAREY, LEA & CAREY, of the
* said District, have deposited in this Office the title of a Book, the right whereof they claim
***** as proprietors, in the words following, to wit:

American Ornithology; or, the Natural History of Birds Inhabiting the United States, not given by
Wilson. With Figures Drawn, Engraved, and Coloured, from Nature. By Charles Lucian
Bonaparte.

In conformity to the act of Congress of the United States, entitled "An act for the encouragement of
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to the authors and proprietors of such copies during the times therein mentioned,' and extending the
benefits thereof to the arts of designing, engraving, and etching, historical and other prints."

D. CALDWELL,
Clerk of the Eastern District of Pennsylvania.

Biology

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Drawn from Nature by A. Röder.

Engraved by Alexander Lanson.

1. Pallas' Dipper.
Cinclus Pallasii.

2. Bohemian Waxwing.
Bombycilla Garrula.

3. Female Pine Bullfinch.
Pyrrhula E. nuchator.

AMERICAN ORNITHOLOGY.

PALLAS' DIPPER.

CINCLUS PALLASII.

Plate XVI. Fig. 1.

Cinclus Pallasii, TEMM. *Man. Orn.* I, p. 177. *NOB. Suppl. Gen. Am. birds*, Sp. 94 bis, in *Zool. Journ. London*, IV, p. 4. *Id.* in *Ann. Lyc. New-York*, II, p. 438.

Cinclus mexicanus, SWAINSON, *Syn. Birds of Mexico*, Sp. 27, in *Phil. Mag. New Series*, I, p. 368.

Collection of Mr. Leadbeater, in London.

THE recent discovery of the genus *Cinclus* in America, furnishes an interesting fact in the history of the geographical distribution of birds, this genus being one of the twenty-five European, enumerated in our "Observations" as not known to inhabit this continent. A specimen from the northern countries, communicated by Mr. Leadbeater, first enabled us to introduce it into the American Fauna; and almost simultaneously, Mr. Swainson, in his Synopsis of the Birds discovered in Mexico by Mr. Bullock, announced it as occurring in that country, but in no other part, as he thought, of America. Judging from his short description, (and the species does not admit of a long one) we have no hesi-

tation in affirming that both Mr. Swainson's, and that described by Temminck, and supposed to have been found by Pallas in the Crimea, are identical with ours; notwithstanding the localities are so widely distant from each other, as well as from that whence ours comes, which however it will be perceived, is intermediate between them.

It has been frequently remarked by us, and the fact is now well established, that many birds of Mexico, entirely unknown in the Atlantic territories of the United States, are met with in the interior, and especially along the range of the Rocky Mountains, at considerably higher latitudes. But it was not to be expected that a Mexican species should extend so far north as the Athabasca Lake, where our specimen was procured. The circumstance is however the less surprising in birds of this genus, as their peculiar habits will only allow them to live in certain districts. The case is similar with the Dipper of the old continent, which, though widely dispersed, is only seen in mountainous and rocky countries. Though we do not see any improbability in the American species inhabiting the eastern Asiatic shore, we prefer believing that the specimens on which Temminck established the species, and whose supposed native place was the Crimea, were in fact American. The two species are so much alike in size, shape, and even colour, as to defy the attempts of the most determined system-maker to separate them into different groups.

The single species of which the genus *Cinclus* had hitherto consisted, was placed in *Sturnus* by Linné, and by Scopoli, with much more propriety, in *Motacilla*. Latham referred it to *Turdus*. Brisson, mistaking for affinity the strong and curious analogy which it bears to the waders, considered it as belonging to the genus *Tringa*, (Sandpipers). Bechstein, Illiger, Cuvier, and all the best modern authorities, have regarded it as the type of a natural genus, for which they have unanimously retained the name of

Cinclus, given by Bechstein, Vieillot alone dissenting, and calling it *Hydrobata*. This highly characteristic name, notwithstanding its close resemblance in sound and derivation to one already employed by Illiger as the name of a family, appears to be a great favourite with recent ornithologists, as they have applied it successively to several different genera, and Temminck has lately attempted to impose it on the genus of Ducks which I had named *Fuligula*. In my system, the genus *Cinclus* must take its place in the family *Canori*, between the genera *Turdus* and *Myiothera*.

The Dippers, or Water-Ouzels, are well distinguished by their peculiar shaped bill, which is compressed-subulate, slightly bent upwards, notched, and with its edges bent in, and finely denticulated from the middle; but more especially by their long, stout, perfectly smooth tarsi, with the articulation exposed, a character which is proper to the order of waders, of which they have also the habits, nay, are still more aquatic than any of them. Their plumage also being thick, compact, and oily, is impermeable to water, as much so as that of the most decidedly aquatic web-footed birds, for when dipped into it, that fluid runs and drops from the surface. Their head is flat, with the forehead low and narrow; the neck is stout; the body short and compact; the nostrils basal, concave, longitudinal, half covered by a membrane; tongue cartilaginous and bifid at tip. Their wings are short and rounded, furnished with a very short spurious feather, and having the third and fourth primaries longest; the tail short, even, and composed of wide feathers; the nails large and robust; the lateral toes are subequal, the outer united at base to the middle one, the hind toe being short and robust. The female is similar to the male in colour, and the young only more tinged with reddish. They moult but once in the year.

These wild and solitary birds are only met with singly or in pairs, in the neighbourhood of clear and swift-running mountain

streams, whose bed is covered with pebbles, and strewed with stones and fragments of rock. They are remarkably shy and cautious, never alight on branches, but keep always on the border of the stream, perched, in an attitude peculiar to themselves, on some stone or rock projecting over the water, attentively watching for their prey. Thence they repeatedly plunge to the bottom, and remain long submerged, searching for fry, crustacea, and the other small aquatic animals that constitute their food. They are also very destructive to mosquitoes, and other dipterous insects and their aquatic larvæ, devouring them beneath the surface. They never avoid water, nor hesitate in the least to enter it, and even precipitate themselves without danger amidst the falls and eddies of cataracts. Their habits are in fact so decidedly aquatic, that water may be called their proper element, although systematically they belong to the true land birds. The web-footed tribes swim and dive; the long-legged birds wade as long as the water does not touch their feathers; the Dippers alone possess the faculty of walking at ease on the bottom, as others do on dry land, crossing in this manner from one shore to the other under water. They may be often seen gradually advancing from the shallows, penetrating deeper and deeper, and, careless of losing their depth, walking with great facility on the gravel against the current. As soon as the water is deep enough for them to plunge, their wings are opened, dropped, and agitated somewhat convulsively, and with the head stretched horizontally, as if flying, they descend to the bottom, where they course up and down in search of food. As long as the eye can follow them, they appear, while in the water, covered with bubbles of air, rapidly emanating from their bodies, as is observed in some coleopterous insects.

The Dippers run very fast: their flight is direct, and swift as an arrow, just skimming the surface, precisely in the manner of the Kingfisher. They often plunge under at once without

alighting, reappearing at a distance. When on their favourite rocks, these birds are constantly dipping in the water, at the same time flirting their erected tail. While on the wing they utter a feeble cry, their voice being weak and shrill, but somewhat varied, and they sing from their perch, not loud, but sweetly, even in the depth of winter. Early in the spring they begin to utter clear and distinct notes, and are among the first to cheer the lonely and romantic haunts which they frequent, with their simple melody.

These birds, like others that live about the water, pair early, and have two broods in the season. The young can leave their nest before being full-fledged, and at the approach of danger, drop from the height where it is generally placed, into the water. In order that this may be done, they build in some place overhanging the water, the ledge of a rock, or the steep bank of a rivulet; or sometimes, in inhabited countries, take advantage of mills, bridges, or other works of man. The nest is large, composed of moss, and vaulted above; the eggs are from four to six, and of a milky white. Though very carefully hid, it may be easily discovered by the incessant chirping of the young.

Having seen nothing but the dried skin of the American Dipper, and being utterly unacquainted with its habits, we have been describing as common to the genus those of the European species, which are well known, and which we have stopped to watch and admire among the precipices of the Alps and Appennines, where it struggles with the steepest and most noisy cascades, and the wildest torrents. The exceedingly great similarity of form in the two species strongly warrants the belief of equal similarity in habits. The more uniform and cinereous hue of the American, the want of reddish, but especially the striking absence of the white on the throat and breast, are the sole, but sufficient marks of difference between the two species.

Pallas' Dipper is longer than the common species, measuring eight and a half inches. The bill is perfectly similar, and three quarters of an inch long, blackish, paler beneath and on the edges. The whole bird without any exception is of a dark grayish slate-colour, with the base of the plumage somewhat lighter; at the superior orbit is a slight indication of whitish. The uniform general colour is somewhat darker on the head, and a shade lighter beneath. The wings are three and a half inches long, as in the genus; the coverts and tertials slightly tipped with dingy whitish; the primaries incline somewhat to brown. The tail measures one inch and a half, and is perfectly even. The feet are of a flesh-colour, and the nails dusky white; the tarsus is precisely one inch long.

If we could rely on Brehm, four species of this genus exist, which are all found in the old continent. Two are new ones proposed by himself, under the names of *Cinclus septentrionalis* and *Cinclus melanogaster*. The latter, according to him, is a Siberian species, appearing occasionally on the northern coast of European Russia in winter, and is perhaps a genuine species, easily distinguished from the *Cinclus aquaticus* by having but ten feathers in the tail, whilst all others have twelve, in addition to its smaller size, darker colour, and dingy throat; but the former can hardly be regarded even as a northern variety produced by climate. Mr. Brehm is probably quite correct in observing that both his new species are perfectly similar to the old one.

BOHEMIAN WAX-WING.

BOMBYCILLA GARRULA.

Plate XVI. Fig. 2.

- Ampelis garrulus*, LINN. *Syst.* I, p. 297, Sp. 1. GMEL. *Syst.* I, p. 838, Sp. 1. LATH. *Ind.* p. 363, Sp. 1. MULLER, p. 30. KRAM. *El.* p. 363, Sp. 1. BOROWSK. *Nat.* III, p. 171, Sp. 68. MEYER & WOLF, *Tasch. Deutsch.* I, p. 204.
- Lanius garrulus*, *Faun. Suec.* II, Sp. 82. SCOP. *Ann.* I, Sp. 20. BRUNN. Sp. 25, 26.
- Bombyciphora poliocælia*, MEYER, *Vog. Liv. and Esthl.* p. 104.
- Bombycivora garrula*, TEMM. *Man. Orn.* I, p. 124. SELBY, *Ill. Br. Orn.* I, p. 87, Pl. 34.
- Bombyciphora garrula*, BREHM, *Lehr. Eur. Vog.* II, p. 980.
- Bombycilla garrula*, VIEILL. *Nouv. Dict. Nob. Suppl. Syn. Am. Birds in Zool. Journ.* London, IV, p. 3, Sp. 65 bis. RANZ. *Elem. Orn.* IV, p. 136, Sp. 1.
- Bombycilla bohémica*, STEPH. *Contin. Shaw's Zool.* X, p. 421.
- Garrulus bohemicus*, GESN. *Av.* p. 703. ALDR. *Orn.* I, p. 796, Pl. 798. *Mus.* p. 674. Pl. 675. RAI *Syn.* p. 85, A. WILL. *Orn.* p. 90, Pl. 20. ALB. *Av.* II, p. 25, Pl. 26.
- Turdus cristatus*, WIRSING, *Vog.* Pl. 4. FRISCH, Pl. 32, fig. 1, Male. KLEIN, *Stemm.* p. 11, Pl. 13, fig. 5, a—c.
- Turdus Bombycilla bohémica*, BRISS. *Orn.* II, p. 333, Sp. 63. *Id.* 8vo. I, p. 250.
- Garrulo di Boemia*, *St. degli Ucc.* II, Pl. 160.
- Le Jaseur*, BUFF. *Ois.* III, p. 429, Pl. 26. LE VAILL. *Ois. Para.* I, p. 137, Pl. 49.
- Le Jaseur de Bohême*, BUFF. *Pl. enl.* 261. CUV. *Règne Anim.* I, p. 349.
- Europaischer Seidenschwanz*, BECHST. *Nat. Deutschl.* III, p. 410, Pl. 34, fig. 1.
- Rothlichgraver Seidenschwanz*, NAUM. *Vog.* Pl. 32, fig. 66. MEYER & WOLF, *Ois. d'Allem. Livr.* 22, Pl. 6, fig. 1, Male, fig. 2, Female.
- Silk-tail*, RAY, *Syn.* p. 85, A. *Phil. Trans.* XV, p. 1165, Pl. 1, fig. 9.
- Bohemian Chatterer*, PENN. *Brit. Zool.* Sp. 112, Pl. 48. *Id.* fol. 7, Pl. 1, C. LATH. *Syn.* III, p. 91, Sp. 1. UBERSETZ, III, p. 86, Sp. 1. BELL, *Trav.* I, p. 98. *Flor. Scot.* 1, Sp. 92. MONT. *Orn. Dict.* LEWIN, *Brit. Birds*, I, Pl. 2. BEWICK, *Br. Birds.* DONOVAN, *Br. Birds*, I, Pl. 11. PULT. *Cat. Dorsetsh.* p. 11.

