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AMERICAN ORNITHOLOGY;

OR, THE

NATURAL HISTORY

OF THE

BIRDS OF THE UNITED STATES.

ILLUSTRATED WITH PLATES

ENGRAVED FROM DRAWINGS FROM NATURE.

BY

ALEXANDER WILSON

AND

CHARLES LUCIAN BONAPARTE.

POPULAR EDITION.

VOL. III.



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AMERICAN ORNITHOLOGY.

ORDER VIII. PINNATIPEDES. PINNATED FEET.

GENUS LXXXII. PHALAROPUS. PHALAROPE.

SPECIES I. *P. FULICARIUS.*

GRAY PHALAROPE.*

[Plate LXXIII. Fig. 4.]

Tringa Fulicaria, LINN. *Syst. ed. 10*, tom. I., p. 148, 6.—*Tringa glacialis*, Gmel. *Syst. I.*, p. 675, 2. *T. hyperborea*, var. *b*, Id. p. 676.—*Le Phalarope*, BRISS. *Orn. VI.*, p. 12, No. 1. *Phalaropus rufescens*, Id. p. 20.—*Phalaropus lobatus*, LATH. *Ind. Orn.* p. 776, 2. *P. glacialis*, Id. No. 3. *Red Phalarope*, fem. *Gen. Syn. III.*, p. 271. *Gray Phalarope*, Id. p. 272, 2. *Plain Phalarope*, Id. p. 273, 3.—*Gray Phalarope*, PENN. *Brit. Zool.* No. 218. *Arct. Zool.* No. 412. *Red Phalarope*, Id. No. 413. *Plain Phalarope*, Id. No. 415. *Red Coot-footed Tringa*, EDWARDS, pl. 142. *Gray Coot-footed Tringa*, Id. *Gleanings*, Pl. 308.—*Le Phalarope rouge*, BUFF. *Ois. viii.*, p. 225. *Le Phalarope à festons dentelés*, Id. p. 226.—*Gray Phalarope*, MONTAGU, *Orn. Dic. and Appendix to Sup.*—BEWICK, II., p. 132.—*Le Phalarope gris*, CUV. *Reg. An.* I., p. 492. *Le Phalarope rouge*, Id. *Ibid.*—*Phalaropus platyrhinchus*, TEMM. *Man. d'Orn.* p. 712.

BILL pretty stout and wide, slightly compressed at the tip, depressed on the lower half, upper mandible carinate; nostrils subovate, a short distance from the base; feet semipalmate, lobes of the toes broad and greatly scalloped; hind toe barely touching the ground.

Bill reddish orange at the base, the remainder black, an inch long; front and crown black, barred transversely with lines of white; throat, sides of the neck, and lower parts, white, thickly and irregularly barred with curving dashes of reddish chocolate; upper parts of a deep cinnereous blue, streaked with brownish yellow and black; the black scapulars broadly edged with brownish yellow; wings and rump dark cinnereous; greater wing-coverts broadly tipped with white, forming a large band; primaries nearly black, and crossed with white below the coverts; tail plain olive, middle of its coverts black, their sides bright brownish

* Named in the plate Red Phalarope.

yellow; vent white, those feathers immediately next to the tail reddish chocolate; legs black on the outside, yellowish within.

Length nine inches, breadth fifteen inches and a half; length of hind toe, independent of the claw, one-eighth of an inch. Male?

The inner toe is connected to the middle one, by a membrane, as far as the first joint, the outer toe much further; hence the feet may be properly termed semipalmate; webs and lobes finely pectinated. This conformation of the feet is pretty accurately exhibited in Edwards's plate, No. 308.

The Gray Phalarope is a rare bird in Pennsylvania; and is not often met with in any part of the United States. The individual from which our figure and description were taken, was shot in a pond, in the vicinity of Philadelphia, in the latter part of May, 1812. There were three in company. The person who shot it had never seen one of the species before, and was struck with their singular manners. He described them as swimming actively near the margin of the pond, dipping in their bill very often, as if feeding, and turning frequently. In consequence of our specimen being in a state of putridity when received, it was preserved with considerable difficulty, and the sex could not be ascertained.

In the spring of the year 1816, my friend, Mr. Le Sueur, shot in Boston Bay a young individual of this species: crown dark slate, tinged with yellowish brown; front, throat, line over the eye, belly and vent, white; shoulders, breast and sides, tawny or fawn color; back dark slate, paler near the rump, the feathers edged with bright yellow ochre; wings pale cinereous, some of the lesser coverts edged with white, the greater coverts largely so, forming the bar; primaries and tail black, the latter edged with yellowish brown, the shafts of the former white. Bill and feet as in the first described.

On the 20th of March, 1818, I shot in the river St. John, in East Florida, an immature female specimen: irides dark brown; around the base of the bill a slight marking of dark slate; front and crown white, mottled with pale ash; at the anterior part of each eye a black spot; beneath the eyes dark slate, which extends over the auriculars, the hind-head, and upper part of the neck; upper parts cinereous gray, with a few faint streaks of slate; throat, breast, whole lower parts, and under tail-coverts, pure white; flanks with a few faint ferruginous stains; wings slate brown, the coverts of the secondaries, and a few of the primary coverts, largely tipped with white, forming the bar as usual; tail brown, edged with cinereous; legs and feet pale plumbeous, the webs, and part of the scalloped membranes, yellowish. Bill and size as in the first specimen.

The tongue of this species is large, fleshy and obtuse.

A reference to the head of this article will show the variety of names

under which this bird has been described. What could induce that respectable naturalist, M. Temminck, to give it a new appellation, we are totally at a loss to conceive. That his name is good, that it is even better than all the rest, we are willing to admit; but that he had no right to give it a new name, we shall boldly maintain, not only on the score of expediency, but of justice. If the right to change be once conceded, there is no calculating the extent of the confusion in which the whole system of nomenclature will be involved. The study of methodical natural history is sufficiently laborious, and whatever will have a tendency to diminish this labor, ought to meet the cordial support of all those who are interested in the advancement of the natural sciences.

"The study of Natural History," says the present learned president of the Linnean Society, "is, from the multitude of objects with which it is conversant, necessarily so encumbered with names, that students require every possible assistance to facilitate the attainment of those names, and have a just right to complain of every needless impediment. Nor is it allowable to alter such names, even for the better. In our science the names established throughout the works of Linnaeus are become current coin, nor can they be altered without great inconvenience."*

That there is a property in names as well as in things, will not be disputed; and there are few naturalists who would not feel as sensibly a fraud committed on their nomenclature as on their purse. The ardor with which the student pursues his researches, and the solicitude which he manifests in promulgating his discoveries under appropriate appellations, are proofs that at least part of his gratification is derived from the supposed distinction which a name will confer upon him; deprive him of this distinction, and you inflict a wound upon his self-love, which will not readily be healed.

To enter into a train of reasoning to prove that he who first describes and names a subject of natural history, agreeably to the laws of systematic classification, is for ever entitled to his name, and that it cannot be superseded without injustice, would be useless, because they are propositions which all naturalists deem self-evident. Then how comes it, whilst we are so tenacious of our own rights, we so often disregard those of others?

I would now come to the point. It will be perceived that I have ventured to restore the long neglected name of *fulicaria*. That I shall be supported in this restoration I have little doubt, when it shall have been manifest that it was Linnaeus himself who first named this species. A

* An Introduction to Physiological and Systemical Botany, chap. 22.

reference to the tenth edition of the *Systema Naturæ** will show that the authority for *Tringa fulicaria* is Edwards's Red Coot-footed *Tringa*, pl. 142, and that alone, for it does not appear that Linnæus had seen the bird. The circumstance of the change of the generic appellation can in nowise affect the specific name; the present improved state of the science requires the former, justice demands that the latter should be preserved. In this work I have preserved it; and I flatter myself that this humble attempt to vindicate the rights of Linnæus will be approved by all those who love those sciences, of which he was so illustrious a promoter.†

SPECIES II. *PHALAROPUS LOBATUS.*

BROWN PHALAROPE.‡

[Plate LXXIII. Fig. 3.]

Tringa lobata, LINN. *Syst. ed. 10*, tom. I., p. 148, 5. *T. hyperborea*, Id. ed. 12, tom. I., p. 249, 9.—*Tringa lobata*, GMEL. *Syst. I.*, p. 674, 6. *T. fusca*, Id. p. 675, 33. *T. hyperborea*, Id. No. 9.—*Phalaropus cinereus*, BRISS. *Orn. VI.*, p. 15. *P. fuscus*, Id. p. 18.—*Le Phalarope cendre*, BUFF. *Ois. VIII.*, p. 224. *Pl. Enl. 766.*—*Coot-footed Tringa*, EDWARDS, pl. 46. *Cock Coot-footed Tringa*, Id. pl. 143.—*Red Phalarope*, PENN. *Brit. Zool. No. 219.* *Brown Phalarope*, *Arct. Zool. No. 414.*—*Phalaropus hyperboreus*, LATH. *Ind. Orn. p. 775*, 1. *P. fuscus*, Id. p. 776, 4. *Red Phalarope*, *Gen. Syn. III.*, p. 270, 1. Id. p. 272, var. A. *Brown Phalarope*, Id. p. 274, 4.—*Red Phalarope*, MONTAGU, *Orn. Dic.* Id. Sup. and Appendix.—*Phalaropus hyperboreus*, TEMM. *Man. d' Orn. p. 709.*—*Le Lobipede à hausse-col*, CUV. *Reg. An. 1*, p. 495.

OF this species only one specimen was ever seen by Wilson, and that was preserved in Trowbridge's Museum, at Albany, in the state of New York. On referring to Wilson's Journal, I found an account of the bird, there called a *Tringa*, written with a lead pencil, but so scrawled and obscured, that parts of the writing were not legible. I wrote to Trowbridge, soliciting a particular description, but no answer was

* Of all the editions of the *Systema Naturæ*, the tenth and the twelfth are the most valuable; the former being the first which contains the synonyma, and the latter being that which received the finishing hand of its author. In the United States, Linnæus is principally known through two editors:—Gmelin, whose thirteenth edition of the *Systema Naturæ* has involved the whole science in almost inextricable confusion, and Turton, whose English translation of Gmelin is a disgrace to science and letters. All writers on Zoology and Botany should possess Linnæus's tenth and twelfth editions; they will be found to be of indispensable use in tracing synonymes, and fixing nomenclature.

† From Mr. Ord's supplementary volume.

‡ Named in the plate Gray Phalarope.

returned. However, having had the good fortune, since publishing the first edition, of examining a fine recent specimen of this rare bird, I hope I shall be enabled to fix the species by such characters, as will prevent any ornithologist in future from confounding it with the species which follows; two birds which, owing to a want of precision, were involved in almost inextricable confusion, until Temminck applied himself to the task of disengaging them; and this ingenious naturalist has fully proved that the seven species of authors constituted, in effect, only two species.

Temminck's distinctive characters are drawn from the bill; and he has divided the genus into two sections, an arrangement the utility of which is not evident, seeing that each section contains but one species; unless we may consider that the Barred Phalarope of Latham constitutes a third: a point not yet ascertained, and not easy to be settled, for the want of characters.

In my examination of these birds, I have paid particular attention to the feet, which possess characters equally striking with those of the bill: hence a union of all these will afford a facility to the student, of which he will be fully sensible, when he makes them the subject of his investigation.

