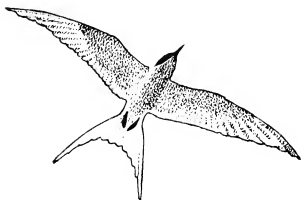




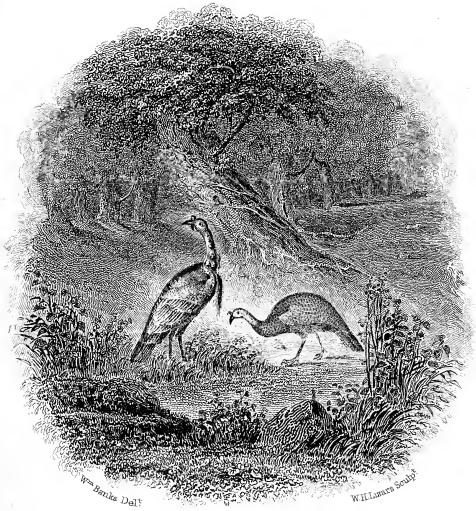
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THE WILD TURKEY.

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AMERICAN ORNITHOLOGY;

OR THE

NATURAL HISTORY

OF

THE BIRDS OF THE UNITED STATES.

BY ALEXANDER WILSON,^c

AND CHARLES LUCIAN BONAPARTE.^c

EDITED BY

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IN this the only European edition of Wilson's American Birds, the whole work (in the original edition in nine volumes quarto—here in three volumes) is, for the *first time*, regularly arranged; so that it is now equally accessible to the general reader and the ornithologist. The interesting biographical Memoir by Mr Hetherington, an esteemed writer, prefixed to the first volume, is the best account of Wilson hitherto published. The fourth volume contains the valuable American Ornithology of Prince Charles Lucian Bonaparte ;

also occasional notes by the Editor: and many beautiful sketches of the feathered creation from the pen of Audubon, another great American self-taught naturalist; and illustrations from an important work, *Northern Zoology*, by Richardson and Swainson, at present in the press, conclude the volume.

R. JAMESON.

EDINBURGH COLLEGE MUSEUM,

August 1, 1831.

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BONAPARTE'S
AMERICAN ORNITHOLOGY.

ORDER I.

ACCIPITRES, LINNÆUS.

GENUS I.

FALCO, LINNÆUS.

1. *FALCO COOPERII*, BONAPARTE.—COOPER'S HAWK.

BONAPARTE, PLATE X. FIG. I.

BUFFON complained of the difficulty of writing a history of birds, because he already knew eight hundred species, and supposed that there might actually exist fifteen hundred, or even, said he, venturing as he thought to the limit of probability, two thousand! What then would be his embarrassment at present, when nearly six thousand species are known, and fresh discoveries are daily augmenting the number?

The difficulties attending a general work on this subject are not, perhaps, experienced in an equal degree by one who confines himself to the history of a particular group, or of the species inhabiting a single district. Nevertheless, in a work like the present, which is not a monography limited to one genus or family, but embraces within its scope species belonging to all the different tribes, it is requisite, in order to explain their various relations and analogies, that the author should be more or less acquainted with the whole system of nature. To attempt, without the aid of methodical arrangement, a subject so vast, and apparently unlimited, would be hopeless. Hence the importance of a correct system of classification; and the construction of one which shall exhibit, as far as practicable, the true affinities of objects, has exercised the attention of the most powerful minds that have been employed in the study of nature.

That division of the feathered tribe popularly called birds of prey, has always been recognized as a separate and well defined group. In the Linnæan System they form the order ACCIPITRES, and were, by that father of the science, distributed into three great natural divisions, which comprise nearly, if not quite, one-fifteenth part of all the known species of birds. The ulterior arrangement of one of these groups, the genus *Falco* of Linné, at present composed of between two and three hundred species, has much divided the opinions of naturalists. From the majestic eagle, the terror of the husbandman, to the feeblest hawk, preying on grasshoppers, it is undeniable that there exists in all these birds a great resemblance in some of the most prominent characteristics, which, being found to predominate in the fish hawk, as well as the kite, and all other species of the falcon tribe, however dissimilar, indicate their separation as a peculiar family from all other birds. But that they are susceptible of division into smaller groups of inferior rank, no practical ornithologist will for a moment deny. Whether these minor groups shall be considered as trivial and secondary, or whether some of them ought not to be admitted as distinct and independent genera, is a question that has been much agitated, and respecting which ornithologists will probably for a long time continue to disagree. Equally great authorities might be cited in favour of either of these opinions, which, like many others of more importance that have divided mankind from the beginning of the world, may perhaps after all be considered as merely a dispute about words.

Admitting, however, as seems to be done by all parties, that this great genus may be subdivided with propriety, we look upon it as altogether a secondary question, whether we shall call the minor groups genera, subgenera, or sections; and we deem it of still less consequence, in a philosophical view, whether the names by which these groups are designated, be taken from a learned or a vernacular language. It is our intention to pursue a middle course. We are convinced of the

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necessity of employing numerous subdivisions, not only in this, but also in its allied genus *Strix*. These, however, we cannot agree to admit as genera, preferring to call them subgenera, and giving them a name, but when having occasion to mention a species belonging to any of them, to employ the name of the great genus.

The desire of avoiding too great a multiplication of groups, has caused some, even of the first ornithologists of our time, to employ sections that are not natural, and with false or inapplicable characters, and, as if they would compel nature to conform to their preconceived and narrow views, after having assigned decided limits to their groups, to force into them species not only widely different, but that do not even possess the artificial character proposed. We shall not imitate this irrational example. It shall rather be our object to compose natural groups, and, in obedience to this principle, whenever we meet with a group, or even a single species, clearly insulated, it shall at least be pointed out, not so much regarding the number of our subgenera, as the characters that unite the species of which they are respectively composed.

It is objected to the numerous subdivisions that have been proposed in our day, that they pass into and blend insensibly with each other. This is no doubt true; but is it not the same with regard to natural groups of every denomination? It is this fact which has induced us to consider them as subgenera, and not as distinct genera. We are told, however, by the advocates for numerous genera, that, in giving a name, we adopt a genus, but we do not see that this necessarily follows.

There are, we confess, other grounds on which we might be attacked with more advantage. We may, perhaps, be charged with inconsistency in refusing to admit, as the foundation of generic groups in the *Rapaces*, characters which are allowed, not only by ourselves, but by some of those who are most strenuously opposed to the multiplication of genera, to have quite sufficient importance for such distinction in other families. With what propriety, it might be asked, can

we admit *Hydrobates* (*Fuligula*, *Nob.*) as distinct from *Anas*, and the various genera that have been dismembered from *Lanius*, at the same time that we reject, as genera, the different groups of hawks? To this we can only reply, that we are ourselves entirely convinced, that all the subgenera adopted in our synopsis among the *Falcones* of North America, are quite as distinct from each other as *Coccyzus* and *Cuculus*, or *Corvus* and *Garrulus*. The latter genus we have admitted after Temminck, who is opposed to new genera among the hawks, though *Astur* and *Elanus* certainly require to be separated no less than the two genera that Temminck himself has established in the old genus *Vultur*.

No living naturalist (with the exception of those who, through a sort of pseudo-religious feeling, will only admit as genera groups indicated as such by Linné) has adhered longer than ourselves to large genera, at the same time that we could not deny the existence of subordinate natural groups. We will not pretend to deny that these are of equal rank with some recognized as genera in other families, and we can only say, that we consider it doubtful, in the present unsettled state of the science, what this rank ought to be. We therefore, in the instances above quoted, consider it of little importance whether these groups be considered as genera or subgenera.

But what is certainly of great importance is, to preserve uniformity in all such cases; to make coordinate divisions, and give corresponding titles to groups of equal value. This uniformity, however desirable, cannot, in the actual state of ornithology, be easily attained; and we have decided, after much hesitation, to continue to employ subgenera. In doing this, we are moreover influenced by the great difficulty that is met with, in some cases, in determining the proper place of a species partaking of the characters of several groups, yet not in the least deserving to be isolated; such as *Falco borealis*, which is almost as much an *Astur* as a *Buteo*, and has been placed by authors, according to their different views, in both these groups.

An extensive reform is evidently needed in the department of classification that relates to genera, and we propose, with this view, to undertake at some future period a general work, when, erecting our system on a more philosophical basis, though we may restrict some, and enlarge other genera, we shall, in the instances to which we have alluded, as well as in a multitude of others, at least place them all on an equal footing.

Among the several groups into which the falcon tribe is divided, we come to one composed of about sixty species, well marked, and, if kept within its proper bounds, very natural, to which authors have variously applied the name of *Accipiter*, *Sparvius*, and *Astur*, which last we have adopted.

Found in all parts of the globe, and destroying every where great numbers of birds, and small quadrupeds, the hawks (by which English name we propose to distinguish this group more particularly) closely resemble each other in colour and changes of plumage, especially the North American and European species. They are eminently distinguished from all other falcons by their short wings, not reaching by a considerable length to the tip of their tail, which is even, or but very slightly rounded; and by their first quill feather or primary, which is very short, while the fourth is constantly the longest. Their bill, suddenly curved from the base, is very strong and sharp; their head is narrowed before, with the eyes placed high, large, and fiery. Their feet are very long, and the toes especially, the middle one of which is much the longest, and all are armed with very strong sharp talons, well seconding the sanguinary nature of these fierce creatures; their outer toe is connected at base by a membrane to the middle one. The female is always one-third larger than the male, and the plumage of both is, in most species, dark above and white beneath; in the adult, barred with reddish or dusky. In the young bird the colour is lighter, the feathers skirted with ferruginous, and the white of the under parts streaked longitudinally with dusky, instead of being barred. The tail is uniform in colour with

the back, with almost always a few broad bands of black, and sometimes of white, and a whitish tip.

The hawks (*Astures*) combine cunning with agility and strength. Sudden and impetuous in their movements, they make great havoc, especially among birds that keep in flocks, as pigeons, blackbirds, &c. and are the terror of the poultry yard. Fearless and sanguinary, they never feed, even when pressed by hunger, except on red and warm-blooded animals, whose quivering limbs they tear with savage delight. Birds they pluck very carefully, and quarter, before eating them, but swallow small quadrupeds entire, afterwards ejecting their skins rolled up into a ball. They always pursue and seize their prey upon the wing, not falling upon it from aloft, but, rapidly skimming the earth, make their insidious approaches sidewise, and, singling out their victim, dart upon it with fatal velocity. They never soar, like the kites and eagles, to the upper regions of the atmosphere; and it is only during the nuptial season that they are observed sailing in wide circles in the air. Their favourite haunts, during summer, are forests, building their nests on trees; in winter they spread over the plains. Though generally observed alone, the male and his companion are seldom far apart. During the youth of their progeny, the parents keep them company, in order to teach them to hunt their prey, and at such times they are observed in families.

This group may be farther subdivided into two sections, to one of which the name of *Astur* has more strictly been assigned, while the other has been distinguished by those of *Sparvius* and *Accipiter*. The former, of which the goshawk of Europe and North America (black-capped hawk of Wilson) is the type, is characterized by its wings being somewhat longer, body more robust, and shorter, and much thicker tarsi. This is the only species that inhabits the United States and Europe.

The second section, to which the present new species belongs, possessing all its characters in a pre-eminent degree, equally with the hawk described by Wilson in

its adult state as *Falco Pennsylvanicus*, and in its youth as *Falco velox*, was established on the sparrow hawk of Europe, *Falco nisus*, but the American species just mentioned are no less typical. The hawks of this section are more elegantly shaped, being much more slender; their wings are still shorter than in the other section, reaching little beyond the origin of the tail, and their tarsi slender and elongated, with a smooth and almost continuous covering.

Notwithstanding their smaller size and diminished strength, their superior courage and audacity, and the quickness of their movements, enable them to turn the flight of the largest birds, and even sometimes, when in captivity together, to overcome them. We have kept a sparrow hawk, (*Falco nisus*,) which, in the space of twenty-four hours that he was left unobserved, killed three falcons which were confined with him.

The inextricable confusion reigning throughout the works of authors who have not attended to the characters of the different groups of this genus, renders it next to impossible to decide, with any degree of certainty, whether our *Falco Cooperii* has or has not been recorded. Though agreeing imperfectly with many, we have not been able, notwithstanding our most sedulous endeavours, to identify it with any. It is evidently a young bird, and we should not be surprised at its proving, when adult, a known species, perhaps one of the numerous species figured of late, and possibly *Le Grand Epervier de Cayenne* of Daudin, *Sparvius major*, Vieillot, stated to be one-third larger than the European sparrow hawk. At all events, however, it is an acquisition to the ornithology of these States; and we have ventured to consider it as a new species, and to impose on it the name of a scientific friend, William Cooper of New York, to whose sound judgment, and liberality in communicating useful advice, the naturalists of this country will unite with us in bearing testimony, and to whom only the author, on the eve of his departure for Europe, would have been

willing to intrust the ultimate revision and superintendence of this work.

Our bird agrees very well with the falcon gentle, *Falco gentilis*, Linné; but as that species is referred to the young of the goshawk, we have preferred giving it a new name to reviving one that might have created an erroneous supposition of identity. To the young goshawk, our hawk is, in fact, extremely similar in colour and markings, being chiefly distinguished from it by the characters of their respective sections, having the tarsi much more slender and elongated, and the wings still shorter; the tail is also considerably more rounded.

But it is to the sharp-shinned hawk (*Falco velox*) of Wilson, the *Falco Pennsylvanicus*, or *Falco fuscus* in its immature plumage, that our Cooper's hawk bears the most striking resemblance, and is in every particular most closely allied. Even comparing feather by feather, and spot by spot, they almost perfectly agree; but the much larger size of the present, it being more than twice the bulk, will always prevent their being confounded, even by the most superficial observer. Another good mark of discrimination may be found in the comparative length of the primaries; the second in *F. Cooperii* being subequal to the sixth, while in *F. velox* it is much shorter. The latter has also the fifth as long as the fourth; that, in our species, being equal to the third. The tail is also much more rounded, the outer feather being nearly an inch shorter than the middle one. In *F. velox* the tail is even, the outer feather being as long, or, if any thing, longer than the middle. There is no other North American species for which it can be mistaken.

The bird here described, of which we have seen seven or eight specimens, perfectly similar in size and plumage, was a male, killed in the latter part of September, near Bordentown, New Jersey. The stomach contained the remains of a sparrow. Another that we procured, was shot on the 12th of December, while in the act of devouring on the ground a full-grown ruffed

grouse which he had killed, though a larger and heavier bird than himself. Mr Cooper, the friend to whom we have dedicated this species, has recently favoured us with an accurate description of a specimen of a somewhat larger size, shot in the early part of November, on the eastern part of Long Island.

The male Cooper's hawk is eighteen inches in length, and nearly thirty in extent. The bill is black, or rather blackish brown; the cere, greenish yellow; the angles of the mouth, yellow. The irides are bright yellow. The general colour above is chocolate brown, the feathers being whitish gray at base; on the head, and neck above, they are blackish, margined with rufous, pure white towards the base, and grayish at the bottom, the white colour shewing itself on the top and sides of the neck, and being much purer on the nucha. The back and rump are the same, but the feathers larger, and lighter coloured, less margined with rufous, more widely grayish at base, and bearing each four regular spots of white in the middle of their length, which are not seen unless when the feathers are turned aside. The whole body beneath is white, each feather, including the lower wing-coverts and femorals, marked with a long, dusky medial stripe, broader and ob lanceolate on the breast and flanks, (some of the feathers of which have also a blackish band across the middle,) the throat, and under wing-coverts; the long feathers of the flanks (or long axillary feathers) are white, banded with blackish; the vent and lower tail-coverts, pure white; the wings are nine inches long, and, when folded, hardly reach to the second bar of the tail from the base; the smaller wing-coverts and scapulars, are like the back, the quills brown above, (lighter on the shaft) and silvery gray beneath, regularly crossed by blackish bands, less conspicuous above; the space between the bands is white on the inner vanes at base; some of the secondaries and tertials are tipped and edged with rusty, and have more and more of white as they approach the body, so that those nearest may in fact be described as white banded with blackish. The first primary is very short,

more so than the secondaries; the second is equal to the sixth, the third to the fifth, these two last mentioned being hardly shorter than the fourth, which, as in all *Astures*, is longest. The tail is full eight inches long, reaching five beyond the wings; its colour is ashy brown, much paler beneath, tipped with whitish, and crossed by four equidistant blackish bands, nearly one inch in breadth; the tail-coverts at their very base are whitish; the lateral feathers are lighter, and with some white on the inner webs. The legs and feet are yellow, slender, and elongated, but still do not reach, when extended, to the tip of the tail; the tarsus, feathered in front for a short space, is two and three quarter inches long; as in other *Astures*, the middle toe is much the longest, and the inner, without the nail, is shorter than the outer, but taken with its much longer nail, is longer. The talons are black, and extremely sharp, the inner and the hind ones subequal, and much the largest, while the outer is the most delicate.

The female is larger, and measures two inches more in length, but in plumage is perfectly similar to the male. As the male we have described is evidently a young bird, it is very probable that the adult, after undergoing the changes usual in this group, obtains a much darker and more uniform plumage above, and is beneath lineated transversely with reddish. That in this supposed plumage, the bird has not yet been found, is no reason to doubt its existence, as the species is comparatively rare. Even of the common *Falco fuscus*, though constantly receiving numerous specimens of the young, we have only been able to procure a single one in adult plumage, during a period of four years.

We regret that this is all that is in our power to offer of the history of this species, which, as will be seen from the description, possesses in an eminent degree the characters of the group. From the circumstance of its being found here in autumn and winter, we are led to infer, that it comes to us from the north.

2. *FALCO DISPAR*, BONAPARTE. — WHITE TAILED HAWK.

BONAPARTE, PLATE XI. FIG. I.

THIS beautiful hawk, which we recently discovered to be an inhabitant of North America, is so strikingly similar to the black-winged hawk (*Falco melanopterus**) of the Old Continent, that we have hitherto considered them as identical, contrary to the opinion of Vieillot; whose authority, it is true, could in this case be of little weight, as he had not seen the species, but like many others had merely given it a name; his sole knowledge of it being derived from the work of D'Azara. We have now yielded only to the decision of Temminck, (who has lately introduced the young into his *Planches Coloriées*;) but not without much reluctance, especially as that distinguished ornithologist has evidently not been at the trouble of comparing the two species; otherwise, he would certainly not have omitted noticing their affinities and differential characters; since in the history of species so closely allied as these two, the differential characters are of more importance and utility than the most laboured descriptions.

This comparison we have carefully instituted between

* *Falco melanopterus*, Daud. *Orn.* 2, p. 152, *Sp.* 124. Lath. *Ind. Suppl.* p. 6. *Sp.* 16.

Falco Sonniniensis, Lath. *Ind. Suppl.* p. 12, *Sp.* 38.

Elanus casius, Savigny, *Ois. d'Égypt.* p. 98, pl. 2, f. 2. Vieill. *Nouv. Dict. d'Hist. Nat.* 8. p. 240, (now *Elanoides*.)

Elanus melanopterus, Leach, *Zool. Misc.* 3, p. 4, pl. 122. Vigors, *Descr. Austral. Birds*, in Tr. Lin. Soc. 15, p. 185.

Le Blac, Le Vaillant, *Ois. d'Afr.* 1, p. 147, pl. 36, male, 37, young male.

Black-winged falcon, Lath. *Syn. Suppl.* 2, p. 28, *Sp.* 23.

Sonnini's falcon, Lath. *Syn. Suppl.* 2, p. 52, *Sp.* 59.

The inspection of original drawings, in a collection that Mr Gray, of the British Museum, was kind enough to shew me lately in London, has enabled me to add to these already numerous synonyms, *Falco axillaris*, Lath. *Ind. Suppl.* (*Circus axillaris*, Vieill.!) from New Holland.

our American specimens, and others from Africa and Java. They agreed perfectly, especially with that from Java, in every, the minutest character, even feather by feather, much better than birds of prey of the same species, and from the same country, do generally. They are even more alike than different specimens from the Old Continent of the black-winged itself, since that species is said to vary considerably in the black markings, which extend more or less on the wings in different individuals. Nevertheless, a constant, though trivial, differential character, added to the difference of locality, has induced us to follow Temminck's course, in which we should never have ventured to take the lead. This character consists in the tail being in *Falco dispar* constantly irregular, while in *F. melanopterus*, it is even; or to explain it more clearly, the outer tail-feather is rather the longest in the African, and more than half an inch shorter than the next in the American species. This essential character is much more conspicuous in Temminck's plate than in ours, owing to the tail being spread. In the black-winged, also, the lower wing-coverts are destitute of the black patch so conspicuous in the American bird; a female from Java has, however, a slight indication of it, but no trace of it is observable in our African males.

By admitting this to be a distinct species from the black-winged hawk, we reject one more of those supposed instances, always rare, and daily diminishing upon more critical observation, of a common habitation of the same bird in the warm parts of both continents, without an extensive range also to the north. A steady and long protracted exertion of its powerful wings, would have been requisite to enable it to pass the vast and trackless sea which lies between the western coast of Africa, the native country of the black-winged hawk, and the eastern shores of South America. Yet were the species identical, this adventurous journey must have been performed. For, even admitting several centres of creation, we cannot believe

that nature,* who, notwithstanding her luxuriant abundance, evidently accomplishes all her ends with the greatest economy of means, has ever placed, aboriginally, in different parts of the globe, individuals of the same species; but has always given to each the power of extending its range, according to volition, in any direction where it should find climate, food, or other circumstances most appropriate.

The white-tailed hawk is one of those anomalous species, which connect the generally received divisions of the great genus *Falco*. It participates in the form and habits of the kites (*Milvus*), while in its other relations it approaches the true falcons (*Falco*), and at the same time presents traits peculiar to itself. Savigny has, therefore, very properly considered its near relative, the black-winged, as the type of a peculiar group, which he elevates to the rank of a genus, but which we for the present shall adopt as a subgenus only. Subsequent observations have confirmed Le Vaillant's opinion, that the swallow-tailed hawk (*Falco furcatus*), is closely related to it; and associated with a few other recently discovered species, they have been considered as a distinct group, under Savigny's name of *Elanus*. Vieillot adopted the group as a genus, but, for what reason we know not, has since changed the name to *Elanoides*. The hawks of this group are readily distinguished from all others, by the superior length of the second primary of their elongated wings; by their bill, rounded above, curved from the base, and not toothed; their hirsute cere; thick, short, and wholly reticulated tarsi, half feathered before; toes entirely separated, and powerful nails. The head is flattened above, the gape wide, and the eyes large, deep sunk, and with the orbits greatly projecting above. The colours are also similar in the different species, being white, or pale, (bluish white, &c.) with more

* The word *nature* being taken in so many different acceptations, we think proper to state, that with Ranzani, we mean by it "the aggregate of all created beings, and of the laws imposed on them by the Supreme Creator."

or less of black. The comparatively even tail of the two allied species of which we are treating, eminently distinguishes them from the others of the subgenus, which have the tail exceedingly forked. They are remarkable also for another characteristic, that of having the nails rounded beneath, and not canaliculate, a circumstance that occurs besides only in the subgenus *Pandion*.* This character, which we formerly attributed to all the *Elani*, and which we believe we first observed not to exist in the fork-tailed species, has induced Mr Vigors, the English ornithologist, to separate the latter as a new genus, under the name of *Nauclerus*.

The female white-tailed hawk, is sixteen and a half inches long, and three feet five and a half inches in extent. The bill is black, and measures from the corners of the mouth one inch and a half, the sides of the mouth, posterior portion of the lower mandible, and cere, bright yellow orange; bristles on the cere white, as well as those first on the lores; those nearest the eye, black; irides, brownish red; eyelids, white; cilia, long and black; orbits, black, wider before the eye; front line over the orbits, sides of the head, neck, and body, and whole inferior surface of the bird, together with the thighs, pure white; head, pearl gray, becoming gradually darker from the pure white front towards the neck and back, which are entirely bluish ash, as well as the rump, scapulars, secondaries, and greater wing-coverts; smaller and middle wing-coverts, deep glossy black; spurious wing, blackish; lining of the wing, and inferior coverts, pure white, the latter with a wide black patch; primaries on both surfaces, slate colour, the shafts, black, and, the first excepted, margined exteriorly, and slightly at tip, with dusky, and interiorly, with whitish; the margin of the inner web is of a remarkably close texture, with a very soft surface; the first primary is a little shorter than the

* In *Pandion*, however, it is the middle nail that is rounded; in this species, it is the lateral and posterior only.

third; the second longest; the two outer ones are slightly serrated on their outer web. When closed, the wings reach within less than an inch of the tip of the tail. The tail is seven inches long, slightly emarginated, and with the outer feather more than half an inch shorter than the adjoining one; the middle feathers are very pale bluish slate, all the others pure white; shafts above, black towards the tip, and beneath, white; that of the exterior tail-feather, white, tipped with dusky above towards the base; feet, bright yellow orange; tarsus, one inch and a half long, feathered in front half its length, the remainder covered with small reticulated scales; toes, separated to the base; nails, large, black, very acute, and, with the exception of the middle one, perfectly rounded beneath; the middle one is very sharp on the inner side.

The male is of a smaller size; the upper surface, instead of being bluish slate, is more of a dirty grayish, slightly tinged with ferruginous; the tail is less purely white. These sexual differences are the more worthy of note, as they are the reverse of what is exhibited in other hawks. It is, however, possible, that they are not to be found in very old males.

The young of both sexes, but especially the young males, are somewhat darker, and are strongly tinged with ferruginous, principally on the head, neck, and wings; the breast being entirely of that colour. A specimen of the African species in this state is figured by Le Vaillant, whose plates in general are tolerably accurate; but how great is the disappointment of the ornithologist to find the tarsi represented as covered distinctly with plates, as in other hawks! We cannot let pass this opportunity of exhorting engravers, draftsmen, and all artists employed on works of natural history, never to depend on what they are accustomed to see, but in all cases to copy faithfully what they have under their eyes; otherwise, taking for granted what they ought not, they will inevitably fall into these gross errors. Even the accurate Wilson himself, or rather perhaps his engraver, has committed the same

error in representing the feet of the swallow-tailed hawk. Of what consequence, will it perhaps be said, is the form of the scales covering the foot of a hawk? But these afford precisely one of the best representative characters of groups, and it will, therefore, not be thought unnecessary to caution artists in this, and similar cases.

The young, as described by Temminck, is in a more advanced stage of plumage; the front, forepart of the neck, thighs, flanks, and under tail-coverts are pure white; the breast and belly are of the same colour, but are marked with reddish spots, and brown lines; the occiput, nucha, back, and scapulars are brownish, mixed with whitish, and more or less tinged with cinereous; all these feathers having wide margins of whitish and reddish; the upper tail-coverts are black, with reddish margins; the inferior marbled with black and white; the quills are bluish, terminated with white; the tail is of a grayish white, with black shafts; all the feathers have dark cinereous towards the point, and are tipped with white.

This species is an inhabitant of a great portion of the American continent, as the *Alcon blanco* of Paraguay, so well described by D'Azara, is undoubtedly the same bird. Vieillot undertook to classify it from D'Azara's description, applying to it the name of *Milvus leucurus*; but, after more attentive consideration, he perceived that it was not a *Milvus*, but an *Elanus*. He consequently removed it to that genus, which he called *Elanoides*, at the same time asserting, that with the swallow-tailed hawk, it ought to constitute a different section from the black-winged hawk; from which, upon actual comparison, it is with difficulty shown to be even specifically distinct! Such are the absurdities into which authors are betrayed through the highly reprehensible practice to which some are addicted, of attempting to classify and name animals they have never seen, from the descriptions, or mere indications, of travellers. Though, by such means, they may sometimes gain the credit of introducing a new species, and

thus deprive future observers, who may risk their fortunes, or even their lives, in pursuit of imperfectly known animals, of their best reward, they cannot fail to incur the merited reprobation of all honourable and fair-dealing naturalists.

Though this bird ranges so widely over the American continent, it is every where a rare species, and in the United States appears to be confined to the southern extremity. This specimen was shot in December, in the neighbourhood of St Augustine, East Florida, at the residence of my near relation, Colonel Achilles Murat, whose kind hospitality afforded to Mr Titian Peale every facility for the prosecution of his scientific researches. It was observed by Mr Peale, about the dawn of day, sitting on the dead branch of an old live oak, attentively watching the borders of an adjacent salt marsh, which abounded with *Arvicola hispidus*, and the different species of sparrow, which make their residence in the southern parts of the Union. It was very shy, and, on his approach, it flew in easy circles at a moderate elevation; and such was its vigilance, that the greater part of a day was spent in attempting to get within gunshot. At length the cover of interposing bushes enabled him to effect his purpose. It was a beautiful female, in perfect adult plumage. This sex, in the perfect state, is now for the first time described, Temminck's plate representing the young female only; and even the figures of the African analogue, in Le Vaillant's work, exhibit only the male in the young and adult states. As usual in the tribe of predaceous birds, the female is much larger than the male, and is, therefore, entitled to precedence.

Though this species is so rare, its near relative, the black-winged hawk, appears, on the contrary, to be very numerous. In Africa, where it was first discovered, and which is probably its native country, it is rather a common species, and has a very extensive range. Le Vaillant frequently observed it on the eastern coast of that little known continent, from Duyven-Hoek to Caffraria, where, however, it is less common. The same traveller

found it to inhabit also in the interior, in the Camdebo, and on the shores of the Swart-kop, and Sunday rivers. It is very common in Congo, and numerous also in Barbary, Egypt, and far-distant Syria. The researches of Ruppel, in the interior of North-Eastern Africa, already so productive, and from which so much more may be expected, have furnished specimens of this species, of which we owe two to the kindness of Dr Creitzschmaer, the learned and zealous Director of the Museum of the free city of Frankfort,—an institution which has risen up with such wonderful rapidity. We are also informed, that it is an inhabitant of India, which is rendered probable by a specimen from Java in my collection. It is found in New Holland, being numerous in the autumn of New South Wales, where it is migratory, and preys chiefly on field mice, but is seldom known to attack birds. It is there observed at times to hover in the air, as if stationary and motionless. Though occasionally met with on the African coast of the Mediterranean, not a solitary individual has ever been known to visit the opposite shores of Italy, Spain, or Turkey, nor has it been met with in any other part of Europe.

When at rest, it is generally seen perched on high bushes, where the pure white of the lower parts of its body renders it very conspicuous at a distance. It utters a sharp piercing cry, which is often repeated, especially when on the wing, though Mr Peale assures us, that our individual uttered no cry. Like its closely related species, it does not attack small birds, except for the purpose of driving them from its favourite food, which consists of hemipterous insects, chiefly of the *Gryllus* and *Mantis* genera, as well as other insects, and some reptiles. In the stomach of our specimen, however, Mr Peale found, besides the usual food, fragments of an *Arvicola hispidus*, and one or two feathers apparently of a sparrow: but it is not a cowardly bird, as might be suspected from its affinity to the kites, and from its insignificant prey, since it successfully attacks crows, shrikes, and even the more

timid birds of its own genus, compelling them to quit its favourite haunts, which it guards with a vigilant eye. They build in the bifurcation of trees. The nest is broad and shallow, lined internally with moss and feathers. The female is stated to lay four or five eggs; the nestlings at first are covered with down of a reddish-gray colour.

The African species is said to diffuse a musky odour, which is retained even after the skin is prepared for the museum: but we are inclined to believe, that it is in the latter state only that it possesses this quality. Mr Peale did not observe any such odour in the bird he shot, but being obliged, for want of better food, to make his dinner of it in the woods, found it not unpalatable.

3. *FALCO CYANEUS*, BONAP. — BLUE HAWK, OR HEN-HARRIER.

BONAPARTE, PLATE XII.

As will be perceived upon a slight inspection of our long and elaborate list of synonyms, [printed at the end of the volume,] this well known species is found in almost every part of the globe; and not only does it seem to have been considered every where distinct, but nearly every different appearance which it assumes during its progress through the various and extraordinary changes that its plumage undergoes according to sex and age, has in each country given rise to a nominal species. At the same time, however, that names were thus inconsiderately multiplied for one bird, two, really distinct, were always confounded together. Analogous in their changes, similar in form and plumage, it was reserved for the acute and ingenious Montague, to point out the difference, and establish the two species by permanent characters. The new one was called by him *Falco cineraceus*, and is known by the English name of ash-coloured harrier. It is figured and accurately described in all its states of plumage by Vieillot, in his *Galerie des Oiseaux*, where he has dedicated it to its discoverer, calling it *Circus Montagui*; thus fully apologizing for having, in his article *Buzzard*,

of the *New Dictionary of Natural History*, declared it to be a state of the other. How far, however, it may be considered a compliment to change the name given to a species by its discoverer, in order to apply even his own to it, we are at a loss to imagine.

The principal distinctive characters of the two species are to be found in the relative length of the wings and tail, and in the proportional lengths of the primaries. In the ash-coloured harrier, the sixth primary is shorter than the first, the second is much longer than the fifth, and the third is the longest; the wings, when closed, reach to the tip of the tail. In the hen-harrier, the first primary is shorter than the sixth, the second sub-equal to the fifth, and the third equal to the fourth, the longest; the wings closed, not reaching, ! more than two inches, to the tip of the tail, which is also but slightly rounded in the latter, while in the ash-coloured it is cuneiform. Other minor differences are besides observable in the respective sexes and states of both; but as those we have indicated are the only ones that permanently exist, and may be found at all times, we shall not dwell on the others, especially as Montague's species appears not to inhabit America. We think proper to observe, however, that the adult male of *Falco cineraceus* has the primaries wholly black beneath, while that of the *F. cyaneus* has them black only from the middle to the point; and that the tail-feathers, pure white in the latter, are in the former spotted beneath. The female in our species is larger than the corresponding sex of the other, though the males in both are nearly of equal size; and the collar that surrounds the face is strongly marked in ours, whereas it is but little apparent in the other. The *F. cineraceus* has two white spots near the eyes, which are not in the *F. cyaneus*. The young of the former is beneath rusty without spots. Thus, slight but constant differences, are seen to represent a species, while the most striking discrepancies in colour, size, and (not in this but in other instances) even of form, prove mere variations of sex or age! We cannot wonder at the two real species having always

been confounded amidst the chaotic indications of the present.

Even Wilson was not free from the error which had prevailed for so long a period in scientific Europe, that the ring-tail and hen-harrier were two species. Though he did not publish a figure of the present in the adult plumage of the male, he was well acquainted with it as an inhabitant of the Southern States; for there can be no doubt that it is the much desired blue hawk which he was so anxious to procure; the only land bird he intended to add to his Ornithology, or at least the only one he left registered in his posthumous list. It was chiefly because he was not aware of this fact, and thought that no blue hawk existed in America corresponding to the European hen-harrier, that Mr Sabine, in the Appendix to Franklin's *Expedition* [as quoted in Synonyms,] persisted in declaring that the marsh-hawk was a distinct species peculiar to America, of which he supposed the Hudson's Bay ring-tail to be the young. The differences which he detected on comparing it with the European ring-tail, must have been owing to the different state of plumage of his specimen of this ultra-changeable species. If, however, he had not mentioned the colours merely, as bringing it nearer to the ash-coloured falcon of Montague, we might be inclined to believe that the specimen he examined was indeed a young bird of that species, which, though as yet unobserved, may, after all, possibly be found in North America. At all events, Wilson's, and the numerous American specimens that have passed under our examination, were all young hen-harriers.

After having stated, that the error of considering the hen-harrier and ring-tail as different species had prevailed for years in Europe, it is but just to mention, that Aldrovandi, Brisson, Ray, and others of the older authors, were perfectly in accordance with nature on this point. It was, perhaps, with Linné, or at least with Buffon, Gmelin, Pennant, and Latham himself, who afterwards corrected it, that the error originated. Latham, confident of his own observations, and those

of Pennant, who had found males of the species said to be the female of the *Falco cyaneus* (hen-harrier,) and not reflecting that these males may be the young, exclaims, "Authors have never blundered more than in making this bird (the ring-tail) the same species with the last mentioned (hen-harrier;)" an opinion that he was afterwards obliged to recant. In physical science, we cannot be too cautious in rejecting facts, nor too careful in distinguishing, in an author's statement, what has passed under his own eyes, however extraordinary it may seem, from the inference he draws from it. Thus, to apply the principle in this instance, Latham might have reconciled the fact of males and females being found in the plumage of the ring-tail; with the others, that no females were ever found under the dress of the hen-harrier, and that some ring-tails would gradually change into hen-harriers.

Whether or not the marsh-hawk of America was the same with the ring-tail of Europe, Wilson would not take upon himself to pronounce; as he has left to his bird the distinctive name of *Falco uliginosus*; though he positively states, that, in his opinion, they are but one species, and even rejects as false, and not existing, the only character on which the specific distinction was based, that of the American having "strong, thick, and short legs," instead of having them long and slender. For want of opportunity, however, of actually comparing specimens from both continents, he could choose no other course than the one he has followed; and so great appears to have been the deference of ornithologists for this extraordinary man, that, while they have unhesitatingly quoted as synonymous with the European hen-harrier, the African specimens described by Le Vaillant, and even the various nominal species created or adopted by Vieillot, as North American, the *Falco uliginosus* of former authors has been respected, probably, as the marsh-hawk of Wilson! But the latter is not more than the others, entitled to be admitted as distinct, being merely the present in its youthful dress.

The hen-harrier belongs to the subgenus *Circus*, which

in English we shall call harrier, the name of buzzard being appropriated to the *Buteones*. Though perfectly well marked in the typical species, such as this, the group to which our bird belongs passes insensibly into others, but especially into that called *Buteo*, some even of the North American species being intermediate between them. Whenever the groups of falcons shall be elevated to the rank of genera, it will perhaps be found expedient to unite *circus* and *buteo*, as they do not differ much more from each other than our two sections of hawks; those with long and slender legs, and those with short stout legs, *Astur* and *Sparvius* of authors, the line of demarcation being quite as difficult to be drawn.

The harriers are distinguished in their tribe by their weak, much compressed bill, destitute of a tooth or sharp process, but with a strongly marked lobe; their short and bristly cere; their long, slender, and scutellated tarsi; their slender toes, of which the outer are connected at base by a membrane; their nails, subequal, weak, channelled beneath, much incurved, and extremely sharp: a very remarkable characteristic is exhibited in their long wings, subequal to the tail, which is large, and even, or slightly rounded at tip: their first quill is very short, always shorter than the fifth, and the third or fourth is the longest. Their slender body and elegant shape chiefly distinguish them from their allies, the buzzards. They may be farther subdivided into those in which the female at least is possessed of that curious facial ring of scaly or stiff feathers, so remarkable in the owls, and those entirely destitute of it. One species only is found in the United States, which belongs to the first section, and cannot be confounded with any other than that from which we have thought proper to distinguish it at the beginning of this article. In this section, the female differs essentially from the male, the young being similar to her in colour. The latter change wonderfully as they advance in age, to which circumstance is owing the wanton multiplication that has been made of the species. In those which compose the

second section, the changes are most extraordinary, since, while the adult male is of a very uniform light colour, approaching to white, the female and young are very dark, and much spotted and banded : they are also much more conspicuously distinguished by the rigid facial ring.

These birds are bold, and somewhat distinguished for their agility, especially when compared with the buzzards ; and in gracefulness of flight they are hardly inferior to the true falcons. They do not chase well on the wing, and fly usually at no great height, making frequent circuitous sweeps, rarely flapping their wings, and strike their prey upon the ground. Their food consists of mice, and the young of other quadrupeds, reptiles, fishes, young birds, especially of those that build on the ground, or even adult water birds, seizing them by surprise, and do not disdain insects ; for which habits they are ranked among the ignoble birds of prey. Unlike most other large birds of their family, they quarter their victims previously to swallowing them, an operation which they always perform on the ground. Morasses and level districts are their favourite haunts, being generally observed sailing low along the surface, or in the neighbourhood of waters, migrating when they are frozen. They build in marshy places, among high grass, bushes, or in the low forks or branches of trees ; the female laying four or five round eggs, entirely white, or whitish, without spots. During the nuptial season, the males are observed to soar to a considerable height, and remain suspended in the air for a length of time.

The male hen-harrier is eighteen inches long, and forty-one in extent ; the bill is blackish horn colour ; the cere greenish yellow, almost hidden by the bristles projecting from the base of the bill ; the irides are yellow. The head, neck, upper part of the breast, back, scapulars, upper wing-coverts, and middle tail-feathers, pale bluish gray, somewhat darker on the scapulars ; the upper coverts, being pure white, constitute what is called a white rump, though that part is

of the colour of the back, but a shade lighter; breast, belly, flanks, thighs, under wing-coverts, and under tail-coverts, pure white, without any spot or streak. The wings measure nearly fourteen inches, and, when closed, reach only two-thirds the length of the tail, which is eight and a half inches long, extending by more than two inches beyond them; the primaries, of which the first is shorter than the sixth, the second and fifth subequal, and the third and fourth longest, are blackish, paler on the edges, and white at their origin, which is more conspicuous on their inferior surface; the secondaries have more of the white, being chiefly bluish gray on the outer web only, and at the point, which is considerably darker. The tail is but very slightly rounded. All the tail-feathers have white shafts, and are pure white beneath; the middle ones are bluish gray, the lateral almost purely white; somewhat grayish on the outer vane, and obsoletely barred with blackish gray on the inner. The feet are bright yellow, and the claws black; the tarsus is three inches long, and feathered in front for an inch.

The female is larger, being between twenty and twenty-one inches long, and between forty-four and forty-seven in extent; the tarsi, wings, and tail, proportionally longer, but strictly corresponding with those of the male. The general colour above is chocolate-brown, more or less varied with yellowish rufous; the space round the orbits is whitish, and the auriculars are brown; the small stiff feathers forming the well marked collar, or ruff, are whitish rusty, blackish brown along the shaft; the feathers of the head and neck are of a darker brown, conspicuously margined with yellowish rusty; on the nucha, for a large space, the plumage is white at the base, as well as on the sides of the feathers, so that a little of that colour appears even without separating them; those of the back and rump are hardly, if at all, skirted with yellowish rusty, but the scapulars and wing-coverts have each four regular large round spots of that colour, of which those farthest from the base lie generally uncovered; the upper tail-

coverts are pure white, often, but not always, with a few rusty spots, constituting the so called white rump, which is a constant mark of the species in all its states of plumage. The throat, breast, belly, vent, and femorals, pale yellowish rusty, streaked lengthwise with large acuminate brown spots darker and larger on the breast, and especially the under wing-coverts, obsolete on the lower parts of the body, which are not spotted. The quills are dark brown, whitish on the inner vane, and transversely banded with blackish; the bands are much more conspicuous on the inferior surface, where the ground colour is grayish white. The tail is of a bright yellowish rusty, the two middle tail-feathers dark cinereous; all are pure white at the origin, and regularly crossed with four or five broad blackish bands; their tips are more whitish, and the inferior surface of a grayish white, like that of the quills, but very slightly tinged with rusty, the blackish bands appearing to great advantage, except on the outer feathers, where they are obsolete, being less defined even above.

The young male is almost perfectly similar in appearance to the adult female, (which is not the case in the ash-coloured harrier,) being, however, more varied with rusty, and easily distinguished by its smaller size. It is in this state that Wilson has taken the species, his very accurate description being that of a young female. The male retains this plumage until he is two years old, after which he gradually assumes the gray plumage peculiar to the adult: of course they exhibit almost as many gradations as specimens, according to their more or less advanced age. The ash and white appear varied or mingled with rusty; the wings, and especially the tail, exhibiting more or less indications of the bands of the young plumage. The male, when he may be called already adult, varies by still exhibiting the remains of bands on the tail, more or less marked or obliterated by the yellowish edges of the feathers of the back and wings, and especially by retaining on the hindhead a space tinged with rusty, with blackish spots. This space is more or less indicated, in the greater part, both of the

American and European specimens I have examined. Finally, they are known by retaining traces of the yellowish of the inferior surface in larger or smaller spots, chiefly on the belly, flanks, and under tail-coverts.

The hen-harrier's favourite haunts are rich and extensive plains, and low grounds. Though preferring open and champaign countries, and seeming to have an antipathy to forests, which it always shuns, it does not, like the ash-coloured harrier, confine itself to marshes, but is also seen in dry countries, if level. We are informed by Wilson, that it is much esteemed by the southern planters, for the services it renders in preventing the depredations of the rice-birds upon their crops. Cautious and vigilant, it is not only by the facial disk that this bird approaches the owls, but also by a habit of chasing in the morning and evening, at twilight, and occasionally at night when the moon shines. Falconers reckon it among the ignoble hawks. Cruel, though cowardly, it searches every where for victims, but selects them only among weak and helpless objects. It preys on moles, mice, young birds, and is very destructive to game; and does not spare fishes, snakes, insects, or even worms. Its flight is always low, but, notwithstanding, rapid, smooth, and buoyant. It is commonly observed sailing over marshes, or perched on trees near them, whence it pounces suddenly upon its prey. When it has thus struck at an object, if it re-appears quickly from the grass or reeds, it is a proof that it has missed its aim; for, if otherwise, its prey is devoured on the spot.

It breeds in open wastes, frequently in thick furze coverts, among reeds, marshy bushes, the low branches of trees, but generally on the ground. The nest is built of sticks, reeds, straw, leaves, and similar materials heaped together, and is lined with feathers, hair, or other soft substances; it contains from three to six, but generally four or five, pale bluish-white eggs, large and round at each end; the young are born covered with white down, to which succeed small feathers of a rust colour, varied with brown and black. If any one

approaches the nest during the period of rearing the young, the parents evince the greatest alarm, hovering around, and expressing their anxiety by repeating the syllables, *geg, geg, gag*; or *ge, ge, ne, ge, ge*. Crows manifest a particular hostility to this species, and destroy numbers of their nests.

The hen-harrier is widely spread over both continents, perhaps more than any other land bird, though it is nowhere remarkably numerous. In the northern countries of America, it is a migratory species, extending its wanderings from Florida to Hudson's Bay. It is not known to breed in the Northern, or even in the Middle States, where the adults are but rarely seen. In the Southern parts of the Union, and especially in Florida, they are rather common in all their varieties of plumage. The species is also found in the West Indies, Cayenne, and probably has an extensive range in South America. It is found throughout Britain, Germany, Italy, the north of Africa, and the northern portion of Asia. It is very common in France and the Netherlands, is found in Russia and Sweden, but does not inhabit the north of Norway, being by no means an Arctic bird. It is again met with in the southern parts of Africa, near the Cape of Good Hope, and is not uncommon all along the eastern coast of that continent. In Switzerland, and other mountainous countries, it is of very rare occurrence.

GENUS III.—*STRIX*, LINNÆUS.

4. *STRIX CUNICULARIA*, MOLINA.—BURROWING OWL, BONAP.

BONAPARTE, PLATE VII. FIG. II.

VENERABLE ruins, crumbling under the influence of time and vicissitudes of season, are habitually associated with our recollections of the owl; or he is considered as the tenant of sombre forests, whose nocturnal gloom is rendered deeper and more awful by the harsh dissonance of his voice. In poetry he has long been regarded as the appropriate concomitant of darkness and horror; and, when heard screaming from the top-

most fragments of some mouldering wall, whose ruggedness is but slightly softened by the mellowing moonlight, imagination loves to view him as a malignant spirit, hooting triumphantly over the surrounding desolation ! But we are now to make the reader acquainted with an owl to which none of these associations can belong ; a bird that, so far from seeking refuge in the ruined habitations of man, fixes its residence within the earth ; and, instead of concealing itself in solitary recesses of the forest, delights to dwell on open plains, in company with animals remarkable for their social disposition, neatness, and order. Instead of sailing heavily forth in the obscurity of the evening or morning twilight, and then retreating to mope away the intervening hours, our owl enjoys the broadest glare of the noonday sun, and, flying rapidly along, searches for food or pleasure during the cheerful light of day.

The votaries of natural science must always feel indebted to the learned and indefatigable Say, for the rich collection of facts he has made whenever opportunities have been presented, but more especially in the instance of this very singular bird, whose places of resort in this country are too far distant to allow many the pleasure of examining for themselves. We feel doubly disposed to rejoice that the materials for the history of our bird are drawn from his ample store, both on account of their intrinsic excellence, and because it affords us an opportunity of evincing our admiration of the zeal, talents, and integrity, which have raised this man to the most honourable and enviable eminence as a naturalist.

In the trans-Mississippian territories of the United States, the burrowing owl resides exclusively in the villages of the Marmot, or Prairie Dog, whose excavations are so commodious, as to render it unnecessary that our bird should dig for himself, as he is said to do in other parts of the world, where no burrowing animals exist. These villages are very numerous, and variable in their extent, sometimes covering only a few acres, and at others spreading over the surface of the country

for miles together. They are composed of slightly elevated mounds, having the form of a truncated cone, about two feet in width at base, and seldom rising as high as eighteen inches above the surface of the soil. The entrance is placed either at the top or on the side, and the whole mound is beaten down externally, especially at the summit, resembling a much-used foot-path.

From the entrance, the passage into the mound descends vertically for one or two feet, and is thence continued obliquely downwards, until it terminates in an apartment, within which the industrious marmot constructs, on the approach of the cold season, the comfortable cell for his winter's sleep. This cell, which is composed of fine dry grass, is globular in form, with an opening at top capable of admitting the finger; and the whole is so firmly compacted, that it might, without injury, be rolled over the floor.

It is delightful, during fine weather, to see these lively little creatures sporting about the entrance of their burrows, which are always kept in the neatest repair, and are often inhabited by several individuals. When alarmed, they immediately take refuge in their subterranean chambers, or, if the dreaded danger be not immediately impending, they stand near the brink of the entrance, bravely barking and flourishing their tails, or else sit erect to reconnoitre the movements of the enemy.

The mounds thrown up by the marmot in the neighbourhood of the Rocky Mountains, have an appearance of greater antiquity than those observed on the far distant plains. They sometimes extend to several yards in diameter, although their elevation is trifling, and, except immediately surrounding the entrance, are clothed with a scanty herbage which always distinguishes the area of these villages. Sometimes several villages have been observed almost entirely destitute of vegetation, and, recollecting that the marmot feeds exclusively on grasses and herbaceous plants, it seems singular that this animal should always choose the

most barren spot for the place of his abode. However this may be accounted for, it at least affords an opportunity of beholding the approach of his enemies, and allows him to seek, within the bosom of the earth, that security which he has neither strength nor arms to command.

In all these prairie dog villages, the burrowing owl is seen moving briskly about, or else in small flocks scattered among the mounds, and, at a distance, it may be mistaken for the marmot itself, when sitting erect. They manifest but little timidity, and allow themselves to be approached sufficiently close for shooting; but, if alarmed, some or all of them soar away, and settle down again at a short distance; if farther disturbed, their flight is continued until they are no longer in view, or they descend into their dwellings, whence they are difficult to dislodge.

The burrows into which these owls have been seen to descend, on the plains of the river Platte, where they are most numerous, were evidently excavated by the marmot, whence it has been inferred by Say, that they were either common, though unfriendly residents of the same habitation, or that our owl was the sole occupant of a burrow acquired by the right of conquest. The evidence of this was clearly presented by the ruinous condition of the burrows tenanted by the owl, which were frequently caved in, and their sides channelled by the rains, while the neat and well preserved mansion of the marmot shewed the active care of a skilful and industrious owner. We have no evidence that the owl and marmot habitually resort to one burrow, yet we are well assured by Pike and others, that a common danger often drives them into the same excavation, where lizards and rattlesnakes also enter for concealment and safety.

The owl observed by Vieillot in St Domingo digs itself a burrow two feet in depth, at the bottom of which its eggs are deposited on a bed of moss, herb stalks, and dried roots. These eggs are two in number, of a very pure white, nearly spheroidal, and about as

large as those of the dove. When the young are only covered with down, they frequently ascend to the entrance to enjoy the warmth of the sun, but, as soon as they are approached, they quickly retire into the burrow.

The note of our bird is strikingly similar to the cry of the marmot, which sounds like *cheh, cheh*, pronounced several times in rapid succession; and, were it not that the burrowing owls of the West Indies, where no marmots exist, utter the same sound, it might be inferred that the marmot was the unintentional tutor to the young owl: this cry is only uttered as the bird begins its flight. Vieillot states, that the burrowing owl inhabiting St Domingo sometimes alights on farm-houses at night, and produces a note which resembles that of the syllables *hoo, hoo, oo, oo*; but has he not mistaken a nocturnal species for it in this case?

The food of the bird we are describing appears to consist entirely of insects, as, on examination of its stomach, nothing but parts of their hard wing-cases were found. The authors we have quoted, inform us, that, in Chili and St Domingo, the burrowing owls also feed on rats, mice, and reptiles, which we cannot suppose to be the case with the bird found in the United States, as our explorers never could discover the slightest reason for believing that they preyed on the marmots, whose dwellings they invade.

Throughout the region traversed by the American Expedition, the marmot was unquestionably the artificer of the burrow inhabited by the owl, while the testimony of Vieillot is equally conclusive that the owl digs for himself when he finds no burrow to suit his purpose; but, preferring one already made, his fondness for the prairie dog village's is readily explained.

Whether only a single species of burrowing owl inhabits the vast continent of North and South America, or whether that of Chili mentioned by Molina, that of St Domingo described by Vieillot, and the owl of the western American territory, be distinct, though closely allied species, can only be determined by accurate

comparisons.* When we consider the extraordinary habits attributed to all those, as well as their correspondence in form and colours noted in the several descriptions, we are strongly inclined to believe that they are all of the same species; nevertheless Vieillot states his bird to be somewhat different from that of Molina, and the eggs of the burrowing owl of the latter are spotted with yellow, whilst those of the former are immaculate. We have to regret that no figure has hitherto been published, and we cannot well understand why Vieillot did not thus exemplify so interesting a bird.

The peculiar subgenus of this bird has not hitherto been determined, owing to the neglect with which naturalists have treated the arrangement of extra European owls. Like all diurnal owls, our bird belongs to the subgenus *noctua* of Savigny, having small oval openings to the ears, which are destitute of operculum, the facial disk of slender feathers small and incomplete, and the outer edges of the primaries not recurved; but it differs from them in not having the tarsus and toes covered by long thick feathers.

The burrowing owl is nine inches and a half long, and two feet in extent. The bill is horn colour, paler on the margin, and yellow on the ridges of both mandibles; the inferior mandible is strongly notched on each side; the capistrum before the eyes terminates in black rigid bristles, as long as the bill; the irides are bright yellow. The general colour of the plumage is a light burnt-umber, spotted with whitish, paler on the head and upper part of the neck; the lower part of the breast and belly are whitish, the feathers of the former being banded with brown; the inferior tail-coverts are white immaculate. The wings are darker than the body, the feathers being much spotted and banded with whitish; the primaries are five or six banded, each band being more or less widely interrupted near the shaft,

* Should they prove to be different species, new appellations must be given; and, as that of *Strix cunicularia* will, by right of priority, be exclusively retained for the Coquimbo owl, we would propose for the present bird the name of *Strix hypugæa*.

and margined with blackish, which colour predominates towards the tip; the extreme tip is dull whitish; the shafts are brown above and white beneath; the exterior primary is finely serrated, and equal in length to the fifth, the second and fourth being hardly shorter than the third, which is the longest. The tail is very short, slightly rounded, having its feathers of the same colour as the primaries, and, like them, five or six banded, but more purely white at tip. The feet are dusky, and remarkably granulated, extending, when stretched backwards, an inch and a half beyond the tail; the tarsi are slender, much elongated, covered before and on each side with loose webbed feathers, which are more thickly set near the base, and become less crowded towards the toes, where they assume the form of short bristles; those on the toes being altogether setaceous, and rather scattered. The lobes beneath the toes are large and much granulated; the nails are black and rather small, the posterior one having no groove beneath.

The individual we have described is a male, and no difference is observable in several other specimens: the female differs in nothing except that her eyes are of a pale yellow colour.

BONAPARTE'S
AMERICAN ORNITHOLOGY.

ORDER II.

PASSERES, LINNÆUS.



GENUS III. — *PICUS*.

5. *PICUS VARIUS*, BONAPARTE.

YOUNG YELLOW-BELLIED WOODPECKER.

BONAPARTE, PLATE VIII. FIG. I, II.

As Wilson's history of this well known woodpecker is complete, and his description obviously discriminates the sexes and young, we shall refer the reader entirely to him for information on these points. The present bird is introduced on account of anomalous plumage; for, although the colour of the head is but slightly advanced towards its red tint, having only two or three reddish points visible on the forehead, yet the patch on the breast is quite as obvious as it is found in the adult state. In young birds of the first and second years, this patch is usually obsolete, the breast being chiefly dusky gray, although the crown is entirely red.

This specimen, possibly exhibiting one of the periodical states of plumage of this changeable bird, is the only one we have been able to procure amongst a great number of the young of both sexes in the ordinary dress. The well marked patch on the breast might induce the belief that this individual is an adult female, and that this sex, as several writers have erroneously remarked, is destitute of the red crown; but, in addition to the fact that our specimen proved, on dissection, to be a male, we obtained, almost every day during the month of November, young birds of both sexes with the crown entirely red, or more or less sprinkled with that colour, the intermixture arising altogether from age or advanced plumage, and not from sex. We are unable to state, with any degree of certainty, at what period the bird

assumes the present plumage, and we rather incline to the opinion that it is an accidental variety.

Vieillot's figure represents the young before the first moult, when, like our anomalous specimen, they have no red on the crown, differing, however, in not having the head of a glossy black, but of a dull yellowish gray, and the patch on the breast also of a dull gray tint.

6. *PICUS TRIDACTYLUS*, LINNÆUS.

NORTHERN THREE TOED WOODPECKER.

BONAPARTE, PLATE XIV. FIG. II.

THIS species is one of those which, from their habitation being in the extreme north, have a wide range round the globe. It is in fact met with throughout northern Asia and Europe, from Kamtschatka to the most eastern coasts of the old continent; and in America, is very common at Hudson's Bay, Severn River, Fort William on Lake Superior, and throughout the north-west, in hilly and wooded tracts. In the United States it is only a rare and occasional winter visitant, never having been received by us, except from the northern territory of the State of Maine. The species, contrary to what is observed of most other arctic birds, does not appear to extend so far south comparatively as in Europe, though it is not improbable that on this continent it may also inhabit some unexplored mountainous districts resembling the wild regions where only it is found in Europe. In both continents, the species affects deep forests among mountains, the hilly countries of northern Asia and Europe, and the very lofty chains of central Europe, whose elevation compensates for their more southern latitude. It is exceedingly common in Siberia, is abundant in Norway, Lapland, and Dalecarlia, among the gorges of Switzerland and the Tyrol, especially in forests of pines. It is not uncommon in the Canton of Berne, in the forests near Interlaken, though very rare in Germany, and the more temperate parts of Europe. It is well known even to breed in Switzerland, and

deposits, in holes formed in pine trees, four or five eggs of a brilliant whiteness; its voice and habits are precisely the same as those of the spotted woodpeckers. Its food consists of insects and their larvæ, and eggs, and sometimes seeds and berries. It is easily decoyed by imitating its voice.

This species is eminently distinguished among the North American and European woodpeckers, by having only three toes, the inner hind toe being wanting, besides which it has other striking peculiarities, its bill being remarkably broad, and flattened, and its tarsi covered with feathers half their length: the tongue is, moreover, not cylindrical, but flat and serrated at the point, which conformation we have, however, observed in the three European spotted woodpeckers, and in the American, *Picus varius*, *villosus*, *pubescens*, and *querulus*. In all these species the tongue is flat, with the margins projecting each side and serrated backwards, plain above, convex beneath, and acute at the tip.

Linné, Brisson, and other anterior writers, confounded this northern bird with a tropical species, the southern three-toed woodpecker, *Picus undulatus* of Vieillot, which inhabits Guiana, and, though very rarely, Central America, but never so far north as the United States. It is the southern species of which Brisson has given us the description, while Linné described the present. It is nevertheless probable that he had the other in view when he observes, that in European specimens the crown was yellow, and in the American red, though, as he states, from Hudson's Bay. The latter mistake was corrected by Latham, who, however, continued to consider the southern as no more than a variety, in which he was mistaken, since they are widely distinct; but as he had no opportunity of seeing specimens, he is not to be censured, especially as he directed the attention of naturalists to the subject. The merit of firmly establishing the two species is, we believe, due to Vieillot. Besides several other traits, the northern bird is always to be distinguished in every state of plumage from its southern analogue, by that curious character

whence Vieillot took his highly characteristic name, (*Picus hirsutus*, *Pic à pieds vêtus*,) the feathered tarsi, a peculiarity which this alone possesses to the same extent. The plumage is an uniform black above in the adult, with the top of the head yellow in the male, while the southern, whose tarsi are naked, is black undulated with white, the male having the sinciput red. It is worthy of remark, that the three-toed group found in arctic and in tropical America, should have no representative in the intermediate countries.

Although these are the only three-toed woodpeckers noted as such in the books, several others are known to exist, some of which, long since discovered, have through inadvertence, or want of proper discrimination, been placed among the four-toed species. The three-toed woodpeckers have been formed into a separate genus, a distinction to which they might indeed be considered entitled, if they all possessed the other characters of the present; but, besides that this character appears to be insulated, and of secondary importance, (since all forms of the bill known among the four-toed species are met with among the three-toed, which ought, therefore, to make as many groups as there are forms, instead of a single one,) the naturalist is perplexed by the anomalous species that inhabit India, of which one has only a stump destitute of nail, and another merely a very small nail without the toe, and, as if nature took delight in such slow and gradual transitions, two others furnished with both toe and nail, have the toe exceedingly short, and the nail extremely small! This serves to demonstrate that *Picus*, like other natural groups, admits of subdivision. These, however, ought not to be separations; and the genus has been left comparatively untouched by the great innovators of our day, who have only established three genera from it. The first of these, *Colaptes*, of which *P. auratus* of North America may be considered the type, comprises the species that have four toes, and slightly curved bills, forming the passage to *Cuculus*; another, for which the name of *Picus* is retained, includes the four-toed species with straight

bills, and the third for the three-toed species indiscriminately. The only foreign three-toed species in our collection, the beautiful *Picus Bengalensis* of authors, (*Picus tiga* of Horsfield,) widely spread through tropical Asia and the adjacent islands, and, though long since known, always ranked as four-toed, has the bill precisely similar to the four-toed species, being even remarkably compressed, and very sharp on the ridge.

The male northern three-toed woodpecker is ten inches long, and sixteen in extent; the bill measures one inch and a quarter, is of a blackish lead colour, bluish white at the base of the lower mandible; it is very broad at base, cuneiform and obtuse at tip, and much depressed throughout, the ridge being very much flattened: both mandibles are perfectly straight; the upper pentagonal, the lower obtusely trigonal; the tongue is somewhat shorter than that of other species of the genus; the bristly feathers at the base of the bill are very thick and long, a provision which Nature has made for most arctic birds; in this they measure half an inch, and are blackish, white at base, somewhat mixed with reddish white; the irides are bluish black; the whole head and neck above and on the sides, back, rump, scapulars, smaller wing and tail-coverts, constituting the whole upper surface of the bird, of an uniform, deep, glossy black, changing somewhat to green and purple, according to the incidence of light; the feathers of the front are tipped with white, producing elegant dots of that colour (which perhaps disappear with age;) the crown of the head is ornamented with a beautiful oblong spot one inch in length, and more than half an inch broad, of a bright silky golden yellow, faintly tinged with orange, and the feathers in this place very fine, and somewhat rigid; they are black at their base, and marked with white at the limits of the two colours; the base of the plumage elsewhere is uniformly plumbeous ash: each side, from the corner of the mouth, arises a broad white line, forming a white space before the eye, prolonged on the neck; beneath this there is a black one, which, passing from the base of the lower mandible,

joins the mass of black of the body; a tuft of setaceous white feathers advances far upon the bill beneath; the throat, breast, middle of the belly, and tips of the under tail-coverts, are pure white; the sides of the breast, flanks broadly, and base of the tail-coverts, and even of some of the belly feathers, are thickly waved with lines of black and white, as well as the femoral and short tarsal feathers: in very old birds these parts are considerably less undulated, being of a much purer white; the wings are five inches long, reaching two-thirds the length of the tail; the spurious feather is exceedingly short, the first primary hardly longer than the seventh; and the four following subequal and longest; the smaller wing-coverts, as mentioned, glossy black: all the other upper coverts, as well as the quills, are of a dull black, the primaries being somewhat duller; these are regularly marked on both webs with square white spots, larger on the inner webs, and as they approach the base; the secondaries are merely spotted on the inner vane, the spots taking the appearance of bands; the tips of all the quills are unspotted, the lower wing-coverts are waved with black and white, similar to the flanks; the tail is four inches long, of the shape usual in the woodpeckers, and composed of twelve feathers, of which the four middle, longest, and very robust and acute, are plain deep black, the next on each side is also very acute, and black at base, cream white at the point, obliquely and irregularly tipped with black; the two next to these are cream white to the tip, banded with black on the inner vane at base, the more exterior being much purer white and somewhat rounded; the exterior of all is very short and rounded, and banded throughout with black and pure white: the tarsus is seven-eighths of an inch long, feathered in front for nearly half its length, and, with the toes and nails, dark plumbeous; the nails are much curved and acute, the hind one being the largest.

The above is a minute description of our finest male specimen, with which all those we have examined coincide more or less. By comparing, however, this

description with the detailed ones found in some works, we must conclude that the species is subject to variations in size and plumage, which, according to the erroneous impression given by authors, could not be satisfactorily accounted for by difference of sex, age, or locality: thus in some specimens the cervix is described white, or partly whitish, instead of being wholly black: the back is also said to be waved with white; which is indeed the case, and with the cervix also, but only in young birds. There is a circumstance, however, that could not be explained by supposing a difference of age, for while some specimens are seen with no appearance of white or yellow on the crown, but having that part, as well as the body, rich shining black, others with a good deal of lemon yellow on that part, are of a duller black, much varied with white. As in other doubtful and intricate cases, these obscurities are dissipated by a close inspection and unprejudiced observation of nature, and we feel much gratification in being enabled to unveil to ornithologists the mystery of these diversities of plumage in this species, by merely pointing out the sexual differences, as well as those originating in the gradual change from youth to maturity in both sexes; which, when understood, will not be found more extraordinary than in other species.

The adult female has never been recognized by any author, nor, hitherto, even by ourselves, having been misled by others in taking the young for her; and this we have only discovered by inspecting a great many specimens. She is precisely similar to the male, even in the minutest particulars, excepting the absence of yellow on the head, this part being of a rich and glossy black.

The young of both sexes are of a dull blackish; the setaceous feathers of the nostrils are grayish, somewhat tinged with rusty; all the feathers of the crown are tipped with white, constituting thick dots on that part, to which they give a silvery appearance; the cheek bands are obscure and much narrower; the cervix is more or less varied with white, and the feathers of the back

being banded with white, gives to that part a waved appearance; the under parts are more thickly waved with black: six, instead of four, of the middle tail-feathers, are almost wholly black, the outer of the six having only two or three whitish spots on the outer web. The remaining parts, with due allowance, are similar to the adult.

The young male gradually assumes the yellow, which is at first but little extended, and of a pale lemon colour, through which are yet for some time seen the white dots attributed to the female. She indeed has them very conspicuous in youth, as they are not confounded with any yellow, but loses them entirely as she advances to the adult state.

7. *PICUS ERYTHROCEPHALUS*, LINNÆUS.

YOUNG RED-HEADED WOODPECKER.

BONAPARTE, PLATE XIV. FIG. III.

WE have nothing to add to Wilson's excellent account of the manners of this very common species, and, therefore, shall limit ourselves to the description of the young.