My Collection.

IF the absurd theory advanced by Buffon, that European animals degenerate, or become more or less changed in other climates,

needed in our time any additional refutation, the discovery of this bird in the north-western territory near the Rocky Mountains, would afford it. By appearing in its full size and perfection, exactly similar to the European individuals of its species, it would vindicate its smaller relation, the common and familiar Cedar-bird from the reproach of degeneracy. But with the more enlightened opinions that now prevail, its occurrence in that unexplored portion of the globe is important chiefly as tending to solve the problem of the place of abode of this mysterious wanderer; especially as, by a singular coincidence, whilst we were proclaiming this species as American it was received by Temminck from Japan, together with a new species, the third known of the genus, which he has caused to be figured and distinguished by the appropriate name of *Bombycilla phœnicoptera*, Boiè. Besides the red band across the wing, whence its name is derived, the length of its crest adorned with black feathers, and the uniform absence in all states, of the corneous appendages of the wings, this new species, resembling more in size and shape the Carolina Wax-wing (Cedar-bird) than the present, is eminently distinguished from both by wanting the small, closely set feathers covering the nostrils, hitherto assigned as one of the characters of the genus. This example evinces the insufficiency of that character, though Illiger considered it of such importance as to induce him to unite in his great genus *Corvus* (comprehending this as well as several other distinct groups), all the species possessing it. It shows especially how erroneous it is to form two separate families for the allied genera with covered or naked nostrils. In fact, the genus as it now stands, is, not the less for this aberration, an exceedingly natural one, though the two species that are now known to inhabit America are still more allied to each other than either of them to the Japanese, the present (Bohemian) differing chiefly by its larger size, mahogany-brown tail-coverts,

and cinereous belly, the first being white, and the second yellowish in the Cedar-bird, which also wants the yellow and white markings on the wing. Of the three species now comprehended in the genus, one is peculiar to America, a second to eastern Asia, and the present common to all the Arctic world.

This small but natural group, at one time placed by Linné in the carnivorous genus *Lanius*, notwithstanding its exclusively frugivorous habits, was finally restored by him to *Ampelis*, in which he was followed by Latham. Brisson placed it in *Turdus*, and Illiger in *Corvus*. Ornithologists now concur in regarding it as a genus, disagreeing only as to the name, some calling it *Bombyciphora*, others *Bombycivora*, though they all appear to have lately united in favour of the more elegant, and prior termination of *Bombycilla*.

The Wax-wings, which we place in our family *Sericati*, having no other representative in Europe or North America, are easily recognised by their short, turgid bill, trigonal at base, somewhat compressed and curved at tip, where both mandibles are strongly notched; their short feet, and rather long, subacute wings. But their most curious trait consists in the small, flat, oblong appendages, resembling in colour and substance red sealing-wax, found at the tips of the secondaries in the adult. These appendages are merely the coloured corneous prolongation of the shafts beyond the webs of the feathers. The new species from Japan is, as we have mentioned, at all times without them, as well as the young of the two others. The plumage of all is of a remarkably fine and silky texture, lying extremely close; and they are all largely and pointedly crested, the sexes hardly differing in this respect.

The Wax-wings live in numerous flocks, keeping by pairs only in the breeding season, and so social is their disposition, that as soon as the young are able to fly, they collect in large bands from

the whole neighbourhood. They perform extensive journeys, and are great and irregular wanderers. Far from being shy, they are simple and easily tamed, but generally soon die in confinement. Their food consists chiefly of juicy fruits, on which they fatten, but to the great detriment of the orchard, where they commit extensive ravages. When fruits are scarce, they seize upon insects, catching them dexterously in the same manner as their distant relatives the Flycatchers. No name could be more inappropriate for these birds than that of Chatterers, as there are few less noisy, and they might even be called mute, with much better reason. They build in trees, and lay twice in a year about five eggs.

Whence does the Bohemian Wax-wing come at the long and irregular periods of its migrations? Whither does it retire to pass its existence and give birth to its progeny? These are circumstances involved in darkness, and which it has not been given to any naturalist to ascertain. It has been stated, and with much appearance of probability, that these birds retire during summer within the Arctic circle; but the fact is otherwise, naturalists who have explored these regions asserting that they are rarer and more accidental there than in temperate climates. It seems probable that their chief place of abode is in the oriental parts of the old continent, and if we may hazard an opinion, we should not be surprised if the extensive and elevated table land of central Asia was found to be their principal rendezvous, whence like the Tartars in former times, they make their irregular excursions.

As we can only arrive at the truth in this matter, by observing facts, and collecting localities, we shall endeavour to do this with the greatest accuracy. In northern Russia and the extreme north of Norway they are seen in great numbers every winter, being observed there earlier than in temperate countries. In northern

Asia and eastern Europe their migrations are tolerably regular, very numerous flocks generally pass through Scania in November, and are again seen on their return in the spring. But they appear only at very remote and irregular periods, and merely as occasional and rare visitants in western, southern, or even central and northern Europe, and then only in the coldest months of the most severe winters. Notwithstanding that they at times invade peculiar districts in vast numbers, so remarkable is the appearance of these winged strangers then considered, that we find it placed upon record. However extraordinary it may seem to those who live in this enlightened age and country, that the unusual appearance of "Cedar-birds of a large kind" should strike terror into the souls of men, such notwithstanding was the effect in more ignorant times. They have been looked upon as the precursors of war, pestilence, and other public calamities. One of their irruptions was experienced in Italy in 1571, when flocks of hundreds were seen flying about in the north of that country in the month of December, and were easily caught. A similar visit had taken place in 1530 in February, marking the epoch when Charles V. caused himself to be crowned at Bologna. Aldrovandi, from whom we learn the above particulars, also informs us that large flocks of them appeared in 1551, when it was remarked that though they spread in numbers through the Modenese, the Plaisantine, and other parts of Italy, they carefully avoided entering the Ferrarese, as if to escape the dreadful earthquake that was felt soon after, causing the very birds to turn their flight. In 1552, Gesner informs us, they appeared along the Rhine near Mentz in Germany in such numbers as to obscure the sun. They have however of late years, in Italy and Germany, and in France especially at all times, been extremely rare, being seen only in small companies or singly, appearing as if they had strayed from their way. In England, the Bohemian Wax-wing has

always been a rare visitant, coming only at long and uncertain intervals. In the winter of 1810 large flocks were dispersed through various parts of that kingdom; from which period we do not find it recorded by English writers till the month of February 1822, when a few came under Mr. Selby's inspection, and several were again observed during the severe storm in the winter of 1823. Upon the continent, its returns are subject to similar uncertainty. In M. Necker's very interesting memoir lately published on the birds of Geneva, we read, that from the beginning of this century only two considerable flights have been observed in that canton, one in January 1807, and the other in January 1814, when they were very numerous, and spent the winter there, all departing in March. In 1807 they were dispersed over a great portion of western Europe, and were seen near Edinburgh in the first days of that year.

What extent of country they inhabit or frequent in this continent, and whether numerous or not, we are unable to state. The specimen here figured was obtained, together with others, from the north-western range of the Rocky Mountains, and the species appears to spread widely, as we have been credibly informed by hunters that "Cedar-birds of a large kind" have been shot a little beyond the Mississippi, at a very great distance from the spot where ours was obtained. Thus does this species extend its range round the whole earth, from the coasts of Europe eastwardly to the Rocky Mountains in America; and we are at a loss to conceive why it should never have been observed on this side of the Mississippi.

Very little is known of the peculiar habits of this elegant bird. It assembles in large flocks, and feeds on different kinds of juicy berries, or on insects, which during summer constitute their principal food. In common with many other birds, they are fond of the berries of the mountain-ash and phytolacca, are extremely

greedy of grapes, and also, though in a less degree, of juniper and laurel-berries, apples, currants, figs, and other fruits. They drink often, dipping in their bill repeatedly. Besides their social disposition, and general love of their species, these birds appear susceptible of individual attachment, as if they felt a particular sentiment of benevolence, even independent of reciprocal sexual attraction. Not only do the male and female caress and feed each other, but the same proofs of mutual kindness have been observed between individuals of the same sex. This amiable disposition, so agreeable for others, often becomes a serious disadvantage to its possessor. It always supposes more sensibility than energy, more confidence than penetration, more simplicity than prudence, and precipitates these as well as nobler victims, into the snares prepared for them by more artful and selfish beings. Hence they are stigmatized as stupid, and as they keep generally close together, many are easily killed at once by a single discharge of a gun. They always alight on trees, hopping awkwardly on the ground. Their flight is very rapid: when taking wing, they utter a note resembling the syllables *zi, zi, ri*, but are generally silent, notwithstanding the name that has been given them. They are however said to have a sweet and agreeable song in the time of breeding, though at others it is a mere whistle. The place of breeding, as we have intimated, is not known with any certainty, though they are said to build in high northern latitudes, preferring mountainous districts, and laying in the clefts of rocks, which however, judging from analogy, we cannot believe.

What can be the cause of their leaving their unknown abodes, of their wide migrations, and extraordinary irruptions, it is very difficult to determine. That they are not compelled to them by cold is well proved. Are they to be ascribed to necessity from excessive multiplication, as is the case with the small quadrupeds called Lemmings, and even with man himself in a savage state,

or in over-populous countries? or shall we suppose that they are forced by local penury to seek elsewhere the food they cannot be supplied with at home? Much light may be thrown on the subject by carefully observing their habits and migrations in America.

The Bohemian Chatterer being so well known, we shall here only give a description of our best American specimen, which is a female shot on the 20th March 1825, on the Athabasca river, near the Rocky Mountains. The sexes hardly differ in plumage.

Length eight and a half inches; extent fifteen; bill three quarters of an inch long, black, paler at the base of the under mandible; irides reddish, often quite red: nostrils entirely uncovered. From the base of the ridge of the bill, arises on each side a velvety black line, bordering the forehead, and spreading on the ophthalmic region, and surrounding almost the whole crown; throat also deep black. The anterior part of the head is bright bay, behind passing gradually into vinaceous drab; the feathers of the crown are elongated into a crest measuring nearly an inch and a half; base of these feathers blackish, middle white, whole neck and hind head and breast cinereous drab, slightly tinged with vinaceous, and passing by degrees on the posterior parts above and beneath into pure cinereous, slightly tinged with bluish, which predominates on the rump and upper tail-coverts. The black of the throat is somewhat margined with bright bay, and is separated from the black of the eye by a slight obliterated white line. The cinereous of the belly and femorals is paler; the vent and lower tail-coverts are chesnut rufous, and the feathers very long. The wings measure four and a half inches in length, the second primary is somewhat longer than the first, the others decreasing in succession rapidly. The upper tail-coverts are cinereous drab, like the back, the lower whitish-gray, quills dusky black, much paler on their inner vane towards the base.

The first is unspotted, the second has a slight mark of white on the outer web at tip. This mark increases in size successively on the following, becoming a longitudinal spot, much larger on the secondaries, four of which are furnished with bright red appendages. Each feather of the winglet is broadly white at tip, constituting a remarkable white spot on the wing, which appears to be on the primaries. No yellow whatever is observable on the wing. The tail is three inches long, black, broadly tipped with pale yellow for half an inch, dark bluish gray at base. Tarsus, which is three quarters of an inch long, and feet, black.