Our figure of this species betrays all the marks of haste; it is inaccurately drawn, and imperfectly colored; notwithstanding, by a diligent study of it, I have been enabled to ascertain, that it is the Coot-footed *Tringa* of Edwards, pl. 46, and 143, to which bird Linnaeus gave the specific denomination of *lobata*, as will be seen in the synomyms at the head of this article. In the twelfth edition of the *Systema Naturæ*, the Swedish naturalist, conceiving that he might have been in error, omitted, in his description of the *lobata*, the synomyme of Edwards's Cock Coot-footed *Tringa*, No. 143, and recorded the latter bird under the name of *hyperborea*, a specific appellation which Temminck, and other ornithologists, have sanctioned, but which the laws of methodical nomenclature prohibit us from adopting, as, beyond all question, *hyperborea* is only a synomyme of *lobata*, which has the priority, and must stand.

M. Temminck differs from us in the opinion, that the *T. lobata* of Gmelin, vol. I., p. 674, is the present species, and refers it to that which follows. But if this respectable ornithologist will take the trouble to look into the twelfth edition of Linnaeus, vol. I., p. 249, No. 8, he will there find two false references, Edwards's No. 308, and Brisson's No. 1, which gave rise to Gmelin's confusion of synomyms, and a consequent confusion in his description, as the essential character in both authors being in nearly the same words, (*rostro subulato, apice inflexo, &c.*) we are at no loss to infer that both descriptions have reference to the same bird; and we are certain that the *lobata* of the twelfth edition of the

former is precisely the same as that of the tenth edition, which cites for authority Edwards's 46 and 143, as before mentioned.

I shall now give the short description of the bird figured in the plate, as I find it in Wilson's note book.

Bill black, slender, and one inch and three eightths* in length, lores, front, crown, hind-head, and thence to the back, very pale ash, nearly white; from the anterior angle of the eye a curving stripe of black descends along the neck for an inch or more; thence to the shoulders dark reddish brown, which also tinges the white on the side of the neck next to it; under parts white; above dark olive; wings and legs black.
Size of the Turn-stone.

The specimen from which the following description was taken, was kindly communicated to me by my friend, Mr. Titian R. Peale, while it was yet in a recent state, and before it was prepared for the museum. It was this individual which enabled me to ascertain the species figured in our plate. It was shot in the neighborhood of Philadelphia, on the seventh of May, 1818.

Bill narrow, slender, flexible, subulate, of equal width; nostrils basal and linear; lobes of the toes thick, narrow, and but slightly scalloped; outer toe connected to the middle one as far as the first joint, inner toe divided nearly to its base; hind toe resting on the ground.

Bill black, one inch and three-eighths in length; head above of an ash gray; hind-head whitish, which color extends a short distance down the neck; over the eyes a white stripe, below them a white spot; throat and lower parts white; a line of black passes through the eyes, spreads out towards the hind-head, and descends along the neck; lower part of the neck pale ferruginous; back part of the neck deep ferruginous, which descends on each side, and mingles with the plumage of the back and scapulars, which are of a clove brown, the feathers tipped with whitish; wings and tail dark clove brown, some of the lesser coverts having a reddish tinge; the upper tail feathers tinged with red at their tips, the under feathers marked with white on their inner webs; irides dark brown; legs and feet dark plumbeous; claws long, of a dark horn color; hind toe, independent of the claw, five-sixteenths of an inch long; the tertials, when the wing is closed, extend to within three-eighths of an inch of the tip of the primaries; weight an ounce and three-quarters; length nine inches and a half, breadth sixteen inches. This was a female, her eggs very small.

In the grand chain of animated nature, the Phalaropes constitute one

* In the original the bill is said to be one inch and three-quarters long; but that this is a mistake, we have only to measure the bill of the figure, drawn of half the size of nature, to be convinced. Wilson always measured his bills from the tip to the angle of the mouth. Our figure, by this admeasurement, indicates a bill of precisely the length of that of Peale's specimen, which I have described in detail.

of the links between the waders and the web-footed tribes, having the form of the Sandpipers, with some of the habits of the gulls: the scalloped membranes on their toes enabling them to swim with facility. They are clothed with a thick coat of feathers, beneath which, as in the Ducks, lies a mass of down, to protect them from the rigors of the northern climates, of which they are natives. They do not appear to be fond of the neighborhood of the ocean, and are generally found in the interior, about the lakes, ponds, and streams of fresh water, where they delight to linger, swimming near the margin in search of seeds and insects.

They are nowhere numerous, are commonly seen in pairs, and are so extremely tame and unsuspicious, that one may approach to within a few feet of them.

The genus *Lobipes*, of the Baron Cuvier, is founded upon this species; and it must be confessed, that its characters are sufficiently distinct, from those of the bird which follows, to authorize such a separation; but unless some new species should be discovered, we see no impropriety in associating the two birds already known, taking care, however, to preserve a consistency in the generic characters, which Temminck, in his Manuel, has not sufficiently observed.

In the appendix to Montagu's Supplement to the Ornithological Dictionary, we find the following remarks on this species, there named *fulicaria*: "We have before mentioned, that this bird had been observed in the Orkneys, in considerable abundance, in the summer, and that no doubts were entertained of its breeding there, although the nest had not been found. To Mr. Bullock, therefore, we are indebted for the further elucidation of the natural history of this elegant little bird. In a letter to the author, this gentleman says, 'I found the Red Phalarope common in the marshes of Sanda and Westra, in the breeding season, but which it leaves in the autumn. This bird is so extremely tame that I killed nine without moving out of the same spot, being not in the least alarmed at the report of a gun. It lays four eggs, of the shape of that of a snipe, but much less, of an olive color, blotched with dusky. It swims with the greatest ease, and when on the water looks like a beautiful miniature of a duck, carrying its head close to the back, in the manner of a Teal.'"

Mr. Bullock further observes, "that the plumage of the female is much lighter, and has less of the rufous than the other sex."*

NOTE.—Since the foregoing was written, I have had an opportunity of examining the identical specimen, from which Wilson's drawing was taken, as it still remains in the Albany Museum. It is of the same

* From Mr. Ord's supplementary volume.

species as the individual in the Philadelphia Museum, and which is described above, in detail. That Edwards's plate 46 represents this very bird, I have little hesitation in reasserting, notwithstanding all that that has been advanced to the contrary, in some recent publications. Let it be remembered, that Edwards expressly informs us, his bird was captured on board of a vessel, on the coast of Maryland, it having been driven thither by an off-shore wind. At the foot of plate 308, Edwards has represented the bill of this Phalarope, as well as that of the *fulicarius*.

GENUS LXXXIII. FULICA. COOT.

SPECIES VIII. *F. AMERICANA.*

C I N E R E O U S C O O T.*

[Plate LXXXIII. Fig. 1.]

Fulica Americana, GMEL. *Syst. I.*, p. 704, 23.—LATH. *Ind. Orn.* p. 779, 5.—*Cinereous Coot*, *Gen. Syn. III.*, p. 279.

THIS species makes its appearance in Pennsylvania about the first of October. Among the muddy flats and islands of the river Delaware, which are periodically overflowed, and which are overgrown with the reed or wild-oats, and rushes, the Coots are found. They are not numerous, and are seldom seen, except their places of resort be covered with water: in that case they are generally found sitting on the fallen reed, waiting for the ebbing of the tide, which will enable them to feed. Their food consists of various aquatic plants, seeds, insects, and, it is said, small fish. The Coot has an aversion to take wing, and can seldom be sprung in its retreat at low water; for although it walks rather awkwardly, yet it contrives to skulk through the grass and reeds with great speed, the compressed form of its body, like that of the Rail genus, being well adapted to the purpose. It swims remarkably well, and, when wounded, will dive like a duck. When closely pursued in the water, it generally takes to the shore, rising with apparent reluctance, like a wounded duck, and fluttering along the surface with its feet patterning on the water.† It is known in Pennsylvania by the name of the Mud-hen.

I have never yet discovered that this species breeds with us; though

* Named in the plate Common Coot.

† In Carolina they are called *Flusterers*, from the noise they make in flying along the surface of the water. A voyage to Carolina by John Lawson, p. 149.

it is highly probable that some few may occupy the marshes of the interior, in the vicinity of the ponds and lakes, for this purpose: those retired situations being well adapted to the hatching and rearing of their young. In the Southern States, particularly South Carolina, they are well known; but the Floridas appear to be their principal rendezvous, for the business of incubation. "The Coot," says William Bartram, "is a native of North America, from Pennsylvania to Florida. They inhabit large rivers, fresh-water inlets or bays, lagoons, &c., where they swim and feed amongst the reeds and grass of the shores; particularly in the river St. Juan, in East Florida, where they are found in immense flocks. They are loquacious and noisy, talking to one another night and day; are constantly on the water, the broad lobated membranes on their toes enabling them to swim and dive like ducks."*

I observed this species to be numerous, during the winter, in the fresh water ponds, situated in the vicinity of the river St. Juan or St. John, in East Florida; but I did not see them in the river. The food which they obtain in these places must be very abundant and nutritious; as the individuals which I shot were excessively fat.

One male specimen weighed twenty-four ounces, avoirdupois. They associate with the Common Gallinule (*Gallinula chloropus*); but there is not, perhaps, one of the latter for twenty of the former. The Cinereous Coot is sixteen inches in length, and twenty-eight in extent; bill one and a half inch long, white, the upper mandible *slightly notched* near the tip, and marked across with a band of chestnut, the lower mandible marked on each side with a squarish spot of the like color, edged on the lower part with a bright yellow or gamboge, thence to the tip pale horn color; membrane of the forehead, dark chestnut brown; irides cornelian red; beneath the eyes, in most specimens, a whitish spot; the head and neck are of a deep shining black, resembling satin; back and scapulars dirty greenish olive; shoulders, breast, and wing-coverts, slate blue; the under parts are hoary; vent black; beneath the tail pure white; primaries and secondaries slate, the former tipped with black, the latter with white, which does not appear when the wing is closed; outer edges of the wings white; legs and toes yellowish green, the scalloped membrane of the latter lead color; middle toe, including the claw, three inches and three-quarters long.

The bird from which the foregoing description was taken, was shot on the Delaware, below Philadelphia, the 29th of October, 1813. It was an old male, an uncommonly fine specimen, and weighed twenty-three ounces avoirdupois. It was deposited in Peale's Museum.

The young birds differ somewhat in their plumage, that of the head

* Letter from Mr. Bartram to the author.

and neck being of a brownish black ; that of the breast and shoulders pale ash ; the throat gray or mottled ; the bill bluish white ; and the membrane on the forehead considerably smaller.

The young females very much resemble the young males ; all the difference which I have been enabled to perceive is as follows : breast and shoulders cinereous ; markings on the bill less ; upper parts of the head, in some specimens, mottled ; and being less in size.

The lower parts of these birds are clothed with a thick down, and, particularly between the thighs, covered with close fine feathers. The thighs are placed far behind, are fleshy, strong, and bare above the knees.

The gizzard resembles a hen's, and is remarkably large and muscular. That of the bird which has been described, was filled with sand, gravel, shells, and the remains of aquatic plants.