The young red-headed woodpecker is nine and a half inches long, and seventeen inches in extent. The bill is short and robust, being but one-eighth more than an inch in length; the upper mandible has the ridge slightly curved; the bill is horn colour, whitish at base beneath; the setaceous feathers covering the nostrils are very short, and not thick, rufous gray, tipped with black; the whole head, neck, and upper parts of the breast, (which are red in the adult) are blackish, each feather broadly edged with whitish, giving the throat the appearance of being whitish, streaked with blackish; the auriculars are plain dusky black; from the breast beneath all is dingy white, the feathers of the breast and lower tail-coverts having dusky shafts; the back and scapulars are black, the feathers being margined with whitish gray; the rump and upper tail-coverts pure white; the wings are five

inches and a half long; the spurious feather very short, the first primary subequal to the fifth, the second to the fourth, the third being longest; the smaller wing-coverts are uniform with the back; the larger are of a deeper black, and tipped with pure white; the spurious wing is wholly deep black; the under wing-coverts are pure white, blackish along the margin of the wing; the primaries are plain black, tipped and edged externally with whitish; the secondaries are white, shafted with black, and with an acuminate, broad, subterminal band, which, running from one to the other, takes a zigzag appearance; the tail is four inches long, and, like those of all the woodpeckers we have examined, composed of twelve feathers, of which the outer on each side is extremely short and inconspicuous, and pure white, with a black shaft. All the others, which are very acute, longer, and more acuminate, and stiffer as they approach the centre, are black, and, except the two middle ones, slightly whitish each side of the shaft at tip, the outer being also of that colour on its outer margin. The feet are dark plumbeous, the tarsus being seven-eighths of an inch long, and feathered for a short space in front.

The young of both sexes are, no less than the adult, perfectly alike; as they advance in age, the margins of the feathers disappear, and the black becomes deep and glossy, and all the colours much purer; the scarlet of the head comes on very gradually, so that specimens are found with merely a reddish tinge, and generally with a few dots on the hind neck. No such mark appears at first.

In the adult, the whole head, neck, and breast, are bright and deep scarlet, with the feathers black at base; the back, scapulars, and smaller wing-coverts, are rich glossy black; the rump, upper tail-coverts, and from the breast beneath, white, the bottom of the plumage being plumbeous, and the tail-coverts with blackish shafts; the wings and tail are black; the lower wing-coverts pure white, with the margin of the wing deep black; the secondaries are white, shafted to near the

tip with black; the last of the primaries being also white at tip, and on the greater part of the base of the outer vane; the small lanceolate outer feather is white, black on the shaft and base of the inner vane; the two next only being tipped with white, the outer of which is also white on the exterior margin.

GENUS IV.—*ICTERUS*, BRISSON.

8. *ICTERUS ICTEROCEPHALUS*, LINNÆUS.

YELLOW-HEADED TROOPIAL, BONAPARTE, ALSO THE YELLOW-HEADED BLACKBIRD OF BONAPARTE.

BONAPARTE, PLATE III. FIG. I. MALE; FIG. II. FEMALE.

ALTHOUGH this species has long been known to naturalists as an inhabitant of South America, and its name introduced into all their works, yet they have given us no other information concerning it, than that it is black, with a yellow head and neck. It was added to the fauna of the United States by the expedition of Major Long to the Rocky Mountains.

The female has been hitherto entirely unknown, and all the figures yet given of the male extremely imperfect, from the circumstance of their having been drawn from wretchedly stuffed specimens. The figures published by Edwards and Buffon approach the nearest to the real magnitude; but they are mere masses of black, surmounted by a yellow cap: those of Brisson and others, are considerably smaller.

As that striking character, the white spot on the wing, is neither indicated in the figure nor description of any author, we might have been induced to believe, that our species is different from the South American, if a close comparison of the two had not proved their identity. Another circumstance might have been equally deceptive: Brisson, who gave the first account of this bird, from a Cayenne specimen sent to Reaumur's Museum, and who seems to have been copied by all subsequent authors, states its length to be less than seven inches, a size considerably inferior to that of the living bird. Had this admeasurement been taken from

a recent specimen, we could hardly hesitate to believe our bird distinct; but as he had only a dried skin, and as Buffon's figure represents a nearer approach to the size of nature, we conclude that Brisson's estimate is not to be implicitly relied upon. Vieillot, who never saw the bird, states the length to be six inches and a half, and refers it to his genus *Pendulinus*, but it certainly belongs to his genus *Agelaius*.

The male yellow-headed troopial is ten inches and a half long. The bill is dark horn colour, and formed exactly like that of the red-winged troopial. The feet are black; the irides, dark brown. The whole head, neck, and breast, are brilliant orange yellow, more vivid and sericeous on the head, and terminating in a point on the belly; the feathers around the base of the bill, the chin, and a wide stripe passing from the bill through the eye, are black. The remaining parts, excepting some feathers of the belly, and some of the under tail-coverts, which are yellow at base, are glossy black, very slightly tinged with brownish. Some of the exterior wing-coverts are pure white, with black tips, constituting two very remarkable white spots on the wing, the larger of which is formed by the greater coverts of the primaries, and the smaller one by the middling coverts. The first, second, and third primaries, are longest and equal. The tail is four inches long, slightly rounded, the two middle feathers being somewhat shorter than those immediately adjoining. This character Wilson remarked in the red-winged troopial; and, as other notable traits are common to both species, we must regard them, not only as congeneric, but as very closely allied species of the same subgenus. They differ, however, in colour, and the yellow-headed troopial is larger, having the bill, feet, and claws consequently stronger, and the first primary longer than the second and third, or at least as long; whereas, in the red-winged, the third is the longest.

The female of our troopial is eight inches and a quarter long, a size remarkably inferior to that of the male, and exactly corresponding with the difference

existing between the sexes of the red-winged troopial. The bill and feet are proportionally smaller than those of the male, the feet being blackish; the irides are dark brown. The general colour is uniform dark brown, a shade lighter on the margin of each feather. The frontlet is grayish ferruginous, as well as a line over the eye, confluent on the auricles, with a broad line of the same colour passing beneath the eye, including a blackish space varied with grayish. An abbreviated blackish line proceeds from each side of the lower mandible; the chin and throat are whitish; on the breast is a large rounded patch, of a pretty vivid yellow, occupying nearly all its surface, and extending a little on the neck. On the lower part of the breast, and beginning of the belly, the feathers are skirted with white. The form of the wings and tail is the same as in the male; the wings are immaculate.

The young of this species are very similar to the female; the young male gradually changing to the rich adult covering.

The yellow-headed troopials assemble in dense flocks, which, in all their varied movements and evolutions, present appearances similar to those of the red-winged, which have been so well described by Wilson. They are much on the ground, like the cow troopial, (cow bunting of Wilson;) on dissection, their stomachs have been found filled with fragments of small insects, which seem to constitute their chief food, though doubtless they also feed on vegetable substances. Their notes resemble those of the red-winged troopial, but are more musical. The range of the yellow-headed troopial is very extensive, as it is found from Cayenne to the river Missouri; although it passes far north in the western region, yet it does not visit the settled parts of the United States.

We adopt the genus *Icterus*, nearly as it was established by Brisson, and accepted by Daudin and Temminck. Authors have variously estimated this genus, both in regard to its denomination and limits. One of Wilson's most important nomenclatural errors

consisted in placing one of the species under the genus *Sturnus*, with which it has but little similarity, if we except some of its habits, and particularly its gregarious disposition. Linné considered these birds as *Orioli*, in which he was followed by Gmelin and Latham, notwithstanding the remarkable difference existing between them and the *Oriolus galbula* of Europe, the type of that genus. Illiger, and some other naturalists, considering that bird a *Coracias*, appropriated the name of *Oriolus* to our *Icterus*, and separated from it the largest species, which he called *Cassici*. Linné had declared all generic names previously given to arts, diseases, &c. to be inadmissible in natural history; Illiger, on that principle, altogether rejected the name *Icterus*, as being preoccupied by a disease. This may account for the introduction of new names for genera, one of which at least ought to have retained its first appellation. Vieillot, however, would have caused less confusion, if he had adopted the name of *Icterus*, (which, with *Saxicola*, and all other names of that class, we do not think objectionable,) instead of *Agelaius*, *Pendulinus*, or *Yphantus*, three of his four genera corresponding to our *Icterus*. But, if the latter name was considered as utterly inadmissible, we see no reason why he did not accept that of *Xanthornus*, applied to this genus by Pallas.

All the species of troopial are peculiar to America. We divide them into four subgenera, the present bird belonging to the second, to which we apply the name of *Xanthornus*. The species of this subgenus are peculiarly social in their dispositions, and their associations are not liable to interruption from the influence of love itself. Not only do many individuals of the same family combine and labour in concert, but they also unite with very different species. Their aspect is animated, and their movements are quick, bold, and vigorous; they fly rapidly, at a good height, and are much attached to the places of their birth. Their song is a kind of whistling; they walk with the body nearly erect, with a slightly hurried step, and are seen sitting

on the ground, or perched on the branches of trees. They seek no concealment, and never enter the woods, though they are very careful to construct their nests in a safe situation. The troopials eat no fruits, but derive their subsistence from insects, worms, grains, and small seeds. They leave the temperate climates at the approach of winter, and are amongst the first birds of passage that return with the spring.

GENUS V. — *QUISCALUS MAJOR*, VIEILLOT.

9. *QUISCALUS MAJOR*, VIEILLOT.

GREAT CROW BLACKBIRD, BONAPARTE.

BONAPARTE, PLATE IV. FIG. I. MALE ; FIG. II. FEMALE.

EDINBURGH COLLEGE MUSEUM.

No part of natural history has been more confused than that relating to North and South American birds of black plumage ; which is by no means surprising, when we recollect that they are chiefly destitute of coloured markings, and that the greater number of admitted species, are founded on the short and inexact descriptions of travellers, who have neglected to observe their forms, habits, and characters. But little aid has been derived from the wretched plates hitherto given, for they seem better suited to increase the confusion than to exemplify the descriptions to which they are annexed, and every succeeding compiler has aggravated, rather than diminished this complication of error. It is, therefore, solely by a studious attention to nature, that we can extricate these species from the uncertainty involving them, and place them in a distinct and cognizable situation.

Wilson having mentioned this species in his catalogue of land birds, evidently intended to describe and figure it ; but this he deferred, probably, in expectation of obtaining better opportunities of examination, which are not so readily presented, as the bird does not inhabit this section of the United States.

It would be difficult to ascertain whether or not Linné and Latham have mentioned this bird in any

part of their works, but the reader may perceive our opinion on this point by referring to our synonyms, which, however, are given with much doubt, since we do not hesitate to say, that those authors have not published any satisfactory description of this species.

We shall not endeavour to settle the question relative to the species inhabiting South America, or even Mexico and the West Indies; but we may assert, that this is the only blackbird found in the United States, besides those of Wilson, which, as is the case with all that his pencil or pen has touched, are established incontestably; he may occasionally have been mistaken as to his genera, or incorrect in a specific name, but by the plate, description, and history, he has always determined his bird so obviously, as to defy criticism, and prevent future mistake.

Mr Ord has published an excellent paper in the *Journal of the Academy of Natural Sciences*, proving the existence, in the United States, of two allied species of crow blackbird, in which he gives new descriptions, indicates stable characters, and adds an account of their respective habits; but in attempting to correct Wilson, he has unfortunately misapplied the names. In this instance, he should not have charged Wilson with error, who is certainly correct in regard to the species he published; and even had this been doubtful, he who so well described and figured the common crow blackbird, ought to have been followed by ornithologists. Therefore, notwithstanding Mr Ord's decision, we consider the *quiscal* of Wilson unquestionably the true *quiscal* of authors. This is so obvious, that it is unnecessary to adduce any evidence in support of our opinion, which, indeed, is sufficiently afforded by Mr Ord's paper itself.

It is impossible to decide with certainty, what bird authors intended to designate by their *Gracula barita*; but after a careful review of the short and unessential indications, respective synonyms, and *habitat*, given by different writers, we feel assured that they have not referred to one and the same species. Thus, the *barita*

of Linné is a species not found in the United States, but common in the West Indies, called *Icterus niger* by Brisson, and afterwards *Oriolus niger* by Gmelin and Latham; the *barita* of Latham, his boat-tailed grakle, is evidently the same with the *quiscala*;* Gmelin's *barita* is taken partly from that of Linné, and partly from the boat-tailed grakle of Latham, being compounded from both species; we shall not be at the trouble of deciphering the errors of subsequent compilers.

Ornithologists are all at variance as to the classification of these species. Linné and Latham improperly referred them to *Gracula*; Daudin, with no better reason, placed them under *Sturnus*; Temminck considers them as *Icteri*, Cuvier as *Cassica*, and Vieillot has formed a new genus for their reception. I have no hesitation in agreeing with the latter author, and adopt his name of *Quiscalus*; but I add to the genus, as constituted by him, the *Gracula ferruginea*, which he regarded as a *Pendulinus*, and which other authors have arranged in several different genera, making of it a profusion of nominal species. Wilson judiciously included that species in the same genus with those above mentioned, although other authors had placed it in *Turdus*, *Oriolus*, &c.

The genus *Quiscalus* is peculiar to America, and is composed of four well ascertained species, three of which are found in the United States; these are, *Quiscalus major*, † *versicolor*, and *ferrugineus*; the fourth, *Quiscalus baritus*, inhabits the West Indies, and probably South America.

The species of this genus are gregarious, and omnivorous; their food being composed of insects, corn,

* It was probably by Latham, that Mr Ord was led to misapply the names of the two species; for, perceiving that the *barita* of that author was the *quiscala*, he inferred, that the *quiscala* was the *barita*.

† We call the present species *Quiscalus major*, agreeably to Vieillot, who certainly intended this bird, although his description is a mere indication.

and small grains, thus assisting and plundering the agriculturist at the same time. When the first European settlements were formed in North America, the havoc made by these birds and the troopials in the grain fields, was so great, that a premium was given for their heads. Their destruction was easily effected, as they are not shy, and are more easily approached as their numbers decrease; but the evil which resulted from exterminating so many of these birds, was as unexpected as irremediable. The corn and pastures were so devoured by worms and insects, that the inhabitants were obliged to spare the birds, in order to avert a scourge which had been previously unknown. As population increases, and a greater quantity of grain is cultivated, the ravages of these birds become less perceptible, and the injury they cause comparatively trifling.

The great crow blackbird is more than sixteen inches long, and twenty-two in extent. The bill, from the angle of the mouth, is one inch and three quarters, and its colour, like that of the feet, is black; the roof of the mouth is furnished with a slight osseous carina; the irides are pale yellow. The general appearance of the bird is black; the whole head and neck having bluish purple reflections; the interscapular region, breast, belly, sides, and smaller wing-coverts, are glossy steel blue; the back, rump, and middling wing-coverts, are glossed with copper green; the vent, inferior tail-coverts, and thighs, are plain black. The undescribed parts of the wings are deep black, slightly glossed with green, as well as the tail, which is cuneiform, capable of assuming a boat-shaped appearance, and measures nearly eight inches in length from its insertion, surpassing the tip of the wings by five inches.

The female is considerably shorter, measuring only twelve and a half inches in length, and seventeen inches and a half in extent. The bill, from the angle of the mouth, is one inch and a half long, and, with the feet, is black; the irides are of a still paler yellow than those of the male. The head and neck above are light brown, gradually passing into dusky towards the back, which,

with the scapulars and lesser wing-coverts, has slight greenish reflections; a whitish line passes from the nostrils over the eye, to the origin of the neck. The chin, throat, and breast, are dull whitish; the anterior part of the breast is slightly tinged with brownish; the flanks are brownish; the belly brownish white; and the vent and inferior tail-coverts are blackish brown, each feather being margined with pale. The remaining parts are of a dull brownish black, slightly glossed with greenish; the secondaries, tail-coverts, and tail feathers, having a slight banded appearance, which is equally observable in the male.

The young at first resemble the female, but have the irides brown, and the males gradually acquire the brilliant plumage of the adult.

The great and common crow blackbirds are both alike distinguished by the very remarkable boat-like form of the tail, but the great difference of size, appearance of the females, length of the tail, prominence of the osseus carina, and brilliancy of colouring, most obviously prove them to be altogether specifically distinct.

The great crow blackbird inhabits the southern part of the Union, where it is called jackdaw; Georgia and Florida appear to be its favourite residence. The disposition of this species is extremely social, and they frequently mingle with the common crow blackbird; vast flocks are seen among the sea islands and neighbouring marshes on the main land, where they feed at low water, on the oyster beds and sand flats.

The chuck of our species is shriller than that of the common crow blackbird, and it has other notes which resemble the noise made by a watchman's rattle; their song is only heard in the spring, and though the concert they make is somewhat melancholy, it is not altogether disagreeable. Their nests are built in company, on reeds and bushes, in the neighbourhood of marshes and ponds; they lay about five eggs, which are whitish, spotted with dark brown.

Mr Ord mentions in his paper, that the first specimens

he saw of this bird, were obtained on the 22d of January at Ossabaw Island, when but a few males were seen scattered over the cotton plantations. Advancing towards the south, they became more numerous; and in the early part of February, the males, unaccompanied by females, were common near the mouth of the river St Juan in Florida. A few days after, the females appeared, and associated by themselves on the borders of fresh water ponds; they were very gentle, and allowed themselves to be approached within a few feet, without becoming alarmed. Flocks composed of both sexes were seen about the middle of March.

About the latter end of November, they leave even the warm region of Florida, to seek winter quarters farther south, probably in the West Indies. Previous to their departure, they assemble in very large flocks, and detachments are seen every morning moving southward, flying at a great height. The males appear to migrate later than the females, as not more than one female (easily distinguishable, even in the higher regions of the air, by its much smaller size) is observed for a hundred males, in the last flocks.

The great crow blackbird is also very numerous in the West Indies, Mexico, and Louisiana; but it does not frequent the Northern, or even the Middle States, like the common crow blackbird. Our opinion, that the *Corvus Mexicanus* of authors is the male of this species, and their *Corvus zanoë* the female, is corroborated by the male and female great crow blackbird being seen in separate flocks.

10. *QUISCALUS VERSICOLOR*, VIEILL.

FEMALE COMMON CROW-BLACKBIRD, BONAPARTE.

BONAPARTE, PLATE V. FIG. I.

THE specific name of this bird (*quiscala*) has been changed, in consequence of its having been applied to the genus: we have substituted the name given by Vieillot, which is admirably appropriate. The English

name employed by Wilson being now rendered inadmissible by the generic change, we have thought proper to adopt a local appellation.

The female common crow blackbird is eleven inches in length, and sixteen and a half in extent. The bill is nearly an inch and a half long, and, as well as the feet, black; the irides are yellowish white; the whole head, neck, and upper part of the breast, are blackish, with steel blue, green and violet reflections, which are not so vivid as in the male. The general colour of the body, wings, and tail, is deep sooty brown; the feathers of the back are margined with coppery and purplish; the rump, tail-coverts, and wing-coverts are glossed with purplish; the lower part of the breast and flanks have a coppery reflection; the inferior tail-coverts are obscurely glossed with violet. The tail is cuneiform, but slightly concave in flight, and is five inches long, extending two and a half inches beyond the tip of the wings; the feathers are glossed with very obscure greenish. In the male, the tail is also cuneiform, and greatly concave, exhibiting a singular boat-shaped appearance, as in the preceding species, and even more remarkably so, according to Mr Ord, which induced him to change the name.

We shall not attempt to make any additions to the almost complete, and very excellent history of this species, given by Wilson: but as the four species of *quiscalus* are liable to be confounded, we shall proceed to give a few comparative observations, that the student may be enabled to distinguish them from each other.

Amongst other remarkable traits, the *Quiscalus ferrugineus* is at once known in all its various states, by its even tail, and comparatively smaller bill, which somewhat resembles that of a thrush. In addition to the characters drawn from its dimensions, the *Quiscalus versicolor* can always be distinguished from its congeners, by the slight difference in size and colour between the sexes; while, in the other species, the males and females are remarkably dissimilar: the mouth of this species is, moreover, armed with a prominent osseous carina, a

quarter of an inch long, which, in the others, is much smaller. That the *Quiscalus major*, and *Quiscalus baritus* should have been confounded together, is not a little surprising, as the former is sixteen inches long, the tail being eight inches, and extending five inches beyond the tip of the wings; whilst the latter is only ten inches, the tail much less cuneiform, four inches and a half long, and extending but two inches beyond the tip of the wings; the osseous carina is similar in these two species, and the markings of the females are much alike. From this statement, it is apparent, that the females of the largest and smallest crow blackbirds correspond in the disposition of their colours; a parity that does not exist in the intermediate species. In comparative size, however, they differ considerably: the female of the *baritus*, though smaller, as we have already stated, is, in proportion to its mate, considerably larger than that of the other, being only half an inch, whilst the female of the *major* is nearly four inches, smaller.

These birds, as we have had occasion personally to observe, like most of the feathered tribes, are subject to become either wholly or partially albinos. From this circumstance, numerous errors have been introduced in the pages of ornithological works.

GENUS VI.—*GARRULUS*, VIEILL.

11. *GARRULUS STELLERI*, LATHAM.—STELLER'S JAY, BONAP.

BONAPARTE, PLATE XIII. FIG. I.

To the enlightened liberality and zeal for science of that distinguished collector, Mr Leadbeater, of London, the American public, are indebted for the appearance of the first figure ever given of this handsome jay. Trusting his precious specimens twice to the mercy of the waves, he confided to us this, together with several other still more rare and valuable North American birds, which no consideration would have

induced him to part with entirely, to have them drawn, engraved, and published on this side of the Atlantic. It is the frequent exercise of similar disinterestedness in the promotion of scientific objects, that has procured for Mr Leadbeater the distinction with which he is daily honoured by learned bodies and individuals.

The Steller's jay is one of those obsolete species alluded to in the preface to this volume. It is mentioned by Pallas as having been shot by Steller, when Behring's crew landed upon the coast of America. It was first described by Latham from a specimen in Sir Joseph Banks's collection from Nootka Sound, and on his authority has been admitted into all subsequent compilations. The species is indeed too well characterized to be doubted, and appears moreover to have been known to Temminck, as it is cited by him as a true jay in his *Analysis of a General System*. Nevertheless, adhering strictly to our plan of not admitting into the Ornithology of the United States any but such as we had personally examined, we did not include this species either in our Catalogue, or Synopsis, of the birds of this country; and it is but recently that Mr Leadbeater's specimen has enabled us to add it to our list.

In elevating our subgenus *Garrulus* to the rank of a genus, we merely conform to the dictates of nature; in this instance coinciding with Temminck, whose intention it is, as he informs us, to include in it the jays and magpies, leaving the name of *Corvus* for those species which are distinguished by their black plumage, and short and even tails. These birds are on every account well worthy of this distinction, and we cheerfully adopt an arrangement which we deem consonant with nature: but we cannot agree to the change of termination (*Garrula*) which he has attempted to introduce, under the pretence that his genus is more extensive than the genus *Garrulus* of former authors. That genus was, in fact, formed by Brisson, and afterwards by Linné, united with *Corvus*. This latter genus of Linné certainly contained within itself the constituents of several

very natural genera; but the additions made to it by Gmelin and Latham rendered it an utter chaos, where every new species with a stout bill took its place, in defiance of the genuine characters. Under such circumstances the task of the ornithologist, who professed to be guided by philosophical principles was, doubtless, not merely to subdivide, but to make an entire reformation. Illiger, with his usual judgment, perceived the evil, and attempted its remedy; but his genus was still too extensive, and, besides, was not natural, as it included the wax-wings, a very distinct genus, that had always been forced into others. The only advantage it possessed over that of Latham was, that all the species it comprised exhibited its artificial characters. As restricted by Brisson, Vieillot, and lately adopted by Temminck, by whom it was previously much limited, it is perfectly natural; though we cannot help remarking that some even of the eighteen species enumerated by the latter in his article on the generalities of the crows, in the *Planches Coloriées*, may again be separated, such as *Corvus Columbianus*, Wils., which ought, perhaps, to constitute a genus by itself. Vieillot, and other recent writers on ornithology, have long since adopted the genus *Garrulus* as distinct even from *Pica*, though we prefer retaining the latter merely as a subgenus of *Garrulus*, since it is absolutely impossible to draw the line of separation between them without resorting to minute and complicated distinctions.

The jays and magpies, in fact, require to be distinguished from the crows, as a genus, on account of their form, colour, habits, and even their osseous structure. Their upper mandible, somewhat inflected at tip, and the navicular shape of the lower, afford obvious characteristic marks. Their wings, too, are rather short, and do not reach by a considerable space to the tip of the tail, which is long, and more or less rounded, sometimes greatly wedge-shaped. On the contrary, the crows have long wings, reaching almost or quite to the extremity of the tail, which is short, and even at tip. The identity in the shape of the wings and tail, and

even the colours of their plumage, which agree in all the species, and in different climates, render the crows a very natural and well marked group. The black plumage and offensive odour, which cause them to be viewed every where with disgust, and even somewhat of superstitious dread, are far from being characteristics of the neat and elegant jays.

The true *corvi* are distinguished by the following traits: Bill, very stout; feet, very strong; general form, robust; flight, highly sustained, straight, or circular, as if performing evolutions in the air. They live, travel, and breed in large bands; affect wide plains and cultivated grounds, only retiring to the adjacent forests to roost, and are always seen on high and naked trees, but never on thickets, shrubs, or bushes. Their voice is deep and hoarse. They are more or less fond of cattle, some species preying on the vermin that infest them. Though devouring all kinds of food, yet their propensity is decidedly carnivorous. Their black, unvaried colours, are remarkably opposed to the bright and cheerful vesture of the jays, whose plumage is of a much looser texture, the feathers being longer and much more downy.

The jays are again more particularly distinguished from the magpies by their head-feathers being long and silky, and always erectile, (especially when the bird is excited or angry) even when they are not decidedly crested, as is the case in many species. Their colours are also gayer, and more brilliant, with more or less of blue. The species of both these sections are garrulous, noisy, and inquisitive. Together with the crows, they are eminently distinguished by their stout, cultrate bill, generally covered at base with setaceous, incumbent, porrect feathers, hiding the nostrils. The female is similar to the male in appearance, and the young differ but little, and only during the first year, from the adult. They are very shy, suspicious, possessed of an acute sense of smelling, and evince great sagacity in avoiding snares. They are omnivorous in the fullest extent of the word, feeding on grains, insects, berries, and even

+ So are the Magpies.

flesh and eggs. When they have caught a small bird, which they can only do when feeble and sickly, or ensnared, they place it under their feet, and with their bill tear it to pieces, swallowing each piece separately. Nevertheless, they give the preference to grains or fruits. The northern species are wary and provident, collecting stores of food for the winter. They are very petulant; their motions quick and abrupt, and their sensations lively. When alarmed by the appearance of a dog, fox, or other living or dead object, they rally together by a peculiar note as if they would impose upon it by their numbers and disagreeable noise. When on the ground, they display great activity; or if on trees, they are continually leaping about from branch to branch, and hardly ever alight on dead or naked ones. They are generally met with in forests, seldom in open plains; their favourite resort is among the closest and thickest woods. Less suspicious and cunning than the crows, or even the magpies, they may be decoyed into snares and taken in great numbers, especially by imitating the voice of one of their own species in difficulties, or by forcing a captive individual to cry. They live in families, or by pairs, the greater portion of the year; and though considerable numbers may be seen travelling at once, they always keep at intervals from each other, and never in close flocks like the crows. They are easily tamed, and are susceptible of attachment; learn readily to articulate words, and imitate the cries of different animals. They have a troublesome propensity to purloin and conceal small objects not useful to themselves, and as jewels and precious metals are peculiarly apt to attract their notice, they have been the cause, when kept as pets, of serious mischief. Every one is familiar with the story of the thieving magpie, become so celebrated by the music of Rossini, and which is founded on fact.

The jays breed in woods, forests, orchards, preferring old and very shaded trees, placing their nests in the centre against the body, or at the bifurcation of large limbs. The nest is built without art, and is formed of

original not used +

twigs and roots, whose capillary fibres serve as a lining inside; the eggs are from four to six. The old ones keep the food for their young in the œsophagus, whence they can bring it up when wanted. The young are born naked, and remain for a long period in the nest, being still fed for some time by the parents after they are full fledged.

Unlike the melancholy crows, which step gravely, lifting one foot after the other, the jays and magpies move about nimbly by hopping, and are constantly in motion while on the ground. Their flight is moreover neither protracted nor elevated, but merely from tree to tree, and from branch to branch, shooting straight forward at once when wishing to go any distance, now and then flapping their wings, and hovering as they descend, when about to alight. It is quite the reverse with the crows; and all these characters are of the greatest importance in the establishment of natural groups.

While the true *Corvi*, by their stout and almost hooked bill, and the carnivorous habits of some species, exhibit on the one hand the gradual passage from the vultures, and on the other by the slender-billed species, the transition to the crow blackbirds and troopials; the affinities of the jays present nice gradations to the genera already dismembered from *Corvus*, such as *Nucifraga*, *Pyrrhocorax*, *Bombycilla*, and at the same time form other links with *Lanius*, and even with *Turdus* and *Acridotheres*.

There is one remarkable analogy of the jays which we cannot pass over in silence. It is, however, singular, and hitherto unsuspected, with the titmouse (*Parus*.) Form, habits, even the peculiar looseness of texture of the plumage, all are similar in these genera, hitherto estimated so widely different. This resemblance extends even to colour in some species: it might even be asked, what else, in fact, is the Canada jay than a large titmouse; and what the crested titmouse, but a small jay? The blue colour of the typical jays predominates, moreover, in other *Pari*, and the *P. caudatus* of Europe

has also the long, cuneiform tail of some, no less than *P. bicolor* their crest.

The genus *Garrulus* has an extensive geographical range, being found in all latitudes and longitudes. It is composed of about thirty species, nearly half of which may more properly be called jays: of the latter, there are but two in Europe, and though we have doubled the number given by Wilson, we think that others will yet be discovered in the wild western tracts of this continent. There exist imperfect accounts of two or three species inhabiting the countries near the Rocky Mountains, one of which is probably that here described, and others may prove to be some of the newly discovered Mexican species, one of which, the *Garrula gubernatrix* of Temminck, is so proudly beautiful.

The Steller's jay is more than twelve inches long. The bill measures one inch and a half, is entire, and totally black; the bristly feathers over the nostrils are also wholly black. The feathers of the head are greatly elongated, forming a large crest, more than two and a half inches long, and, with the whole head and neck, entirely deep brownish black, grayish on the throat; the feathers on each side of the front are slightly tipped with bright and light azure, thus forming a dozen or more of small dots on that part: on the neck, the brown becomes lighter, and extends down on the back, occupying the scapulars as well as the inner wing-coverts; on the middle of the back the brown becomes somewhat tinged with bluish, and blends gradually into a fine bright blue colour, covering the rump and the upper tail-coverts: all the inferior parts from the neck, at the lower part of which the dusky colour passes into blue, are blue, somewhat tinged with gray, which is the general colour of the base of the plumage. The wings are nearly six inches in length; the fourth, fifth, and sixth primaries being subequal and longest. All the outer wing-coverts and the secondaries are blue, faintly crossed with obsolete blackish lines; the under wing-coverts are dusky; the primaries are dark dusky, and, with the exception of the outer ones, at tip are edged

or tinged with blue ; on the inner vane, the secondaries are blackish, but on the outer, they are deep glossy blue. The tail is five inches and a half long, and but slightly rounded ; it is of a deep glossy azure blue, more brilliant on the outer vanes of the feathers, the inner being slightly tinged with dusky ; an indication of obliterated, transverse blackish lines, may be perceived in certain lights on almost all the tail-feathers in our specimen, and we have no doubt that on others they are more marked ; the shafts both of the quills and tail-feathers are black. The tarsus is an inch and three quarters long ; the femorals, blackish, slightly mixed with bluish at the joint ; the feet and nails are entirely black.

This description is taken from an individual which was killed near the Oregon, or Columbia river. Another specimen, from Mexico, also in Mr Leadbeater's collection, exhibited greater brilliancy of plumage, being principally distinguished, as nearly as our recollection serves, by the black colour of the anterior parts being less extended, and by having more of silvery bluish (indicated in our bird) on the front, extending to the throat and eyebrows, and somewhat round the head. This, without any hesitation, we considered as a more perfect specimen, a mere variety of age, and would have had our figure made from it : but having been informed that an English ornithologist (his name and that of the species were not mentioned, or, if they were, we have forgotten them) considered it as a new Mexican species, we have preferred, notwithstanding our conviction, strictly copying the less brilliant specimen procured in the United States territory, to the more beautiful one from Mexico. The appearance of *Garrulus coronatus* of Mr Swainson, in the Synopsis before quoted, reminded us of the circumstance, and we have therefore quoted it with doubt. Our two birds agree perfectly in markings and dimensions. Of the habits of the Steller's jay, little or nothing is known. It inhabits the western territory of the United States, beyond the Rocky Mountains, extending along the western coasts of North America, at least from California to Nootka

Sound; is common on the Oregon, and found also in Mexico, on the table land, and in Central America.

It is a curious fact in ornithological geography, that of the four jays now admitted into the Fauna of the United States, while the common blue jay, the only eastern representative of the genus, spreads widely throughout the continent, the three others should be confined in their range each to a particular section of country. Thus, the Canada jay is the northern, the Florida jay is the southern, and the present the western representative of the genus. It is probable that another species at least, our *Garrulus ultramarinus*, from Mexico, will soon be admitted as the central jay. To the latter bird, Mr Swainson, who had probably not seen my paper describing it, (published more than two years ago in the *Journal of the Academy of Natural Sciences*,) gives the name of *G. sordidus*; at least, judging from his short phrase, and the dimensions and locality, they are the same.

12. *GARRULUS FLORIDANUS*, BONAPARTE. — FLORIDA JAY.

BONAPARTE, PLATE XIV. FIG. I.

A SINGLE glance at this fine bird, and at the preceding, or Steller's jay, would suffice, better than the longest description, to shew the error committed by Latham, in quoting, in his recent work, (*General History of Birds*,) the name of this species among the synonyms of that dedicated to Steller. In fact, the large crest of that species, (of which the present is altogether destitute,) and its black head; the light brown back, and bluish collar of this — but it is needless to carry the comparison between them any farther; they are too dissimilar to suffer it, and we shall reserve pointing out differences, until required, by closely related species, of which more striking examples will not long be wanting.

Mistakes of this kind are perhaps unavoidable in a compilation of such extent as the work we have men-

tioned, and if they proceeded from a laudable desire of excluding nominal species, evinced throughout, we should refrain from censure; but when, on the contrary, we find in the same work such repeated instances of an inconsiderate multiplication of species, they cannot be too severely condemned.

Vieillot, in the case of this bird, has fallen into the contrary, and much more common, error, of making two species out of it; one from personal observation, and the other by compilation. This mistake has already been corrected by Mr Ord, in a valuable paper which he drew up on his return from Florida, where he enjoyed the advantage of studying this species in its native haunts.

“When we first entered East Florida,” says Mr Ord, “which was in the beginning of February, we saw none of these birds; and the first that we noticed were in the vicinity of St Augustine, on the 13th of the above mentioned month. We afterwards observed them daily in the thickets near the mouth of the St Juan. Hence we conjectured that the species is partially migratory. Their voice is not so agreeable as that of the *Garrulus cristatus*, or crested blue jay of the United States; they are quarrelsome, active, and noisy; and construct their nests in thickets. Their eggs I have not seen.” “The blue jay, which is so conspicuous an ornament to the groves and forests of the United States, is also common in Florida. This beautiful and sprightly bird we observed daily, in company with the mocking-bird and the cardinal grosbeak, around the rude habitations of the disheartened inhabitants, as if willing to console them amid those privations which the frequent Indian wars, and the various revolutions which their province has experienced, have compelled them to bear.” The Florida jay, however, is a resident in that country, or only removes from section to section. It is not confined to Florida, where it was first noticed by Bartram, being found also in Louisiana, and in the west extends northward to Kentucky; but along the Atlantic, not so far. In East Florida it is more abundant, being found at all

seasons in low thick covers, clumps, or bushes. They are most easily discovered in the morning about sun-rise, on the tops of young live oaks, in the close thickets of which they are found in numbers. Their notes are greatly varied, and in sound have much resemblance to those of the thrush and the blue jay, partaking a little of both. Later in the day it is more difficult to find them, as they are more silent, and not so much on the tree tops as among the bushes, which are too thickly interwoven with briars and saw-palmettos to be traversed; and unless the birds are killed on the spot, which they seldom are when struck with fine shot, it is next to impossible to come at them in such situations. This species, like its relatives, is omnivorous, but, being inferior in strength, does not attack large animals. The stomachs of our specimens contained small fragments of shells, sand, and half-digested seeds.

The blue jays, though also found in the same localities, are not so numerous; they keep more in the woods, and their note is louder.

The Florida jay is eleven and a half inches long, and nearly fourteen in extent; the bill is one inch and a quarter long, hardly notched, and of a black colour, lighter at tip; the incumbent setaceous feathers of the base are grayish blue, mixed with a few blackish bristles; the irides are hazel brown; the head and neck above, and on the sides, together with the wings and tail, are bright azure; the front, and the line over the eye, bluish white; the lores and cheeks of a duller blue, somewhat mixed with black; the back is yellowish brown, somewhat mixed with blue on the rump, the upper tail-coverts being bright azure; the inner vanes and tips of the quails are dusky, their shafts, as well as those of the tail-feathers, being black. All the lower parts are of a dirty pale yellowish gray, more intense on the belly, and paler on the throat, which is faintly streaked with cinereous, owing to the base of the plumage appearing from underneath, its feathers having blackish, bristly shafts, some of them without webs. From the cheeks and sides of the neck, the blue colour

passes down along the breast, and forms a somewhat obscure collar; the under wing and under tail-coverts are strongly tinged with blue, which colour is also slightly apparent on the femorals; the inferior surface of the wings and tail is dark silvery gray; the base of the plumage is plumbeous ash, blackish on the head; the wings are four and a half inches long, and reach, when closed, hardly beyond the coverts of the tail, which is five and a half inches long, extending beyond the wings three and a half; the spurious feather is extremely short; the first primary, (often mistaken for the second,) is as short as the secondaries; the five succeeding are subequal, the third and fourth being rather the longest. The tail is somewhat wedge-shaped, the outer feather being half an inch shorter than the next, and one inch and a half shorter than the middle one. The tarsus is an inch and a quarter long, and black, as well as the toes and nails.

The female is perfectly similar to the male, being but a trifle less in size, and quite as brilliant in plumage.

Two years since, it fell to our lot to describe, and apply the name of ultramarine jay, (*Garrulus ultramarinus*,) to a species found in Mexico, closely resembling this, and to which Mr Swainson, in his *Synopsis of Mexican Birds*, has lately given the name of *Garrulus sordidus*, his specimen being probably a young one. The principal distinctive characters may be found in its larger dimensions, but especially in the shape of its tail, which is perfectly even, and not in the least cuneiform, as it generally is in the jays. The back, though it is also somewhat intermixed with dusky, is much more blue than in our species, and indeed the whole azure colour is somewhat more brilliant and silky; the bluish collar is wanting, and the under wing, but especially the under tail-coverts, are much less tinged with blue. The wings, moreover, are proportionally larger.

GENUS VII.—*BOMBYCILLA*, VIEILL.13. *BOMBYCILLA GARRULA*, VIEILL.—BOHEMIAN WAXWING.

BONAPARTE, PLATE XVI. FIG. II.

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 on 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 waxwing (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 shews, 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 waxwings, which we place in our family *Sericati*, having no other representative in Europe or North America, are easily recognized 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 waxwings 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 waxwing 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 waxwing 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 described was obtained, together with others, from the northwestern 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 were 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 these elegant birds. They assemble in large flocks, and feed 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 chestnut 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. Tarse, which is three quarters of an inch long, and feet, black.

GENUS VIII.—*HIRUNDO*, LINNÆUS.14. *HIRUNDO FULVA*, VIEILL. — FULVOUS, OR CLIFF SWALLOW.

BONAPARTE, PLATE VII. FIG. I.

WITH the exception of a very imperfect description, little was known relative to this interesting bird, anterior to Long's expedition to the Rocky Mountains. One of the notes annexed to the account of that journey contains an excellent description of this swallow, with a notice of its habits, and remarkable manner of building. Mr de Witt Clinton has recently published a paper on the same subject, accompanied by some observations from Mr Audubon. Combining what these gentlemen have made known with the information previously given by Vieillot and Say, we can present a tolerably complete history of the cliff swallow.

Some doubts having been entertained whether the *Hirundo lunifrons* of the Rocky Mountains be the same species as the *Hirundo fulva* of the western part of New York, I was desirous of deciding the question by comparing the specimens; this I accomplished through the politeness of Dr Dekay of New York, who, with the kindness and liberality distinctive of those who cultivate science for its own sake, sent me the specimen and nest deposited by Mr Clinton in the cabinet of the Lyceum. Thus being possessed of the individuals in question, we are enabled to place their specific identity beyond the reach of future uncertainty.

That Say considered his *Hirundo lunifrons* as a new bird, is entirely attributable to the incorrectness of Vieillot's figure, which is one of those better suited to mislead than to assist the naturalist in his researches. The most striking characteristic of the *Hirundo fulva* is its even tail, yet Vieillot has represented this part as forked. We are, therefore, not surprised that our learned zoologist, who had no opportunity of consulting the

coloured plate, should not have even thought of comparing his bird with that of Vieillot, who probably figured it with a forked tail merely because it was a swallow. The characters of the cliff swallow are so remarkable, and its manner of building is so peculiar, that, when these are accurately delineated, it cannot be mistaken for any other species.

The cliff swallow is five and a half inches long. The bill is black, and the feet dusky; the irides are dark brown. A narrow black line extends over the bill to each eye; the front is pale rufous, and the remaining part of the crown black violaceous; the chin, throat, and cheeks, are dark ferruginous, extending in a narrow band on the hindhead; the upper part of the body is black, glossed with violaceous; the inferior part of the rump, and some of the tail-coverts, are pale ferruginous; the breast is of a pale rufous ash colour, and the remaining under parts are whitish, tinged with brownish ferruginous. The wings and tail are blackish, the small wing-coverts being glossed with violaceous; the inferior wing-coverts are ashy brown: the tail is nearly entire, somewhat shorter than the tips of the wings; the exterior tail-feather is slightly edged with whitish on the inner vane; the wing and tail-feathers have their shafts black above and white beneath.

This description is taken from our finest male; no difference exists between the sexes, and the young, even during early age, can scarcely be distinguished from the parents, except by having the front white instead of rufous. We are informed by Vieillot, that some individuals have all the inferior surface of the body tinged with the same colour as that of the throat; these are probably very old males.

A very singular trait distinguishes the migrations of this bird. While the European, or white variety of the human race, is rapidly spreading over this continent, from its eastern borders to the remotest plains beyond the Mississippi, the cliff swallow advances from the extreme western regions, annually invading a new territory farther to the eastward, and induces us to

conclude, that a few more summers will find it sporting in this immediate vicinity, and familiarly established along the Atlantic shores.

Like all other North American swallows, this species passes the winter in tropical America, whence in the spring it migrates northward, for the purpose of breeding. It appears to be merely a spring passenger in the West Indies, remaining there but a few days, according to Vieillot, who, not seeing any in the United States, and observing some while at sea, in August, in the latitude of Nova Scotia, supposed that they propagated in a still more northern region. As we have not received any account of their inhabiting the well explored countries around Hudson's Bay, we are led to the conclusion, that the western wilds of the United States have hitherto been their summer resort, and that not until recently have they ventured within the domains of civilized man. Be this as it may, they were observed in great numbers, by Major Long's party, near the Rocky Mountains, in the month of July; and a few were also seen on the banks of the Missouri river. Within ten or twelve years, they have become familiar in different localities of Ohio, Kentucky, &c. whence they are extending very rapidly, and have recently appeared in the western part of New York. In order to shew the rapid progress of this little stranger, we quote the following passage from Mr Clinton's interesting paper:—

The fulvous swallow "first made its appearance at Winchell's tavern, on the high road, about five miles south of Whitehall, near Lake Champlain, and erected its nest under the eaves of an outhouse, where it was covered by the projection of a roof. This was in 1817, and in this year there was but one nest; the second year seven; the third twenty-eight; the fourth forty; and in 1822 there were seventy, and the number has since continued to increase.

"It appeared in 1822 at Whitehall, on the 5th of June, and departed on the 25th of July; and these are the usual times of its arrival and disappearance."

This active little bird is, like its congeners, almost continually on the wing, and feeds on flies and other insects, while performing its aerial evolutions. Its note is different from that of other swallows, and may be well imitated by rubbing a moistened cork around in the neck of a bottle. The species arrive in the west from the south early in April, and immediately begin to construct their symmetrical nests, which are perfected by their united and industrious efforts. At the dawn of day they commence their labours, by collecting the necessary mud from the borders of the river or ponds adjacent, and they persevere in their work until near mid-day, when they relinquish it for some hours, and amuse themselves by sporting in the air, pursuing insects, &c. As soon as the nest acquires the requisite firmness, it is completed, and the female begins to deposit her eggs, which are four in number, white, spotted with dusky brown. The nests are extremely friable, and will readily crumble to pieces: they are assembled in communities. In unsettled countries these birds select a sheltered situation, under a projecting ledge of rock; and, in civilized districts, they have already evinced a predilection for the abodes of man, by building against the walls of houses, immediately under the eaves of the roof, though they have not in the least changed their style of architecture. A nest from the latter situation is now before me; it is hemispherical, five inches wide at its truncated place of attachment to the wall, from which it projects six inches, and consists exclusively of a mixture of sand and clay, lined on the inside with straw and dried grass, negligently disposed for the reception of the eggs. The whole external surface is roughened by the projection of the various little pellets of earth which compose its substance. The entrance is near the top, rounded, projecting, and turning downward, so that the nest may be compared to a chemist's retort, flattened on the side applied to the wall, and with the principal part of the neck broken off.

So great is the industry of these interesting little

architects, that this massive and commodious structure is sometimes completed in the course of three days. About the middle of July, some nests found near the Rocky Mountains contained young ones, while in others the process of incubation had not terminated. It is probable that the cliff swallows rear two broods in that region, though in Kentucky and Ohio, agreeably to Mr Audubon, they have but one in the year. During the first few days of August, they assemble in flocks, and, after several attempts to commence their migration, they finally succeed in obtaining a unanimity of purpose, and disappear as suddenly as they came.

GENUS IX.—*MUSCICAPA*, LINNÆUS.

15. *MUSCICAPA SAVANA*, VIEILLOT.

FORK-TAILED FLYCATCHER, BONAPARTE.

BONAPARTE, PLATE I. FIG. I.

THOUGH Brisson, Linné, and Pennant have stated the fork-tailed flycatcher to inhabit this region, as far north as Canada, still the fact seemed more than doubtful, since this bird escaped the researches of Vieillot, and, what is more extraordinary, those of the indefatigable Wilson. It is, therefore, a very gratifying circumstance, that we are able to introduce this fine bird with certainty into the Ornithology of the United States, and to remove all doubt on the subject. The present specimen is a beautiful male, in full plumage; it was shot near Bridgetown, New Jersey, at the extraordinary season of the first week in December, and was presented by Mr J. Woodcraft, of that town, to Mr Titian Peale, who favoured me with the opportunity of examining it.

Brisson published the first account of this bird. That we have rejected the name given by Linné may appear contrary to our principles; but in this instance we certainly have no option, inasmuch as the same name has been very properly retained by Wilson, agreeably to Brisson, for the *Lanius tyrannus* of Linné. Had

Linné himself included them both in the same genus, he would doubtless have retained that specific name for the kingbird, which is unquestionably a *Muscicapa* and not a *Lanius*. As the kingbird is a very abundant species, known to every zoological reader by the name of *Tyrannus*, it is obvious that less inconvenience will be produced by changing the name of an almost unknown species, than would result from altering that of one with which we are so familiar. We have, therefore, adopted Vieillot's specific name of *Savana*, taken by that author from Montbeillard, who, in Buffon's work, thereby endeavoured to commemorate this bird's habit of frequenting inundated savannas. Naturalists who separate *Tyrannus* from *Muscicapa* generically, disagree with respect to the arrangement of this species. For ourselves, we consider the former as a subgenus of *Muscicapa*, including the larger species, among which our fork-tailed flycatcher must be placed.

This species is fourteen inches long, its tail measuring nearly ten; the extent from the tip of the one wing to that of the other is fourteen inches. The bill is somewhat more slender and depressed at base than that of the kingbird, and, as well as the feet, is black. The irides are brown. The upper part of the head, including the cheeks and superior origin of the neck, is velvet black. The feathers of the crown are somewhat slender, elevated, and of a yellow orange colour at base, constituting a fine spot, not visible when they are in a state of repose; the remaining part of the neck above, and the back are grayish ash; the rump is of a much darker grayish ash, and gradually passes into black, which is the colour of the superior tail-coverts; the inferior surface of the body, from the base of the bill, as well as the under wing and under tail-coverts, is pure white. The wings are dusky, the coverts being somewhat lighter at tip and on the exterior side; the first primary is edged with whitish on the exterior web, and is equal in length to the fourth; the second primary is longest; the three outer ones have a very extraordinary and profound sinus, or notch on their inner webs, near the

tip, so as to terminate in a slender process. The tail is very profoundly forked, the two exterior feathers measuring nearly ten inches in perfect individuals, whilst the two succeeding are but five inches long, and the other feathers become gradually and proportionally shorter, until those in the middle are scarcely two inches in length; the tail is, in fact, so deeply divided, that if the two exterior feathers were removed, it would still exhibit a very forked appearance. All the tail feathers are black, the exterior one each side being white on the remarkably narrow outer web, and on the shaft beneath, for nearly three-fourths of its length.

I cannot agree with those who say, that the female is distinguished from the other sex by wanting the orange spot on the head, as I think we may safely conclude, from analogy, that there is hardly any difference between the sexes. The young birds are readily recognized, by being destitute of that spot, as well as by having the head cinereous, instead of black; the colour of the whole upper part of the body is also darker, the tail considerably shorter, and the exterior feathers not so much elongated as those of the adult. It is proper to remark, that the elongated tail-feathers of the full grown bird are sometimes very much worn, in consequence of the rapidity with which it passes through the bushes.

Two coloured figures have been given of the fork-tailed flycatcher, the one by Buffon, which is extremely bad, although the rectilinear form of the tail is correctly represented; the other, by Vieillot, which has the exterior tail-feathers unnaturally curved, and, notwithstanding it is preferable to Buffon's figure, yet it is far from being accurate. This author having been unable to procure a North American specimen, chose nevertheless to introduce the species in his *Natural History of North American Birds*, on the authority of former authors, giving a figure from a South American specimen. The error in representing the exterior tail-feathers curved, doubtless arose from the manner in which the dried skin was packed for transportation. Buffon's

plain figure is a more faithful representation than that given in his coloured engravings.

From the very great rarity of the fork-tailed flycatcher in this region, and the advanced season in which this individual was killed, it is evident that it must have strayed from its native country under the influence of extraordinary circumstances; and we are unable to believe that its wanderings have ever extended as far as Canada, notwithstanding the statements of authors to the contrary. It may be proper to observe, that the difference indicated by Linné and Latham between the variety which they suppose to inhabit Canada, and that of Surinam, appears to have no existence in nature.

Although this bird is so very rare and accidental here, we should be led to suppose it a more regular summer visitant of the Southern States, were it not impossible to believe that so showy a bird could have escaped the observation of travellers: hence we infer, that the fork-tailed flycatcher must be included in the catalogue of those species which are mere fortuitous visitors to the United States. As but a single specimen of this bird has been obtained, I cannot give any account of its manners and habits from personal observation.

The native country of the fork-tailed flycatcher is Guiana, where it is rather common, and is improperly called *veuve* (widow,) from the great length of its tail, in which character only it resembles the African birds of that name.

The habits of the fork-tailed flycatcher resemble those of other species of the same genus. It is a solitary bird, remaining for a long time perched on the limb of a tree, whence it occasionally darts after passing insects; or, flying downwards, it alights on the tufts of herbage which appear above the water, affording it a resting place in the midst of those partially inundated lands, called savannas, beyond the limits of which it is not frequently seen. While on the tuft, this bird moves its tail in a manner similar to that of the wagtails. Besides insects, the fork-tailed flycatcher feeds occa-

sionally on vegetable substances, as, on dissection, the stomach of our specimen was found to be filled with pokeberries, (*Phytolacca decandra*, L.)

Beyond these particulars we have no positive knowledge of the manners of our flycatcher, though Vieillot has recorded a history of some length, taken from D'Azara; but the bird observed by the latter author in Paraguay and Buenos Ayres, though closely allied, appears to be specifically distinct from the one we are describing. Vieillot has since been convinced of this difference, and, in the (French) *New Dictionary of Natural History*, he has separated the more southern species under the name of *Tyrannus violentus*. In colour that bird strongly resembles our *Muscicapa savana*, but it is considerably smaller, and has different habits, being gregarious; whilst the *savana* is a solitary bird.

Another species, for which ours may be readily mistaken, is the *Tyrannus bellulus*, Vieill. which, however, is much larger, with a still longer tail, differing also by having a large black collar extending to each corner of the eye, margining the white throat; and the head of the same bluish gray colour with the other superior parts of the body; the remaining under parts being of the same colour, with a narrow brown line in the middle of each feather; and by having a whitish line on each side of the head behind the eye, extending to the occiput. The *Tyrannus bellulus* is a native of Brazil.

16. *MUSCICAPA FORFICATA*, LATHAM.

SWALLOW-TAILED FLYCATCHER.

BONAPARTE, PLATE II. FIG. I.

THE plate given by Buffon of this rare and beautiful bird conveys but an imperfect idea of its character. That author had the merit of publishing the first account of the species; and the individual he described was received from that part of Louisiana which borders on

Mexico. Neither Latham, Gmelin, nor Vieillot, seem to have had an opportunity of examining this bird, as they have evidently drawn on Buffon for what they have said relative to it. Hence it appears that the swallow-tailed flycatcher has never been obtained from the time of Buffon to the period of Major Long's expedition to the unexplored region it inhabits. The present specimen, which is a fine adult male, was shot by Mr Titian Peale, on the 24th of August, on the Canadian fork of the Arkansaw river.

Although this bird is very different from the fork-tailed flycatcher, yet, on account of the form of the tail, and the similarity of the common name, they are apt to be mistaken for each other, and, when both are immature, some caution is required to avoid referring them to the same species. Notwithstanding this similarity, some authors have placed the fork-tailed flycatcher in their genus *Tyrannus*, and the present bird in *Muscicapa*, whereas, from an inspection of the bills, it will at once be seen, that the latter would be still more properly placed in their genus *Tyrannus*, as the form of its bill is exactly the same with that of the kingbird, the type of the subgenus.

The swallow-tailed flycatcher, when in full plumage, is eleven inches long. The bill and feet are blackish; the irides are brown (red, according to authors.) The upper part of the head and neck is of a light gray; the back and scapulars are dark cinereous, tinged with reddish brown; the rump is of the same colour, but strongly tinged with black, and the superior tail-coverts are deep black; the under part of the body is milk white, the flanks being tinged with red; the inferior tail-coverts are pale rosaceous; the wings are brownish black, the upper coverts and secondaries being margined externally and at tip with dull whitish; the under wing-coverts are whitish rosaceous; the axillary feathers, above and beneath, are of a vivid scarlet colour. The tail is greatly elongated and excessively forked; it is of a deep velvet black colour, each feather having the terminal margin of a dull whitish tint, and the shafts

white at their bases. The three exterior feathers on each side are of a delicate pale rosaceous colour on a considerable part of their length from the base. The external one is five inches and a half long; the second and third gradually decrease in length, but the fourth is disproportionately shorter, and from this feather there is again a gradual decrease to the sixth, which is little more than two inches long.

The female of the swallow-tailed flycatcher is probably very similar to the male, but the colours of the young bird are much less vivid, and the exterior tail-feathers are much shorter than those of the adult.

The swallow-tailed flycatcher is as audacious as the kingbird, attacking with unhesitating intrepidity, and turning the flight of the most powerful of the feathered tribe. Its note consists of a chirping, sounding like *tsch, tsch*, much resembling that of the prairie dog, (*Arctomys ludoviciana*, Ord,) by which it deceived the members of Long's party into a belief that they were approaching one of the villages of this animal.

"A note, like that of the prairie dog, (writes Say,) for a moment induced the belief that a village of the marmot was near, but we were soon undeceived by the appearance of the beautiful *Tyrannus forficatus* in full pursuit of a crow. Not at first view recognizing the bird, the fine elongated tail plumes occasionally diverging in a furcate manner, and again closing together, to give direction to the aerial evolutions of the bird, seemed like extraneous processes of dried grass, or twigs of a tree, adventitiously attached to the tail, and influenced by currents of wind. The feathered warrior flew forward to a tree, whence, at our too near approach, he descended to the earth, at a little distance, continuing at intervals his chirping note. This bird seems to be rather rare in this region; but, as the very powder within the barrels of our guns was wet, we were obliged to content ourselves with only a distant view of it."

The range of the swallow-tailed flycatcher appears to be limited to the trans-Mississippian territories, lying

on the southwestern frontier of the United States, more especially frequenting the scanty forests, which, with many partial, and often total interruptions, extend along the Arkansaw, Canadian, and Platte rivers, where in some districts they do not seem to be very uncommon.

17. *MUSCICAPA VERTICALIS*, BONAPARTE.

ARKANSAW FLYCATCHER.

BONAPARTE, PLATE II. FIG. II.

THIS bird, brought from the Rocky Mountains by Major Long's exploring party, is so closely allied to many imperfectly described species of the extensive genus to which it belongs, that ornithologists, at first sight, may very reasonably doubt its pretensions to rank as a new species. But, notwithstanding any doubt that may be produced by its similarity to others, it is certainly an addition to the already numerous catalogue of flycatchers.

The total length of the Arkansaw flycatcher is eight inches. The bill is similar to that of the crested flycatcher, but is more rounded above, and more abruptly inflected at tip, being of a blackish colour, as well as the feet. The head above, and nucha, are pure pale plumbeous; the crown has a restricted bright orange spot in the middle, invisible when the feathers are at rest; there is a dusky spot between the bill and eyes. The cervix and back are pale plumbeous, tinged with olivaceous, and deepening on the rump almost to blackish, which is the colour of the superior tail-coverts. The chin is whitish; the throat and upper part of the breast are of the same colour as the head, but paler; the remaining under surface, including the inferior wing and tail-coverts, is yellow. The wings are brown, the secondaries being margined exteriorly with whitish; the inner webs of the primaries are whitish towards the base, and near the tips they are narrowed; the first is remarkably so, being almost falciform. The tail is of a deep brown black colour, and very slightly

emarginated; the exterior feather is white on the outer web, the shaft being white on the exterior half, and brown on the interior.

Say first described and named this bird in the second volume of the work above quoted, and he remarks that it is allied to the *Tyrannus griseus* and *Tyrannus sulphuratus* of Vieillot. There are many species for which the Arkansaw flycatcher might more readily be mistaken; of these we may mention the crested flycatcher (*Muscicapa crinita*) so well described by Wilson in his second volume; and particularly the *Muscicapa ferox** of Gmelin, a South American bird, the description of which agrees so well with the species we are now considering that it might be equally applied to either. Our bird differs from the two latter by that striking character, the white exterior web of the outer tail-feather. From the *Crinita* it may more especially be known by the spot on the crown, which does not exist in that species; by not having the tail and wing-feathers rufous in any part; and by having the primaries narrowed at tip, while the *Crinita* has them quite large, entire, and rounded. On a particular comparison with the *Ferox*, we shall perceive that the bill of that bird is flattened, broad, and carinate, whilst in the *Verticalis* it is almost rounded above. The general colour of the latter is, besides, much paler, and the tail is less deeply emarginated.

The Arkansaw flycatcher appears to inhabit all the region extending west of the Missouri river. The specimen we have been describing is a male killed in the beginning of July, on the river Platte, a few days' march from the mountains.

* This bird had been incorrectly considered by Vieillot in his *Natural History of North American Birds*, as identical with the *Muscicapa crinita*, but, afterwards perceiving it to be a distinct species, he named it *Tyrannus ferox*. A specimen is, in the Philadelphia Museum, designated by the fanciful name of ruby-crowned flycatcher, (with this Say compared his *Tyrannus verticalis* before he stated it to be new,) and in the New York Museum three specimens are exhibited with the erroneous title of whiskered flycatcher (*Muscicapa barbata*.)

18. *MUSCICAPA SAYA*, BONAPARTE. — SAY'S FLYCATCHER.

BONAPARTE, PLATE II. FIG. III.

WE now introduce into the Fauna of the United States a species which is either a nondescript, or one that has been improperly named; and I dedicate it to my friend Thomas Say, a naturalist of whom America may justly be proud, and whose talents and knowledge are only equalled by his modesty. The specimen now before us is a male, shot by Mr T. Peale, on the 17th of July, near the Arkansaw river, about twenty miles from the Rocky Mountains.

We cannot be perfectly sure that this flycatcher has not heretofore been noticed, since we find in the books, two short and unessential descriptions which might be supposed to indicate it. One of these is the *Muscicapa obscura* of Latham, (dusky flycatcher of his *Synopsis*,) from the Sandwich Islands; but, besides the difference of the tail-feathers, described as acute in that bird, the locality decides against its identity with ours. The other description is that of a bird from Cayenne, the *Muscicapa obscura* of Vieillot,* given by that author as very distinct from Latham's, although he has applied the same name to it, no doubt inadvertently. This may possibly be our bird; but, even, in this case, the name we have chosen will necessarily be retained, as that of *Obscura* attaches to Latham's species by the right of priority.

This flycatcher strongly resembles the common pewee (*Muscicapa fusca*,) but differs from that familiar bird by the very remarkable form of the bill; by the colour of the plumage, which verges above on cinnamon brown, instead of greenish, and beneath is cinereous and rufous, instead of yellowish ochreous; and by the proportional length of the primary feathers, the first being longer than the sixth in our bird, whereas it is shorter in the pewee.

* *Now. Dict. d'Hist. Nat.* xxi. p. 451.

The total length of Say's flycatcher is seven inches; the bill is long, straight, and remarkably flattened; the upper mandible is blackish, and but very slightly emarginated; the lower mandible is much dilated, and pale horn colour on the disk. The feet are blackish; the irides are brown. The general colour of the whole upper parts is dull cinnamon brown, darker on the head; the plumage at base is of a lead colour. The throat and breast are of the same dull cinnamon tint, gradually passing into pale rufous towards the belly, which is entirely of the latter colour; the under wing-coverts are white, slightly tinged with rufous. The primaries are dusky, tinged with cinnamon, and having brown shafts; they are considerably paler beneath. The first primary is a quarter of an inch shorter than the second, which is nearly as long as the third; the third is longest; the fourth and fifth gradually decrease, and the sixth is decidedly shorter than the first. The tail is hardly emarginated, and of a blackish brown colour.

We know nothing of the habits of this flycatcher, except what has been communicated by Mr T. Peale, from his manuscript notes. The bird had a nest in July, the time when it was obtained; its voice is somewhat different from that of the pewee, and first called attention to its nest, which was built on a tree, and consisted chiefly of moss and clay, with a few blades of dried grass occasionally interwoven. The young birds were, at that season, just ready to fly.

GENUS X.—*CINCLUS*, LINNÆUS.

19. *CINCLUS PALLASII*, TEMMINCK.—PALLAS' DIPPER, BONAP.

BONAPARTE, PLATE XVI. FIG. I.

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 on Wilson's Ornithology*, 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 hesitation 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 peculiarly 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 musquitoes, 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.

It is very clear that author knows nothing of the habits of the Dipper. It

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 Apennines, 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's 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.

GENUS XI. — *MYIOTHERA*, BONAPARTE.

20. *MYIOTHERA OBSOLETA*, BONAPARTE.

ROCKY MOUNTAIN ANTCATCHER.

BONAPARTE, PLATE I. FIG. II.

THIS bird is one of those beings which seem created to puzzle the naturalist, and convince him that nature

will never conform to his systems, however perfect his ingenuity may be capable of devising them. This will become sufficiently apparent, when we consider in what manner different authors would have arranged it.

We cannot positively decide whether Vieillot and his followers would have referred this species to *Myrmothera*, a name they have substituted for *Myiothera*; to their genus *Thryothorus*, which we unite to *Troglodytes*; or to their slender billed section of *Tamnophilus*, rejected by us from that genus, and of which some recent authors have made a genus called *Formicivora*; yet we have very little hesitation in stating our belief, that they would have assigned its place among the species of the latter. According to our classification, it is certainly not a *Tamnophilus*, as we adopt the genus, agreeably to the characters given by Temminck, who, not admitting the genus *Troglodytes*, would undoubtedly have arranged this bird with *Myiothera*, as Illiger would also have done.

The only point, therefore, to be established by us, is, whether this bird is a *Myiothera* or a *Troglodytes*. It is, in fact, a link intermediate to both. After a careful examination of its form, especially the unequal length of the mandibles, the notch of the superior mandible, and the length of the tarsus; and, after a due consideration of the little that is known relative to its habits, we unhesitatingly place it with *Myiothera*, though, in consequence of its having the bill more slender, long, and arcuated, than that of any other species I have seen, it must occupy the last station in the genus, being still more closely allied to *Troglodytes*, than those species whose great affinity to that genus has been pointed out by Cuvier. The figure which our rocky mountain antcatcher resembles most, is Buffon's Pl. Enl. 823, fig. 1, (*Myiothera lineata*.) The colours of our bird are also similar to those of a wren; but this similitude is likewise observed in other *Myiotheræ*.

This bird was brought from the Arkansaw river, in the neighbourhood of the Rocky Mountains, by Major Long's exploring party, and was described by Say

under the name of *Troglodytes obsoleta*, from its close resemblance to the Carolina wren, (*Troglodytes Ludovicianus*), which Wilson considered a *Certhai*, and Vieillot a *Thryothorus*.

As the rocky mountain antcatcher is the first and only species hitherto discovered in North America, we shall make some general observations on the peculiarities of a genus thus introduced into the Fauna of the United States.

Buffon first formed a distinct group of the antcatchers, under the name of *Fourmiliers*, and considered them as allied to his *Brèves*, now forming the genus *Pitta* of Vieillot, they having been previously placed in that of *Turdus*. Lacépède adopted that group as a genus, and applied to it the name of *Myrmecophaga*. Illiger added such species of the genus *Lanius* of Linné and Latham, as are destitute of prominent teeth to the bill, and gave to the genus, thus constituted, the name of *Myiothera*; rejecting Lacépède's designation, as already appropriated to a genus of mammalia.

Cuvier perceived that some of the *Fourmiliers* of Buffon were true thrushes; but he retained the remainder as *Myiotheræ*, among which he also included the *Pittæ*. Vieillot, besides the *Pittæ*, removed some other species, in order to place them in his new genera *Conopophaga* and *Tamnophilus*, giving the name of *Myrmothera* to the remaining species, with the exception of the *Myiothera rex*, for which he formed a distinct genus, with the name of *Grallaria*. We agree with Vieillot, in respect to the latter bird; but, as regards the other species, we prefer the arrangement of Temminck, who has adopted the genus *Myiothera* nearly as constituted by Illiger, including some of the slender-billed *Tamnophili* of Vieillot, of which our *Myiothera obsoleta* would probably be one, as above stated.

The genus thus constituted contains numerous species, which inhabit the hottest parts of the globe; a greater number of them existing in South America, than elsewhere. For the sake of convenience, several sections may be formed in this genus, founded on the

characters of the bill, tail, and tarsus; but as we have only one species, it does not rest with us to make divisions; and we shall merely remark, that our *obsoleta* is referable to the last section, consisting of those whose bills are the most slender, elongated, and arcuated, in company with the *Turdus lineatus* of Gmelin.

The antcatchers may justly be enumerated amongst the benefactors of mankind, as they dwell in regions where the ants are so numerous, large, and voracious, that, without their agency, co-operating with that of the *Myrmecophaga jubata*, and a few other ant-eating quadrupeds, the produce of the soil would inevitably be destroyed in those fertile parts of the globe. The ant-hills of South America are often more than twenty feet in diameter, and many feet in height. These wonderful edifices are thronged with two hundred fold more inhabitants, and are proportionally far more numerous, than the small ones with which we are familiar. Breeding in vast numbers, and multiplying with great celerity and profusion, the increase of these insects would soon enable them to swarm over the greatest extent of country, were not their propagation and diffusion limited by the active exertions of that part of the animal creation, which continually subsist by their destruction.