FEMALE PINE BULLFINCH.

PYRRHULA ENUCLEATOR.

Plate XVI. Fig. 3.

See WILSON'S *American Ornithology, Pine Grosbeak, Loxia enucleator*, Vol. I, p. 80, Pl. 5, Fig. 2, for the Male at the age of one year.

Loxia enucleator, LINN. *Syst.* I, p. 299, Sp. 3. *Faun. Succ.* Sp. 223. SCHEN, *Act. Holm.* 1757. p. 139. GMEL. *Syst.* I, p. 845, Sp. 3. BRUNN. Sp. 239. MULLER, Sp. 246. BOROWSK. *Nat.* III, p. 133, Sp. 3. LATH. *Ind.* I, p. 372, Sp. 5. RETZ, *Faun. Succ.* p. 234, Sp. 211. MEYER & WOLF, *Taschenb. Vog. Deutschl.* I, p. 142.

Loxia flamenco, *Mus. Carls.* I, Pl. 17. GMEL. *Syst.* I, p. 864, accid. var.

Loxia pyrrhula, var. ♂. LATH. *Ind.* I, p. 388, Sp. 56, accid. var.

Coccothraustes canadensis, BRISS. *Orn.* III, p. 250, Sp. 15, Pl. 12, fig. 3. *Id.* 8vo. I, p. 378.

Pyrrhula enucleator, TEMM. *Man. Orn.* I, p. 383. SABINE, *Zool. App. to Frank. Exp.* p. 675. BREHM. *Lehr. Eur. Vog.* I, p. 169. RANZ. *Elem. Orn.* VI, p. 70, Sp. 2. SELBY, *Ill. Brit. Orn.* I, p. 256, Pl. 53, fig. 1, Male, fig. 2, Female. *NOB. Obs. Wils. Nom. Cat. and Syn. Birds U. S.* Sp. 193.

Corythus enucleator, CUV. *Règn. Anim.* I, p. 392.

Strobilophaga enucleator, VIEILL. *Gal. Ois.* I, Pl. 53, young Male.

Fringilla enucleator, MEYER, *Syst. Taschenb.* III, p. 250, Sp. 2.

Ciufolotto snocciolatore, RANZ. *loc. cit.*

Dur-bee, BUFF. *Ois.* III, p. 457. *Gros-bee du Canada*, *Id.* Pl. enl. 135, fig. 1, Male a year old.

Haken Kernbeisser, BECHST. *Nat. Deutsch.* III, p. 28. NAUM. *Vog. Nachtr.* Pl. 19, fig. 36, Male, fig. 37, Female.

Der Fichten Kernbeisser, MEYER & WOLF, *Vog. Deutschl.* 12, Pl. 5, fig. 1, young Male, fig. 2, old Female.

Greatest Bullfinch, EDWARDS, Pl. 123, young Male, Pl. 24, adult Female.

Pine Grosbeak, PENN. *Brit. Zool.* Sp. 114, Pl. 49, fig. 2. *Arct. Zool.* II, Sp. 209. ELLIS, *Narr.* II, p. 15. LEWIN, *Brit. Birds*, II, Pl. 68. LATH. *Syn.* II, p. 111, Sp.

5. ID. *Supp.* p. 148. MONT. *Orn. Dict.* I. WALCK. *Syn.* Pl. 207. DONOV. *Brit. Birds*, I, Pl. 17. BEWICK, *Brit. Birds*, I, p. 135. SHAW'S *Zool.* IX, p. 238, Pl. 43. UBERS. II, p. 106, Sp. 5.
Flamingo Grosbeak, LATH. *Syn. Suppl.* p. 155, accid. var.

My Collection, Male, Female, and young.

THE female Pine Bullfinch is eight and a half inches long, and thirteen and a half in extent. The bill measures more than half an inch, is blackish with the lower mandible paler at base, the feathers of the whole head, neck, breast, and rump, orange, tipped with brownish, the orange richer on the crown, where are a few blackish dots, the plumage at base plumbeous: the back is cinereous, somewhat mixed with orange, the shafts darker: belly and femorals pure cinereous: lower tail-coverts whitish, shafted with dusky: the wings are four and a half inches long, reaching beyond the middle of the tail: the smaller coverts are similar to the back, cinereous slightly tinged with orange: middle and larger blackish, margined with whitish exteriorly and widely at tip; the lower coverts are whitish gray; quills blackish, primaries margined with pale greenish orange, secondaries and tertials with broad white exterior margins: the tail is three and three quarter inches long, blackish, the feathers with narrow pale edges; feet dusky, nails blackish.

In the young female the head and rump are tinged with reddish. The male represented and most accurately described by Wilson, is not adult, but full one year old; at which period, contrary to the general law of nature, it is the brightest, as was first stated by Linné, though his observation has since been overlooked or unjustly contradicted. In the adult male, the parts that were crimson in the immature bird, exhibit a fine reddish orange, the breast and belly being also of that colour, but paler; the bars of the wings, tinged with rose in the young, become pure white.

We have nothing to add to Wilson's history of this bird. Although after the example of Temminck and others, we place this species at the head of the Bullfinches, we cannot avoid remarking that its natural affinities connect it most intimately with the Crossbills, being allied to them closely in its habits and in its form, plumage, general garb, and even in its anomalous change of colours. The bill however, precisely that of a Bullfinch, induces us to leave it in that genus, between which and the Crossbills it forms a beautiful link: the obtuse point of the lower mandible, but especially the small, porrect, setaceous feathers covering the nostrils, as in these latter, eminently distinguish it from all others of its own genus. These characters induced Cuvier to propose it as a subgenus, under the name of *Corythus*, and Vieillot as an entirely distinct genus, which he first named *Pinicola*, but has since changed it to *Strobilophaga*. These authors have of course been followed by the German and English ornithologists of the new school, who appear to consider themselves bound to acknowledge every genus proposed, from whatever quarter, or however minute and variable the characters on which it is based.



Drawn from Nature by A. Miller

1. White-crowned Pigeon.

Columba Leucocephala.

2. Zenaida Dove.

Columba Zenaida.

Engraved by Alexander Lawson

WHITE-CROWNED PIGEON.

COLUMBA LEUCOCEPHALA.

Plate XVII. Fig. 1.

- Columba leucocephala*, LINN. *Syst.* I, p. 281, Sp. 14. GMEL. *Syst.* I, p. 772, Sp. 14.
 LATH. *Ind.* p. 594, Sp. 5. TEMM. *Ind. Col. in Hist. Pig. et Gall.* I, p. 459. VIEILL.
Gal. Ois. II, p. 331, Pl. 194.
- Columba minor leucocoryphas*, RAI, *Syn.* p. 63, Sp. 16, and p. 184, Sp. 24. KLEIN,
Av. p. 120, p. 120, Sp. 18.
- Columba saxatilis jamaicensis*, BRISS. *Orn.* I, p. 137, Sp. 33. ID. *Svo.* I, p. 34.
- Columba capite albo*, *The White-crowned Pigeon*, CATESBY, *Car.* I, p. 25, Pl. 25.
 SELIGMAN, *Saml. Selt. Vog.* II, col. plate.
- Le Pigeon de roche de la Jamaïque*, BUFF. *Ois.* II, p. 529. SONN. *Buff.* VII, p. 216.
- Colombe à calotte blanche*, TEMM. *Hist. Pig. et Gall.* I, p. 204. ID. *folio Pl.* 13 of the
 second family.

My Collection.

THIS bird has been already alluded to in our first volume, when pointing out the difference between it and the new *Columba fasciata* of Say. We were then far from supposing that we should so soon have to become its historian, but having ascertained that it inhabits Florida, as well as the West-Indies, we are enabled to give it a place in these pages. A glance at the plate will now render the difference strikingly obvious to the American student, who will thus perceive, better than can be explained by words, how entirely distinct the above named species is from the present.

The White-crowned Pigeon, well known as an inhabitant of Mexico and the West-Indies, is likewise found in great numbers on some of the Florida keys, such as Key Vacas and others, early in spring, where it feeds almost exclusively on a kind of wild fruit,

usually called beach plum, and some few berries of a species of palmetto that appears to be peculiar to those keys. It is also extensively spread in Jamaica and St. Domingo, and is very abundant in the island of Porto Rico, frequenting deep woods, and breeding on rocks, whence they are called by some Rock Pigeons. They are very numerous on all the Bahama islands, and form an important article of food with the inhabitants, particularly when young, being then taken in great quantities from the rocks where they breed. On the Florida keys also they breed in large societies, and the young are much sought after by the wreckers. They there feed principally on berries, and especially on those of a tree called sweet-wood. When the fruit of this is ripe they become fat and well flavoured, but other fruits again make their flesh very bitter.

Buffon, in accordance with his whimsical idea of referring foreign species to those of Europe, considers the present as a variety of the Biset (*Columba livia*, Briss.) To that bird it is in fact allied, both in form and plumage, and has moreover the same habit of breeding in holes and crevices of rocks, but it is at the same time entirely distinct.

The size of the White-crowned Pigeon has been underrated by authors. Its length is fourteen inches and its extent twenty-three. The bill is one inch long, carmine red at the base, the end from the nostrils being bluish-white: the irides are orange yellow, the bare circle round the eye dusky white, becoming red in the breeding season. The entire crown, including all the feathers advancing far on the bill is white with a tinge of cream colour, and is narrowly margined with black, which passes insensibly into the general deep slate colour: on the nape of the neck is a small deep purplish space changing to violet; the remainder of the neck above, and on the sides, is covered by scale-like feathers, bright green with bluish and golden reflections, according as the

light falls. The sides of the head, the body above, and whole inferior surface, the wings and tail above and beneath, in short the whole bird without any exception but the parts described, is of a uniform deep bluish slate, much lighter on the belly, more tinged with blue on the stout-shafted rump-feathers, somewhat glossy and approaching to brownish black on the scapulars: the quills are more of a dusky black. The wings are nearly eight inches long, reaching when closed to two-thirds of the tail; the first primary is somewhat shorter than the fourth, and the second and third are longest; the third is curiously scalloped on the outer web, which is much narrowed for two inches from the tip; all are finely edged with whitish. The tail is five inches long, perfectly even, of twelve uniform broad feathers with rounded tips. The feet are carmine red, the nails dusky; the tarsus measures less than an inch, being subequal to the lateral toes, and much shorter than the middle one.

The female is perfectly similar. It is one of this sex, shot in the beginning of March, that is represented in the plate, and is perhaps a young, or not a very old bird, for it would seem that as they advance in age, these Pigeons become somewhat lighter coloured, the crown acquiring a much purer white. This however we only infer from authors, our plate and description being faithfully copied from nature.

The young are distinguished by duller tints, and the crown is at first nearly uniform with the rest of their dark plumage: this part after a time changes to gray, then grayish white, and becomes whiter and whiter as the bird grows older. It is proper to remark, after what has been said under the article of the Band-tailed Pigeon in vol. i., that the white colour extends equally over the whole crown, not more on one part than another; thus never admitting of a restricted band or line, as in that much lighter coloured bird.

Another species closely allied to, and perhaps identical with our Band-tailed Pigeon, (though we have equally good reasons for believing it the *Columba rufina* of Temminck) and of which we have not yet been able to procure specimens, is also well known to breed on the Florida keys; whither probably almost all the West-Indian species occasionally resort.

ZENAIDA DOVE.

COLUMBA ZENAIDA.

Plate XVII. Fig. 2.

Columba zenaida, Nov. Add. Orn. U. S. in Journ. Acad. Phil. Id. Cat. Birds U. S. Sp. 198, in Contr. Macl. Lyc. Ph. I, p. 22. Id. Syn. Birds U. S. Sp. 198, in Ann. Lyc. Nat. Hist. N. Y. II, p. 119. Id. Suppl. in Zool. Journ. Lond. V, p. 6.

My Collection.