Buffon describes the mode of shooting Coots in France, particularly in Lorraine, on the great pools of Tiaucourt and of Indre ; hence we are led to suppose that they are esteemed as an article of food. But with us who are enabled, by the abundance and variety of game, to indulge in greater luxuries in that season when our Coots visit us, they are considered as of no account, and are seldom eaten.

The European ornithologists represent the membrane on the forehead of the *Fulica atra* as white, except in the breeding season, when it is said to change its color to pale red. In every specimen of the Cinereous Coot which I have seen, except one, the membrane of the forehead was of a dark chestnut brown color. The one alluded to was a fine adult male, shot in the Delaware, at Philadelphia, on the eleventh of May ; the membrane was of a *pure white* ; no white marking beneath the eye ; legs and feet of a bright grass green.

In Wilson's figure of the Coot, accompanying this volume, there are some slight errors : the auriculars are designated, which should not have been done, as they are not distinguishable from the rest of the plumage of the head and neck, which is all of a fine satiny texture ; and the outline of the bill is not correct.

Latham states that the Common European Coot, *F. atra*, is "met with in Jamaica, Carolina, and other parts of North America." This I presume is a mistake, as I have never seen but one species of Coot in the United States. Brown, in speaking of the birds of Jamaica, mentions a Coot, which, in all probability, is the same as ours. The Coot mentioned by Sloane, is the Common Gallinule. So is also that spoken of in the Natural History of Barbadoes, by Hughes, p. 71.

In Lewis and Clark's History of their expedition, mention is made of a bird, which is common on the Columbia ; is said to be very noisy, to have a sharp, shrill whistle, and to associate in large flocks ; it is

called the *Black Duck*.* This is doubtless a species of Coot, but whether or not different from ours cannot be ascertained. How much is it to be regretted, that in an expedition of discovery, planned and fitted out by an enlightened government, furnished with every means for safety, subsistence and research, not one naturalist, not one draftsman, should have been sent, to observe and perpetuate the infinite variety of natural productions, many of which are entirely unknown to the community of science, which that extensive tour must have revealed!

The Coot leaves us in November, for the southward.

The foregoing was prepared for the press, when the author, in one of his shooting excursions on the Delaware, had the good fortune to kill a full plumaged female Coot. This was on the twentieth of April. It was swimming at the edge of a cripple or thicket of alder bushes, busily engaged in picking something from the surface of the water, and while thus employed it turned frequently. The membrane on its forehead was very small, and edged on the fore part with gamboge. Its eggs were of the size of partridge shot. And on the thirteenth of May, another fine female specimen was presented to him, which agreed with the above, with the exception of the membrane on the forehead being nearly as large and prominent as that of the male. From the circumstance of the eggs of all these birds being very small, it is probable that the Coots do not breed until July.

* History of the Expedition, vol. ii., p. 194. Under date of November 30th, 1805, they say: "The hunters brought in a few *black ducks* of a species common in the United States, living in large flocks, and feeding on grass; they are distinguished by a *sharp white beak*, *toes separated*, and by having *no craw*."

GENUS LXXXV. RECURVIROSTRA. AVOSET.

SPECIES I. *R. AMERICANA.*

A M E R I C A N A V O S E T.

[Plate LXIII. Fig. 2.]

Arct. Zool. No. 421.—*LATH. Syn.* v. III., p. 295, No. 2.

THIS species, from its perpetual clamor, and flippancy of tongue, is called by the inhabitants of Cape May, the Lawyer; the comparison, however, reaches no farther: for our Lawyer is simple, timid, and perfectly inoffensive.

In describing the Long-legged Avoset of this volume, the similarity between that and the present was taken notice of. This resemblance extends to everything but their color. I found both these birds associated together in the salt marshes of New Jersey, on the twentieth of May. They were then breeding. Individuals of the present species were few in respect to the other. They flew around the shallow pools, exactly in the manner of the Long-legs, uttering the like sharp note of *click click click*, alighting on the marsh, or in the water, indiscriminately, fluttering their loose wings, and shaking their half-bent legs, as if ready to tumble over, keeping up a continual yelping note. They were, however, rather more shy, and kept at a greater distance. One which I wounded, attempted repeatedly to dive; but the water was too shallow to permit him to do this with facility. The nest was built among the thick tufts of grass, at a small distance from one of these pools. It was composed of small twigs, of a seaside shrub, dry grass, sea weed, &c., raised to the height of several inches. The eggs were four, of a dull olive color, marked with large irregular blotches of black, and with others of a fainter tint.

This species arrives on the coast of Cape May late in April; rears its young, and departs again to the south early in October. While here, it almost constantly frequents the shallow pools in the salt marshes; wading about, often to the belly, in search of food, viz., marine worms, snails, and various insects that abound among the soft muddy bottoms of the pools.

The male of this species is eighteen inches and a half long, and two feet and a half in extent; the bill is black, four inches in length, flat above, the general curvature upwards, except at the extremity, where

it bends slightly down, ending in an extremely fine point; irides reddish hazel; whole head, neck and breast, a light sorrel color; round the eye, and on the chin, nearly white; upper part of the back and wings black; scapulars, and almost the whole back, white, though generally concealed by the black of the upper parts; belly, vent and thighs, pure white; tail equal at the end, white, very slightly tinged with cinereous; tertials dusky brown; greater coverts tipped with white; secondaries white on their outer edges, and whole inner vane; rest of the wing deep black; naked part of the thighs two and a half inches; legs four inches, both of a very pale light blue, exactly formed, thinned and netted, like those of the Long-legs; feet half-webbed; the outer membrane somewhat the broadest; there is a very slight hind toe, which, claw and all, does not exceed a quarter of an inch in length. In these two latter circumstances alone it differs from the Long-legs; but is in every other strikingly alike.

The female was two inches shorter, and three less in extent; the head and neck a much paler rufous, fading almost to white on the breast; and separated from the black of the back by a broader band of white; the bill was three inches and a half long; the leg half an inch shorter; in every other respect marked as the male. She contained a great number of eggs, some of them nearly ready for exclusion. The stomach was filled with small snails, periwinkle shell-fish, some kind of mossy vegetable food, and a number of aquatic insects. The intestines were infested with tape-worms, and a number of smaller bot-like worms, some of which swallowed in the cavity of the abdomen.

In Mr. Peale's collection there was one of this same species, said to have been brought from New Holland, differing little in the markings of its plumage from our own. The red brown on the neck does not descend so far, scarcely occupying any of the breast; it is also somewhat less.*

In every stuffed and dried specimen of these birds which I have examined, the true form and flexure of the bill is altogether deranged; being naturally of a very tender and delicate substance.

NOTE.—It is remarkable, that, in the Atlantic States, this species invariably affects the neighborhood of the ocean; we never having known an instance of its having been seen in the interior; and yet Captain Lewis met with this bird at the ponds, in the vicinity of the Falls of the Missouri. That it was our species, I had ocular evidence, in a skin brought by Lewis himself, and presented, among other specimens of natural history, to the Philadelphia Museum. See *History of Lewis and Clarke's Expedition*, vol. II., p. 343.—G. Ord.

* This is a different species; it is the *R. rubricollis* of Temminck, Manuel d'Ornithologie, p. 592.

SPECIES II. *RECURVIROSTRA HIMANTOPUS.**

LONG-LEGGED AVOSET.

[Plate LVIII. Fig. 2.]

Long-legged Plover, Arct. Zool. p. 487, No. 405.—*TURTON*, p. 416. *BEWICK*, II., 21.—*L'Échasse*, *BUFF.* VIII., 114. *Pl. Enl.* 878.

NATURALISTS have most unaccountably classed this bird with the genus *Charadrius*, or Plover, and yet affect to make the particular conformation of the bill, legs and feet, the rule of their arrangement. In the present subject, however, excepting the trivial circumstance of the want of a hind toe, there is no resemblance whatever of those parts to the bill, legs or feet, of the Plover; on the contrary, they are so entirely different, as to create no small surprise at the adoption, and general acceptation, of a classification, evidently so absurd and unnatural. This appears the more reprehensible, when we consider the striking affinity there is between this bird and the common Avoset, not only in the particular form of the bill, nostrils, tongue, legs, feet, wings and tail, but extending to the voice, manners, food, place of breeding, form of the nest, and even the very color of the eggs of both, all of which are strikingly alike, and point out, at once, to the actual observer of nature, the true relationship of these remarkable birds.

Strongly impressed with these facts, from an intimate acquaintance with the living subjects, in their native wilds, I have presumed to remove the present species to the true and proper place assigned it by nature; and shall now proceed to detail some particulars of its history.

This species arrives on the seacoast of New Jersey about the twenty-fifth of April, in small detached flocks, of twenty or thirty together. These sometimes again subdivide into lesser parties; but it rarely happens that a pair is found solitary, as during the breeding season they usually associate in small companies. On their first arrival, and indeed during the whole of their residence, they inhabit those particular parts of the salt marshes pretty high up towards the land, that are broken into numerous shallow pools, but are not usually overflowed by the tides during the summer. These pools, or ponds are generally so shallow, that with their long legs the Avosets can easily wade them in every direction, and as they abound with minute shell-fish, and multitudes of

* This bird belongs to the genus *Himantopus* of Brisson.

aquatic insects and their larvæ, besides the eggs and spawn of others deposited in the soft mud below, these birds find here an abundant supply of food, and are almost continually seen wading about in such places, often up to the breast in water.

In the vicinity of these *bald places*, as they are called by the country people, and at the distance of forty or fifty yards off, among the thick tufts of grass, one of these small associations, consisting perhaps of six or eight pair, takes up its residence during the breeding season. About the first week in May they begin to construct their nests, which are at first slightly formed of a small quantity of old grass, scarcely sufficient to keep the eggs from the wet marsh. As they lay and sit, however, either dreading the rise of the tides, or for some other purpose, the nest is increased in height, with dry twigs of a shrub very common in the marshes, roots of the salt grass, seaweed, and various other substances, the whole weighing between two and three pounds. This habit of adding materials to the nest, after the female begins sitting, is common to almost all other birds that breed in the marshes. The eggs are four in number, of a dark yellowish clay color, thickly marked with large blotches of black. These nests are often placed within fifteen or twenty yards of each other, but the greatest harmony seems to prevail among the proprietors.

While the females are sitting, the males are either wading through the ponds, or roaming over the adjoining marshes; but should a person make his appearance, the whole collect together in the air, flying with their long legs extended behind them, keeping up a continual yelping note of *click click click*. Their flight is steady, and not in short sudden jerks like that of the Plover. As they frequently alight on the bare marsh, they drop their wings, stand with their legs half bent, and tremble as if unable to sustain the burden of their bodies. In this ridiculous posture they will sometimes stand for several minutes, uttering a curring sound, while from the corresponding quiverings of their wings and long legs, they seem to balance themselves with great difficulty. This singular manœuvre is, no doubt, intended to induce a belief that they may be easily caught, and so turn the attention of the person from the pursuit of their nests and young to themselves. The Red-necked Avoset, which we have introduced in the present volume, practises the very same deception, in the same ludicrous manner, and both alight indiscriminately on the ground, or in the water. Both will also occasionally swim for a few feet, when they chance in wading to lose their depth, as I have had several times an opportunity of observing.