The antcatchers run rapidly on the ground, alighting but seldom on trees, and then on the lowest branches; they generally associate in small flocks, feed exclusively on insects, and most commonly frequent the large ant-hills before mentioned. Several different species of these birds are often observed to live in perfect harmony on the same mound, which, as it supplies an abundance of food for all, removes one of the causes of discord which is most universally operative throughout animated nature. On the same principle, we might explain the comparative mildness of herbivorous animals, as well as the ferocity and solitary habits of carnivorous, and particularly of rapacious animals, which repulse all others from their society, and forbid even their own kind to approach the limits of their sanguinary domain.

The antcatchers never soar high in the air, nor do they extend their flight to any great distance, without alighting to rest, in consequence of the shortness of their wings and tail, which, in fact, seem to be seldom employed for any other purpose, than to assist them in running along the ground, or in leaping from branch to branch of bushes and low trees,—an exercise in which they display remarkable activity. Some species, like the woodpeckers, climb on the trunks of trees in pursuit of insects; and it would appear, from their restless habits and almost constant motion, that their limited excursions are entirely attributable to the want of more ample provision for flight. The antcatchers are never found in settled districts, where their favourite insects are generally less abundant; but they live in the dense and remote parts of forests, far from the abodes of man and civilization. They also dislike open and wet countries.

The note of the antcatchers is as various as the species are different; but it is always very remarkable and peculiar. Their flesh is oily and disagreeable to the taste; and, when the bird is opened, a very offensive odour is diffused, from the remains of half-digested ants and other insects, contained in the stomach.

The plumage of the antcatchers very probably undergoes considerable changes in colour. The size of the sexes is different, the female being much larger than the male. Such variations may have induced naturalists to consider many as species, that really do not exist, as such, in nature.

The nest of these birds is hemispherical, varying in magnitude, according to the size of the species, composed of dried grass, rudely interwoven; it is fixed to small trees, or attached by each side to a branch, at the distance of two or three feet from the ground. The eggs are nearly round, and three or four in number.

The discovery of any species of this genus in the old world, is quite recent, and it had previously been believed, that the genus was peculiar to South America; and though the existence of ant-destroying birds was suspected in other tropical regions, they were supposed

to be generically distinct from those of the corresponding parts of America, as was known to be the fact, in the case of the ant-eating quadrupeds. This opinion was founded on the admitted axiom, that nature always varies her groups in remote tropical regions having no communication with each other. The reverse, however, is the fact, in the case of the ant-catching birds, as we find perfect analogies between the species residing in those distant parts of the globe, even throughout the different sections into which the genus may be divided.

The rocky mountain antcatcher is six inches long. The bill, measured from the corner of the mouth, is more than one inch in length, being slightly curved almost from the base; it is very slender, being nearly two-eighths of an inch in diameter at the base, and only the sixteenth of an inch in the middle, whence it continues to diminish to the tip; and is of a dark horn colour, paler beneath. The feet are dusky; and the length of the tarsus is seven-eighths of an inch. The irides are dark brown; the whole plumage above is of a dusky-brownish, slightly undulated with pale, tinted with dull ferruginous on the top of the head and superior portions of the back. The sides of the head are dull whitish, with a broad brown line passing through the eye to the commencement of the neck. The chin, throat, and breast, are whitish, each feather being marked by a longitudinal line of light brown. The belly is white; and the flanks are slightly tinged with ferruginous. The primaries are entirely destitute of undulations or spots; the tail-coverts are pale, each with four or five fuscous bands; the inferior tail coverts are white, each being bifasciate with blackish brown. The tail is nearly two inches long, rounded, broadly tipped with ferruginous yellow, and having a narrow black band before the tip; the remaining part of the tail is of the same colour with the wings, and is obsoletely banded, these bands being more distinct on the two middle feathers, which are destitute of the black and yellowish termination; the exterior feather is dusky

at tip, marked by four yellowish-white spots on the exterior, and by two larger ones on the inner web.

The specimen of the rocky mountain antcatcher we are describing, is a male, shot in the month of July, and possibly not adult. As it is the only one brought by Major Long's party, we cannot determine the extent or nature of the variations the species may undergo from age, sex, or season.

The note of this bird is peculiar, resembling the harsh voice of the terns. It inhabits the sterile country bordering on the river Arkansaw, in the neighbourhood of the Rocky Mountains, where it is frequently observed hopping on the ground, or flitting among the branches, and weather-beaten, half-reclining trunks of a species of juniper: when it flies among the crooked limbs of this tree, it spreads its tail considerably, but was never seen to climb. They were generally observed in small associations of five or six individuals, perhaps composing single families.

GENUS XII. — *SYLVIA*, LINNÆUS.

21. *SYLVIA CHRYSOPTERA*, LATHAM.

FEMALE GOLDEN-WINGED WARBLER, PENNANT.

BONAPARTE, PLATE I. FIG. III.

THE female of this pretty little warbler, hitherto unknown to any naturalist, is now described for the first time. For the opportunity, we are indebted to Mr Titian Peale, who shot it on the 24th of May, near Camden, New Jersey; and, with his usual kindness and zeal for natural history, communicated it to us for this work.

This little warbler differs so materially from its mate, as to require a distinct description, in order to be recognized; yet we cannot fail to perceive a kind of family resemblance between the sexes; and, by comparing the two descriptions, our readers will agree with us that they are but one and the same species, in a different

garniture of plumage. The distribution of markings is really similar in both sexes; but in the female the colours are paler, and green prevails on those parts which, in the male, are of a dark slate colour.

The female of the golden-winged warbler is four and a half inches long. The bill is blackish, straight, entire, rounded, and gradually tapering to a sharp point. The feet are brownish ash; the irides, dark brown. The front is golden yellow; the top of the head, bright olive yellow; the back of the head, and superior parts of the neck and body are of a pale plumbeous hue, the feathers being tipped with yellow olive, more particularly on the rump; the superior tail-coverts are pure pale plumbeous. A wide slate coloured stripe passes through the eye from the bill, and dilates on the cheeks; this is margined by a white line above the eye, and by a wider one on each side of the throat. The throat is of a pale slate colour, becoming still paler on the breast. The remaining under parts are whitish, occasionally tinged with yellow, and with slate colour on the flanks. The wings are of the same colour as the back, but somewhat darker, and are crossed by two wide bands of bright yellow, formed by the tips of the first and second rows of wing-coverts. The primaries are dusky, margined on the exterior web with pale, and on the inner broadly with white. The secondaries are broadly margined with yellow olive on the outer web, and with white on the inner web. The tail is nearly even at tip, of a dusky plumbeous colour; the three lateral feathers have a large pure white spot on the inner web.

This last essential character also exists in the male, though Wilson has not mentioned it. As to the manners and habits of the species, he has given us no information, except that it is rare, and remains only a few days in Pennsylvania. He says nothing of the female, and Vieillot never saw it.

We regret that we are unacquainted with the form of its nest, and the peculiarity of its song. We can only state, that during its short stay in Pennsylvania,

it is solitary and silent, gleaning amongst the branches of trees, and creeping much after the manner of the titmouse, with its head frequently downwards, in pursuit of larvæ and insects, which constitute exclusively the food of this species.

Wilson was impressed with the opinion, that the shape of the bill would justify the formation of a distinct subgenus, which would include this bird, the *Sylvia vermivora*, and some other species. In this opinion Cuvier has coincided, by forming his subgenus *Dacnis*, which he places under his extensive genus *Cassicus*, remarking that they form the passage to *Motacilla*. This subgenus we shall adopt, but we differ from Cuvier by arranging it under *Sylvia*; it will then form the transition to the more slender-billed *Icteri*. Temminck and Vieillot have arranged them also under *Sylvia*; the latter author, in the (French) *New Dictionary of Natural History*, gives them the name of pitpits; and it is most probably from want of examination, that he has not considered the present bird as belonging to that section.

22. SYLVIA MARITIMA, BONAP. — FEMALE CAPE MAY WARBLER.

BONAPARTE, PLATE III. FIG. III.

I WAS so fortunate as to obtain this undescribed little warbler in a small wood near Bordentown, New Jersey, on the 14th of May, at which season ornithologists would do well to be on the alert to detect the passenger warblers, whose stay in this vicinity is frequently limited to a very few days.

Judging by the analogical rules of our science, this bird is no other than the female of Wilson's Cape May warbler. Its appearance is so different from the male he described, that the specific identity is not recognized at first sight; but, by carefully comparing the two specimens, a correspondence in the least variable characters may readily be perceived, especially in the remarkable slenderness of the bill, which distinguishes

the Cape May from all other resembling species of North American warblers.

Wilson has given no information relative to the history and habits of this species, having never procured more than a male specimen; and we have equally to regret, that, having obtained but a single female, we are unable to supply the deficiency, even in regard to its song.

The female Cape May warbler is four inches and three quarters long, and more than eight in extent. The bill is slender, delicate, and slightly curved, being black, as well as the feet. The irides are dark brown; the upper part of the head, olive cinereous, each feather having a small blackish spot on the middle. A yellow line extends from the bill over the eye, and is prolonged in an obsolete trace around the auditory region, thence returning to the corner of the mouth. A blackish line passes through the eye, which is circumscribed by a whitish circle; the cheeks are dull cinereous, with very small pale spots; the upper parts of the neck and of the body are olive cinereous, tinged with more cinereous on the neck, and with yellow olive on the rump. The chin is whitish; the throat, breast, and flanks are whitish, slightly tinged with yellowish, each feather having a blackish spot on the middle; the belly is immaculate; the vent and inferior tail-coverts are shaded in the middle of each feather with dusky. The smaller wing-coverts are dull olive green, blackish in the centre; the middling wing-coverts are black, margined exteriorly, and tipped with pure white; the greater wing-coverts are blackish, margined with olive white; the primaries are dusky, finely edged with bright olive green on the exterior web, obsolete on that of the first primary, which is of the same length as the fourth; the second and third are longest, and but little longer than the fourth. The tail is slightly emarginated, the feathers being dusky, edged with bright olive green on the exterior side, and with white on the interior; the two or three exterior feathers on each side have a pure white spot on their inner webs near the tip.

The female Cape May warbler may be very easily mistaken for an imperfect *Sylvia coronata*, of which four or five nominal species have already been made. The striking resemblance it bears to the young, and to the autumnal condition of the plumage in that species, requires a few comparative observations to prevent their being confounded together.

The present bird is smaller than the *coronata*, with a more slender, and rather more elongated bill; it is altogether destitute of the yellow spot on the head, as well as of the yellow on the rump, which is a striking character of the *coronata* in all its states, and gives rise to the English name adopted by Wilson.

The colour of the outer edging of the wing and tail feathers is a very good distinctive mark; in the *maritima* it is olive green, whilst in the *coronata* it is white. The white spot on the inner webs of the exterior tail feathers, is also four times larger in the *coronata* than in the *maritima*.

23. *SYLVIA CELATA*, BONAP. — ORANGE-CROWNED WARBLER.

BONAPARTE, PLATE V. FIG. II.

THIS little bird, discovered, early in May, at Engineer Cantonment, on the Missouri river, was first described and named by Say; the species was not uncommon at that season, and appeared to be on its passage farther north. It is more particularly interesting, inasmuch as it enriches the Fauna of the United States with another species of the small subgenus *Dacnis*, which may be ascertained by inspecting the bill.

The orange-crowned warbler is full five inches long, and seven in extent. The bill is dark horn colour, slender, straight, entire, and tapering to an acute point; the base of the inferior mandible is whitish beneath; the legs are dusky; the irides dark brown. The general plumage above is dull greenish olive, the rump and tail-coverts being bright yellowish olive. The head is very slightly and inconspicuously crested; the feathers of

the crest are orange at base, constituting a spot on the crown, visible only when they are elevated, being tipped with the common colour. The whole bird beneath is dull olive yellow; the inferior tail-coverts are pure yellow. The wings are destitute of spots or bands; the primaries are dark brown, olive green on the exterior margin, which is much paler on the outer ones; the interior margin is whitish; the four outer primaries are subequal; the fifth is but very little shorter. The tail is even, the feathers being dark brown, edged with olive green on the outer, and with white on the inner web.

The orange-crowned warbler resembles several species of indigenous and foreign warblers; and the females of others, such as that of the *Sylvia trichas*, may also be mistaken for it; but it may be distinguished from each of them respectively, by particular characters, which it is not necessary to detail, as the concealed orange spot of the crown is a peculiarity not possessed by either of the allied species. The Nashville warbler (*Sylvia rubricapilla*) of Wilson, seems to be more closely related to the orange-crowned warbler than any other. That bird, also, is evidently a *Dacnis*, and scarcely differs from our species, except in the white belly, the light ash colour of the head and neck, and the deep chestnut colour disposed in small touches on the crown, instead of an uniform orange colour. The only difference observable between the sexes is, that the rump of the male is of a brighter colour, approaching, in old birds, to a pure yellow.

During winter, the orange-crowned warbler is one of the most common birds in the neighbourhood of St Augustin, Florida, almost exclusively frequenting the orange trees. Their manners resemble those of the kindred species, though they have a remarkable habit of constantly inflecting the tail, like the pewee. The note consists of a chuck, and a faint squeak, but little louder than that of a mouse.

24. *SYLVIA PALMARUM*, LATHAM. — PALM WARBLER.

BONAPARTE, PLATE X. FIG. II.

THIS is one of those lively, transient visitants, which, coming in spring from warmer regions, pass through the middle states on their way to still colder and more northern countries, to breed. From the scarcity of the species, its passage has hitherto been unobserved; and it is now, for the first time, introduced as a bird of the United States. Authors who have heretofore made mention of it, represent it as a permanent resident of St Domingo, and other islands of the West Indies, and even describe its nest and habits, as observed there.

In the United States, it is found during winter in Florida, where it is, at that season, one of the most common birds. In the month of November, they are very abundant in the neighbourhood of St Augustine, in East Florida, even in the town, and in other parts of the territory wherever the orange tree is cultivated, being rare elsewhere. They are found in great numbers in the orange groves near Charleston, south Carolina, at the same season, and have also been observed at Key West, and the Tortugas, in the middle of February, and at Key Vacas in the middle of March. Their manners are sprightly, and a jerking of the tail, like the pewee, characterizes them at first sight from a distance. The only note we have heard them utter, is a simple chirp, very much like that of the black and yellow warbler, *Sylvia maculosa*, (*Magnolia* of Wils.) They are fond of keeping among the thick foliage of the orange trees. A few are observed every year in spring, on the borders of the Schuylkill, near Philadelphia, as well as in the central parts of New Jersey, on their passage to the North. They breed in Maine, and other parts of New England, where they are common during summer, and perhaps also in Canada, though probably not extending to the inhospitable

+ Observed a few near Kingston Canada N. in
 the month of May & procured a specimen or two.
 1858. H.

climates of Hudson's Bay, whose natural productions are so well known.

The present bird was shot near Bordentown, on the 17th of April, in the morning. It was a fine adult male, in the gayer plumage of the breeding season, and a description is subjoined.

Length five inches and a quarter; extent more than eight inches; bill, five-eighths of an inch long, very slender, straight, hardly notched, blackish, paler beneath; feet, dusky gray, yellowish inside; irides, dark brown, nearly black; crown, bright chestnut bay; bottom of the plumage lead colour all over, much darker beneath; a well defined superciliar line, and the rudiment of another, on the medial base of the upper mandible, rich yellow: the same colour also encircles the eye; streak through the eyes and cheeks dusky olive, somewhat intermixed with dull chestnut; upper parts olive green, each feather being dusky in the middle; rump and upper tail-coverts yellow olive; all beneath bright yellow; sides of the neck, breast, and flanks, with chestnut streaks; superior wing-coverts blackish, margined and tipped with olive green, and somewhat tinged with chestnut; inferior wing-coverts yellowish; quills dusky, edged exteriorly with green, the outer one with white on the outer side, two exterior with a large white spot on the inner web at tip.

In the plumage here described, it has been mentioned by several authors, under the name of *Sylvia ruficapilla*, and by Latham is called the bloody-side warbler. In that which we are about to describe, it was first made known by Buffon, who adopted the name of *Bimbelé*, given to it in the West Indies, and in this state it is figured by Vieillot, as the *Sylvia palmarum*. The following description is drawn up from a specimen procured in Florida, in winter.

Length five inches; bill half an inch, slender, almost straight, and very slightly notched, blackish, paler beneath; the feet are blackish; irides, very dark brown. The general plumage above, is olive brown, each feather being dusky along the middle: the feathers of

the head are dusky at base, as is the whole plumage; then they are chestnut nearly to the tip, (forming a concealed spot of that colour on the crown,) where they are of the common colour, but somewhat darker; the rump and superior tail-coverts are yellow olive; a well defined yellowish white line passes over the eye, which is encircled with white; the cheeks are dusky, as well as a streak through the eye; the inferior parts are whitish, slightly tinged with yellowish, and with a few blackish streaks on each side of the throat, and on the breast and flanks; the belly is immaculate, and more richly tinged with yellow, the inferior tail-coverts being pure yellow; the wing-coverts are of the colour of the feathers of the back, the blackish centre being more extended and deeper; the wings have no bands; the quill feathers are blackish, edged externally with pale yellow olive, becoming whitish towards the tip; the five outer ones are subequal; the tail is even, its feathers are somewhat pointed, edged externally with yellow olive, internally with whitish, the outer one also externally whitish; the two outer ones with a large pure white spot on their inner vane at tip; the third and fourth, each side, with an inner white terminal margin.

In this plumage, this bird resembles so nearly *Sylvia coronata* in its most humble dress, that it is distinguishable only on a close examination. However, the bill is longer, and more slender, the crown spot chestnut instead of yellow, the feathers being destitute of the white which is observable in the other, by separating the feathers; the rump is olive yellow, not pure yellow, and that colour extending on the tail-coverts, which it does not in *Sylvia coronata*. The under parts tinged with yellow, and especially the pure yellow tail-coverts, which are pure white in *S. coronata*, will sufficiently distinguish them.

It is a remarkable circumstance, that there is no obvious difference to be observed between the plumage of the sexes, notwithstanding the statements of authors to the contrary. This is the case, however, in *S.*

coronata, and in almost all the warblers that change periodically from a dull to a bright plumage; and, in fact, in most birds in which this change takes place.

According to Buffon and Vieillot, this bird is a permanent resident in the West Indies, where, as they state, the name is sometimes applied to it of *Fausse Linotte*. We, however, can perceive scarcely any resemblance, except in its dull state of plumage, to a similar state of the red-poll finch. The name of *Bim-belé*, by which it is known among the negroes of those countries, is derived from the recollection of an African bird, to which, probably, the resemblance is not more evident. Unfortunately, this propensity of limited minds to refer new objects, however distinct, to those with which they are acquainted, seems to have prevailed throughout the world, and is found exemplified no where more absurdly than in the Anglo-American names of plants and animals.

The food of this little warbler consists chiefly of fruits and small seeds. Its song is limited to five or six notes; but though neither brilliant nor varied, it is highly agreeable, the tones being full, soft, and mellow. While other birds of its kind build in thickets and humble situations, this proud little creature is said always to select the very lofty tree from which it takes its name, the palmist, (a species of palm,) and to place its nest in the top, in the sort of hive formed at the base or insertion of the peduncle which sustains the clusters of fruit.

Such are the facts we have gathered from authors; but as the singular description of the nest coincides exactly with the manner of building of the *Tanagra dominica*, and as, moreover, the palm warbler appears not to be known in its gayer vesture in the West Indies, we cannot easily believe that it breeds elsewhere than where we have stated; that is, in the temperate, and even colder regions of America, and that what has been mistaken for its nest, in reality belongs to the above named, or some other bird.

The first accounts of this species were given, as we

have already stated, by Buffon, and from him subsequent writers appear to have copied what they relate of it. The bird which he described must have been a very young specimen, as its colours are very dull, much more so than the one figured and described by Vieillot, who supposes, though erroneously, Buffon's specimen to have been a female. Even Vieillot's, which is certainly our species in its winter dress, is much duller in colour than those we received from Florida; and these again are far less brilliant than ours, as it appears for a few days in the spring in Pennsylvania and New Jersey, and is found throughout summer in Maine; thus exhibiting the several gradations of change which the plumage undergoes.

Naturalists cannot be too circumspect in receiving reports even from the most respectable sources, their own senses affording the only authentic testimony to be relied on. From information derived from Mr T. Peale, who had no opportunity for making comparisons, we erroneously stated, (*supra*, p. 108.) that *Sylvia celata*, Say, was one of the most common birds in Florida during winter, keeping among the orange trees, &c. All this statement had reference to the present species; and as soon as the specimens brought by Mr Peale as *Sylvia celata*, were shewn to us, the error was immediately perceived. We therefore hasten to correct this mistake, which would be otherwise of more consequence, inasmuch as no one else could, for a long time, detect it. This species resembles, it is true, *S. celata*, (whose range must remain limited to the Rocky Mountains,) and perhaps still more *S. rubricapilla*, Wilson, but it is not of the same subgenus, *Dacnis*, and it may readily be known by the white spots of the tail feathers.

When the genus *Sylvia*, containing upwards of two hundred and fifty species, shall have been properly studied, it will be found practicable to divide it into several more sections, subgenera, and even perhaps genera. This bird, along with many other North American species, will constitute a highly natural

group, very distinct from the true *Sylvia*, of which *S. atricapilla* may be considered as the type. We presume that it is the group we have in view, to which Mr Swainson has given the name of *Sylvicola*, in his Synopsis of Mexican birds. Our species is erroneously placed by Buffon among his *Demi-fins*, corresponding to our *Dacnis*, and Wilson's *Worm-eaters*.

25. SYLVIA AZUREA, STEPHENS.

FEMALE CÆRULEAN WARBLER.

BONAPARTE, PLATE XI. FIG. II.

THE merit of having discovered this bird, is entirely due to the Peale family, whose exertions have contributed so largely to extend the limits of natural history. The male, which he has accurately described and figured, was made known to Wilson by the late venerable Charles Wilson Peale, who alone, and unaided, accomplished an enterprise, in the formation of the Philadelphia Museum, that could hardly have been exceeded under the fostering hand of the most powerful government. To the no less zealous researches of Mr Titian Peale, the discovery of the female is recently owing, who moreover evinced his sagacity by determining its affinities, and pointing out its true place in the system. Although it preserves the principal characters of the male, yet the difference is sufficiently marked to deserve especial notice in this work.

The present specimen was procured on the banks of the Schuylkill, near Mantua village, on the 1st of August, 1825. It was very active, skipping about on the branches of an oak, attentively searching the leaves, and crevices of the bark, and at intervals taking its food on the wing, in the manner of the flycatchers. It warbled in an under tone, not very unlike that of the blue-gray flycatcher of Wilson, (*Sylvia cærulea*, L.) a circumstance that would lead to the supposition of its being a male in summer dress; but on dissection it proved to be a female.

The female azure warbler is four and three-quarter inches long, and eight and a quarter in extent.* Bill, blackish above, pale bluish beneath; feet, light blue; irides, very dark brown; head and neck above, and back, rich silky green, brighter on the head, and passing gradually into dull bluish on the rump; line from the bill over the eye, whitish, above which is the indication of a blue-black line widening behind; a dusky streak passes through the eye; cheeks, dusky greenish; beneath, entirely whitish, strongly tinged with yellow on the chin; sides of the neck, breast, flanks, and vent, streaked with dark bluish; the base of the whole plumage is bluish white; inferior tail-coverts, pure white; wings and tail, very similar to those of the male, though much less brilliant; smaller wing-coverts, bluish, tipped with green; middling and large wing-coverts, blackish, widely tipped with white, constituting two very apparent bands across the wings, the white slightly tinged with yellowish at tip; spurious wing, blackish; quill-feathers, blackish, edged externally with green, internally and at tip with whitish, the three nearest the body more widely so; the inferior wing-coverts, white; tail, hardly rounded, feathers, dusky slate, slightly tinged with bluish externally, and lined with pure white internally, each with a white spot towards the tip on the inner web. This spot is larger on the outer feathers, and decreases gradually until it becomes inconspicuous on the two middle ones.

The description of the male need not here be repeated, having been already given with sufficient accuracy by Wilson, to whose work the reader is referred. On a comparison of the description, he will find that the chief difference between the sexes consists in the female being green instead of blue, in her wanting the black streaks, and in being tinged with yellow beneath.

We have to regret our inability to add much to

* The dimensions given by Wilson of the male must be rather below the standard, as they are inferior to those of the female, whereas all the specimens we examined were larger, as usual.

Wilson's short and imperfect account of the species. It is by no means more common at this time, than it was when he wrote; which may account for the difficulty of ascertaining the period of its migrations, and for the circumstance of our having never met with the nest, and our want of acquaintance with its habits. We can only add to its history, that it is found in the trans-Mississippian territory; for the *Sylvia bifasciata* of Say, accurately described in Long's first expedition, is no other than the male. We have examined the specimen shot at Engineer Cantonment.

Although the undisputed merit of first making known this species belongs to Wilson, yet the scientific name that he applied to it cannot be retained, inasmuch as it is pre-occupied by the blue-gray warbler, a Linnean species, which Wilson placed in *Muscicapa*, but which we consider a *Sylvia*, notwithstanding that it does in some degree aberrate from the typical species of that genus.* Under such circumstances, we cannot hesitate in adopting the name substituted by Mr Stephens, the continuator of Shaw's compilation.

GENUS XII.—*REGULUS*, VIEILLOT.

26. *REGULUS CRISTATUS*, RAY.

FEMALE GOLDEN-CROWNED GOLD-CREST.

BONAPARTE, PLATE II. FIG. IV.

Two distinct species of gold-crest have been, until lately, considered by naturalists as but one. Are they both inhabitants of this continent? and, if not, which is the American species? These questions cannot be readily answered, since we have nothing better than negative evidence to offer relative to the first. The present female, however, is decisive as to which of them inhabits this country. A slight inspection of this specimen leaves no doubt as to its being the female of

* See my *Observations on the Nomenclature of Wilson's Ornithology*.

the *Regulus cristatus*; and, should the *Regulus ignicapillus*, contrary to our expectations, also prove to be an inhabitant of this country, it will be described along with its mate, in another volume of this work. All the ornithologists state, that the latter is a native of this continent, whilst they take no notice whatever of the *Regulus cristatus*, which, if not the only indigenous, is certainly the more common species. This error seems to have originated with Vieillot, who, considering the two species as but one, probably was not careful in selecting the individual from which his drawing was made; he may, therefore, have chosen an European bird, and unluckily of the other species, as both are found in Europe.

However this may be, his figure is certainly that of the *Ignicapillus*; and, it is equally obvious, that his short description of the female can only apply to the female of the *Cristatus*, which corroborates my opinion. In the (*French*) *New Dictionary of Natural History*, Vieillot distinguishes two varieties of *Regulus cristatus*, and again describes the *Ignicapillus* as the one he saw in America. If this observation could be replied upon, we should admit that both species are inhabitants of this country, although the present, which must be by far the most numerous, is certainly not the *Ignicapillus*.

I agree with Ray, Vieillot, and other authors, and dissent from Linné, Latham, Wilson, and Temminck, respecting the propriety of placing these birds in a separate genus from *Sylvia*, and I have therefore changed the generic name adopted by Wilson. This genus forms a link intermediate to the genera *Sylvia* and *Parus*. It is small both in the number and size of its species, consisting of the two smallest of the European birds, one of which is the subject of this article; an American species, the ruby-crowned goldcrest (*Regulus calendulus*), so well described by Wilson; and a fourth from Asia.

The most obvious characters that distinguish the genus *Regulus* from *Sylvia* are, the bill remarkably

slender throughout, and two small decomposed feathers, directed forwards so as to cover the nostrils.

The habits of the gold-crests resemble, in many respects, those of the titmouse. They delight in cold weather, and then often perch on evergreen trees. They display great activity and agility in search of their food, being almost constantly in motion, hopping from branch to branch, or climbing on trees, frequently with the head downwards, searching the chinks of the bark for their prey. These little birds commonly feed on the smallest insects, which they catch adroitly while on the wing. In the winter, they seek them in their retreats, where they lie torpid or dead. They are also very expert at finding larvæ and all sorts of small worms, of which they are so fond, as to gorge themselves exceedingly. During summer, they occasionally eat little berries and small grains. In autumn, they are fat, and fit for the table, notwithstanding their very diminutive size. The species we are describing, is found in great quantities in the neighbourhood of Nuremberg, in Germany, and sold in the markets of that city, where they command a high price.

Wilson, in his account of the present species, observes, that "the very accurate description given by the Count de Buffon, agrees, in every respect, with ours." Notwithstanding this observation, Buffon's plate and description designate the *Ignicapillus* beyond the possibility of doubt; whilst those of Wilson are intended for the *Cristatus*.

This statement of Wilson, joined to the testimony of Vieillot, would have led us to believe the *Ignicapillus* to be an American bird, if Wilson's description, as well as the inspection of the very individual, and a hundred others, had not confirmed our own belief. It may, however, be considered extraordinary, that so diminutive a being should extend its range so widely, as to participate equally in the bounties of two continents; and that another, so closely allied to it, as to be generally mistaken for a mere variety, should be limited in its wanderings by the boundaries of but one.

That the reader may be assured of the specific difference between these two birds, I add a short comparative description. The *Regulus cristatus* has the bill very feeble, and quite subulate; whilst that of the *Ignicapillus* is also subulate, but is wider at base. The cheeks of the former are pure cinereous, without any white lines, having only a single blackish one through the eye; those of the latter, in addition to the black line through the eye, have a pure white one above, and another below, whence Temminck calls it *Roitelet triple bandeau*. The English name also may be derived from this character, or the bird may rather be called fire-crowned gold-crest, from its Latin name. The crest of the male golden-crowned gold-crest is yellowish orange, that of the fire-crowned is of the most vivid orange; but the most obvious difference is between the females, that of the golden-crowned having a lemon yellow crest, which, in the female of its congener, is orange, like that of the male, only much less vivid. The cheek bands of the female fire-crowned are by no means so obvious, as in its mate; thus the female of this species resembles the male golden-crowned, than which the colours of its crest are not less brilliant. If, to these traits, we add, that the latter is a little larger, we shall complete the enumeration of their differences.

The two species are also somewhat distinguished by their manner of living. The golden-crowned gold-crest associates in small bands, consisting of a whole family, whilst the fire-crowned is only observed in pairs. The latter is more shy, and frequents the tops of the highest trees; whereas, the former is more generally observed amongst low branches and bushes; the voice of the fire-crowned gold-crest is also stronger. Their nests, however, are both of the same admirable construction, having the entrance on the upper part; but the eggs are different in colour, and those of the fire-crowned are fewer in number.

The female golden-crowned gold-crest is three inches and three quarters long, and six in extent. The bill is

black; the feet dusky; the toes and nails wax colour; the irides are dark brown. The frontlet is dull whitish gray, extending in a line over and beyond the eye; above this is a wide black line, confluent on the front, enclosing on the crown a wide longitudinal space of lemon yellow, erectile, slender feathers, with disunited webs; a dusky line passes through the eye, beneath which is a cinereous line, margined below by a narrow dusky one. The cervix and upper part of the body are dull olive green, tinged with yellowish on the rump. The whole inferior surface is whitish; the feathers, like those of the superior surface, being blackish-plumbeous at base. The lesser and middling wing coverts are dusky, margined with olive green, and tipped with whitish; the greater coverts are dusky, the outer ones immaculate, the inner ones have white tips, which form a band on the wings. The inferior wing coverts, and all the under surface of the wings, are more or less whitish gray; the primaries are dusky, with a narrow greenish yellow outer margin, wider at base, and attenuated to the tip, where it is obsolete. The secondaries are dusky; on the outer web, they are whitish near the base, then black, then with a greenish yellow margin, extending nearly to the tip; the margin of the inner web is white; the secondaries nearest to the body are, moreover, whitish on the terminal margin. The tail is emarginated; the feathers are dusky olive green on the margin of the outer web; the inner margins, with the exception of the two middle ones, are whitish.

Until their first moult, the young of both sexes are much like the adult female, except in being destitute of the yellow spot on the crest, which is greenish olive. In this state, however, they are not seen here, as they breed farther to the north, and moult before their arrival in the autumn.

GENUS XIII. — *EMBERIZA*, LINNÆUS.27. *EMBERIZA LAPPONICA*, WILSON. — LAPLAND LONGSPUR.

BONAPARTE, PLATE XIII. FIG. I. MALE; FIG. II. FEMALE.

THIS species, long since known to inhabit the desolate arctic regions of both continents, is now for the first time introduced into the Fauna of the United States; having been omitted both in our Synopsis and Catalogue. It is entitled to be ranked among the birds of this country, from the fact, that a few stragglers out of the numerous bands which descend in winter to comparatively warm latitudes, shew themselves almost every year in the higher unsettled parts of Maine, Michigan, and the northwestern territory. Even larger flocks are known not unfrequently to enter the territory of the Union; where, contrary to what is generally supposed, they are observed to alight on trees, as well as on the ground, notwithstanding their long and straight hind nail. We think it highly probable that some individuals, especially in their youth, visit in cold winters the mountainous districts of the Middle States; as they are well known in Europe to wander or stray to the more temperate climates of Germany, France, England, and especially Switzerland; in all which countries, however, the old birds are never seen. It is not extraordinary that they should never have been observed in the Atlantic States, as they are no where found in maritime countries.

No figure of the adult male in perfect plumage has hitherto, we believe, been given; and no representation at all is to be met with in the more generally accessible books, or collections of plates. Mr Selby has lately published a figure of the young in the *Linnean Transactions*, and it will also, we presume, appear in his splendid work, which yields to none but Naumann's, Wolf's, and Wilson's, in point of accuracy and character. That recorded by him appears to be the first instance of an individual having been found in Britain. The

species is common in the hilly districts of eastern Europe, but is chiefly confined within the Polar circle, though found abundantly in all the northern mountainous districts of Europe and Asia, particularly Siberia and Lapland. It is sometimes known to descend in autumn and winter, and, though very rarely, in spring, either singly and astray, or in immense clouds, into the north and middle of Germany. Great numbers were seen in the neighbourhood of Frankfort on the Main, in the middle of November, 1821. In France, they are restricted to the loftiest and most inaccessible mountains, where they are very rare; so much so, that in those of the Vosges, Gerardin only met with a single specimen after six years' researches, though more frequent in the mountains of Dauphiné. They are common during summer in Arctic America; and are found at Hudson's Bay in winter, not appearing before November: near the Severn river they haunt the cedar trees, upon whose berries they feed exclusively. These birds live in large flocks, and are of so social a disposition, that when separated from their own species, or when in small parties, they always join company with the common lark of Europe; or in America, with some of the different snow birds. They feed chiefly on seeds, especially of the dwarf willows growing in frozen and mountainous countries, but occasionally also on leaves, grass, and insects. They breed on small hillocks, in open marshy fields; the nest is loosely constructed with moss and grasses, lined with a few feathers. The female lays five or six oblong eggs, yellowish rusty, somewhat clouded with brown. The Lapland longspur, like the larks, never sings but suspended aloft in the air, at which time it utters a few agreeable and melodious notes.

As may be seen by the synonyms, this bird has been condemned by nomenclators to fluctuate between different genera. But between *Fringilla* and *Emberiza* it is not difficult to decide, as it possesses all the characters of the latter in an eminent degree, even more so than its near relative the snow bunting, which has

never been misplaced. It has even the palatine knob of *Emberiza*, and much more distinctly marked than in the snow bunting (*Emberiza nivalis*.) It has been erroneously placed in *Fringilla*, merely on account of its bill being somewhat wider and more conic.

Meyer has lately proposed for the two just mentioned nearly allied species, a new genus under the name *Plectrophanes*, (corresponding to the English name we have used.) This we have adopted as a subgenus, and are almost inclined to admit as an independent genus being well characterized both by form and habits. The two species of *Plectrophanes*, to which we apply the name of longspur, together with the buntings, are well distinguished from the finches by their upper mandible, contracted and narrower than the lower, their palatine tubercle, &c. From the typical *Emberizæ* they differ remarkably by the length and straightness of their hind nail, and the form of their wings, which, owing to the first and second primaries being longest, are acute. In the true buntings, the first quill is shorter than the second and third, which are longest. This species, in all its changeable dresses, may at once be known by its straight and very long hind nail, which is twice as long as the toe. The bill is also stronger and longer than in the other species.

The longspurs are strictly Arctic birds, only descending in the most severe and snowy winters to less rigorous climates, and never to the temperate zone, except on the mountains. Hence they may with the greatest propriety be called snow birds. They frequent open countries, plains, and desert regions, never inhabiting forests. They run swiftly, advancing by successive steps like the larks, (which they resemble in habits, as well as in the form of their hind nail,) and not by hopping, like the buntings. The conformation of their wings also gives them superior powers of flight to their allied genera, the buntings and finches. Their moult appears to be double, and, notwithstanding Temminck's and my own statement to the contrary, they differ much in their summer and winter plumage. Owing to this,

the species have been thoughtlessly multiplied; there are in reality but two, the present, and snow bunting of Wilson.

The male Lapland longspur, in full breeding dress, is nearly seven inches long, and twelve and a quarter in extent; the bill is nearly half an inch long, yellow, blackish at the point; the irides are hazel, and the feet dusky; the head is thickly furnished with feathers; the forepart of the neck, throat, and the breast, are glossy black; the hind-head is of a fine reddish rusty; a white line arises from the base of the bill to the eye, behind which it becomes wider, descending on the sides of the neck somewhat round the breast; the belly and vent are white; the flanks posteriorly with long blackish streaks; the back and scapulars are brownish black, the feathers being skirted with rusty; the smaller wing-coverts are blackish, margined with white; the greater coverts margined with rufous, and white at tip, forming two white bands across the wings; the primaries are blackish, edged with white; secondaries emarginated at tip, dusky, edged with rusty; the wings when closed reach to three-fourths the tail; the tail is two and a half inches in length, rather forked, and of a blackish colour; the outer feather on each side with a white cuneiform spot; and the outer web almost entirely white; the second with a white cuneiform spot only. The hind nail is almost an inch long.

The adult female is somewhat smaller than the male. In spring, she has the top of the head, the shoulders, back, and wing-coverts brownish black, the feathers being edged with rusty; the sides of the head, blackish, intermixed with rusty; over the eyebrows a whitish line, as in the male, tinged with rusty; the nucha and rump are brownish rusty, with small black spots; the throat is white, encircled with brown; remaining inferior parts, white; wings and tail as in the other sex.

The male in autumn and winter has the bill brownish yellow; irides and feet, brownish. Head, black, varied with small spots of rusty; auriculars, partly encircled with black feathers; throat, yellowish white, finely

streaked with deep black. Foreneck and breast, black, mixed with grayish white; the line passing through the eye down the breast, yellowish white, becoming darker on the breast; lower surface from the breast, white, spotted on the flanks. Wings, deep blackish chestnut, crossed by two white lines; primaries on the inside at tip, margined with white. Tail, forked, brownish black, all the feathers margined with rusty, the two outer with a white cuneiform spot at tip.

The dress of the female in autumn and winter is as follows: head, and neck above, shoulders, and back, grayish rusty, with blackish spots, the rusty predominating on the neck and rump; the superciliar line, whitish rusty, uniting with a white streak from the angle of the bill; throat, white each side, with a brownish line; upper part of the breast, grayish, spotted with black; inferior parts, white; the flanks with longitudinal blackish marks.

The young of both sexes, during the first year, are of a yellowish brown above, tinged with grayish, streaked and spotted with blackish, the shafts of the feathers being of that colour; the cheeks and auriculars are brownish, the latter mixed with black; a small blackish spot, that spreads as the bird advances in age, is already visible near the opening of the ears; above the eye is a broad streak of pale brownish; the throat is yellowish white, slightly streaked with brown, and with a blackish line on each side coming from the corner of the lower mandible; the lower portion of the neck and breast is of a dingy, reddish white, more intense, and thickly spotted with blackish brown on the breast and flanks; the belly and vent are almost pure whitish. The wing-coverts and secondaries are blackish brown, margined with dark rusty, and tipped with white; the primaries are dusky brown, paler at the edge. The tail-feathers are dusky, and also margined with deep rusty; the outer bearing a reddish white conic spot, which is merely longitudinal, and narrow on the next. The bill is entirely of a dirty yellowish brown; the feet are dusky brown; the hind nail, though still longer than its toe, is much shorter, and not quite so straight.

GENUS XIV.—*FRINGILLA*.23. *FRINGILLA GRAMMACA*. — LARK FINCH.

BONAPARTE, PLATE V. FIG. III.

FOR this very interesting new species, Ornithology is again indebted to Long's expedition, and particularly to Say, who gave it the name we have adopted, and informs us, in his notes, that many of these birds were shot in the month of June, at Bellefontaine, on the Missouri; and others were observed, the following spring, at Engineer Cantonment, near Council Bluffs.

It seems probable that the range of this bird is limited, in a great measure, by the Mississippi on the east. Like the larks, they frequent the prairies, and very seldom, if ever, alight on trees. They sing sweetly, and often continue their notes while on the wing.

The lark finch is six inches and a half long; its bill, a little notched at tip, is of a pale horn colour, with a slight elevation on the roof of the upper mandible. The feet are pale flax colour, tinged with orange; the irides are dark brown. On the top of the head are two dilated lines, blackish on the front, and passing into ferruginous on the crown and hind head, separated from each other by a whitish cinereous line; from the eye to the superior mandible is a black line, which, as well as the eye, is enclosed by a dilated white line, contracted behind the eye; from the angle of the mouth proceeds a black line, which is much dilated into a ferruginous spot on the auricles; below this is a broad white line, margined beneath by a narrow black one, originating at the inferior base of the lower mandible; the chin and throat are pure white. The neck above, the back, and rump, are dull cinereous brown, each feather of the interscapular region having a blackish brown disk; the neck beneath and breast, are dull whitish cinereous; a small blackish brown spot is on the middle of the breast; the belly and vent are white. The wings are dusky brown; the lesser wing-coverts are margined with dull cinereous;

the exterior primary is equal to the third; both are very little shorter than the second, which is longest; the outer webs of the second, third, and fourth primaries, being whitish near their bases, form a distinct spot on the wing. The tail is rounded, the feathers being blackish brown; the two intermediate ones are immaculate, somewhat paler than the others. The adjoining ones have a small white spot at tip, which, on the lateral feathers, increases in size, until, on the exterior one, it occupies half the total length of the feather; whilst its exterior web is white to the base.

The female is very similar to the male, but the colours are duller, and the stripes on the head are not so decided; the auriculars, moreover, are yellowish-brown.

This species has the bill and feet precisely similar to those of Wilson's black-throated bunting, and those other *Fringillæ*, and supposed *Emberizæ*, of which I have constituted the sub-genus *Spiza*, in my *Observations on Wilson's Ornithology*. It cannot be mistaken for any other species, being very peculiar in its markings and manners.

29. *FRINGILLA PSALTRIA*, SAY. — ARKANSAW SISKIN.

BONAPARTE, PLATE VI. FIG. III.

“A VERY pretty little bird,” writes Say, in his precious zoological notes to the journal of Long's expedition, “was frequently seen hopping about in the low trees or bushes, singing sweetly, somewhat in the manner of the American goldfinch, or hempbird, *Fringilla tristis*. The tints, and the distribution of the colours of its plumage, resemble, in a considerable degree, those of the autumnal and less brilliant vesture of that well known species. It may, however, be distinguished, in addition to other differences, by the black tip of its tail feathers, and the white wing spot.”

The Arkansaw siskin inhabits the country near the base of the Rocky Mountains, south of the river Platte,

and probably is also to be found in Mexico. The only specimen brought by the party was shot on the 16th of July, near Boiling Spring Creek.

The Arkansaw siskin is four inches and a quarter long; the bill is yellowish, tipped with blackish; the feet are flesh colour; the irides burnt umber. The top of the head is blue black; the cheeks are dusky olivaceous; the neck above, and half its side, the back, and rump, are olivaceous, more or less intermixed with dusky and yellowish, particularly on the rump; the superior tail-coverts are black, varied with olivaceous; all the under parts, from the very base of the bill to the under tail-coverts, inclusively, are of a pure bright yellow. The wings are brownish black, the smaller wing-coverts being very slightly tinged with blue, and edged with olivaceous; the greater wing-coverts are tipped with white, which forms a narrow band across the wing; the primaries, excepting the exterior one, are slightly edged with white; the third, fourth, fifth, sixth, and seventh, are white towards the base, so as to exhibit a white spot beyond the wing-coverts; the first four primaries are nearly equal in length, the fifth is a quarter of an inch shorter; the secondaries are broadly margined with white exteriorly, towards their tips. The tail is slightly emarginated, the feathers being blackish, slightly edged with dull whitish; the three exterior ones are widely pure white on the middle of their inner webs.

The specimen we have just described is a male, evidently in perfect plumage; the female, and state of imperfect plumage, are unknown; but, without risking any great deviation from the truth, we may state, from analogy, that the young resemble the female, which must be destitute of the black cap, and have the colours less vivid and less pure.

The Arkansaw siskin certainly resembles the American goldfinch in its winter dress; but a still more striking similarity exists in some other birds, such as the European siskin, (*Fringilla spinus*), and the Olivarez, (*Fringilla magellanica*, Vieill.) of South America;

and it is so similar to the European, that it might, with a much greater degree of propriety, be considered as a variety, than those regarded as such by authors. They can, however, be easily distinguished by the following comparative characters: All the under parts of the Arkansaw siskin are bright yellow, whilst the corresponding parts of the European siskin are tinged with greenish, the throat being black, and the belly, vent, and flanks, whitish, spotted longitudinally with black; the margins and spots of the wing and tail-feathers are white in our bird, and yellow in the European siskin; the white spots on the tail of the Arkansaw siskin are confined to the three outer feathers, whilst, in the foreign bird, all the feathers, excepting the two middle ones, are marked with yellow; the bill of our species is also a little shorter, less compressed, and less acuminate; finally, we may notice another trifling difference, which consists in the proportional length of the primaries, the four first being nearly equal in the American bird, and the three first only in the European, the fourth being almost a quarter of an inch shorter. The other approximate species, *Fringilla magellanica*, Vieill. considered by Gmelin and Latham as a variety of the European siskin, is readily distinguishable by having the head entirely black.

Though the Mexican siskin (*Fringilla mexicana*, Gmel.) may prove to be the female of our bird, or the male in an imperfect state of plumage, (and, from the locality, we should possibly have referred it to that name, had the classification of it fallen to our lot,) yet; as nothing positive can be drawn from so unessential an indication as that of the Mexican siskin, we have no hesitation in following the same course with Say, who considers it as entirely new, and have retained his elegant name of *Fringilla psaltria*. It is very possible that not only the *Fringilla mexicana*, but also the Black Mexican siskin, (*Fringilla catotol*, Gmel.) may be the same bird as our *Fringilla psaltria*; but how can we determine, from the vague descriptions that have been given of those species? They are equally appli-

cable to the American goldfinch in its dull state of plumage; and Wilson expresses a doubt whether or not the black Mexican siskin is the same as his new species, *Fringilla pinus*.

All these pretty little birds belong to the subgenus *Carduelis*, having a more slender, acute, and elongated bill, than other *Fringillæ*.

30. *FRINGILLA TRISTIS*, LIN. — FEMALE AMERICAN GOLDFINCH.

BONAPARTE, PLATE VI. FIG. IV.

THE very great dissimilarity between the sexes in their spring dress, will justify the reappearance of a bird already given by Wilson, more especially as it has, in this state, been mistaken for a distinct species, and most unaccountably arranged in the systems as a variety of the European siskin.

The history of this bird, which so completely resembles the goldfinch of Europe in song and habits, being nearly completed by the golden pen of Wilson, we shall not attempt to add any observations of our own, but shall refer the reader to his volume (Vol. II. p. 262) for its biography. As we cannot but observe that his description is short and somewhat imperfect, probably owing to the opinion he at first entertained, but afterwards judiciously relinquished, that a minute description of common birds is superfluous, we shall proceed to describe the species in all its different states.

The male American goldfinch in summer dress, described by Wilson, is four and a half inches long, and eight in extent. The bill resembles that of the European goldfinch, and, as well as the feet, is of a reddish cinnamon colour; the irides are dark brown; the front and vertex are glossy black; the remaining part of the head, and all the body, rich lemon yellow; the superior and inferior tail-coverts are white, as well as the thighs; the wings and tail are black, the small coverts of the wings being yellow externally, and white on the inner side and at tip; the greater coverts are

tipped with white, an arrangement which exhibits two white bands across the wings; the first and third primaries are equal, hardly shorter than the second, which is the longest, the fourth being nearly as long as the third; the secondaries are margined with white. The tail is emarginated, the feathers being black, slightly edged with white, and having a large pure white spot on the inner web at tip.

The female, as is usual in this family of birds, is rather smaller than the male, and is widely different from that sex in the colours of its plumage. The bill and feet are brownish; the lower mandible is whitish at base; the head has no appearance of black, and, with the neck, the back, and rump, is brownish olive, the latter part being of a lighter shade than the preceding portions; the upper tail-coverts are greenish white; the frontlet, cheeks, sides of the neck, throat, and upper part of the breast, are pale greenish yellow; the lower portion of the breast, belly, vent, flanks, under wing and under tail-coverts, are whitish. The wings and tail, which always afford the most constant specific characters, are like those of the male, except that the black colour is less intense, and the white is less pure, being slightly tinged with rufous.

In this state of plumage, the bird closely resembles the *Fringilla citrinella* of the south of Europe, which, however, can always be distinguished from it by several characters, but more particularly by its greenish yellow rump, and by being destitute of the whitish spot at the tip of the inner web of the tail feathers. The young are so like the females as to be distinguished with difficulty; their colours, however, are still less lively; they assume the adult livery in the spring, but do not exhibit all the brilliancy of the perfect bird until the third moult.

The American goldfinch moults twice a-year, in the seasons of spring and autumn. At the spring moult the males obtain their vivid colouring, which is lost at the autumnal change, and replaced by a more humble dress, similar to that of the female, from which sex

they cannot then be readily distinguished. The black of the wings is, however, somewhat more intense; the white of the wings and of the tail is dull and dirty, and a yellowish tint prevails around the eyes, as well as on the neck.

As the season advances, the plumage of the adult male gradually changes, but not simultaneously in the different individuals, so that in the spring and autumn we rarely find two that are alike; some being more or less yellow, having a rudiment of black on the head, &c. according as the moulting process is more or less advanced.

A remarkable variety is exhibited in a changing male, which I shot near Philadelphia, in the month of April, and which is therefore considerably advanced towards perfect plumage. All the primaries are pure white on the outer web towards the base, thus constituting, in the most obvious manner, that white spot beyond the wing-coverts, assigned by Say as a good discriminating mark between this species and the preceding. The fact we have related diminishes the value of this character, which is nevertheless a very good one; but as many other distinctions are observable, we need not rely exclusively upon it. The deviation we have here mentioned is the more remarkable, as the greater number of species allied to this bird have that spot, either white or yellow.

Since writing the above, I obtained, from one of the large flocks in which these birds congregate in the autumn, several specimens of both sexes, more or less distinguished by the marking above stated as peculiar to the variety.

31. *FRINGILLA AMENA*, BONAPARTE,

LAZULI FINCH.

BONAPARTE, PLATE VI. FIG. V.

THE genus *Emberiza*, though very natural, and distinguished by well marked characters, has, notwith-

standing these advantages, been often misunderstood; and authors, without consulting the boundaries assigned to it by themselves, have recorded a copious list of species, whilst in nature its limits are much restricted. We are not, therefore, surprised, that so acute a zoologist as Say should have arranged his bird in that genus, particularly as it is more closely allied to *Emberiza* than many of those, not only of Wilson, but even of Linné and Latham.

This bird, which we have no hesitation in pronouncing one of the most beautiful of its tribe, would be placed by Vieillot in his genus *Passerina*; but, according to my classification, it belongs to the genus *Fringilla*, and to that American sub-genus lately established in my "*Observations on the Nomenclature of Wilson's Ornithology*," under the name of *Spiza*. As a species, it is more intimately allied to *Fringilla ciris* and *Fringilla cyanea*,* which I stated in that paper to differ so much from their congeners, particularly in the greater curvature of the upper mandible, as to deserve, perhaps, a separation into a small sub-genus by themselves: this would unite *Fringilla* to *Tanagra*, as *Spiza*, on the other hand, shews its transition to *Emberiza*.

The lazuli finch is five inches and three quarters long; the bill is formed like that of the Indigo bird, (*Fringilla cyanea*, Wilson,) but is emarginated near the tip, being horn colour, as well as the feet; the irides are dark brown; the whole head and neck are brilliant verdigrise blue; the back is brownish black, intermixed with blue, and a little ferruginous brown; the rump is pure verdigrise blue; the superior portion of the breast is pale ferruginous; the lower part of the breast, the belly, and inferior tail-coverts, are white; the smaller wing-coverts are blue; the middling-coverts are blackish at base, and broadly tipped with white, forming a wide band across the wing; the greater wing-coverts are

* Its relation to *Fringilla cyanea*, considered as an *Emberiza*, probably induced Say to place it under that genus.

blackish, obscurely margined with blue, and slightly tipped with white on the exterior web, constituting a second band across the wings parallel to the first, but much narrower; the primaries and secondaries are blackish, obscurely margined with blue on the outer web; the under wing-coverts are whitish, a little intermixed with blue. The tail is slightly emarginated, the feathers being blackish, edged with blue on the outer web, and with white on the inner web at tip.

The above description of this handsome bird is taken from a male in summer plumage, the only specimen brought by Long's exploring party: hence we are unable to give any positive information relative to the female and young, though, from analogy, we must believe them in great part destitute of the blue colour, and otherwise less brilliantly adorned.

This species appears to be rather rare; it is found along the Arkansaw river, near the base of the Rocky Mountains, during the summer months; they frequent the bushy valleys, keeping much in the grass, and seldom alight on shrubs or trees. In this respect, also, they resemble the Indigo bird, and probably their habits are the same, although the note is entirely dissimilar.

32. *FRINGILLA VESPERTINA*, COOPER.

EVENING GROSBEEK.

BONAPARTE, PLATE XV. FIG. I.

FEW birds could form a more interesting acquisition to the Fauna of any country than this really fine grosbeak. Beautiful in plumage, peculiar in its habits, important to systematical writers, it combines advantages of every kind. It was named and first described by Mr Cooper, and little has since been discovered of its history to be added to the information he has collected and given us in the journal above quoted. The species appears to have an extensive range in the northern and north-western parts of this continent, being met with from the extremity of the Michigan

Territory to the Rocky Mountains, within the same parallels. It is common about the head of Lake Superior, at Fond du Lac, and near the Athabasca Lake. A few were observed by Mr Schoolcraft, during the first week of April, 1823, about Sault Sainte Marie, Michigan Territory, where they remained but a short time, and have not appeared since; and by Major Delafield, in the month of August of the same year, near the Savannah river, north-west from Lake Superior. They appear to retire during the day to the deep swamps of that lonely region, which are covered with a thick growth of various trees of the coniferous order, and only leave them in small parties at the approach of night. Their note is strange and peculiar; and it is only at twilight that they are heard crying in a singular strain. This mournful sound, uttered at such an unusual hour, strikes the traveller's ear, but the bird itself is seldom seen; though, probably from its unacquaintance with man, it is so remarkably tame and fearless as almost to suffer itself to be caught with the hand.

The specimen of the evening grosbeak presented to the Lyceum of New York, by Mr Schoolcraft, from which Mr Cooper established the species, was thought, until lately, the only one in possession of civilized man; but we have since examined two others shot early in the spring on the Athabasca Lake, near the Rocky Mountains, and preserved among the endless treasures of Mr Leadbeater of London. The subjoined description is carefully drawn up from a perfect specimen now before us, which Mr Leadbeater, with the most obliging liberality, has confided to our charge.

Although we consider the grosbeaks (*Coccothraustes*) as only a subgenus of our great genus *Fringilla*, they may with equal propriety constitute one by themselves; as the insensible degrees by which intermediate species pass from one form into another, (which determined us in considering them as a subgenus, and not a genus,) are equally observable between other groups, though admitted as genera. *Coccothraustes* is as much entitled

to be distinguished generically from *Fringilla*, as *Turdus* from *Sylvia*; and at all events, its claim is full as good, and perhaps better, than its near relation *Pyrrhula*. In the present work, however, we have preferred retaining things as we found them, until we can apply ourselves to the work of a general reform, as announced in the first article of this volume. Though we regard the grosbeaks as a subgenus, others, going to the opposite extreme, have erected them into a separate family, composed of several genera. The evening grosbeak is, however, so precisely similar in form to the hawfinch-type of the group, as to defy the attempts of the most determined innovators to separate them. Its bill is as broad, as high, quite as strong and turgid, with both mandibles equal, the upper depressed and rounded above, and the commissure straight. It conforms even, in a slight degree, in the rhomboidal shape of the ends of the secondaries,—a character so conspicuous in its analogue; to which, in the distribution and transitions of its tints, though very different, it also bears a resemblance. It is, however, of the four North American species of its group, the only one so strictly allied, for even the cardinal grosbeak, the most nearly related of these species, on account of its short rounded wings and other minor traits, might be separated, though fortunately it has not been as yet, to our knowledge; the others have already.

The evening grosbeak is eight and a half inches long; its bill is of a greenish yellow, brighter on the margins, seven-eighths of an inch long, five-eighths broad, the same in height; the capistrum and lora are black; the front is widely bright yellow, prolonged in a broad stripe over the eye to the ears; the hind crown is black, intermixed with yellow, visible only on separating the feathers, but leading to the suspicion that at some period the yellow extends perhaps all over the crown; the sides and inferior parts of the head, the whole neck, above and beneath, together with the interscapulars and breast, are of a dark olive brown, becoming lighter by degrees; the scapulars are yellow, slightly tinged

with greenish; the back, rump, with the whole lateral and inferior surface, including the under wing and under tail-coverts, yellow, purer on the rump, and somewhat tinged with olive-brown on the belly. Although these colours are all very pure, they are not definitely separated, but pass very insensibly into each other; thus the black of the crown passes into the dark brown of the neck, which, becoming lighter by degrees, is blended with the yellow of the back. The same thing takes place beneath, where the olive-brown of the breast passes by the nicest gradations into the yellow of the posterior parts; the whole base of the plumage is pale bluish plumbeous, white before the tips of the feathers; the femorals are black, skirted with yellow; the wings are four and a half inches long; the smaller, middling, and exterior larger wing-coverts are deep black, as well as the spurious wing; those nearest the body are white, black at the origin only; the quills are deep black, the three outer being subequal and longest, attenuated on their outer web at the point, and inconspicuously tipped with whitish; the secondaries are marked with white on their inner web, that colour extending more and more as they approach the body, the four or five nearest being entirely pure white, like their immediate coverts, and slightly and inconspicuously edged with yellow externally; the tail is two and a half inches long, slightly forked, and, as well as its long superior coverts, very deep black; the outer feather on each side has, on the inner vane, towards the tip, a large, roundish, white spot, which seems disposed to become obliterated, as it is much more marked on one, than on that of the other side which corresponds to it, and does not exist in all specimens; a similar spot is perceptible on the second tail-feather, where it is, however, nearly obliterated; the feet are flesh colour, the nails blackish, the tarsus measuring three quarters of an inch.

No difference of any consequence is observable between the sexes; though it might be said that the female is a little less in size, and rather duller in plumage.

33. *FRINGILLA LUDOVICIANA*, BONAPARTE.

FEMALE ROSE-BREASTED GROSBK.

BONAPARTE, PLATE XV. FIG. II.

THOUGH several figures have been published of the very showy male rose-breasted grosbeak, the humble plumage of the female and young has never been described. It would, however, have better served the purposes of science, if the preference had been given to the latter, though less calculated to attract the eye, inasmuch as striking colours are far less liable to be misunderstood or confounded in the description of species, than dull and blended tints. It will be seen by the synonymy, that nominal species have in fact been introduced into the systems. But if it be less extraordinary that the female and young should have been formed into species, it is certainly unaccountable that the male itself should have been twice described in the same works, once as a finch, and once as a grosbeak. This oversight originated with Pennant, and later compilers have faithfully copied it, though so easy to rectify.

The female rose-breasted grosbeak is eight inches long, and twelve and a half inches in extent. The bill has not the form either of the typical grosbeaks, or of the bullfinches, but is intermediate between them, though more compressed than either; it is three quarters of an inch long, and much higher than broad; instead of being pure white, as that of the male, it is dusky horn colour above, and whitish beneath and on the margins; the irides are hazel brown; the crown is of a blackish-brown, each feather being skirted with light olive-brown, and faintly spotted with white on the centre; from the nostrils a broad band passes over the eye, margining the crown to the neck; a brown streak passes through the eye, and the inferior orbit is white; more of the brown arises from the angle of the mouth, spreading on the auriculars; on the upper part of the

neck above, the feathers are whitish, edged with pale flaxen, and with a broad, oblong, medial, blackish brown spot at tip; on the remaining part of the neck and interscapulars this blackish spot is wider, so that the feathers are properly of that colour, broadly edged with pale flaxen; the back and rump, and the upper tail-coverts, are of a lighter brown, with but a few merely indicated and lighter spots; the whole inferior surface of the bird is white, but not very pure; the sides of the throat are dotted with dark brown, the dots occupying the tips of the feathers; the breast and flanks are somewhat tinged with flaxen, (more dingy on the latter,) and each feather being blackish along the middle at tip, those parts appear streaked with that colour; the middle of the throat, the belly, and under tail-coverts, are unspotted; the base of the plumage is every where plumbeous; the wings are rounded, less than four inches long, entirely dusky brown, somewhat darker on the spurious wing, all the feathers, both quills and coverts, being lighter on their edges; the exterior webs of the middle and larger wing-coverts are whitish at tip, constituting two white bands across the wings; the primaries are whitish at the origin beneath the spurious wing; the secondaries are inconspicuously whitish externally at tip, that nearest the body having a very conspicuous whitish spot; the lower wing-coverts are of a bright buff; and as they are red in the male, afford an excellent essential character for the species; the tail is three inches long, nearly even, and of a paler dusky brown; the two outer feathers are slightly edged internally with whitish, but without the least trace of the large spot so conspicuous in the male, and which is always more or less apparent in the young of that sex; the feet are dusky, the tarsus measuring seven-eighths of an inch.

The young male is at first very similar to the female, and is, even in extreme youth, paler and somewhat more spotted, but a little of the beautiful rose colour, of which the mother is quite destitute, soon begins to make its appearance, principally in small dots on the

throat: this colour spreads gradually, and the wings and tail, and soon after the head, blacken, of course presenting as they advance in age a great variety of combinations.

For the description of the beautiful adult male, we shall refer to Wilson, whose description is good, but not having stated any particulars about the habits of the species, we shall subjoin the little that is known of them. Though long since recorded to be an inhabitant of Louisiana, whence it was first received in Europe, recent observations, and the opinion of Wilson; had rendered this doubtful, and it was believed to be altogether an arctic bird, averse to the warm climate of the Southern States, and hardly ever appearing even in the more temperate. Its recent discovery in Mexico is, therefore, a very interesting and no less remarkable fact, and we may safely conclude that this bird migrates extensively according to season, spending the summer in the north, or in the mountains, and breeding there, and in winter retiring southward, or descending into the plains; being, however, by no means numerous in any known district, or at any season, though perhaps more frequent on the borders of Lake Ontario. Its favourite abode is large forests, where it affects the densest and most gloomy retreats. The nest is placed among the thick foliage of trees, and is constructed of twigs outside, and lined with fine grasses within; the female lays four or five white eggs, spotted with brown. This may also be called an "evening grosbeak," for it also sings during the solemn stillness of night, uttering a clear, mellow, and harmonious note.

We have placed this species in our subgenus *Coccothraustes*. It is probably because he laboured under the mistake that all the grosbeaks removed from *Loxia* had been placed in *Pyrrhula* by Temminck, that Mr Sabine has made it a bullfinch; and in truth the bill very much resembles those of that genus, so that the species is intermediate between the two. Mr Swainson places it, together with the blue grosbeak, *Fringilla* (*Coccothraustes*) *cærulea*, in a new genus which he calls *Guiraca*, but without as yet characterizing

it. These species have, it is true, a bill somewhat different from that of the typical *Coccothraustes*, being much less thick and turgid, and higher than broad; the upper mandible being larger than the lower, and covering its margins entirely, compressed on the sides, making the ridge very distinct, (not rounded above,) and curved from the base, but at tip especially: the margins of both are angular.

34. *FRINGILLA CYANEA*, BONAPARTE.

FEMALE INDIGO FINCH.

BONAPARTE, PLATE XV. FIG. IV.

THE remarkable disparity existing between the plumage of the different sexes of the common indigo bird renders it almost indispensably requisite that the female, unaccountably neglected by Wilson, as he generally granted this distinction in similar, and often in less important, cases, should be described in this work. Hardly any North American bird more absolutely stands in need of being thus illustrated than the beautiful finch which is now the subject of our consideration. It could scarcely be expected that the student should easily recognize the brilliant indigo bird of Wilson's second volume in the description which is now given of it. But, however simple in its appearance, the plumage of the female is far more interesting and important than that of the male, as it belongs equally to the young, and to the adult male after the autumnal moult, and previous to the change which ensues in the spring,—a large proportion of the life of the bird.

The importance of a knowledge of these changes will also be duly estimated on recurring to the copious synonymy, by which it will be seen that several nominal species have been made by naturalists who chanced to describe this bird during its transitions from one state to another. Errors of this kind too frequently disfigure the fair pages of zoology, owing to the ridiculous

ambition of those pseudo naturalists, who, without taking the trouble to make investigations, for which indeed they are perhaps incompetent, glory in proclaiming a new species established on a single individual, and merely on account of a spot, or some such trifling particular! The leading systematists who have enlarged the boundaries of our science have too readily admitted such species, partly compelled to it perhaps by the deficiency of settled principles. But the more extensive and accurate knowledge which ornithologists have acquired within a few years relative to the changes that birds undergo, will render them more cautious, in proportion as the scientific world will be less disposed to excuse them for errors arising from this source. Linné may be profitably resorted to as a model of accuracy in this respect, his profound sagacity leading him in many instances to reject species which had received the sanction even of the experienced Brisson. Unfortunately Gmelin, who pursued a practice directly the opposite, and compiled with a careless and indiscriminating hand, has been the oracle of zoologists for twenty years. The thirteenth edition of the *Systema Naturæ* undoubtedly retarded the advancement of knowledge instead of promoting it, and if Latham had erected his ornithological edifice on the chaste and durable Linnean basis, the superstructure would have been far more elegant. But he first misled Gmelin, and afterwards suffered himself to be misled by him, and was, therefore, necessarily betrayed into numerous errors, although he at the same time perceived and corrected many others of his predecessor. We shall not enumerate the nominal species authorized by their works in relation to the present bird, since they may be ascertained by consulting our list of synonyms. On comparing this list with that furnished by Wilson, it will be seen that the latter is very incomplete. Indeed, as regards synonymy, Wilson's work is not a little deficient; notwithstanding which, however, it will be perpetuated as a monument of original and faithful

observations of nature, when piles of pedantic compilations shall be forgotten.

We refer our readers entirely to Wilson for the history of this very social little bird, only reserving to ourselves the task of assigning its true place in the system. As we have already mentioned in our "Observations," he was the first who placed it in the genus *Fringilla*, (to which it properly belongs,) after it had been transferred from *Tanagra* to *Emberiza* by former writers, some of whom had even described it under both in one and the same work. But although Wilson referred this bird to its proper genus, yet he unaccountably permitted its closely allied species, the *Fringilla ciris*, to retain its station in *Emberiza*, being under the erroneous impression that a large bill was characteristic of that genus. This mistake, however, is excusable, when we consider that almost all the North American birds which he found placed in it, through the negligence or ignorance of his predecessors, are in fact distinguished by large bills.

The transfer of this species to the genus *Fringilla*, renders a change necessary in the name of *Loxia cyanea* of Linné, an African bird, now a *Fringilla* of the subgenus *Coccothraustes*. The American bird belongs to *Spiza*, and, together with the *Fringilla ciris* and the beautiful *Fringilla amæna*, it may form a peculiar group, allied to *Fringilla*, *Emberiza*, and *Tanagra*, but manifestly nearest the former.