THE name of Dove is not commonly used to designate a systematic group, but is employed for all the small Pigeons indiscriminately, whilst the larger Doves are known as Pigeons. Even this distinction of size however does not seem to be agreed upon, as we find authors calling the larger species Doves, and the smaller ones Pigeons, and sometimes even applying both appellations to different sexes or ages of the same species, as in the case of the common American Pigeon, *Columba migratoria*. This extensive family of birds, so remarkable for richness and splendor of colours, so important as contributing largely to supply the wants of mankind, so interesting as forming so perfect a link between the two great divisions of the feathered tribes, has been divided on more philosophical principles into three groups, which some naturalists consider as genera, and others as subgenera or sections. Of these two only are found represented in America, the third, a very natural group, being confined to Africa and the large eastern islands of the old world. That to which the present bird, and all the North American species but one, belong, is the most typical of all, being characterized by a straight and slender bill, both mandibles of which are soft and

flexible, and the upper turgid towards the end; by their short tarsi, divided toes, and long, acute wings, with the first primary somewhat shorter than the second, which is the longest. This group (the true Pigeons and Doves) is however so numerous in species, that we cannot but wonder that it should still remain comparatively untouched by the reforming hand of our contemporaries; especially seeing that as good reasons may be found for subdividing them as the Parrots, and other large natural groups. We may indicate the differences exhibited in the form of the scales covering the tarsus, and the shape of the tail, &c. as offering characters on which sections or genera could be founded. But as the species of the United States, which are those we are to treat of, are but few, we shall leave the promising task to any one whose researches may lead him to engage in it; and shall only observe, that the two species described by Wilson belong to a different group from the three we have since introduced into the Fauna of this country. Of these the present beautiful Dove is the only one hitherto undescribed.

This new and charming little species inhabits the Florida keys with the preceding, but is much more rare. We have also received it from Cuba, and noticed a specimen in a collection of skins sent from that island by Mr. MacLeay to the Zoological Society of London. They are fond of being on the ground, where they are most commonly observed, dusting themselves, and seeking for the gravel which, like the gallinaceous birds, they swallow to assist digestion. When flushed, they produce the same whistling noise with their wings as the common Turtle Dove, *Columba carolinensis*.

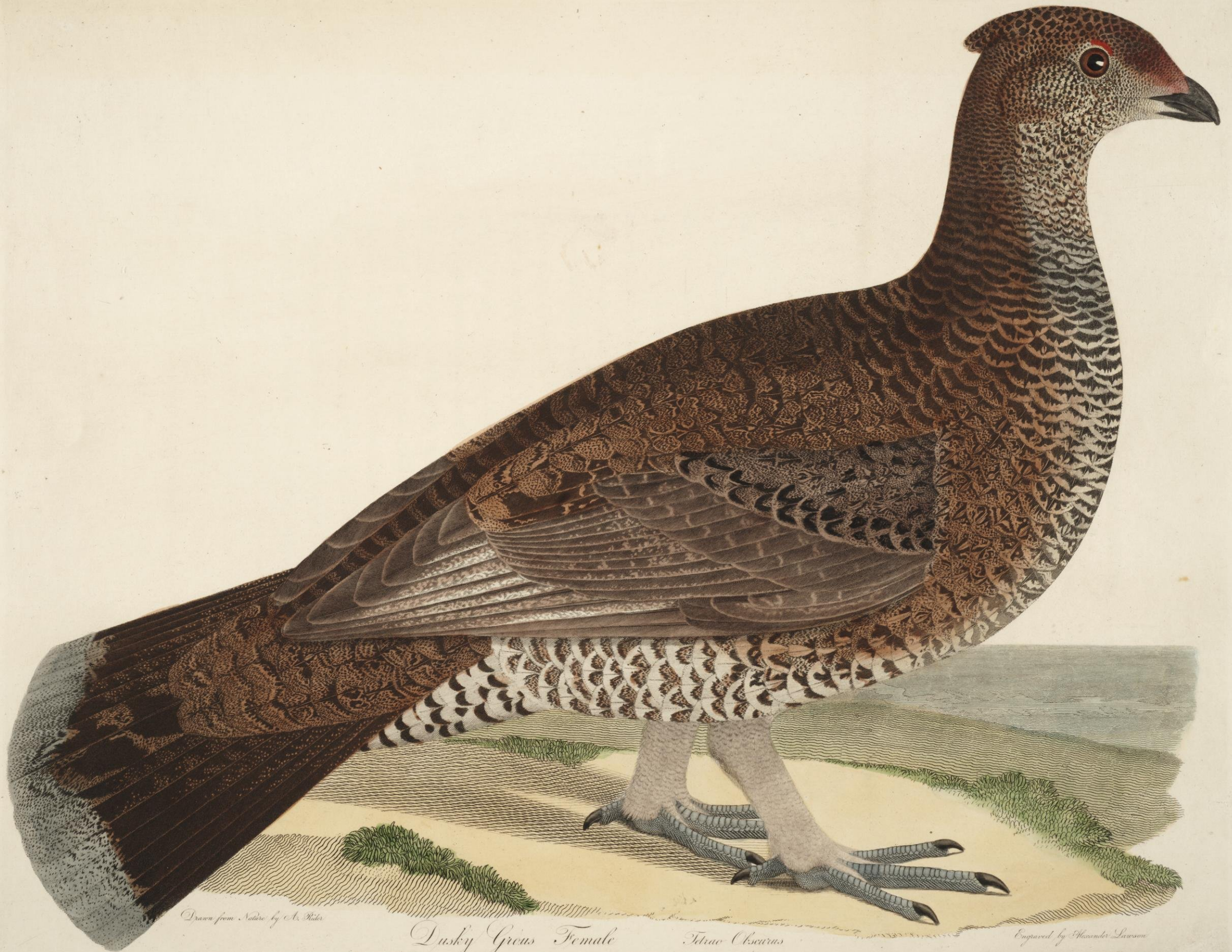
The Zenaida Dove measures ten inches in length. The bill is somewhat more robust than that of the common Dove, but otherwise perfectly similar, less than an inch long, black, the corners of the mouth being lake: the irides are dark brown, the

pupil of the eye large, and the eye itself full, giving the whole bird a mild and pleasing expression: the naked orbits are of a bluish gray. The whole plumage above is yellowish ashy-brown, tinged with vinaceous on the crown, and paler on the sides of the head and neck; under the ears is a small bright rich and deep violaceous spot, rivalling the amethyst in splendour; and above this a similar smaller one, not very distinguishable: the sides of the neck before the bend of the wing exhibit splendid golden violaceous reflections slightly passing into greenish in different lights: the scapulars are spotted with black, the spots being large and roundish; the exterior wing-coverts, spurious wing and quill-feathers are blackish; the primaries are edged with white externally, and with the exception of the outer ones, at tip also; the secondaries are broadly terminated with white. The chin is yellowish white; the whole inferior surface is bright vinaceous, paler on the throat, and gradually passing into richer on the belly; the flanks and under wing-coverts are delicate lilac, and the under tail-coverts are mixed with the same colour, some of the longest being entirely lilac, which is also found at the base of the plumage on the belly and rump. The wings are six inches and a quarter long, reaching within one inch of the tip of the tail: the primaries are entire on both vanes; the first is longer than the fourth, the second longest, though scarcely longer than the third. The tail is four and a half inches long, composed of twelve broad, full, rounded feathers, extending but one inch beyond their coverts: it is nearly even, and of the colour of the body, with a broad black band at two-thirds of its length, obsolete on the two middle feathers, (which are of the colour of the body) purer on the three exterior; the lateral feathers are pearl-gray for half an inch towards the tip, the outer plume being moreover of that colour on the outer vane: all the tail-feathers are blackish on the inferior surface to within three quarters of an inch of their

tips. The feet are red; the nails blackish; the tarsus measures three quarters of an inch in length.

The female is very similar to the male in size and colour: the head however is but slightly tinged with vinaceous, the golden violet reflections of the neck are not quite so vivid, and the inferior surface of a paler vinaceous, but graduated as in the male. The lateral tail-feathers are also much more uniform with the middle one, and of course with the back, the three outer only on each side being pearl-gray at tip. This latter character however we should rather attribute to age than sex, if we had not good reason to believe that our female is a perfectly adult bird.

At first sight, the Zenaida Dove might perhaps be mistaken for the common Turtle Dove, (*Columba carolinensis*, and *marginata* of authors) having the same general colour and several common markings; but to mention no other differential character, the short even tail, composed of but twelve feathers, all rounded, the outer bluish-gray at tip, will at once distinguish it from the latter, which belongs to a different group, having the tail long cuneiform, and (what is found in no other American species, not even its close relation the Passenger Pigeon) composed of fourteen tapering and acute feathers, the two middle remarkably so, and the lateral pure white at tip. If any other distinction should be required, the white tips of the secondaries of our new species will afford a good one, as well as the outer tail-feather, the exterior web of which is blue-gray, crossed, as well as the others, by the black band; whilst in the *C. carolinensis* it is entirely pure white, the black band being confined to the inner web.



Drawn from Nature by A. Miller

Dusky Grouse Female

Tetrao Obscurus

Engraved by Alexander Leitch

DUSKY GROUS.

TETRAO OBSCURUS.

Plate XVIII. Female.

Tetrao obscurus, SAY, in *Long's Exped. to Rocky Mount.* II, p. 14. *NOB. Cat. Birds U. S.* Sp. 209, in *Contr. Macl. Lyc. Phila.* I, p. 23. *Id. Syn. Birds U. S.* Sp. 207, in *Ann. Lyc. Nat. Hist. N. Y.* pp. 127, 442.

Philadelphia Museum, Female.

Collection of Mr. Sabine, in London, Male and Female.

LINNÉ, in his genus *Tetrao*, brought together so great a number of species bearing no more than a distant resemblance to each other, and differing not only in their external characters, but even in their peculiar habits, that he might with almost the same propriety have included in it all typical gallinaceous birds. Latham very judiciously separated the genus *Tinamus*, as well as that of *Perdix*, which latter he restored from Brisson. Illiger likewise contributed to our better knowledge of these birds by characterizing two more natural genera, *Syrrhaptes* and *Ortygis*. Temminck, in his *Histoire des Gallinacés*, carried the number to seven, but has since reduced it by reuniting *Coturnix* to *Perdix*.

The true *Tetraones* are divided by Vieillot into two genera, the *Lagopodes* forming a distinct one by themselves. These however we regard as no more than a subgenus, of which we distinguish three in our genus *Tetrao*. I. *Lagopus*, which represents it in the Arctic Polar regions; for whose climate they are admirably adapted by being clothed to the very nails in plumage suited to the temperature, furnished abundantly with thick down, upon which the feathers are closely applied. The colour of their

winter plumage is an additional protection against rapacious animals, by rendering it difficult to distinguish them from the snows by which they are surrounded. II. *Tetrao*, which is distributed over the more temperate climates; the legs being still feathered down to the toes. III. *Bonasia*, a new division, of which we propose *Tetrao bonasia*, L. as the type, in which only the upper portion of the tarsus is feathered. These occasionally descend still farther south than the others, inhabiting wooded plains as well as mountainous regions, to which those of the second section are more particularly attached. But the entire genus is exclusively boreal, being only found in Europe and the northern countries of America and Asia. The long and sharp-winged Grouse, or *Pterocles* of Temminck, which represent, or rather replace these birds in the arid and sandy countries of Africa and Asia, a single species inhabiting also the southern extremity of Europe, we consider, in common with all modern authors, as a totally distinct genus. That group, composed of but few species, resort to the most desert regions, preferring dry and burning wastes to the cool shelter of the woods. These oceans, as they might be termed, of sand, so terrific to the eye and the imagination of the human traveller, they boldly venture to cross in large companies in search of the fluid so indispensable to life, but there so scarce, and only found in certain spots. Over the intervening spaces they pass with extraordinary rapidity, and at a great elevation, being the only gallinaceous birds furnished with wings of the form required for such flights. This however is not the only peculiarity in which they aberrate from the rest of their order, and approach the Pigeons, being said to lay but few eggs, the young remaining in the nest until they are full-fledged, and fed in the mean time by the parents.