The name by which this bird is known on the seacoast is the Stilt, or Tilt, or Long-shanks. They are but sparingly dispersed over the marshes, having, as has been already observed, their particular favorite spots; while in large intermediate tracts, there are few or none to be

found. They occasionally visit the shore, wading about in the water, and in the mud, in search of food, which they scoop up very dexterously with their delicately formed bills. On being wounded while in the water, they attempt to escape by diving, at which they are by no means expert. In autumn, their flesh is tender, and well tasted. They seldom raise more than one brood in the season, and depart for the south early in September. As they are well known in Jamaica, it is probable some of them winter in that and other of the West India Islands.

Mr. Pennant observes that this bird is not a native of northern Europe; and there have been but few instances where it has been seen in Great Britain. It is common, says Latham, in Egypt, being found there in the marshes in October. It is likewise plentiful about the salt lakes; and is often seen on the shores of the Caspian Sea, as well as by the rivers which empty themselves into it; and in the southern deserts of Independent Tartary. The same author adds, on the authority of Ray, that it is known at Madras in the East Indies.

All the figures and descriptions which I have seen of this curious bird, represent the bill as straight, and of almost an equal thickness throughout, which I have never found so in any of the numerous specimens I have myself shot and examined. Many of these accounts, as well as figures, have been taken from dried and stuffed skins, which give but an imperfect, and often erroneous, idea of the true outlines of nature. The dimensions, colors and markings, of a very beautiful specimen, newly shot, were as follow:

Length from the point of the bill to the end of the tail fourteen inches, to the tips of the wings sixteen; extent twenty-eight inches; bill three inches long, slightly curved upwards, tapering to a fine point, the upper mandible rounded above, the whole of a deep black color; nostrils an oblong slit, pervious; tongue short, pointed; forehead, spot behind the eye, lower eyelid, sides of the neck, and whole lower parts, pure white; back, rump and tail coverts, also white, but so concealed by the scapulars as to appear black; tail even, or very slightly forked, and of a dingy white; the vent feathers reach to the tip of the tail below; line before the eye, auriculars, back part of the neck, scapulars, and whole wings, deep black, richly glossed with green; legs and naked thighs a fine pale carmine; the latter measure three, the former four inches and a half in length, exceedingly thin, and *so flexible that they may be bent considerably without danger of breaking.* This thinness of the leg enables the bird to wade with expedition, and without fatigue. Feet three-toed, the outer toe connected to the middle one by a broad membrane; wings long, extending two inches beyond the tail, and sharp pointed; irides a bright rich scarlet; pupil black. In some, the white from the breast extends quite round the neck, sepa-

rating the black of the hind neck from that of the body; claws blackish horn.

The female is about half an inch shorter, and differs in having the plumage of the upper back and scapulars, and also the tertials, of a deep brown color. The stomach, or gizzard, was extremely muscular, and contained fragments of small snail shells, winged bugs, and a slimy matter, supposed to be the remains of some aquatic worms. In one of these females I counted upwards of one hundred and fifty eggs, some of them as large as buckshot. The singular form of the legs and feet, with the exception of the hind toe and one membrane of the foot, is exactly like those of the Avoset. The upward curvature of the bill, though not quite so great, is also the same as in the other, being rounded above, and tapering to a delicate point in the same manner. In short, a slight comparison of the two is sufficient to satisfy the most scrupulous observer, that nature has classed these two birds together; and so believing, we shall not separate them.

GENUS LXXXVII. PHÆNICOPTERUS. FLAMINGO.

SPECIES. *P. RUBER.*

RED FLAMINGO.

[Plate LXVI. Fig. 4.]

Le Flamant, BRISS. VI., p. 533, pl. 47, fig. 1.—BUFF. VIII., p. 475, pl. 39. *Pl. Enl.* 63.—LATH. *Syn.* III., p. 299.—*Arct. Zool.* No. 422.—CATESBY, I., pl. 73, 74.

THIS very singular species being occasionally seen on the southern frontiers of the United States, and on the peninsula of East Florida, where it is more common, has a claim to a niche in our Ornithological Museum, although the author regrets that from personal observation he can add nothing to the particulars of its history, already fully detailed in various European works. From the most respectable of these, the Synopsis of Dr. Latham, he has collected such particulars as appear authentic and interesting.

“ This remarkable bird has the neck and legs in a greater disproportion than any other bird, the length from the end of the bill to that of the tail is four feet two or three inches, but to the end of the claws measures sometimes more than six feet. The bill is four inches and a quarter long, and of a construction different from that of any other bird; the upper mandible very thin and flat, and somewhat movable; the under thick, both of them bending downwards from the middle; the nostrils

are linear, and placed in a blackish membrane; the end of the bill as far as the bend is black, from thence to the base reddish yellow, round the base quite to the eye covered with a flesh-colored cere; the neck is slender, and of a great length; the tongue large, fleshy, filling the cavity of the bill, furnished with twelve or more hooked papillæ on each side, turning backwards; the tip a sharp cartilaginous substance. The bird when in full plumage is wholly of a most deep scarlet (those of Africa said to be the deepest), except the quills, which are black; from the base of the thigh to the claws measures thirty-two inches, of which the feathered part takes up no more than three inches; the bare part above the knee thirteen inches, and from thence to the claws sixteen; the color of the bare parts is red, and the toes are furnished with a web as in the Duck genus; but is deeply indented. *The legs are not straight, but slightly bent, the shin rather projecting.*

“ These birds do not gain their full plumage till the third year. In the first they are of a grayish white for the most part; the second of a clearer white, tinged with red, or rather rose color; but the wings and scapulars are red; in the third year a general glowing scarlet manifests itself throughout; the bill and legs also keep pace with the gradation of color in the plumage, these parts changing to their colors by degrees as the bird approaches to an adult state.

“ Flamingoes prefer a warm climate, in the old continent not often met with beyond forty degrees north or south. Everywhere seen on the African coast, and adjacent isles, quite to the Cape of Good Hope,* and now and then on the coasts of Spain,† Italy, and those of France lying in the Mediterranean Sea; being at times met with at Marseilles, and for some way up the Rhone. In some seasons frequents Aleppo,‡ and parts adjacent. Seen also on the Persian side of the Caspian Sea, and from thence along the western coast as far as the Wolga; though this at uncertain times, and chiefly in considerable flocks, coming from the north coast mostly in October and November; but so soon as the wind changes they totally disappear.§ They breed in the Cape Verd Isles, particularly in that of Sal.|| The nest is of a singular construction, made of mud, in shape of a hillock, with a cavity at top; in this the female lays generally two white eggs,¶ of the size of those of a Goose, but more elongated. The hillock is of such an height as to admit of the bird's sitting on it conveniently, or rather standing, as the legs are

* In Zee Coow river. Phil. Trans. Once plenty in the Isle of France. Voy. to Mauritius, p. 66.

† About Valencia, in the Lake Albufera. Dillon's Trav. p. 374.

‡ Russel's Aleppo, p. 69. § Decouv. Russ. II., p. 248.

|| Damp. Voy. I., p. 70.

¶ They never lay more than three, and seldom fewer. Phil. Trans.

placed one on each side at full length.* The young cannot fly till full grown, but run very fast.

"Flamingoes, for the most part, keep together in flocks; and now and then are seen in great numbers together, except in breeding time. Dampier mentions having, with two more in company, killed fourteen at once; but this was effected by secreting themselves; for they are very shy birds, and will by no means suffer any one to approach openly near enough to shoot them.† Kolben observes that they are very numerous at the Cape, keeping in the day on the borders of the lakes and rivers, and lodging themselves of nights in the long grass on the hills. They are also common to various places in the warmer parts of America, frequenting the same latitudes as in other quarters of the world; being met with in Peru, Chili, Cayenne,‡ and the coast of Brazil, as well as the various islands of the West Indies. Sloane found them in Jamaica; but particularly at the Bahama Islands, and that of Cuba, where they breed. When seen at a distance they appear as a regiment of soldiers, being arranged alongside of one another, on the borders of the rivers, searching for food, which chiefly consists of small fish,§ or the eggs of them, and of water insects, which they search after by plunging in the bill and part of the head; from time to time trampling with their feet to muddy the water, that their prey may be raised from the bottom. In feeding are said to twist the neck in such a manner that the upper part of the bill is applied to the ground;|| during this one of them is said to stand sentinel, and the moment he sounds the alarm, the whole flock take wing. This bird when at rest stands on one leg, the other being drawn up close to the body, with the head placed under the wing on that side of the body it stands on.

"The flesh of these birds is esteemed pretty good meat; and the young thought by some equal to that of a Partridge;¶ but the greatest dainty is the tongue, which was esteemed by the ancients an exquisite morsel.** Are sometimes caught young and brought up tame; but are ever impatient of cold, and in this state will seldom live a great while, gradually losing their color, flesh and appetite; and dying for want of

* Sometimes will lay the eggs on a projecting part of a low rock, if it be placed sufficiently convenient so as to admit of the legs being placed one on each side. Linn.

† Davies talks of the gunner disguising himself in an ox hide, and by this means getting within gun-shot. Hist. Barbad. p. 88.

‡ Called there by the name of Tococo.

§ Small shell fish. Gesner.

|| Linnæus. Brisson.

¶ Commonly fat and accounted delicate. Davies's Hist. Barbad. p. 88. The inhabitants of Provence always throw away the flesh, as it tastes fishy, and only make use of the feathers as ornaments to other birds at particular entertainments. Dillon's Trav. p. 374.

** See Plin. IX., cap. 48.

that food which in a state of nature, at large, they were abundantly supplied with."

GENUS XC. URIA. GUILLEMOT.

SPECIES. *URIA ALLE*.

LITTLE GUILLEMOT.*

[Plate LXXIV. Fig. 5.]

Uria alle, TEMM. *Man. d'Orn.* p. 928.—*Alca alle*, LINN. *Syst. ed. 12*, tom. I., p. 211, 5.—GMEL. *Syst.* I., p. 554, 5.—IND. *Orn.* p. 795, 10.—*Uria minor*, BRISS. VI., p. 73, 2.—*Le Petit Guillemot femelle*, PL. ENL. 917.—*Small black and white Diver*, EDWARDS, pl. 91.—*Little Auk*, LATH. *Gen. Syn.* III., p. 327.—PENN. *Arct. Zool.* No. 429.—BEWICK, II., p. 158.

OF the history of this little stranger, but few particulars are known. With us it is a very rare bird; and, when seen, it is generally in the vicinity of the sea. The specimen from which the figure in the plate was taken, was killed at Great Egg Harbor, in the month of December, 1811, and was sent to Wilson as a great curiosity. It measured nine inches in length, and fourteen in extent; the bill, upper part of the head, back, wings and tail, were black; the upper part of the breast and hind-head, were gray, or white mixed with ash; the sides of the neck, whole lower parts, and tips of secondaries, were pure white; feet and legs black, shins pale flesh color; above each eye there was a small spot of white; the lower scapulars streaked slightly with the same.

The little Guillemot is said to be but a rare visitant of the British Isles. It is met with in various parts of the north, even as far as Spitzbergen; is common in Greenland, in company with the black-billed Aux, and feeds upon the same kind of food. The Greenlanders call it the Ice-bird, from the circumstance of its being the harbinger of ice. It lays two bluish white eggs, larger than those of the Pigeon. It flies quick, and dives well; and is always dipping its bill into the water while swimming, or at rest on that element. Walks better on land than others of the genus. It grows fat in the stormy season, from the waves bringing plenty of crabs and small fish within its reach. It is not a very crafty bird, and may be easily taken. It varies to quite white; and sometimes is found with a reddish breast.†

To the anatomist, the internal organization of this species is deserving attention: it is so constructed as to be capable of contracting or dilating itself at pleasure. We know not what Nature intends by this conformation, unless it be to facilitate diving, for which the compressed

* Named in the plate Little Auk.