The adult male, in full plumage, having been described by Wilson, may be omitted here. The female measures four inches and three quarters in length, and nearly seven in extent. The bill is small, compressed, and less than half an inch long, is blackish above and pale horn colour beneath; the irides are dark brown; above she is uniformly of a somewhat glossy drab; between the bill and eyes, and on the cheeks, throat, and all the inferior parts, of a reddish clay colour, much paler on the belly, dingy on the breast, and strongly inclining to drab on the flanks, blending into the colour of the back, the shafts of the feathers being darker, giving somewhat

of a streaked appearance; the whole base of the plumage is lead colour; the wings and tail are of a darker and less glossy brown, each feather being edged with lighter, more extended on the secondaries, and especially the wing-coverts; the wings are two inches and a half long, not reaching, when folded, beyond the tail-coverts; the first primary is subequal to the fourth, the second and third being longest; the three outer, besides the first, are greatly attenuated on the outer web, half an inch from the point, where it is extremely narrow; the tail is two inches in length, and but slightly emarginated; the feet are dusky, the tarsus measuring three-quarters of an inch.

The male, after his autumnal moult, exhibits pretty much the same dress, except being more or less tinged with bluish. We shall here observe, that we do not believe that the individual kept by Wilson in a cage through the winter, in which the gay plumage did not return for more than two months, formed an exception to the general law, as he supposed. We have no doubt that this circumstance is characteristic of the species in its wild state.

The young strongly resemble the female; the drab colour is, however, much less pure and glossy, being somewhat intermixed with dusky olive, owing to the centre of the feathers being of the latter hue. Consequently, during the progress from youth to adolescence, and even during the two periodical changes, the plumage of this bird is more or less intermixed with drab, blue, and white, according to the stage of the moulting process, some being beautifully and regularly spotted with large masses of those colours symmetrically disposed. In one of these males, but little advanced in its changes, we readily recognize the *Emberiza cærulea* of authors, *Azuroux* of Buffon, &c.; and in another, which has made farther progress towards the perfect state, the shoulders only retaining the ferruginous tinge, we can trace the *Emberiza cyanella* of Sparmann.

GENUS XV.—PYRRHULA.

35. *PYRRHULA FRONTALIS*, BONAPARTE.

CRIMSON-NECKED BULLFINCH.

BONAPARTE, PLATE VI. FIG. I. MALE. — FIG. II. FEMALE.

MUCH confusion exists in the works of naturalists respecting those finches and bullfinches that are tinged with red; and, in fact, their great resemblance to each other, and their intricate synonymy, render them very difficult to elucidate. The only species in Wilson's work with which the present may be confounded is the *Fringilla purpurea*, a bird closely related to ours, and for the first time well described and permanently established by that author.* But several other allied species may be mistaken for the crimson-necked bullfinch; two of these, belonging to the genus *Pyrrhula*, present so much analogy with the present species, judging from their descriptions, that we doubted the correctness of giving the latter a separate place, con-

* He was rather precipitate in asserting the *Fringilla rosea* and *Loxia erythrina* to be identical with his bird, as they are actually two very distinct species, belonging to the genus *Pyrrhula*, and proper to the old continent, whilst the *Purpurea* is a true *Fringilla*, and peculiar to America. To those who have not critically investigated the subject, it may appear somewhat inconsistent to state, that the *Erythrina* is not an inhabitant of this continent, when it is a well known fact, that many authors speak of it as an American bird. This apparent contradiction may be readily removed by considering what bird those authors alluded to when they stated the *Erythrina* to be a native of North America. When Latham expressed a doubt in his Synopsis, whether the birds in the neighbourhood of New York, so much resembling the *Erythrina*, were not specifically the same, he alluded to the *Fringilla purpurea*: Gmelin, as usual, in his miserable compilation, inserted this doubt of Latham as a certainty. As to the crimson-headed finch of Pennant, it is evidently the *Purpurea*, thus excusing, in part, the strange assertion of Wilson. Latham also committed an error in his index, by placing the *Loxia erythrina* of Pallas and Gmelin, his own crimson-headed finch, as a variety of *Fringilla rosea*.

sidering it identical with *Pyrrhula erythrina* of Temminck, whose description agrees better with it than that of any other. Yet, in addition to some differences discoverable by comparing the crimson-necked bullfinch with his description, we cannot admit, that an arctic bird of the old continent, known to visit even the more northern portion of the temperate climates only during very cold winters, and then not very regularly, should be found, in the month of July, on the sultry plains of the Arkansaw, and of course breeding there. We therefore conclude that our bird is not the *erythrina*, although we regret our inability to give differential characters, having never seen that species, as our endeavours to obtain a specimen have not been attended with success. The southern residence of our bird might lead us to suppose it the *Loxia (Pyrrhula) violacea*, which we have not seen, neither do we think the species well established. But if we are to rely on the short description given of it, and on Catesby's figure, we cannot perceive much resemblance between them; their identity, however, would not much surprise us, when we consider that Catesby's figure of the *Pyrrhula violacea* is as much like our bird as his figure of the purple finch is like what it is intended to represent. Having the authority of Say, we consider it as new, notwithstanding these doubts.

The crimson-necked bullfinch was procured by Long's party, near the Rocky Mountains, and Say described it in the journal of that expedition, under the name of *Fringilla frontalis*, adopting that genus in the comprehensive limits assigned by Illiger and Cuvier. The specific name given by Say is preoccupied in that genus by an African species; but, as we consider our bird a *Pyrrhula*, we think proper to retain his name.

The crimson-necked bullfinch is five inches and a half long. The bill and feet are horn colour; the lower mandible is paler; the irides are dark brown; the head, neck beneath, and superior portion of the breast, are brilliant crimson, most intense near the bill and over the eye; the space between the bill and the eye

is cinereous gray, as well as the cheeks, and the small feathers immediately around the bill; the crimson feathers are brown at base, being red only at tip; the occiput, and the neck above and on each side, are brown, with a reddish cast, the feathers being margined with pale; the back is dusky brownish; the rump and superior tail-coverts are crimson, but less vivid than that of the head; the inferior portion of the breast, the belly, and vent, are whitish, each feather having a broad fuscous line; the general plumage is lead colour at base. The wings are blackish brown, the primaries being broadly margined within, towards the base, with whitish, and exteriorly edged with grayish; the coverts and secondaries are edged with dull grayish; the tail is blackish brown, hardly emarginated; the lateral feathers are edged, on the inner side, with whitish.

Such is the description of our male specimen; but as it was procured when summer was far advanced, a season in which the plumage begins to fade, it is proper to observe, that the colouring of this bird is probably much more brilliant in its full spring dress, the crimson extending much farther down on the back, &c. As the season advances, the tips of the feathers, which are the only parts of a crimson colour, being gradually worn off, the bird as gradually loses its brilliancy; and, in the autumnal and winter plumage, exhibits the humble appearance of the female.

The female is altogether destitute of the brilliant colour, being dusky brown above, the feathers margined on each side with dull whitish; the whole inferior surface is whitish, each feather having a brown longitudinal line in the middle, obsolete on the vent, which is almost pure white.

A change similar to that above mentioned, takes place in the purple finch, whose habits also much resemble those of the crimson-necked bullfinch; but the form of its bill is certainly that of a finch, and will always distinguish it from the species we are describing, the bill of which is unequivocally of the bullfinch form. The different tints of red adorning these birds, will

also at once strike the eye of the least expert in discriminating species; in the present bird, the tint is vivid crimson, whilst in the purple finch, it is rosaceous. In addition to these characters, the latter is a somewhat larger bird, with a pure white belly and inferior tail-coverts, and a deeply emarginated tail; whilst the former has a nearly even tail, and its belly and inferior tail-coverts are striped with dusky.

Some persons, without doubt, may think it highly improper to separate generically two birds, so closely allied as the present species and the purple finch, which may be mistaken for the same species; but we may remark, that they stand at the extreme limit of their respective genera, and form the links of union between *Pyrrhula* and *Fringilla*. It is true, that the intimate alliance of these two groups would seem to justify Illiger, Meyer, and others, in uniting them under the same genus; but, as *Fringilla* is so vast in the number of its species, and *Pyrrhula* has a few distinctive characters, we choose to follow Temminck, Vieillot, and other naturalists, by arranging them generically separate. The closeness of affinity between these two birds, when thus properly disposed, affords no good reason for the unity of their genera; for, if we proceed to the abolition of all artificial distinction between genera united by almost imperceptible gradations, *Sylvia* would be joined to *Turdus*, *Myiothera* to *Troglodytes*, *Lanius* to *Muscicapa*, the whole of these would be confused together; and, in fact, orders and classes would be considered as genera; and even the vast groups, thus formed, would be still observed to unite inseparably at their extremes, and we should finally be compelled to consider all living bodies, both animal and vegetable, as belonging to one genus. This argument, however, may not convince every naturalist of the propriety of our arrangement, and they must, therefore, place the two species, strictly according to nature, in one genus, and consider the present as a *Fringilla*; but how unnatural will then be the situation of *Pyrrhula vulgaris*, and *Pyrrhula enucleator*!

The inflated form of the bill, the curvature of both mandibles, very apparent in the superior one, as well as the compression of both at tip, are obvious characters, which distinguish the species of *Pyrrhulā* from the *Fringillæ*, in which both mandibles are nearly straight, and present a conic form on every side.

Berries, and seeds which they extract from the pericarp, buds, and young shoots of different plants, constitute the food of the bullfinches. They generally frequent forests and bushy places, building their nests on small trees, or low branches of large ones: the females lay four or five eggs. The greater number of the species moult twice a year; the sexes differ considerably in appearance. They reside in cold and temperate climates, with the exception of a few species, that inhabit Africa and South America.

The crimson-necked bullfinch is found in the district of country extending along the base of the Rocky Mountains, near the Arkansaw river, and has not been observed elsewhere. In the month of July, when our specimens were obtained, these birds occur in small scattered flocks, keeping mostly on the tops of the cotton-wood trees, on whose buds they partially feed. Their voice considerably resembles that of their relative, the *Fringilla purpurea*.

36. *PYRRHULA ENUCLEATOR*. — FEMALE PINE BULLFINCH.

BONAP. PLATE XVI. FIG. III. — EDINBURGH COLLEGE MUSEUM.

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 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, and general garb, 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.

GENUS XVI.—*LOXIA*.37. *LOXIA LEUCOPTERA*. — FEMALE WHITE-WINGED CROSSBILL.

BONAPARTE, PLATE XV. FIG. III.

THE white-winged crossbill, first made known by Latham in his celebrated *Synopsis*, was subsequently introduced on his authority into all the huge compilations of the last century. Wilson introduced the male, and promised the female, together with "such additional facts, relative to its manners, as he might be able to ascertain." It is to fulfil Wilson's engagement that we now endeavour to describe minutely the other sex, in all its different states of plumage. This has never before been done, though Vieillot, since Wilson's time, has compiled some account of its habits, described the female, and recently published a bad enough figure of the male in his *Galerie des Oiseaux*.

The English name was bestowed by its discoverer, the scientific was imposed on by the compiler, Gmelin, who, like the daw in the fable, though with much better success, appropriated to himself the borrowed plumes of others, making Latham's new species his own, by being the first to give them scientific names, which the discoverer himself was afterwards obliged to adopt in his *Index Ornithologicus*. In the present instance, however, he took the liberty of altering Gmelin's name, most probably with the view of giving one analogous to that of *Loxia curvirostra*, and indicative of the remarkable form of the bill. That character having since been employed as generic, the propriety of Latham's change has ceased to exist, and in fact the advantage is altogether on the side of Gmelin. We have therefore respected the right of priority, even in the case of an usurper.

The female white-winged crossbill is five inches and three quarters long, and nearly nine in extent; the bill is more than five-eighths long, of a dark horn colour, paler on the edges; as is the case in the whole genus, it is very much compressed throughout, but especially at the point, where the edges almost unite into one: both mandibles are curved (the lower one upwards) from the base, the ends crossing each other; the upper has its ridge distinct, and usually crosses to the left in both sexes, and not, as Wilson appears to intimate, generally in one sex only; the lower mandible is considerably shorter; the tongue is short, cartilaginous, and entire; the irides are of a very dark hazel; the small setaceous feathers covering the nostrils, which is one of the characteristics of the genus, are whitish gray; the bottom of the plumage is every where slate colour; the head, and all the upper parts down to the rump, are of a grayish green strongly tinged with olive, each feather being marked with black in the centre, giving the plumage a streaked appearance; the rump is pure pale lemon yellow, the upper tail-coverts are blackish, margined with whitish olive; the front, and a broad line over and round the eye and bill, are slightly distinguished from the general colour of the head by the want of olivaceous, being grayish white, and as the feathers are very small, appear minutely dotted with black: the curved blackish spot, more apparent in the colours of the male, is slightly indicated on the sides of the head; the sides of the head and neck, the throat, and the breast, are of a grayish white, also streaked with blackish, and somewhat tinged with yellowish on the sides of the breast; the flanks become of a dingy yellowish gray, and have large, dull, blackish blotches; the belly and vent are of a much purer whitish, and the streaks are on that part long, narrow, and well defined; the under tail-coverts are blackish, with broad white margins; the wings are three inches and a half long, reaching, when closed, to the last of the tail-coverts; the first three primaries are subequal and longest, the fourth being but little shorter, and much

longer than the succeeding; the general colour of the wing is black, the smaller coverts each margined with olive; the middle and longer coverts broadly tipped with white, forming a double band across the wings, so conspicuous as to afford the most obvious distinguishing character of the species; all the quills are slightly edged with paler, the tertials being also tipped with white; the under wing-coverts are of a dark silvery, as well as the whole inferior surface of the wing; the tail measures two and a half inches, being as usual composed of twelve feathers; it is black, and deeply emarginated, the feathers acute, and slightly edged with paler: the feet are short, rather robust, and blackish; the tarsus five-eighths of an inch in length, somewhat sharp behind, with its covering entire before; the toes are divided to the base, very short, the middle one considerably the longest, but much less than half an inch long, the lateral one subequal, (all these being remarkable characters of the genus;) the hind toe long, and stoutest; the nails strong, much curved, and sharp, the hind one the longest, and twice as large as the lateral.

The male described by Latham, Wilson, and Vieillot, as in full plumage, but which, with Temminck, we have good reasons for believing to be between one and two years old, differs from the female in being a trifle larger, and of a crimson red where she is olive gray: the base of the plumage is also considerably darker, approaching to black on the head, which colour predominates in several parts of the plumage, round the eye, on the front, in a broad line curving and widening from the eye each side of the neck, and appearing distinctly on the back, where it generally forms a kind of band descending from the base of the wing: the rump is of a beautiful rose-red; the black of the wings and tail is deeper; the white, pure, and more extended; the lining of the quills, and especially of the tail-feathers, more conspicuous; the belly is of a pure whitish, much less streaked, &c.

The bird which, from analogy, we take for the adult male, though we have no positive evidence for deciding

whether it is in the passage to, or from, the preceding, differs only in having a light buff orange tinge, where the other has crimson: it agrees with it in all its minute markings, the patch on the sides of the head is better defined, and the wings and tail are of a still deeper black, the edges of the quills and tail-feathers being very conspicuous, and almost pure white. All these facts conspire to favour our opinion. In this state, the bird is rare, as might be expected, and has not before been noticed by any naturalist.

The very young male before assuming the red, at the age of one year, exactly resembles the female; being only more grayish, and less tinged with olive, and having the rump greenish yellow, instead of yellow.

The four above described states of plumage are selected from a number of specimens shot on the same day, and out of the same flock. The changes of these birds must still rank among the unexplained phenomena of natural history. An illustration might be attempted, by supposing a double moult to take place in the birds of this genus, but besides that we ought to be cautious in admitting an hypothesis like this, not founded on observation, it would be entirely untenable in the present instance, from the fact, that all the variations of plumage are found at the same period of the year; thus proving that age, and, of course, sex, but not season, produce these changes; and we must provisionally admit, that, contrary to what takes place in all other birds, these, (the crossbills,) together with the pine bullfinches, lose, instead of acquiring brilliancy of colours, as they advance in age.

This species inhabits, during summer, the remotest regions of North America, and it is therefore extraordinary that it should not have been found in the analogous climates of the old continent. In this, its range is widely extended, as we can trace it from Labrador, westward to Fort de la Fourche, in latitude 56°, the borders of Peace river, and Montague island on the northwest coast, where it was found by Dixon. Round Hudson's Bay it is common and well known,

probably extending far to the northwest, as Mackenzie appears to allude to it when speaking of the only land bird found in the desolate regions he was exploring, which enlivened, with its agreeable notes, the deep and silent forests of those frozen tracts. It is common on the borders of Lake Ontario, and descends in autumn and winter into Canada and the northern and middle States. Its migrations, however, are very irregular. During four years it had escaped my careful researches, and now, while writing, (in the first week of November, 1827,) they are so abundant, that I am able to shoot every day great numbers out of flocks that are continually alighting in a copse of Jersey scrub-pine (*Pinus inops*) even opposite my window. It is proper to mention, that owing perhaps to the inclemency of the season, which has so far been distinguished by rains, early frost, and violent gales of wind, there have been extraordinary flights of winter birds. Many flocks of the purple finch are seen in all directions. The American siskin, (*Fringilla pinus*, Wils.) of which I never saw a living specimen before, covers all the neighbouring pines and its favourite thistles with its innumerable hosts. The snow-bunting (*Emberiza nivalis*) has also made its appearance in New Jersey, though in small parties, after an absence of several years.

The white-winged crossbills generally go to Hudson's Bay on their return from the south, and breed there, none remaining during summer even in the most northern parts of the United States, where they are more properly transient irregular visitors, than even winter residents. They are seldom observed elsewhere than in pine swamps and forests, feeding almost exclusively on the seeds of these trees, together with a few berries. All the specimens I obtained had their crops filled to excess entirely with the small seeds of *Pinus inops*. They kept in flocks of from twenty to fifty, when alarmed suddenly taking wing all at once, and after a little manœuvring in the air, generally alighting again nearly on the same pines whence they

had set out, or adorning the naked branches of some distant, high, and insulated tree. In the countries where they pass the summer, they build their nest on the limb of a pine, towards the centre; it is composed of grasses and earth, and lined internally with feathers. The female lays five eggs, which are white, spotted with yellowish. The young leave their nest in June, and are soon able to join the parents in their autumnal migration.

In the northern countries, where these birds are very numerous, when a deep snow has covered the ground, they appear to lose all sense of danger, and by spreading some favourite food, may be knocked down with sticks, or even caught by the hand, while busily engaged in feeding. Their manners are, in other respects, very similar to those of the common crossbill, as described by Wilson, and they are said also to partake of the fondness for saline substances so remarkable in that species.

GENUS XVII. — *COLUMBA*.

38. *COLUMBA FASCIATA*, SAY. — BAND-TAILED PIGEON.

BONAPARTE, PLATE VIII. FIG. III.

THIS bird, which is a male, was shot in July, by Mr Titian Peale, at a saline spring on a small tributary of the river Platte, within the first range of the Rocky Mountains; it was accompanied by another individual, probably its mate, which escaped. As no other specimens have been discovered, the reader will not be surprised that our specific description is unaccompanied by a general history of their manners.

The band-tailed pigeon is thirteen inches long; the bill is yellow, black at tip, and somewhat gibbous behind the nostrils; the feet are yellow, and the nails black; the irides are blackish; the head is of a purple cinereous colour; the neck, at its junction with the head, has a white semiband, beneath which its back and sides are brilliant golden green, the feathers being brownish

purple at base; the under part of the neck is pale vinaceous purplish, this colour becoming paler as it approaches the vent, which, together with the inferior tail-coverts, is white. The anterior portion of the back, the wing-coverts, and scapulars, are brownish ash; the primaries are dark brown, edged with whitish on the exterior webs; the lower part of the back, the rump, tail-coverts, inferior wing-coverts, and sides, are bluish ash, brighter beneath the wings. The shafts of the body feathers and tail-coverts are remarkably robust, tapering rather suddenly near the tip. The tail, which consists of twelve feathers, is slightly rounded at tip, with a definite blackish band at two-thirds the length from the base, visible on both sides; before this band the colour is bluish ash, and behind dirty grayish: the tail is much lighter on the inferior surface.

This species is closely allied to *Columba caribæa* of Gmelin, with which Say stated its analogy, and also to *Columba leucocephala* of Linné. In fact, it possesses some characters in common with each of these species, such as the band on the tail of the former, and an indication of white on the head of the latter. This character may induce some naturalists to suppose it the young of the *leucocephala*; but by a careful comparison, all doubt will be removed, and it will be admitted to the rank of a distinct species.

The *caribæa* may readily be distinguished from the present species, by its superior size, and by being destitute of the white band on the neck; by having a reddish bill, tipped with yellow, and dark red feet. The *leucocephala*, in the adult state, has the whole head white above; but as it is destitute of this distinction when young, acquiring it gradually as it advances in age, other discriminating characters must be employed; the tail is without a band, the bill is red with a white tip, and the feet are red.

39. *COLUMBA LEUCOCEPHALA*, LIN. — WHITE-CROWNED PIGEON.

BONAPARTE, PLATE XVII. FIG. I. — EDINBURGH COLLEGE MUSEUM.

THIS bird has been already alluded to in the preceding article, 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.

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. They are also extensively spread in Jamaica and St Domingo, and are 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 sweetwood. 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. 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, 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.

40. *COLUMBA ZENAIDA*, BONAPARTE. — ZENAIDA PIGEON.

BONAPARTE, PLATE XVII. FIG. II.

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 splendour 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.

GENUS XVIII.—*MELEAGRIS*, LINNÆUS.

41. *MELEAGRIS GALLOPAVO*, LINNÆUS. — WILD TURKEY.

BONAPARTE, PLATE IX. MALE AND FEMALE.

THE native country of the wild turkey extends from the north-western territory of the United States to the Isthmus of Panama, south of which it is not to be found, notwithstanding the statements of authors, who have mistaken the curassow for it. In Canada, and the now densely peopled parts of the United States, wild turkeys were formerly very abundant; but, like the Indian

and buffalo, they have been compelled to yield to the destructive ingenuity of the white settlers, often wantonly exercised, and seek refuge in the remotest parts of the interior. Although they relinquish their native soil with slow and reluctant steps, yet such is the rapidity with which settlements are extended and condensed over the surface of this country, that we may anticipate a day, at no distant period, when the hunter will seek the wild turkey in vain.

We have neglected no means of obtaining information from various parts of the Union, relative to this interesting bird; and having been assisted by the zeal and politeness of several individuals, who, in different degrees, have contributed to our stock of knowledge on this subject, we return them our best thanks. We have particular satisfaction in acknowledging the kindness of Mr John J. Audubon, from whom we have received a copious narrative, containing a considerable portion of the valuable notes collected by him, on this bird, during twenty years that he has been engaged in studying ornithology, in the only book free from error and contradiction, the great book of nature. His observations, principally made in Kentucky and Louisiana, proved the more interesting, as we had received no information from those states: we have, in consequence, been enabled to enrich the present article with several new details of the manners and habits of the wild turkey.

The wooded parts of Arkansas, Louisiana, Tennessee, and Alabama; the unsettled portions of the states of Ohio, Kentucky, Indiana, and Illinois; the vast expanse of territory northwest of these states, on the Mississippi and Missouri, as far as the forests extend, are more abundantly supplied, than any other parts of the union, with this valuable game, which forms an important part of the subsistence of the hunter and traveller in the wilderness. It is not probable that the range of this bird extends to, or beyond, the Rocky Mountains; the Mandan Indians, who a few years ago visited the city of Washington, considered the turkey one of the greatest

curiosities they had seen, and prepared a skin of one, to carry home for exhibition.

The wild turkey is not very plenty in Florida, Georgia, and the Carolinas; is still less frequently found in the western parts of Virginia and Pennsylvania; and is extremely rare, if indeed it exists at all, in the remaining northern and eastern parts of the United States; in New England, it even appears to have been already destroyed one hundred and fifty years back. I am, however, credibly informed, that wild turkeys are yet to be found in the mountainous districts of Sussex county, New Jersey. The most eastern part of Pennsylvania now inhabited by them, appears to be Lancaster county; and they are often observed in the oak woods near Philipsburg, Clearfield county. Those occasionally brought to the Philadelphia and New York markets, are chiefly obtained in Pennsylvania and New Jersey.

The wild turkeys do not confine themselves to any particular food; they eat maize, all sorts of berries, fruits, grasses, beetles; and even tadpoles, young frogs, and lizards, are occasionally found in their crops; but where the pecan nut is plenty, they prefer that fruit to any other nourishment; their more general predilection is, however, for the acorn, on which they rapidly fatten. When an unusually profuse crop of acorns is produced in a particular section of country, great numbers of turkeys are enticed from their ordinary haunts in the surrounding districts. About the beginning of October, while the mast still remains on the trees, they assemble in flocks, and direct their course to the rich bottom lands. At this season they are observed in great numbers on the Ohio and Mississippi. The time of this irruption is known to the Indians by the name of the *turkey month*.

The males, usually termed *gobblers*, associate in parties, numbering from ten to a hundred, and seek their food apart from the females; whilst the latter either move about singly with their young, then nearly two-thirds grown, or, in company with other females and their families, form troops, sometimes consisting of seventy

or eighty individuals, all of whom are intent on avoiding the old males, who, whenever opportunity offers, attack and destroy the young, by repeated blows on the skull. All parties, however, travel in the same direction, and on foot, unless they are compelled to seek their individual safety by flying from the hunter's dog, or their march is impeded by a large river. When about to cross a river, they select the highest eminences, that their flight may be the more certain; and here they sometimes remain for a day or more, as if for the purpose of consultation, or to be duly prepared for so hazardous a voyage. During this time the males *gobble* obstreperously, and strut with extraordinary importance, as if they would animate their companions, and inspire them with the utmost degree of hardihood; the females and young also assume much of the pompous air of the males, the former spreading their tails, and moving silently around. At length the assembled multitude mount to the tops of the highest trees, whence, at a signal note from a leader, the whole together wing their way towards the opposite shore. All the old and fat ones cross without difficulty, even when the river exceeds a mile in width; but the young, meagre, and weak, frequently fall short of the desired landing, and are forced to swim for their lives; this they do dexterously enough, spreading their tails for a support, closing their wings to the body, stretching the neck forwards, and striking out quickly and forcibly with their legs. If, in thus endeavouring to regain the land, they approach an elevated or inaccessible bank, their exertions are remitted, they resign themselves to the stream for a short time, in order to gain strength, and then, with one violent effort, escape from the water. But in this attempt all are not successful; some of the weaker, as they cannot rise sufficiently high in air to clear the bank, fall again and again into the water, and thus miserably perish. Immediately after the turkeys have succeeded in crossing a river, they for some time ramble about without any apparent unanimity of purpose, and

a great many are destroyed by the hunters, although they are then least valuable.

When the turkeys have arrived in their land of abundance, they disperse in small flocks, composed of individuals of all sexes and ages intermingled, who devour all the mast as they advance: this occurs about the middle of November. It has been observed, that, after these long journeys, the turkeys become so familiar as to venture on the plantations, and even approach so near the farmhouses as to enter the stables and corn-cribs, in search of food; in this way they pass the autumn, and part of the winter. During this season great numbers are killed by the inhabitants, who preserve them in a frozen state, in order to transport them to a distant market.

Early in March they begin to pair; and, for a short time previous, the females separate from, and shun their mates, though the latter pertinaciously follow them, uttering their gobbling note. The sexes roost apart, but at no great distance, so that, when the female utters a call, every male within hearing responds, rolling note after note, in the most rapid succession; not as when spreading the tail and strutting near the hen, but in a voice resembling that of the tame turkey, when he hears any unusual or frequently repeated noise. Where the turkeys are numerous, the woods from one end to the other, sometimes for hundreds of miles, resound with this remarkable voice of their wooing, uttered responsively from their roosting places. This is continued for about an hour; and, on the rising of the sun, they silently descend from their perches, and the males begin to strut, for the purpose of winning the admiration of their mates.

If the call be given from the ground, the males in the vicinity fly towards the individual, and, whether they perceive her or not, erect and spread their tails, throw the head backwards, distend the comb and wattles, strut pompously, and rustle their wings and body feathers, at the same moment ejecting a puff of air from the lungs. Whilst thus occupied, they occasionally halt to

look out for the female, and then resume their strutting and puffing, moving with as much rapidity as the nature of their gait will admit. During this ceremonious approach, the males often encounter each other, and desperate battles ensue, when the conflict is only terminated by the flight or death of the vanquished.

This pugnacious disposition is not to be regarded as accidental, but as resulting from a wise and excellent law of nature, who always studies the good of the species, without regard to the individuals. Did not females prefer the most perfect of their species, and were not the favours of beauty most willingly dispensed to the victorious, feebleness and degeneracy would soon mark the animal creation; but, in consequence of this general rule, the various races of animals are propagated by those individuals who are not only most to be admired for external appearance, but most to be valued for their intrinsic spirit and energy.

When the object of his pursuit is discovered, if the female be more than one year old, she also struts, and even gobbles, evincing much desire; she turns proudly round the strutting male, and suddenly opening her wings, throws herself towards him, as if to terminate his procrastination, and, laying herself on the earth, receives his dilatory caresses. But should he meet a young hen, his strut becomes different, and his movements are violently rapid; sometimes rising in air, he takes a short circular flight, and on alighting drags his wings for a distance of eight or ten paces, running at full speed, occasionally approaching the timorous hen, and pressing her, until she yields to his solicitations. Thus are they mated for the season, though the male does not confine himself exclusively to one female, nor does he hesitate to bestow his attentions and endearments on several, whenever an opportunity offers.

One or more females, thus associated, follow their favourite, and roost in his immediate neighbourhood, if not on the same tree, until they begin to lay, when they change their mode of life, in order to save their eggs, which the male uniformly breaks if in his power,

that the female may not be withdrawn from the gratification of his desires. At this time the females shun the males during the greater part of the day; the latter become clumsy and careless, meet each other peacefully, and so entirely cease to gobble, that the hens are obliged to court their advances, calling loudly and almost continually for them. The female may then be observed caressing the male, and imitating his peculiar gestures, in order to excite his amorousness.

The cocks, even when on the roost, sometimes strut and gobble, but more generally merely elevate the tail, and utter the *puff*, on which the tail and other feathers suddenly subside. On light or moonshining nights, near the termination of the breeding season, they repeat this action, at intervals of a few minutes, for several hours together, without rising from their perches.

The sexes then separate; the males, being much emaciated, cease entirely to gobble, retire and conceal themselves by prostrate trees, in secluded parts of the forest, or in the almost impenetrable privacy of a cane-brake. Rather than leave their hiding places, they suffer themselves to be approached within a short distance, when they seek safety in their speed of foot; at this season, however, they are of no value to the hunter, being meagre and covered with ticks. By thus retiring, using very little exercise, and feeding on peculiar grasses, they recover their flesh and strength, and when this object is attained, again congregate, and recommence their rambles.

About the middle of April, when the weather is dry, the female selects a proper place in which to deposit her eggs, secured from the encroachment of water, and, as far as possible, concealed from the watchful eye of the crow: this crafty bird spies the hen going to her nest, and having discovered the precious deposit, waits for the absence of the parent, and removes every one of the eggs from the spot, that he may devour them at leisure. The nest is placed on the ground, either on a dry ridge, in the fallen top of a dead leafy tree, under a thicket of sumach or briars, or by the side of a log:

it is of a very simple structure, being composed of a few dried leaves. In this receptacle the eggs are deposited, sometimes to the number of twenty, but more usually from nine to fifteen; they are whitish, spotted with reddish brown, like those of the domestic bird. Their manner of building, number of eggs, period of incubation, &c. appear to correspond throughout the Union, as I have received exactly similar accounts from the northern limits of the turkey range, to the most southern regions of Florida, Louisiana, and the western wilds of Missouri.

The female always approaches her nest with great caution, varying her course so as rarely to reach it twice by the same route; and, on leaving her charge, she is very careful to cover the whole with dry leaves, with which she conceals it so artfully, as to make it extremely difficult, even for one who has watched her movements, to indicate the exact spot: hence few nests are found, and these are generally discovered by fortuitously starting the female from them, or by the appearance of broken shells, scattered around by some cunning lynx, fox, or crow. When laying or sitting, the turkey hen is not readily driven from her post by the approach of apparent danger; but, if an enemy appears, she crouches as low as possible, and suffers it to pass. A circumstance related by Mr Audubon will shew how much intelligence they display on such occasions: having discovered a sitting hen, he remarked that, by assuming a careless air, whistling, or talking to himself, he was permitted to pass within five or six feet of her; but, if he advanced cautiously, she would not suffer him to come within twenty paces, but ran off twenty or thirty yards with her tail expanded, when, assuming a stately gait, she paused on every step, occasionally uttering a chuck. They seldom abandon their nests on account of being discovered by man, but should a snake, or any other animal, suck one of the eggs, the parent leaves them altogether. If the eggs be removed, she again seeks the male and recommences laying, though otherwise she lays but one nest of eggs

during the season. Several turkey hens sometimes associate, perhaps for mutual safety, deposit their eggs in the same nest, and rear their broods together. Mr Audubon once found three females sitting on forty-two eggs. In such cases, the nest is constantly guarded by one of the parties, so that no crow, raven, nor even polecat, dares approach it.

The mother will not forsake her eggs, when near hatching, while life remains; she will suffer an enclosure to be made around and imprison her, rather than abandon her charge. Mr Audubon witnessed the hatching of a brood, while thus endeavouring to secure the young and mother. "I have laid flat," says he, "within a very few feet, and seen her gently rise from the eggs, look anxiously towards them, chuck with a sound peculiar to the mother on such an occasion, remove carefully each half empty shell, and with her bill caress and dry the younglings, that already stand tottering and attempting to force their way out of the nest."

When the process of incubation is ended, and the mother is about to retire from the nest with her young brood, she shakes herself violently, picks and adjusts the feathers about the belly, and assumes a different aspect; her eyes are alternately inclined obliquely upwards and sidewise; she stretches forth her neck, in every direction, to discover birds of prey or other enemies; her wings are partially spread, and she softly clucks to keep her tender offspring close to her side. They proceed slowly, and, as the hatching generally occurs in the afternoon, they sometimes return to pass the first night in the nest. While very young, the mother leads them to elevated dry places, as if aware that humidity, during the first few days of their life, would be very dangerous to them, they having then no other protection than a delicate, soft, hairy down. In very rainy seasons wild turkeys are scarce, because, when completely wetted, the young rarely survive.

At the expiration of about two weeks, the young leave the ground on which they had previously reposed

at night under the female, and follow her to some low, large branch of a tree, where they nestle under the broadly curved wings of their vigilant and fostering parent. The time then approaches in which they seek the open ground or prairie land during the day, in search of strawberries, and subsequently of dewberries, blackberries, and grasshoppers; thus securing a plentiful food, and enjoying the influence of the genial sun. They frequently dust themselves in shallow cavities of the soil, or on anthills, in order to clean off the loose skin of their growing feathers, and rid themselves of ticks and other vermin.

The young turkeys now grow rapidly, and in the month of August, when several broods flock together, and are led by their mothers to the forest, they are stout and quite able to secure themselves from the unexpected attacks of wolves, foxes, lynxes, and even cougars, by rising quickly from the ground, aided by their strong legs, and reaching with ease the upper limbs of the tallest tree. Amongst the numerous enemies of the wild turkey, the most dreaded are the large diurnal and nocturnal birds of prey, and the lynx (*Felis rufa*,) who sucks their eggs, and is extremely expert at seizing both parent and young; he follows them for some distance, in order to ascertain their course, and then, making a rapid circular movement, places himself in ambush before them, and waits until, by a single bound, he can fasten on his victim.

The following circumstance is related by Bartram: "Having seen a flock of turkeys at some distance, I approached them with great caution; when, singling out a large cock, and being just on the point of firing, I observed that several young cocks were affrighted, and in their language warned the rest to be on their guard against an enemy, whom I plainly perceived was industriously making his subtle approaches towards them, behind the fallen trunk of a tree, about twenty yards from me. This cunning fellow-hunter was a large fat wild cat, or lynx: he saw me, and at times seemed to watch my motions, as if determined to seize the

delicious prey before me ; upon which I changed my object, and levelled my piece at him. At that instant my companion, at a distance, also discharged his piece, the report of which alarmed the flock of turkeys, and my fellow-hunter, the cat, sprang over the log, and trotted off."

These birds are guardians of each other, and the first who sees a hawk or eagle gives a note of alarm, on which all within hearing lie close to the ground. As they usually roost in flocks, perched on the naked branches of trees, they are easily discovered by the large owls, and, when attacked by these prowling birds, often escape by a somewhat remarkable manœuvre. The owl sails around the spot to select his prey ; but, notwithstanding the almost inaudible action of his pinions, the quick ear of one of the slumberers perceives the danger, which is immediately announced to the whole party by a *chuck* ; thus alarmed, they rise on their legs, and watch the motions of the owl, who, darting like an arrow, would inevitably secure the individual at which he aimed, did not the latter suddenly drop his head, squat, and spread his tail over his back ; the owl then glances over without inflicting any injury, at the very instant that the turkey suffers himself to fall headlong towards the earth, where he is secure from his dreaded enemy.

On hearing the slightest noise, wild turkeys conceal themselves in the grass, or among shrubs, and thus frequently escape the hunter, or the sharp-sighted birds of prey. The sportsman is unable to find them during the day, unless he has a dog trained for the purpose ; it is necessary to shoot them at a very short distance, since, when only wounded, they quickly disappear, and, accelerating their motion by a sort of half flight, run with so much speed, that the swiftest hunter cannot overtake them. The traveller, driving rapidly down the declivity of one of the Alleghanies, may sometimes see several of them before him, that evince no urgent desire to get out of the road ; but, on alighting, in

hopes of shooting them, he soon finds that all pursuit is vain.

In the spring, when the males are much emaciated by their attendance on the females, it sometimes may happen that, in cleared countries, they can be overtaken by a swift cur-dog, when they will squat, and suffer themselves to be caught by the dog, or hunter, who follows on horseback. But from the knowledge we have gained of this bird, we do not hesitate to affirm, that the manner of running down turkeys, like hares or foxes, so much talked of, is a mere fable, as such a sport would be attended with very trifling success. A turkey hound will sometimes lead his master several miles, before he can a second time *flush* the same individual from his concealment; and even on a fleet horse, after following one for hours, it is often found impossible to *put it up*. During a fall of melting snow, turkeys will travel extraordinary distances, and are often pursued in vain by any description of hunters; they have then a long, straddling manner of running, very easy to themselves, but which few animals can equal. This disposition for running, during rains, or humid weather, is common to all gallinaceous birds.

The males are frequently decoyed within gunshot, in the breeding season, by forcibly drawing the air through one of the wing bones of the turkey, producing a sound very similar to the voice of the female; but the performer on this simple instrument must commit no error, for turkeys are quick of hearing, and, when frequently alarmed, are wary and cunning. Some of these will answer to the call without advancing a step, and thus defeat the speculations of the hunter, who must avoid making any movement, inasmuch as a single glance of a turkey may defeat his hopes of decoying them. By imitating the cry of the barred owl, (*Strix nebulosa*,) the hunter discovers many on their roosts, as they will reply by a gobble to every repetition of this sound, and can thus be approached with certainty, about daylight, and easily killed.

Wild turkeys are very tenacious of their feeding

grounds, as well as of the trees on which they have once roosted. Flocks have been known to resort to one spot for a succession of years, and to return after a distant emigration in search of food. Their roosting place is mostly on a point of land, jutting into a river, where there are large trees. When they have collected at the signal of a repeated gobbling, they silently proceed towards their nocturnal abodes, and perch near each other: from the numbers sometimes congregated in one place, it would seem to be the common rendezvous of the whole neighbourhood. But no position, however secluded or difficult of access, can secure them from the attacks of the artful and vigilant hunter, who, when they are all quietly perched for the night, takes a stand previously chosen by daylight, and, when the rising moon enables him to take sure aim, shoots them down at leisure, and, by carefully singling out those on the lower branches first, he may secure nearly the whole flock, neither the presence of the hunter, nor the report of his gun, intimidating the turkeys, although the appearance of a single owl would be sufficient to alarm the whole troop: the dropping of their companions from their sides excites nothing but a buzzing noise, which seems more expressive of surprise than fright. This fancied security, or heedlessness of danger, while at roost, is characteristic of all the gallinaceous birds of North America.

The more common mode of taking turkeys is by means of *pens*, constructed with logs, covered in at top, and with a passage in the earth under one side of it, just large enough to admit an individual when stooping. The ground chosen for this purpose is generally sloping, and the passage is cut on the lower side, widening outwards. These preparations being completed, Indian corn is strewed for some distance around the pen, to entice the flock, which, picking up the grain, is gradually led towards the passage, and thence into the enclosure, where a sufficient quantity of corn is spread to occupy the leader until the greater part of the turkeys have entered. When they raise their heads and discover

that they are prisoners, all their exertions to escape are directed upwards and against the sides of the pen, not having sagacity enough to stoop sufficiently low to pass out by the way they entered, and thus they become an easy prey, not only to the experienced hunter, but even to the boys on the frontier settlements.

In proportion to the abundance or scarcity of food, and its good or bad quality, they are small or large, meagre or fat, and of an excellent or indifferent flavour : in general, however, their flesh is more delicate, more succulent, and better tasted than that of the tame turkey : they are in the best order late in the autumn, or in the beginning of winter. The Indians value this food so highly, when roasted, that they call it "the white man's dish," and present it to strangers as the best they can offer. It seems probable that in Mexico the wild turkey cannot obtain such substantial food as in the United States, since Hernandez informs us that their flesh is harder, and in all respects inferior to that of the domestic bird.

The Indians make much use of their tails as fans ; the women weave their feathers with much art on a loose web made of the rind of the birch tree, arranging them so as to keep the down on the inside, and exhibit the brilliant surface to the eye. A specimen of this cloth is in the Philadelphia Museum ; it was found enveloping the body of an Indian female, in the great Saltpetre cave of Kentucky.

Among the benefits conferred by America on the rest of the world, the gift of this noble bird should occupy a distinguished place, as unquestionably one of the most useful of the feathered tribe, being capable of ministering largely to the sustenance and comfort of the human race. Though the turkey is surpassed in external beauty by the magnificent peacock, its flesh is greatly superior in excellence, standing almost unrivalled for delicacy of texture and agreeable sapidty. On this account it has been eagerly sought by almost all nations, and has been naturalized with astonishing rapidity

throughout the world, almost universally constituting a favourite banquet dish.

The turkey, belonging originally to the American continent, was necessarily unknown to the ancients, who, in this as in a thousand other instances, were deficient in our most common and essential articles of food. Readers unacquainted with the fact may well be surprised to learn, that, although the introduction of this bird into Europe is comparatively modern, its origin has already been lost sight of, and that eminent naturalists of the last century, who lived so much nearer to the time of its first appearance, have expressed great uncertainty concerning its native country. Thus Belon, Aldrovandi, Gessner, Ray, &c. thought that it came originally from Africa and the East Indies, and endeavoured to recognize it in some of the domestic birds of the ancients. Belon and Aldrovandi supposed it to have been mentioned by ancient authors, but they mistook for it the *Numida meleagris* of Linné, which is actually an African bird, now almost naturalized in America, even in a wild state, so that it would be apparently more reasonable for America to regard that bird as indigenous, than that the old continent should lay claim to the turkey. In so soon losing sight of the origin of this bird, we see a strong exemplification of the ungrateful disposition of man, who can durably treasure up the memory of wrongs and injuries, but fails to recollect the greatest benefits he has received. It would be loss of time to combat the arguments advanced by authors, who have deceived themselves in attempting to deprive America of her just title to this bird, since they have been fully refuted by the eloquent Buffon; but we may here introduce a sketch of its progress from America throughout Europe.

The first unquestionable description of the turkey was written by Oviedo, in 1525, in the summary of his *History of the Indies*. This bird was sent from Mexico to Spain early in the sixteenth century; from Spain it was introduced into England in 1524. Turkeys were taken to France in the reign of Francis the First,

whence they spread into Germany, Italy, &c. ; a few, however, had been carried to the latter country by the Spaniards, some years previously. The first turkey eaten in France appears to have been served up at the wedding banquet of Charles the Ninth, in the year 1570. Since that period they have been bred with so much care, that, in England, as we read in ancient chronicles, their rapid increase rendered them attainable at country feasts, where they were a much esteemed dish as early as 1585. Europeans conveyed them to all their colonies, and thus were they gradually introduced into Asia, Africa, and even Oceanica.

The French distinguished them by the name of *Cog et Poule d'Inde*, (cock and hen from India,) because they were natives of the West Indies. Subsequently, for the sake of brevity, they called them *Dindon*, an appellation which is yet retained. The English name is still worse, as it conveys the false idea that the turkey originated in Asia, owing to the ridiculous habit, formerly prevalent, of calling every foreign object by the name of Turk, Indian, &c.

Although the turkey is generally considered a stupid bird, it is probable that his intellectual qualifications have not been fairly appreciated, as he is susceptible of very lively emotions. If any new and remarkable object attracts the attention of the male, his whole appearance and demeanour undergo a sudden and extraordinary change: relinquishing his peaceful aspect, he boldly raises himself, his head and neck become turgid, and the wattles, from an influx of blood, glow with vivid red; he bristles up the feathers of the neck and back, his tail is vertically raised and expanded like a fan, and the wing-feathers are extended until they touch the ground. Thus transformed, he utters a low, humming sound, and advances with a grave and haughty strut, occasionally accelerating his steps, and, at the same time, rubbing the tips of the primary feathers violently against the earth. During these manœuvres, he now and then utters a harsh, interrupted, and dissonant note, apparently expressive of the highest degree

of rage : this cry, sounding like *rook, oorook, oorook*, will be repeated at the pleasure of any person who should whistle, or strike the ear of the bird by any other acute or unusual sound. The appearance of any red cloth is sure to awaken his anger, and induce him to rush fearlessly on the disagreeable object, exerting all his power to injure or destroy it.

In connection with the peculiar character of this bird, we may advantageously quote the sentiments of the great Franklin, who expressed a regret that the turkey should not have been preferred to the bald eagle as an emblem of the United States. Certainly this eagle is a tyrannical and pusillanimous bird, by no means an appropriate representative of a great and magnanimous nation, as was the eagle chosen by the Romans.

“ Others object to the bald eagle,” says Franklin, in one of his letters, “ as looking too much like a dindon, or turkey. For my own part, I wish the bald eagle had not been chosen as the representative of our country; he is a bird of bad moral character; he does not get his living honestly; you may have seen him perched on some dead tree, where, too lazy to fish for himself, he watches the labour of the fishing hawk, and, when that diligent bird has at length taken a fish, and is bearing it to his nest for the support of his mate and young ones, the bald eagle pursues him, and takes it from him. With all this injustice he is never in good case, but, like those among men who live by sharpening and robbing, he is generally poor, and often very lousy. Besides, he is a rank coward; the little kingbird, not bigger than a sparrow, attacks him boldly, and drives him out of the district. He is, therefore, by no means a proper emblem for the brave and honest Cincinnati of America, who have driven all the *Kingbirds* from our country, though exactly fit for that order of knights which the French call *Chevaliers d'Industrie*. I am, on this account, not displeased that the figure is not known as a bald eagle, but looks more like a turkey. For in truth the turkey is, in comparison, a much more respectable bird, and withal a true original native of America. Eagles have

been found in all countries, but the turkey was peculiar to ours. He is, besides, (though a little vain and silly, 'tis true, but not the worse emblem for that,) a bird of courage, and would not hesitate to attack a grenadier of the British guards, who should presume to invade his farm-yard with a red coat on."

But, since the choleric temper and vanity of the tame turkey are proverbial in various languages, in some of which its very name is opprobrious, and often applied in derision to vainglorious and stupid people, we are better satisfied that its effigy was not placed in the escutcheon of the United States.

Those who have not observed the turkey in its wild state, have only seen its deteriorated progeny, which are greatly inferior in size and beauty. So far from having gained by the care of man, and the abundance of food accessible in its state of domestication, this bird has degenerated not only in Europe and Asia, but, what is certainly extraordinary, even in its native country. The domesticated turkey of America, accustomed as it is to roam in the woods and open fields almost without restraint, is in no respect superior to that of the European poultry yard. I have, however, seen several very beautiful ones from Lancaster county, Pennsylvania, and Sussex county, New Jersey, that were said to be a cross breed between the wild cock and tame hen. This crossing often occurs in countries where wild and tame turkeys are found; it is well known that they will readily approach each other; and such is the influence of slavery even upon the turkey, that the robust inhabitant of the forest will drive his degenerate kinsfolk from their own food, and from their females, being generally welcomed by the latter and by their owners, who well know the advantages of such a connection. The produce of this commixture is much esteemed by epicures, uniting the luscious obesity of the one, with the wild flavour of the other. A gentleman, residing in Westchester county, New York, a few years since procured a young female wild turkey, in order to make the experiment of crossing the breed;

but, owing to some circumstance, it did not succeed, and in the ensuing spring this female disappeared. In the following autumn she returned, followed by a large brood; these were quite shy, but, by a little management, they were secured in a coop, and the mother allowed her liberty: she remained on the farm until the succeeding spring, when she again disappeared, and returned in autumn with another brood. This course she has repeated for several successive years.

Eggs of the wild turkey have been frequently taken from their nests and hatched under the tame hen; the young preserve a portion of their uncivilized nature, and exhibit some knowledge of the difference between themselves and their foster mother, roosting apart from the tame ones, and in other respects shewing the force of hereditary disposition. The domesticated young, reared from the eggs of the wild turkey, are often employed as decoy birds to those in a state of nature. Mr William Bloom, of Clearfield, Pennsylvania, caught five or six wild turkeys, when quite chickens, and succeeded in rearing them. Although sufficiently tame to feed with his tame turkeys, and generally associate with them, yet they always retained some of their original propensities, roosting by themselves, and higher than the tame birds, generally on the top of some tree, or of the house. They were also more readily alarmed; on the approach of a dog, they would fly off, and seek safety in the nearest woods. On an occasion of this kind, one of them flew across the Susquehanna, and the owner was apprehensive of losing it; in order to recover it, he sent a boy with a tame turkey, which was released at the place where the fugitive had alighted. This plan was successful; they soon joined company, and the tame bird induced his companion to return home. Mr Bloom remarked, that the wild turkey will thrive more, and keep in better condition, than the tame, on the same quantity of food.

Besides the above mentioned half breed, some domesticated turkeys, of a very superior metallic tint, are sold in the Philadelphia and New York markets, as

wild ones. Many of these require a practised eye to distinguish their true character, but they are always rather less brilliant, and those I examined had a broad whitish band at the tip of the tail-coverts, and another at the tip of the tail itself, which instantly betrayed their origin, the wild ones being entirely destitute of the former, and the band on the tip of the tail being neither so wide nor so pure.

In the following description we give the generic as well as the specific characters of the wild turkey, in order to make it complete.

The male wild turkey, when full grown, is nearly four feet in length, and more than five in extent. The bill is short and robust, measuring two inches and a half to the corner of the mouth; it is reddish, and horn colour at tip; the superior mandible is vaulted, declining at tip, and overhangs the inferior, being longer and wider; it is covered at base by a naked cere-like membrane, in which the nostrils are situated, they being half closed by a turgid membrane, and opening downwards; the inferior mandible slightly ascends towards the tip; the aperture of the ear is defended by a fascicle of small decomposed feathers; the tongue is fleshy and entire; the irides are dark brown; the head, which is very small in proportion to the body, and half of the neck, are covered by a naked bluish skin, on which are a number of red wart-like elevations on the superior portion, and whitish ones on the inferior, interspersed with a few scattered, black, bristly hairs, and small feathers, which are still less numerous on the neck; the naked skin extends farther downwards on the inferior surface of the neck, where it is flaccid and membranous, forming an undulating appendage, on the lower part of which are cavernous elevations, or *wattles*. A wrinkled, fleshy, conic, extensible caruncle, hairy and penicellated at tip, arises from the bill at its junction with the forehead; when the bird is quiescent, this process is not much more than an inch and a half long; but when he is excited by love or rage, it becomes elongated, so as to cover

the bill entirely, and depend two or three inches below it. The neck is of a moderate length and thickness, bearing on its inferior portion a pendent fascicle of black rigid hairs, about nine inches long. The body is thick, somewhat elongated, and covered with long truncated feathers; these are divided into very light fuliginous down at base, beyond which they are dusky; to this dusky portion succeeds a broad, effulgent, metallic band, changing now to copper colour or bronze gold, then to violet or purple, according to the incidence of light; and at tip is a terminal, narrow, velvet black band, which does not exist in the feathers of the neck and breast; the lower portion of the back, and the upper part of the rump, are much darker, with less brilliant golden violaceous reflections; the feathers of the inferior part of the rump have several concealed, narrow, ferruginous, transverse lines, then a black band before the broad metallic space, which is effulgent coppery; beyond the terminal narrow black band is an unpolished bright bay fringe. The upper tail-coverts are of a bright bay colour, with numerous narrow bars of shining greenish; all these coverts are destitute of the metallic band, and the greater number have not the black subterminal one; the vent and thighs are plain brownish cinereous, intermixed with paler; the under tail-coverts are blackish, glossed with coppery towards the tip, and at tip are bright bay.

The wings are concave and rounded, hardly surpassing the origin of the tail; they have twenty-eight quill feathers, of which the first is shortest, and the fourth and fifth longest, the second and ninth being nearly equal; the smaller and middling wing-coverts are coloured like the feathers of the body; the greater coverts are copper violaceous, having a black band near the whitish tip; their concealed web is blackish, sprinkled with dull ferruginous: in old birds, the exterior web is much worn by friction amongst the bushes, in consequence of which those feathers exhibit a very singular, unwebbed, curved appearance. The spurious wing, the primary coverts, and the primaries,

are plain blackish, banded with white, which is interrupted by the shaft, and sprinkled with blackish; the secondaries have the white portion so large, that they may as well be described as white, banded with blackish, and are, moreover, tinged with ferruginous yellow; this colour gradually encroaches on the white, and then on the blackish, in proportion as the feathers approach the body, so that the tertials are almost entirely of that colour, being only sprinkled with blackish, and having metallic reflections on the inner web; the anterior under wing-coverts are brownish black, the posterior ones being gray; the tail measures more than a foot and a quarter, is rounded, and composed of eighteen wide feathers; it is capable of being expanded and elevated, together with the superior tail-coverts, so as to resemble a fan, when the bird parades, struts, or wheels. The tail is ferruginous, mottled with black, and crossed by numerous narrow undulated lines, of the same colour, which become confused on the middle feathers; near the tip is a broad black band, then the feathers are again mottled for a short distance, and are widely tipped with ferruginous yellow.

The feet are robust and somewhat elongated; the tarsus measures more than six inches in length, being covered before by large alternate pentagonal plates, and furnished, on the inner posterior side, with a rather obtuse, robust, compressed spur, nearly one inch long. The toes are three before, connected at base by a membrane, and one behind, touching the ground only at tip, being articulated higher on the tarsus than the others, and one-half shorter than the lateral toes, which are equal; the middle toe is more than four inches long, and the posterior but little more than one inch; they are all covered by entire plates; the sole is granulated: the colour of the feet is red, the margins of the plates and scales, the membrane and nails, being blackish; the nails are oblong, wide, obtuse at tip, rounded above, and perfectly plain beneath.

The female, or hen turkey, is considerably smaller in

size, being three feet and a quarter long; the bill and feet resemble those of the male, but are proportionally smaller, the latter being destitute of even a rudiment of spur; the irides are like those of the male; the head and neck are not so naked as in that sex, but are covered by small, decomposed feathers, of a dirty grayish colour; those of the back of the neck are tipped with ferruginous, constituting a longitudinal vitta on that part; the caruncle on the frontlet is rudimental, not susceptible of being elongated; the pectoral appendage is entirely wanting in our specimen; the general plumage is dusky gray, each feather having a metallic band, less brilliant than that of the male; then a blackish band and a grayish terminal fringe; the black subterminal band is obsolete on the feathers of the neck, and of the whole inferior surface; those of the latter part, with the feathers of the lower portion of the back, of the rump, and the flanks, have their tips yellowish ferruginous, becoming gradually brighter towards the tail. The vent and thighs are dirty yellowish gray, without any reflections; the under tail-coverts are tipped, and varied with rather deep ferruginous; the superior tail-coverts are like those of the male, but duller, and tipped with a broad, whitish ferruginous fringe. The wings are also duller, each covert being tipped with grayish; less white exists on the primaries, the bands being narrower, and the secondaries entirely destitute of them. The tail is similar in colour to that of the male. It is proper to remark, that the female which furnished the above description, though certainly adult, had not attained to its full size and perfect beauty. It was procured in the month of March, on St. John's River, Florida. The male was selected from among many fine specimens, shot in the month of April, near Engineer Cantonment, on the Missouri. It weighed twenty-two pounds; but as the males are very thin at that season,* when in good order it must have weighed much more.

* The extraordinary leanness of this bird, at particular seasons

The young of both sexes resemble each other so closely, before the naked membrane acquires its tinge of red, as to be scarcely distinguishable; the females, however, when a few days old, are somewhat larger than the males, and have a weaker piping note; the males then begin to stand higher on their legs, which are stronger than those of the females, and soon exhibit the rudiments of spurs. On the approach of the first winter, the young males shew a rudiment of the beard or fascicle of hairs on the breast, consisting of a mere tubercle, and attempt to strut and gobble; the second year the hairy tuft is about three inches long; in the third the turkey attains its full stature, although it certainly increases in size and beauty for several years longer. In a fine male specimen, evidently young, which I obtained in the Philadelphia market, the plumage is equally brilliant with that of the finest adult, although the frontal caruncle is only one inch in length, the pectoral appendage two inches, and the spur merely rudimental. The concealed portion of the plumage on the anterior part of the back is sprinkled with pale ferruginous, which disappears as the bird advances in age.

Females of four years old have their full size and colouring; they then possess the pectoral fascicle, four or five inches long, (which, according to Mr Audubon, they exhibit a little in the second year, if not barren,) but this fascicle is much thinner than that of the male. The barren hens do not obtain this distinction until a very advanced age; and, being preferable for the table, the hunters single them from the flock, and kill them in preference to the others. The female wild turkey is more frequently furnished with the hairy tuft than the tame one, and this appendage is gained earlier in life. The great number of young hens without it, has no doubt given rise to the incorrect assertion of a few writers, that the female is always destitute of it.

of the year, has become proverbial in many Indian languages. An *Omawhaw*, who wishes to make known his abject poverty, says, "*Wah pawne zezecah ha go ba*,—I am as poor as a turkey in summer."

The weight of the hen generally averages about nine pounds avoirdupois. Mr Audubon has shot barren hens, in strawberry time, weighing thirteen pounds; and he has seen some few so fat as to burst open by falling from a tree, after being shot. The male turkeys differ more in bulk and weight; from the accounts I have received from various parts of the Union, fifteen or twenty pounds may be considered a fair statement of their medium weight; but birds of thirty pounds are not very rare; and I have ascertained the existence of some weighing forty. In relation to those surpassing the last mentioned weight, according to the report of authors who do not speak from personal observation, I have not been able to find any, and am inclined to consider them as fabulous. Mr Audubon informs us, he saw one in the Louisville market that weighed thirty-six pounds; the pectoral appendage of this bird measured more than a foot in length. Bartram describes a specimen of remarkable size and beauty, reared from an egg found in the forest, and hatched by a common hen. When this turkey stood erect, the head was three feet from the ground. The animal was stately and handsome, and did not seem insensible of the admiration he excited.

Though comparatively recent, the domestic state of the turkey has been productive of many varieties; we need not, therefore, be surprised at the existence of numerous and remarkable differences in those animals, which have been domesticated from time immemorial. The most striking aberration from the standard of the species, is certainly the tufted turkey, which is very rare, the crest being white in some specimens, and black in others. Tame turkeys sometimes occur of an immaculate black colour; others are exclusively white; some are speckled or variegated; and all these varieties are continued by propagation, under analogous circumstances. In the wild state, a white, or even a speckled turkey, is unknown; and we may venture to say, that a plain black one has hardly ever occurred.

Moehring proposed the name of *Cynchramus* for this

genus, as the term *Meleagris* was used by the ancients to indicate a different bird. All other naturalists have agreed with Linné, who, though fully aware of the fact, made use of the name we have adopted. But he included in the genus two allied species, which Gmelin very properly rejected, and placed in a separate genus, which he called *Penelope*, considering the turkey as *sui generis*. Latham again rendered the genus unnatural, by restoring one of the objectionable Linnean species, perceiving that it was not properly placed in *Penelope*; it is, in truth, a *Phasianus*. As now characterized, the present genus is exclusively American; and, by the discovery of a beautiful species closely allied to that of the United States, it now consists of two species. The ocellated turkey (*Meleagris oculata*) inhabits Honduras, and may be distinguished from the common species by its smaller size, more brilliant plumage, and principally by having ocellated spots on the tail. It was first described by Cuvier, and has lately been figured in the magnificent periodical work, the "*Planches Coloriées*" of Temminck and Laugier. A beautiful specimen has long been exhibited in the Charleston Museum.

M. Duponceau, so well known by his philological researches, has favoured us with the following table of names for the wild turkey, in the different Indian languages.

E. English Pronunciation.—F. French.—S. Spanish.—G. German.

Algonkin . . .	Mississay, E. . .	Mackenzie.
Adayes . . .	Owachuk, S. . .	MS. Voc.
Atacapas . . .	Skellig, S. . .	MS. Voc.
Caddoes . . .	Noe, E. . .	Dr Sibley.
Chetimachas . . .	Tsante hatineche hase, S. . .	} MS. Voc.
Cherokee . . .	Kainna; Oocoooco, E.	MS. Voc.
Chickasaws . . .	Fukit, E. . .	MS. Voc.
Choctaws . . .	Oopuh, E. . .	MS. Voc.
Creeks . . .	Pinewau, E. . .	MS. Voc.
Delaware proper . . .	Tschikenum, G. . .	} Heckewelder and Zeis- berger.
Delaware of New Jersey . . .	Tshikuuna, E. . .	MS. Voc.
Delaware of New Sweden . . .	Sickenem, (Swedish)	Luther's Catechism.
Huron . . .	Ondetontak, F. . .	Pere Sagard.

Wyandot (same people)	Daigh-ton-tah, E.	{ Attwater in Archaeol. Amer.
Illinois	Pireouah, F.	MS. Voc.
Knisteneaux	Mes-sey-thew, E.	Mackenzie.
Miamis	Pilauh	MS. Voc.
Nenticoke	Pahquun, E.	MS. Voc.
Nottoway *	Kunum, E.	MS. Voc.
Omawhaw (a branch of Sioux)	{ Ze-ze-kah, E.	Say.
Onondagos (Iroquois)	{ Netachrochwa gatschi- nak, G.	Zeisberger's Dictionary, MS.
Osage { cock	Sukah tingah, E.	MS. Voc.
{ hen	Inchuga Sukah, E.	MS. Voc.
Ottos, or Wahtoktatah (Sioux)	{ Wa-ek-kung-ja, E.	Say.
Shawanese	Pelewa, G.	Heckewelder.
Uchee †	Witch-pshah, E.	MS. Voc.
Unquachog (Long Island)	{ Nahiam, E.	MS. Voc.

GENUS XIX. — *TETRAO*.42. *TETRAO OBSCURUS*, SAY. — DUSKY GROUSE.

BONAPARTE, PLATE XVIII. FEMALE.

LINNE, 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, *Syrhaptēs* 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

* Indians of Virginia, a branch of the Tuscaroras.

† *Uchees*, a nation of Floridian Indians, speaking a curious language, full of particular sounds, not found in any other languages. They live among the Creeks.

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 *Bonasia*, 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 farther 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. bonasiæ* 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 on 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. phasaniellus* 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.

The genus *Tetrao* is now composed of thirteen species,—three *Lagopodes*, two *Bonasiæ*, and eight typical *Tetraones*. This enumeration does not include

* These processes are liable to fall off, at least in preserved skins.

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 farther 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 present specimen is that on which Say established the species: it 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 bandlike 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 described, 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.

43. *TETRAO PHASIANELLUS*, LIN. — SHARP-TAILED GROUSE.

BONAPARTE, PLATE XIX. — EDINBURGH COLLEGE MUSEUM.

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 Edward'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 farther 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 taken our description, 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 to 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 ochrous 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 bandlike 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 emarginated 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 female specimen we have selected for the following description, on account of its being the only one we had from the United States

territory ; it is in the autumnal dress, and was brought from the Rocky Mountains by the expedition under Major Long. It is now in the Philadelphia Museum, and 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.

This female 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 emarginated at tip, the inner lobe being longer, acute, and singularly shaped.

44. *TETRAO CANADENSIS*. — SPOTTED GROUSE.

BONAPARTE, PLATE XX. MALE; PLATE XXI. FIG. 1. FEMALE.
EDINBURGH COLLEGE MUSEUM.

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.

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, farther 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 present bird 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. 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.

45. *TETRAO UROPHASIANUS*, BONAPARTE.

COCK OF THE PLAINS.

BONAPARTE, PLATE XXI. FIG. II.

It is with the liveliest satisfaction that we are enabled finally to enrich the North American Fauna with the name 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 nowhere 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 travellers, 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 description 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 southeast 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

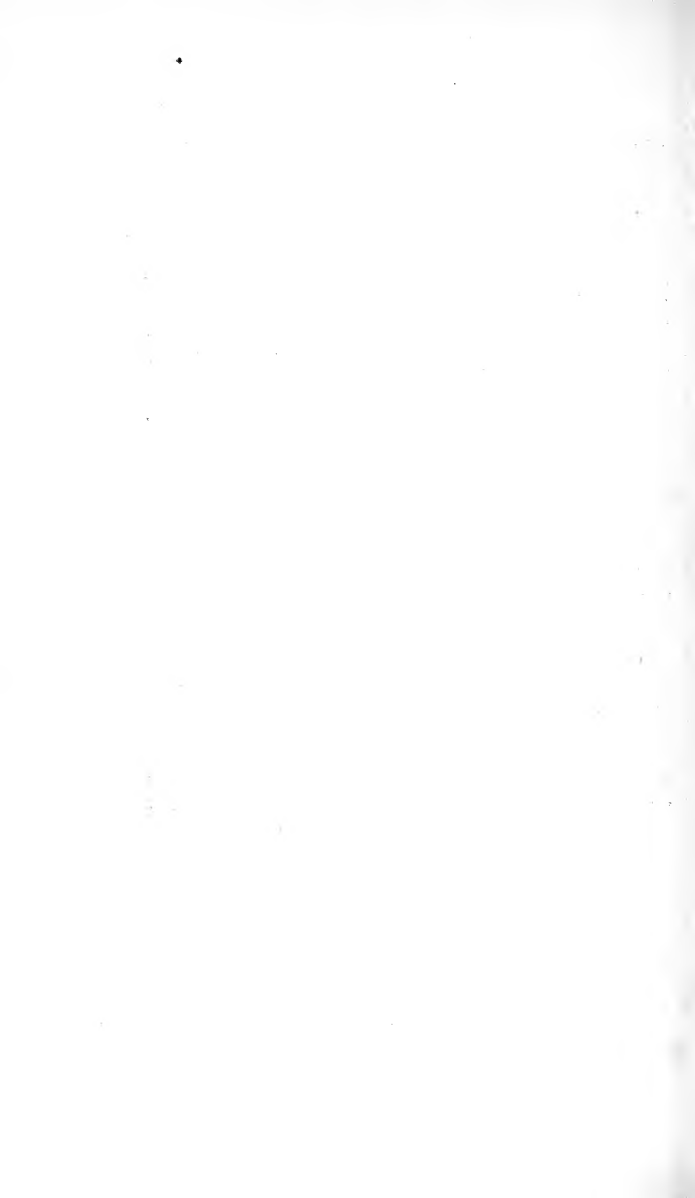
the largest of grouse. The two females are strikingly similar. The cock of the plains is, however, a much more grayish bird, wanting entirely the reddish that mottles, and occupies so much of the plumage of its analogue. This, the total want of beard-like appendages, and the singular shape of the tail, 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, 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, espe-

cially 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 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.