The Grouse dwell in forests, especially such as are deep, and situated in mountainous districts; the *Bonasiæ* however, and

the *Tetrao cupido*, frequenting plains where grow trees of various kinds. The *Lagopodes* of the Arctic regions, or Ptarmigans, are also found on the very elevated mountains of central Europe, where the temperature corresponds to that of more northern latitudes. Here they keep among the tufts of dwarf willows, which with pines, form the principal vegetation of these climates. The Grouse feed almost exclusively on leaves, buds, berries, and especially the young shoots of trees, pines spruce or birch, resorting to seeds only when compelled by scarcity of other food, or when their usual means of subsistence are buried beneath the snow. They sometimes, especially when young, pick up a few insects and worms, and are fond of ants' eggs. Like other gallinaceous birds, they are constantly employed in scratching the earth, are fond of covering themselves with dust, and swallow small pebbles and gravel to assist digestion. No birds are more decidedly and tyrannically polygamous. As soon as the females are fecundated, the male deserts them, caring no further about them nor their progeny, to lead a solitary life. Like perfidious seducers, they are full of attentions however, and display the greatest anxiety to secure the possession of those they are afterwards so ready to abandon. The nuptial season commences when the leaves first appear in spring. The males then appear quite intoxicated with passion: they are seen, either on the ground, or on the fallen trunks of trees, with a proud deportment, an inflamed and fiery eye, the feathers of the head erected, the wings dropped, the tail widely spread—parading and strutting about in all sorts of extravagant attitudes, and expressing their feelings by sounds so loud as to be heard at a great distance. This season of ardour and abandonment is protracted till June. The deserted female lays, unnoticed by the male, far apart on the ground among low and thick bushes, from eight to sixteen eggs, breeding but once in a season. They sit and rear their

young precisely in the manner of the common fowl, the chicks being carefully protected by the mother only, with whom they remain all the autumn and winter, not separating until the return of the breeding season. It is only at this period that the males seek the society of the females.

The Grouse are remarkably wild, shy, and untameable birds, dwelling in forests or in barren uncultivated grounds, avoiding cultivated and thickly inhabited countries, and keeping together in families. The *Lagopodes* only live in very numerous flocks composed of several broods, parting company when the return of spring invites them to separate in pairs of different sexes, which is always done by the birds of this division. Except in the breeding season, the Grouse keep always on the ground, alighting on trees only when disturbed, or when going to roost at night; by day retiring to the deepest part of the forest. The flesh of all Grouse is delicious food, dark-coloured in some, and white in others, the dark being more compact, juicy, and richly flavoured, as in *Tetrao cupido*; while the white, though somewhat dry, is distinguished for delicacy and lightness. Such are the *Bonasiæ*, *T. umbellus* of America, and *T. bonasia* of Europe.

The Grouse are distinguished by a short stout bill, feathered at base, and they are of all gallinaceous birds those in which the upper mandible is the most vaulted: the feathers of the bill are very thick and close, and cover the nostrils entirely. The tongue is short, fleshy, acuminate, and acute. The eye is surmounted by a conspicuous red and papillous naked space. The tarsi are generally spurless in both sexes, and partly or wholly covered with slender feathers, which in the *Lagopodes* are thicker and longer than in the rest, extending not only beyond the toes, but growing even on the sole of the foot; a peculiarity which, agreeably to the observation of Buffon, of all animals is again met with only in the hare. These feathers in winter become still

longer and closer. All the others have the toes scabrous beneath, and furnished with a pectinated row of processes each side.* This roughness of the sole of the feet enables them to tread firmly on the slippery surface of the ground or frozen snow, or to grasp the branches of trees covered with ice. Their nails are manifestly so formed as to suit them for scratching away the snow covering the vegetables which compose their food. The wings of the Grouse are short and rounded, the first primary is shorter than the third and fourth, which are longest. The tail is usually composed of eighteen feathers, generally broad and rounded. The Red Grouse, *T. scoticus*, however, and the European *Bonasiæ*, and *T. canadensis* or Spotted Grouse, have but sixteen; while our two new North American species have twenty, one of them having these feathers very narrow and pointed, the narrowness being also observed in the Sharp-tailed Grouse. They have the head small, the neck short, and the body massive and very fleshy.

The females of the larger species differ greatly from the males, which are glossy black, or blackish, while the former are mottled with gray, blackish, and rufous: such are all the typical *Tetraones* of Europe, and the Cock of the Plains, the Dusky, and the Spotted Grouse of America. The smaller species, in which both sexes are mottled, such as *T. phasianellus* and *T. cupido*, exhibit little or no difference in the plumage of the two sexes; which is also the case in all the *Bonasiæ* and *Lagopodes*. The young in their first feathers are in all respects like the female, and the males do not acquire their full plumage until after the second moult. All moult twice a year, and most of the *Lagopodes* change their colours with the seasons in a remarkable manner.

* These processes are liable to fall off, at least in preserved skins. It is owing to this circumstance that we committed several errors in characterizing these birds in our *Synopsis of the Birds of the United States*.

The genus *Tetrao* is now composed of thirteen species, three *Lagopodes*, two *Bonasiæ*, and eight typical *Tetraones*. This enumeration does not include the *Tetrao rupestris*, which we do not consider well established, any more than the new species of Mr. Brehm. The species of *Lagopus*, as might be inferred from their inhabiting high northern latitudes, are common to both continents, with the exception of the Red Grouse, *T. scoticus*, which is peculiar to the British islands, and which, from its not changing the colours of its plumage with the seasons, may be considered as forming the passage to the true *Tetraones*. Of these there are five in North America, each and all distinct from the three European. Of the two *Bonasiæ*, one is peculiar to the old, and the other to the new continent, the former having sixteen, the latter eighteen feathers to the tail. Thus the entire number is seven in Europe, while it is eight in North America. Setting aside the two common to both, and the respective *Bonasiæ*, we may consider the Cock of the Woods of Europe, as the parallel of the Cock of the Plains of America. The Black Grouse, *T. tetrix*, will find its equivalent in the Dusky Grouse, *T. obscurus*; but the *T. hybridus* has no representative in America, any more than the *T. scoticus*. These however are more than replaced as to number, by the *T. phasianellus*, *T. cupido*, and *T. canadensis*, all American species which have none corresponding to them in the old world.

Perhaps no other naturalist has personally inspected all the known species of this genus of both continents, and having examined numerous specimens even of some of the rarest, and possessing all but one in my own collection, my advantages are peculiar for giving a monography of this interesting genus. Such a work it is my intention hereafter to publish, illustrated with the best figures, and accompanied with further details respecting their habits. In the mean time I shall merely state, that being replaced in Africa by *Pterocles*, and in South America by *Tinamus*, all the

known species of Grouse are found in North America or in Europe, the European also inhabiting Asia; from whose elevated central and northern regions, yet unexplored, may be expected any new species that still remain to be discovered. The extensive wilds of North America may also furnish more, though we do not think so; for since we have become acquainted with both sexes of the Dusky Grouse and the Cock of the Plains, we have been able to refer satisfactorily to known species all those of which any indications occur in the accounts of travellers in this country.

North America is exceeded by no country in the beauty, number, and valuable qualities of her Grouse; and she is even perhaps superior to all others in these respects since the discovery of the Cock of the Plains. Although the careful and accurate researches of Wilson had led him to the belief that there existed but two species of Grouse in the territory of the United States, no less than six are now known to inhabit within their boundaries. But we are not aware that any of the subgenus *Lagopus* ever enters the confines of the Union, notwithstanding the pains we have taken to obtain information on this point from the high northern districts of Maine and Michigan, in which, if any where, they are most likely to be discovered. It would however be very extraordinary if these birds, which are found in the Alps of Switzerland, should not also inhabit the lofty ranges of the Rocky Mountains, which are known to be the resort of the various species of Grouse. With the exception therefore of the well known *Tetrao umbellus*, which belongs to *Bonasia*, all the others are true Grouse, *Tetraones*.

The Spotted, and the Sharp-tailed Grouse, were long since known as inhabitants of that part of America north of the United States; but the two others are newly added, not only to our Fauna, but to the General System, being found for the first time in the American territory and not elsewhere. For the history of the

discovery, the manners, habitation, and a particular description of each of these, we shall refer the reader to their several articles.

The Dusky Grouse is eminently distinguished from all other known species, by having the tail slightly rounded, and composed of twenty broad and rounded feathers. This peculiarity of the extraordinary number of tail-feathers, is only found besides in the Cock of the Plains, in which however they are not rounded, but very slender, tapering, and acute. In size and colour, the Dusky Grouse may be compared to the Black Grouse of Europe, so remarkable for the outward curvature of the lateral feathers of the tail.

The figure in our plate is taken from the specimen on which Say established the species: this was killed on a mountain in the great chain dividing the waters of the Mississippi from those which flow towards the Pacific; at a spot where, on the 10th of July 1820, the exploring party of Major Long were overlooking from an elevation of one or two thousand feet, a wide extent of country. A small river poured down the side of the mountain through a deep and inaccessible chasm, forming a continued cascade of several hundred feet. The surface of the country appeared broken for several miles, and in many of the valleys could be discerned columnar and pyramidal masses of sandstone, some entirely naked, and others bearing small tufts of bushes about their summits. When the bird flew, and at the unexpected moment of its death, it uttered a cackling note somewhat resembling that of the domestic fowl.

The female Dusky Grouse is eighteen inches in length. The bill measures precisely an inch, which is small in proportion; it is blackish, with the base of the under mandible whitish. The general colour of the plumage is blackish brown, much lighter on the neck and beneath, all the feathers having two or three narrow bars of pale ochreous, much less pure and bright on the

neck and breast; the small short feathers at the base of the bill covering the nostrils are tinged with ferruginous, those immediately nearest the forehead have but a single band, and are slightly tipped, while the larger ones of the neck, back, rump, and even the tail-coverts, as well as the feathers of the breast, have two bands and the tip. These rufous terminal margins, on the upper portion of the back, and on the tail-coverts, are broad, and sprinkled with black, so as to be often blended with the lower band. The sides of the head, and the throat, are whitish dotted with blackish, the black occupying both sides of each feather, deepening and taking a band-like appearance on the inferior portion of the upper sides of the neck; on each feather of the breast is a whitish band that becomes wider on those nearest the belly; the flanks are varied with rufous, each feather having besides the small tip, three broad cross lines of that colour, and a white spot at the tip of the shaft, increasing in size as they are placed lower. The belly feathers are plain dull cinereous, the lower tail-coverts are white, black at their base, with one or two black bands besides, and tinged between the bands with grayish ochreous. The wings are nine and a half inches long, with the third and fifth primaries subequal, the coverts as well as the scapulars are of the general colour, with about two bands, the second of which is sprinkled as well as the tip, each feather being white on the shaft at tip; the primaries, secondaries, and outer wing-coverts, including their shafts, are plain dusky; the secondaries have ochreous zigzag marks on their outer webs, and are slightly tipped with dull whitish; the primaries themselves are somewhat mottled with dingy white externally, but are notwithstanding entirely without the regular white spots so remarkable in other Grouse; the lower wing-coverts and long axillary feathers are pure white. The tail measures in length seven and a half inches, is very slightly rounded, of twenty broad feathers, of

which the lateral are plain blackish, with the exception of a few whitish dots at the base of their outer webs, and the middle ones being varied with rufous dots disposed like the bands across their whole width; all are thickly dotted with gray for half an inch at tip, which in the specimen figured, but by no means so much so in others, gives the tail an appearance of having a broad terminal band of cinereous sprinkled with blackish. This circumstance evinces the inutility of describing with the extreme minuteness to which we have descended in this instance, as after all the pains bestowed, the description is only that of an individual. The tail is pure black beneath, considerably paler at tip and on the undulations of the middle feathers. The tarsus is three quarters of an inch long; the feathers with which it is covered, together with the femorals, are pale grayish ochreous undulated with dusky; the toes are dusky, and the nails blackish.

The male is but little larger, and entirely, but not intensely black. We can however say very little about it, having taken but a hasty and imperfect view of a specimen belonging to Mr. Sabine of London, and writing merely from recollection. The tail-feathers are wholly black, perfectly plain and unspotted, and in the female and young they are but slightly mottled, as is seen in almost all Grouse. Mr. Sabine has long had this bird in his possession, and intended dedicating it as a new species to that distinguished traveller Dr. Richardson.