† Latham. Pennant.

form is well adapted; and likewise the body when expanded will be rendered more buoyant, and fit for the purpose of swimming upon the surface of the water.*

GENUS XCI. COLYMBUS. DIVER.

SPECIES. *C. GLACIALIS.*

GREAT NORTHERN DIVER, OR LOON.

[Plate LXXIV. Fig. 3.]

Colymbus glacialis, LINN. *Syst. ed. 12*, tom. I., p. 221, 5. *C. immer*, ID. p. 222, No. 6.—*Ind. Orn.* p. 799, 1. *C. immer*, ID. p. 800, 2.—*Le grand Plongeon*, BRISS. VI., p. 105, pl. 10, fig. 1. *Le grand Plongeon tacheté*, ID. p. 120, pl. 11, fig. 2.—*Le grand Plongeon*, BUFF. *Ois. VIII.*, p. 251. *L'Imbrim, ou grand Plongeon de la mer du nord*, ID. p. 258, tab. 22. *Pl. Eul.* 952.—*Northern Diver*, LATH. *Gen. Syn. III.*, p. 337. *Imber Diver*, ID. p. 340.—PENN. *Brit. Zool.* No. 237, 238. *Arct. Zool.* No. 439, 440.—BEWICK, II., p. 168, 170.—MONTAGU, *Orn. Dic. Sup. App.*—LOW, *Fauna Orcadensis*, p. 108, 110.—*Plongeon Imbrim*, TEMM. *Man. d'Orn.* p. 910.

THIS bird in Pennsylvania is migratory. In the autumn it makes its appearance with the various feathered tribes that frequent our waters; and when the streams are obstructed with ice, it departs for the Southern States.† In the months of March and April it is again seen; and after lingering awhile, it leaves us for the purpose of breeding. The Loons are found along the coast as well as in the interior; but in the summer they retire to the fresh-water lakes and ponds. We have never heard that they breed in Pennsylvania; but it is said they do in Missibisci Pond, near Boston, Massachusetts. The female lays two large brownish eggs. They are commonly seen in pairs, and procure their food, which is fish, in the deepest water of our rivers, diving after it, and continuing under for a length of time. Being a wary bird, it is seldom they are killed, eluding their pursuers by their astonishing faculty of diving. They seem averse to flying, and are but seldom seen on the wing. They are never eaten.

The Loon is restless before a storm; and an experienced master of a coasting vessel informed me, that he always knew when a tempest was approaching by the cry of this bird, which is very shrill, and may be heard at the distance of a mile or more. The correctness of this observation I have myself since experienced, in a winter voyage on the southern coasts of the United States.

* From Mr. Ord's supplementary Volume.

† The Loon is said to winter in the Chesapeake Bay.

This species seldom visits the shores of Britain, except in very severe winters; but it is met with in the north of Europe, and spreads along the arctic coast as far as the mouth of the river Ob, in the dominions of Russia. It is found about Spitzbergen, Iceland and Hudson's Bay. Makes its nest, in the more northern regions, on the little isles of fresh-water lakes; every pair keep a lake to themselves. It sees well, flies very high, and, darting obliquely, falls secure into its nest. Appears in Greenland in April or the beginning of May; and goes away in September or October, on the first fall of snow.* It is also found at Nootka Sound,† and Kamtschatka.

The Barabinzians, a nation situated between the river Ob and the Irtisch, in the Russian dominions, tan the breasts of this and other water fowl, whose skins they prepare in such a manner as to preserve the down upon them; and, sewing a number of these together, they sell them to make pelisses, caps, &c. Garments made of these are very warm, never imbibing the least moisture; and are more lasting than could be imagined.‡

The natives of Greenland use the skins for clothing; and the Indians about Hudson's Bay adorn their heads with circlets of their feathers.§

Lewis and Clark's party, at the mouth of the Columbia, saw robes made of the skins of Loons;|| and abundance of these birds during the time that they wintered at Fort Clatsop on that river.¶

The Laplanders, according to Regnard, cover their heads with a cap made of the skin of a *Loom* (Loon), which word signifies in their language *lame*, because the bird cannot walk well. They place it on their head in such a manner, that the bird's head falls over their brow, and its wings cover their ears.

"Northern Divers," says Hearne, "though common in Hudson's Bay, are by no means plentiful; they are seldom found near the coast, but more frequently in fresh-water lakes, and usually in pairs. They build their nests at the edge of small islands, or the margins of lakes or ponds; they lay only two eggs, and it is very common to find only one pair and their young in one sheet of water: a great proof of their aversion to society. They are known in Hudson's Bay by the name of Loons."**

The Great Northern Diver measures two feet ten inches from the tip of the bill to the end of the tail, and four feet six inches in breadth; the bill is strong, of a glossy black, and four inches and three-quarters long to the corner of the mouth; the edges of the bill do not fit exactly

* Pennant.

† Cook's Last Voy. ii., p. 237, Am. ed.

‡ Latham.

§ Arctic Zoology.

|| Gass's Journal.

¶ History of the Expedition, vol. ii., p. 189.

** Hearne's Journey, p. 429, quarto.

into each other, and are ragged, the lower mandible separates into two branches, which are united by a thin elastic membrane, and are easily movable horizontally or receding from each other, so as to form a wider gap to facilitate the swallowing of large fish; tongue bifid; irides dark blood red; the head, and half of the length of the neck, are of a deep black, with a green gloss, and purple reflections; this is succeeded by a band, consisting of interrupted white and black lateral stripes, which encompasses the neck, and tapers to a point on its fore part, without joining—this band measures about an inch and a half in its widest part, and to appearance is not continuous on the back part of the neck, being concealed by some thick, overhanging, black feathers, but on separating the latter the band becomes visible: the feathers which form these narrow stripes are white, streaked down their centre with black, and, what is a remarkable peculiarity, their webs project above the common surface; below this a broad band of dark glossy green and violet, which is blended behind with the plumage of the back; the lower part of the neck, and the sides of the breast, are ribbed in the same manner as the band above; below the chin a few stripes of the same; the whole of the upper parts are of a deep black, slightly glossed with green, and thickly spotted with white, in regular transverse or semicircular rows, two spots on the end of each feather—those on the upper part of the back, shoulders, rump and tail coverts small and roundish, those on the centre of the back, square and larger, those on the scapulars are the largest, and of an oblong square shape; the wing feathers and tail are plain brown black, the latter composed of twenty feathers; the lower parts are pure white, a slight dusky line across the vent; the scapulars descend over the wing, when closed, and the belly feathers ascend so as to meet them, by which means every part of the wing is concealed, except towards the tip; the outside of the legs and feet is black, inside lead color; the leg is four inches in length, and the foot measures, along the exterior toe to the tip of its claw, four inches and three-quarters; both legs and feet are marked with five-sided polygons. Weight of the specimen described eight pounds and a half.

The adult male and female are alike in plumage.

The young do not appear to obtain their perfect plumage until the second or third year. One which I saw, and which was conjectured to be a yearling, had its upper parts of a brown or mouse color; a few spots on the back and scapulars; but none of those markings on the neck, which distinguish the full-grown male. Another had the whole upper parts of a pale brown; the plumage of part of the back and scapulars tipped with pale ash; the lower parts white, with a yellowish tinge; no bands on the neck, nor spots on the body.

The conformation of the ribs and bones of this species is remarkable, and merits particular examination.

In the account which some of the European ornithologists give of their Northern Diver, we presume there is an inaccuracy. They say it measures three feet six inches in length, and four feet eight in breadth; and weighs *sixteen pounds*. If this be a correct statement, it would lead to the surmise that our Diver is a different species; for of several specimens which we examined, the best and largest has been described for this work, the admeasurement of which bird comes considerably short of that of the European, mentioned above. The weight, as has been stated, was eight pounds and a half.

On a re-examination of the Supplement to the Ornithological Dictionary of Montagu, I find, upon this subject, the following remarks, which should seem to put the question at rest respecting the identity of the European and American species: "It should appear that the size of this species has been commonly exaggerated, or they must vary materially, since those which have come under our examination did not exceed ten pounds; and an old or matured male measured only two feet eight inches. A young female, before the plumage was perfected, weighed eight pounds six,ounces, and measured two feet seven inches in length.

"A Northern Diver taken alive, was kept in a pond for some months, which gave us an opportunity of attending to its manners. In a few days it became extremely docile, would come at the call, from one side of the pond to the other, and would take food from the hand. The bird had received an injury in the head, which had deprived one eye of its sight, and the other was a little impaired, but notwithstanding, it could by incessantly diving, discover all the fish that was thrown into the pond. In defect of fish it would eat flesh.

"It is observable that the legs of this bird are so constructed and situated, as to render it incapable of walking upon them. This is probably the case with all the divers, as well as the Grebes.

"When this bird quitted the water, it shoved its body along upon the ground, like a seal, by jerks, rubbing the breast against the ground; and it returned again to the water in a similar manner. In swimming and diving,* only the legs are used, and not the wings, as in the Guillemot and Auk tribes; and by their situation so far behind, and their little deviation from the line of the body, the bird is enabled to propel itself in the water with great velocity in a straight line, as well as turn with astonishing quickness."†

* I have never seen this bird diving in pursuit of fish, but I have seen it in the act of diving to avoid danger, and took notice, that its wings, when beneath the surface of the water, did not lie close to the body, but they were not as much extended as when in the act of flying. They had no visible motion, hence the presumption is, that their only use is to balance the body.

† From Mr. Ord's supplementary volume.

GENUS XCII. RHYNCHOPS. SKIMMER.

SPECIES. *RHYNCHOPS NIGRA.*

BLACK SKIMMER, OR SHEARWATER.

[Plate LX. Fig. 4.]

Arct. Zool. No. 445.—CATESBY, I., 90.—*Le Bec en Ciseaux*, BUFF. VIII., 454, tab. 36.*

THIS truly singular fowl is the only species of its tribe hitherto discovered. Like many others, it is a bird of passage in the United States; and makes its first appearance, on the shores of New Jersey, early in May. It resides there, as well as along the whole Atlantic coast, during the summer; and retires early in September. Its favorite haunts are low sand-bars, raised above the reach of the summer tides; and also dry flat sands on the beach, in front of the ocean. On such places it usually breeds along the shores of Cape May, in New Jersey. On account of the general coldness of the spring there, the Shearwater does not begin to lay until early in June, at which time these birds form themselves into small societies, fifteen or twenty pair frequently breeding within a few yards of each other. The nest is a mere hollow, formed in the sand, without any materials. The female lays three eggs, almost exactly oval, of a clear white, marked with large round spots of brownish black, and intermixed with others of pale Indian ink. These eggs measure one inch and three-quarters, by one inch and a quarter. Half a bushel and more of eggs has sometimes been collected from one sand bar, within the compass of half an acre. These eggs have something of a fishy taste; but are eaten by many people on the coast. The female sits on them only during the night, or in wet and stormy weather. The young remain for several weeks before they are able to fly; are fed with great assiduity by both parents; and seem to delight in lying with loosened wings, flat on the sand, enjoying its invigorating warmth. They breed but once in the season.