SYNONYMS;

OR,

**NAMES GIVEN TO THE DIFFERENT BIRDS IN
BONAPARTE'S AMERICAN ORNITHOLOGY,
BY TRAVELLERS AND NATURALISTS.**

SYNONYMS

TO

BONAPARTE'S AMERICAN ORNITHOLOGY

I. — Page 3.

COOPER'S HAWK.

FALCO COOPERII, BONAPARTE.

BONAPARTE, Plate x. Fig. 1. — *Philadelphia Museum*, No. 403.
— *My Collection*.

II. — Page 13.

WHITE-TAILED HAWK.

FALCO DISPAR, BONAPARTE.

BONAPARTE, Plate xi. Fig. 1. — *Falco dispar*, *Temm. et Lagg.* pl. col. 319, young female. — *Ncb. App. to Synopsis of N. A. birds in Ann. Lyc. New York*, p. 435. — *Milvus*, (now *Elanoides*) *leucurus*, *Vieill.* (*Alcon blanco*, d'Azara) *Nouv. Dict. d'Hist. Nat.* 20, p. 556. — *Falco melanopterus*, *Nob. Jour. Ac. Ph.* 5, p. 28. *Id. Cat. birds U. S.* sp. 16, in *Contr. Macl. Lyc.* 1, p. 11. *Id. Synopsis of N. A. birds*, sp. 16, in *Ann. Lyc. N. Y.* — *Le Faucon blanc*, *Sonnini's d'Azara*, 3, p. 96, sp. 36.
— *My Collection*.

III. — Page 21.

BLUE HAWK, OR HEN-HARRIER.

FALCO CYANEUS, BONAPARTE.

BONAPARTE, Plate xii. — See *Wilson's American Ornithology*, vol. 6, p. 67, pl. 51, fig. 1, for the young, (under the name of Marsh Hawk, *Falco uliginosus*.) — *Falco cyaneus*, *Linn. Syst.* 1, p. 126, sp. 10. *Gmel. Syst.* 1, p. 276, sp. 10. *Iter Poseg.* p. 27, adolescent male. *Lath. Ind. Orn.* 1, p. 39, sp. 94. *Montague, in Trans. Lin. Soc.* 9, p. 182. *Meyer, Taschen. Deutschl. Vog.* 1, p. 145. *Temm. Man. Orn.* 1, p. 72. *Ranz. El. Zool.* 3, pl. 7, p. 137, sp. 28. *Brehm. Lehrb. Eur. Vog.* 1,

p. 59. *Selby, Ill. Brit. Orn.* 1, p. 26, pl. 10, fig. 1, male; fig. 2, female. *Savi, Orn. Tosc.* 1, p. 63. *Nob. Cat. and Syn. Birds U. S.* sp. 22. — *Falco pygargus*, *Linn. Syst.* 1, p. 126, sp. 11. *Gmel. Syst.* 1, p. 277, sp. 11, female and young. — *Falco Hudsonius*, *Linn. Syst.* 1, p. 128, sp. 19. *Gmel. Syst.* 1, p. 277, sp. 19, young, American. — *Falco Bohemicus*, *Gmel. Syst.* 1, p. 276, sp. 107. *Lath. Ind.* p. 38, sp. 93, adult male. — *Falco Albicans*, *Gmel. Syst.* 1, p. 276, sp. 102. *Lath. Ind.* p. 38, sp. 93, adult male. — *Falco griseus*, *Gmel. Syst.* 1, p. 275, sp. 100. *Lath. Ind.* p. 37, sp. 86. *Gerard, Tabl. Elem.* p. 37, adolescent male. — *Falco montanus*, var. B. *Gmel. Syst.* 1, p. 278, sp. 106. *Lath. Ind.* p. 48, sp. 116. — *Falco cinereus*, *It. Poseg.* p. 27, adolescent male. — *Falco albicollis*, *Lath. Ind.* p. 36, sp. 81, adult South American male. — *Falco Buffonii*, *Gmel. Syst.* 1, p. 277, sp. 103, female and young, American. — *Falco uliginosus*, *Gmel. Syst.* 1, p. 278. *Lath. Ind.* p. 40, sp. 95. *Sabine, Zool. App. to Frankl. Exped.* p. 671, young American. — *Falco rubiginosus*, *It. Poseg.* p. 29. *Lath. Ind.* p. 27, sp. 56, young. — *Falco ranivorus*, *Daudin, Orn.* 2, p. 170. *Lath. Ind. Suppl.* p. 7, young. — *Falco europogistus*, *Daud. Orn.* 2, p. 110, adolescent male. — *Circus europogistus*, *Vieillot, Ois. Am. Sept.* 1, p. 36, pl. 8, adolescent male. — *Circus Hudsonius*, *Vieill. l. c.* 1, p. 36, pl. 9, young. — *Circus uliginosus*, *Vieill. l. c.* 1, p. 37, female and young. — *Circus variegatus*, *Vieill. l. c.* 1, p. 37, male changing. — *Circus gallinarius*, *Vieill. Nouv. Dict. d'Hist. Nat.* 4, p. 459. *Circus cyaneus*, *Id.* 31, p. 410. — *Circus cyaneus*, *Boie.* *Circus ranivorus*, *Vieill. Nouv. Dict. d'Hist. Nat.* 4, p. 456, young, African. — *Falco strigiceps*, *Nills. Orn. Suec.* 1, p. 21. — *Falco torquatus*, *Briss. Orn.* 1, p. 345, sp. 7. *Id.* 8vo, p. 100, male and female, *Brunn.* sp. 14. — *Falco montanus cinereus*, *Briss. Orn.* 1, p. 355, sp. 9, var. A. *Id.* 8vo, p. 112, adolescent male. — *Accipiter Freti Hudsonis*, *Briss. Orn.* 6, *App.* p. 18, sp. 47. — *Lanarius cinereus*, *Briss. Orn.* 1, p. 365, sp. 17. *Id.* 8vo, p. 106. — *Lanarius albicans*, *Briss.* 1, p. 367, sp. 18. — *Subbuteo*, *Gessner, Av.* p. 48. — *Pygargus accipiter*, *Ray, Syn.* p. 17, sp. 5. *Will. Orn.* p. 40, pl. 7. — *Falco plumbeus*, cauda tessellata, *Klein, Av.* p. 52, sp. 22. — *Lanarius*, *Aldr. Orn.* 1, pl. 381, 382, adult male. — *Lanarius cinereus*, sive *Falco cinereo-albus*, *Frisch*, pl. 79, 80, adult male. — *Falco montanus secundus*, *Aldr.* *Will.* pl. 9, adult male. — *Albanella*, *Storia degli Ucc.* 1, pl. 35, adult male. — *Falco Pygargo*, *Id.* 1, pl. 31, female. — *Autre Oiseau St Martin*, *Belon, Hist. Ois.* p. 104. — *L'Oiseau St Martin*, *Buff. Ois.* 1, p. 212. *Id. Pl. enl.* 459, adult male. *Gerardin, Tabl. Elem. Orn.* 1, p. 43. — *La Soubuse*, *Buff. Ois.* 1, p. 215, pl. 9. *Id. Pl. enl.* 443, young female, 480, young male. *Gerardin, Tabl. Elem. Orn.* 1, p. 37, female and young. — *Le Grenouillard*, *Le Vaill. Ois. Afrique*, 1, p. 63, pl. 23, young. — *Kore oder Halbweyhe*, *Bechst.*

Tasch. Deutsch. p. 25, sp. 20. — *Meyer and Wolf, Ois. d'Allem.* liv. 27, pl. 5, adult male, pl. 6, female. — *Naumann, Vog. Deutsch.* ed. 2. 1, pl. 39, fig. 1, adult male; fig. 2. adult female, pl. 38; fig. 2, young male. — Mause Habicht, Missilauche, *Meyer, Boehm. Abh.* 6, p. 313, adult male. — Blue Hawk, *Edw.* 5, p. 33, pl. 225, adult male. — Marsh Hawk, *Edw.* p. 173, pl. 291. — *Penn. Arct. Zool.* sp. 105. — *Lath. Syn.* 1, p. 90, sp. 75, var. A. female and young. — Ash-coloured mountain Falcon, *Lath. Syn.* 1, p. 94, sp. 78, var. A. adolescent male. — Hen-harrier, *Edw.* pl. 225, very old male. — *Will. (Angl.)* p. 172. — *Alb.* 2, pl. 5. — *Hayes, Brit. Birds,* pl. 1. — *Lewin, Brit. Birds,* 1, p. 18. — *Penn. Brit. Zool.* 1, sp. 58, p. 28. — *Lath. Syn.* 1, p. 88, sp. 74. — *Id. Suppl.* p. 22, adult male. — Ring-tail Hawk, *Edw.* 3, pl. 107. — *Penn. Arct. Zool.* sp. 106, female and young. — Ring-tail, *Will. (Angl.)* p. 72. — *Alb.* 3, pl. 3. — *Hayes, Brit. Birds,* pl. 2. — *Lewin, Brit. Birds,* 1, pl. 18, female. — *Id.* pl. 2, fig. 4, the egg. — *Penn. Brit. Zool.* sp. 59. — *Lath. Syn.* 1, p. 89, sp. 75. — *Id. Suppl.* p. 22, female and young. — White-rumped Bay Falcon, *Lath. Syn.* p. 54, sp. 34, var. B. young. — Hudson's Bay Ring-tail, *Lath. Syn.* 1, p. 91, sp. 76, young. — White Lanner, *Lath. Syn.* 1, p. 87, sp. 73, adult male. — Gray Falcon, *Penn. Brit. Zool.* 1, sp. 49. — *Lewin, Brit. Birds,* 1, pl. 15. — *Lath. Syn.* 1, p. 82, sp. 67, adolescent male. — New York Falcon, *Penn. Arct. Zool.* 2, p. 209, adolescent male. — Ranivorous Falcon, *Lath. Syn. Suppl.* female and young. — White-necked Falcon, *Lath. Syn. Suppl.* p. 30, sp. 101, adult male, South American. — Cayenne Ring-tail, *Lath. Syn.* 1, p. 91, sp. 76, var. A. young. — Falco glaucus, the sharp-winged hawk, of a pale sky blue colour, the tip of the wings black, *Bartr. Trav.* p. 290, adult male. — Falco subcœruleus, the sharp-winged hawk, of a dark or dusky blue colour, *Bartr. Trav.* p. 290, adolescent male. — Falco ranivorus, the Marsh Hawk, *Bartr. Trav.* p. 290, young. — *Philadelphia Museum.* — *My Collection.* — *Edinburgh College Museum.*

IV. — Page 30.

BURROWING OWL.

STRIX CUNICULARIA, MOLINA.

BONAPARTE, Plate VII. Fig. 2. — *Strix cunicularia, Molina, Hist. Chili,* (Am. ed.) 1, p. 184. — *Gmel. Syst.* 1, p. 292, sp. 28. — *Lath. Ind.* p. 63, sp. 38. — *Vieill. Ois. de l'Am. Sept.* 1, p. 48. — *Say, in Long's Expedition to the Rocky Mountains,* 2, p. 36 and 200. — *Ulula cunicularia, Feuillee, Journ. Obs. Phys.* p. 562. — *Noctua coquimbana, Briss. Av.* 1, p. 525, sp. 11. — *Coquimbo Owl, Lath. Syn.* 1, p. 145, sp. 33. — *Philadelphia Museum,* No. 472.

V. — Page 39.

YOUNG YELLOW-BELLIED WOODPECKER.

PICUS VARIUS, BONAPARTE.

BONAPARTE, Plate VIII. Fig. 1, 2. — See *Wilson's American Ornithology*, 1, p. 147, pl. 9, Fig. 2, for the adult and history, (present edition, vol. 1, p. 157.) — *Picus varius*, *Linn. Syst.* 1, p. 176, sp. 20. *Gmel. Syst.* 1, p. 438, sp. 20. *Lath. Ind.* p. 232, sp. 21. *Vieill. Ois. de l'Am. Sept.* 2, p. 63, pl. 118, adult male; pl. 119, very young. — *Picus varius carolinensis*, *Briss. Av.* 4, p. 62, sp. 24. — *Picus varius minor*, ventre luteo, the Yellow-bellied Woodpecker, *Catesby, Carolina*, 1, p. 21, pl. 21, left figure, adult male. — *Bartram, Trav.* p. 291. — Epeiche ou Pic varié de la Caroline, *Buff. Ois.* 7, p. 77. *Pl. enl.* 785, adult male. — Yellow-bellied Woodpecker, *Penn. Arct. Zool.* sp. 166. *Latham, Syn.* 1, p. 574, sp. 20. — *Philadelphia Museum*, No. 2004, adult male; No. 2005, adult female. — *My Collection*, young and variety. — Edinburgh College Museum.

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NORTHERN THREE-TOED WOODPECKER.

PICUS TRIDACTYLUS, LINNÆUS.

BONAPARTE, Plate XIV. Fig. 2. — *Picus tridactylus*, *Linn. Syst.* 1, p. 177, sp. 21. *Gmel. Syst.* 1, p. 439, sp. 21. *Faun. Suec.* sp. 103. *Act. Holm.* 1740, p. 222. *Phil. Trans.* 62, p. 388. *Scop. Ann.* 1, sp. 56. *Georgi, Reise*, p. 165. *Borowsk, Nat.* 2, p. 138, sp. 8. *Lath. Ind.* p. 243, sp. 56. *Meyer and Wolf, Taschen. Deutsch. Vog.* 1, p. 125, sp. 8. *Temm. Man. Orn.* 1, p. 401, young. *Brehm, Lehr. Eur. Vog.* 1, p. 142. *Ranz. Elem. Orn.* 2, p. 184, sp. 9, tab. 7, fig. 4. — *Picus hirsutus*, *Vieill. Ois. Am. Sept.* 2, p. 68, pl. 124, adult male. — *Picoides*, *Lacepede*. — *Dendrocopos tridactylus*, *Koch, Baierische Zool.* — *Tridactylia hirsuta*, *Stephens, in Shaw's Zool.* 9, p. 219. — *Picus tridactylus anomalus*, *Mus. Petr.* 368. — *Picchio a tre dita*, *Stor. degl' Ucc.* 2, pl. 180. — *Pic tridactyle*, ou *Picoide*, *Temm. l. c.* — *Dreizehiger Specht*, *Bechst. Nat. Deutschl.* 2, p. 1044. *Naum. Vog. Nachtr.* pl. 41, fig. 81. *Meyer and Wolf, Ois. d'Allem. Cah.* 26, pl. 4, male; pl. 6, female. — Northern Three-toed Woodpecker, *Edwards*, pl. 114, male. — Three-toed Woodpecker, *Penn. Arct. Zool.* sp. 168. *Lath. Syn.* 2, p. 600, sp. 51, *Id. Suppl.* p. 112. — *Philadelphia Museum*, male. — *My Collection*, male, female, and young.

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YOUNG RED-HEADED WOODPECKER.

PICUS ERYTHROCEPHALUS, LINNÆUS.

BONAPARTE, Plate XIV. Fig. 3. — See *Wilson's American Ornithology*, vol. 1, p. 142, pl. 9, fig. 1, for the adult. — *Picus erythrocephalus*, *Linn. Syst.* 1, p. 174, sp. 7. *Mus. Adolph. Frid.* 2, p. 21. *Briss. Orn.* 4, p. 52, sp. 19, pl. 3, fig. 1. *Id.* 8vo, 2, p. 50. *Gmel. Syst.* 1, p. 429, sp. 7. *Borowsk, Nat.* 2, p. 136, sp. 4. *Lath. Ind.* p. 227, sp. 9, adult. *Vieill. Ois. Am. Sept.* 2, p. 60, pl. 112, adult; pl. 113, young. — *Picus obscurus*, *Gmel. Syst.* 1, p. 429. *Lath. Ind.* p. 228, sp. 11, young. — *Picus capite toto rubro*, the Red-headed Woodpecker, *Catesby, Car.* 1, pl. 20, adult. — *Picus capite colloque rubris*, *Klein, Av.* p. 28, sp. 12, adult. — *Picus capite toto rubro*, *Kalm, It.* 3, pl. 43, adult. — *Picchio di testa rossa*, *Storia degli Ucc.* pl. 170, adult. — *Pic noir à domino rouge*, *Buff. Ois.* 7, p. 55, adult. — *Pic de Virginie*, *Buff. Pl. enl.* 117, adult. — *Pic tricolor*, *Vieill.* l. c. adult and young. — Red-headed Woodpecker, *Penn. Arct. Zool.* sp. 160. *Kalm, Trav. (Angl.)* 2, p. 86. *Lath. Synop.* 2, p. 561, adult. — White-rumped Woodpecker, *Lath. Syn.* 2, p. 563, sp. 10, young.

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YELLOW-HEADED TROOPIAL.

ICTERUS ICTEROCEPHALUS, LINNÆUS.

BONAPARTE, Plate III. Fig. 1, male; Fig. 2, female. — *Oriolus Icterocephalus*, *Linn. Syst.* 1, p. 163, sp. 16. *Gmel. Syst.* 1, p. 392, sp. 16. *Lath. Ind.* p. 183, sp. 32, male. — *Icterus Icterocephalus*, *Daudin, Orn.* 2, p. 337, sp. 9, male. — *Pendulinus Icterocephalus*, *Vieill. Nouv. Dict. d'Hist. Nat.* 5, p. 317, male. — *Icterus Xanthornus Icterocephalus Cayanensis*, *Briss. Av.* 2, p. 124, sp. 27, pl. 12, fig. 4, male. — *Cornix atra*; capite, collo, pectoreque flavis, *Koelreuter, Nov. Comm. Ac. Sc. Petrop.* 11, p. 435, pl. 15, fig. 7, male. — *Les Coiffes jaunes*, *Buff. Ois.* 3, p. 250, male. — *Carouge de Cayenne*, *Buff. Pl. enl.* 343, male. — Yellow-headed Starling, *Edw. Glean.* 3, p. 241, pl. 323, male. — Yellow-headed Oriole, *Lath. Syn.* 1, part 2, p. 441, sp. 30, male. — *Phil. Museum*, No. 1528, male; No. 1529, female.

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GREAT CROW BLACKBIRD.

QUISCALUS MAJOR, VIEILLOT.

BONAPARTE, Plate IV. Fig. 1, male; Fig. 2, female. — *Quiscalus major*, *Vieill. Nouv. Dict. d'Hist. Nat.* 28, p. 487. — *Gracula quiscula*, *Ord, Journ. Acad. Nat. Sc. Philad.* 1, p. 253. —

Gracula barita, *Wilson, Am. Orn.* 6, *Index*, p. 8. — *Gracula quiscal*, the Purple Jackdaw of the sea coast, *Bartram, Travels*, p. 290. — *Corvus mexicanus*? *Gmel. Syst.* 1, p. 375, sp. 42. *Lath. Ind.* p. 164, sp. 36, male. — *Corvus zanoë*? *Gmel. Syst.* 1, p. 375, sp. 44. *Lath. Ind.* p. 164, sp. 37, female. — *Pica mexicana major*? *Briss. Av.* 2, p. 43, sp. 4, male. — *Pica mexicana minor*? *Briss. Av.* 2, p. 44, sp. 5, female. — *L'Hocizana*? *Buff. Ois.* 3, p. 103, male. — *Le Zanoë*? *Buff. Ois.* 3, p. 106, female. — *Mexican Crow*? *Lath. Syn.* 1, p. 396, sp. 34, male. — *Lesser Mexican Crow*? *Lath. Syn.* 1, p. 397, sp. 36, female. — *Hocitzanatl*, seu *magnus Sturnus*? *Hernand. Hist. An. Nov. Hisp.* p. 21, male. — *Tzanahoei*? *Hernand. Hist. An. Nov. Hist.* p. 22, female. — *Hoitzanatl*? *Ray, Syn. Av.* p. 162, male. — *Tzanahoei*, seu *Pica mexicana Hernandezii*? *Ray, Syn. Av.* p. 162, female. — *Philadelphia Museum*, No. 1582, male; No. 1583, female. — *Edinburgh College Museum*.

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FEMALE COMMON CROW BLACKBIRD.

QUISCALUS VERSICOLOR, VIEILL.

BONAPARTE, Plate v. Fig. 1. — See *Wilson's American Ornithology*, 3, p. 44, pl. 21, fig. 4, for the male, and history. — *Quiscalus versicolor*, *Vieill. Nouv. Dict. d'Hist. Nat.* 28, p. 488. *Nobis, Obs. Nom. Wils. Orn. Journ. Acad. Nat. Sc. Philad.* 3, p. 365. — *Gracula quiscal*, *Linn. Syst.* 1, p. 165, sp. 7. *Gmel. Syst.* 1, p. 397, sp. 7. *Lath. Ind.* p. 191, sp. 7. — *Gracula barita*, *Gmel. Syst.* 1, p. 396, sp. 4. *Lath. Ind.* p. 191, sp. 6. *Ord. Journ. Acad. Nat. Sc. Philad.* 1, p. 254, (not of Linn.) — *Oriolus ludovicianus*, *Gmel. Syst.* 1, p. 387, sp. 31, (pied variety.) — *Oriolus leucocephalus*, *Lath. Ind.* p. 175, sp. 4, (pied variety.) — *Pica jamaicensis*, *Briss. Av.* 2, p. 41, sp. 3. — *Monedula purpurea*, the Purple Jackdaw, *Catesby, Carolina*, 1, p. 12, pl. 12. — *Gracula purpurea*, the Lesser Purple Jackdaw, or Crow Blackbird, *Bartram, Trav.* p. 291. — *Pie de la Jamaïque*, *Buffon, Ois.* 3, p. 97. — *Cassique de la Louisiane*, *Buff. Ois.* 3, p. 242. *Pl. enl.* 646, (pied variety.) — Purple Grakle, *Penn. Arct. Zool.* sp. 153. *Lath. Syn.* 1, part 2, p. 462, sp. 6. — Boat-tailed Grakle, *Penn. Arct. Zool.* sp. 154. *Lath. Syn.* 1, part 2, p. 460, sp. 5. — White-headed Oriole, *Penn. Arct. Zool.* sp. 147. *Lath. Syn.* 1, part 2, p. 422, sp. 4, (pied variety.) — *Philadelphia Museum*, No. 1578, male; No. 1579, female; No. 1602, whitish variety.

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STELLER'S JAY.

GARRULUS STELLERI, LATHAM.

BONAPARTE, Plate XIII. Fig. 1. — *Corvus stelleri*, *Gmel. Syst.* 1, p. 370, sp. 27. *Lath. Ind.* p. 158, sp. 20. *Nob. Suppl.*

Syn. Birds U. S. sp. 63, *bis*, in *Zool. Journ. Lond.* 5, p. 2. *Id. in App. Gen. N. A. Birds in Ann. Lyc. N. Y.* p. 438. *Garrulus coronatus?* *Swainson, Syn. Birds Mex.* sp. 67, in *Phil. Mag. N. S.* 1, p. 457, old bird? — *Garrulus stelleri, Vieill. Nouv. Dict. d'Hist. Nat.* 12, p. 481. — Geai de Steller, *Daud. Orn.* 2, p. 248. — Steller's crow, *Penn. Arct. Zool.* sp. 139. *Lath. Syn.* 1, p. 387, sp. 21. *Id. 2d Suppl.* 8, p. 111, sp. 8. *Id. Gen. Hist.* 3, p. 56, sp. 58. — Collection of Mr Leadbeater, in London.

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FLORIDA JAY.

GARRULUS FLORIDANUS, BONAPARTE.

BONAPARTE, Plate xiv. Fig. 1. — *Garrulus cyaneus, Vieill. Nouv. Dict. d'Hist. Nat.* 12, p. 476. — *Garrulus cœrulescens Vieill. Nouv. Dict. d'Hist. Nat.* 12, p. 480. — *Garrulus cœrulescens, Ord, in Jour. Ac. Nat. Sc. Phila.* 1, p. 346. — *Corvus floridanus, Nob. Syn. Am. Birds,* sp. 64, in *Ann. Lyc. N. Y. Id. Cat. Birds, U. S.* sp. 64, in *Contr. Macl. Lyc. Phil.* — *Corvus floridanus, Pica glandaria minor, the little Jay of Florida, Bart. Tr.* p. 290. — *Pica glandaria cœrulea non cristata, Bart. Trav.* p. 172. — Le Geay azurin, and Le Geay gris-bleu, *Vieill. Nouv. Dict. l. c.* — *Philadelphia Museum,* No. 1378, male; 1379, female. — *My Collection.*

XIII. — Page 71.

BOHEMIAN WAXWING.

BOMBYCILLA GARRULA, VIEILL.

BONAPARTE, Plate xvi. Fig. 2. — *Ampelis garrulus, Linn. Syst.* 1, p. 297, sp. 1. *Gmel. Syst.* 1, p. 838, sp. 1. *Lath. Ind.* p. 363, sp. 1. *Muller,* p. 30. *Kram. El.* p. 363, sp. 1. *Borowsk. Nat.* 3, p. 171, sp. 68. *Meyer and Wolf, Taschen. Deutsch.* 1, p. 204. — *Lanius garrulus, Faun. Suec.* 2, sp. 82. *Scop. Ann.* 1, sp. 20. *Brunn.* sp. 25, 26. — *Bombyciphora poliocœlia, Meyer, Vog. Liv. and Esthl.* p. 104. — *Bombycivora garrula, Temm. Man. Orn.* 1, p. 124. *Selby, Ill. Br. Orn.* 1, p. 87, pl. 34. — *Bombyciphora garrula, Brehm, Lehr. Eur. Vog.* 2, p. 980. *Bombycilla garrula, Vieill. Nouv. Dict. Nob. Suppl. Syn. Am. Birds in Zool. Journ. London,* 4, p. 3, sp. 65, *bis.* *Ranz. Elm. Orn.* 4, p. 136, sp. 1. — *Bombycilla bohemica, Steph. Contin. Shaw's Zool.* 10, p. 421. — *Garrulus bohemicus, Gesn. Av.* p. 703. *Aldr. Orn.* 1, p. 796, pl. 798. *Muss.* p. 674. pl. 675. *Raii Syn.* p. 85, A. *Will. Orn.* p. 90, pl. 20. *Alb. Av.* 2, 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 bohemica*, *Briss. Orn.* 2, p. 333, sp. 63. *Id.* 8vo, 1, p. 250. — *Garrulo di Boemia*, *St. degli Ucc.* 2, pl. 160. — *Le Jaseur*, *Buff. Ois.* 3, p. 429, pl. 26. *Le Vaill. Ois. Para.* 1, p. 137, pl. 49. — *Le Jaseur de Bohême*, *Buff. Pl. enl.* 261. *Cuv. Règne Anim.* 1, p. 349. — *Europaischer Seidenschwanz*, *Bechst. Nat. Deutschl.* 3, p. 410, pl. 34, fig. 1. — *Rothlichgraver Seidenschwanz*, *Naum. Vog.* pl. 32, fig. 66. *Meyer and Wolf, Ois. d'Allem. Livr.* 22, pl. 6, fig. 1, male; fig. 2, female. — *Silk tail*, *Ray, Syn.* p. 85, A. *Phil. Trans.* 15, p. 1165, pl. 1, fig. 9. — *Bohemian Chatterer*, *Penn. Brit. Zool.* sp. 112, pl. 48. *Id.* fol. 7, pl. 1, C. *Lath. Syn.* 3, p. 91, sp. 1. *Ubersetz*, 3, p. 86, sp. 1. *Bell, Travels*, 1, p. 98. *Flor. Scot.* 1, sp. 92. *Mont. Orn. Dict. Lewin. Brit. Birds*, 1, pl. 2. *Bewick, Br. Birds. Donovan, Br. Birds*, 1, pl. 11. *Pult. Cat. Dorsetsh.* p. 11. — *My Collection.*

XIV. — Page 78.

FULVOUS, OR CLIFF SWALLOW.

HIRUNDO FULVA, VIEILL.

BONAPARTE, Plate VII. Fig. 1. — *Hirundo fulva*, *Vieill. Ois. de l'Am. Sept.* 1, p. 62, pl. 32. *Stephens, Cont. of Shaw's Zool.* 10, part 1, p. 126. *Dewitt Clinton, Ann. Lyceum Nat. Hist. N. Y.* 1, p. 156. — *Hirundo lunifrons*, *Say, in Long's Exp. to the Rocky Mountains*, 2, p. 47. — *Phil. Mus.* No. 7624.

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FORK-TAILED FLYCATCHER.

MUSCICAPA SAVANA, VIEILLOT.

BONAPARTE, Plate I. Fig. 1. — *Muscicapa tyrannus*, *Linn. Syst.* 1, p. 325, sp. 4. *Gmel. Syst.* 1, p. 931, sp. 4. *Lath. Ind.* p. 484, sp. 69. — *Tyrannus savana*, *Vieill. Ois. de l'Am. Sept.* 1, p. 72, pl. 43, (a South American specimen.) *Vieill. Nouv. Dict. d'Hist. Nat.* 35, p. 87. — *Muscicapa tyrannus cauda bifurca*, *Briss. Av.* 2, p. 395, sp. 20, pl. 39, fig. 3. — *Le Moucherolle savana*, *Buff.* 4, p. 557, pl. 26. — *Le Tyran à queue fourchue de Cayenne*, *Buff. Pl. enl.* 571, fig. 2. — *Fork-tailed Flycatcher*, *Penn. Arct. Zool.* sp. 265. *Lath. Syn.* 2, part 1, p. 355, sp. 59. — *Phil. Museum*, No. 6620.

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SWALLOW-TAILED FLYCATCHER.

MUSCICAPA FORFICATA, LATHAM.

BONAPARTE, Plate II. Fig. 1. — *Muscicapa forficata*, *Gmel. Syst.* 1, p. 931, sp. 22. *Lath. Ind.* p. 485, sp. 70. *Vieill. Ois. de l'Am. Sept.* 1, p. 71. *Stephen's Cont. of Shaw's Zool.* 20, p. 413, pl. 3. — *Tyrannus forficatus*, *Say, in Long's Expedition to the Rocky Mountains*, 2, p. 224. — *Moucherolle*

à queue fourchue du Mexique, *Buff. Ois.* 4. p. 564. — Gobe mouche à queue fourchue du Mexique, *Buff. Pl. enl.* 677. — Swallow-tailed Flycatcher, *Lath. Syn.* 2, part 1, p. 356, sp. 60. — *Philadelphia Museum*, No. 6623.

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ARKANSAW FLYCATCHER.

MUSCICAPA VERTICALIS, BONAPARTE.

BONAPARTE, Plate II. Fig. 2. — *Tyrannus verticalis*, *Say*, in *Long's Expedition to the Rocky Mountains*, 2, p. 60. — *Philadelphia Museum*, No. 6624.

XVIII. — Page 91.

SAY'S FLYCATCHER.

MUSCICAPA SAYA, BONAPARTE.

BONAPARTE, Plate II. Fig. 3. — *Phil. Museum*, No. 6831.

XIX. — Page 92.

PALLAS' DIPPER.

CINCLUS PALLASII, TEMMINCK.

BONAPARTE, Plate XVI. Fig. 1. — *Cinclus Pallasii*, *Temm. Man. Orn.* 1, p. 177. *Nob. Suppl. Gen. Am. birds*, sp. 94, bis, in *Zool. Journ. London*, 4, p. 4. *Id. in Ann. Lyc. New York*, 2, p. 438. — *Cinclus mexicanus*, *Swainson, Syn. Birds of Mexico*, sp. 27, in *Phil. Mag. New Series*, 1, p. 368. — Collection of Mr Leadbeater, in London.

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ROCKY MOUNTAIN ANTCATCHER.

MYIOTHERA OBSOLETA, BONAPARTE.

BONAPARTE, Plate I. Fig. 2. — *Troglodytes obsoleta*, *Say*, in *Long's Expedition to the Rocky Mountains*, vol. 2. p. 4. — *Philadelphia Museum*, No. 2420.

XXI. — Page 103.

FEMALE GOLDEN-WINGED WARBLER.

SYLVIA CHRYSOPTERA, LATHAM.

BONAPARTE, Plate I. Fig. 3. — See *Wilson's American Ornithology*, 2, p. 113, pl. 15, fig. 5, for the male. — *Motacilla chrysoptera*, *Linn. Syst.* 1, p. 333, sp. 20. *Gmel. Syst.* 1, p. 971, sp. 20, (male.) — *Sylvia chrysoptera*, *Lath. Ind.* p. 541, sp. 123. *Vieill. Ois. de l'Am. Sept.* 2, p. 37, pl. 97, (male.) — *Motacilla flavifrons*, *Gmel. Syst.* 1, p. 976, sp. 126, (male.) — *Sylvia flavifrons*, *Lath. Ind.* p. 527, sp. 69, (male.) — *Ficedula Pensylvanica cinerea gutture nigro*, *Brisson, Av. suppl.* p. 109,

sp. 80, (male.)—Figuier aux ailes dorées, *Buff, Ois.* 5, p. 311, (male.)—Golden-winged Flycatcher, *Edwards, Glean.* 2, p. 189, pl. 299, (male.)—Gold-winged Warbler, *Penn. Arct. Zool.* sp. 295. *Lath. Syn.* 2, part 2, p. 492, sp. 118, male.—Yellow-fronted Warbler, *Penn. Arct. Zool.* sp. 296. *Lath. Syn.* 2, part 2, p. 461, sp. 67, (male.)—Parus alis aureis, the Golden-winged Flycatcher, *Bartram, Trav.* p. 292, (male.)—*Philadelphia Museum*, No. 7010, male; No. 7011, female.

XXII. — Page 105.

FEMALE CAPE MAY WARBLER.

SYLVIA MARITIMA, BONAPARTE.

BONAPARTE, Plate III. Fig. 3. — See *Wilson's Amer. Orn.* 6, p. 99, pl. 54, fig. 3, for the male. *My Collection.*

XXIII. — Page 107.

ORANGE-CROWNED WARBLER.

SYLVIA CELATA, BONAPARTE.

BONAPARTE, Plate v. Fig. 2. — *Sylvia celata*, *Say, in Long's Exp. to the Rocky Mountains*, 1, p. 169. — *Phil. Mus.* No. 7013.

XXIV. — Page 109.

PALM WARBLER.

SYLVIA PALMARUM, LATHAM.

BONAPARTE, Plate x. Fig. 2. — *Motacilla palmarum*, *Gmel. Syst.* 1, p. 951, sp. 53, winter dress. — *Sylvia palmarum*, *Lath. Ind.* p. 544, sp. 136. *Vieill. Ois. Am. Sept.* 2, p. 21, pl. 73. (and the other works of the same author,) winter plumage. *Nob. Add. Orn. U. S. in Jour. Ac. Ph.* 5, p. 29. *Id. Cat. birds U. S. in Contr. Macl. Lyc. Ph.* 1, p. 16, sp. 105. *Id. Syn. birds U. S.* sp. 105, in *Ann. Lyceum, N. Y.* 2, p. 78. — *Motacilla ruficapilla*, *Gmel. Syst.* 1, p. 971, sp. 106, summer dress. — *Sylvia ruficapilla*, *Lath. Ind.* summer dress, (not of *Vieill.*) — *Ficedula martinicana*, *Briss. Av.* 3, p. 490, sp. 50, pl. 22, fig. 4, perfect plumage. — Le Bimbelé, ou fausse Linotte, *Buff. Ois.* 5, p. 330, winter dress. — Figuiers à tête rousse, *Buff. Ois.* 5, p. 306, summer dress. — Palm Warbler, *Lath. Syn.* 4, p. 489, sp. 131, winter dress — Bloody-side Warbler, *Lath. Syn.* 4, p. 489, sp. 115, (not of *Penn.*) summer plumage. — *Philadelphia Museum.*

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FEMALE CÆRULEAN WARBLER.

SYLVIA AZUREA, STEPHENS.

BONAPARTE, Plate XI. Fig. 2. — See *Wilson's American Ornithology*, Cærulean Warbler, *Sylvia cærulea*, vol. 2, p. 141,

pl. 17, fig. 5, for the male. — *Sylvia azurea*, *Stephens, cont. Shaw's Zool.* 10, p. 653. *Nob. Obs. Jour. Ac. Nat. Sc. Ph.* 4, p. 193, male. — *Sylvia bifasciata*, *Say, in Long's Exp. to the Rocky Mountains*, 1, p. 170, male. — *Philadelphia Museum*, No. 7309, male; 7310, female.

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FEMALE GOLDEN-CROWNED GOLD-CREST.

REGULUS CRISTATUS, RAY.

BONAPARTE, Plate II. Fig. 4. — See *Wilson's American Ornithology*, 1, p. 126, pl. 8, fig. 2, for the male. — *Motacilla regulus*, *Linn. Syst.* 1, p. 338, sp. 48. *Gmel. Syst.* 1, p. 995, sp. 48. — *Sylvia regulus*, *Lath. Ind.* p. 548, sp. 152. *Temm. Man. d'Orn.* p. 229. *Ranzani, Elem. di Zool.* 3, part 5, p. 105, pl. 16, fig. 3. — *Regulus cristatus*, *Ray, Syn.* p. 79, sp. 9. *Aldr. Orn.* 2, p. 649. *Will. Orn.* p. 163, pl. 42. *Vieill. Nouv. Dict. d'Hist. Nat.* 29, p. 420. — *Regulus vulgaris*, *Stephens, Cont. of Shaw's Zool.* 20, p. 758, pl. 59. — *Parus calendula*, *Regulus cristatus vulgo dicta*, *Briss. Av.* 3, p. 579, sp. 17. — Le Roitelet, *Gerardin, Tabl. Elem. d'Orn.* 1, p. 318, sp. 26, pl. 15, (not of *Buff. Ois.* 5, p. 363, pl. 16, fig. 2. nor *Pl. enl.* 651, fig. 3. which represent *Sylvia ignicapilla* of *Brehm.*) — *Regolo*, *Storia degli uccelli*, 4, pl. 390. — *Gold-crested Wren*, *Lath. Syn.* 2, part 2, p. 508, sp. 145. *Penn. Brit. Zool.* sp. 153. *Penn. Arct. Zool.* sp. 321. — *Golden-crowned Wren*, *Edw. Glean.* 5, p. 95, pl. 254, lower fig. male. — *Philadelphia Museum*, No. 7246, male; No. 7247, female.

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LAPLAND LONGSPUR.

EMBERIZA LAPPONICA, WILSON.

BONAPARTE, Plate XIII. Fig. 1, male; Fig. 2, female. — *Fringilla lapponica*, *Linn. Syst.* 1, p. 317, sp. 1. *Faun. Suec.* sp. 235. *Gmel. Syst.* 1, p. 900, sp. 1. *Retz. Faun. Suec.* p. 242, sp. 119. *Forst. Ph. Tr.* 62, p. 404. *Fabr. Faun. Grænl.* p. 119, sp. 8. *Lath. Ind.* p. 440, sp. 18. *Ubers.* 1, p. 289, sp. 18. — *Fringilla montana*, *Briss. Orn.* 3, p. 160, sp. 38. *Klein. Av.* p. 92, sp. 10. — *Fringilla calcarata*, *Pallas, It.* p. 710, sp. 20, t. E. *Id.* in 4to. French transl. 3, pl. 1. *Meyer and Wolf, Tasch. Deutschl.* 1, p. 176, sp. 13. — *Emberiza lapponica*, *Nilsson. Orn. Suec.* 1, p. 157, sp. 76. *Ranz. El. Zool.* 6, p. 24. — *Emberiza calcarata*, *Temm. Man. Orn.* 1, p. 322. *Brehm, Lehrb. Eur. Vog.* 1, p. 221. *Richardson App. to Parry's 2d Voy.* p. 345. — *Passerina lapponica*, *Vieill. Nouv. Dict. Hist. Nat.* 25, p. 12. — *Plectrophanes calcaratus*, *Meyer, Tasch.* 3, p. 176, sp. 13. — *Plectrophanes lapponica*, *Selby in*

Trans. Linn. Soc. 15, p. 156, pl. 1, young. — Montifringilla congener, *Aldrov. Orn.* 2, p. 821, pl. 823. — Le Grand Montain, *Buff. Ois.* 4, p. 134. — Le Pinson de Montagne, *Gerardin, Tabl. Elem. d'Orn.* 1, p. 186. — Lerchen Finch, *Bechst. Naturg. Deutsch.* 3, p. 246, sp. 16. *Naum. Nachtr.* 3, p. 25, pl. 20, B. female, pl. 40, male in autumn. — Greater Brambling, *Alb.* 3, p. 59, pl. 63. — Lapland Finch, *Penn. Arct. Zool.* 2, sp. 259. *Lath. Syn.* 4, p. 263, sp. 14. *Ubers.* 3, p. 256, sp. 14. — *My Collection.*

XXVIII. — Page 126.

LARK FINCH.

FRINGILLA GRAMMACA.

BONAPARTE, Plate v. Fig. 3. — *Fringilla grammaca*, *Say*, in *Long's Expedition*, 1, p. 139. — *Phil. Museum*, No. 6288.

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ARKANSAW SISKIN.

FRINGILLA PSALTRIA, SAY.

BONAPARTE, Plate vi. Fig. 3. — *Fringilla psaltria*, *Say*, in *Long's Expedition*, 2, p. 40. — *Phil. Museum*, No. 6278.

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FEMALE AMERICAN GOLDFINCH,

FRINGILLA TRISTIS, LINNÆUS.

BONAPARTE, Plate vi. Fig. 4. — See *Wilson's American Ornithology*, 1, p. 20, pl. 1, fig. 2, for the male, and history. — *Fringilla tristis*, *Linn. Syst.* 1, p. 320, sp. 12, male. *Gmel. Syst.* 1, p. 907, sp. 12. *Lath. Ind.* p. 452, sp. 64. *Vieill. Nouv. Dict. d'Hist. Nat.* 12, p. 167. — *Fringilla spinus*, var. γ . *Gmel. Syst.* 1, p. 914, sp. 25, male, in winter plumage. — *Carduelis americana*, *Briss. Av.* 3, p. 64, sp. 3. — *Carduelis americanus*, the American Goldfinch, *Catesby, Carolina*, 1, p. 43, pl. 43, male in spring dress. *Bartr. Trav.* p. 291. — Chardonneret jaune, *Buff. Ois.* 4, p. 212. — Chardonneret du Canada, *Buff. Pl. enl.* 202, fig. 2, male, in spring dress. — *Tarin de la Nouvelle York*, *Buff. Ois.* 4, p. 231. *Pl. enl.* 292, fig. 1, male changing; fig. 2, male in winter dress. — Golden Finch, *Penn. Arct. Zool.* sp. 242. — American Goldfinch, *Edwards, Glean.* 2, p. 133, pl. 274, male and female. *Lath. Syn.* 2, part 1, p. 288, sp. 57. *Id.* 1st Suppl. p. 166. — Siskin, var. B, *Lath. Syn.* 2, part 1, p. 291, sp. 58, male changing. — *Philadelphia Museum*, No. 6344, male; No. 6345, female; No. 6346, Albino.

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LAZULI FINCH.

FRINGILLA AMÆNA, BONAPARTE.

BONAPARTE, Plate vi. Fig. 5. — *Emberiza amœna*, Say, in *Long's Expedition to the Rocky Mountains*, 2, p. 47. — *Philadelphia Museum*, No. 5919.

XXXII. — Page 134.

EVENING GROSBEEK.

FRINGILLA VESPERTINA, COOPER.

BONAPARTE, Plate xv. Fig. 1. — *Fringilla vespertina*, Cooper in *Ann. Lyc. New York*, 1, p. 220. *Nob. Cat. Birds*, U. S. sp. 188. in *Contr. Macl. Lyc. Phila.* 1, p. 21. *Id. Syn. Birds*, U. S. sp. 188, in *Ann. Lyc. N. Y.* 2, p. 113. *Id. Suppl. in Zool. Journ. London*, 4, p. 2. — *Cabinet of the Lyceum of Nat. Hist. of New York*. — Mr Leadbeater's Collection in London.

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FEMALE ROSE-BREASTED GROSBEEK.

FRINGILLA LUDOVICIANA, BONAPARTE.

BONAPARTE, Plate xv. Fig. 2. — See *Rose-breasted Grosbeak*, *Loxia rosea*, (*ludoviciana*) *Wils. Am. Orn.* 2, p. 135, pl. 17, fig. 1, for the male. — *Loxia ludoviciana*, *Linn. Syst.* 1, p. 306, sp. 38. *Gmel. Syst.* 1, p. 862, sp. 38. *Lath. Ind.* p. 379, sp. 25. — *Fringilla punicea*, *Gmel. Syst.* 1, p. 921, sp. 81. — *Lath. Ind.* p. 444, sp. 34, adult male. — *Loxia maculata*, *Gmel. Syst.* 1, p. 861, sp. 87. *Lath. Ind.* p. 379, sp. 26, young. — *Loxia obscura*, *Gmel.* 1, p. 862, sp. 88. *Lath. Ind.* p. 379, sp. 27, female. — *Coccothraustes ludoviciana*, *Briss. Orn.* 3, p. 247, sp. 14, pl. 12, fig. 2. *Id.* 8vo. 1, p. 378. — *Coccothraustes rubricollis*, *Vieill. Gal. Ois.* 1, part 2, p. 67, pl. 58, (very bad,) and *Dict.* — *Pyrhula ludoviciana*, *Sabine, Zool. App. to Frankl. Exp.* p. 675. — *Fringilla ludoviciana*, *Nob. Obs. Nom. Wils. Orn.* sp. 80. *Id. Cat. Birds*, U. S. sp. 189. *Id. Syn. Birds*, U. S. sp. 189. — *Guiraca ludoviciana*, *Swainson, Syn. Mex. Birds*, sp. 76, in *Phil. Mag. N. S.* 1, p. 438. — Le Rose-gorge, *Buff. Ois.* 3, p. 460. — Gros-bec de la Louisiane, *Buff. Pl. enl.* 153, fig. 2, male. — Moineau à poitrine et ventre pourprés, *Sonn. Buff.* 48, p. 240. — Red-breasted Grosbeak, *Penn. Art. Zool.* sp. 212. *Lath. Syn.* 3, p. 126, sp. 24. — Red-breasted Finch, *Penn. Arct. Zool.* sp. 275. *Lath. Syn.* 3, p. 272, sp. 30, adult male. Dusky Grosbeak, *Penn. Arct. Zool.* sp. 216. *Lath. Syn.* 3, p. 127, sp. 26, female. Spotted Grosbeak, *Penn. Arct. Zool.* sp. 213. *Lath. Syn.* 3, p. 126, sp. 25, young. *Philadelphia Museum*, No. 5806, male; 5807, female.

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FEMALE INDIGO FINCH.

FRINGILLA CYANEA, BONAPARTE.

BONAPARTE, Plate xv. Fig. 4. — See *Wilson's American Ornithology*, 1, p. 100, pl. 6, Fig. 5, for the male. — *Tanagra cyanea*, *Linn. Syst.* 1, p. 315, sp. 6, adult male in full plumage. — *Emberiza cyanea*, *Gmel. Syst.* 1, p. 876, sp. 54. *Lath. Ind.* p. 415, sp. 60. — *Emberiza cyanella*, *Sparm. Mus. Carls.* 2, pl. 42, 43. *Gmel. Syst.* 1, p. 887, sp. 74. — *Emberiza cœrulea*, *Gmel. Syst.* 1, p. 876. *Lath. Ind.* p. 415, sp. 59, male in moult. — *Tanagra cœrulea?* *Gmel. Syst.* 1, p. 891, sp. 27. *Lath. Ind.* p. 427, sp. 27, adult male. — *Tanagra carolinensis cœrulea*, *Briss. Av.* 3, p. 13, sp. 6, adult male in full dress. — *Emberiza canadensis cœrulea*, *Briss. Av.* 3, p. 298, sp. 12, pl. 14, fig. 2, male moulting. — *Passerina cyanea*, *Vieill. Nouv. Dict. Hist. Nat.* — *Fringilla cyanea*, *Nob. Obs.* sp. 112. *Id. Cat. and Synop. Birds U. S.* sp. 164. — *Linaria cyanea*, *Bartram, Trav.* p. 296. — *Linaria cœrulea*, the Blue Linnet, *Catesby, Carolina*, 1, p. 45, pl. 45. — Le ministre, *Buff. Ois.* 4, p. 86. — L'azuroux, *Buff. Ois.* 4, p. 369, male moulting. — Passe-bleu? *Buff. Ois.* 3, p. 495, adult male in full plumage — Moineau bleu de Cayenne? *Buff. Pl. enl.* 203, fig. 2, adult male in full dress. — Blue Linnet, *Edwards, Av.* 4, p. 132, pl. 273, lower figure. — Indigo Bunting, *Penn. Arct. Zool.* 2, sp. 235. *Lath. Syn.* 4, p. 205, sp. 53. — Blue Bunting, *Penn. Arct. Zool.* 2, sp. 234. *Latham, Syn.* 3, p. 205, sp. 52, male moulting. — Blue Tanager? *Lath. Syn.* 3, p. 234, sp. 28. — *Philadelphia Museum*, No. 6002, male; 6003, female.

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CRIMSON-NECKED BULLFINCH.

PYRRHULA FRONTALIS, BONAPARTE.

BONAPARTE, Plate vi. Fig. 1, male; Fig. 2, female. — *Fringilla frontalis*, *Say, in Long's Expedition to the Rocky Mountains*, 2, p. 40. — *Philadelphia Museum*, No. 6276, male; No. 6277, female.

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FEMALE PINE BULLFINCH.

PYRRHULA ENUCLEATOR.

BONAPARTE, Plate xvi. Fig. III. — See *Wilson's American Ornithology*, Pine Grosbeak, *Loxia enucleator*, vol. 1, p. 80, pl. 5, fig. 2, for the male at the age of one year. — *Loxia enucleator*, *Linn. Syst.* 1, p. 299, sp. 3. *Faun. Suec.* sp. 223,

Schæn. Act. Holm. 1757, p. 139. *Gmel. Syst.* 1, p. 845, sp. 3. *Brunn.* sp. 239. *Muller*, sp. 246. *Borowsk. Nat.* 3, p. 133, sp. 3. *Lath. Ind.* 1, p. 372, sp. 5. *Retz. Faun. Suec.* p. 234, sp. 211. *Meyer and Wolf, Taschenb. Vog. Deutschl.* 1, p. 142. — *Loxia flamengo*, *Mus. Carls.* 1, pl. 17. *Gmel. Syst.* 1, p. 864, accid. var. — *Loxia pyrrhula*, var. δ . *Lath. Ind.* 1, p. 388, sp. 56, accid. var. — *Coccothraustes canadensis*, *Briss. Orn.* 3, p. 250, sp. 15, pl. 12, fig. 3. *Id.* 8vo, 1, p. 378. — *Pyrrhula enucleator*, *Temm. Man. Orn.* 1, p. 383. *Sabine, Zool. App. to Frank. Exp.* p. 675. *Brehm. Lehr. Eur. Vog.* 1, p. 169. *Ranz. Elem. Orn.* 6, p. 70, sp. 2. *Selby, Ill. Brit. Orn.* 1, 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.* 1, p. 392. — *Strobilophaga enucleator*, *Vieill. Gal. Ois.* i, pl. 53, young male. — *Fringilla enucleator*, *Meyer, Syst. Taschenb.* 3, p. 250, sp. 2. — *Ciufolotto snocciolatore*, *Ranz. loc. cit.* — *Dur-bec, Buff. Ois.* 3, p. 457. *Gros-bec du Canada*, *Id. Pl. enl.* 135, fig. 1, male a year old. — *Haken Kernbeisser*, *Bechst. Nat. Deutsch.* 3, p. 28. *Naum. Vog. Nachtr.* pl. 19, fig. 36, male, fig. 37, female. — *Der Fichten Kernbeisser*, *Meyer and 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.* 2, sp. 209. *Ellis*, *Narr.* 2, p. 15. *Lewin, Brit. Birds*, 2, pl. 68. *Lath. Syn.* 2, p. 111, sp. 5. *Id. Suppl.* p. 148. *Mont. Orn. Dict.* 1. *Walck. Syn.* pl. 207. *Donov. Brit. Birds*, 1, pl. 17. *Bewick, Brit. Birds*, 1, p. 135. *Shaw's Zool.* 9, p. 238, pl. 43. *Ubers.* 2, p. 106, sp. 5. — *Flamingo Grosbeak*, *Lath. Syn. Suppl.* p. 155, accid. var. — *My Collection*, male, female, and young. — *Edinburgh College Museum.*

XXXVII. — Page 151.

FEMALE WHITE-WINGED CROSSBILL.

LOXIA LEUCOPTERA.

BONAPARTE, Plate xv. Fig. 3. — See *Wilson's American Ornithology*, 4, p. 48, pl. 41, for the young male. — *Loxia leucoptera*, *Gmel. Syst.* 1, p. 844, sp. 12. *Vieill. Gal. Ois.* 1, p. 56, pl. 52, young male. *Nob. Obs.* sp. 84. *Id. Cat. and Syn. Birds U. S.* sp. 195. — *Loxia falcirostra*, *Lath. Ind.* p. 371, sp. 2. — *Le Bec-croisé leucoptère*, *Sonn. Buff.* 47, p. 65. *Vieill. Nouv. Dict. Hist. Nat.* 2d ed. 3, p. 359. — *White-winged Crossbill*, *Lath. Syn.* 3, p. 108, sp. 2. *Id. Suppl.* p. 148. *Dixon, Voy.* t. 20, p. 358, female. *Penn. Arct. Zool.* 2, sp. 208. — *My Collection*, male, female, young, and middle aged.

XXXVIII. — Page 156.

BAND-TAILED PIGEON.

COLUMBA FASCIATA, SAY.

BONAPARTE, Plate VIII. FIG. 3. — *Columba fasciata*, Say, in *Long's Expedition to the Rocky Mountains*, 2, p. 10. *Philadelphia Museum*, No. 4938.

XXXIX. — Page 158.

WHITE-CROWNED PIGEON.

COLUMBA LEUCOCEPHALA, LINNÆUS.

BONAPARTE, Plate XVII. Fig. 1. — *Columba leucocephala*, Linn. *Syst.* 1, p. 281, sp. 14. *Gmel. Syst.* 1, p. 772, sp. 14. *Lath. Ind.* p. 594, sp. 5. *Temm. Ind. Col. in Hist. Pig. et Gall.* 1, p. 459. *Vieill. Gal. Ois.* 2, p. 331, pl. 194. *Columba minor leucocoryphas*, *Raii Syn.* p. 63, sp. 16, and p. 184, sp. 24. *Klein, Av.* p. 120, sp. 18. *Columba saxatilis jamaicensis*, *Briss. Orn.* 1, p. 137, sp. 33. *Id.* 8vo. 1, p. 34. *Columba capite albo*, The White crowned Pigeon, *Catesby, Car.* 1, p. 25, pl. 25. *Seligman, Saml. Selt. Vog.* 2, col. plate. Le Pigeon de roche de la Jamaïque, *Buff. Ois.* 2, p. 529. *Sonn. Buff.* 7, p. 216. *Colombe à calotte blanche*, *Temm. His. Pig. et Gall.* 1, p. 204. *Id. folio*, pl. 13 of the second family. *My Collection.* Edinburgh College Museum.

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ZENAIDA PIGEON.

COLUMBA ZENAIDA, BONAPARTE.

BONAPARTE, Plate XVII. Fig. 2. — *Columba zenaida*, *Nob. Add. Orn. U. S. in Journ. Acad. Phil. Id. Cat. Birds, U. S.* sp. 198, in *Contr. Macl. Lyc. Ph.* 1, p. 22. *Id. Syn. Birds, U. S.* sp. 198, in *Ann. Lyc. Nat. Hist. N. Y.* 2, p. 119. *Id. Suppl. in Zool. Journ. Lond.* 5, p. 6. *My Collection.*

XLI. — Page 163.

WILD TURKEY.

MELEAGRIS GALLOPAVO, LINNÆUS.

BONAPARTE, Plate IX. male and female. — *Meleagris gallopavo*, Linn. *Syst.* 1, p. 268, sp. 1. *Gmel. Syst.* 1, p. 732, sp. 1. *Lath. Ind.* p. 618, sp. 1. *Temm. Hist. Nat. des Pig. et Gall. Index*, 3, p. 676. *Wilson Am. Orn.* 6, Index, p. xvii. *Stephens, Cont. of Shaw's Zool.* 11, Part 1, p. 156, pl. 8. *Ranzani, Elem. di Zool.* 3, Part 1, p. 154. *Meleagris sylvestris*, *Vieill. Nouv. Dict. d'Hist. Nat.* 9, p. 447. *Gallopavo*, *Aldrovandi, Orn.* 2, p. 35, fig. on p. 39, domestic variety, male; fig. on p. 40.

Id. female. *Willughby, Orn.* p. 113, pl. 27, fig. 4, dom. var. male. *Johnston, Theatrum Universale de Avibus*, p. 55. pl. 24, fig. 1, dom. var. male; fig. 2, *Id.* female. *Briss. Av.* 1, p. 158, pl. 16, dom. var. male. *Gallus indicus*, Welscher Han, *Johnston, Th. Av.* p. 83, pl. 29, fig. 1, dom. var. male. Gallopavo sylvestris Novæ-Angliæ, a New England Wild Turkey, *Ray, Syn.* p. 51, sp. 3. Gallopavo sylvestris, *Catesby, Carolina*, 1, *App.* p. xlv. Meleagris americanus, the Wild Turkey, *Bartr. Trav.* p. 290. Gallo Pavo, Gallo Pavone volgarmente Pollo d'India; *Storia degli Uccelli*, 2, pl. 222, dom. crested var. male; pl. 223, dom. white, black-spotted var. young; pl. 224, dom. white yellowish-spotted var. young; pl. 225, dom. black, var. young; pl. 226, dom. black, white-spotted var. young.—Coc d'Inde, *Belon Histoire de la Nature des Oiseaux*, p. 248, with fig. dom. var. male. Dindon, *Buff. Ois.* 2, p. 132, pl. 3. *Pl. enl.* 97, dom. whitish, var. male. *Temm. Hist. Nat. des Pig. et Gall.* 2, p. 374. *Gerardin, Tabl. Elem. d'Orn.* 2, p. 103, pl. 21, fig. 2, dom. var. male. Turkie, *Josselyn Voyages to New England*, p. 99. *New England's Rarities*, p. 8. Wild Turkey, *Clayton, Virginia, Phil. Trans.* 17, p. 992. *Id. Abridg.* 3, p. 590. *Lawson, Carolina*, p. 149. *Penn. Phil. Trans.* 71, p. 67. *Arct. Zool.* sp. 178. American Turkey, *Lath. Syn.* 2, Part 2, p. 676, sp. 1. Domestic Turkey, *Penn. Brit. Zool.* 1, sp. 97.

XLII.—Page 189.

DUSKY GROUSE.

TETRAO OBSCURUS, SAY.

BONAPARTE, Plate XVIII. female.—*Tetrao obscurus*, *Say, in Long's Exped. to Rocky Mount.* 2, p. 14. *Nob. Cat. Birds U. S.* sp. 209, in *Contr. Macl. Lyc. Phila.* 1, 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.

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SHARP-TAILED GROUSE.

TETRAO PHASIANELLUS, LINNÆUS.

BONAPARTE, Plate XIX.—*Tetrao phasianellus*, *Linn. Syst. ed.* 10, p. 160. *Gmel. Syst.* 1, p. 747. *Forst. Phil. Trans.* 62, pp. 394 and 425. *Lath. Ind. Orn.* p. 635, sp. 2. *Briss. Suppl.* p. 9. *Temm. Ind. Gall. in Hist. Pig. and Gall.* 3, 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.* 1, p. 273, sp. 1.—*Gelinotte à longue queue*, *Buff. Ois.* 2, p. 286. *Sonn. Buff.* 6, 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.—Tetrao phasianelle, *Temm. Pig. et Gall.* 3, p. 152.—Long-tailed Grouse, *Edwards, Glean.* pl. 117. *Lath. Syn.* 4, p. 732. *Id. Suppl.* p. 21.—Sharp-tailed Grouse, *Penn. Arct. Zool.* sp. 181.—The Grouse, or Prairie Hen, *Lewis and Clark, Exp.* 2, p. 180, sp. 1.—*Philadelphia Museum*, female.—*My Collection*, male and female.—Edinburgh College Museum.

XLIV.—Page 206.

SPOTTED GROUSE.

TETRAO CANADENSIS.

BONAPARTE, Plate xx. male; Plate xxi. Fig. 1. female.—*Tetrao canadensis*, *Linn. Syst.* 1, p. 274, sp. 3. *Gmel. Syst.* 1, p. 749, sp. 3. *Lath. Ind.* p. 637, sp. 6. *Forster, in Phil. Tr.* 62, p. 389. *Temm. Ind. Gall. in Hist. Pig. et Gall.* 3, 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.* 1, p. 25, sp. 7, female.—*Lagopus Bonasa Freti Hudsonis*, *Briss. Orn.* 1, p. 201, sp. 6. *Id. Suppl.* p. 10. *Id.* 8vo, 4, p. 56, male.—*Lagopus Bonasa canadensis*, *Briss. Orn.* 1, p. 203, sp. 7, pl. 20, fig. 2. *Id.* 8vo, 4, p. 57, female.—*Lagopus Freti Hudsonis*, *Klein, Av. p.* 117, sp. 6.—*La Gelinotte du Canada*, *Buff. Ois.* 2, p. 279. *Id. Pl. enl.* 131, male, 132, female. *Sonn. Buff.* '6, p. 58. *Bonat. Tabl. Enc. Orn.* p. 197, pl. 91, fig. 2.—*Tetrao tacheté, ou Acaho*, *Temm. Pig. et Gall.* 3, 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*, 1, t. p. 50.—*Spotted Grouse*, *Penn. Arct. Zool.* sp. 182. *Lath. Syn.* 4, p. 735, sp. 6. *Id. Suppl.* p. 214, accid. var.—*The small speckled Pheasant*, *Lewis and Clark, Exp.* 2, p. 182, male.—*The small brown Pheasant*, *Id. Id. Exp.* 2, p. 182, female.—*Philadelphia Museum*, male.—*My Collection*, male and female.—Edinburgh College Museum.

XLV.—Page 212.

COCK OF THE PLAINS.

TETRAO UROPHASIANUS, BONAPARTE.

BONAPARTE, 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.* 2, p. 180, sp. 2.—*Mr Leadbeater's Collection in London*, female.

APPENDIX.

ADDITIONAL DETAILS IN REGARD TO THE BIRDS
OF AMERICA, AND BIRDS IN GENERAL; BY
AUDUBON, RICHARDSON, AND SWAINSON.



APPENDIX.

THE BIRDS OF AMERICA.

BY JOHN JAMES AUDUBON, F.R.S.L.&E. F.L.S. M.W.S. &c.

A WELL known author remarks, when speaking of this naturalist of the woods and wilds, — “ Devotedly attached to the study of nature, no less than to painting, he seems to have pursued both with a genius and an ardour, of which, in their united effects, there is no parallel. His ornithological narratives in the *Edinburgh Philosophical Journal* are as valuable to the scientific world, as they are delightful to the general reader. There is a freshness and an originality about these essays, which can only be compared to the animated biographies of Wilson. Both these men contemplated nature as she really is, not as she is often represented in books: they sought her in her sanctuaries. The shore, the mountains, and the forest, were alternately their study, and there they drank the pure stream of knowledge at its fountainhead. The observations of such men are the corner stones of every attempt to discover the system of nature. Their writings will be consulted when our favourite theories shall have passed away. Ardently, therefore, do we hope, that M. Audubon will alternately become the historian and the painter of his favourite objects; that he will never be made a convert to any system; but instruct and delight us in a true and unprejudiced biography of nature.” Audubon, like Wilson, is a self-taught naturalist, and, like him, has

produced a work — his *Ornithological Biography* — distinguished by beauty of style, and perspicuity of narrative. It is descriptive of the plates in the unrivalled work entitled *The Birds of America*. We say unrivalled, because few naturalists and artists have appeared who could represent accurately the external forms, attitudes, form and style of distribution of the plumage of birds, and scarcely any one, except Audubon, has succeeded in presenting, to the eye and imagination, the passions and feelings of these interesting beings. Wilson, although a fascinating writer, and an accurate observer of the habits and manners of the feathered creation, cannot be considered as an effective ornithological painter.

In order that the volumes of the *Miscellany* on the *Birds of America*, may be as complete as circumstances will allow of, we shall now lay before our readers a systematic catalogue of the birds drawn and described by Audubon; also, some notices of the new species he has discovered, and a few interesting details from his *Ornithological Biography*: —

Systematic Catalogue of the American Birds, drawn and described by Audubon.

1. Bird of Washington,	Falco washingtonii. <i>Aud.</i>
2. White-headed Eagle,	Falco leucocephalus. <i>Linn.</i>
3. Great-footed Hawk,	Falco peregrinus. <i>Gmel.</i>
4. Stanley Hawk,	Falco stanleii. <i>Aud.</i>
5. Red-tailed Hawk,	Falco borealis. <i>Gmel.</i>
6. Red-shouldered Hawk,	Falco hyemalis. <i>Gmel.</i>
7. Winter Hawk,	Falco hyemalis. <i>Gmel.</i>
8. Swallow-tailed Hawk,	Falco furcatus. <i>Linn.</i>
9. Le Petit Caporal,	Falco temerarius. <i>Aud.</i>
10. Fish Hawk,	Falco haliætos. <i>Linn.</i>
11. Black Warrior,	Falco harlani. <i>Aud.</i>
12. Broad-winged Hawk,	Falco pennsylvanicus. <i>Lath.</i>
13. Pigeon Hawk,	Falco columbarius. <i>Linn.</i>
14. Great Horned Owl,	Strix virginiana. <i>Gmel.</i>
15. Barred Owl,	Strix nebulosa. <i>Gmel.</i>
16. Mottled Owl,	Strix asio. <i>Linn.</i>
17. Carolina Parrot,	Psittacus carolinensis. <i>Linn.</i>
18. Yellow-billed Cuckoo,	Coccyzus americanus. <i>Bonap.</i>
19. Black-billed Cuckoo,	Coccyzus erythrophthalmus. <i>Bon.</i>
20. Red-headed Woodpecker,	Picus erythrocephalus. <i>Linn.</i>
21. Gold-winged Woodpecker,	Picus auratus. <i>Linn.</i>
22. Ivory-billed Woodpecker,	Picus principalis. <i>Linn.</i>
23. Belted Kingfisher,	Alcedo alcyon. <i>Linn.</i>
24. Baltimore Oriole,	Icterus baltimore. <i>Daud.</i>
25. Orchard Oriole,	Icterus spurius. <i>Bonap.</i>

26. Rice Bunting,
 27. Red-winged Starling,
 28. Cow Bunting,
 29. Purple Grackle,
 30. Florida Jay,
 31. Columbian Jay,
 32. Cedar Bird,
 33. Chuckwill's Widow,
 34. Whip-poor-Will,
 35. White-bellied Swallow,
 36. Republican Cliff Swallow,
 37. Purple Martin,
 38. Bonaparte Flycatcher,
 39. Selby's Flycatcher,
 40. American Redstart,
 41. Tyrant Flycatcher,
 42. Solitary Flycatcher,
 43. White-eyed Flycatcher,
 44. Loggerhead Shrike,
 45. Louisiana Water Thrush,
 46. Mocking Bird,
 47. Hermit Thrush,
 48. Wood Thrush,
 49. Prothonotary Warbler,
 50. Prairie Warbler,
 51. Blue Yellow-back Warbler,
 52. Blue-winged Yellow Warbler,
 53. Maryland Yellow-throat,
 54. Roscoe's Warbler,
 55. Vigors' Warbler,
 56. Worm-eating Warbler,
 57. Children's Warbler,
 58. Trail's Flycatcher,
 59. Kentucky Warbler,
 60. Azure Warbler,
 61. Blue-green Warbler,
 62. Black-and-yellow Warbler,
 63. Chestnut-sided Warbler,
 64. Carbonated Warbler,
 65. Rathbone's Warbler,
 66. Bay-breasted Warbler,
 67. Cœrulean Flycatcher,
 68. Yellow-throated Warbler,
 69. Autumnal Warbler,
 70. Nashville Warbler,
 71. Blue-eyed Warbler,
 72. Brown Lark,
 73. Prairie Titlark,
 74. Bewick's Wren,
 75. Cuvier's Wren,
 76. Great Carolina Wren,
 77. House Wren,
 78. Marsh Wren,
 79. Black-and-white Creeper,
 80. Ruby-throated Humming Bird,
 81. Crested Titmouse,
 82. Henslow's Bunting,
 83. Summer Red Bird,
 84. Purple Finch,
 85. White-throated Sparrow,
- Icterus agripennis.* Bonap.
Icterus phœniceus. Daud.
Icterus pecoris. Bonap.
Quiscalus versicolor. Vieill.
Corvus floridanus. Bart.
Garrulus ultramarinus. Bonap.
Bombicilla carolinensis. Briss.
Caprimulgus carolinensis. Gmel.
Caprimulgus vociferus. Wils.
Hirundo bicolor. Vieill.
Hirundo fulva. Vieill.
Hirundo purpurea. Linn.
Muscicapa bonaparti. Aud.
Muscicapa selbii. Aud.
Muscicapa rutticilla. Linn.
Muscicapa tyrannus. Briss.
Vireo solitarius. Vieill.
Vireo noveboracensis. Bonap.
Lanius ludovicianus. Linn.
Turdus ludovicianus. Aud.
Turdus polyglottus. Linn.
Turdus minor. Gmel.
Turdus mustelinus. Gmel.
Sylvia protonotarius. Lath.
Sylvia discolor. Vieill.
Sylvia americana. Lath.
Sylvia solitaria. Wils.
Sylvia trichas. Lath.
Sylvia roscoe. Aud.
Sylvia vigorsii. Aud.
Sylvia vermivora. Lath.
Sylvia childrenii. Aud.
Sylvia trailii. Aud.
Sylvia formosa. Wils.
Sylvia azurea. Steph.
Sylvia tigrina. Lath.
Sylvia maculosa. Lath.
Sylvia icterocephala. Lath.
Sylvia carbonata. Aud.
Sylvia rathbonii. Aud.
Sylvia castanea. Wils.
Sylvia cœrulea. Lath.
Sylvia pensilis. Lath.
Sylvia autumnalis. Wils.
Sylvia rubricapilla. Wils.
Sylvia æstiva. Lath.
Anthus spinoletta. Bonap.
Anthus pipiens. Aud.
Troglodytes bewickii. Aud.
Troglodytes cuvierii. Aud.
Troglodytes ludovicianus. Bonap.
Troglodytes ædon. Vieill.
Troglodytes palustris. Bonap.
Certhia varia. Aud.
Trochilus colubris. Linn.
Parus bicolor. Linn.
Emberiza henslowii. Aud.
Tanagra æstiva. Gmel.
Fringilla purpurea. Gmel.
Fringilla pennsylvanica. Lath.