Drawn from Nature by A. Riker.

Sharp-tailed Grouse.

Tetrao Phasianellus.

Engraved by Alexander Lawson.

SHARP-TAILED GROUS.

TETRAO PHASIANELLUS.

Plate XIX.

- Tetrao phasianellus*, LINN. *Syst.* ed. 10, p. 160. GMEL. *Syst.* I, p. 747. FORST. *Phil. Trans.* LXII, pp. 394 and 425. LATH. *Ind. Orn.* p. 635, Sp. 2. BRISS. *Suppl.* p. 9. TEMM. *Ind. Gall. in Hist. Pig. & Gall.* III, p. 702. VIEILL. *Nouv. Dict. Hist. Nat.* SABINE, *Zool. App. to Frankl. Exped.* p. 681. NOB. *Cat. Birds U. S.* Sp. 208. ID. *Syn. Birds U. S.* Sp. 209.
- Tetrao urogallus*, var. β , LINN. *Syst.* I, p. 273, Sp. 1.
- Gelinotte à longue queue.* BUFF. *Ois.* II, p. 286. SONN. *Buff.* VI, p. 72. BONAT. *Tabl. Encyc. Orn.* p. 196, Pl. 91, fig. 1.
- Francolin à longue queue*, HEARNE, *Voy. à l'océan du Nord*, (Fr. transl.) p. 386.
- Tetras phasianelle*, TEMM. *Pig. et Gall.* III, p. 152.
- Long-tailed Grouse*, EDWARDS, *Glean.* Pl. 117. LATH. *Syn.* IV, p. 732. ID. *Suppl.* p. 21.
- Sharp-tailed Grouse*, PENN. *Arct. Zool.* Sp. 181.
- The Grouse, or Prairie Hen*, LEWIS and CLARK, *Exp.* II, p. 180, Sp. 1.

Philadelphia Museum, Female.

My Collection, Male and Female.

THIS species of Grouse, though long since said to inhabit Virginia, is in fact a recent acquisition to the Fauna of the United States; for it was only through an awkward mistake that it was ever attributed to that country. Mitchell, upon an inspection of Edwards's bad drawing of this bird, mistaking it for the Ruffed Grouse of that and the neighbouring states, declared it to be an inhabitant of Virginia; and upon his authority Edwards gave it as such. This statement however led Wilson into the erroneous belief of the identity of the two species, in which he was further confirmed, when after the most careful researches he

became satisfied that the Ruffed Grouse was the only species to be found in Virginia.

The gallant and lamented Governor Lewis gave the first authentic information of the existence of this bird within the limits of these states. He met with it on the upper waters of the Missouri, but observes, that it is peculiarly the inhabitant of the great plains of the Columbia. He states also that the scales, or lateral processes of the toes, with which it is furnished in winter like the rest of its genus, drop off in summer.

Say introduced the species regularly into the scientific records of his country. The expedition under Major Long brought back a specimen now in the Philadelphia Museum, from which, though a female, and unusually light coloured, we have had our drawing made, on account of its having been procured in the American territory. The bird is never seen in any of the Atlantic states, though numerous in high northern latitudes. It is common near Severn river and Albany fort, inhabiting the uncultivated lands in the neighbourhood of the settlements, and particularly near the southern parts of Hudson's bay, being often killed in winter near Fort York; but it does not extend its range to Churchill. Near Fort William on Lake Superior, the Sharp-tailed Grouse is also found in spring, and we have seen specimens killed in winter at Cumberland House, and others at York Factory in summer. In collections it is very rare; and Temminck, when he wrote his history of gallinaceous birds, had never seen a specimen, nor did it exist at the time in any European museum.

It is by the shape of the tail that this Grouse is eminently distinguished from all others. The English name which we have, with Mr. Sabine, selected from Pennant, is much more applicable than that of Long-tailed, given by Edwards; for instead of being long, it is, except the middle feathers, remarkably short, cuneiform, and acute, more resembling that of some Ducks than of the

Pheasant. By the elongated feathers, but in no other particular, this species approaches the African genus *Pterocles*. At Hudson's bay it is called Pheasant, a name which though inappropriate, seems at least better applied to this than the Ruffed Grouse.

The original writers that have mentioned this Grouse are, Edwards, who first introduced it, and has figured the female from a badly stuffed specimen, being however the only figure before ours; Pennant; Hearne, who has given the most information concerning its habits derived from personal observation; and Forster, who has described it with accuracy. Linné at first adopted it from Edwards, but afterwards most unaccountably changed his mind, and considered it as a female of the European Cock of the Woods. It was restored by Latham and others to its proper rank in the scale of beings.

The Sharp-tailed Grouse is remarkably shy, living solitary, or by pairs, during summer, and not associating in packs till autumn; remaining thus throughout the winter. Whilst the Ruffed Grouse is never found but in woods, and the Pinnated Grouse only in plains, the present frequents either indifferently. They however, of choice, inhabit what are called the juniper plains, keeping among the small juniper bushes, the buds constituting their principal food. They are usually seen on the ground, but when disturbed fly to the highest trees. Their food in summer is composed of berries, the various sorts of which they eagerly seek: in winter they are confined to the buds and tops of evergreens, or of birch and alder, but especially poplar, of which they are very fond. They are more easily approached in autumn than when they inhabit large forests, as they then keep alighting on the tops of the tallest poplars, beyond the reach of an ordinary gun. When disturbed in that position they are apt to hide themselves in the snow; but Hearne informs us that the hunter's chance is not the better for that, for so rapidly do they make

their way beneath the surface, that they often suddenly take wing several yards from the spot where they entered, and almost always in a different direction from that which is expected.

Like the rest of its kind, the Sharp-tailed Grouse breeds on the ground near some bush, making a loose nest with grass, and lining it with feathers. Here the female lays from nine to thirteen eggs, which are white spotted with blackish. The young are hatched about the middle of June; they utter a piping noise, somewhat like chickens. Attempts have been repeatedly made to domesticate them, but have as constantly failed, all the young, though carefully nursed by their stepmother, the common hen, dying one after another, probably for want of suitable food. This species has several cries: the cock has a shrill crowing note, rather feeble, and both sexes when disturbed, or whilst on the wing, repeat frequently the cry of *cack, cack*. This well known sound conducts the hunter to their hiding place, and they are also detected by producing with their small, lateral, rigid tail-feathers, a curious noise resembling that made by a winnowing fan. When in good order, one of these Grouse will weigh upwards of two pounds, being very plump. Their flesh is of a light brown colour, and very compact, though at the same time exceedingly juicy and well tasted, being far superior in this respect to the common Ruffed, and approaching in excellence the delicious Pinnated Grouse.

The adult male Sharp-tailed Grouse in full plumage is sixteen inches long and twenty-three in breadth. The bill is little more than an inch long, blackish, pale at the base of the lower mandible, and with its ridge entering between the small feathers covering the nostrils: these are blackish edged with pale rusty, the latter predominating: the irides are hazel. The general colour of the bird is a mixture of white, and different shades of dark and light rusty on a rather deep and glossy blackish ground: the feathers

of the head and neck have but a single band of rusty, and are tipped with white; those however of the crown are of a much deeper and more glossy black, with a single marginal spot of rusty on each side, and a very faint tip of the same, forming a tolerably pure black space on the top of the head. The feathers between the eye and bill, those around the eye above and beneath, on the sides of the head, and on the throat, are somewhat of a dingy yellowish white, with a small black spot on each side, giving these parts a dotted appearance, but the dots fewer and smaller on the throat. The feathers of the back and rump are black, transversely varied on the margin and at tip with pale bright rusty sprinkled with black, forming a confused mixture of black and rusty on the whole upper parts of the bird; the long loose-webbed upper tail-coverts being similar, but decidedly and almost regularly banded with black and sprinkled with rusty, this colour being there much lighter and approaching to white, and even constituting the ground colour. The breast is brown, approaching chocolate, each feather being terminated by a white fringe, with a large arrow-shaped spot of that colour on the middle of each feather, so that when the plumage lies close the feathers appear white with black crescents, and are generally described so. On the lower portion of the breast the white spots as they descend become longer and narrower, the branches forming the angle coming closer and closer to each other till the spot becomes a mere white streak along the shaft, but at the same time the white marginal fringe widens so considerably that the feathers of the belly may be properly called white, being brown only at their base, but the shaft is white even there, with no more than a brown heart-shaped spot visible on the middle. The heart-shaped brown spots of the belly become so very small at the vent, that this part appears pure white with a few very small blackish spots: the long flank feathers are broadly banded with black and white,

somewhat tinged with ochraceous exteriorly; the under tail-coverts are white, blackish along the shafts, and more or less varied with black in different specimens, which also vary considerably as to the size and shape of all the spots, being in some more acute, in others more rounded, &c. The wings are eight inches long, the third and fourth primaries being the longest; the scapulars are uniform with the back, but besides the rusty sprinkling of the margins and tip, the largest have narrow band-like spots of a pure bright rufous, a slight whitish streak along the shaft in the centre, and a large white spot at the end. The smaller wing-coverts are plain chocolate brown; the spurious wing, and outer coverts, are of the same brown, but each feather bears at the point a large and very conspicuous pure white spot; all the other superior coverts are blackish, sprinkled and banded with rusty, each furnished with a conspicuous terminal spot; the under wing-coverts, together with the long axillary feathers, are pure white, each with a single small dusky spot, and are marbled with white and brownish on the outer margin; the quills are plain dusky brown, the primaries being regularly marked with pure white spots half an inch apart on their outer webs, except at the point of the first; the longest feather of the spurious wing, and the larger outer coverts have also a pair of these spots: the secondaries, besides the outer spots, which assume the appearance of bands, are tipped with pure white, forming a narrow terminal margin, those nearest the tertials are also slightly marked with rusty; the tertials themselves are similar to the scapulars, that is, they are black, banded and sprinkled with different shades of rusty. The tail is strongly cuneiform and graduated, of eighteen feathers, with the middle five inches long, which is three more than the outer. According to some accounts, the two middle feathers are by more than two inches longer than the adjoining, but in all we have examined the difference was little more than

an inch. The four middle are similar in shape, texture, and colour, being narrow, flaccid, equal in breadth throughout, though somewhat dilated and cut square at the end. In colour they vary considerably in different specimens, the ground being generally black, and the tips white, but more or less varied, in some with white and in others with rusty, these colours being at one time pure, at another sprinkled with blackish, and assuming various tints; in one specimen they are disposed in spots, in another in bands, lines, chains, angles, &c., but generally in a long stripe on each side of the shaft at base, and in transverse spots at the point of the two longest, while they are in round spots all along each side of the two shortest: in one specimen the latter are even almost plain, being dingy white, sprinkled with blackish on the whole of their outer web: all the other lateral feathers, entirely concealed by the coverts, are pure white at the point, but with dusky shafts, and are more or less broadly dark cinereous at base: these feathers are very rigid, and of a curious form, tapering from the base to the point, where they suddenly dilate; they are deeply emarginate at tip, and their inner lobe projects considerably. The tarsus is two inches long; the slender hair-like feathers covering it are, as well as the femorals, of a dingy grayish white, obsoletely waved with dusky; the toes are strongly pectinated, and are, as well as the nails, of a blackish dusky, while the long processes are whitish.

The foregoing minute description is chiefly taken from a handsome male specimen from Arctic America. There is no difference between the sexes, at least we have not been able to detect any in all the specimens of both that we have examined: hence we conclude that the difference generally described by authors, and which we have ourselves copied in our Synopsis, that of the breast being chocolate brown in the male, and uniform with the rest of the plumage in the female, does not exist. The female is merely

less bright and glossy. Both sexes, like other Grouse, have a papillous red membrane over the eye, not always seen in stuffed skins, and which is said to be very vivid in the male of this species in the breeding season. This membrane, an inch in length, becomes distended, and projects above the eye in the shape of a small crest, three-eighths of an inch high. The male at this season, like that of other species, and indeed of most gallinaceous birds, struts about in a very stately manner, carrying himself very upright. The middle feathers of the tail are more or less elongated, in young birds scarcely exceeding the adjoining by half an inch.