The singular conformation of the bill of this bird has excited much surprise; and some writers, measuring the divine proportions of nature by their own contracted standards of conception, in the plenitude of their vanity have pronounced it to be “an awkward and defective

* *Pl. Enl.* 357.

instrument."* Such ignorant presumption, or rather impiety, ought to hide its head in the dust on a calm display of the peculiar construction of this singular bird, and the wisdom by which it is so admirably adapted to the purposes, or mode of existence, for which it was intended. The Shearwater is formed for skimming, while on wing, the surface of the sea for its food, which consists of small fish, shrimps, young fry, &c., whose usual haunts are near the shore, and towards the surface. That the lower mandible, when dipped into and cleaving the water, might not retard the bird's way, it is thinned and sharpened like the blade of a knife; the upper mandible being at such times elevated above water, is curtailed in its length, as being less necessary, but tapering gradually to a point, that, on shutting, it may offer less opposition. To prevent inconvenience from the rushing of the water, the mouth is confined to the mere opening of the gullet, which indeed prevents mastication taking place there; but the stomach, or gizzard, to which this business is solely allotted, is of uncommon hardness, strength and muscularity, far surpassing, in these respects, any other water bird with which I acquainted. To all these is added a vast expansion of wing, to enable the bird to sail with sufficient celerity while dipping in the water. The general proportion of the length of our swiftest Hawks and Swallows, to their breadth, is as one to two; but in the present case, as there is not only the resistance of the air, but also that of the water, to overcome, a still greater volume of wing is given, the Shearwater measuring nineteen inches in length, and upwards of forty-four in extent. In short, who-ever has attentively examined this curious apparatus, and observed the possessor with his ample wings, long bending neck, and lower mandible occasionally dipped into, and ploughing, the surface, and the facility with which he procures his food, cannot but consider it a mere playful amusement, when compared with the dashing immersions of the Tern, the Gull, or the Fish-Hawk, who, to the superficial observer, appear so superiorly accommodated.

The Shearwater is most frequently seen skimming close along shore, about the first of the flood, at which time the young fry, shrimp, &c., are most abundant in such places. There are also numerous inlets, among the low islands between the sea beach and main land of Cape May, where I have observed the Shearwaters, eight or ten in company, passing and repassing at high-water particular estuaries of those creeks that run up into the salt marshes, dipping, with extended neck, their open bills into the water, with as much apparent ease as Swallows glean up flies from the surface. On examining the stomachs of several of these, shot at the time, they contained numbers of a small fish, usually called *silver-sides*, from a broad line of a glossy silver color that runs

* Vide Buffon.

from the gills to the tail. The mouths of these inlets abound with this fry, or fish, probably feeding on the various matters washed down from the marshes.

The voice of the Shearwater is harsh and screaming, resembling that of the Tern, but stronger. It flies with a slowly flapping flight, dipping occasionally, with steady expanded wings, and bended neck, its lower mandible into the sea, and with open mouth receiving its food as it ploughs along the surface. It is rarely seen swimming on the water; but frequently rests in large parties on the sand-bars at low water. One of these birds which I wounded in the wing, and kept in the room beside me for several days, soon became tame and even familiar. It generally stood with its legs erect, its body horizontal, and its neck rather extended. It frequently reposed on its belly, and stretching its neck, rested its long bill on the floor. It spent most of its time in this way, or in dressing and arranging its plumage, with its long scissors-like bill, which it seemed to perform with great ease and dexterity. It refused every kind of food offered it, and I am persuaded never feeds but when on the wing. As to the reports of its frequenting oyster beds, and feeding on these fish, they are contradicted by all those persons with whom I have conversed, whose long residence on the coast, where those birds are common, has given them the best opportunities of knowing.

The Shearwater is nineteen inches in length, from the point of the bill to the extremity of the tail, the tips of the wings, when shut, extend full four inches farther; breadth three feet eight inches; length of the lower mandible four inches and a half, of the upper three inches and a half, both of a scarlet red, tinged with orange, and ending with black; the lower extremely thin, the upper grooved so as to receive the edge of the lower; the nostril is large and pervious, placed in a hollow near the base and edge of the upper mandible, where it projects greatly over the lower; upper part of the head, neck, back and scapulars, deep black; wings the same, except the secondaries, which are white on the inner vanes, and also tipped with white; tail forked, consisting of twelve feathers, the two middle ones about an inch and a half shorter than the exterior ones, all black, broadly edged on both sides with white; tail-coverts white on the outer sides, black in the middle; front, passing down the neck below the eye, throat, breast, and whole lower parts, pure white; legs and webbed feet bright scarlet, formed almost exactly like those of the Tern. Weight twelve ounces avoirdupois. The female weighed nine ounces, and measured only sixteen inches in length, and three feet three inches in extent, the colors and markings were the same as those of the male, with the exception of the tail, which was white, shafted and broadly centered with black.

The birds from which these descriptions were taken, were shot on the

twenty-fifth of May, before they had begun to breed. The female contained a great number of eggs, the largest of which were about the size of duck-shot; the stomach, in both, was an oblong pouch, ending in a remarkably hard gizzard, curiously puckered or plaited, containing the half dissolved fragments of the small silver-sides, pieces of shrimps, small crabs, and skippers, or sand fleas.

On some particular parts of the coast of Virginia, these birds are seen, on low sand-bars, in flocks of several hundreds together. There more than twenty nests have been found within the space of a square rod. The young are at first so exactly of a color with the sand on which they sit, as to be with difficulty discovered, unless after a close search.

The Shearwater leaves our shores soon after his young are fit for the journey. He is found on various coasts of Asia, as well as America, residing principally near the tropics; and migrating into the temperate regions of the globe only for the purpose of rearing his young. He is rarely or never seen far out at sea; and must not be mistaken for another bird of the same name, a species of Petrel,* which is met with on every part of the ocean, skimming with bended wings along the summits, declivities, and hollows of the waves.

GENUS XCIII. STERNA. TERN.

SPECIES I. STERNA HIRUNDO.

G R E A T T E R N .

[Plate LX. Fig. 1.]

Arct. Zool. p. 524.—No. 448.—*Le pierre garin, ou grande Hirondelle de mer,* BUFF. VIII., 331. *Pl. Enl.* 987.—BEWICK, II., 181.†

THIS bird belongs to a tribe very generally dispersed over the shores of the ocean. Their generic characters are these:—Bill straight, sharp pointed, a little compressed and strong; nostrils linear; tongue slender, pointed; legs short; feet webbed; hind toe and its nail straight; wings long; tail generally forked. Turton enumerates twenty-five species of this genus, scattered over various quarters of the world; six of which, at least, are natives of the United States. From their long pointed wings they are generally known to seafaring people, and others residing

* *Procellaria Puffinus*, the Shearwater Petrel.

† *Sterna Hirundo*, GMEL. *Syst.* I., p. 606.—*Ind. Orn.* p. 807, No. 15.—BRISS. VI., p. 203, pl. 19, fig. 1.—TEMM. *Man. d'Orn.* p. 740.

near the seashore, by the name of *Sea Swallows*; though some few, from their near resemblance, are confounded with the Gulls.

The present species, or Great Tern, is common to the shores of Europe, Asia and America. It arrives on the coast of New Jersey about the middle or twentieth of April, led no doubt by the multitudes of fish which at that season visit our shallow bays and inlets. By many it is called the Sheep's-head Gull, from arriving about the same time with the fish of that name.

About the middle or twentieth of May this bird commences laying. The preparation of a nest, which costs most other birds so much time and ingenuity, is here altogether dispensed with. The eggs, generally three in number, are placed on the surface of the dry drift grass, on the beach or salt marsh, and covered by the female only during the night, or in wet, raw or stormy weather. At all other times the hatching of them is left to the heat of the sun. These eggs measure an inch and three-quarters in length, by about an inch and two-tenths in width, and are of a yellowish dun color, sprinkled with dark brown and pale Indian ink. Notwithstanding they seem thus negligently abandoned during the day, it is very different in reality. One or both of the parents are generally fishing within view of the place, and on the near approach of any person, instantly make their appearance over head; uttering a hoarse jarring kind of cry, and flying about with evident symptoms of great anxiety and consternation. The young are generally produced at intervals of a day or so from each other, and are regularly and abundantly fed for several weeks, before their wings are sufficiently grown to enable them to fly. At first the parents alight with the fish, which they have brought in their mouth, or in their bill, and tearing it in pieces distribute it in such portions as their young are able to swallow. Afterwards they frequently feed them without alighting, as they skim over the spot; and as the young become nearly ready to fly, they drop the fish among them, where the strongest and most active has the best chance to gobble it up. In the meantime, the young themselves frequently search about the marshes, generally not far apart, for insects of various kinds; but so well acquainted are they with the peculiar language of their parents, that warn them of the approach of an enemy, that on hearing their cries they instantly squat, and remain motionless until the danger be over.

The flight of the Great Tern, and indeed of the whole tribe, is not in the sweeping shooting manner of the land Swallows, notwithstanding their name; the motions of their long wings are slower, and more in the manner of the Gull. They have, however, great powers of wing and strength in the muscles of the neck, which enable them to make such sudden and violent plunges, and that from a considerable height, too, headlong on their prey, which they never seize but with their bills.

In the evening, I have remarked, as they retired from the upper parts of the bays, rivers and inlets, to the beach for repose, about breeding time, that each generally carried a small fish in his bill.

As soon as the young are able to fly, they lead them to the sandy shoals and ripples where fish are abundant; and while they occasionally feed them, teach them by their example to provide for themselves. They sometimes penetrate a great way inland, along the courses of rivers; and are occasionally seen about all our numerous ponds, lakes and rivers, most usually near the close of the summer.

This species inhabits Europe as high as Spitzbergen; is found on the arctic coasts of Siberia and Kamtschatka, and also on our own continent as far north as Hudson's Bay. In New England it is called by some the Mackerel Gull. It retires from all these places, at the approach of winter, to more congenial seas and seasons.

The Great Tern is fifteen inches long, and thirty inches in extent; bill reddish yellow, sometimes brilliant crimson, slightly angular on the lower mandible, and tipped with black; whole upper part of the head black, extending to a point half way down the neck behind, and including the eyes; sides of the neck, and whole lower parts, pure white; wing quills hoary, as if bleached by the weather, long and pointed; whole back, scapulars and wing, bluish white, or very pale lead color; rump and tail coverts white; tail long and greatly forked, the exterior feathers being three inches longer than the adjoining ones, the rest shortening gradually for an inch and a half to the middle ones, the whole of a pale lead color; the outer edge of the exterior ones black; legs and webbed feet brilliant red lead; membranes of the feet deeply scalloped; claws large and black, middle one the largest. The primary quill feathers are generally dark on their inner edges. The female differs in having the two exterior feathers of the tail considerably shorter. The voice of these birds is like the harsh jarring of an opening door, on its rusted hinges. The bone of the skull is remarkably thick and strong, as also the membrane that surrounds the brain; in this respect resembling the Woodpecker's. In both, this provision is doubtless intended to enable the birds to support, without injury, the violent concussions caused by the plunging of the one, and the chiselling of the other.

SPECIES II. *STERNA MINUTA.*

LESSER TERN.