86. Snow Bird,	Fringilla hyemalis. <i>Linn.</i>
87. Song Sparrow,	Fringilla melodia. <i>Wils.</i>
88. Towhe Bunting,	Fringilla erythrophthalma. <i>Linn.</i>
89. American Goldfinch,	Fringilla tristis. <i>Linn.</i>
90. Painted Bunting,	Fringilla ciris. <i>Temm.</i>
91. Swamp Sparrow,	Fringilla palustris. <i>Wils.</i>
92. Indigo Bird,	Fringilla cyanea. <i>Wils.</i>
93. Sea-side Finch,	Fringilla maritima. <i>Wils.</i>
94. Bay-winged Bunting,	Fringilla graminea. <i>Gmel.</i>
95. Carolina Turtle Dove,	Columba carolinensis. <i>Linn.</i>
96. Passenger Pigeon,	Columba migratoria. <i>Linn.</i>
97. The Wild Turkey. Male,	Meleagris gallopavo. <i>Linn.</i>
98. Wild Turkey. Female,	Meleagris gallopavo. <i>Linn.</i>
99. Virginian Partridge,	Perdix virginiana. <i>Lath.</i>
100. Ruffed Grouse,	Tetrao umbellus. <i>Linn.</i>

NORTHERN ZOOLOGY. (BIRDS.)

BY JOHN RICHARDSON, M.D. F.R.S. &c. AND
W. SWAINSON, ESQ. F.R.S. &c.

THROUGH the goodness of the distinguished authors, we have been favoured with a sight of the proof sheets of the descriptive part of this important work, at present in the press. Its scientific details and views are learned and accurate; the natural history of the species interesting, and the popular illustrations amusing and instructive. The extracts which we shall make may bring forcibly to the recollection of many of our readers the admirable sketches in the *Journey to the Polar Sea*.

Catalogue of the New Species of American Birds, described by Richardson and Swainson in the "Northern Zoology."

1. Arctic, or White Horned Owl. *Strix Arcticus*. — Swainson.
This beautiful owl is white, marked on the dorsal aspect with crowded transverse brown lines; the base of the plumage ferruginous; the ventral aspect unspotted. It is two feet long; was seen at Carlton House by Dr Richardson.
2. American Gray Shrike. *Lanius excubitorides*. — Carlton House.
3. White-winged Shrike. *Lanius elegans*. — Hudson's Bay.
4. Northern Tyrant. *Tyrannus borealis*. — Banks of the Saskatchewan.
5. Little Tyrant Flycatcher. *Tyrannula pusilla*. — Carlton House.
6. Short-legged Pewit. *Tyrannula richardsonii*. — Cumberland House.
7. American Dipper: Pallas' Dipper of Bonaparte. *Cinclus americanus*. — Athabasca River.
8. Little Tawny Thrush. *Merula minor*. — Banks of the Saskatchewan.

9. Hermit Thrush. *Merula solitaria*. — Lake Huron.
10. Thrush-like Mock-bird. *Orpheus meruloides*. — Nootka Sound.
11. The Arctic Blue-bird. *Erythaca Arctica*. — Great Bear Lake.
12. Bartram's Greenlet. *Vireo Bartramii*. — Banks of the Columbia.
13. Painted Bunting. *Emberiza Picta*. — Carlton House.
14. Clay-coloured Bunting. *Emberiza Pallida*. — Carlton House.
15. Arctic Ground-finch. *Pyrgita Arctica*. — Carlton House.
16. Gray-coloured Linnet. *Linaria Tephrocotis*: — On the Saskatchewan.
17. Short-billed Jay. *Garrulus Brachyrhynchus*. — Port Franklin.
18. Red-shafted Woodpecker. *Colaptes Mexicanus*. — Banks of the Columbia.
19. Cinnamon, or Nootka Humming Bird. *Trochilus Rufus*.
This superb species, found by Captain Cook in Nootka Sound, and since in Real del Monte, in Mexico. — Edinburgh College Museum.
20. White-tailed Grouse. *Tetrao Leucurus*. — Rocky Mountains.
21. Drummond's Snipe. *Scelopax Drummondii*. — Rocky Mountains.
22. Ring-billed Mew Gull. *Larus zonorhynchus*. — Banks of the Saskatchewan.
23. Short-billed Mew Gull. *Larus Brachyrhynchus*. — Great Bear Lake.
24. Franklin's Rosey Gull. *Larus Franklinii*. — On the Saskatchewan.
25. Bonapartian Gull. *Larus Bonapartii*. — On Great Slave Lake.
26. Cuneate-tailed Gull. *Larus Rosii*.
This beautiful species was first discovered and described by Dr Richardson. A description of this bird, by my former assistant, which was never written, is referred to by a late author.
27. Richardson's Jager. *Lestris Richardsonii*. — Port Franklin.
28. Rocky Mountain Garrot. *Clangula Barrovii*. — On the Rocky Mountains.
29. Trumpeter Swan. *Cygnus Buccinator*. — Hudson's Bay.
30. Hutchin's Barnacle. *Anas Hutchinsii*. — Melville Peninsula. — Edinburgh College Museum.
31. Double-crested Cormorant. *Pelicanus Dilophus*.

ORDER I.—*ACCIPITRES*.GENUS I.—*VULTUR*.

1. *VULTUR AURA*. — TURKEY VULTURE; OR, TURKEY BUZZARD.

Observations on the supposed power which Vultures, such as the Turkey Vulture, are said to possess, of scenting carrion at great distances.

It has always appeared to us unaccountable, that birds of prey, as vultures, could scent carcasses at such immense distances, as they are said to do. We were led to call in question the accuracy of this opinion, on recollecting the observations of some travellers, who have remarked birds of prey directing their course

towards dead animals, floating in the rivers in India, where the wind blows steadily from one point of the compass, for months in succession. It was not easy to conceive, that the effluvium from a putrid carcass in the water, could proceed in direct opposition to the current of air, and affect the olfactory nerves of birds, at so many miles distant. We were disposed to believe, that these birds were directed towards the carrion rather by the sense of seeing, than by that of smelling. This opinion is confirmed by the following observations of our friend Audubon, communicated to us by him, some time ago, for our *Philosophical Journal*:—

“As soon as, like me, you shall have seen the turkey buzzard follow with arduous closeness of investigation, the skirts of the forests, the meanders of creeks and rivers, sweeping over the whole of extensive plains, glancing his quick eye in all directions, with as much intentness as ever did the noblest of falcons, to discover where below him lies the suitable prey; when, like me, you have repeatedly seen that bird pass over objects, calculated to glut his voracious appetite, unnoticed, because unseen; and when you have also observed the greedy vulture, propelled by hunger, if not famine, moving like the wind, suddenly round his course, as the carrion attracts his eye; then will you abandon the deeply rooted notion, that this bird possesses the faculty of discovering, by his sense of smell, his prey at an immense distance.

“This power of smelling so acutely, I adopted as a fact, from my youth. I had read of this when a child; and many of the theorists, to whom I subsequently spoke of it, repeated the same with enthusiasm, the more particularly as they considered it an extraordinary gift of nature. But I had already observed, that nature, although wonderfully bountiful, had not granted more to any one individual than was necessary, and that no one was possessed of any two of the senses in a very high state of perfection; that if it had a good scent, it needed not so much acuteness of sight, and *vice versa*.

When I visited the Southern States, and had lived, as it were, amongst these vultures for several years, and discovered, thousands of times, that they did not smell me when I approached them, covered by a tree, until within a few feet; and that when so near, or at a greater distance, I shewed myself to them, they instantly flew away much frightened,—the idea evaporated, and I assiduously engaged in a series of experiments, to prove to myself, at least, how far this acuteness of smell existed, or if it existed at all.

“ I sit down to communicate to you the results of those experiments, and leave for you to conclude how far, and how long, the world has been imposed on by the mere assertions of men who had never seen more than the skins of our vultures, or heard the accounts from men caring little about observing nature closely.

“ My *First Experiment* was as follows:— I procured a skin of our common deer, entire to the hoofs, and stuffed it carefully with dried grass until filled rather above the natural size—suffered the whole to become perfectly dry, and as hard as leather—took it to the middle of a large open field—laid it down on its back with the legs up and apart, as if the animal was dead and putrid. I then retired about a few hundred yards, and, in the lapse of some minutes, a vulture, coursing round the field tolerably high, espied the skin, sailed directly towards it, and alighted within a few yards of it. I ran immediately, covered by a large tree, until within about forty yards, and from that place could spy the bird with ease. He approached the skin—looked at it without apparent suspicion—jumped on it—raised his tail, and voided itself freely, (as you well know all birds of prey in a wild state generally do before feeding,) then approaching the eyes, that were here solid globes of hard, dried, and painted clay, attacked first one, and then the other, with, however, no farther advantage than that of disarranging them. This part was abandoned; the bird walked to the other extremity of the pretended animal, and there, with much exertion, tore the stitches apart, until much

fodder and hay was pulled out; but no flesh could the bird find or smell; he was intent on discovering some where none existed, and, after reiterated efforts, all useless, he took flight, coursed about the field, when, suddenly rounding and falling, I saw him kill a small garter snake, and swallow it in an instant. The vulture rose again, sailed about, and passed several times quite low over the stuffed deerskin, as if loth to abandon so good looking a prey.

“ Judge of my feelings when I plainly saw that the vulture, which could not discover, through its extraordinary sense of smell, that no flesh, either fresh or putrid, existed about that skin, could at a glance see a snake, scarcely as large as a man’s finger, alive, and destitute of odour, hundreds of yards distant. I concluded that at all events his ocular powers were much better than his sense of smell.

“ *Second Experiment.*—I had a large dead hog hauled some distance from the house, and put into a ravine, about twenty feet deeper than the surface of the earth around it, narrow and winding much, filled with briars and high cane. In this I made the negroes conceal the hog, by binding cane over it, until I thought it would puzzle either buzzards, carrion crows, or any other birds, to see it, and left it for two days. This was early in the month of July, when, in this latitude, a dead body becomes putrid and extremely fetid in a short time. I saw from time to time many vultures, in search of food, sail over the field and ravine in all directions, but none discovered the carcass, although during this time several dogs had visited it and fed plentifully on it. I tried to go near it, but the smell was so insufferable when within thirty yards, that I abandoned it, and the remnants were entirely destroyed at last through natural decay.

“ I then took a young pig, put a knife through its neck, and made it bleed on the earth and grass about the same, and, having covered it closely with leaves, also watched the result. The vultures saw the fresh blood, alighted about it, followed it down into the

ravine, discovered by the blood of the pig, and devoured it, when yet quite fresh, within my sight.

“ Not contented with these experiments, which I already thought fully conclusive, having found two young vultures, about the size of pullets, covered yet with down, and looking more like quadrupeds than birds, I had them brought home and put into a large coop in the yard, in the view of every body, and attended to their feeding myself. I gave them a great number of red-headed woodpeckers and paroquets, birds then easy to procure, as they were feeding daily on the mulberry trees in the immediate neighbourhood of my orphans.

“ These the young vultures could tear to pieces by putting both feet on the body, and applying the bill with great force. So accustomed to my going towards them were they in a few days, that when I approached the cage with hands filled with game for them, they immediately began hissing and gesticulating very much like young pigeons, and putting their bills to each other, as if expecting to be fed mutually, as their parent had done. Two weeks elapsed; black feathers made their appearance, and the down diminished. I remarked an extraordinary increase of their legs and bill; and thinking them fit for trial, I closed three sides of the cage with planks, leaving the front only with bars for them to see through; had the cage cleaned, washed, and sanded, to remove any filth attached to it from the putrid flesh that had been in it; and turned its front immediately from the course I usually took towards it with food for them. I approached it often barefooted, and soon perceived that if I did not accidentally make a noise, the young birds remained in their silent upright attitudes, until I shewed myself to them by turning to the front of their prison. I frequently fastened a dead squirrel or rabbit, cut open, with all the entrails hanging loosely, to a long pole, and in this situation would put it to the back part of the cage; but no hissing, no movement was made: when, on the contrary, I presented the end of the pole, thus covered, over the cage, no sooner would it appear beyond the edge, than

my hungry birds would jump against the bars, hiss furiously, and attempt all in their power to reach the food. This was repeatedly done with fresh and putrid substances, all very congenial to their taste.

“ Satisfied within myself, I dropped these trials, but fed the birds until full grown, and then turned them out into the yard of the kitchen for the purpose of picking up whatever substances might be thrown to them. Their voracity, however, soon caused their death; young pigs were not safe, if within their reach; and young ducks, turkeys, or chickens, were such a constant temptation, that the cook, unable to watch them, killed them both, to put an end to their depredations.

“ Whilst I had these two young vultures in confinement, an extraordinary occurrence took place respecting an old bird of the same kind, which I cannot help relating to you. This bird, sailing over the yard whilst I was experimenting with the pole and squirrels, saw the food, and alighted on the roof of one of the out-houses, then alighted on the ground, walked directly to the cage, and attempted to reach the food within. I approached it carefully, and it hopped off a short distance; as I retired, it returned, when always the appearances of the strongest congratulations would take place from the young towards this new comer. I directed several young negroes to drive it gently towards the stable, and to try to make it go in there. This would not do; but, after a short time, I helped to drive it into that part of the gin-house where the cotton seeds are deposited, and there caught it. I easily discovered that the bird was so emaciated, that to this state of poverty only I owed my success. I put it in with the young, who both at once jumped about him, making most extraordinary gestures of welcome; whilst the old bird, quite discomfited at his confinement, lashed both with great violence with his bill. Fearing the death of the young, I took them out, and fed plentifully the old bird: his appetite had become so great through fasting, that he ate too much, and died of suffocation.

“ I could enumerate many more instances, indicating

that the power of smelling in these birds has been grossly exaggerated, and that, if they can smell objects at any distance, they can see the same objects much farther. I would ask any observer of the habits of birds, why, if vultures could smell at a great distance their prey, they should spend the greater portion of their lives hunting for it, when they are naturally so lazy, that, if they are fed in one place, they never will leave it; and merely make such a change as is absolutely necessary to enable them to reach it. But I will now enter on their habits, and you will easily discover how this far famed power has originated.

“Vultures are gregarious, and often associate in flocks of twenty, forty, or more; hunting thus together, they fly in sight of each other, and thus cover an immense extent of country. A flock of twenty may easily survey an area of two miles, as they go turning in large circles, often inspecting each other in their lines, as if forming a vast chain of rounded links; some are high, whilst others are low; not a spot is passed unseen; and, consequently, the moment that a prey is discovered, the favoured bird rounds to, and, by the impetuosity of its movements, gives notice to its nearest companion, who immediately follows him, and is successively attended by all the rest. Thus, the farthest from the discoverer being at a considerable distance, sails in a direct line towards the spot indicated to him by the flight of the others, who all have gone in a straight course before him, with the appearance of being impelled by this extraordinary power of smelling, so erroneously granted them. If the object discovered is large, lately dead, and covered with a skin too tough to be ate, and torn asunder, and afford free scope to their appetite, they remain about it, and in the neighbourhood. Perched on high, dead limbs in such conspicuous positions are easily seen by other vultures, who, through habit, know the meaning of such stoppages, and join the first flock, going also directly, and affording farther evidence to those persons who are satisfied with appearances only. In this manner, I have seen several hundreds of vultures

and carrion crows assembled near a dead ox, at the dusk of evening, that had only two or three in the morning, when some of the latter comers had probably travelled hundreds of miles, searching diligently themselves for food, and probably would have had to go much farther, had they not espied this association. Around the spot both species remain; some of them examining the dead body, giving it a tug in those parts most accessible, until putridity ensues. The accumulated number then fall to work, exhibiting a most disgusting picture of famished cannibals; the strongest driving the weakest, and the latter harassing the former with all the power that a disappointed hungry stomach can produce. They are seen jumping off the carcass, re-attacking it, entering it, and wrestling for portions partly swallowed by two or more of them, hissing at a furious rate, and clearing every moment their nostrils from the filth that enters there, and stops their breathing. No doubt remains on my mind, that the great outward dimensions of these nostrils were allotted them for that especial and necessary purpose.

“The animal is soon reduced to a mere skeleton; no portion of it being now too hard not to be torn apart and swallowed, leaving merely the bare bones. Soon all these bloody feeders are seen standing gorged, and scarcely able to take wing. At such times the observer may approach very near the group, whilst engaged in feeding, and see the vultures in contact with the dogs, who really, by smelling, have found the prey. Whenever this happens, it is with the greatest reluctance that the birds suffer themselves to be driven off, although frequently the sudden scowl, or growl, of the dogs will cause nearly all the vultures to rise a few yards in the air. I have several times seen the buzzards feeding at one extremity of the carcass, whilst the dogs were tearing the other; but, if a single wolf approached, or a pair of white-headed eagles, driven by extreme hunger, then the place is abandoned to them, until their wants are supplied. The repast finished, each bird gradually rises to the highest branches of the nearest trees, and remains

there until the full digestion of all the food they have swallowed is completed; from time to time opening their wings to the breeze, or to the sun, either to cool or warm themselves. The traveller may then pass them unnoticed, or, if noticed, a mere sham of flying off is made. The bird slowly recloses its wings, looks at the person as he passes, and remains there until hunger again urges him onwards. This takes oftentimes more than a day, when gradually, and very often singly, each vulture is seen to depart.

“ They now rise to an immense height, cutting with great elegance and ease many circles through the air; now and then gently closing their wings, they lanch themselves obliquely with great swiftness for several hundred yards, check and resume their portly movements, ascending until, like mites in the distance, they are seen altogether to leave that neighbourhood, to seek farther the needed means of subsistence.

“ Having heard it said, no doubt with the desire to prove that buzzards smell their prey, that these birds usually fly against the breeze, I may state, that, in my opinion, this action is simply used, because it is easier for birds to maintain themselves on the wing encountering a moderate portion of wind, than when flying before it; but I have so often witnessed these birds bearing away under the influence of a strong breeze, as if enjoying it, that I consider either case as a mere incident connected with their pleasures or their wants.

“ Here, my dear sir, let me relate one of those facts, curious in itself, and attributed to mere instinct, but which I cannot admit under that appellation, and which, in my opinion, so borders on reason, that, were I to call it by that name, I hope you will not look on my judgment as erroneous, without your farther investigating the subject in a more general point of view. During one of those heavy gusts that so often take place in Louisiana in the early parts of summer, I saw a flock of these birds, which had undoubtedly discovered that the current of air that was tearing all over them was a mere sheet, raise themselves obliquely against it

with great force, slide through its impetuous current, and reassume, *above it*, their elegant movements.

“ The power given to them by nature of discerning the approaching death of a wounded animal is truly remarkable. They will watch each movement of any individual thus assailed by misfortune, and follow it with keen perseverance, until the loss of life has rendered it their prey. A poor old emaciated horse or ox, the deer mired on the margin of the lake, where the timid animal has resorted to escape flies and mosquitoes, so fatiguing in summer, is seen in distress with exultation by the buzzard. He immediately alights, and if the animal does not extricate itself, waits and gorges in peace on as much of the flesh as the nature of the spot will allow. They do more; they often watch the young kid, the lamb, and the pig, issuing from the mother’s womb, and attack it with direful success; yet, notwithstanding this, they frequently pass over a healthy horse, hog, or other animal, lying as if dead, basking in the sunshine, without even altering their course in the least. Judge, then, my dear sir, how well they must see.

“ Opportunities of devouring young living animals are so very frequent among large plantations in this country, that to deny them would be ridiculous, although I have heard it attempted by European writers.

“ During the terrifying inundations of the Mississippi, I have very frequently seen many of those birds alight on the dead floating bodies of animals, drowned by the water in the low lands, and washed by the current, gorging themselves at the expense of the squatter, who often loses the greater portion of his wandering flocks on such occasions.

“ Dastardly withal, and such cowards are they, that our smaller hawks can drive them off any place; the little king bird proves, indeed, a tyrant, whenever he espies the large marauder sailing about the spot where his dearest mate is all intent on incubation; and the

eagle, if hungry, will chase him, force him to disgorge his food in a moment, and to leave it at his disposal.

“ Many of those birds, accustomed by the privileges granted them by law, of remaining about the cities and villages in our Southern States, seldom leave them, and might almost be called a second set, differing widely in habits from those that reside constantly at a distance from these places. Accustomed to be fed, they are still more lazy; their appearance exhibits all the nonchalance belonging to the garrisoned half-paid soldier. To move is for them a hardship; and nothing but extreme hunger will make them fly down from the roof of the kitchen into the yard, or follow the vehicles employed in cleaning the streets from disagreeable substances, except where (at Natchez for instance) the number of these expecting parasites is so great, that all the refuse of the town, within their reach, is insufficient; then they are seen following the scavengers' carts, hopping, flying, and alighting all about it, amongst grunting hogs and snarling dogs, until the contents, having reached a place of destination outside the suburbs, are emptied, and swallowed by them.

“ Whilst taking a view of that city from her lower ancient fort, I have for several days seen exhibitions of this kind.

“ I do not think that the vultures thus attached to the cities, are so much inclined to multiply as those more constantly resident in the forests, perceiving no diminution of number during the breeding season, and having remarked, that many individuals known to me by particular marks made on them, and a special cast of countenance, were positively constant residents of the town. The *Vultur aura* is by no means so numerous as the *Atratus*. I have seldom seen more than twenty-five or thirty together; where, on the contrary, the latter are frequently associated to the number of a hundred.

“ The *Vultur aura* is a more retired bird in habits, and more inclined to feed on dead game, snakes, lizards, frogs, and the dead fish that frequently are found about

the sand flats of rivers, and borders of the sea shore; is more cleanly in its appearance; and, as you will see by the difference in the drawings in both species, a neater and better formed bird. Its flight is also vastly superior in swiftness and elegance, needing but a few flaps of its large wings to raise it from the ground, after which it will sail for miles, by merely turning either on one side or the other, and using its tail so slowly, to alter its course, that a person looking at it, whilst elevated and sailing, would be inclined to compare it to a machine, fit to perform just a certain description of evolutions. The noise made by the vultures through the air, as they glide obliquely towards the earth, is often as great as that of our largest hawks, when falling on their prey; but they never reach the ground in this manner, always checking when about a hundred yards high, and going several rounds, to examine well the spot they are about to alight on. The *Vultur aura* cannot bear cold weather well: the few who, during the heat of the summer, extend their excursions to the Middle, or Northern States, generally all return at the approach of winter; and I believe also, that very few of these birds breed eastward of the pine swamps of West Jersey. They are much attached to particular roosting trees, and I know will come to them every night from a great distance. On alighting on these, each of them, anxious for a choice of place, creates always a general disturbance; and often, when quite dark, their hissing noise is heard, in token of this inclination for supremacy. These roosting trees of the buzzards are generally in deep swamps, and mostly high, dead cypresses. Frequently, however, they roost with the carrion crows, (*Vultur atratus*,) and then it is on the largest dead timber of our fields, not unfrequently close to the houses. Sometimes, also, this bird will roost close to the body of a thick leaved tree. In such position, I have killed several, when hunting wild turkeys by moonlight nights, and mistaking them for these latter birds.

“ In Mississippi, Louisiana, Georgia, and Carolina,

they prepare to breed early in the month of February, in common with almost all the genus *Falco*. The most remarkable habit attached to their life is now to be seen: they assemble in parties of eight or ten, sometimes more, on large fallen logs, males and females exhibiting the strongest desire to please mutually, and forming attachments by the choice of a mate by each male, that, after many caresses, leads her off on the wing from the group, neither to mix or associate with any more, until their offspring are well able to follow them in the air; after that, and until incubation takes place, (about two weeks,) they are seen sailing side by side the whole day.

“ These birds form no nest, yet are very choice respecting the place of deposit for their two eggs. Deep in the swamps, but always above the line of overflowing watermark, a large hollowed tree is sought, either standing or fallen, and the eggs are dropped on the mouldy particles inside; sometimes immediately near the entrance, at other times as much as twenty feet in. Both birds incubate alternately, and both feed each other while sitting, by disgorging the contents of the stomach, or part of them, immediately close before the bird that is sitting. Thirty-two days are needed to bring forth the young from the shell; a thick down covers them completely; the parents, at that early period, and, indeed, for nearly two weeks, feed them, by gorging food considerably digested in their bill, in the manner of the common pigeons. The down acquires length, becomes thinner, and of a deeper tint, as the bird grows older. The young vultures, at three weeks, are large for their age, weighing then upwards of a pound, but extremely clumsy and inactive; unable to keep up their wings, then partly covered by large pen feathers, they drag them almost to the ground, bearing their whole weight on the full length of their legs and feet.

“ If approached at that time by a stranger or enemy, they hiss with a noise resembling that of a strangling

cat or fox, swell themselves, and hop sidewise as fast as in their power.

“ The parents, whilst sitting, and equally disturbed, act in the same manner, — fly only a very short distance, waiting there the departure of the offender to reassume their duty. As the young grow larger, the parents throw their food merely before them, and, with all their exertions, seldom bring their young offspring fat to the field. Their nests become so fetid, before the final departure of the young birds, that a person forced to remain there half an hour, must almost be suffocated.

“ I have been frequently told that the same pair will not abandon their first nests or place of deposit, unless broken up during incubation. This would attach to the vulture a constancy of affection that I cannot believe exists, as I cannot believe that pairing in the manner described is of any longer duration than the necessitous call of nature for the one season; and, again, were they so inclined, they would never congregate in the manner they do, but would go in single pairs all their lives like eagles.

“ Vultures do not possess, in any degree, the power of bearing off their prey, as falcons do, unless it be slender portions of entrails hanging by the bill. When chased by others from a carcass, it even renders them very awkward in their flight, and forces them to the earth again almost immediately.

“ Many persons in Europe believe that buzzards prefer putrid flesh to any other. This is a mistake. Any flesh that they can at once tear with their very powerful bill in pieces, is swallowed, no matter how fresh. What I have said of their killing and devouring young animals, is sufficient proof of this; but it frequently happens that these birds are forced to wait until the hide of their prey gives way to the bill. I have seen a large dead alligator, surrounded by vultures and carrion crows, of which nearly the whole of the flesh was so completely decomposed before these birds could perforate the tough skin of the monster, that, when at last it took place, their disappointment was

apparent, and the matter, in an almost fluid state, abandoned by the vultures."

So far Audubon. We may add, that the toucan is a bird which ranks next to the vulture in discovering, whether by smell or sight, the carrion on which it feeds. The great size of its bill was supposed to admit of an extensive distribution of the olfactory nerve, and thus to account for its supposed power of smelling at great distances; but careful examination shews that there is no such extensive distribution of the nerve for smelling; but the eye of this bird is rather larger than the whole brain, and its power of vision is most acute. Hence, in countries where the toucan occurs, it generally arrives a little in the rear of the vulture, and remains until the larger bird is glutted; while smaller birds of prey, at a still more retired distance, pay similar respect to the toucan.

2. *VULTUR CALIFORNIANUS*, SHAW. — CALIFORNIAN VULTURE.

DR RICHARDSON, in the *Northern Zoology*, says,—
“ This great vulture, which is four feet eight inches in length, and between the tips of the wings nine feet eight inches, is an inhabitant of the shores of the Pacific, and was first introduced to the notice of naturalists by Mr Menzies, who brought a specimen from California, and deposited it in the British Museum. It has not been discovered to the eastward of the Rocky Mountains, and I can, consequently, make no addition to its history from personal observation; but Mr David Douglas has given an interesting account of the habits of the species in the *Zoological Journal*, from which the following notices are extracted. He represents it as a common bird in the woody districts of California, and that he met with it in the summer as far north as the forty-ninth degree of latitude; but no where so abundantly as in the valley of the Columbia, between the Grand Rapids and the sea. They build, he says, in the most secret and impenetrable

parts of the pine forests, invariably selecting the loftiest trees that overhang the precipices on the deepest and least accessible parts of the mountain valleys. The nest is large, composed of strong thorny twigs and grass, in every way similar to the nests of the eagle tribe, but more slovenly constructed. The same pair resort for several years to the same nest, bestowing little trouble or attention in repairing it. They lay two nearly spherical *jet black* eggs, about the size of those of a goose. They hatch generally about the first of June, and the period of incubation is twenty-nine or thirty-one days. The young are covered with thick whitish down, and are incapable of leaving the nest until the fifth or sixth week. Their food is carrion, or dead fish : in no instance will they attack any living animal, unless it be wounded and unable to walk. Their senses of smelling and seeing are remarkably keen. In searching for prey, they soar to a great altitude, and on discovering a wounded deer, or other animal, they follow its track until it sinks, when they descend precipitately on their object. Although only one bird may be at first in possession of the carcass, few minutes elapse before the prey is surrounded by great numbers, and it is then devoured to a skeleton within an hour, even though it be one of the larger animals, — a stag, for instance, or a horse. Their voracity is almost insatiable ; and they are extremely ungenerous, suffering no other animal to approach them while feeding. After eating, they become so sluggish and indolent as to remain in the same place until urged by hunger to go in quest of another repast. At such times they perch on decayed trees, with their heads so much retracted, as to be with difficulty observed through the long, loose, lanceolate feathers of the collar. The wings, at the same time, hang down over the feet. This position they invariably preserve in dewy mornings, or after rains. Except after eating, or while guarding their nest, they are so excessively wary, that the hunter can scarcely ever approach sufficiently near even for buck-shot to take effect on them,

the fullness of the plumage affording them a double chance of escaping uninjured. Their flight is slow, steady, and particularly graceful, gliding along with scarcely any apparent motion of the wings, the tips of which are curved upwards in flying. They are seen in greatest numbers, and soar highest, before hurricanes or thunder-storms. Their quills are used by the hunters as tubes for tobacco-pipes."

GENUS II. — *FALCO*.3. *FALCO WASHINGTONII*. — THE BIRD OF WASHINGTON.

AUDUBON, PLATE IX. MALE.

OF this magnificent bird, Audubon, in his *Ornithological Biography*, gives the following animated account:—

"It was in the month of February, 1814, that I obtained the first sight of this noble bird, and never shall I forget the delight which it gave me. Not even Herschel, when he discovered the planet which bears his name, could have experienced more rapturous feelings. We were on a trading voyage, ascending the Upper Mississippi. The keen wintry blasts whistled around us, and the cold from which I suffered, had, in a great degree, extinguished the deep interest which, at other seasons, this magnificent river has been wont to awake in me. I lay stretched beside our patroon. The safety of the cargo was forgotten, and the only thing that called my attention was the multitude of ducks, of different species, accompanied by vast flocks of swans, which from time to time passed us. My patroon, a Canadian, had been engaged many years in the fur trade. He was a man of much intelligence; and, perceiving that these birds had engaged my curiosity, seemed anxious to find some new object to divert me. An eagle flew over us. 'How fortunate!' he exclaimed; 'this is what I could have wished. Look, sir! the great eagle, and the only one I have seen since I left the lakes.' I was instantly on my feet, and, having observed it attentively, concluded, as I lost it in the

distance, that it was a species quite new to me. My patroon assured me, that such birds were indeed rare; that they sometimes followed the hunters, to feed on the entrails of animals which they had killed, when the lakes were frozen over, but that when the lakes were open, they would dive in the daytime after fish, and snatch them up in the manner of the fishing hawk; and that they roosted generally on the shelves of the rocks, where they built their nests, of which he had discovered several by the quantity of white dung scattered below.

“Convinced that the bird was unknown to naturalists, I felt particularly anxious to learn its habits, and to discover in what particulars it differed from the rest of its genus. My next meeting with this bird was a few years afterwards, whilst engaged in collecting crayfish on one of those flats which border and divide Green River, in Kentucky, near its junction with the Ohio. The river is there bordered by a range of high cliffs, which, for some distance, follow its windings. I observed on the rocks, which, at that place, are nearly perpendicular, a quantity of white ordure, which I attributed to owls that might have resorted thither. I mentioned the circumstance to my companions, when one of them, who lived within a mile and a half of the place, told me it was from the nest of the brown eagle, meaning the white-headed eagle (*Falco leucocephalus*,) in its immature state. I assured him this could not be, and remarked, that neither the old nor the young birds of that species ever build in such places, but always in trees. Although he could not answer my objection, he stoutly maintained that a brown eagle of some kind, above the usual size, had built there; and added, that he had espied the nest some days before, and had seen one of the old birds dive and catch a fish. This he thought strange, having, till then, always observed that both brown eagles and bald eagles procured this kind of food by robbing the fish-hawks. He said, that if I felt particularly anxious to know what nest it was, I might soon satisfy myself, as the old birds would come and feed their young with fish, for he had seen them do so before.

“In high expectation, I seated myself about a hundred yards from the foot of the rock. Never did time pass more slowly. I could not help betraying the most impatient curiosity, for my hopes whispered it was a sea eagle’s nest. Two long hours had elapsed before the old bird made his appearance, which was announced to us by the loud hissings of the two young ones, which crawled to the extremity of the hole to receive a fine fish. I had a perfect view of this noble bird as he held himself to the edging rock, hanging like the barn, bank, or social swallow, his tail spread, and his wings partly so. I trembled lest a word should escape from my companions. The slightest murmur had been treason from them. They entered into my feelings, and, although little interested, gazed with me. In a few minutes the other parent joined her mate, and, from the difference in size, (the female of rapacious birds being much larger,) we knew this to be the mother bird. She also had brought a fish; but, more cautious than her mate, she glanced her quick and piercing eye around, and instantly perceived that her abode had been discovered. She dropped her prey, with a loud shriek communicated the alarm to the male, and, hovering with him over our heads, kept up a growling cry, to intimidate us from our suspected design. This watchful solicitude I have ever found peculiar to the female—must I be understood to speak only of birds?

“The young having concealed themselves, we went and picked up the fish which the mother had let fall. It was a white perch, weighing about $5\frac{1}{2}$ lb. The upper part of the head was broken in, and the back torn by the talons of the eagle. We had plainly seen her bearing it in the manner of the fish-hawk.

“This day’s sport being at an end, as we journeyed homewards, we agreed to return the next morning, with the view of obtaining both the old and young birds; but rainy and tempestuous weather setting in, it became necessary to defer the expedition till the third day following, when, with guns and men all in

readiness, we reached the rock. Some posted themselves at the foot, others upon it, but in vain. We passed the entire day, without either seeing or hearing an eagle, the sagacious birds, no doubt, having anticipated an invasion, and removed their young to new quarters.

“ I come at last to the day which I had so often and so ardently desired. Two years had gone by since the discovery of the nest, in fruitless excursions; but my wishes were no longer to remain ungratified. In returning from the little village of Henderson, to the house of Doctor Rankin, about a mile distant, I saw an eagle rise from a small enclosure not a hundred yards before me, where the Doctor had, a few days before, slaughtered some hogs, and alight upon a low tree branching over the road. I prepared my double-barreled piece, which I constantly carry, and went slowly and cautiously towards him. Quite fearlessly he awaited my approach, looking upon me with undaunted eye. I fired, and he fell. Before I reached him, he was dead. With what delight did I survey the magnificent bird! Had the finest salmon ever pleased him as he did me?—Never. I ran and presented him to my friend, with a pride which they alone can feel, who, like me, have devoted themselves from their earliest childhood to such pursuits, and who have derived from them their first pleasures. To others I must seem to ‘ prattle out of fashion.’ The Doctor, who was an experienced hunter, examined the bird with much satisfaction, and frankly acknowledged he had never before seen or heard of it.

“ The name which I have chosen for this new species of eagle, ‘ the bird of Washington,’ may, by some, be considered as preposterous and unfit; but as it is indisputably the noblest bird of its genus that has yet been discovered in the United States, I trust I shall be allowed to honour it with the name of one yet nobler, who was the saviour of his country, and whose name will ever be dear to it. To those who may be curious to know my reasons, I can only say, that, as the new world gave me birth and liberty, the great man who

ensured its independence is next to my heart. He had a nobility of mind, and a generosity of soul, such as are seldom possessed. He was brave, so is the eagle; like it, too, he was the terror of his foes; and his fame, extending from pole to pole, resembles the majestic soarings of the mightiest of the feathered tribe. If America has reason to be proud of her Washington, so has she to be proud of her great eagle.

“ In the month of January following, I saw a pair of these eagles flying over the falls of the Ohio, one in pursuit of the other. The next day I saw them again. The female had relaxed her severity, had laid aside her coyness, and to a favourite tree they continually resorted. I pursued them unsuccessfully for several days, when they forsook the place.

“ The flight of this bird is very different from that of the white-headed eagle. The former encircles a greater space, whilst sailing, keeps nearer to the land and the surface of the water, and when about to dive for fish, falls in a spiral manner, as if with the intention of checking any retreating movement which its prey might attempt, darting upon it only when a few yards distant. The fish-hawk often does the same. When rising with a fish, the bird of Washington flies to a considerable distance, forming, in its line of course, a very acute angle with the surface line of the water. My last opportunity of seeing this bird, was on the 15th of November, 1821, a few miles above the mouth of the Ohio, when two passed over our boat, moving down the river with a gentle motion. In a letter from a kind relative, Mr W. Bakewell, dated ‘ Falls of the Ohio, July, 1819,’ and containing particulars relative to the swallow-tailed hawk, (*Falco furcatus*), that gentleman says:—‘ Yesterday, for the first time, I had an opportunity of viewing one of those magnificent birds, which you call the sea eagle, as it passed low over me, whilst fishing. I shall be really glad when I can again have the pleasure of seeing your drawing of it.’

“ Whilst in Philadelphia, about twelve months ago, I

had the gratification of seeing a fine specimen of this eagle at Mr Brano's museum. It was a male in fine plumage, and beautifully preserved. I wished to purchase it, with a view to carry it to Europe, but the price put upon it was above my means.

“ My excellent friend, Richard Harlan, M. D. of that city, speaking of this bird, in a letter, dated ‘ Philadelphia, August 19, 1830,’ says, ‘ That fine specimen of Washington eagle, which you noticed in Brano's museum, is at present in my possession. I have deposited it in the academy, where it will most likely remain.’ I saw the specimen alluded to, which, in as far as I could observe, agreed in size and markings exactly with my drawing, to which, however, I could not at the time refer, as it was, with the whole of my collection, deposited in the British Museum, under the care of my ever kind and esteemed friend, J. G. Children, Esq. of that institution.

“ The glands containing the oil used for the purpose of anointing the surface of the plumage are extremely large. Their contents have the appearance of hog's lard, which had been melted and become rancid. This bird makes more copious use of that substance than the white-headed eagle, or any of the tribe to which it belongs, excepting the fish-hawk, the whole plumage looking, upon close examination, as if it had received a general coating of a thin clear dilution of gum-arabic, and presenting less of the downy gloss exhibited in the upper part of the white-headed eagle's plumage. The male bird weighs $14\frac{1}{2}$ lb. avoirdupois, and measures 3 feet 7 inches in length, and 10 feet 2 inches in extent.”

4. *FALCO FULVUS*. — RING-TAIL, OR GOLDEN EAGLE.

DR RICHARDSON says, at page 12 of the *Northern Zoology*, — “ This powerful bird breeds in the recesses of the sub-alpine country which skirts the Rocky Mountains, and is seldom seen farther to the eastward. It is held by the aborigines of America, as it is by almost every other people, to be an emblem of

might and courage; and the young Indian warrior glories in his eagle plume as the most honourable ornament with which he can adorn himself. Its feathers are attached to the calumets, or smoking pipes, used by the Indians in the celebration of their solemn festivals, which has obtained for it the name of the calumet eagle. Indeed, so highly are these ornaments prized, that a warrior will often exchange a valuable horse for the tail feathers of a single eagle. The strength of vision of this bird must almost exceed conception, for it can discover its prey and pounce upon it from a height at which it is itself, with its expanded wings, scarcely visible to the human eye. When looking for its prey, it sails in large circles, with its tail spread out, but with little motion of its wings; and it often soars aloft in a spiral manner, its gyrations becoming gradually less and less perceptible, until it dwindles to a mere speck, and is at length entirely lost to the view. A story is current, on the plains of the Saskatchewan, of a half-breed Indian, who was vaunting his prowess before a band of his countrymen, and wishing to impress them with a belief of his supernatural powers. In the midst of his harangue an eagle was observed suspended as it were in the air, directly over his head, upon which, pointing aloft with his dagger, which glistened brightly in the sun, he called on the royal bird to come down. To his own amazement, no less than the consternation of the surrounding Indians, the eagle seemed to obey the charm, for instantly, shooting down with the velocity of an arrow, it impaled itself on the point of his weapon!"

5. *FALCO LEUCOCEPHALUS*.

THE WHITE-HEADED EAGLE, OR BALD EAGLE.

AUDUBON, PLATE XXXI. MALE.

To the delightful history of this bird given by Wilson, vol. 1, p. 22, we have pleasure in adding that of Audubon, which will enable our readers to form an

estimate of the descriptive powers of these two eminent individuals :—

“The figure of this noble bird is well known throughout the civilized world, emblazoned as it is on our national standard, which waves in the breeze of every clime, bearing to distant lands the remembrance of a great people living in a state of peaceful freedom. May that peaceful freedom last for ever !

“The great strength, daring, and cool courage of the white-headed eagle, joined to his unequalled power of flight, render him highly conspicuous among his brethren. To these qualities, did he add a generous disposition towards others, he might be looked up to as a model of nobility. The ferocious, overbearing, and tyrannical temper which is ever and anon displaying itself in his actions, is nevertheless best adapted to his state, and was wisely given him by the Creator, to enable him to perform the office assigned to him.

“To give you, kind reader, some idea of the nature of this bird, permit me to place you on the Mississippi, on which you may float gently along, while approaching winter brings millions of water fowl on whistling wings, from the countries of the north, to seek a milder climate in which to sojourn for a season. The eagle is seen perched, in an erect attitude, on the highest summit of the tallest tree, by the margin of the broad stream : His glistening but stern eye looks over the vast expanse : He listens attentively to every sound that comes to his quick ear from afar, glancing now and then on the earth beneath, lest even the light tread of the fawn may pass unheard : His mate is perched on the opposite side, and, should all be tranquil and silent, warns him by a cry to continue patient : At this well known call the male partly opens his broad wings, inclines his body a little downwards, and answers to her voice in tones not unlike the laugh of a maniac : The next moment he resumes his erect attitude, and again all around is silent : Ducks of many species, the teal, the widgeon, the mallard, and others, are seen passing with great rapidity, and following the course of the current ; but

the eagle heeds them not; they are at that time beneath his attention. The next moment, however, the wild, trumpet-like sound of a yet distant but approaching swan is heard. A shriek from the female eagle comes across the stream,—for, kind reader, she is fully as alert as her mate. The latter suddenly shakes the whole of his body, and with a few touches of his bill, aided by the action of his cuticular muscles, arranges his plumage in an instant. The snow white bird is now in sight: her long neck is stretched forward; her eye is on the watch, vigilant as that of her enemy; her large wings seem with difficulty to support the weight of her body, although they flap incessantly. So irksome do her exertions seem, that her very legs are spread beneath her tail, to aid her in her flight. She approaches, however. The eagle has marked her for his prey. As the swan is passing the dreaded pair, starts from his perch, in full preparation for the chase, the male bird, with an awful scream, that to the swan's ear brings more terror than the report of the large duck gun.

“ Now is the moment to witness the display of the eagle's powers. He glides through the air like a falling star, and, like a flash of lightning, comes upon the timorous quarry, which now, in agony and despair, seeks, by various manœuvres, to elude the grasp of his cruel talons. It mounts, doubles, and willingly would plunge into the stream, were it not prevented by the eagle, which, long possessed of the knowledge that by such a stratagem the swan might escape him, forces it to remain in the air by attempting to strike it with his talons from beneath. The hope of escape is soon given up by the swan. It has already become much weakened, and its strength fails at the sight of the courage and swiftness of its antagonist. Its last gasp is about to escape, when the ferocious eagle strikes with his talons the under side of its wing, and with unresisted power forces the bird to fall in a slanting direction upon the nearest shore.

“ It is then, reader, that you may see the cruel spirit

of this dreaded enemy of the feathered race, whilst, exulting over his prey, he for the first time breathes at ease. He presses down his powerful feet, and drives his sharp claws deeper than ever into the heart of the dying swan. He shrieks with delight as he feels the last convulsions of his prey, which has now sunk under his unceasing efforts to render death as painfully felt as it can possibly be. The female has watched every movement of her mate; and if she did not assist him in capturing the swan, it was not from want of will, but merely that she felt full assurance that the power and courage of her lord were quite sufficient for the deed. She now sails to the spot where he eagerly awaits her, and, when she has arrived, they together turn the breast of the luckless swan upwards, and gorge themselves with gore.

“ At other times, when these eagles, sailing in search of prey, discover a goose, a duck, or a swan, that has alighted on the water, they accomplish its destruction in a manner that is worthy of your attention. The eagles, well aware that water-fowl have it in their power to dive at their approach, and thereby elude their attempts upon them, ascend in the air in opposite directions over the lake or river, on which they have observed the object which they are desirous of possessing. Both eagles reach a certain height, immediately after which, one of them glides with great swiftness towards the prey; the latter, meantime, aware of the eagle's intention, dives the moment before he reaches the spot. The pursuer then rises in the air, and is met by its mate, which glides toward the water-bird, that has just emerged to breathe, and forces it to plunge again beneath the surface, to escape the talons of this second assailant. The first eagle is now poisoning itself in the place where its mate formerly was, and rushes anew to force the quarry to make another plunge. By thus alternately gliding, in rapid and often repeated rushes, over the ill-fated bird, they soon fatigue it, when it stretches out its neck, swims deeply, and makes for the shore, in the hope of concealing itself among the rank

weeds. But this is of no avail, for the eagles follow it in all its motions, and the moment it approaches the margin, one of them darts upon it, and kills it in an instant, after which they divide the spoil.

“During spring and summer, the white-headed eagle, to procure sustenance, follows a different course, and one much less suited to a bird apparently so well able to supply itself without interfering with other plunderers. No sooner does the fish-hawk make its appearance along our Atlantic shores, or ascend our numerous and large rivers, than the eagle follows it, and, like a selfish oppressor, robs it of the hard-earned fruits of its labour. Perched on some tall summit, in view of the ocean, or of some water-course, he watches every motion of the osprey while on the wing. When the latter rises from the water, with a fish in its grasp, forth rushes the eagle in pursuit. He mounts above the fish-hawk, and threatens it by actions well understood, when the latter, fearing perhaps that its life is in danger, drops its prey. In an instant, the eagle, accurately estimating the rapid descent of the fish, closes his wings, follows it with the swiftness of thought, and the next moment grasps it. The prize is carried off in silence to the woods, and assists in feeding the ever-hungry brood of the eagle.

“This bird now and then procures fish himself, by pursuing them in the shallows of small creeks. I have witnessed several instances of this in the Perkioming Creek in Pennsylvania, where, in this manner, I saw one of them secure a number of red-fins, by wading briskly through the water, and striking at them with his bill. I have also observed a pair scrambling over the ice of a frozen pond, to get at some fish below, but without success.

“It does not confine itself to these kinds of food, but greedily devours young pigs, lambs, fawns, poultry, and the putrid flesh of carcasses of every description, driving off the vultures and carrion-crows, or the dogs, and keeping a whole party at defiance until it is satiated. It frequently gives chase to the vultures, and forces them to disgorge the contents of their stomachs, when

it alights and devours the filthy mass. A ludicrous instance of this took place near the city of Natchez, on the Mississippi. Many vultures were engaged in devouring the body and entrails of a dead horse, when a white-headed eagle accidentally passing by, the vultures all took to wing, one among the rest with a portion of the entrails partly swallowed, and the remaining part, about a yard in length, dangling in the air. The eagle instantly marked him, and gave chase. The poor vulture tried in vain to disgorge, when the eagle, coming up, seized the loose end of the gut, and dragged the bird along for twenty or thirty yards, much against its will, until both fell to the ground, when the eagle struck the vulture, and in a few moments killed it, after which he swallowed the delicious morsel.

“ I have heard of several attempts made by this bird to destroy children, but have never witnessed any myself, although I have little doubt of its having sufficient daring to do so.

“ The flight of the white-headed eagle is strong, generally uniform, and protracted to any distance at pleasure. Whilst travelling, it is entirely supported by equal easy flappings, without any intermission, in as far as I have observed it, by following it with the eye, or the assistance of a glass. When looking for prey, it sails with extended wings, at right angles to its body, now and then allowing its legs to hang at their full length. Whilst sailing, it has the power of ascending in circular sweeps, without a single flap of the wings, or any apparent motion either of them or of the tail; and in this manner it often rises until it disappears from the view, the white tail remaining longer visible than the rest of the body. At other times, it rises only a few hundred feet in the air, and sails off in a direct line, and with rapidity. Again, when thus elevated, it partially closes its wings, and glides downwards for a considerable space, when, as if disappointed, it suddenly checks its career, and reassumes its former steady flight. When at an immense height, and as if observing an object on the

ground, it closes its wings, and glides through the air with such rapidity as to cause a loud rustling sound, not unlike that produced by a violent gust of wind passing amongst the branches of trees. Its fall towards the earth can scarcely be followed by the eye on such occasions, the more particularly, that these falls, or glidings through the air, usually take place when they are least expected.

“ This bird has the power of raising from the surface of the water any floating object not heavier than itself. In this manner it often robs the sportsman of ducks which have been killed by him. Its audacity is quite remarkable. While descending the Upper Mississippi, I observed one of these eagles in pursuit of a green-winged teal. It came so near our boat, although several persons were looking on, that I could perceive the glancings of its eye. The teal, on the point of being caught, when not more than fifteen or twenty yards from us, was saved from the grasp of its enemy, one of our party having brought the latter down by a shot, which broke one of its wings. When taken on board, it was fastened to the deck of our boat by means of a string, and was fed with pieces of cat-fish, some of which it began to eat on the third day of its confinement. But, as it became a very disagreeable and dangerous associate, trying on all occasions to strike at some one with its talons, it was killed and thrown overboard.

“ When these birds are suddenly and unexpectedly approached or surprised, they exhibit a great degree of cowardice. They rise at once, and fly off very low, in zigzag lines, to some distance, uttering a hissing noise, not at all like their usual disagreeable imitation of a laugh. When not carrying a gun, one may easily approach them; but the use of that instrument being to appearance well known to them, they are very cautious in allowing a person having one to get near them. Notwithstanding all their caution, however, many are shot by approaching them under cover of a tree, on horseback, or in a boat. They do not possess the power of smelling gunpowder, as the crow and the

raven are absurdly supposed to do; nor are they aware of the effects of spring traps, as I have seen some of them caught by these instruments. Their sight, although probably as perfect as that of any bird, is much affected during a fall of snow, at which time they may be approached without difficulty.

“The white-headed eagle seldom appears in very mountainous districts, but prefers the low lands of the sea shores, those of our large lakes, and the borders of rivers. It is a constant resident in the United States, in every part of which it is to be seen. The roosts and breeding places of pigeons are resorted to by it, for the purpose of picking up the young birds that happen to fall, or the old ones when wounded. It seldom, however, follows the flocks of these birds when on their migrations.

“When shot at and wounded, it tries to escape by long and quickly repeated leaps, and, if not closely pursued, soon conceals itself. Should it happen to fall on the water, it strikes powerfully with expanded wings, and in this manner often reaches the shore, when it is not more than twenty or thirty yards distant. It is capable of supporting life without food for a long period. I have heard of some, which, in a state of confinement, had lived without much apparent distress for twenty days, although I cannot vouch for the truth of such statements, which, however, may be quite correct. They defend themselves in the manner usually followed by other eagles and hawks, throwing themselves backwards, and furiously striking with their talons at any object within reach, keeping their bill open, and turning their head with quickness to watch the movements of the enemy, their eyes being apparently more protruded than when unmolested.

“It is supposed that eagles live to a very great age,—some persons have ventured to say even a hundred years. On this subject, I can only observe, that I once found one of these birds, which, on being killed, proved to be a female, and which, judging by its appearance, must have been very old. Its tail and wing feathers

were so worn out, and of such a rusty colour, that I imagined the bird had lost the power of moulting. The legs and feet were covered with large warts—the claws and bill were much blunted—it could scarcely fly more than a hundred yards at a time, and this it did with a heaviness, and unsteadiness of motion, such as I never witnessed in any other bird of the species. The body was poor, and very tough. The eye was the only part which appeared to have sustained no injury. It remained sparkling, and full of animation; and, even after death, seemed to have lost little of its lustre. No wounds were perceivable on its body.

“The white-headed eagle is seldom seen alone, the mutual attachment which two individuals form when they first pair, seeming to continue until one of them dies or is destroyed. They hunt for the support of each other, and seldom feed apart, but usually drive off other birds of the same species. They commence their amatory intercourse at an earlier period than any other land bird with which I am acquainted, generally in the month of December. At this time, along the Mississippi, or by the margin of some lake not far in the interior of the forest, the male and female birds are observed making a great bustle, flying about and circling in various ways, uttering a loud cackling noise, alighting on the dead branches of the tree on which their nest is already preparing, or in the act of being repaired, and caressing each other. In the beginning of January incubation commences. I shot a female, on the 17th of that month, as she sat on her eggs, on which the chicks had made considerable progress.

“The nest, which in some instances is of great size, is usually placed on a very tall tree, destitute of branches to a considerable height, but by no means always a dead one. It is never seen on rocks. It is composed of sticks, from three to five feet in length, large pieces of turf, rank weeds, and Spanish moss in abundance, whenever that substance happens to be near. When finished, it measures from five to six feet in diameter; and so great is the accumulation of materials, that

it sometimes measures the same in depth, it being occupied for a great number of years in succession, and receiving some augmentation each season. When placed in a naked tree, between the forks of the branches, it is conspicuously seen at a great distance. The eggs, which are from two to four, more commonly two or three, are of a dull white colour, and equally rounded at both ends, some of them being occasionally granulated. Incubation lasts for more than three weeks; but I have not been able to ascertain its precise duration, as I have observed the female on different occasions sit for a few days in the nest, before laying the first egg. Of this I assured myself by climbing to the nest every day in succession, during her temporary absence,—a rather perilous undertaking when the bird is sitting.

“ I have seen the young birds when not larger than middle sized pullets. At this time, they are covered with a soft cottony kind of down, their bill and legs appearing disproportionately large. Their first plumage is of a grayish colour, mixed with brown of different depths of tint; and before the parents drive them off from the nest, they are fully fledged. I once caught three young eagles of this species, when fully fledged, by having the tree on which their nest was, cut down. It caused great trouble to secure them, as they could fly and scramble much faster than any of our party could run. They, however, gradually became fatigued, and at length were so exhausted as to offer no resistance, when we were securing them with cords. This happened on the border of Lake Pontchartrain, in the month of April. The parents did not think fit to come within gun-shot of the tree while the axe was at work.

“ The attachment of the parents to the young is very great, when the latter are yet of a small size; and to ascend to the nest at this time would be dangerous. But as the young advance, and, after being able to take wing and provide for themselves, are not disposed to fly off, the old birds turn them out, and beat them away from them. They return to the nest, however, to

roost, or sleep on the branches immediately near it, for several weeks after. They are fed most abundantly while under the care of the parents, which procure for them ample supplies of fish, either accidentally cast ashore, or taken from the fish-hawk, together with rabbits, squirrels, young lambs, pigs, opossums, or raccoons. Every thing that comes in the way is relished by the young family, as by the old birds.

“The young birds begin to breed the following spring, not always in pairs of the same age, as I have several times observed one of these birds in brown plumage mated with a full coloured bird, which had the head and tail pure white. I once shot a pair of this kind, when the brown bird (the young one) proved to be the female.

“This species requires at least four years before it attains the full beauty of its plumage when kept in confinement. I have known two instances in which the white of the head did not make its appearance until the sixth spring. It is impossible for me to say how much sooner this state of perfection is attained, when the bird is at full liberty, although I should suppose it to be at least one year, as the bird is capable of breeding the first spring after birth.

“The weight of eagles of this species varies considerably. In the males, it is from six to eight pounds, and in the females, from eight to twelve. These birds are so attached to particular districts, where they have first made their nest, that they seldom spend a night at any distance from the latter, and often resort to its immediate neighbourhood. Whilst asleep, they emit a loud hissing sort of snore, which is heard at the distance of a hundred yards, when the weather is perfectly calm. Yet, so light is their sleep, that the cracking of a stick under the foot of a person immediately awakens them. When it is attempted to smoke them while thus roosted and asleep, they start up and sail off without uttering any sound, but return next evening to the same spot.

“Before steam navigation commenced on our western rivers, these eagles were extremely abundant there, particularly in the lower parts of the Ohio, the Mississippi, and the adjoining streams. I have seen hundreds going down from the mouth of the Ohio to New Orleans, when it was not at all difficult to shoot them. Now, however, their number is considerably diminished, the game on which they were in the habit of feeding, having been forced to seek refuge from the persecution of man farther in the wilderness. Many, however, are still observed on these rivers, particularly along the shores of the Mississippi.”

6. *FALCO STANLEII*.—THE STANLEY HAWK.

AUDUBON, PLATE LXXI.

THIS is a new species, named in honour of Lord Stanley, president of the Linnæan Society.

7. *FALCO HYEMALIS*—THE WINTER HAWK.

AUDUBON, PLATE XXXVI. MALE AND FEMALE.

AUDUBON, as usual, gives an admirable portrait of this species; and this was the more necessary, seeing that Wilson's figure is bad. The following observations on the *physiognomy of birds*, occur in his account of the winter hawk:—

“Every species of bird is possessed of a certain, not always definable, cast of countenance, peculiar to itself. Although it undergoes changes necessary for marking the passions of the individual, its joy, its anger, its terror, or despondency, still it remains the same *specific look*. Hawks are perhaps more characteristically marked in this manner than birds of any other genus, being by nature intended for deeds of daring enterprise, and requiring a greater perfection of sight to enable them to distinguish their prey at great distances. To most persons the *family look* of particular species does not

appear so striking as to the student of nature, who examines her productions in the haunts which she has allotted to them. He perceives at a glance the differences of species, and when he has once bent his attention to an object, can distinguish it at distances which to the ordinary observer present merely a moving object, whether beast or bird. When years of constant observation have elapsed, it becomes a pleasure to him to establish the differences that he has found to exist among the various species of a tribe, and to display to others, whose opportunities have been more limited, the fruits of his research.

“ I hope, kind reader, you will not lay presumption to my charge, when I tell you, that I think myself somewhat qualified to decide in a matter of this kind; or say that I go too far, when I assert, that the hawk which sails before me, at a distance so great, that a careless observer might be apt to fancy it something else, I can distinguish and name with as much ease as I should recognize an old friend by his walk, or his *tourneure*. Independently of the cast of countenance so conspicuously distinctive of different species of birds, there are characters of separation in their peculiar notes, or cries; and, if you add to these, the distinctions that exist in their habits, it will be easy for you, when you have looked at the plate of the winter falcon and that of the red-shouldered hawk, and have been told that their notes and manners differ greatly, to perceive that these birds, although confounded by some, are truly distinct.”

8. *FALCO TEMERARIUS*. — LE PETIT CAPORAL.

AUDUBON, PLATE LXXXV.

THIS is a new species, allied to the hobby. It is a native of Pennsylvania.

9. *FALCO HARLANI*. —BLACK WARRIOR.

AUDUBON, PLATE LXXXVI. MALE AND FEMALE.

THIS is also a new species, allied to the common buzzard, and named in honour of a promising young American naturalist.

GENUS III.—*STRIX*.10. *STRIX NEBULOSA*. —BARRED OWL.

AUDUBON, PLATE XLVI. MALE.

WE cannot resist the temptation of gratifying our readers with Audubon's account of this bird:—

“Should you, kind reader, find it convenient or agreeable to visit the noble forests existing in the lower parts of the State of Louisiana, about the middle of October, when nature, on the eve of preparing for approaching night, permits useful dews to fall and rest on every plant, with the view of reviving its leaves, its fruits, or its lingering blossoms, ere the return of morn; when every night insect rises on buzzing wings from the ground, and the fire-fly, amidst thousands of other species, appears as if purposely to guide their motions through the sombre atmosphere; at the moment when numerous reptiles and quadrupeds commence their nocturnal prowlings, and the fair moon, empress of the night, rises peacefully on the distant horizon, shooting her silvery rays over the heavens and the earth, and, like a watchful guardian, moving slowly and majestically along; when the husbandman, just returned to his home, after the labours of the day, is receiving the cheering gratulations of his family, and the wholesome repast is about to be spread out for master and servants alike:—it is at this moment, kind reader, that were you, as I have said, to visit that happy country, your ear would suddenly be struck by the discordant screams of the barred owl. Its *whah-whah-whah-whah-aa*,

is uttered loudly, and in so strange and ludicrous a manner, that I should not be surprised were you, kind reader, when you and I meet, to compare these sounds to the affected bursts of laughter which you may have heard from some of the fashionable members of our own species.

“ How often, when snugly settled under the boughs of my temporary encampment, and preparing to roast a venison steak or the body of a squirrel, on a wooden spit, have I been saluted with the exulting bursts of this nightly disturber of the peace, that, had it not been for him, would have prevailed around me, as well as in my lonely retreat! How often have I seen this nocturnal marauder alight within a few yards of me, exposing his whole body to the glare of my fire, and eye me in such a curious manner, that, had it been reasonable to do so, I would gladly have invited him to walk in and join me in my repast, that I might have enjoyed the pleasure of forming a better acquaintance with him! The liveliness of his motions, joined to their oddness, have often made me think that his society would be at least as agreeable as that of many of the buffoons we meet with in the world. But, as such opportunities of forming acquaintance have not existed, be content, kind reader, with the imperfect information which I can give you of the habits of this Sancho Pança of our woods.

“ Such persons as conclude, when looking upon owls in the glare of day, that they are, as they then appear, extremely dull, are greatly mistaken. Were they to state, like Buffon, that woodpeckers are miserable beings, they would be talking as incorrectly; and, to one who might have lived long in the woods, they would seem to have lived only in their libraries.

“ The barred owl is found in all those parts of the United States which I have visited, and is a constant resident. In Louisiana it seems to be more abundant than in any other State. It is almost impossible to travel eight or ten miles in any of the retired woods there, without seeing several of them, even in broad

day; and, at the approach of night, their cries are heard proceeding from every part of the forest around the plantations. Should the weather be lowering, and indicative of the approach of rain, their cries are so multiplied during the day, and especially in the evening, and they respond to each other in tones so strange, that one might imagine some extraordinary fête about to take place among them. On approaching one of them, its gesticulations are seen to be of a very extraordinary nature. The position of the bird, which is generally erect, is immediately changed. It lowers its head, and inclines its body, to watch the motions of the person beneath, throws forward the lateral feathers of its head, which thus has the appearance of being surrounded by a broad ruff, looks towards him as if half blind, and moves its head to and fro in so extraordinary a manner, as almost to induce a person to fancy that part dislocated from the body. It follows all the motions of the intruder with its eyes; and, should it suspect any treacherous intentions, flies off to a short distance, alighting with its back to the person, and immediately turning about with a single jump, to recommence its scrutiny. In this manner, the barred owl may be followed to a considerable distance, if not shot at, for to halloo after it does not seem to frighten it much. But if shot at, and missed, it removes to a considerable distance, after which its *whah-whah-whah* is uttered with considerable pomposity. This owl will answer the imitation of its own sounds, and is frequently decoyed by this means.

“The flight of the barred owl is smooth, light, noiseless, and capable of being greatly protracted. I have seen them take their departure from a detached grove in a prairie, and pursue a direct course towards the skirts of the main forest, distant more than two miles, in broad daylight. I have thus followed them with the eye until they were lost in the distance, and have reason to suppose that they continued their flight until they reached the woods. Once, whilst descending the Ohio, not far from the well known *Cave-in-rock*,

about two hours before sunset, in the month of November, I saw a barred owl teased by several crows, and chased from the tree in which it was. On leaving the tree, it gradually rose in the air, in the manner of a hawk, and at length attained so great a height, that our party lost sight of it. It acted, I thought, as if it had lost itself, now and then describing small circles, and flapping its wings quickly, then flying in zigzag lines. This being so uncommon an occurrence, I noted it down at the time. I felt anxious to see the bird return towards the earth, but it did not make its appearance again. So very lightly do they fly, that I have frequently discovered one passing over me, and only a few yards distant, by first seeing its shadow on the ground, during clear moonlight nights, when not the faintest rustling of its wings could be heard.

“ Their power of sight during the day seems to be rather of an equivocal character, as I once saw one alight on the back of a cow, which it left so suddenly afterwards, when the cow moved, as to prove to me that it had mistaken the object on which it had perched for something else. At other times, I have observed, that the approach of the gray squirrel intimidated them, if one of these animals accidentally jumped on a branch close to them, although the owl destroys a number of them during the twilight. It is for this reason, kind reader, that I have represented the barred owl gazing in amazement at one of the squirrels placed only a few inches from him.

“ The barred owl is a great destroyer of poultry, particularly of chickens when half grown. It also secures mice, young hares, rabbits, and many species of small birds, but is especially fond of a kind of frog of a brown colour, very common in the woods of Louisiana. I have heard it asserted that this bird catches fish, but never having seen it do so, and never having found any portion of fish in its stomach, I cannot vouch for the truth of the report.

“ About the middle of March, these owls begin to lay their eggs. This they usually do in the hollows of trees, on the dust of the decomposed wood. At other

times they take possession of the old nest of a crow, or a red-tailed hawk. In all these situations I have found their eggs and young. The eggs are of a globular form, pure white, with a smooth shell, and are from four to six in number. So far as I have been able to ascertain, they rear only one brood in a season. The young, like those of all other owls, are at first covered with a downy substance, some of which is seen intermixed with and protruding from the feathers, some weeks after the bird is nearly fledged. They are fed by the parents for a long time, standing perched, and emitting a hissing noise in lieu of a call. This noise may be heard in a calm night, for fifty, or probably a hundred yards, and is by no means musical. To a person lost in a swamp, it is, indeed, extremely dismal.