The spring plumage is much more bright and glossy than the autumnal, and also exhibits differences in the spots and markings. The specimen we have selected for our plate, on account of its being the only one we had from the United States territory, is a female in the autumnal dress, and was brought from the Rocky Mountains. We think proper to insert here in detail the description we took from it at the time, thus enabling the reader to contrast it with that made from a Northern specimen in spring plumage, rather than point out each and all the numerous and at the same time minute and unimportant variations.

The female represented in the figure was fifteen inches long. Its general colour mottled with black and yellowish rufous: the feathers of the head above are yellowish rufous banded with black, the shaft yellowish: a line above the eye, the cheeks, and the throat, are pure yellowish rusty with very few blackish dots, and a band of the latter colour from the bill beneath the eye and spreading behind. All the lower parts are whitish cream, with a yellowish rusty tinge; each feather of the neck and breast with a broad blackish subterminal margin in the shape of a crescent, becoming more and more narrow and acute as they are lower down on the belly, until the lowest are reduced to a mere black

mark in the middle; the lower tail-coverts and the femorals are entirely destitute of black. All the upper parts, viz. the back, rump, upper tail-coverts, and scapulars, have a uniform mottled appearance of black and rusty, each feather being black with rusty shafts, spots, bands, or margins, the rusty again minutely dotted with black: on the rump, but especially on the tail-coverts, the rusty predominates in such a manner that each feather becomes first banded with black and rusty, then decidedly rusty varied with black, which however does not change in the least the general effect. The wing-coverts are dusky, each with a large round white spot at tip, the inner gradually taking the markings of the back and scapulars; the lining of the shoulder is plain dusky, as well as the spurious wing and the primaries, each feather of the spurious wing having about five large round spots of white on its outer web; the primaries are regularly marked on the same side with eight or ten squarish equidistant white spots, with a few inconspicuous whitish dots on their inner web besides; the secondaries are also dusky, but in them the spots take the appearance of bands continued across the whole feather, of which bands there are three or four, including the terminal; the inner secondaries become darker and darker as they approach the body, the white becomes rufous, the dots are more frequent, and they become confounded with the scapulars, and are banded and mottled with various tints of black and rusty: the lower wing-coverts and long axillary feathers are pure white, the outer coverts being marbled with dusky. The tail is composed of eighteen feathers; it is cuneiform, very short, and entirely hidden by the coverts, except the four middle feathers; the two middle feathers are flaccid, narrow, equal in breadth throughout, longer than the others by more than an inch, rusty, crossed by chained bands of black, and dotted with black and whitish at tip; the two next are also longer than the others,

nearly whitish, but almost similar in shape, markings, and texture, to the longest; the lateral decrease in size very fast from the centre, but by regular degrees, and are remarkably stiff, somewhat like those of Woodpeckers, wider at base and tip than in the middle, pure white at the end and on the inner web, the shaft black, and the outer web dotted with blackish; they are deeply emarginate at tip, the inner lobe being longer, acute, and singularly shaped.



Drawn from Nature by A. Ryder.

Spotted Grouse. *Tetrao Canadensis.*

Engraved by Alexander Lawson.

SPOTTED GROUS.

TETRAO CANADENSIS.

Plate XX. Male. Plate XXI. Fig. 1, Female.

Tetrao canadensis, LINN. *Syst.* I, p. 274, Sp. 3. GMEL. *Syst.* I, p. 749, Sp. 3.
LATH. *Ind.* p. 637, Sp. 6. FORSTER, in *Phil. Tr.* LXII, p. 389. TEMM. *Ind. Gall.*
in *Hist. Fig. et Gall.* III, p. 702. VIEILL. *Nouv. Dict. Hist. Nat.* SABINE, *Zool.*
App. Frankl. Exp. p. 683. NOB. *Cat. Birds U. S.* Sp. 207. ID. *Syn. Birds U. S.*
Sp. 208.

Tetrao canace, LINN. *Syst.* I, p. 25, Sp. 7, Female.

Lagopus Bonasa Freti Hudsonis, BRISS. *Orn.* I, p. 201, Sp. 6. ID. *Suppl.* p. 10. ID.
Svo. IV, p. 56, Male.

Lagopus Bonasa canadensis, BRISS. *Orn.* I, p. 203, Sp. 7, Pl. 20, fig. 2. ID. Svo. IV,
p. 57, Female.

Lagopus Freti Hudsonis, KLEIN, *Av.* p. 117, Sp. 6.

La Gelinotte du Canada, BUFF. *Ois.* II, p. 279. ID. Pl. enl. 131, Male, 132, Female.
SONN. *Buff.* VI, p. 58. BONAT. *Tabl. Enc. Orn.* p. 197, Pl. 91, fig. 2.

Tetras tacheté, ou Acaho, TEMM. *Fig. et Gall.* III, p. 160, bis.

Black and Spotted Heathcock, EDW. *Glean.* p. 118, Pl. 118, Male.

Brown and Spotted Heathcock, EDW. *Glean.* p. 71, Pl. 71, Female. ELLIS, *Hudson*
Bay, I, t. p. 50.

Spotted Grouse, PENN. *Arct. Zool.* Sp. 182. LATH. *Syn.* IV, p. 735, Sp. 6. ID. *Suppl.*
p. 214, accid. var.

The small speckled Pheasant, LEWIS and CLARK, *Exp.* II, p. 182, Male.

The small brown Pheasant, ID. ID. *Exp.* II, p. 182, Female.

Philadelphia Museum, Male.

My Collection, Male and Female.

As may be seen by the synonymy, two separate species have been made of the present, the male and female being taken for different birds. This error, which originated with Edwards and Brisson, from whom it was copied by Linné, was rectified by Buffon,

Forster, and others; and in their decision Gmelin, Latham, and all subsequent writers have acquiesced. Both sexes were tolerably well figured by Buffon, as they had also been previously by Edwards; but we feel justified in saying that none of their plates will bear a comparison with the present.

The Spotted Grouse is well characterized by its much rounded tail, of but sixteen broad and rounded feathers, and may be at once distinguished from all others by the large and conspicuous white spots ornamenting the breast, flanks, and under tail-coverts. It has been inaccurately compared with the European *Tetrao bonasia*, from which it differs very materially, not even being of the same subgenus, and approaching nearer, if indeed it can be compared with any, to the *Tetrao urogallus*.

This bird is common at Hudson's bay throughout the year, there frequenting plains and low grounds, though in other parts of America it is found on mountains, even of great elevation. It inhabits Canada in winter, and was seen by Vieillot in great numbers during the month of October in Nova-Scotia. Lewis and Clark met with it on the elevated range of the Rocky Mountains, and brought back from their western expedition a male specimen now deposited in the Philadelphia Museum, where it has been long exhibited under the name of Louisiana Grouse. This, as truly observed by Say, first entitled it to rank among the birds of the United States. But the Rocky Mountains are not the only region of the United States territory where the Spotted Grouse is found. We have traced it with certainty as a winter visitant of the northern extremity of Maine, Michigan, and even of the state of New-York; where, though very rare, it is found in the counties of Lewis and Jefferson. On the frontiers of Maine it is abundant, and has been seen by Professor Holmes of the Gardiner Lyceum, near Lake Umbagog and others. In these countries the Spotted Grouse is known by the various names of Wood Partridge, Swamp Partridge,

Cedar Partridge, and Spruce Partridge. The American settlers of Canada distinguish it by the first. In Michigan and New-York it goes generally by the second. In Maine it bears the third, and in other parts of New-England, New-Brunswick &c., more properly the last. We have been informed by General Henry A. S. Dearborn, that they are sent from Nova-Scotia and New-Brunswick to Boston in a frozen state; as in the north they are known to be so kept hanging throughout the winter, and when wanted for use, they need only be taken down and placed in cold water to thaw. General Dearborn, to whom we are much indebted for the information which his interest for science has induced him voluntarily to furnish, further mentions, that he has heard from his father that during the progress of the expedition under Arnold through the wilderness to Quebec in 1775, these Grouse were occasionally shot between the tide waters of Kennebeck river and the sources of the Chaudière, now forming part of the state of Maine. Fine specimens of the Spotted Grouse have been sent to the Lyceum of Natural History of New-York from the Sault de Ste. Marie, by Mr. Schoolcraft, whose exertions in availing himself of the opportunities which his residence affords him for the advancement of every branch of zoology, merit the highest praise. He informs us that this bird is common from Lake Huron to the sources of the Mississippi, being called in the Chipeway language, Mushcodasee, i. e., Partridge of the Plains.

The favourite haunts of the Spotted Grouse are pine woods and dark cedar swamps, in winter resorting to the deep forests of spruce to feed on the tops and leaves of these evergreens, as well as on the seeds contained in their cones, and on juniper berries. Hence their flesh, though at all times good, is much better in summer, as in winter it has a strong flavour of spruce. At Hudson's bay, where they are called indifferently Wood or Spruce Partridge, they are seen throughout the year. Like other

Grouse, they build on the ground, laying perhaps fewer eggs: these are varied with white, yellow, and black. They are easily approached, being unsuspecting, and by no means so shy as the common Ruffed Grouse, and are killed or trapped in numbers without much artifice being necessary for this purpose. When much disturbed, like their kindred species they are apt to resort to trees, where, by using the precaution of always shooting the lowest, the whole of the terrified flock may be brought down to the last bird.

The Spotted Grouse is smaller than the common Partridge or Pheasant, being but fifteen inches in length. The bill is black, seven-eighths of an inch long. The general colour of the plumage is made up of black and gray mingled in transverse wavy crescents, with a few of grayish rufous on the neck. The small feathers covering the nostrils are deep velvety black. The feathers may all be called black as to the ground colour, and blackish plumbeous at the base; on the crown, upper sides of the head above the eye, and the anterior portion of the neck, they have each two gray bands or small crescents, and tipped with a third; these parts, owing to the gray margin of the feathers being very broad, appear nearly all gray. These longer feathers of the lower part of the neck above, and between the shoulders, are more broadly and deeply black, each with a reddish band, and gray only at tip; the lowest have even two reddish bands, which pass gradually into grayish; a few of the lateral feathers of the neck are almost pure white, all the remaining feathers of the upper parts of the body have two grayish bands, besides a slight tip of the same colour, some of the lowest and longest having even three of these bands besides the tip. The very long upper tail-coverts are well distinguished, not only by their shape, but also by their colours, being black brown, thickly sprinkled on the margins with grayish rusty, and a pretty well defined band of that colour towards the

point, then a narrow one of deep black, and are broadly tipped with whitish gray, more or less pure in different specimens; their shafts also are brownish rusty. The sides of the head beneath the eyes, together with the throat, are deep black with pure white spots, the white lying curiously upon the feathers, so as to form a band about the middle, continued along the shaft, and spreading at the point; but the feathers being small on these parts, the white spots are not very conspicuous. The breast also is deep black, but each feather broadly tipped with pure white, constituting the large spots by which this species is so peculiarly distinguished. On the flanks, the feathers are at first from their base waved with black and grayish rusty crescents, but these become gradually less pure and defined, and by getting confused, make the lowest appear mottled with the two colours; all are marked along the shaft with white, dilating at tip, forming on the largest a conspicuous terminal spot. The vent is for a space pure white, the tips of its downy feathers being of that colour: the under tail-coverts are deep black, pure white for half an inch at their tip, and with a white mark along the shaft besides. The wings are seven inches long, the fourth primary alone being somewhat longer than the rest. The upper coverts and scapularies are blackish, waved and mottled with grayish rusty; the longest scapularies have a small terminal spot of pure white along their shaft. The smaller coverts are merely edged with grayish rusty, and in very perfect specimens they are even plain; the under wing-coverts are brownish dusky, edged with grayish, some of the largest, as well as the long axillary feathers, having white shafts dilating into a terminal spot; the remaining inferior surface of the wing is bright silvery gray: the spurious wing and the quills are plain dusky brown, the secondaries being slightly tipped and edged externally with paler, and those nearest the body somewhat mottled with grayish rusty at the

point and on the inner vane; the primaries, with the exception of the first, are slightly marked with whitish gray on their outer edge, but are entirely destitute of white spots. The tail is six inches long, well rounded, and composed of only sixteen feathers. These are black, with a slight sprinkling of bright reddish on the outer web at base, under the coverts, which disappears almost entirely with age; all are bright dark rusty for half an inch at their tip, this colour itself being finely edged and shafted with black. The tarsus measures an inch and a half, its feathers, together with the femorals, are dingy gray, slightly waved with dusky; the toes are dusky; the lateral scales dingy whitish, and the nails blackish.