[Plate LX. Fig. 2.]

Arct. Zool. No. 449.—*La petite Hirondelle de mer*, BUFF. VIII., 337. *Pl. Enl.* 996.
—BEWICK, II., 183.*

THIS beautiful little species looks like the preceding in miniature, but surpasses it far in the rich glossy satin-like white plumage with which its throat, breast, and whole lower parts, are covered. Like the former, it is also a bird of passage, but is said not to extend its migrations to so high a northern latitude, being more delicate and susceptible of cold. It arrives on the coast somewhat later than the other, but in equal and perhaps greater numbers; coasts along the shores, and also over the pools, in the salt marshes, in search of prawns, of which it is particularly fond; hovers, suspended in the air, for a few moments above its prey, exactly in the manner of some of our small Hawks, and dashes headlong down into the water after it, generally seizing it with its bill; mounts instantly again to the same height, and moves slowly along as before, eagerly examining the surface below. About the twenty-fifth of May, or beginning of June, the female begins to lay. The eggs are dropped on the dry and warm sand, the heat of which, during the day, is fully sufficient for the purpose of incubation. This heat is sometimes so great, that one can scarcely bear the hand in it for a few moments, without inconvenience. The wonder would therefore be the greater should the bird sit on her eggs during the day, when her warmth is altogether unnecessary, and perhaps injurious, than that she should cover them only during the damps of night, and in wet and stormy weather; and furnishes another proof that the actions of birds are not the effect of mere blind impulse, but of volition, regulated by reason, depending on various incidental circumstances, to which their parental cares are ever awake. I lately visited those parts of the beach on Cape May, where this little bird breeds. The eggs, generally four in number, were placed on the flat sands, safe beyond the reach of the highest summer tide. They were of a yellowish brown color, blotched with rufous, and measured nearly an inch and three-quarters in length. During my whole stay, these birds flew in crowds around me, and often within a few yards of my head, squeaking like so many young pigs,

* *Sterna minuta*, GMEL. *Syst.* I., p. 608.—*Ind. Orn.* p. 809, No. 19.—*Sterna metopoleucus*, Ib. No. 22.—BRISS. VI., p. 206, pl. 19, fig. 2.—TEMM. *Man. d'Orn.* p. 752.

which their voice strikingly resembles. A Humming Bird, that had accidentally strayed to the place, appeared suddenly among this outrageous group, several of whom darted angrily at him; but he shot like an arrow from them, directing his flight straight towards the ocean. I have no doubt but the distressing cries of the Terns had drawn this little creature to the scene, having frequently witnessed his anxious curiosity on similar occasions in the woods.

The Lesser Tern feeds on beetles, crickets, spiders, and other insects, which it picks up from the marshes; as well as on small fish, on which it plunges at sea. Like the former, it also makes extensive incursions, inland, along the river courses, and has frequently been shot several hundred miles from the sea. It sometimes sits for hours together on the sands, as if resting after the fatigues of flight to which it is exposed.

The Lesser Tern is extremely tame and unsuspicuous, often passing you in its flight, and within a few yards, as it traces the windings and indentations of the shore in search of its favorite prawns and skippers. Indeed at such times it appears either altogether heedless of man, or its eagerness for food overcomes its apprehensions for its own safety. We read in ancient authors, that the fishermen used to float a cross of wood, in the middle of which was fastened a small fish for a bait, with limed twigs stuck to the four corners, on which the bird darting was entangled by the wings. But this must have been for mere sport, or for its feathers, the value of the bird being scarcely worth the trouble, as they are generally lean, and the flesh savoring strongly of fish.

The Lesser Tern is met with in the south of Russia, and about the Black and Caspian Sea; also in Siberia about the Irtish.* With the former, it inhabits the shores of England during the summer, where it breeds, and migrates, as it does here, to the south, as the cold of autumn approaches.

This species is nine and a half inches long, and twenty inches in extent; bill bright reddish yellow; nostril pervious; lower mandible angular; front white, reaching in two narrow points over the eye; crown, and band through the eye, and hind-head, black, tapering to a point as it descends; cheeks, sides of the neck, and whole lower parts, of the most rich and glossy white, like the brightest satin; upper parts of the back and wings a pale glossy ash or light lead color; the outer edges of the three exterior primaries, black, their inner edges white; tail pale ash, but darker than the back, and forked, the two outer feathers an inch longer, tapering to a point; legs and feet reddish yellow; webbed feet, claws and hind toe, exactly formed like those of the preceding. The female nearly resembles the male, with the exception of having the two exterior tail feathers shorter.

* Pennant.

SPECIES III. *STERNA ARANEA.*

MARSH TERN.

[Plate LXXII. Fig. 6.]

THIS new species I first met with on the shores of Cape May, particularly over the salt marshes, and darting down after a kind of large black spider, plenty in such places. This spider can travel under water as well as above, and, during summer at least, seems to constitute the principal food of the present Tern. In several which I opened, the stomach was crammed with a mass of these spiders alone; these they frequently pick up from the pools as well as from the grass, dashing down on them in the manner of their tribe. Their voice is sharper and stronger than that of the Common Tern; the bill is differently formed, being shorter, more rounded above, and thicker; the tail is also much shorter, and less forked. They do not associate with the others; but keep in small parties by themselves.

The Marsh Tern is fourteen inches in length, and thirty-four in extent; bill thick, much rounded above, and of a glossy blackness; whole upper part of the head and hind neck black; whole upper part of the body hoary white; shafts of the quill and tail feathers pure white; line from the nostril under the eye, and whole lower parts pure white; tail forked, the outer feathers about an inch and three-quarters longer than the middle ones; the wings extend upwards of two inches beyond the tail; legs and feet black, hind toe small, straight, and pointed.

The female, as to plumage, differs in nothing from the male. The yearling birds, several of which I met with, have the plumage of the crown white at the surface, but dusky below; so that the boundaries of the black, as it will be in the perfect bird, are clearly defined; through the eye a line of black passes down the neck for about an inch, reaching about a quarter of an inch before it; the bill is not so black as in the others; the legs and feet dull orange, smutted with brown or dusky; tips and edges of the primaries blackish; shafts white.

This species breeds in the salt marshes, the female drops her eggs, generally three or four in number, on the dry drift grass, without the slightest appearance of a nest; they are of a greenish olive, spotted with brown.

A specimen of this Tern has been deposited in the museum of this city.

SPECIES IV. *STERNA PLUMBEA*.*

SHORT-TAILED TERN.

[Plate LX. Fig. 3.]

A SPECIMEN of this bird was first sent me by Mr. Beasley of Cape May; but being in an imperfect state, I could form no correct notion of the species; sometimes supposing it might be a young bird of the preceding Tern. Since that time, however, I have had an opportunity of procuring a considerable number of this same kind, corresponding almost exactly with each other. I have ventured to introduce it in this place as a new species; and have taken pains to render the figure in the plate a correct likeness of the original.

On the sixth of September, 1812, after a violent north-east storm, which inundated the meadows of Schuylkill in many places, numerous flocks of this Tern all at once made their appearance, flying over those watery spaces, picking up grasshoppers, beetles, spiders, and other insects, that were floating on the surface. Some hundreds of them might be seen at the same time, and all seemingly of one sort. They were busy, silent and unsuspicious, darting down after their prey without hesitation, though perpetually harassed by gunners, whom the novelty of their appearance had drawn to the place. Several flocks of the Yellow-shanks Snipe, and a few Purres, appeared also in the meadows at the same time, driven thither, doubtless, by the violence of the storm.

I examined upwards of thirty individuals of this species, by dissection, and found both sexes alike in color. Their stomachs contained grasshoppers, crickets, spiders, &c., but no fish. The people on the seacoast have since informed me, that this bird comes to them only in the fall, or towards the end of summer; and is more frequently seen about the mill-ponds, and fresh-water marshes, than in the bays; and add, that it feeds on grasshoppers, and other insects, which it finds on the meadows and marshes, picking them from the grass, as well as from the surface of the water. They have never known it to associate with the Lesser Tern, and consider it altogether a different bird. This opinion seems confirmed by the above circumstances, and by the fact

* Prince Musignano asserts that this is the young of the *Sterna nigra*, a bird inhabiting Europe as well as this country, and of which many nominal species have been made. In this opinion he is probably correct.

of its greater extent of wing, being full three inches wider than the Lesser Tern; and also making its appearance after the others have gone off.

The Short-tailed Tern measures eight inches and a half, from the point of the bill to the tip of the tail, and twenty-three inches in extent; the bill is an inch and a quarter in length, sharp pointed, and of a deep black color; a patch of black covers the crown, auriculars, spot before the eye, and hind-head; the forehead, eyelids, sides of the neck, passing quite round below the hind-head, and whole lower parts, are pure white; the back is dark ash, each feather broadly tipped with brown; the wings a dark lead color, extending an inch and a half beyond the tail, which is also of the same tint, and slightly forked; shoulders of the wing brownish ash; legs and webbed feet tawny. It had a sharp shrill cry when wounded and taken.

This is probably the *Brown Tern* mentioned by Willoughby, of which so many imperfect accounts have already been given. The figure in the plate, like those which accompany it, is reduced to one-half the size of life.

SPECIES V. *STERNA FULIGINOSA.*

SOOTY TERN.

[Plate LXXII. Fig. 7.]

Le Hirondelle de Mer à grande enverguer, BUFF. VIII., p. 345.—*Egg-bird*, FORST. Voy. p. 113.—*Noddy*, DAMP. Voy. III., p. 142.—*Aret. Zool.* No. 447.—LATH. *Syn.* III., p. 352.*

THIS bird has been long known to navigators, as its appearance at sea usually indicates the vicinity of land; instances, however, have occurred in which they have been met with one hundred leagues from shore.† The species is widely dispersed over the various shores of the ocean. They were seen by Dampier in New Holland; are in prodigious numbers in the Island of Aseension; and in Christmas Island are said to lay, in December, one egg on the ground, the egg is yellowish, with brown and violet spots.‡ In passing along the northern shores of Cuba and the coast of Florida and Georgia, in the month of July, I observed this species very numerous and noisy, dashing down headlong after small fish. I shot and dissected several, and found their stomachs uniformly filled

* *Sterna fuliginosa*, GMEL. *Syst.* I., p. 605.—*Ind. Orn.* p. 804, No. 4. *Gen. Syn.* III., p. 352, No. 4.

† Cook, Voy. I., p. 275.

‡ Turton.

with fish. I could perceive little or no difference between the colors of the male and female.

Length of the Sooty Tern seventeen inches, extent three feet six inches; bill an inch and a half long, sharp pointed and rounded above, the upper mandible serrated slightly near the point; nostril an oblong slit, color of the bill glossy black; irides dusky; forehead as far as the eyes white; whole lower parts and sides of the neck pure white; rest of the plumage black; wings very long and pointed, extending, when shut, nearly to the extremity of the tail, which is greatly forked, and consists of twelve feathers, the two exterior ones four inches longer than those of the middle, the whole of a deep black, except the two outer feathers, which are white, but towards the extremities a little blackish on the inner vanes; legs and webbed feet black, hind toe short.

The secondary wing feathers are eight inches shorter than the longest primary.

This bird frequently settles on the rigging of ships at sea, and, in common with another species, *S. Stolida*, is called by sailors the Noddy.

GENUS XCIV. LARUS. GULL.