“The plumage of the barred owl differs very considerably, in respect to colour, in different individuals, more so among the males. The males are also smaller than the females, but less so than in some other species. During the severe winters of our Middle Districts, those that remain there suffer very much; but the greater number, as in other species, remove to the Southern States. When kept in captivity, they prove excellent mousers.

“The antipathy shewn to owls by every species of day bird is extreme. They are followed and pursued on all occasions; and although few of the day birds ever prove dangerous enemies, their conduct towards the owls is evidently productive of great annoyance to them. When the barred owl is shot at and wounded, it snaps its bill sharply and frequently, raises all its feathers, looks towards the person in the most uncouth manner, but, on the least chance of escape, moves off in great leaps with considerable rapidity.

“The barred owl is very often exposed for sale in the New Orleans market. The Creoles make *gumbo* of it, and pronounce the flesh palatable.”

11. *STRIX VIRGINIANA*. — THE GREAT HORNED OWL.

AUDUBON, PLATE LXI. MALE AND FEMALE.

We recommend to our readers Audubon's admirable account of the natural history of this species.

12. *PICUS PRINCIPALIS*. — THE IVORY-BILLED WOODPECKER.

AUDUBON, PLATE LXVI. MALE AND FEMALE.

"I HAVE always," says Audubon, "imagined, that in the plumage of the beautiful ivory-billed woodpecker, there is something very closely allied to the style of colouring of the great Vandyke. The broad extent of its dark glossy body and tail, the large and well-defined white markings of its wings, neck, and bill, relieved by the rich carmine of the pendent crest of the male, and the brilliant yellow of its eye, have never failed to remind me of some of the boldest and noblest productions of that inimitable artist's pencil. So strongly, indeed, have these thoughts become ingrafted in my mind, as I gradually obtained a more intimate acquaintance with the ivory-billed woodpecker, that whenever I have observed one of these birds flying from one tree to another, I have mentally exclaimed, "There goes a Vandyke!" This notion may seem strange, perhaps ludicrous, to you, good reader, but I relate it as a fact, and whether or not it may be found in accordance with your own ideas, after you have inspected the plate in which is represented this great chieftain of the woodpecker tribe, is perhaps of little consequence."

The natural history of this bird, given by Audubon, will be read with delight by readers of every description.

13. *ICTERUS PECORIS.*

THE COW-PEN BIRD. — COW BUNTING OF WILSON.

AUDUBON, PLATE XCIX, MALE AND FEMALE.

As preliminary to his amusing account of this bird, Audubon beautifully remarks :—

“The works of nature are evidently perfect in all their parts. From the manifestations of consummate skill everywhere displayed, we must infer that the intellect which planned the grand scheme, is infinite in power ; and even when we observe parts or objects which to us seem unnecessary, superfluous, or useless, it would be more consistent with the ideas which we ought to have of our own feeble apprehension, to consider them as still perfect, to have been formed for a purpose, and to execute their intended function, than to view them as abortive and futile attempts.

“The seed is dropped on the ground. It imbibes moisture, swells, and its latent principle of life receiving an impulse, slowly unfolds. Its radicle shoots down into the earth, its plumule rises toward the sky. The first leaflets appear, and, as we watch its progress, we see it assuming size and strength. Years pass on, and it still enlarges. It produces flowers and fruits, and gives shelter to multitudes of animated beings. At length, it stands the glory of the forest, spreading abroad its huge arms, covering with its dense foliage the wild animals that retreat to it for protection from the sun and the rain. Centuries after its birth, the stately tree rears its green head to the sky. At length symptoms of decay begin to manifest themselves. The branches wither, the core dries and putrefies. Gray and shaggy lichens cover its trunk and limbs. The woodpecker resorts to it for the purpose of procuring the insects which find shelter beneath its decayed bark. Blackness spreads over the heavens, the muttering of the thunder is heard. Suddenly there comes on the ear the bickering noise of the whirlwind, which scatters

the twigs and the foliage around, and meeting in its path the patriarch of the forest, lays him prostrate on the ground. For years the massy trunk lies extended on the earth; but it is seen gradually giving way. The summer's sun and the winter's frost crumble it into dust, which goes to augment the soil. And thus has it finished its course.

“ Look again at the egg of the bird, dropped on its curious bed, the construction of which has cost the parent bird many labours and anxieties. It also is a seed, but it gives rise to a very different object. Fostered by the warmth imparted by the parent bird, the germ which it contains swells into life, and, at length bursting its fragile enclosure, comes tottering into existence. To sustain the life and contribute to the development of this helpless being, the mother issues in quest of food, which she carefully places in its open throat. Day after day it acquires new development under the fostering care of its nurse, until at length, invested with all the powers which nature intended to bestow upon it, it spreads its pinions to the breeze, and sallies forth to perform the many offices for which it is destined.

“ How often have I watched over the little bird in its nest, and marked the changes which day after day it exhibited; the unfolding of its first scanty covering of down, the sprouting of its plumelets, the general enlargement of all its parts! With what pleasure have I viewed the development of its colouring and the early manifestations of its future habits!”

14. *CORVUS BULLOCKII*, AUDUBON.

GARRULUS ULTRAMARINUS OF BONAP.—THE COLUMBIA JAY.

AUDUBON, PLATE XCVI.

THE general colour of this new species of crow is bright blue, with purple reflections; the foreneck and anterior part of the breast, black; the rest of the under parts, white; length, thirty-one inches; across the

wings, twenty-six. Audubon, when speaking of this fine bird, has the following remarks:—

“ The genus *corvus* consists of birds which differ considerably in their appearance and manners. This circumstance has given rise to various separations and groupings. It may, in fact, be considered analogous to the great genera *Falco*, *Psittacus*, and *Columba*, which, although the species composing them exhibit great diversity, may be allowed to retain their integrity, because the gradations between the species are so minute, that each group presents an uninterrupted series. Were one to compare the golden eagle with the swallow-tailed hawk, the red macaw with the ground parrot of New Holland, or the great crested pigeon with the turtle dove, he might doubtless find reasons for separating these birds into genera, could he but forget that the intermediate gradations are to be seen. It is so with the crows and jays. The former are characterized by a certain gravity of aspect; their flight is regular, protracted, and performed by easy flappings and sailings; they frequent open places, and feed on almost all kinds of food indiscriminately; their cry is a dull croak, or scream. The latter are much smarter in their appearance, more lively in their motions; their flight is less protracted, and performed by short flappings; they frequent woods and thickets, and live chiefly on fruits; and their notes are emitted in noisy chatterings. The bill of the crows is large, robust, cultriform, covered at the base with long, stiff, closely adpressed, reversed, bristly feathers; that of some of the jays is much smaller, not robust, and approaching to the form of that of thrushes and nut-crackers, and the basirostral feathers are diminished in size and rigidity. The crows have shortish, even or rounded tails, with long and sometimes rather sharp wings. The jays have the tail often greatly elongated and cuneiform or graduated, with short, much rounded, concave wings. Numerous other contrasts are afforded,—the crows, for example, being generally dull and uniform in their colours, the jays variegated and often

brilliant. All these circumstances I intend to discuss in another work, and in the mean time retain the usual generic name for the present splendid species, which has the bill of nearly the same form as the true crows, combined with the elongated tail, and lively colouring of the jays.

“Were I to relate to you, good reader, the various accounts which I have heard respecting this splendid bird, I should have enough to say; but as I have resolved to confine myself entirely to the results of my own observation, I must for the present remain silent on the subject.

“The specimen from which the drawings were taken was presented to me by a friend who had received it from the Columbia River, and is the only individual represented in the volume which I did not myself procure on the spot. However, as I expect to ramble again through our vast forests and extensive territories, I may yet be enabled to give you a full account of this beautiful bird, which, from the splendour of its plumage, deserves all the attention of the naturalist. In the mean time, I adjoin a notice respecting it, with which I have lately been favoured by my friend, the Prince of Musignano: ‘Le superbe geai, dont vous me parlez, est sans doute l’oiseau que Wagler a fait connaître le premier, sous le nom de *Pica Bullockii*, et que Temminck a figuré dans ses planches coloriées, sous celui de *Garrula Gubernatrix*. Son nom legitime, suivant mes principes, sera *Garrulus Bullockii*, mais vous avez raison de dire qu’il ne se trouve pas dans mon Synopsis: ce n’est que par votre lettre que j’ai appris qu’il se trouvait dans le territoire des Etats-Unis. Jusqu’à présent, on ne l’avait trouve qu’au Mexique et à la Californie. Il n’est pas etonnant qu’il se retrouve sur la rivière Columbia. Mais comment l’avez-vous obtenu et avez-vous pu le dessiner vivant? Trois autres especes de geais, qui ne sont pas dans mon Synopsis, habitent l’extremité nord de l’Amerique, et il est probable, qu’outre votre superbe *geai commandeur*,

plusieurs autres des especes Mexicaines se retrouvent dans sa partie occidentale.' ”

15. *CORVUS CORAX*, LINNÆUS. — THE RAVEN.

THIS well known bird, common to the four quarters of the globe, abounds in the fur countries, and visits the remotest islands of the polar seas.* Richardson remarks, “It frequents the barren grounds even in the most intense winter colds, its movements being directed in a great measure by those of the herds of rein-deer, musk-oxen, and bison, which it follows, ready to assist in devouring such as are killed by beasts of prey or by accident. No sooner has a hunter slaughtered an animal, than these birds are seen coming from various quarters to feast on the offal; and considerable numbers constantly attend at the fishing stations, where they shew equal boldness and rapacity. The experienced native, when he sees from afar a flock of ravens wheeling in small circles, knows that a party of his countrymen, well provided with venison, are encamped on the spot, or that a band of wolves are preying upon the carcass of some of the larger quadrupeds; and pushes on briskly, in the certain prospect of having his wants supplied. The thievish habits of a tame raven† are well known; but it is remarkable, that, inhabiting in a wild state the most secluded and worst peopled districts of America, it

* Captain James C. Ross remarks, that the raven was found in the most northern part of the Arctic regions visited by the exploratory expedition. A pair took up their residence in the high cliffs of Port Bowen, and occasionally approached the ships in search of food. During the winter, they were frequently observed to have a white ring round the neck, caused by the freezing of the vapour of their breath, and giving them a very singular appearance. Winter produced no effect on their plumage, nor did they differ in any respect from the European bird.

† Ravens have been taught to articulate short sentences as distinctly as any parrot. One now in the possession of Mr Henslow, of St Albans, speaks so distinctly, that, upon first hearing it, we were actually deceived in thinking it was a human voice.

should exhibit the same disposition to carry off shining metallic bodies and other articles, totally unfit either for food or to be used in the construction of its nest. Mr Kendall, in crossing the height of land which divides the waters that flow towards Hudson's Bay from those which fall into the Arctic Sea, saw a raven flying off with something in his claws, pursued by a number of his companions. The flock being fired at, the object of contention was dropped, and proved to be the lock of a chest!"*

* "With the exception of the snipe, no bird seems more universally spread over the surface of our globe than the raven, inhabiting every zone, the hot, the temperate, and the severe; feeding upon and removing noxious substances from the earth, of which it obtains intimation by means of a faculty we have little conception of. Sight it cannot be; and we know not of any feter escaping from an animal, previous to putrescence, so subtle as to call these scavengers of nature from the extremity of one country to that of another; for it is manifest, from the height which they preserve in their flight, and the haste they are making, that their departure has been from some far distant station, having a remote and urgent object in contemplation.

"In England, the raven does not seem to abound; but it is most common on the shores of harbours, or near great rivers, where animal substances are more frequently to be met with than in inland places. In Greenland and Iceland, where putrescent fishy substances abound, they appear to be almost domesticated. Horace calls the raven 'Annosa Cornix;' and in a tame state it has attained a very long life. How long extended its existence may be, when roaming in an unrestricted state, we have no means of ascertaining. This liberty may be most favourable to longevity; yet, from the numerous contingencies attending the condition of these creatures, it is probable that few of them live out all their days, so as to become the 'bird of ages.' However, the supposed longevity they have attained, their frequent mention and agency in Holy Writ, the obscure knowledge we possess of their powers and motives, with the gravity of their deportment, like an 'all knowing bird,' have acquired for them, from very remote periods, the veneration of mankind. The changes of our manners and ideas, in respect to many things, have certainly deprived them of much of this reverence; yet the almost supernatural information which they obtain of the decease, or approaching dissolution, of an animal, claims still some admiration for them. This supposed faculty of

16. *CAPRIMULGUS CAROLINENSIS*. — CHUCK-WILL'S-WIDOW.

AUDUBON, PLATE LII.

AUDUBON remarks of this bird, that if the eggs in the nest are handled, the parents remove them to some other part of the wood. "This singular occurrence," says he, "has as much occupied my thoughts as the equally singular manner in which the cow-bunting deposits her eggs, which she does, like the common cuckoo of Europe, one by one, in the nests of other birds, of different species from her own. I have spent much time in trying to ascertain in what manner the chuck-will's-widow removes her eggs or young, particularly as I found, by the assistance of an excellent dog, that neither the eggs nor the young were to be met with within at least a hundred yards from the spot where they at first lay. The negroes, some of whom pay a good deal of attention to the habits of birds and quadrupeds, assured me that these birds push the eggs or young with their bill along the ground. Some farmers, without troubling themselves much about the matter, imagined the transportation to be performed under the wings of the old bird. The account of the negroes appearing to me more likely to be true than

'smelling death,' formerly rendered their presence, or even their voice, ominous to all, as

'The hateful messengers of heavy things,
Of death and dolour telling;'

and the universal sound of their harsh croak, still, when illness is in the house, with some timid and affectionate persons, brings old fancies to remembrance, savouring of terror and alarm. I am no friend to the superstition of converting natural transactions or occasional events into signs and indications of coming things. Superstitions are wearing out, and shortly will waste away, and be no more heard of; but, I fear, in their place, deism, infidelity, impiety, have started up, the offspring of intuitive wisdom: the first belief arises from weakness and ignorance; the latter disbelief is ingratitude, pride, wickedness." — *Journal of a Naturalist*.

that of the farmers, I made up my mind to institute a strict investigation of the matter. The following is the result:—

“When the chuck-will’s-widow, either male or female, (for each sits alternately,) has discovered that the eggs have been touched, it ruffles its feathers, and appears extremely dejected for a minute or two, after which it emits a low murmuring cry, scarcely audible to me, as I lay concealed at a distance of not more than eighteen or twenty yards. At this time I have seen the other parent reach the spot, flying so low over the ground that I thought its little feet must have touched it, as it skimmed along, and after a few low notes and some gesticulations, all indicative of great distress, take an egg in its large mouth, the other bird doing the same, when they would fly off together, skimming closely over the ground, until they disappeared among the branches and trees. But to what distance they remove their eggs, I have never been able to ascertain; nor have I ever had an opportunity of witnessing the removal of the young. Should a person, coming upon the nest when the bird is sitting, refrain from touching the eggs, the bird returns to them, and sits as before. This fact I have also ascertained by observation.”

17. *HIRUNDO LUNIFRONS.*

WHITE-FRONTED, OR CLIFF SWALLOW.

“Its clustered nests are of frequent occurrence, on the faces of the rocky cliffs of the barren grounds, and they are not uncommon throughout the whole course of the Slave and Mackenzie Rivers. On the 25th of June, in the year 1825, a number of them made their first appearance at Fort Chipewyan, and built their nests under the eaves of the dwelling-house, which are about six feet above a balcony, that extends the whole length of the building, and is a frequented promenade. They had thus to graze the heads of the passengers, on entering their nests, and were moreover exposed to the curiosity and depredations of the children, to whom

they were novelties ; yet they preferred the dwelling-house to the more lofty eaves of the storehouses, and in the following season returned with augmented numbers to the same spot. Fort Chepewyan has existed for many years, and trading posts, though far distant from each other, have been established in the fur countries for a century and a half ; yet this, as far as I could learn, is the first instance of this species of swallow placing itself under the protection of man within the widely extended lands north of the great lakes.* What cause could have thus suddenly called into action that apparent confidence in the human race with which the Framer of the universe has endowed this species, in common with others of the swallow tribe ? It has been supposed, that birds frequenting desert countries, and unaccustomed to annoyance from man, would approach him fearlessly, or at least be less shy than those inhabiting thickly peopled districts, where they are daily exposed to the attacks of the great destroyer of their tribes. But although this may be true of some families of birds, it is far from being generally the case. On the contrary, the small birds of the fur countries, which are never objects of pursuit, and scarcely even of notice to the Indian hunter, are shy, retiring, and distrustful, their habits contrasting strongly with the boldness and familiarity of the sparrows, that are persecuted to death by every idle boy in Europe. Nay, some species, which are bold enough during their winter residence in the United States, evince great timidity in the northern regions, where the raising their progeny occupies their whole time. In like manner, the redbreast of Europe, familiar as it is in winter, sequesters itself with the greatest care in the breeding season. The question, however,

* The late Governor De Witt Clinton, has given a very interesting history of the closely resembling species *H. fulva*, which about sixteen years ago began to build its nests on the walls of houses in the Western States, and has, every succeeding summer, been advancing farther to the eastward— *Vide Ann. Lyc. New York*, i, p. 156.

recurs,— what is the peculiarity of economy which leads one species of bird to conceal its nest with the most extraordinary care and address, and another to place its offspring in the most exposed situation it can select?”—*Richardson.*

18. *HIRUNDO FULVA*, VIEILL.

THE REPUBLICAN, OR CLIFF SWALLOW.

AUDUBON, PLATE LXVIII.

IN his account of this species, Audubon has the following observations on the migration of swallows:—

“Being extremely desirous of settling the long agitated question respecting the migration, or supposed torpidity of swallows, I embraced every opportunity of examining their habits, carefully noted their arrival and disappearance, and recorded every fact connected with their history. After some years of constant observation and reflection, I remarked, that among all the species of migratory birds, those that remove farthest from us, depart sooner than those which retire only to the confines of the United States; and, by a parity of reasoning, those that remain later return earlier in the spring. These remarks were confirmed, as I advanced towards the southwest, on the approach of winter; for I there found numbers of warblers, thrushes, &c. in full feather and song. It was also remarked, that the *Hirundo viridis* of Wilson, (called by the French of Lower Louisiana, *Le Petit Martine à ventre blanc*,) remained about the city of New Orleans later than any other swallow. As immense numbers of them were seen during the month of November, I kept a diary of the temperature from the third of that month, until the arrival of *Hirundo purpurea*. The following notes are taken from my journal; and as I had excellent opportunities, during a residence of many years in that country, of visiting the lakes to which these swallows were said to resort, during the transient frosts, I present them with confidence?

“November 11.—Weather very sharp, with a heavy white frost. Swallows in abundance during the whole

day. On inquiring of the inhabitants if this was a usual occurrence, I was answered in the affirmative by all the French and Spaniards. From this date to the 22d, the thermometer averaged 65° , the weather generally a drizzly fog. Swallows playing over the city in thousands.

“ *November 25.*—Thermometer this morning at 30° Ice in New Orleans a quarter of an inch thick. The swallows resorted to the lee of the Cypress Swamp, in the rear of the city. Thousands were flying in different flocks. Fourteen were killed at a single shot, all in perfect plumage, and very fat. The markets were abundantly supplied with these tender, juicy, and delicious birds. Saw swallows every day; but remarked them more plentiful the stronger the breeze blew from the sea.

“ *December 20.*—The weather continues much the same. Foggy and drizzly mist. Thermometer averaging 63° .

“ *January 14.*—Thermometer 42° . Weather continues the same. My little favourites constantly in view.

“ *January 28.*—Thermometer at 40° . Having seen the *Hirundo viridis* continually, and the *H. purpurea*, or purple martin, beginning to appear, I discontinued my observations.

“ During the whole winter, many of them retired to the holes about the houses; but the greater number resorted to the lakes, and spent the night among the branches of *Myrica cerifera*, the *Cirier*, as it is termed by the French settlers.

“ About sunset, they began to flock together, calling to each other for that purpose; and, in a short time, presented the appearance of clouds moving towards the lakes, or the mouth of the Mississippi, as the weather and wind suited. Their aerial evolutions before they alight, are truly beautiful. They appear at first as if reconnoitring the place, when, suddenly throwing themselves into a vortex of apparent confusion, they descend spirally with astonishing quickness, and very much resemble a *trombe*, or water spout. When within

a few feet of the *ciriers*, they disperse in all directions, and settle in a few moments. Their twittering, and the motions of their wings, are, however, heard during the whole night. As soon as the day begins to dawn, they rise, flying low over the lakes, almost touching the water for some time, and then rising, gradually move off in search of food, separating in different directions. The hunters who resort to these places destroy great numbers of them, by knocking them down with light paddles, used in propelling their canoes."

19. *MUSCICAPA BONAPARTII*. — BONAPARTE'S FLYCATCHER.

AUDUBON, PLATE V.

This beautiful new species, discovered by Audubon, is dedicated to Prince Charles Bonaparte.

20. *MUSCICAPA SELBII*. — SELBY'S FLYCATCHER.

AUDUBON, PLATE IX.

Of this rare species, named in honour of Mr Selby, the distinguished ornithologist, a beautiful figure is given by Audubon.

21. *MUSCICAPA TRAILII*. — TRAILL'S FLYCATCHER.

AUDUBON, PLATE XLV. — MALE.

This new species, dedicated to a learned and excellent man, Dr Traill of Liverpool, although nearly allied to the green-crested flycatcher, differs from it in notes, habits, as well as the districts in which it resides.

22. *TURDUS LUDOVICIANUS*. — THE LOUISIANA WATER THRUSH.

AUDUBON, PLATE XIX. — MALE.

This interesting species, added to the fauna of North America by Audubon, differs in colour and *habits* from the common water thrush, described by Wilson. "Much and justly as the song of the nightingale is admired, I am inclined," says Audubon, "after having often listened to it, to pronounce it in no degree superior to that of

the Louisiana water thrush. The notes of the latter bird are as powerful and mellow, and at times as varied. This bird is a resident of the low lands of Louisiana and the Mississippi. It may be observed perched on a low bough, scarcely higher than the top of the canes, in an erect attitude, swelling its throat, and repeating, several times in succession, sounds so approaching the whole two octaves of a good piano-forte, as almost to induce the hearer to imagine that the keys of that instrument are used on the occasion. The bird begins on the upper key, and progressively passes from one to another until it reaches the base note, this last frequently being lost when there is the least agitation in the air. Its song is heard even in the winter when the weather is calm and warm."

Voices of Birds.

Although the beautiful remarks of Wilson on the *song of birds* are already before our readers, we doubt not they will enjoy the following observations of a universally admired popular modern English writer on the same subject:—

"Rural sounds, the voices, the language of the wild creatures, as heard by the naturalist, belong to, and are in concord with, the country only. Our sight, our smell, may perhaps be deceived for an interval by conservatories, horticultural arts, and bowers of sweets; but our hearing can in no way be beguiled by any semblance of what is heard in the grove or the field. The hum, the murmur, the medley of the mead, are peculiarly its own, admit of no imitation, and distinctly notify the various periods of the year, with an accuracy as certain as they are detailed in our calendars. The season of spring is always announced as approaching by the notes of the rookery, by the jangle or wooing accents of the dark frequenters of its trees; and that time having passed away, these contentions and cadences are no longer heard. The cuckoo then comes, and informs us that spring has arrived,—that he has journeyed to us, borne by gentle gales in sunny days,—that

fragrant flowers are in the copse and the mead, and all things telling of gratulation and of joy. The children mark this well known sound—spring out, and “cuckoo! cuckoo!” as they gambol down the lane. The very ploughboy bids him welcome in the early morn. It is hardly spring without the cuckoo’s song; and, having told his tale, he has voice for no more—is silent or away.

“Then comes the dark, swift winged martin, glancing through the air, that seems afraid to visit our uncertain clime: he comes, though late, and hurries through his business here, eager again to depart, all day long in agitation and precipitate flight. The bland zephyrs of the spring have no charms with them, but, basking and careering in the sultry gleams of June and July, they associate in throngs, and, screaming, dash round the steeple or the ruined tower, to serenade their nesting mates, and glare and heat are in their train. When the fervour of summer ceases, this bird of the sun will depart. The evening robin, from the summit of some leafless bough, or projecting point, tells us that autumn is come, and brings matured fruits, chilly airs, and sober hours, and he, the lonely minstrel now that sings, is understood by all. These four birds thus indicate a separate season, have no interference with the intelligence of the other, nor could they be transposed without the loss of all the meaning they convey, which no contrivance of art could supply, and, by long association, they have become identified with the period, and in peculiar accordance with the time.

“We note birds in general more from their voices than their plumage, for the carols of spring may be heard involuntarily, but to observe the form and decoration of these creatures requires an attention not always given. Yet we have some native birds beautifully and conspicuously feathered,—the goldfinch, the chaffinch, the wagtails, are all eminently adorned, and the fine gradations of sober browns in several others are very pleasing. Those sweet sounds, called the song of birds, proceed only from the male, and, with a few

exceptions, only during the season of incubation. Hence the comparative quietness of our summer months, when this care is over, except from accidental causes, where a second nest is formed, few of our birds bringing up more than one brood in the season. The redbreast, blackbird, and thrush, in mild winters, may continually be heard, and form exceptions to the general procedure of our British birds; and we have one little bird, the wood lark, (*alauda arborea*,) that, in the early parts of the autumnal months, delights us with its harmony, and its carols may be heard in the air commonly during the calm sunny mornings of this season. They have a softness and quietness perfectly in unison with the sober, almost melancholy, stillness of the hour. The skylark also sings now, and its song is very sweet, full of harmony, cheerful as the blue sky and gladdening beam in which it circles and sports, and known and admired by all; but the voice of the woodlark is local, not so generally heard—from its softness must almost be listened for to be distinguished, and has not any pretensions to the hilarity of the former. This little bird sings likewise in the spring; but, at that season, the contending songsters of the grove, and the variety of sound proceeding from every thing that has utterance, confuse and almost render inaudible the placid voice of the woodlark. It delights to fix its residence near little groves and copses, or quiet pastures, and is a very unobtrusive bird, not uniting in companies, but associating in its own little family parties only, feeding in the woodlands on seeds and insects. Upon the approach of man it crouches close to the ground, then suddenly darts away, as if for a distant flight, but settles again almost immediately. This lark will often continue its song, circle in the air, a scarcely visible speck, by the hour together; and the vast distance from which its voice reaches us in a calm day is almost incredible. In the scale of comparison it stands immediately below the nightingale in melody and plaintiveness, but compass of voice is given to the linnæus, a bird of very inferior powers. The strength of the larynx, and of the

muscles of the throat in birds, is infinitely greater than in the human race. The loudest shout of the peasant is but a feeble cry compared with that of the golden-eyed duck, the wild goose, or even this lark. The sweet song of this poor little bird, with a fate like that of the nightingale, renders it an object of capture and confinement, which few of them comparatively survive. I have known our country bird-catchers take them by a very simple but effectual method. Watching them to the ground, the wings of a hawk, or of the brown owl, stretched out, are drawn against the current of air by a string, as a paper kite, and made to flutter and librate like a kestrel over the place where the woodlark has lodged, and so intimidates the bird, that it remains crouching and motionless as a stone on the ground: a hand net is brought over it, and it is caught.

“ From various little scraps of intelligence scattered through the sacred and ancient writings, it appears certain, as it was reasonable to conclude, that the notes now used by birds, and the voices of animals, are the same as uttered by their earliest progenitors. The language of man, without any reference to the confusion accomplished at Babel, has been broken into innumerable dialects, created or compounded as his wants occurred, or his ideas prompted, or obtained by intercourse with others, as mental enlargement or novelty necessitated new words to express new sentiments. Could we find a people from Japan or the Pole, whose progress in mind has been stationary, without increase of idea, from national prejudice or impossibility of communication with others, we probably should find little or no alteration in the original language of that people; so, by analogy of reasoning, the animal having no idea to prompt, no new want to express, no converse with others, (for a note caught and uttered merely is like a boy mocking the cuckoo,) so no new language is acquired. With civilized man, every thing is progressive; with animals, where there is no mind, all is stationary. Even the voice of one species of birds, except in particular cases, seems not to be attended to by another species.

That peculiar call of the female cuckoo, which assembles so many contending lovers, and all the various amatorial and caressing language of others, excites no influence generally, that I am aware of: with all, but the individual species, it is a dialect unknown. I know but one note which animals make use of, that seems of universal comprehension, and this is the signal of danger. The instant that it is uttered, we hear the whole flock, though composed of various species, repeat a separate moan, and away they all scuttle into the bushes for safety. The reiterated *twink twink* of the chaffinch, is known by every little bird as information of some prowling cat or weasel. Some give the maternal hush to their young, and mount to inquire into the jeopardy announced. The wren, that tells of perils from the hedge, soon collects about her all the various inquisitive species within hearing, to survey and ascertain the object, and add their separate fears. The swallow, that, shrieking, darts in devious flight through the air when a hawk appears, not only calls up all the hirundines of the village, but is instantly understood by every finch and sparrow, and its warning attended to. As Nature, in all her ordinations, had a fixed design and foreknowledge, it may be that species had a separate voice assigned it, that each might continue as created, distinct and unmixed; and the very few deviations and admixtures that have taken place, considering the lapse of time, association, and opportunity, united with the prohibition of continuing accidental deviations, are very remarkable, and indicate a cause and original motive. That some of the notes of birds are as language, designed to convey a meaning, is obvious, from the very different sounds uttered by these creatures at particular periods. The spring voices become changed as summer advances, and the requirements of the early season have ceased; the summer excitements, monitions, informations, are not needed in autumn, and the notes conveying such intelligences are no longer heard. The periodical calls of animals, croaking of frogs, &c. afford the same reasons for concluding, that the sound of their voices by ele-

vation, depression, or modulation, conveys intelligence equivalent to an uttered sentence. The voices of birds seem applicable, in most instances, to the immediate necessities of their condition; such as the sexual call, the invitation to unite when dispersed, the moan of danger, the shriek of alarm, the notice of food. But there are other notes, the designs and motives of which are not so obvious. One sex only is gifted with the power of singing, for the purpose, as Buffon supposed, of cheering his mate during the period of incubation; but this idea, gallant as it is, has such slight foundation in probability, that it needs no confutation; and after all, perhaps, we must conclude, that, listened to, admired, and pleasing, as the voices of many birds are, either for their intrinsic melody, or from association, we are uncertain what they express, or the object of their song. The singing of most birds seems entirely a spontaneous effusion, produced by no exertion, or occasioning no lassitude in muscle, or relaxation of the parts of action. In certain seasons and weather, the nightingale sings all day, and most part of the night; and we never observe that the powers of song are weaker, or that the notes become harsh and untunable, after all these hours of practice. The song thrush, in a mild moist April, will commence his tune early in the morning, pipe unceasingly through the day, yet, at the close of eve, when he retires to rest, there is no obvious decay of his musical powers, or any sensible effort required to continue his harmony to the last. Birds of one species sing in general very like each other, with different degrees of execution. Some countries may produce finer songsters, but without great variation in the notes. In the thrush, however, it is remarkable, that there seems to be no regular notes, each individual piping a voluntary of his own. Their voices may always be distinguished amid the choristers of the copse; yet some one performer will more particularly engage attention by a peculiar modulation, or tune; and should several stations of these birds be visited in the same morning, few or none

probably will be found to preserve the same round of notes ; whatever is uttered seeming the effusion of the moment. At times a strain will break out perfectly unlike any preceding utterance, and we may wait a long time without noticing any repetition of it. During one spring an individual song thrush, frequenting a favourite copse, after a certain round of tune, trilled out most regularly some notes that conveyed so clearly the words, *lady-bird! lady-bird!* that every one remarked the resemblance. He survived the winter, and in the ensuing season the *lady-bird! lady-bird!* was still the burden of our evening song; it then ceased, and we never heard this pretty modulation more. Though merely an occasional strain, yet I have noticed it elsewhere; it thus appearing to be a favourite utterance. Harsh, strained, and tense as the notes of this bird are, yet they are pleasing from their variety. The voice of the blackbird is infinitely more mellow, but has much less variety, compass, or execution; and he, too, commences his carols with the morning light, persevering from hour to hour without effort, or any sensible faltering of voice. The cuckoo wearies us throughout some long May morning with the unceasing monotony of its song; and though there are others as vociferous, yet it is the only bird I know that seems to suffer from the use of the organs of voice. Little exertion as the few notes it makes use of seem to require, yet, by the middle or end of June, it loses its utterance, becomes hoarse, and ceases from any farther essay of it. The croaking of the nightingale in June, or the end of May, is not apparently occasioned by the loss of voice, but a change of note—a change of object; his song ceases when his mate has hatched her brood; vigilance, anxiety, caution, now succeed to harmony, and his croak is the hush, the warning of danger or suspicion to the infant charge and the mother bird.

“ But here I must close my notes of birds, lest their actions and their ways, so various and so pleasing, should lure me on to protract

My tedious tale through many a page;

for I have always been an admirer of these elegant creatures, their notes, their nests, their eggs, and all the economy of their lives; nor have we throughout the orders of creation any beings that so continually engage our attention as these our feathered companions. Winter takes from us all the gay world of the meads, the sylphs that hover over our flowers, that steal our sweets, that creep, or gently wing their way in glittering splendour around us; and of all the miraculous creatures that sported their hour in the sunny beam, the winter gnat (*tipula hiemalis*) alone remains to frolic in some rare and partial gleam. The myriads of the pool are dormant, or hidden from our sight; the quadrupeds, few and wary, veil their actions in the glooms of night, and we see little of them; but birds are with us always, they give a character to spring, and are identified with it; they enchant and amuse us all summer long with their sports, animation, hilarity, and glee; they cluster round us, suppliant in the winter of our year, and, unrepining through cold and want, seek their scanty meal amidst the refuse of the barn, the stalls of the cattle, or at the doors of our house; or, flitting hungry from one denuded and bare spray to another, excite our pity and regard. Their lives are patterns of gaiety, cleanliness, alacrity, and joy."

23. *TURDUS POLYGLOTTUS*, LINNÆUS. — THE MOCKING-BIRD.

AUDUBON, PLATE XXII.

Audubon says, "It is where the great magnolia shoots up its majestic trunk, crowned with evergreen leaves, and decorated with a thousand beautiful flowers, that perfume the air around; where the forests and fields are adorned with blossoms of every hue; where the golden orange ornaments the gardens and groves; where bignonias of various kinds interlace their climbing stems around the white-flowered stuartia, and mounting still higher, cover the summits of the lofty trees around, accompanied with innumerable vines, that here and there festoon the dense foliage of the magnificent woods,

lending to the vernal breeze a slight portion of the perfume of their clustered flowers; where a genial warmth seldom forsakes the atmosphere; where berries and fruits of all descriptions are met with at every step; in a word, kind reader, it is where nature seems to have paused, as she passed over the earth, and, opening her stores, to have strewed with unsparing hand the diversified seeds from which have sprung all the beautiful and splendid forms which I should in vain attempt to describe, that the mocking-bird should have fixed its abode—there only that its wondrous song should be heard.

“But where is that favoured land?—It is in that great continent to whose distant shores Europe has sent forth her adventurous sons, to wrest for themselves a habitation from the wild inhabitants of the forest, and to convert the neglected soil into fields of exuberant fertility. It is, reader, in Louisiana that these bounties of nature are in the greatest perfection. It is there that you should listen to the love song of the mocking-bird, as I at this moment do. See how he flies round his mate, with motions as light as those of the butterfly! His tail is widely expanded, he mounts in the air to a small distance, describes a circle, and, again alighting, approaches his beloved one, his eyes gleaming with delight, for she has already promised to be his and his only. His beautiful wings are gently raised, he bows to his love, and, again bouncing upwards, opens his bill, and pours forth his melody, full of exultation at the conquest which he has made.

“They are not the soft sounds of the flute or of the hautboy that I hear, but the sweeter notes of Nature’s own music. The mellowness of the song, the varied modulations and gradations, the extent of its compass, the great brilliancy of execution, are unrivalled. There is probably no bird in the world that possesses all the musical qualifications of this king of song, who has derived all from Nature’s self. Yes, reader, all!

“No sooner has he again alighted, and the conjugal contract has been sealed, than, as if his breast was

about to be rent with delight, he again pours forth his notes with mere softness and richness than before. He now soars higher, glancing around with a vigilant eye, to assure himself that none has witnessed his bliss. When these love scenes, visible only to the ardent lover of nature, are over, he dances through the air, full of animation and delight, and, as if to convince his lovely mate that to enrich her hopes he has much more love in store, he that moment begins anew, and imitates all the notes which nature has imparted to the other songsters of the grove.

“For a while, each long day and pleasant night are thus spent; but at a peculiar note of the female he ceases his song, and attends to her wishes. A nest is to be prepared, and the choice of a place in which to lay it is to become a matter of mutual consideration.”

24. *TURDUS MIGRATORUS*, WILS. — *MERULA MIGRATURA*, SW.

THE ROBIN, OR RED-BREADED THRUSH.

THE male of this species is one of the loudest and most delightful of the songsters that frequent the fur countries, beginning his chant immediately on his arrival. Dr Richardson remarks, with great beauty and feeling, “His notes resemble those of the common thrush, but are not so loud. Within the arctic circle the woods are silent in the bright light of noon-day, but towards midnight, when the sun travels near the horizon, and the shades of the forest are lengthened, the concert commences, and continues till six or seven in the morning. Even in these remote regions, the mistake of those naturalists who have asserted that the feathered tribes of America are void of harmony, might be fully disproved. Indeed, the transition is so sudden from the perfect repose, the deathlike silence of an arctic winter, to the animated bustle of summer; the trees spread their foliage with such magical rapidity, and every succeeding morning opens with such agreeable accessions of feathered songsters to swell the chorus — their plumage as gay and unimpaired as when

they enlivened the deep-green forests of tropical climes, that the return of a northern spring excites in the mind a deep feeling of the beauties of the season, a sense of the bounty and providence of the Supreme Being, which is cheaply purchased by the tedium of nine months of winter. The most verdant lawns and cultivated glades of Europe, the most beautiful productions of art, fail in producing that exhilaration and joyous buoyancy of mind which we have experienced in treading the wilds of Arctic America, when their snowy covering has been just replaced by an infant but vigorous vegetation. It is impossible for the traveller to refrain, at such moments, from joining his aspirations to the song which every creature around is pouring forth to the great Creator."

We may add, many naturalists, as Catesby, Buffon, Sparrman, award to tropical birds the greatest brilliancy and beauty of plumage, but deny them the melody of voice, or song. It is certainly true that many of the most beautiful birds, as parrots, toucans, spoonbills, cuckoos, &c. have a coarse and unmelodious voice, yet it would be unfair, from this circumstance, to deny the power of song altogether to the feathered inhabitants of the tropical regions. Hernandez, Sloane, Clavigero, Ulloa, Molina, and Azara, mention birds, natives of Jamaica, Mexico, and South America, known for their melodious song. Forster also informs us, that many small birds in Otaheite have considerable extent and power of song. It has been remarked, that those wild birds which come in contact with man, and often hear the human voice, have their note or song improved.

Awakening of Birds. — Early Morning.

THE awakening of our British Birds, and the early morning of England, are thus beautifully sketched by Mr Knapp:—

"At one period of my life, being an early waker, and riser, my attention was frequently drawn 'to songs of earliest birds;' and I always observed, that these creatures appeared abroad at very different periods, as

the light advanced. The rook is perhaps the first to salute the opening morn; but this bird seems rather to rest than to sleep. Always vigilant, the least alarm after retirement rouses instantly the whole assemblage, not successively, but collectively. It is appointed to be a ready mover. Its principal food is worms, which feed and crawl upon the humid surface of the ground in the dusk, and retire before the light of day: and, roosting higher than other birds, the first rays of the sun, as they peep from the horizon, become visible to it. The restless inquisitive robin now is seen too. This is the last bird that retires in the evening, being frequently flitting about when the owl and bat are visible, and awakes so soon in the morning, that little rest seems required by it. Its fine large eyes are fitted to receive all, even the weakest rays of light that appear. The worm is its food, too, and few that move upon the surface escape its notice. The cheerful melody of the wren is the next we hear, as it bustles from its ivied roost; and we note its gratulation to the young eyed day, when twilight almost hides the little minstrel from our sight. The sparrow roost in holes, and under the eaves of the rick or shed, where the light does not so soon enter, and hence is rather a tardy mover; but it is always ready for food, and seems to listen to what is going forward. We see it now peeping from its penthouse, inquisitively surveying the land; and, should provision be obtainable, it immediately descends upon it without any scruple, and makes itself a welcome guest with all. It retires early to rest. The blackbird quits its leafy roost in the ivied ash; its *chink chink* is heard in the hedge; and mounting on some neighbouring oak, with mellow, sober voice, it gratulates the coming day. 'The plain-song cuckoo gray,' from some tall tree now tells its tale. The lark is in the air, the 'martin twitters from her earthbuilt shed,' all the choristers are tuning in the grove; and amid such tokens of awakening pleasure, it becomes difficult to note priority of voice. These are the matin voices of the summer season: in winter, a cheerless chirp, or a

hungry twit, is all we hear; the families of voice are away, or silent; we have little to note, and perhaps as little inclination to observe.

“During no portion of the day can the general operations of Nature be more satisfactorily observed than in the early morning. Rosy June—the very thoughts of an early summer’s morning in the country, like enchantment, gives action to the current of our blood, and seems to breathe through our veins a stream of health and enjoyment! All things appear fresh and unsoiled. The little birds, animated and grateful, are frisking about the sprays; others, proceeding to their morning’s meal, or occupied in the callings of their nature, give utterance, by every variety of voice, to the pleasures that they feel; the world has not yet called us, and, with faculties unworn, we unite with them, partake of this general hilarity and joy, feel disposed to be happy, and enjoy the blessings around us: the very air itself, as yet uninhaled by any, circulates about us, replete with vitality, conveying more than its usual portion of sustenance and health; ‘and man goeth forth unto his labour.’ Night-feeding creatures, feeling the freshness of light, and the coming day, are all upon the move, retiring from danger and observation; and we can note them now unhidden in their lairs, unconcealed beneath the foliage in the hedge; the very vegetation, bathed in dew and moisture, full fed, partakes of this early morning joy and health, and every creeping thing is refreshed and satisfied. As day advances, it changes all; and of these happy beings of the early hour, part are away, and we must seek them; others are oppressed, silent, listless; the vegetable, no longer lucid with dew, and despoiled of all the little gems that glittered from every serrature of its leaf, seems pensive at the loss. When blessed with health, having peace, innocence, and content, as inmates of the mind, perhaps the most enjoyable hours of life may be found in an early summer’s morning.”

25. *SYLVIA ROSCOE*. — ROSCOE'S YELLOW-THROAT.

AUDUBON, PLATE XXIV.

THIS species, named in honour of the celebrated author of the *Life of Leo the Tenth*, in general appearance very much resembles the Maryland yellow-throat, described by Wilson, but differs from it remarkably in its habits.

Audubon, we think, is in the main right in the determination of his species, although he has not stated precisely the grounds on which he founds his specific characters. The number of tail feathers is sometimes a good character; thus, the sula, from Greenland and the Faro Islands, has ten tail feathers; that from Iceland, twelve; and that from the Cape of Good Hope, fourteen; and these, if the numbers are fairly given, may be considered as distinct species. The length of the tail, the size of the feet, &c. are also employed in specific distinctions; but the chief characters are those taken from the *cranium* and *bill*. There is something truly wonderful in the circumstance that creatures, which, in other characters, so nearly resemble each other, should exhibit, in the form of their crania, evident and characteristic differences. Those naturalists who have rejected this character, have never examined it with care. Brehm has made numerous observations on the forms of the crania of different species of birds, and on their affinities. He says, all birds which pair together belong to the same species, and have the same form of skull; on the contrary, those that do not pair together belong not to the same species, and differ in the form of their cranium. Thus, if we examine the *Scolopax rusticola*, (woodcock,) and the *Corvus corax*, (raven,) from different countries, the differences in the form of the cranium will arrest our attention. It is true, that a certain tact is required in order readily to detect these differences. The following illustrations in

regard to the house sparrow, will shew in what light Brehm views species :—

In Siberia there is a house sparrow, the male of which very much resembles that in our own country. The *Pyrgita rustica* of Brehm occurs at Greifswald, in Northern Germany; it is rather larger than those in Central Germany, and has a strong bill, *flat crown*, short feet, and slightly notched tail. In Central Germany, as at Renthendorf, there are two species of sparrow, viz. the town sparrow, *Pyrgita pagorum*, and the high-crowned sparrow, *Pyrgita domestica*. The town sparrow has a rather smaller, and, in winter, darker coloured bill, than the North German species, and besides, it has a *flatly arched crown*, and a rather short and straight truncated tail; the high-crowned sparrow is characterized by its *acutely arched crown*. All these sparrows have a gray stripe across the middle of the crown, which is least distinct in the high-crowned, and broadest in the Siberian. The house sparrow from the neighbourhood of Trieste, Brehm's *Pyrgita media*, is intermediate as to colour between the German and Italian, for the male has, with the exception of a small gray spot in the middle of the crown of the head, a completely brown coloured crown: in the form of the bill and skull it resembles the *Pyrgita rustica*, found at Greifswald. The Italian sparrow forms two species, viz. *Pyrgita cisalpina*, and *itala*. The first agrees in size, and pretty nearly in form of bill, with the German high-crowned sparrow, viz. *Pyrgita domestica*; the other, however, is much smaller, the bill more slender, and, it would appear, always brown coloured; in both of them the male has a brown crown. In all the species already noticed, the extremities of the wings are very short. It is otherwise with the following species: The Sardinian, which probably follows the Spanish, and which Brehm, in the meantime, names with Temminck, *Pyrgita hispanica*, has a very strong bill, arched head, and in the male, not only, as in all the preceding, a black throat, but also black spots on the sides of the belly. In the Egyptian sparrow, Brehm's *Pyrgita ægyptica*, the bill is shorter,

the crown flat, but the marking of colour the same. The same is the case with the eastern; but this is much smaller than the immediately preceding, and has a more slender bill and more highly arched crown. It lives in the countries extending from Egypt to Bucharia. The last species to be mentioned is the *Pyrgita arcuata*, from the Cape of Good Hope, which in marking resembles the immediately preceding; but, in the male, there is a distinct white stripe under the eye. It is true, there are varieties of these species: thus, in Southern Germany there occur, although but rarely, male house sparrows, in which the head is entirely brown; and in Egypt individuals occur which approach in coloured delineation to ours. But these circumstances do not, in the opinion of Brehm, invalidate his distinction of these species, as he states his firm conviction that the individuals of his different species do not breed together. Temminck says, that the *Pyrgita cisalpina* and *domestica* do not pair together; and Brehm has proved the same to be the case with two of the German species, viz. *Pyrgita domestica* and *pagorum*. Brehm makes out another species, which he names *Pyrgita septentrionalis*, that extends from Kiel to Copenhagen, and probably much farther northward. It has a flat crown, and short bill and head. A species occurs at Trieste of the same size, with a short bill and high crown. Two species breed at Renthendorf, the one has rather a flat crown, but with longer feet and bill than the northern; the other has the crown much elevated, extended bill, and short tail. This is Brehm's *Pyrgita montana*, the other his *Pyrgita campestris*.

It is also worthy of notice, that the species differ according to their place of residence or locality. Thus, Brehm says he has convinced himself, that birds inhabiting cone forests, as those where pines prevail, differ from those residing in forests of broad leafed trees, as oak, lime, &c. This observation he has made with the *Emberiza citrinella*, or yellow-hammer, *Fringilla cælebs*, or chaffinch, *Fringilla linota*, or linnet, *Sylvia*

atricapilla, or blackcap, *Sylvia garrula* of Bechstein, and also with species of Troglodytes and Perdrix. They shew such marked differences, that we can determine them with ease after a little practice. The principal differences are here again in the head and bill. It has been ascertained, that different forms of crania determine different species of mammalia, but that the determinations are less strikingly marked in the smaller animals, as those of the mouse, shrew, and bat tribes, than in the larger ones, but that, in all these, the teeth afford good distinctive characters. It is worthy of remark, that, as the bill in birds is equivalent to the teeth in quadrupeds, that differences in the manducatory organs, in both classes, afford specific characters.

Many ornithologists, says Brehm, will consider these distinctions either as useless, or as leading to needless minutiae,—an opinion he considers as erroneous. In illustration of the importance of such distinctions, he remarks, that the very precise determination of the species of birds affords interesting disclosures in regard to their migrations. Hitherto, says he, it has been believed that the *Strix bubo*, or great horned owl, *Cinclus*, or water rail, wild duck, (*Anas boschas*), *Regulus*, or gold-crested wren, and many others, remained in his neighbourhood, (Renthendorf,) during the winter, which is not the case; for accurate determination of the species has shewn, that their great-horned owl leaves them, and its place is taken in the winter season by that from the north; that a kind of wild duck, which rarely breeds in Central Germany, but is a native of the Faro Islands, is common in the open brooks and rivers in the winter season; that the *Northern Cinclus* occurs more frequently in winter in their mountains, streams, and brooks, than the *German Cinclus*; and that it is rarely the case that the gold-crested wren, which breeds there, remains over the winter, its place being taken by the northern species, which has wandered to them across the Baltic.

These facts, (allowing Brehm's determinations to be correct,) shew, in a very interesting manner, the impor-

tance of his observations. It is not, it is true, a new mode of determining species; for similar minute distinctions have long since been made by sportsmen, who, for example, distinguish two kinds of the common snipe, naming the smaller the *high crowned*; and some jagers even maintain there are three species. Bird catchers speak of two species of the goldfinch, (*Fr. carduelis*), viz. a larger and a smaller; also, of an *Alder Siskin* and a *Birch Siskin*; of two kinds of grosbeak, (*Loxia pyr.*); of a larger and smaller nightingale; of different finches; of different linnets, (*Fringilla linaria.*) These distinctions, Brehm says, he has proved to be correct, by a careful examination of the osteology of the birds in question.

26. *SYLVIA VIGORSII*. — VIGORS' WARBLER.

AUDUBON, PLATE XXX. — MALE.

Nothing whatever is known of the habits and manners of this species, named after Mr Vigors, an active, intelligent, and ingenious ornithologist.

27. *SYLVIA CHILDRENII*. — CHILDREN'S WARBLER.

AUDUBON, PLATE XXXV.

A rare species, named after Mr Children, the celebrated chemist.

28. *SYLVIA CARBONATA*. — THE CARBONATED WARBLER.

AUDUBON, PLATE LX.

A new species, concerning which nothing is known, killed by Audubon in the state of Kentucky.

29. *SYLVIA RATHBONII*. — THE RATHBONE WARBLER.

AUDUBON, PLATE LXV.

Of this new and beautiful species, named in remembrance of the Rathbones of Liverpool, nothing is known.

30. *TROCHILUS COLUMBRIS*, LINNÆUS.

NORTHERN HUMMING BIRD.

“The migration of birds,” say the authors of *The Northern Zoology*, “has in all ages been a matter of pleasing speculation to the natural philosopher; but in no instance does it appear more wonderful than when we contemplate it as forming part of the economy of the humming birds. The vast extent of space traversed by some of the winged tribes in their way from their winter retreats to their breeding places, gives us great ideas of their unwearied strength of wing and rapidity of flight; but how is our admiration of the ways of Providence increased, when we find that one of the least of its class, clothed in the most delicate and brilliant plumage, and apparently more fitted to flutter about in a conservatory, than to brave the fury of the blast, should yield to few birds in the extent of its migrations! The ruby-throated humming bird, which winters to the southward of the United States, ranges, in summer, to the fifty-seventh parallel, and, perhaps, even still farther north.* We obtained specimens on the plains of the Saskatchewan, and Mr Drummond found one of their nests near the sources of the Elk River. This nest is composed principally of the down of an anemone, bound together with a few stalks of moss and bits of lichen, and has an internal diameter of one inch. The eggs, two in number, of a reddish white colour, and obtuse at both ends, are half an inch long, and four lines and a quarter in transverse diameter.”

* Kotzebue informs us, that the *Trochilus rufus* is found in summer as high as the sixty-first parallel, on the Pacific coast. The climate, however, is considerably milder to the west of the Rocky Mountains than to the eastward.

31. *REGULUS CUVIERII*.—CUVIER'S REGULUS.

AUDUBON, PLATE LV.

This beautiful little species, from Pennsylvania, is of rare occurrence.

32. *ANTHUS PIIPIENS*.—THE PRAIRIE TITLARK.

AUDUBON, PLATE LXXX.

Nothing particular is known of this new species.

33. *TROGLODYTES BEWICKII*.—BEWICK'S WREN.

AUDUBON, PLATE XVIII.

A new species of wren, named in honour of the reviver of engraving on wood in this country.

34. *EMBERIZA HENSLOWII*.—HENSLOW'S BUNTING.

AUDUBON, PLATE LXX.

Nothing is known of this species, named after Professor Henslow of Cambridge.

35. *EMBERIZA NIVALIS*.—SNOW BUNTING.

“ Amongst the specimens of this bird received are two males, each measuring seven inches. One killed on May 10th, presents precisely the colours of *Le vieux male en plumage d'hiver*, Temm. ; and the other, killed on the 27th of the same month, is in complete summer plumage, with only the pure black and white colours. These two specimens shew, in the most satisfactory manner, how the change to the summer plumage takes place, by the tips of the feathers on the parts tinged red dropping off, as mentioned by Temminck. A very few of the red points remain on the second specimen ; but they drop off on the slightest touch. And the unequal, and somewhat wiry appearance of the other.

feathers, mark the recent loss they have sustained of their coloured margins.

“ A female, killed on the 10th of June, is noticed by Mr Edwards, as having the crown and nape black, with white tips. Fabricius remarks correctly, that the white feathers of the back and belly, when blown aside, appear black at their bases. This occurs both in the summer and winter plumage of the male bird.

“ The snow buntings frequent the shores of the Arctic Sea during the summer season, retiring inland in the winter to shelter themselves in wooded tracts. At Cumberland House, in the interior of the country, and in lat. 54° , they remain the greater part of the winter, absenting themselves only occasionally during the severe storms of December and January. At Fort Enterprise, in lat. 64° , they were also seen in the winter, but more rarely, and in a register kept for a series of years at Fort Churchill, in lat. 59° , on the sea-coast, they are noted as arriving from the 26th of March to the 7th of April; disappearing in the summer, returning again in the end of September, and remaining for about a month. It is mentioned as a rare occurrence, that one was killed in December. They made their first appearance at Captain Parry's winter quarters, in lat. 66° , on the 27th of April. In their winter migrations, they reach, according to Wilson, (vol. ii. p. 224.) as far south as the borders of Maryland.

“ They breed on Melville peninsula, and Captain Lyon describes their nest as being placed in the crevices of rocks, or amongst loose stones, and constructed of dried grass, neatly lined with white deers' hair. They lay seven eggs. (PARRY'S *Narrative*, p. 462.)

“ Pennant remarks, that it is singular that a graminivorous bird should resort to the barren regions of the Arctic circle; but Mr Brown has pointed out, that the grasses which grow on the islands of the Arctic Sea, form nearly one-fifth of the phænogamous vegetation; a proportion nearly double to what occurs in any other part of the world. These grasses retain their seeds all

the winter, and thus furnish nourishment for the birds which arrive upon the melting of the snow.* The snow bunting, moreover, feeds, as Temminck remarks, also on insects, and Wilson found their stomachs filled with shell fish.

“Fabricius,† and other writers, mention, that the male loudly serenades the female during incubation, but that his song ceases when the young are hatched. Sir George Mackenzie informs us, that the song is pleasing, and resembles the first three or four notes of the robin;‡ whilst Marten, who, perhaps, was not musical, says, ‘I can tell nothing of its singing, only that it whistleth a little, as birds use to do when they are hungry.’ *Spitzb.* p. 73.”—*Richardson.*

GENUS IV.—COLUMBA.

36. COLUMBA MIGRATORIA.—THE PASSENGER PIGEON.

AUDUBON, PLATE LXII.

THE most important feature in the natural history of these birds is their migration. These migrations are caused by the necessity of providing for food, and, consequently, they do not take place at any fixed period or season of the year. Indeed it happens sometimes, that an abundant supply of food in one district, will keep these birds absent from another for years.

Their great power of flight enables them to pass over vast tracts of country in a very short time. Pigeons, for example, have been killed in the neighbourhood of New York, with their crops still filled with rice, collected by them in the fields of Georgia and Carolina, the nearest points at which this supply could possibly be obtained; and as it is well ascertained, that, owing to their great power of digestion, they will decompose food entirely in twelve hours, they must

* On their first arrival they generally feed on grass seeds; but as the summer advances, they live much on worms, and are then not so much esteemed.—HEARNE, *l. c.*

† *Fauna Grænl.* p. 119.

‡ *Travels in Iceland*, p. 341.

have travelled between 300 and 400 miles in six hours, making their speed, at an average, about one mile in a minute; and this would enable one of these birds, if so inclined, to visit the European continent, as swallows undoubtedly are able to do, in a couple of days. An individual of this species was shot, while perched on a wall near a pigeon-house at West Hall, Monymead, Fifeshire, on the 31st December, 1825.* This vast

* *Explanation of the Flight of Birds.* — Were each muscle of flight to contract separately, it would only put in motion the most mobile of the parts of the body to which it is especially attached, but there would be no locomotion. This assertion is true in every respect. Thus, for example, in the lowering of the wings, during flight, the resistance or contraction of the middle pectoral muscles and their congeners is absolutely necessary, since without it the wings would fall by their own weight, and the action of the great pectoral muscles would be useless. Besides, in the depression of the wings, the fixed point of the middle pectoral muscles, which is at the humerus, where their respective tendon is attached, retiring, it must necessarily be that the sudden contraction of these muscles contributes to the ascent of the trunk, until the moment when the humeri are arrested by the cessation of the action of the great pectoral muscles.

It is easy to conceive why the projector muscles of the trunk and the depressors of the wings are stronger than the levators. It is because the former have to make the trunk perform a kind of leap, and by this means lower the wings, notwithstanding the resistance of the latter; and these, not being able to prevent the humeri from falling, take their fixed point in them, and draw the trunk upwards, thus seconding the action of the great pectoral muscles, and participating of the kind of projection of the trunk upwards and forwards.

Thus, to enable the bird to rise in the air, and direct itself there, all the muscles of flight must contract in the following order: The clavicle and scapula, being fixed by the trapezius, the rhomboideus, the upper part of the longissimus dorsi, the costo-scapularis and the clavicularis brevis, and the wing being in part unfolded, carried forwards, and raised by the action of the pectoralis medius, infra-clavicularis internus, the levatores humeri, the coraco-brachialis and extensors of the anterior membrane of the wing, the bird then springs into the air, in accomplishing the extension of its wings. At the same time, the great pectoral muscles, the principal ones of the wings, and whose fixed point is at the humerus at the insertion of their respective tendon, suddenly contract; and, on account of the resistance which the air opposes to the motion of

power of flight is seconded by great acuteness of vision, which enables them, as they travel at a swift rate, to view objects below them, to discover their food with facility, and thus to finish their journey. Thus, it has

the wings, bear all their force upon the sternum, through the intervention of which they make the trunk perform a kind of leap; and the wings, the immediate lowering of which the atmospheric fluid resists, as we have just said, are nevertheless lowered by this indirect means.

While all these things are performing with an extreme velocity, several muscles of the arm, among others the extensors of the fore-arm, try to extend the wing; but as the resistance of the air upon the extremities of the wings is very great, and as that fluid opposes all rapid motion on their part, these muscles then direct their force towards the trunk. Taking, therefore, their fixed point in the bones of the fore-arm, on the outer side of the wing, and acting by their upper extremity, they extend the arm upon the fore-arm; and as this action, and that of the great pectoral muscles, take place at the same moment and in concert at both sides of the trunk, the latter is pushed upwards in a middle direction.

Thus, the combination of these various efforts impress upon the trunk a force of projection which carries it upwards and forwards along with the wings; and this projection has evident relations to the leap of other animals. Then the great pectoral muscles relax, and the wings rise immediately, partly by the reaction of the air upon their lower surface, and by the descent of the trunk, and partly by the action of the middle pectoral muscles and their congeners, whose contraction is in a manner permanent during flight.

The bird, after leaping forwards, no longer weighing upon the air during a moment, that fluid then, by its reaction, repels it, and tends to raise it higher than the leap alone could have made it do. It then prevents it from falling so low as the point of departure.

The ascent of the trunk is, without doubt, favoured by the internal air, which introduces itself into all parts of the animal, and which it has the faculty of retaining. This air, which is perhaps a light gas, being dilated and rarefied by great heat, not only is its specific gravity thereby greatly diminished, but it must contribute to diminish that of the bird by filling up all its vacuities during flight.

The bird which descends with precipitation, if it be afraid of injuring itself in approaching the ground, opens its wings and tail, and performs several small leaps, which, diminishing the rapidity of the descent, permit it to alight gently.

It is by means of the tail that certain birds are enabled to descend from great heights with precipitation: by bringing the

been observed, that the pigeons, when passing over a sterile part of the country, keep high in the air; but if, on the contrary, the land is richly covered with food, they will fly low, in order to discover the places most abundant in food. The form of these migrating bodies is an elongated oval, steered by a long, well-plumed tail, furnished with well set, and very muscular wings, for the size of the individual. If a single bird is seen gliding through the woods, and close by, it passes as if by magic; and, on trying to see it again, the eye searches in vain—the bird is gone.

The multitudes of these birds almost pass belief. In the autumn of 1813, Audubon left his house at Henderson, on the banks of the Ohio, on his way to Louisville. Having met the pigeons flying from N.E. to S.W. in greater numbers than usual, he felt an inclination to enumerate the flocks that would pass within the reach of the eye in the course of one hour. He dismounted, and, seating himself on a small eminence, began to mark, in his pocket-book, a dot for every flock which passed. Finding, however, that this was scarcely possible, and feeling unable to record the flocks, as they constantly increased, he rose, and, counting the dots already put down, found that 163 had been made in twenty-one minutes. He travelled on, and still met more the farther he went. The air was literally filled with pigeons; the light of noon-day became dim, as during an eclipse. Whilst waiting for dinner at the Sun, Audubon saw, at his leisure, immense legions still going by, and he says, "But I cannot describe to you the extreme beauty of their aerial evolutions, when a hawk chanced to press upon the rear of a flock. At once, like a torrent, and with a noise like thunder, they rushed into a compact mass,

feathers of the tail close together, and closing the wings, they thereby render the action of the air predominant on the posterior part of the body, which directs the anterior part downwards, and delivers it over entirely to the influence of gravity.

The tail can strengthen the action of the wing, by directing itself towards it.

pressing upon each other towards the centre. In these almost solid masses, they darted forward in undulating and angular lines, descended and swept close over the earth with inconceivable velocity, mounted perpendicularly, so as to resemble a vast column, and, when high, were seen wheeling and twisting within their continued lines, which then resembled the coils of a gigantic serpent." Before sunset, Audubon reached Louisville, distant from Hardensburgh 55 miles; the pigeons were still passing in undiminished numbers, and continued to do so for three days in succession. Audubon attempts to reckon the number of pigeons in one of these flocks, and the daily quantity of food consumed by it. He takes, as an example, a column of one mile in breadth, and supposes it passing over us, without interruption, for three hours, at the rate of one mile per minute. This will give us a parallelogram of 180 miles by 1, averaging 180 square miles; and, allowing two pigeons to the square yard, we have one billion one hundred and fifteen millions one hundred and thirty-six thousand pigeons in one flock: and, as every pigeon consumes fully half a pint per day, the quantity required to feed such a flock must be eight millions seven hundred and twelve thousand bushels per day. Audubon thus describes the appearance of the pigeons at one of their roosting places:—"The sun was lost to our view, yet not a pigeon had arrived; but, suddenly, there burst forth a general cry of, '*Here they come!*' The noise which they made, though yet distant, reminded me of a hard gale at sea, passing through the rigging of a close reefed vessel. As the birds arrived, and passed over me, I felt a current of air that surprised me. Thousands were soon knocked down by the men provided with poles. The current of birds, however, kept still increasing. The fires were lighted, and a most magnificent, as well as a wonderful and terrifying sight, presented itself. The pigeons, coming in by thousands, alighted every where, one above another, until solid masses of them,

resembling hanging swarms of bees, as large as hogs-heads, were formed on every tree, in all directions. Here and there the perches gave way under the weight with a crash, and, falling to the ground, destroyed hundreds of the birds beneath, forcing down the dense groups with which every stick was loaded. It was a scene of uproar and confusion. I found it quite useless to speak, or even to shout, to those persons nearest me. The reports, even, of the nearest guns, were seldom heard; and I knew only of the firing by seeing the shooters reloading. No person dared venture within the line of devastation; the hogs had been penned up in due time, the picking up of the dead and wounded being left for the next morning's employment. Still the pigeons were constantly coming; and it was past midnight before I perceived a decrease in the number of those that arrived. The uproar continued, however, the whole night; and, as I was anxious to know to what distance the sound reached, I sent off a man, accustomed to perambulate the forest, who, returning two hours afterwards, informed me he had heard it distinctly when three miles from the spot. Towards the approach of day, the noise rather subsided; but, long ere objects were at all distinguishable, the pigeons began to move off, in a direction quite different from that in which they had arrived the evening before; and, at sunrise, all that were able to fly had disappeared. The howlings of the wolves now reached our ears; and the foxes, lynxes, cougars, bears, racoons, opossums, and pole-cats, were seen sneaking off from the spot, whilst eagles and hawks, of different species, accompanied by a crowd of vultures, came to supplant them, and enjoy their share of the spoil. It was then that the authors of all this devastation began their entry amongst the dead, the dying, and the mangled. The pigeons were picked up, and piled in heaps, until each had as many as he could possibly dispose of, when the hogs were let loose to feed on the remainder."

The following table of Brehm's arrangement of the European pigeons, will interest some of our readers:—

Columbine birds. Columbidae. — *Leach*.

GENUS I.

Pigeons. *Columba*. — *Linnæus*, *Boje*, *Brehm*.

First Division.

Ring pigeons. *Columbæ torquatæ*.

1. High crowned ring pigeon. *C. palumbus*. — *Lin.*
2. Pine ring pigeon. *C. pinetorum*. — *Brehm*.
3. Flat crowned ring pigeon. *C. torquata*. — *Brehm*.

Second Division.

Field pigeons. *Columbæ campestris*.

1. Domestic field pigeon. *C. domestica*. — *Lin.*
2. Southern field pigeon. *C. livia*. — *Briss.*
3. Amalias field pigeon. *C. amaliæ*. — *Brehm*.

Third Division.

Cave pigeons. *Columbæ cavorum*.

1. Stock pigeon. *C. ænas*. — *Lin.*
2. Cave pigeon. *C. cavorum*. — *Brehm*.

GENUS II.

Turtle dove. *Peristera*. — *Boje*.

1. High crowned turtle dove. *P. turtur*. — *Boje*.
2. Flat crowned turtle dove. *P. tenera*. — *Brehm*.
3. Dubious turtle dove. *P. dubia*. — *Brehm*.

GENUS V. — *TETRAO*.

37. GROUSE.

BIRDS of this genus are of a hardy frame, and patient of extreme cold. They only occur in northern or temperate countries, and have not yet been discovered in Africa, in the eastern parts of Asia, or in South America. The northern regions of Europe and America produce them in the greatest abundance. The special localities which they affect vary according to the different kinds; and even the haunts of the same species admit of variation, according to circumstances. The wood grouse (such as the magnificent capercailzie,

T. urogallus, a former inhabitant of Scotland) prefer forests of pine, and of such other hardy trees as grow readily on the sides of mountains. The red grouse, (*T. scoticus*), so highly esteemed as an article of food, and so eagerly followed by our sportsmen, confines itself to the acclivities of mountains and moors, and is careless of other shelter than that afforded by the natural roughness of the ground and its plentiful covering of heath. The habits of the black cock (*T. tetrix*) may be said to be, in this respect, intermediate between those of the two species just alluded to; for although it usually occurs in mountainous and moorish districts, it exhibits a partiality for cover of birch or willow. Ptarmigans seem to prefer, in comparatively temperate climates, such as that of Scotland, the bare and stony sides and summits of the highest mountains; but under the severe climate of Greenland, and the most northern parts of North America, they are chiefly found in the vicinity of the sea shore, by the banks of rivers, and among the willow and other copse wood of the lower and more sheltered vales.