The female is smaller than the male, being more than an inch shorter. The general plumage is much more varied, with less of black, but much more of rusty. There is a tinge of rufous on the feathers of the nostrils. Those of the head, neck, and upper part of the back, are black, with two or three bright bands of orange rusty, and tipped with gray; there is more of the gray tint on the neck, on the lower part of which above, the orange bands are broader; all the remaining parts of the body above, including the tail-coverts, are more confusedly banded and mottled with duller rusty, orange, and gray, on a blackish ground, these colours themselves being also sprinkled with a little black. The sides of the head, the throat, and all the neck below, are dull rusty orange, each feather varied with black; on the lower portion of the breast the black bands are broad and very deep, alternating equally with the orange rusty, and even gradually encroaching upon the ground colour. The breast is deep black, each feather, as well as those of the under parts, including the lower tail-coverts, are broadly tipped with pure white, forming over all the inferior surface very large and close spots, each feather having besides one or two rusty orange spots, much paler and duller on the belly, and scarcely appearing when the plumage

lies close: the feathers of the flanks are blackish, deeper at first, and barred with very bright orange, then much mottled with dull grayish rusty, each having a triangular white spot near the tip. The wings and tail are similar to those of the male, the variegation of the scapulars and upper coverts being only of a much more rusty tinge, dull orange in the middle on the shaft, all the larger feathers having moreover a white streak along the shaft ending in a pure white spot, wanting in the male. The outer edge of the primaries is more broadly whitish, and the tertials are dingy white at the point, being also crossed with dull orange; the tail-feathers, especially the middle ones, are more thickly sprinkled with rusty orange, taking the appearance of bands on the middle feathers, their orange coloured tip being moreover not so pure, and also sprinkled.

The bird represented in the plate comes from the Rocky Mountains: it is a male, and remarkably distinguished from the common ones of his species by having the tail-feathers entirely black to the end. This difference I have observed to be constant in other specimens from the same wild locality; whilst all the northern specimens, of which I have examined a great number, are alike distinguished by the broad rufous tip, as in those described, and as also described by Linné and all other writers, who have even considered that as an essential mark of the species. The Rocky Mountain specimens are moreover somewhat larger, and their toes, though likewise strongly pectinated, are perhaps somewhat less so, and the tail-coverts are pure white at tip, as represented in the plate. But heaven forbid that our statements should excite the remotest suspicion that these slight aberrations are characteristic of different species. If we might venture an opinion not corroborated by observation, we would say, that we should not be astonished if the most obvious discrepancy, that of the tail, were entirely owing to season, the

red tip being the full spring plumage; though it is asserted that this species does not vary in its plumage with the seasons. However this may be, we have thought proper to give a representation of the anomalous male bird from the Rocky Mountains in our plate, whilst the female, placed with the Cock of the Plains, that its reduced size may be properly estimated, has been chosen among the ordinary specimens having the tails tipped with red; the red tip being still more conspicuous in the common males, from which, in order to comprehend all, our description has been drawn up.



Drawn from Nature by A. Roder.

Engraved by Alexander Lawson.

1. Cock of the Plains. Female. *Tetrao Urophasianus.*
2. Female Spotted Grouse. *Tetrao Canadensis.*

COCK OF THE PLAINS.

TETRAO UROPHASIANUS.

Plate XXI. Fig. 2.

Tetrao urophasianus, NOB. in *Zool. Journ. Lond.* ID. *App. to Syn. Birds U. S.* p. 442, in *Ann. Lyceum Nat. Hist. New-York.*

The Cock of the Plains, LEWIS and CLARK, *Exp.* II, p. 180. Sp. 2.

Mr. Leadbeater's Collection in London, Female.

IT is with the liveliest satisfaction that we are enabled finally to enrich the North American Fauna with the name, portrait, and description of this noble bird; which must have formed from the earliest periods a principal ornament of the distant wilds of the west. Hardly inferior to the Turkey in size, beauty, and usefulness, the Cock of the Plains is entitled to the first place in the beautiful series of North American Grouse, in the same rank that the Cock of the Woods so justly claims among those of Europe and Asia.

This fine bird, like its European analogue, seems to be restricted within certain bounds, and is probably no where numerous, owing to its bulk, limited powers of flight, and the eagerness with which it is pursued; but chiefly to its polygamous habits, which are the cause of desperate combats between the males for the possession of the females. However long the period since it was first heard of in the accounts of hunters and travelers, no more was known than that there existed in the interior of America a very large species of Grouse, called by the hunters of the west the Prairie Turkey. We have little to add, it is true, to what is known of its habits, but we have it in our power to say

that we have seen it, we can determine its place in the system, and now give a faithful representation of at least one sex.

We have again to acknowledge ourselves indebted, no less to the industry and sagacity, than to the liberal views of Mr. Leadbeater, for the present opportunity of representing this bird. His invaluable collection contains the only specimen known to be any where preserved.

The name of Cock of the Plains was given by Lewis and Clark, and we have retained it, as being not only appropriate, but at the same time analogous to that of the large European species called Cock of the Woods. Similar reasons have influenced us in selecting the scientific name, which though perhaps too long, and ill compounded, has nevertheless the advantage of combining analogy in meaning with the indication of a most remarkable characteristic of the bird. This species is in fact distinguished from all others of its genus, and especially from its European analogue, by its long tail, composed of twenty narrow, tapering, acute feathers; thus evincing the fallacy of the character erroneously attributed to all the Grouse, of having broad and rounded tail-feathers. It is a singular fact that both of the newly discovered species from the north-western part of America, and they only, should be distinguished by the extraordinary number of the feathers of the tail. In the Dusky Grouse, however, they are broad and rounded. The Cock of the Woods, like the greater part of the species, has but eighteen, which are also broad and rounded. The only Grouse in which they are found narrow is the Sharp-tailed, though without being either acute or tapering, but on the contrary square at tip, and of equal breadth throughout, or if any thing, the lateral rather broader at the tip.

Lewis and Clark first met with this bird on their journey westward near the fountain of the Missouri, in the heart of the Rocky Mountains. They inform us that it is found on the plains

of the Columbia in great abundance, from the entrance of the south-east fork of the Columbia to that of Clark's river. It appears also to extend to California, for there can be but little doubt that it is the bird erroneously called Bustard by the travellers who have visited that country. Lewis and Clark state that in its habits it resembles the Grouse, (meaning probably *T. phasianellus*) except that its favourite food is the leaf and buds of the pulpy-leaved thorn. The gizzard is large, and much less compressed and muscular than in most gallinaceous birds, and perfectly resembles a maw. When the bird flies, he utters a cackling note, not unlike that of the domestic fowl. The flesh of the Cock of the Plains is dark, and only tolerable in point of flavour, and is not so palatable as either that of the Pheasant or Grouse. It is invariably found in the plains.

The Cock of the Plains is precisely equal in size to the Cock of the Woods; at least such is the result of a comparison of the female with the corresponding sex of the European bird, both lying before us. Each part exactly coincides in form and dimension, excepting that the tail rather gives the superiority to the American, so that if the male bears the same relative proportion to his female, the Cock of the Plains must be proclaimed the largest of Grouse. The two females are strikingly similar. The Cock of the Plains is however a much more grayish bird, wanting entirely the reddish that mottles, and occupies so much of the plumage of its analogue. This, the total want of beard-like appendages, and the singular shape of the tail, are the prominent discriminative features; to which may be added, that the under wing-coverts, marbled with black in the European, are pure white in our new species, though this, as well as the want of reddish, might be ascribed to the youth of our specimen. However this may be, the remaining differences will be better estimated by attending to the following minute and accurate description.

The female of the Cock of the Plains, represented in the plate of one half the natural size, is from twenty-eight to thirty inches in length. The bill is one inch and a quarter long, perfectly similar to that of *T. urogallus*, perhaps a trifle less stout, and with the base (if this remarkable character be not accidental in our specimen) farther produced among the feathers of the front. The whole plumage above is blackish, most minutely dotted, mottled, and sprinkled with whitish, tinged here and there with very pale yellowish rusty, hardly worth mentioning: on the head, and all the neck, the feathers being small minutely crossed transversely with blackish and whitish lines, gives the plumage quite a minutely dotted appearance: the superciliar line is slightly indicated by more whitish; on a spot above the eye, in the space between the bill and eye, and along the mouth beneath, the black predominates, being nearly pure: on the throat, on the contrary, it is the white that prevails, so as to be whitish dotted with black: on the lower portion of the neck the black again is the prevailing colour, the black feathers there being nearly tipped with grayish; the sides of the neck are pure white for a space; from the lower portion of the neck to the upper tail-coverts inclusively, the back, scapulars, wing-coverts, and secondaries, the blackish feathers have each two or three yellowish white bands, which are broader especially on the upper part of the back, and are moreover sprinkled with white somewhat tinged with rusty: the scapulars and wing-coverts are besides shafted with white somewhat dilating towards the point, the scapulars being of a deeper black; the spurious wing and primaries are plain dusky with paler edges, the outer with some indications of whitish dots (generally found in Grouse) on the outer vane, but no regular white spots; the secondaries are tipped with white, and those which are next to the primaries nearly plain on their inner web; the primaries are rather slender, the inferior surface of the wings is of a

very pale silvery gray; the under wing-coverts and long axillary feathers being pure silvery white, excepting on the lining of the wing, which is dusky blackish. The wings are twelve inches long. The breast is grayish, somewhat mottled with black; on each side below is a pure white space, some of the feathers of which are tipped or banded with black; the large feathers of the flanks are blackish shafted with white, crossed by several whitish bands and sprinkled with yellowish: a broad oblong patch of deep brownish black occupies the whole of the belly and vent, the outer feathers being shafted with white, and broadly white at the point of their outer webs. The femorals and small feathers of the tarsus extending between the toes are yellowish gray minutely waved with blackish: the tarsus measures two inches; the toes are dusky black, and the pectinated row of processes long, strong, and dingy whitish; the nails blackish. The whole base of the plumage, with the exception of that of the neck beneath (which is white,) is of a dusky gray. The tail is ten inches long, and in colour is, as well as its coverts, in harmony with the rest of the plumage; the ground colour is blackish, and crossed or rather mottled with bands of whitish spots disposed irregularly, between which are small additional darker spots; the two middle ones are mottled all over, but the others are almost immaculate on their inner vane and at the point; hence the lower surface of the unexpanded tail is of a silvery gray, much darker than that of the wings; at the very tip of the tail-feathers, the middle excepted, appears a very small whitish spot, the two outer pairs being rather broadly yellowish white, dotted with blackish on that part. The tail is composed of twenty feathers, the highest number ever met with in any tribe of birds. Although it appears strongly cuneiform, owing to the remarkable shape and curve of the feathers, it is when expanded and properly examined, nothing more than much rounded, the two in the middle, which

are the longest, reaching but a trifle beyond the adjoining, and so on in succession, the difference in length increasing progressively, but very gradually at first, and more and more as they are distant from the centre, there being nearly an inch difference between the third and second, and full that between the second and the outer, which is only six inches long, while the middle is ten. All the twenty are narrow, tapering, acute, and falciform, turning inward. Those toward the middle are less curved, but more conspicuously acuminate and narrow for nearly two inches, all but the middle ones being slightly square at their narrow tips.

Though we have reason to believe that the specimen described and figured is a female, yet from the broad patch upon the belly, and other marks unnecessary to be specified, we should not be surprised at its being a young male just beginning to change. In that case, and supposing him to have attained his full growth, this species would prove to be inferior in size to the Cock of the Woods, as its male would only be equal to the female of the latter.

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