38. TETRAO (*LAGOPUS*) *MUTUS*, LEACH. — THE PTARMIGAN.

Ptarmigan, *Penn. Brit. Zool.* 1. p. 359, pl. 57. — Upper Figure, Tetrao lagopus, *Captain Sabine, Suppl. Parry's First Voy.* p. cxcvii. *Sab. (J.) Frankl. Journ.* p. 682. *Richardson, App. Parry's Second Voy.* p. 350.

ACCORDING to Captain Sabine, this bird inhabits the islands lying to the southwest of Baffin's Bay, as well as the loftiest mountains in Scotland. A specimen from Churchill River, Hudson's Bay, was declared by Mr Sabine to be identical with the ptarmigan of Scotland, thus establishing it as an inhabitant of the American continent. It remains, however, to be seen whether or not it is the same, according to the method of discrimination, depending on the form of the head, &c. as pointed out by Brehm.

39. TETRAO (*LAGOPUS*) *SALICETI*, SWAINSON.—WILLOW GROUSE.

GENUS, Tetrao, *Linn.* Sub-genus, Lagopus, *Vieillot.*—The White Partridge, (*Lagopus*,) *Edwards*, pl. 72; male in spring.—Tetrao lagopus, *Forst. Phil. Trans.* lxii. p. 390.—White Grouse, *Penn. Arct. Zool.* ii. p. 307, No. 183.—Rehusak Grouse, *Idem*, p. 316; E.—Willow Partridge, *Hearne, Journ.* p. 411.—Tetrao saliceti, *Temm.* ii. p. 471.; *Sab. Frankl. Jour.* p. 681; *Richardson, App. Parry's Second Voy.* p. 347, No. 7.—Wawpeethæo, *Crees. Kasbah, Chipewyans.* Akkaidiggæuck, *Esquimaux.*

“ THE willow grouse inhabits the fur countries from the fiftieth to the seventieth parallels of latitude, within which limits it is partially migratory; breeding in the valleys of the Rocky Mountains, the Barren Grounds, and Arctic coasts; collecting in flocks on the approach of winter, and retiring southward as the severity of the weather increases; considerable bodies, however, remaining in the woody tracts as far north as latitude 67°, even in the coldest winters. It is tolerably abundant in the sixty-fifth parallel all the year, and assembles in vast flocks on the shores of Hudson's Bay in the winter time. Mr Hutchins has known ten thousand captured in a single season at Severn River, and Sir Thomas Button, and other navigators, speak of still greater multitudes. In the year 1819, its earliest appearance at Cumberland House, lat. 54°, was in the second week of November; and it returned to the northward again before the beginning of spring. The species seems to be identical with the willow grouse of the Old Continent, which inhabits the greater part of Scandinavia, Kamtschatka, Greenland, and Iceland, and also the valleys of the Alps. In America, these grouse shelter themselves in the winter in thickets of willow and dwarf birches, on the banks of marshes and lakes, the tops and buds of the shrubs constituting the principal part of their food at that season. Denuded sandy spots are favourite resorts in the daytime; but they pass the night in holes in the snow. When pursued by a sportsman or bird of prey, they often

terminate their flight by diving precipitately into the loose snow, endeavouring to escape by working their way beneath the surface, which they do with considerable celerity. In thick, windy, or snowy weather, they are very shy, and then often perch on the taller willows, when it requires a sharp eye to distinguish them from flakes of snow. In the breeding season, they feed mostly on the berries of the *empetrum nigrum*, *vaccinium vitis idæa*, and *arbutus alpina*, which are exposed by the first thaws, and do not disappear until replaced by the new crop. At the commencement of this period they begin to lose their snow-white winter dress, the male changing first, his head and neck becoming red, and, when viewed from a distance, contrasting so strongly with the white body, as to appear as if they were stripped of their feathers, and quite raw. The beginning of June is the period of incubation, and the female then moults, the delay being admirably suited to her habits, and well calculated to ensure her safety. The male puts on his coloured plumage as soon as the rocks and eminences most exposed to the sun become bare, and at a time when he is accustomed to stand on a large stone, and call, in a loud, croaking voice, to the females, that hide themselves in their white dress among the unmelted snow on the more level ground. Like most other birds that summer within the Arctic circle, they are more in motion in the milder light of night than in the broad glare of day. I had no opportunity of seeing the eggs. The eggs are bright or dark yellow, with chestnut brown spots, or dots."—*Richardson*.

40. TETRAO (*LAGOPUS*) RUPESTRIS, LEACH. — ROCK GROUSE.

Rock grouse, *Penn. Arct. Zool.* 2, p. 312, N. 184. — Tetrao lagopus, *Temm.* 2, p. 468.

“THIS bird was first described by Pennant as a distinct species, principally on the authority of Mr Hutchins, and was adopted into the compilations of Latham and

Gmelin; but it was reserved for Captain Sabine to point out clearly the differences between it and the *Tetrao lagopus* of the Highlands of Scotland; the principal of which are, the colours and markings of the summer plumage, and the size; the rock grouse being smaller, having more of the brownish yellow in its summer dress, broader bars of black, and none of the cinereous tint which predominates in the ptarmigan.* If the latter visits the settlements on Hudson's Bay otherwise than accidentally, of which there is much doubt, Hearne and some other writers have confounded the two species under the name of rock grouse; and, indeed, in their winter dress, the only perceptible difference between the two seems to be size; hence we can learn nothing certain from these authors of the distribution of the species. Hutchins reports, that the rock grouse is numerous at the two extremities of Hudson's Bay, but does not appear at the middle settlements, (York and Severn factories,) except in very severe seasons, when the willow grouse are scarce; and Captain Sabine informs us that they abound on Melville Island, lat. 74° to 75° , in the summer. It arrived there in its snow-white winter dress on the 12th of May, 1820; at the end of that month the females began to assume their coloured plumage, which was complete by the first week in June, the change at the latter period being only in its commencement with the males. Some of the males were killed as late as the middle of June in their unaltered winter plumage. In this respect the species differs from the willow

* Captain Sabine observes, that "the distribution of the coloured plumage of the rock grouse corresponds, both in the male and female, with the ptarmigan, the same parts of both species remaining white; but there is much difference in the colour itself: the upper plumage of the ptarmigan is cinereous, with undulating and narrow black lines and minute spots; whereas in the rock grouse each feather is black, cut by transverse broad lines or bars of a reddish yellow, which do not reach the shaft, and have spaces of black between them broader than themselves; the feathers are tipped, in the male, with a light colour, that approaches to white in the female."

grouse, whose males first assume the summer colours: The rock grouse is found also on Melville Peninsula and the Barren Grounds, seldom going farther south in winter than latitude 63° in the interior, but descending along the coast of Hudson's Bay to latitude 58°, and in severe seasons still farther to the southward. It also occurs on the Rocky Mountains as far south as latitude 55°. It exists in Greenland, is common in Norway, is known in Sweden by the name of *sno rissa*, and is the species most frequent in the museums of France and Italy under the name of *Tetrao lagopus*. It is not a native of Scotland. The rock grouse, in its manners and mode of living, resembles the willow grouse, except that it does not retire so far into the woody country in winter. Contrary, however, to what Hearne says, it is frequent in open woods on the borders of lakes in that season, particularly in the sixty-fifth parallel of latitude, though, perhaps, the bulk of the species remains on the skirts of the Barren Grounds. It hatches in June. The ground colour of the egg is, according to Captain Sabine, a pale reddish brown, and is irregularly blotched and spotted with darker brown." — *Richardson*.

41. TETRAO (LAGOPUS) LEUCURUS, RICH.

WHITE-TAILED GROUSE.

Genus, Tetrao, *Linn. Swains.* — Sub-genus, (2,) Lagopus, *Ray.*
In winter is entirely white: in summer coloured: the tail white.

“ OF this undescribed species I have only five specimens, four procured by Mr Drummond on the Rocky Mountains, in the fifty-fourth parallel, and one by Mr Macpherson on the same chain, nine degrees of latitude farther north. Mr Douglas killed several in 1827, but, through the want of means of carriage, was obliged to leave them behind. It is said to have the habits of the ptarmigan, and to inhabit the snowy peaks near the mouth of the Columbia as well as the lofty ridges of

the Rocky Mountains. Its summer dress is intermediate in colour between that of *T. lagopus* and *rupestris*; but it differs from both these species in its smaller size, and in its tail being totally white at all seasons. The sexes of my specimens were not noted; but none of them have the black eye stripe; and Mr Drummond, who killed great numbers, is confident that that mark does not exist in either sex."—*Richardson*.

Account of several new species of Grouse, recently discovered by Mr David Douglas, among the Rocky Mountains.

THE interesting species of grouse, which we have now the pleasure of noticing, were discovered by Mr David Douglas, the intelligent traveller employed by the London Horticultural Society to explore some of the northern regions of America. They are described and figured in Mr James Wilson's elegant *Illustrations of Zoology*, and specimens of the whole are deposited in the Edinburgh College Museum.

The following details, communicated by Mr James Wilson, will enable those of our readers who may not have an opportunity of consulting his splendid *Illustrations*, to form a distinct conception of these beautiful and interesting birds.

"The most remarkable of the species, to which we have now to direct the attention of our readers, is the *Tetrao urophasianus*, or pheasant-tailed grouse, the largest of all the American species of the genus, and, excepting the capercaillie, or wood grouse, the largest to be met with in any country. This bird was observed by Messrs Lewis and Clark, by whom it is mentioned under the name of the 'cock of the plains.' A short notice of it was also published some time ago, in the *Zoological Journal*, by Charles Lucian Bonaparte, who obtained an imperfect specimen of the male in London.

"The length of this bird, when full grown, is thirty-

two inches; its girth, twenty-two. It weighs from six to eight pounds. In the female, the lengthened filamentous feathers on the sides of the neck are wanting. The skin, cheek, and upper part of the throat, are dingy white, streaked with brownish black; the remainder of the anterior portion of the neck and breast are grayish white, minutely streaked and spotted with brownish black. In other respects, her plumage nearly resembles that of the male. Her size is considerably less.

“The flight of these magnificent bird is slow and unsteady, and affords but little amusement to the sportsman. Their wings are feeble, and of small dimensions, in proportion to the great size and weight of their bodies; and their progress through the air is consequently effected rather by a fluttering motion, than by a direct and continuous flight. They rise at first hurriedly from the ground, giving two or three claps with their wings in quick succession, and, after flying a short distance, all the time swinging from side to side with a whirring noise, they gradually drop again to the ground. When raised, their voice resembles that of the common pheasant. Though they may be said to represent the capercailzie, or wood grouse, (*T. urogallus*), in the New World, they so far differ from that species in their mode of life, that they never perch. ‘Indeed,’ says Mr Douglas, in a letter addressed to me on these subjects, ‘within their range not a bush larger than a common broom or whin is to be found.’—‘The young autumnal birds,’ he adds, ‘are of a light gray, or betwixt that and slate colour. The œsophagus (externally) in colour is similar to that of *T. cupido*, but has numerous reticulated minute nerves (blood-vessels?) of a darker tint, which are conspicuous when in an inflated state. How delighted you would be to see this bird making love! His usual form is totally lost. He appears all neck and breast, and is on the whole one of the most grotesque looking creatures that can well be imagined.’

“They pair in March and April. ‘Small eminences

on the banks of streams are the places usually selected for celebrating the weddings; the time generally about sunrise. The wings of the male are lowered and buzzing on the ground; the tail spread like a fan, somewhat erect; the bare yellow œsophagus inflated to a prodigious size, fully half as large as his body, and from its soft membranous substance being well contrasted with the scale-like feathers below it on the breast, and the flexile silky feathers on the neck, which on these occasions stand erect. In this grotesque form he displays, in the presence of his intended mate, a variety of pleasing attitudes. His love-song is a confused, grating, but not offensively disagreeable tone,—something that we can imitate, but have a difficulty in expressing, — *Hurr-hurr-hurr-r-r-r-hoo*, ending in a deep hollow tone, not unlike the sound produced by blowing into a large reed.

“ The pheasant-tailed grouse builds on the ground, beneath the shade of *Purshia* and *Artemisia*, or near streams, among *Phalaris arundinacea*. The nest is carelessly constructed of dry grass and twigs. The eggs are of a wood-brown colour, irregularly blotched with chocolate brown at the larger end; in size they equal those of a common fowl, and vary from thirteen to seventeen in number. The period of incubation is about three weeks; and the young leave their nest a few hours after they are hatched.

“ In the summer and autumn months, according to Mr Douglas, these birds are seen in small troops, and in spring and winter in flocks of several hundreds. They are plentiful throughout the barren arid plains of the river Columbia, as well as in the interior of North California. They do not exist on the banks of the river Missouri; nor have they been seen in any place east of the Rocky Mountains. The vernacular name by which they are known among the Kyuse Indians, who reside on the banks of the Columbia, is *Pyamis*. Their food consists chiefly of the buds, leaves, and fruit of *Purshia tridentata*, *Artemisia*, the seeds of *Cactus*, brown and black ants, and sand bugs. Their

flesh is dark coloured; and, I am sorry to add, not particularly good in point of flavour.

“ The next species in size and importance is Richardson’s grouse, (*Tetrao Richardsonii*), so named in honour of Dr Richardson, the distinguished traveller. The most remarkable feature in the plumage of this species is the contrast between the plumage of the male and female. The prevailing colours of the former are obscure lead colour and brown, those of the latter yellowish brown and black, with a few streaks and spots of white.

“ The weight of these birds varies from two and a half to three pounds. Their flesh is white and excellent. They pair in April, and form their nests of small twigs, leaves, and grass, on the declivities of subalpine hills. They usually select, for the purposes of nidification, small coppices of hazel and birch, in the vicinity of springs or mountain rills. They lay from thirteen to nineteen eggs, which are nearly as large as those of the domestic fowl, and are marked with larger and smaller specks of red. According to Mr Douglas their period of incubation is three weeks. They feed on the buds of the pine, the catkins of birch, alder, and hazel, and the fruit of *Fragaria* and *Vaccinium*. Their voice is a continuation of distinct hollow sounds like the cooing of a dove. Their flight is swift, steady, and particularly graceful. When startled from the sombre branches of the overshadowing pine trees, their usual roosting places, they descend, or rather drop, to within a few feet of the ground before they commence flying,—a circumstance which, Mr Douglas observes, often leads the hunter to think he has secured his bird, until he sees it in the distance winging its way through the forest. This trait seems peculiar to the species. No bird, however, is more easily destroyed, for they will often continue to sit, with apparent tranquillity, on the rocks or pine trees, after several shots have been fired. In spring they are seen in great numbers basking in the sun on the southern declivities of the low hills, and in

winter in the neighbourhood of springs, lakes, or large streams, in flocks of sixty or eighty. They are easily captured by small snares formed of sinews of the deer tribe. They are very abundant on the subalpine regions of the Rocky Mountains, in latitude 52° N. longitude 115° W. They are still more numerous in the mountainous districts of the river Columbia, in lat. 48° N. long. 118 W.

“ This species is rare on the mountains of the northwest coast. Mr Douglas captured some in April 1825, and several more during the winters of 1826 and 1827. The birds from the last named locality appeared larger, with the general colours more distinct, and a broader marking of white at the extremity of the tail. A few seasons ago Mr Sabine received specimens of this kind, through the Hudson’s Bay Company, which were supposed to have been obtained among the mountains near the sources of the river Athabasca.

“ The third species is named the smaller pheasant-tailed grouse, (*Tetrao urophasianellus*), a beautiful bird, nearly allied to the pin-tailed grouse of Latham (*Tetrao phasianellus*.) The general colour is pale brown, richly barred and blotched with black, particularly on the back and scapulars, where the black forms the prevailing portion of the plumage. The wing-coverts are marked with subrounded pale spots, and the outer webs of the primary quill-feathers are also marked with many almost colourless spots of a rounded or oblong figure. The sexes resemble each other in their plumage. The tail of the male is more fully developed, and his dimensions exceed those of the female.

“ The flight of this species is swift, steady, and almost noiseless. Their habits approach closely to those of the large species first described. They inhabit the same country, form their nests after the same fashion, and, in similar situations, subsist on the same food, and, produce their young at the same season. The number of eggs varies from eleven to fifteen. Of these the colour is light ash, and their size does not much exceed

those of a pigeon. They are more numerous than the larger species, with which they associate and live in harmony. They are shy, and not easily approached by the sportsman.

“ The fourth species is named, in honour of Mr Sabine, *Tetrao Sabini*. Its plumage is rich and varied, and presents those singular appendages or shoulder-knots so conspicuous in another species, to which it bears a great resemblance, the wood partridge of the United States and Canada (*Tetrao umbellus*.) The sexes do not differ much from each other. The colours of the female are grayer and less richly toned. The weight is two pounds.

“ Of this species the flight is rapid, and consists of a quick clapping of the wings, and then of a sudden darting or shooting forwards, with scarcely any discernible movement of the individual parts. They feed on the buds of *Pinus*, *Fragaria*, *Rubus*, *Corylus*, and *Alnus*, and the berries of *Vaccinium*. They build upon the ground in coppices of *Corylus*, *Amelanchier*, and *Pteris*, on the outskirts of pine forests; their nests are composed of the slender fronds of *Pteris*, dry leaves, and grass.* They pair in March. The eggs are of a

* *Nests of Birds*. — “ The construction and selected situations of the nests of birds, are as remarkable as the variety of materials employed in them,—the same forms, places, and articles, being rarely, perhaps never, found united by the different species, which we should suppose similar necessities would direct to a uniform provision. Birds that build early in the spring, seem to require warmth and shelter for their young; and the blackbird and the thrush line their nests with a plaster of loam, perfectly excluding, by these cottage-like walls, the keen icy gales of our opening year; yet, should accident bereave the parents of their first hopes, they will construct another, even when summer is far advanced, upon the model of their first erection, and with the same precautions against severe weather, when all necessity for such provision has ceased, and the usual temperature of the season requiring coolness and a free circulation of air. The house sparrow will commonly build four or five times in the year, and in a variety of situations, under the warm eaves of our houses and our sheds, the branch of the clustered fir, or the thick tall hedge

dingy white, with red spots, and vary in number from nine to eleven.

“These birds are not so common as some of the others. For a short time during early spring, they associate in that bounds our gardens, &c. ; in all which places, and without the least consideration of site or season, it will collect a great mass of straws and hay, and gather a profusion of feathers from the poultry yard, to line its nest. This cradle for its young, whether under our tiles in March or in July, when the parent bird is panting in the common heat of the atmosphere, has the same provisions made to afford warmth to the brood ; yet this is a bird that is little affected by any of the extremes of our climate. The wood pigeon and the jay, though they erect their fabrics on the tall underwood in the open air, will construct them so slightly, and with such a scanty provision of materials, that they seem scarcely adequate to support their broods ; and even their eggs may almost be seen through the loosely connected materials ; but the goldfinch, that inimitable spinner, the Arachné of the grove, forms its cradle of fine mosses and lichens, collected from the apple or the pear tree, compact as a felt, lining it with the down of thistles besides, till it is as warm as any texture of the kind can be, and it becomes a model for beautiful construction. The golden-crested wren, a minute creature, perfectly unmindful of any severity in our winter, and which hatches its young in June, the warmer portion of our year, yet builds its nest with the utmost attention to warmth ; and, interweaving small branches of moss with the web of the spider, forms a closely compacted texture, nearly an inch in thickness, lining it with such a profusion of feathers, that, sinking deep into this downy accumulation, it seems almost lost itself when sitting, and the young, when hatched, appear stifled with the warmth of their bedding, and the heat of their apartment ; while the whitethroat, the blackcap, and others, which will hatch their young nearly at the same period, or in July, will require nothing of the kind. A few loose bents and goose grass, rudely entwined with perhaps the luxury of some scattered hairs, are perfectly sufficient for all the wants of these ; yet they are birds that live only in genial temperatures, feel nothing of the icy gales that are natural to our pretty indigenous artists, but flit from sun to sun, and, we might suppose, would require much warmth in our climate during the season of incubation ; but it is not so. The greenfinch places its nest in the hedge, with little regard to concealment ; its fabric is slovenly and rude, and the materials of the coarsest kinds ; while the chaffinch, just above it in the elm, hides its nest with cautious care, and moulds it with the utmost attention to order, neatness, and form. One bird must have a hole in the ground ; to another, a crevice in the wall, or a chink in a tree, is indispensable. The bullfinch requires fine roots

small flocks, rarely exceeding eight or twelve. At other seasons it seldom happens that more than three or four are seen together. This species exhibits a remarkably strong attachment to its young. When the hunter approaches the spot where the brood lie concealed, the mother usually sallies forth in the greatest rage, with the tail broadly spread, the wings buzzing and rubbing on the ground, and the shoulder-knots raised; and in this grotesque condition she continues to run backwards and forwards, in a state of the most anxious solicitude, within a few yards of the sportsman, whose feelings are probably in no way softened by such an exhibition of maternal tenderness.

“ Sabine’s grouse not only resembles *Tetrao umbellus* in the prevailing characters of its plumage, but also in its habit of perching on stumps of decayed trees in the darkest parts of the forest, and there performing the singular operation called *drumming*, which is effected by giving two or three loud distinct slaps with the wings, followed by many others, which become quicker

for its nest; the gray flycatcher will have cobwebs for the outworks of its shed. All the parus tribe, except the individual above mentioned, select some hollow in a tree, or cranny in a wall; and, sheltered as such places must be, yet will they collect abundance of feathers, and warm materials for their infants’ beds. Endless examples might be found of the dissimilarity of requirements in these constructions among the several associates of our groves, our hedges, and our houses; and yet the supposition cannot be entertained for a moment, that they are superfluous, or not essential, for some purpose with which we are unacquainted.*

* “ I remember no bird that seems to suffer so frequently from the peculiar construction of its nest, and, by reason of our common observance of its sufferings, obtains more of our pity, than the house martin. The rooks will at times have their nests torn from their airy site, or have their eggs shaken from it by the gales of spring, but the poor martin, which places its earthy shed beneath the eave of the barn, the roof of the house, or in the corner of the house window, is more generally injured. July and August are the months in which these birds usually bring out their young, but one rainy day at this period, attended with wind, will often moisten the earth that composes the nest, the cement then fails, and all the unfledged young ones are dashed upon the ground; and there are some places to which these poor birds are unfortunately partial, though their nests are annually washed down. The projecting thatch of the old farm-house appears to be their safest asylum. The parent birds at times seem aware of the misfortune that awaits them, as, before the calamity is completed, we may observe them with great anxiety hovering about their nests.” — *Knapp*.

and quicker, until the noise appears to die away in the distance, like the sound of a muffled drum. The true voice is a continuation of measured sounds, not unlike the ticking of a large clock. This very interesting and beautiful species was discovered by Mr Douglas in the woody parts of the coast of Northwest America, between the parallels of 40° and 49° , from Cape Mendocina on the south, to the Straits of Juan de Fuca, Quadra, and Vancouver's Island, on the north.

“ The fifth and last species to be noticed, though of smaller dimensions, is certainly not inferior in beauty to any of its predecessors : of this I am as yet acquainted only with the male. The species which it resembles most nearly is the Canada grouse, *Tetrao canadensis*. The general plumage is dark and glossy, and composed of alternate bars of black and grayish brown ; the head, neck, and breast, are almost black ; the tail is entirely black ; the upper and under tail-coverts are black, terminated by a large white spot ; and the lateral parts of the abdomen are likewise spotted with white.

“ Mr Douglas states that there is nothing very peculiar in the manners of this bird. Its flight is similar to that of the last mentioned species. It runs over the shattered rocks, and among the brushwood, with amazing speed, and only uses its wings as a last effort to escape. Like the others, it builds on the ground, not unfrequently at the foot of decayed stumps, or by the side of fallen timber in the mountain woods. The nest is composed of dead leaves and grass, and contains from five to seven eggs, of a dingy white colour, and not larger than those of our wood pigeon.

“ The alarm note of this bird is composed of two or three hollow sounds, ending in a disagreeable grating noise, like the latter part of the cry of the well known guinea fowl. It is said to be one of the most common birds in the valleys of the Rocky Mountain, from lat. 50° to 54° , near the sources of the Columbia River. It probably inhabits still higher latitudes. Small flocks

were seen on the high mountains which form the base, or platform, of the snowy peaks, Mount Hood, Mount St Helens, and Mount Baker, on the western parts of the continent.

“ This species is named Franklin's grouse, *Tetrao Franklinii*, (Rocky Mountain spotted grouse,) in honour of the distinguished commander of the overland arctic expeditions.

“ I have little doubt that some of these birds might be imported into this country, of which the soil, climate, and natural productions, are not so dissimilar to those of their native regions, as to preclude the hope of a successful issue to an experiment of a very interesting nature, which the wealth and zeal for field-sports inherited by many of our aristocracy, would render easy, and which might eventually prove of more substantial and permanent advantage. Their importation to the upland valleys of our Scottish mountains, would certainly form a fine addition to the feathered game of Great Britain.”

The following is Brehm's arrangement of the German grouse :—

GENUS I. — *Tetrao*. — *Lin.*

First Division.

Grouse with the tail rounded. *Tetraones cauda rotundata.*

1. Flat crowned capercalzie. *T. urogallus*. — *Lin.*
2. Great capercalzie. *T. major*. — *Br.*
3. Thick billed capercalzie. *T. crassirostris*. — *Brehm.*
4. Spotted capercalzie. *T. maculatus*. — *Brehm.*

Second Division.

Grouse with bifurcated tail. *Tetraones cauda bifurcata.*

1. Middle grouse. *Tetrao medius*. — *Leisler.*
2. Juniper grouse. *T. juniperorum*. — *Brehm.*
3. Thin billed birchwood grouse, or black cock. *T. tetrix*. — *Lin.*
4. Heath grouse. *T. ericeus*. — *Brehm.*

GENUS II. — *Bonasia*. — *Briss.* Hazel hen.

1. Rock hazel hen. *B. rupestris*. — *Brehm.*
2. Wood hazel hen. *B. sylvestris*. — *Brehm.*

GENUS III. — *Lagopus*. — *Briss.* Snow hen, or ptarmigan.

1. Mountain snow hen, or ptarmigan. *L. montanus*. — *Brehm.*
2. Morass snow hen, or ptarmigan. *L. subalpinus*. — *Brehm.*

42. ANAS, OR GOOSE TRIBE.

“THE arrival of the birds of this genus in the fur countries marks the return of spring, and diffuses as much joy among the wandering hunters of the Arctic regions, as the harvest or vintage excites in more genial climes. It is an event of great importance to the natives, as it affords them a supply of food at a season when the moose and deer hunting is impeded by the floods of melting snow. The larger species, or geese, have been principally attended to, and are observed to follow determinate routes in their progress northward, and to halt regularly at certain stations. Their return in autumn is also by passes well known to the natives, but not always in the same line with their spring movements. Actuated in the beginning of the season by an impulse which hurries them to the breeding stations, they remain at their resting places only long enough to admit of the country to the northward being properly thawed for their reception; but during these rests, which are seldom prolonged beyond eight or ten days, they become very fat, although on their first arrival they are always lean. Their movements to the northward are sometimes premature; and after having left a station, they occasionally return to it for a few days. Such an event is always followed by cold frosty weather, or severe snow storms. When they return in autumn, their migrations being more exclusively regulated by the supplies of food they can obtain, their halt in the marshy districts through which the Saskatchewan, and its continuation, Nelson's River, flow, and on the low shores of the southern parts of Hudson's Bay, is more considerable, and is terminated by the freezing of the marshes. This period forms the principal goose hunt of the Crees, who are the only

natives that frequent those swampy districts. In the barren grounds, on the other hand, frequented by the northern Indians, or Chepewyans, the spring goose hunt is the most productive.

“ The only geese seen in numbers in the interior of the country are the Canada goose, (*Anas canadensis*,) the laughing goose, (*Anas albifrons*,) and the snow goose, (*Anas hyperborea*.) The distinct notes of these three species are well imitated by the Indians, who thus are very successful, in the spring, in bringing them within gun-shot. In the autumn, the geese do not so readily answer the call; and it is necessary that the sportsman should conceal himself, and use some dead birds as a decoy. The reported long life of some of the species of this group we can neither confirm nor deny.*

* *Longevity of Animals.* — “ Of the natural duration of animal life, it is, from many circumstances, difficult to form an accurate statement, the wild creatures being in a great measure removed from observation, and those in a condition of domestication being seldom permitted to live as long as their bodily strength would allow. It was formerly supposed that the length of animal life was in proportion to its duration in utero, or the space it remained in the parent from conception to birth, and the length of time it required to obtain maturity. This notion might have some support in reason and fact occasionally, but in many cases was incorrect, and, in regard to birds, had no foundation. Herbivorous animals probably live longer than carnivorous ones, vegetable food being most easily obtainable in all seasons, in a regular and requisite supply; whereas animals that subsist on flesh, or by the capture of prey, are necessitated, at one period, to pine without food, and, at another, are gorged with superfluity: and when the bodily powers of rapacious creatures become impaired, existence is difficult to support, and gradually ceases; but with herbivorous animals, in the same condition, supply is not equally precarious, or wholly denied. Yet it is probable that few animals, in a perfectly wild state, live to a natural extinction of life. In a state of domestication, the small number of carnivorous creatures about us are sheltered and fed with care, seldom are in want of proper food, and at times are permitted to await a gradual decay, continuing as long as nature permits, and by such attentions many have attained to a great age; but this is rather an artificial than a natural existence. Our herbi-

“ The Canada goose, termed by the Canadian voyagers *l'outarde*,* and by the Crees *neescah*, arrives first of the three species just mentioned. It breeds every where throughout the Hudson's Bay territory, and was observed, in the middle of July, on the Copper Mine River, not far from its debouchure, accompanied by its newly hatched young. The cry of this species is imitated by a nasal repetition of the syllable *wook*, or, as Wilson writes it, *honk*.

“ The following table of the arrival of this species, in different parallels of latitude, in the interior of the

vorous animals, being kept mostly for profit, are seldom allowed to remain beyond approaching age, and, when its advances trench upon our emoluments, by diminishing the supply of utility, we remove them. The uses of the horse, though time may reduce them, are often protracted; and our gratitude for past services, or interest in what remains, prompts us to support his life by prepared food of easy digestion, or requiring little mastication; and he certainly by such means attains to a longevity probably beyond the contingencies of nature. I have still a favourite pony—for she has been a faithful and able performer of all the duties required of her in my service for upwards of two-and-twenty years—and, though now above five-and-twenty years of age, retains all her powers perfectly, without any diminution or symptom of decrepitude; the fineness of limb, brilliancy of eye, and ardour of spirit, are those of the colt, and, though treated with no remarkable care, she has never been disabled by the illness of a day, or sickened by the drench of the farrier. With birds it is probably the same as with other creatures, and the eagle, the raven, the parrot, &c. in a domestic state, attain great longevity, and, though we suppose them naturally tenacious of life, yet, in a really wild state, they would probably expire before the period which they attain when under our attention and care. And this is much the case with man, who probably outlives most other creatures; for though excess may often shorten, and disease or misfortune terminate his days, yet naturally he is a long-lived animal. His ‘threescore years and ten’ are often prolonged by constitutional strength, and by the cares, the loves, the charities, of human nature. As the decay of his powers awaken solicitude, duty and affection increase their attentions, and the spark of life only expires when the material is exhausted.”—*Knapp*.

* This is the bustard of Messrs Jerome and De la Poitries, who have been so much censured by Hearne, for asserting its existence. See *Journey to the Northern Ocean*, p. 417.

country, is derived chiefly from the journals kept by the traders :—

Engineer Cantonment, Lat. $41\frac{1}{2}^{\circ}$,	22d of February. *
Cumberland House,	54° from the 8th to the 12th of April.
Athabasca Lake,	59° about the 20th–25th of April.
Slave Lake,	61° about the 1st–6th of May.
Fort Enterprise,	$64^{\circ} 30''$ about the 12th–20th of May.

“ The results of registers for various years kept at Fort Churchill, on Hudson’s Bay, lat. 59° , give the 27th of April and 14th of May as the earliest and latest arrivals of different seasons. Their eggs have been found as early as the 15th of May. They collect in the marshes of that neighbourhood in some autumns as early as August 16th, and depart about September 10th, rarely continuing until October 10th, which is considered as a very late fall.

“ The other two species seen in the interior arrive in separate flocks, generally about six or eight days after the Canada geese. One of these, the laughing goose, keeps the middle part of the continent in its migrations, and is rarely seen on the coast of Hudson’s Bay. Its breeding station is to the northward even of the resorts of the snow goose, and is still unknown to the Europeans. The note of this bird has some resemblance to the laugh of a man, and from this its name has been derived, and not as Wilson supposes, from the grinning appearance of its mandibles. The Indians imitate its cry by moving the hand quickly against the lips, whilst they repeat the syllable *wah*.

“ The snow goose, in its migration northwards, is seen both in the interior and on the sea-coast, and in numbers exceeding the other two.

“ The brent goose (*Anas bernicla*) is found only on the coast of Hudson’s Bay; and the barnacle, (*Anas*

* In LONG’S *Expedition to the Rocky Mountains*, the great migration of geese is stated to commence at Engineer Cantonment, in lat. $41\frac{1}{2}^{\circ}$ on the 22d of February, and to terminate at the latter end of March.

leucopsis,) and the bean goose, (*Anas segetum*,) the remaining two species of geese known to visit those countries, are rarely seen, being accidental visitors.

“The swans arrive in the fur countries still earlier than the Canada goose, and frequent the eddies under waterfalls, and other spots of open water, until the rivers and lakes break up. They are seen both in the interior and on the sea coast, sometimes in small flocks, but more frequently in pairs.

“Of the smaller birds, or ducks, that constitute the genus *anas*, there are about twenty-four species known in the Hudson’s Bay fur countries, only three of which were seen by our navigators. Two of these three, the eider and king ducks, confine their visits to the sea coast; but the third, the long-tailed duck, (*Anas glacialis*,) is seen also abundantly in the interior, on its passage north.”

CYGNUS, SWAN.

43. *CYGNUS BUCCINATOR*, RICHARDSON. — TRUMPETER SWAN.

SUB FAMILY, Anserinæ, *Swains*.—Genus, *Cygnus*, *Auct.*—Keetchee wapeeshew, *Cree Indians*.—CH. SP. *Anas* (*Cygnus*) *Buccinator*, *albus*; *rostrum toto nigro et tuberculato, rectricibus 24.*—SP. CH. Trumpeter Swan, white; head glossed above with chestnut; bill, entirely black, without a tubercle; tail feathers, 24.

“THIS is the most common swan in the interior of the fur countries. It breeds as far south as lat. 61°, but principally within the Arctic circle; and, in its migrations, generally precedes the geese a few days. A fold of its windpipe enters a protuberance on the dorsal aspect of the sternum, at its upper part, which is wanting both in the *Cygnus ferus* and *Bewickii*; in other respects, it is distributed through the sternum, nearly as in the latter of these species. It is to the trumpeter the bulk of the swan skins imported by the Hudson’s Bay Company belong.”—*Richardson*.

44. *CYGNUS BEWICKII*, YARRELL. — BEWICK'S SWAN.

GENUS, *Cygnus*, *Auctor.* — CH. SP. *Cygnus Bewickii*, albus, rostro nigro pone nares flavescenti, rectricibus 18. — SP. CH. Bewick's Swan, white; bill, yellow at the base posterior to the nostrils, 18 tail feathers.

“ THIS swan breeds on the sea coast, within the Arctic circle, and is seen in the interior of the fur countries in its passage only. It makes its appearance amongst the latest of the migratory birds in the spring, while the trumpeter swans are, with the exception of the eagles, the earliest. It winters, according to Lewis and Clark, near the mouth of the Columbia.* Captain Lyon describes its nest as built of moss peat, nearly six feet long, and four and three-quarters wide, and two feet high, exteriorly; the cavity, a foot and a half in diameter. The eggs were brownish white, slightly clouded with a darker tint.” — *Richardson*.

CLANGULA, GARROT.45. *CLANGULA BARROWII*. — ROCKY MOUNTAIN GARROT.

Head, and upper part of the neck, pansy purple, with a large crescentic white mark before each eye. White speculum separated from the band on the coverts by a black stripe. Inhabits the Rocky Mountains. The specific name is intended as a tribute to Mr Barrow's varied talents, and his unwearied exertions for the promotion of science. Mr Swainson remarks, on the subject of zoological nomenclature, that “ No monument of marble or brass is so lasting as this. It is the only way of perpetuating the memories of *true* zoolo-

* “ The swans are of two kinds, — the large and small. The large swan is the same with the one common in the Atlantic States. The small differs from the large only in size and note; it is about one-fourth less, and its note is entirely different. These birds were first found below the Great Narrows of the Columbia, near the Chilluckittequaw nation. They are very abundant in this neighbourhood, and remained with the party all winter; and, in number, they exceed those of the larger species in the proportion of five to one.” — LEWIS and CLARK, *Journ.* &c.

gists, or of those who have benefited the science. Latterly, however, the custom among us has been so much abused, that it may be questioned whether it expresses any thing more than a mere compliment from the nomenclator. To bestow the same honour upon a mere collector, which is given to a Wilson, a Cuvier, or a Bonaparte, is, at best, injudicious; but, to call all the new species in the museum of a learned society after the council and office-bearers of the current year, merely because they are *ex officio* promoters of ornithology, is not only ludicrous, but, as we conceive, a total perversion of scientific justice. A great and pious divine, a skilful and eminent physician, or accomplished diplomatic character, can receive neither honour or pleasure from such flattery. It behoves every true naturalist to set his face against such practices; and we shall, upon all occasions, pass over every name so misapplied. For ourselves, we have studiously sought to bestow this 'honour' only where it was due. The name of Barrow, it is true, will not be solely indebted to us for its imperishable record. It will be associated, by the future historian, with the history and discoveries of Arctic America, Southern Africa, and China; with high benefits conferred upon the State; and with the *possession and encouragement of zoological knowledge.*"

The following has been communicated to us as Brehm's latest arrangement of the European species of the Anatidæ:—

Anatidæ. *Leach.*

GENUS I.

Swan. *Cygnus.*

First Division.

Gibbous swans. *Cygni gibbi.*

1. White headed gibbous swan. *C. gibbus*, Bechst.
2. Yellow headed gibbous swan. *C. olor*, Illiger.

Second Division.

Singing swans. *Cygni musici.*

1. Northeastern singing swan. *C. musicus*, Bechst.
2. Icelandic singing swan. *C. islandicus*, Brehm.

GENUS II.

Goose. Anser, *Brisson, Boje.**First Division.*

Gray geese. Anseres cinerei.

1. German gray goose. A. cinereus, Meyer.
2. Northern gray goose. A. sylvestris, Brisson.

Second Division.

Bean geese. Anseres segetum.

1. Broad tailed bean goose. A. platyuros, Brisson.
2. True bean goose. A. segetum, Meyer.
3. Rufous bean goose. A. rufescens, Brisson.
4. Field goose. A. arvensis, Brisson.
5. Obscure bean goose. A. obscurus, Brisson.
6. Bruck's bean goose. A. Bruckii, Brisson.

Third Division.

White-fronted geese. Anseres fronte albo.

1. Large white fronted goose. A. albifrons, Bechst.
2. Small white fronted goose. A. brevirostris, Heckel.

Fourth Division.

Dwarf geese. Anseres pygmaei.

1. Gray dwarf goose. A. cineraceus, Brisson.

GENUS III.

Bernacle, or Sea goose. Bernicla, *Boje.**First Division.*

Small billed bernacles. Bernicla microrhynchoi.

1. White cheeked bernacle. B. leucopsis, Bechst.

Second Division.

Ringed bernacles. Berniclæ torquatæ.

1. Gray bellied ringed bernacle. B. glaucogaster, Brisson.
2. Small footed ringed bernacle. B. micropus, Brehm.
3. Broad tailed ringed bernacle. B. platyuros, Brisson.
4. Short billed ringed bernacle. B. torquata, Boje.
5. Long billed ringed bernacle. B. collaris, Brehm.

Third Division.

Red-necked bernacles. Berniclæ collo rufo.

1. Red-necked bernacle. B. ruficollis, Boje.

GENUS IV.

Sheldrake, or goose duck. Tadorna, *Boje.*

*First Division.*Snowy sheldrakes. *Tadornæ niveæ.*

1. Northern sheldrake. *T. nivea*, Brehm.

*Second Division.*Variegated sheldrakes. *Tadornæ variaæ.*

1. Egyptian sheldrake. *T. egyptica*, Boje.

*Third Division.*Maritime sheldrakes. *Tadornæ maritimæ.*

1. Gibbous sheldrake. *T. gibbera*, Brehm.
2. Littoral sheldrake. *T. littoralis*, Brehm.
3. Sea sheldrake. *T. maritima*, Brehm.

*Fourth Division.*Red sheldrakes. *Tadornæ rubræ.*

1. Red sheldrake. *T. rubra*, Brehm.

GENUS V.

Duck. *Anas*, *Linnaeus*, *Brisson*, *Leach*, *Boje*, *Brehm.**First Division.*Stock ducks. *Anates rectricibus medius recurvis.*

1. Great stock duck. *An. archiboschas*, Brehm.
2. True stock duck. *An. boschas*, *Linnaeus*.
3. Icelandic stock duck. *An. subboschas*, Brehm.
4. Greenland stock duck. *An. conboschas*, Brehm.

*Second Division.*Pintail ducks. *Anates cauda cuneata.*

1. Small billed pintail duck. *A. acuta*, *Linnaeus*.
2. Broad billed pintail duck. *A. longicauda*, Brehm.
3. American pintail duck. *A. caudata*, Brehm.

*Third Division.*Gadwalls. *Anates streperæ.*

1. Great billed gadwall. *A. strepera*, *Linnaeus*.
2. Small billed gadwall. *A. cinerea*, *Gmelin*.

*Fourth Division.*Wigeons, or whistling ducks. *Anates fistulantes.*

1. Great billed wigeon. *A. kagolka*, *Gmelin*.
2. Small billed wigeon. *A. fistularis*, *Gesner*.
3. Short billed wigeon. *A. penelope*, *Linnaeus*.

GENUS VI.

Shoveller, or shoveller duck. *Clypeata*, *Boje*, *Brehm.*

1. Long billed shoveller. *Cl. macrorhynchos*, Brehm.
2. Broad billed shoveller. *Cl. platyrhynchos*, Brehm.

3. Pomarine shoveller. Cl. pomarina, Brehm.
4. Short billed shoveller. Cl. brachyrhynchos, Brehm.

GENUS VII.

Garganey, or garganey duck. Querquedula, *Boje*.

First Division.

Garganeys, properly so called. Querquedulae, proprie sic dictae.

1. Great garganey. Qu. circia, Brehm.
2. Blue winged garganey. Qu. glaucopteros, Brehm.
3. Small garganey. Qu. scapularis, Brehm.

Second Division.

Teal garganeys. Querquedulae creccae.

First Subdivision. European T. garganeys.

1. Small billed teal garganey. Qu. crecca, *Boje*.
2. Middle teal garganey. Qu. subcrecca, Brehm.
3. Short billed teal garganey. Qu. creccoides, Brehm.

Second Subdivision. American teal garganeys.

1. North American. Qu. americana, Brehm.
2. Greenland teal garganey. Qu. grœnlandica, Brehm.

GENUS VIII.

Eider duck. Somateria, *Leach*.

First Division.

True eider ducks. Somateriae, proprie sic dictae. (*Anas mollissima*, Linnæus.

1. Danish eider duck. S. Danica, Brehm.
2. Norwegian eider duck. S. Norwegica, Brehm.
3. Broad tailed eider duck. S. platyuros, Brehm.
4. Farö eider duck. S. Faroensis, Brehm.
5. Large tailed eider duck. S. megauros, Brehm.
6. Icelandic eider duck. S. Icelandica, Brehm.
7. Northern eider duck. S. borealis, Brehm.
8. Leisler's eider duck. S. Leisleri, Brehm.
9. Flat fronted eider duck. S. planifrons, Brehm.

GENUS IX.

Scoter, or black duck. Melanitta, *Boje*.

First Division.

True scoter ducks. Melanittae nigrae.

1. Black footed scoter duck. Mel. nigripes, Brehm.
2. Large tailed scoter duck. Mel. megauros, Brehm.
3. Broad gibbous scoter duck. Mel. gibbera, Brehm.
4. Small tailed scoter duck. Mel. nigra, *Boje*.

*Second Division.*Velvet scoter ducks. *Melanittæ fusca*.

1. Hornschuch's velvet scoter duck. *Mel. hornschuchii*, Brehm.
2. True velvet scoter duck. *Mel. fusca*, Boje.
3. Large footed velvet scoter duck. *Mel. megapus*, Brehm.
4. Broad billed velvet scoter duck. *M. platyrhynchos*.

GENUS X.

Moor duck. *Aythya*, *Boje*.*First Division.*Rowing moor ducks. *Aythæ remigantes*.

1. White headed moor duck. *A. leucocephala*, Brehm.

*Second Division.*Scaup, or hill-moor ducks. *Aythæ montanæ*.

1. Icelandic scaup duck. *A. Islandica*.
2. Curved billed scaup duck. *A. marila*, Lin.
3. White backed scaup duck. *A. leuconotos*, Brehm.

*Third Division.*Tufted moor ducks *Aythæ cristatæ*.

1. Broad billed tufted duck. *A. fuligula*, Boje.
2. Small billed tufted duck. *A. cristata*, Brehm.

*Fourth Division.*White eyed moor ducks. *Aythæ iridibus albis*.

1. Eastern white eyed moor duck. *A. leucophthalmos*, Brehm.
2. Northern white eyed moor duck. *A. nyroca*, Boje.

*Fifth Division.*Pochard ducks. *Aythæ sapidissimæ*, (*Anas ferina*, Lin.)

1. Red headed pochard. *A. erythrocephala*, Brehm.
2. Reddish brown headed pochard. *A. ferina*, Boje.

GENUS XI.

Buffel duck. *Callichen*, Brehm.

1. Red headed buffel duck. *C. ruficeps*, Brehm.
2. Yellow headed buffel duck. *C. rufinus*, Brehm.
3. Small tailed buffel duck. *C. sub-rufinus*, Brehm.
4. Small footed buffel duck. *C. micropus*, Brehm.

GENUS XII.

Garrot. *Clangula*, *Boje*.*First Division.*True garrots. *Clangulæ veræ*.

1. Icelandic garrot. *Cl. scapularis*, Brehm.

2. Peregrine garrot. Cl. peregrina, Brehm.
3. Short billed garrot. Cl. glaucion, Brehm.
4. Small billed garrot. Cl. angustirostris, Brehm.

Second Division.

Glacial garrots. Clangulæ glaciales.

1. Icelandic glacial garrot. Cl. hiemalis.
2. Faber's gl. garrot. Cl. Faberi, Brehm.
3. Large tailed gl. garrot. Cl. megauros, Brehm.
4. Short tailed gl. garrot. Cl. musica, Brehm.
5. Broad billed gl. garrot. Cl. glacialis, Brehm.
6. Short billed gl. garrot. Cl. brachyrhynchos, Brehm.

GENUS XIII.

Goosander. Mergus.

First Division.

White goosanders, or smews. Mergi albelli, (Mergus albellus, Lin.)

1. Large white smew. M. albellus, Lin.
2. Small white smew. M. minutus, Lin. and Brehm.

Second Division.

Goosanders. Mergi mergansereres, (Mergus merganser, Lin.)

1. Icelandic goosander. M. merganser, Lin.
2. Northeastern goosander. M. castor, Lin. and Brehm.

Third Division.

Mergansers. Mergi longirostres, (Mergus serrator, Lin.)

1. High crowned long billed merganser. M. serrator, Lin.
2. Flat crowned long billed merganser. M. leucomelas, Lin. and Brehm.

LARUS, GULL.

46. LARUS BRACHYRHYNCHUS, RICHARDSON.

SHORT-BILLED MEW GULL.

GENUS, Larus, Linn. — CH. SP. *Larus brachyrhynchus*, rostro abbreviato crassiusculo, tarso vix bi-unciali, remigibus apice concoloribus; spatio albo duorum exteriorum abbreviato: rachidibus nigrescentibus. — SP. CH. Short-billed Mew Gull, with a short, thickish bill; a tarsus scarcely two inches long; quills, not tipped with white; a short white space on the two exterior ones, and blackish shafts.

“OUR specimen of this gull is a female, killed on the 23d of May, 1826, at Great Bear Lake. Some brown

markings on the tertiaries, primary coverts, and bastard wing, with an imperfect sub-terminal bar on the tail, point it out as a young bird, most probably commencing its second spring. The rest of its plumage corresponds with that of *L. zonorhynchus*, except that it wants the extreme white tips of the quill feathers, which, on the third and following ones, are very conspicuous in *L. zonorhynchus*. It differs, however, remarkably in its bill being shorter, though considerably stouter than that of our *L. canus*; and, like it, it is wax yellow, with a bright yellow *rictus* and point. Its tarsus is nearly one third shorter than that of *L. zonorhynchus*. Many may be disposed to consider this as merely a local variety of *L. canus*; and it might be urged, in support of this opinion, that there are considerable differences in the length and thickness of the bills of individuals of the common and winter gulls killed on the English coasts, which are all usually referred to *L. canus*. We have judged it advisable, however, to call the attention of ornithologists to these American birds, by giving them specific names, leaving it to future observation to determine whether they ought to retain the rank of species, or be considered as mere varieties." — *Richardson*.

47. *LARUS FRANKLINII*, NOBIS. — FRANKLIN'S ROSEY GULL.

GENUS, *Larus*, *Linn.* — *Larus atricilla*, (laughing gull.) *SAB.* *Frankl. Journ.* p. 695; * detailed description. — *CH. SP.* *Larus Franklinii*, rostro pedibusque miniatis, dorso alisque perlaceo-cinereis, remigibus quinque exterioribus nigro latè fasciatis: remige priori apice unciali albo, tarso viginti lineas longo; cucullo æstate nigro. — *SP. CH.* American laughing gull, with vermilion bill and feet; mantle, pearl gray; five exterior quills, broadly barred with black, the first one tipped with white for an inch; tarsus, twenty lines long; hood, black in summer.

“ THIS is a very common gull in the interior of the fur countries, where it frequents the shores of the

* Mr Sabine observes, that this is the *L. atricilla* of Linnæus, but not of Temminck. — *R.*

larger lakes. It is generally seen in flocks, and is very noisy. It breeds in marshy places. Ord's description of his black-headed gull, (Wilson, vol. ix. p. 89—present edition, vol. iii. p. 161,) corresponds with our specimens, except that the conspicuous white end of the first quill is not noticed: the figure, (pl. 74, fig. 4.) differs in the primaries being entirely black.* The Prince of Musignano gives the totally black primaries, and a tarsus nearly two inches long, as part of the specific character of his *L. atricilla*, to which he refers Wilson's bird; though, in his *Observations*, he states, that the adult specimens have the primaries, with the exception of the first and second, tipped with white. *L. franklinii* cannot be referred either to the *L. atricilla* or *L. melanocephalus* of M. Temminck: the first has a lead-coloured hood, and deep black quill feathers, untipped by white; and the black hood of the second does not descend lower on the throat than on the nape; its quill feathers are also differently marked, and its tarsus is longer. His *L. ridibundus* and *capistratus* have brown heads, and the interior of the wings gray; the latter has also a much smaller bill than our *L. franklinii*." — *Richardson*.

48. *LESTRIS RICHARDSONII*, SWAINS. — RICHARDSON'S JAGER.

GENUS, *Lestris*, *Illig.* — CH. SP. *Lestris Richardsonii*, subconcolor, reatricibus mediis abruptè accuminatis, tarsiis nigris posticè asperis viginti-duas lineas longis. — SP. CH. Richardson's jager, whole plumage, brown; two middle tail feathers, abruptly accuminated; tarsi, black, twenty-two lines long.

"THIS specimen appears to us to be in full and mature plumage; we cannot, therefore, view it as the young, or even as the female, of the *Lestris buffonii* of Bojé, which we only know from the characters assigned to

* "Four American specimens of *L. atricilla* are now before me. It is a larger, and a totally different species. The three outer quills are wholly black; the fourth tipped for about one inch, and the fifth for half an inch, with black; the extreme white spot at the point of the five first quills is very small in some, and not seen in adult specimens, having these feathers worn." — Sw.

it by the Prince of Musignano.* According to this account, the *L. buffonii* has the bill an inch and a quarter long from the front; ours is only an inch: the tarsi are described as almost smooth, whereas in ours they are particularly rough. The adult, as figured in plate 762 of the *Pl. Enl.* has the chin, throat, and sides of the neck quite white; but, in our bird, these parts are of the same pure and decided tint as that of the body, except that the ear feathers, and a few lower down the neck, have a slight tinge of ochre. The tarsi also, in both the plates cited by the Prince, are coloured yellow. These differences, with the more important one exhibited in the feet, will not permit us to join these birds under one name. Another distinction, which must not be overlooked, is in the colour of the feet. Edwards expressly says of his 'Arctic Bird,' (pl. 149, which much more resembles ours than that figured on the plate immediately preceding,) that 'the legs and toes are all yellow;' whereas, in our bird, these members are of a deep and shining black; while the hinder parts of the tarsi, toes, and connecting membrane, are particularly rough."—Sw.

"This jager breeds in considerable numbers in the barren grounds, at a distance from the coast. It feeds on shelly mollusca, which are plentiful in the small lakes of the fur countries; and it harasses the gulls in the same way with others of the genus."—*Richardson.*

* "*Lestris buffonii*, *Bojè*. Bill, one inch and a quarter from the front, straight, notched; middle tail feathers, gradually tapering, narrow for several inches, ending in a point; tarsus, one inch and a half long, almost smooth.—Adult, brown; neck, and beneath, white, the former tinged with yellow.—Young, wholly brownish.

"Arctic bird, EDW. pl. 148; BUFF. *Pl. Enl.* 762. *Lestris crepidata*, BREHM."—BONAP. *Syn.* No. 306.

The following is Brehm's arrangement of the European gulls :—

Gulls. Laridæ. — *Leach*.

GENUS I.

Rapacious gull, or jager. *Lestris*. — *Illiger*.

First Division.

Rap. gulls without acuminate tail. *Lestrides reatricibus fere æqualibus*.

- 1 Giant skua. *L. cataractes*, Illiger and Brehm.
- 2 Great skua. *L. skua*, Brehm.

Second Division.

Lestrides reatricibus mediis retorsis.

- 1 *Lestris spærinros*, Brehm.

Third Division.

Parasitic rapacious gulls. *Lestrides parasiticæ*.

- 1 Boje's rapacious gull. *L. Boje*, Brehm.
- 2 Schleep's rap. gull. *L. Schleepii*, Brehm.
- 3 Long-winged rap. gull. *L. macropteros*, Brehm.
- 4 Parasitic gull. *L. parasitica*, Boje.
- 5 Benicke's rap. gull. *L. Benickii*, Brehm.
- 6 Rock rap. gull. *L. crepidata*, Brehm.
- 7 Small-billed rap. gull. *L. microrhynchos*, Brehm.

GENUS II.

Gull. *Larus*. — *Lin. Boje*, and *Brehm*.

First Division.

Black-backed gulls. *Lari dorso nigro*.

- 1 Great gull. *L. maximus*, Brehm.
- 2 Muller's gull. *L. Mulleri*, Brehm.
- 3 Fabricius's gull. *L. Fabricii*, Brehm.
- 4 Black-backed gull. *L. marinus*, *Lin.* and *Brehm*.

Second Division.

White-winged gulls. *Lari leucopteroi*.

- 1 Ice gull. *L. glacialis*, Benicke.
- 2 Great white-winged gull. *L. glaucus*, *Brunn*.
- 3 Burgo-master gull. *L. consol.*, *Boje*.
- 4 Small gull. *L. minor*, *Brehm*.

GENUS III.

Darting gull. *Laroides*. — *Brehm*.

First Division.

Silvery gulls. *Lari argentati*.

- 1 Great silvery gull. *L. major*, *Brehm*.
- 2 True silvery gull. *L. argentatus*, *Brehm*.
- 2 Silvery gray gull. *L. argenteus*, *Brehm*.

- 4 Silvery bluish gray gull. *L. argentatoides*, Brehm.
- 5 Small silvery gull. *L. argentaceus*, Brehm.
- 6 North American silvery gull. *L. Americanus*, Brehm.

Second Division.

White winged darting gulls. *Laroidæ leucopteroi*.

- 1 Great white winged darting gull. *L. glaucoides*, Brehm.
- 2 Middle sized white winged darting gull. *L. leucopteros*, Brehm.
- 3 High crowned white winged darting gull. *L. sub-leucopteros*, Brehm.

Third Division.

Herring gulls. *Laroidæ harengorum*.

- 1 Great herring gull. *L. melanotos*, Brehm.
- 2 Small-billed herring gull. *L. harengorum*, Brehm.
- 3 Thick-billed herring gull. *L. fuscus*, Brehm.

Fourth Division.

Storm gulls. *Laroidæ procellosi*.

- 1 Pomarine storm gull. *L. procellosus*, Brehm.
- 2 Northern storm gull. *L. canus*, Brehm.
- 3 High crowned storm gull. *L. canescens*, Brehm.

Fifth Division.

Three-toed gulls. *Laroidæ tridactyli*.

- 1 Great three-toed gull. *L. tridactylus*.
- 2 Greenland three-toed gull. *L. rissa*, Brehm.
- 3 Small three-toed gull. *L. minor*, Brehm.

GENUS IV.

Swallow gull. *Xema*. — *Leach* and *Boje*.

- 1 Black-headed swallow gull. *X. melanocephalon*, Boje.
- 2 Lead gray-headed swallow gull. *X. caniceps*, Brehm.
- 3 Laughing swallow gull. *X. ridibundum*, Boje.
- 4 Capped swallow gull. *X. pileatum*, Brehm.
- 5 Capucin swallow gull. *X. capistratum*, Boje.
- 6 Small swallow gull. *X. minutum*, Boje.

GENUS V.

Ivory gull. *Gavia*. — *Brisson* and *Boje*.

- 1 Great ivory gull. *G. eburnea*, Brehm.
- 2 Small ivory gull. *G. nivea*, Brehm.

GENUS VI.

Rapacious sea swallow. *Sylochelidon*: — *Brehm*.

- 1 Baltic rapacious sea swallow. *S. Balthica*, Brehm.
- 2 Schilling's rap. sea swallow. *S. Schillingii*, Boje.
- 3 Caspian rap. sea swallow. *S. Caspia*, Brehm.

GENUS VII.

Laughing sea swallow. *Gelochelidon*. — *Brehm*.

- 1 Baltic laughing sea swallow. *G. Balthica*, Brehm.
- 2 Southern laughing sea swallow. *G. meridionalis*, Brehm.
- 3 Land laughing sea swallow. *G. agraria*, Brehm.

GENUS VIII.

Sea swallow. *Thalasseus*. — *Boje*.

- 1 Whitish gray sea swallow. *Th. canescens*, Brehm.
- 2 Whitish sea swallow. *Th. candicans*, Brehm.

GENUS IX.

Tern. *Sterna*. — *Linn. Boje*, and *Brehm*.

- 1 Dougall's tern. *Sterna Dougalli*, Mont.
- 2 River tern. *Sterna fluviatilis*, Naum. and Brehm.
- 3 Pomarine tern. *Sterna pomarina*, Brehm.
- 4 Red-footed tern. *Sterna hirundo*, Linnæus.
- 5 Silver gray tern. *Sterna argentata*, Brehm.
- 6 Silver coloured tern. *Sterna argentacea*.
- 7 Long-tailed tern. *Sterna macroura*, Naum.
- 8 Northern tern. *Sterna arctica*, Temminck.
- 9 Nitches' tern. *Sterna Nitzschii*, Kaup.
- 10 Short-footed tern. *Sterna brachy tarsi*, Graba.

GENUS X.

Dwarf sea swallow. *Sternula*. — *Boje*.

- 1 Cloven-footed dwarf sea swallow. *Sterna fessipes*, Brehm.
- 2 Danish dwarf sea swallow. *Sterna danica*, Brehm.
- 3 Pomarine sea swallow. *Sterna pomarina*, Brehm.

GENUS XI.

Water swallow. *Hydrochelidon*. — *Boje*.

- 1 Black water swallow. *Sterna nigra*, Boje.
- 2 Blackish water swallow. *Sterna nigricans*, Brehm.
- 3 Dusky water swallow. *Sterna obscura*, Brehm.
- 4 White-winged water swallow. *Sterna leucoptera*, Boje.

49. *CALYMERIS GLACIALIS*. — GREAT NORTHERN DIVER.

“ THESE birds are numerous in the northern parts of the American continent. They arrive in the fur countries about the end of May, and retire to the south in October. They were frequently seen by Captain Franklin's party during their voyage on the Arctic Sea; and Captain Parry received some of their skins from the Esquimaux who visited him. They breed on the shores of small lakes, laying two eggs at a time. Their cry is loud, has a peculiarly low and melancholy tone, and, when often repeated, is said to portend rain. The Canadian voyagers never fail to make a loud hooting noise when this bird passes, for the purpose of rendering it, as they say, foolish. It is certain that it

is thus frequently induced to fly in circles round the canoe, and often attracted within gun-shot. In water, they are watchful, and dive so instantaneously, that it is difficult to shoot them. They take wing, however, with difficulty, although they fly well; and this circumstance enables the hunter to destroy great numbers of them in the spring. They arrive in that season when the ice of the lakes continues entire, except, perhaps, a small basin of open water where a rivulet happens to flow in, or where the discharge of the lake takes place. When the birds are observed to alight in these places, the hunter runs to the margin of the ice, they instantly dive, but are obliged after a time to come to the surface to breathe, when he has an opportunity of shooting them. In this way upwards of twenty were killed at Fort Enterprise in the spring of 1821, in a piece of water only a few yards square. In the summer and autumn, they are often caught in nets set for fish. The flesh of the northern diver is tough, and is eaten only through necessity."—*Richardson*.

The following is Brehm's arrangement of the grebes, divers, guillemots, tysties, rotches, coulternebs, and awks. We add also his arrangement of the petrels and pelicanidæ.

Divers. Colymbidæ. — *Leach*.

FIRST PRINCIPAL DIVISION.

Feet divers. Colymbidæ non nisi pedum ope mergente.

GENUS I.

Grebe. Podiceps. — *Lath*.

First Division.

Hooded grebes. Podiceps cristati (*Col. cristatus*, *Linn.*)

- 1 Great-crested grebe, gaunt, or cargoose. *P. cristatus*.
- 2 High-crowned hooded grebe. *P. mitratus*, *Brehm*.
- 3 Flat-crowned hooded grebe. *P. patagiatus*, *Brehm*.

Second Division.

Gray-throated grebes. Podiceps subcristati.

- 1 The Danish gray-throated grebe. *P. rubricollis*, *Latham*.
- 2 Short-billed grebe. *P. subcristatus*, *Bechst*.
- 3 Small-billed grebe. *P. canigularis*, *Brehm*.

Third Division.

Northern grebes. Podiceps septentrionales.

- 1 The great-horned grebe. Podiceps cornutus, Latham.
- 2 The small-horned grebe. Podiceps bicornis, Brehm.
- 3 Icelandic northern grebe. Podiceps arcticus, Boje and Fabr.

Fourth Division.

Eared grebes. Podiceps auriti.

- 1 Black-necked eared grebe. Podiceps nigricollis, Brehm.
- 2 Red-necked eared grebe. Podiceps auritus, Linnæus.

Fifth Division.

Dwarf grebes. Podiceps minuti.

- 1 Hebridian grebe. P. hebridicus, Latham.
- 2 Middle grebe. P. minor, Latham.
- 3 Small grebe. P. pygmæus, Brehm.

GENUS II.

Diver. Colymbus. — *Lath.**First Division.*Ice divers. Colymbii glaciales. (Colymbus glacialis, *Linn.*)

- 1 Iceland ice diver. C. glacialis, Linn.
- 2 Great diver. C. maximus, Brehm.
- 3 Winter diver. C. hiemalis, Brehm.

*Second Division.*Polar divers. Colymbii arctici. (Col. arcticus, *Linn.*)

- 1 Great polar diver. C. arcticus, Linn.
- 2 Long billed polar diver. C. macrorhynchus, Brehm.
- 3 Baltic diver. C. Balticus, Hornschuch.

*Third Division.*Red-throated divers. Colymbii rufigulares. (Colymbus et septentrionalis, striatus et borealis, *Linn.*)

- 1 Northern red-throated diver. C. septentrionalis, Linn.
- 2 Northeastern red-throated diver. C. Lumme of Brunnich and Brehm.
- 3 Northwestern red-throated diver. C. borealis, Bruenn.

SECOND PRINCIPAL DIVISION.

Use both feet and wings in diving. Colymbidiæ non solum pedum, sed etiam alarum ope mergentes.

GENUS I.

Guillemot. — *Lunme.* Uria. — *Briss.*

- 1 Foolish guillemot. Uria troile, Lath.
- 2? White-ringed guillemot. U. leucopsis, Brehm.
- 3 Norwegian guillemot. U. Norwegica, Brehm.
- 4 Brunnich's guillemot. U. Brunnichii of Sabine.
- 5 Polar guillemot. U. polaris, Brehm.
- 6 Brehm's guillemot. U. unicolor, Brehm.

GENUS II.

Tystie. Cephus. — *Cuv.*

- 1 North European tystie. *C. grylle*, Cuvier.
- 2 Long-billed tystie. *C. arcticus*, Brehm.
- 3 Meisner's tystie. *C. Meisneri*, Brehm.
- 4 Faroe tystie. *C. Faroensis*, Brehm.
- 5 Ice tystie. *C. glacialis*, Brehm.

GENUS III.

Mergulus of *Ray*. Rotche. Little awk.

- 1 Flat-crowned rotche. *M. alle*, Ray.
- 2 High-crowned rotche. *M. arcticus*, Ray.

GENUS IV.

Coulterneb. Mormon. — *Illig.*

- 1 Northern coulterneb. *M. fratercula*, Temm.
- 2 Ice coulterneb. *M. glacialis*, Leach.
- 3 Polar coulterneb. *M. polaris*, Brehm.
- 4 Grabas coulterneb. *M. Grabæ*, Brehm.

GENUS V.

Awk. Alca. — *Linnaeus, Cuvier, Temminck, Ray.*

- 1 Eastern awk. *A. Balthica*, Brehm and Bruennich.
- 2 Razor bill, or marrot. *A. torda*, Linn.
- 3 Ice awk. *A. glacialis*, Brehm.
- 4 Icelandic awk. *A. islandica*.

GENERA PROCELLARIA, HYDROBATES, PUFFINUS,
SULA, AND CARBO.

GENUS I.

Fulmar. Procellaria. — *Linnaeus, &c.*

- 1 Ice fulmar. *Pr. glacialis*, Linn.
- 2 Winter fulmar. *Pr. hiemalis*, Brehm.

GENUS II.

Petrel, or Peter's bird. Hydrobates. — *Boje.*

- 1 Faroe petrel. *Hyd. Faroensis* of Graba and Brisson.
- 2 Stormy petrel. *H. pelagicus*, Boje.

GENUS III.

Storm Diver, or Puffin. Puffinus. — *Brisson.*

- 1 Northern puffin. *Puff. arcticus*, Faber.
- 2 Mank's puffin. *Puff. anglorum*, Brehm.

GENUS IV.

Gannet. *Sula*. — *Brisson*.

- 1 Great gannet, or solan goose. *S. major*, Brisson.
- 2 Bass gannet, or solan goose. *S. Bassana*, Brisson.

GENUS V.

Cormorant. *Carbo*. — *Gessner*.

- 1 Common cormorant. *C. cormoranus*, Meyer.
- 2 Ice cormorant. *C. glacialis*, Brehm.
- 3 Tree cormorant. *C. arboreus*, Brehm.
- 4 Small cormorant. *C. subcormoranus*, Brehm.
- 5 Crow cormorant. *C. graculus*, Meyer.
- 6 Short-tailed cormorant. *C. brachyuros*, Brehm.

THE END.

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