SPECIES. *L. ATRICILLA.*

LAUGHING GULL.

[Plate LXXIV. Fig. 4.]

Larus atricilla, LINN. *Syst. ed. 10*, tom. I., p. 136, 5.—GMEL. *Syst. I.*, p. 600, 8.—*Ind. Orn.* p. 813, 4.—*Laughing Gull*, CATESBY, I., pl. 89.—LATH. *Gen. Syn. III.*, p. 383, 12.—*Arct. Zool.* No. 454.—*La Mouette rieuse*, BRISS. VI., p. 192, 13, pl. 18, fig. 1.—*Mouette à capuchon plombé*, TEMM. *Man. d'Orn.* p. 779.

LENGTH seventeen inches, extent three feet six inches; bill, thighs, legs, feet, sides of the mouth and eyelids, dark blood red; inside of the mouth vermillion; bill nearly two inches and a half long; the nostril is placed rather low; the eyes are black; above and below each eye there is a spot of white; the head and part of the neck are black, remainder of the neck, breast, whole lower parts, tail-coverts and tail, pure white; the scapulars, wing-coverts, and whole upper parts, are of a fine blue ash color; the first five primaries are black towards their extremities; the secondaries are tipped largely with white, and almost all the primaries slightly; the bend of the wing is white, and nearly three inches

long; the tail is almost even, it consists of twelve feathers, and its coverts reach within an inch and a half of its tip; the wings extend two inches beyond the tail; a delicate blush is perceptible on the breast and belly. Length of tarsus two inches.

The head of the female is of a dark dusky slate color, in other respects she resembles the male.

In some individuals, the crown is of a dusky gray; the upper part and sides of the neck of a lead color; the bill and legs of a dirty, dark, purplish brown. Others have not the white spots above and below the eyes; these are young birds.

The changes of plumage, to which birds of this genus are subject, have tended not a little to confound the naturalist; and a considerable collision of opinion, arising from an imperfect acquaintance with the living subjects, has been the result. To investigate thoroughly their history, it is obviously necessary that the ornithologist should frequently explore their native haunts; and to determine the species of periodical or occasional visitors, an accurate comparative examination of many specimens, either alive, or recently killed, is indispensable. Less confusion would arise among authors, if they would occasionally abandon their accustomed walks—their studies and their museums, and seek *correct* knowledge in the only place where it is to be obtained—in the grand Temple of Nature. As it respects, in particular, the tribe under review, the zealous inquirer would find himself amply compensated for all his toil, by observing these neat and clean birds coursing along the rivers and coast, enlivening the prospect by their airy movements: now skimming closely over the watery element, watching the motions of the surges, and now rising into the higher regions, sporting with the winds; while he inhaled the invigorating breezes of the ocean, and listened to the soothing murmurs of its billows.

The Laughing Gull, known in America by the name of the Black-headed Gull, is one of the most beautiful and most sociable of its genus. They make their appearance, on the coast of New Jersey, in the latter part of April; and do not fail to give notice of their arrival, by their familiarity and loquacity. The inhabitants treat them with the same indifference that they manifest towards all those harmless birds, which do not minister either to their appetite or their avarice; and hence the Black-heads may be seen in companies around the farm-house; coursing along the river shores, gleaning up the refuse of the fishermen, and the animal substances left by the tide; or scattered over the marshes, and newly-ploughed fields, regaling on the worms, insects and their larvæ, which, in the vernal season, the bounty of Nature provides for the sustenance of myriads of the feathered race.

On the Jersey side of the Delaware Bay, in the neighborhood of Fish-

ing-creek, about the middle of May, the Black-headed Gulls assemble in great multitudes, to feed upon the remains of the King Crabs, which the hogs have left, or upon the spawn, which those curious animals deposit in the sand, and which is scattered along the shore by the waves. At such times, if any one approach to disturb them, the Gulls will rise up in clouds, every individual squalling so loud, that the roar may be heard at the distance of two or three miles.

It is an interesting spectacle to behold this species when about recommencing their migrations. If the weather be calm, they will rise up in the air, spirally, chattering all the while to each other, in the most sprightly manner, their notes, at such times, resembling the singing of a hen, but far louder, changing often into a *haw, ha ha ha haw!* the last syllable lengthened out like the excessive laugh of a negro. When mounting and mingling together, like motes in the sunbeams, their black heads and wing tips, and snow-white plumage, give them a very beautiful appearance. After gaining an immense height, they all move off, with one consent, in a direct line towards the point of their destination.

This bird breeds in the marshes. The eggs are three in number, of a dun clay color, thinly marked with small irregular touches of a pale purple, and pale brown; some are of a deeper dun, with larger marks, and less tapering than others; the egg measures two inches and a quarter by one inch and a half.

The Black-heads frequently penetrate into the interior, especially as far as Philadelphia; but they seem to prefer the neighborhood of the coast, for the purpose of breeding. They retire southward early in the autumn.*

* From Mr. Ord's supplementary volume.

GENUS XCV. PROCELLARIA. PETREL.

SPECIES. *P. PELAGICA*.*

STORMY PETREL.

[Plate LX. Fig. 6.]

Arct. Zool. No. 464.—*Le Petrel; ou l'Oiseau tempête*, *Pl. Enl.* 993.—BEWICK,
II., 223.

THERE are few persons who have crossed the Atlantic, or traversed much of the ocean, who have not observed these solitary wanderers of the deep, skimming along the surface of the wild and wasteful ocean; flitting past the vessel like Swallows, or following in her wake, gleaning their scanty pittance of food from the rough and whirling surges. Habited in mourning, and making their appearance generally in greater numbers previous to or during a storm, they have long been fearfully regarded by the ignorant and superstitious, not only as the foreboding messengers of tempests and dangers to the hapless mariner; but as wicked agents, connected, somehow or other, in creating them. “*Nobody*,” say they, “can tell anything of where they come from, or how they breed, though (as sailors sometimes say) it is supposed that they hatch their eggs under their wings as they sit on the water.” This mysterious uncertainty of their origin, and the circumstances above recited, have doubtless given rise to the opinion so prevalent among this class of men, that they are in some way or other connected with that personage who has been styled the Prince of the Power of the Air. In every country where they are known, their names have borne some affinity to this belief. They have been called *Witches*;† *Stormy Petrels*; the *Devil's Birds*; *Mother Carey's Chickens*,‡ probably from some celebrated ideal hag of that name; and their unexpected and numerous appearance has frequently thrown a momentary damp over the mind of the hardiest seaman.

It is the business of the naturalist, and the glory of philosophy, to

* *Procellaria Wilsonii*, BONAPARTE, *Journal Acad. Nat. Sc. Ph.* vol. III., p. 231.—It is not the *P. pelagica*; of course the synomymes quoted by our author do not belong to this bird.

† *Arct. Zool.* p. 464.

‡ This name seems to have been originally given them by Captain Carteret's sailors, who met with these birds on the coast of Chili. See Hawkesworth's Voyages, vol. I., p. 203.

examine into the reality of these things ; to dissipate the clouds of error and superstition wherever they begin to darken and bewilder the human understanding ; and to illustrate Nature with the radiance of truth. With these objects in view, we shall now proceed, as far as the few facts we possess will permit, in our examination into the history of this celebrated species.

The *Stormy Petrel*, the least of the whole twenty-four species of its tribe enumerated by ornithologists, and the smallest of all palmated fowls, is found over the whole Atlantic Ocean, from Europe to North America, at all distances from land, and in all weathers ; but is particularly numerous near vessels immediately preceding and during a gale, when flocks of them crowd in her wake, seeming then more than usually active in picking up various matters from the surface of the water. This presentiment of a change of weather is not peculiar to the Petrel alone ; but is noted in many others, and common to all, even to those long domesticated. The Woodpeckers, the Snow-birds, the Swallows, are all observed to be uncommonly busy before a storm, searching for food with great eagerness, as if anxious to provide for the privations of the coming tempest. The common Ducks and the Geese are infallibly noisy and tumultuous before falling weather ; and though, with these, the attention of man renders any extra exertions for food at such times unnecessary, yet they wash, oil, dress and arrange their plumage with uncommon diligence and activity. The intelligent and observing farmer remarks this bustle, and wisely prepares for the issue ; but he is not so ridiculously absurd as to suppose, that the storm which follows is produced by the agency of these feeble creatures, who are themselves equal sufferers by its effects with man. He looks on them rather as useful monitors, who from the delicacy of their organs, and a perception superior to his own, point out the change in the atmosphere before it has become sensible to his grosser feelings ; and thus, in a certain degree, contribute to his security. And why should not those who navigate the ocean contemplate the appearance of this unoffending little bird in like manner, instead of eyeing it with hatred and execration ? As well might they curse the midnight light-house, that, star-like, guides them on their watery way, or the buoy, that warns them of the sunken rocks below, as this harmless wanderer, whose manner informs them of the approach of the storm, and thereby enables them to prepare for it.

The Stormy Petrels, or Mother Carey's Chickens, breed in great numbers on the rocky shores of the Bahama and the Bermuda Islands, and in some places on the coast of East Florida and Cuba. They breed in communities like the Bank Swallows, making their nests in the holes and cavities of the rocks above the sea, returning to feed their young only during the night, with the superabundant oily food from their stomachs. At these times they may be heard making a continued clattering sound

like frogs during the whole night. In the day they are silent, and wander widely over the ocean. This easily accounts for the vast distance they are sometimes seen from land, even in the breeding season. The rapidity of their flight is at least equal to the fleetness of our Swallows. Calculating this at the rate of one mile per minute, twelve hours would be sufficient to waft them a distance of seven hundred and twenty miles; but it is probable that the far greater part confine themselves much nearer land during that interesting period.

In the month of July, while on a voyage from New Orleans to New York, I saw few or none of these birds in the Gulf of Mexico, although our ship was detained there by calms for twenty days, and carried by currents as far south as Cape Antonio, the westernmost extremity of Cuba. On entering the gulf stream, and passing along the coasts of Florida and the Carolinas, these birds made their appearance in great numbers, and in all weathers; contributing much, by their sprightly evolutions of wing, to enliven the scene; and affording me every day several hours of amusement. It is indeed an interesting sight to observe these little birds in a gale, coursing over the waves, down the declivities, up the ascents of the foaming surf, that threatens to burst over their heads; sweeping along the hollow troughs of the sea, as in a sheltered valley, and again mounting with the rising billow, and, just above its surface, occasionally dropping their feet, which, striking the water, throw them up again with additional force; sometimes leaping, with both legs parallel, on the surface of the roughest waves for several yards at a time. Meanwhile they continue coursing from side to side of the ship's wake, making excursions far and wide, to the right and to the left, now a great way ahead, and now shooting astern for several hundred yards, returning again to the ship as if she were all the while stationary, though perhaps running at the rate of ten knots an hour! But the most singular peculiarity of this bird is its faculty of standing, and even running, on the surface of the water, which it performs with apparent facility. When any greasy matter is thrown overboard, these birds instantly collect around it, and facing to windward, with their long wings expanded, and their webbed feet patting the water; the lightness of their bodies, and the action of the wind on their wings, enable them to do this with ease. In calm weather they perform the same manœuvre, by keeping their wings just so much in action as to prevent their feet from sinking below the surface. According to Buffon,* it is from this singular habit that the whole genus have obtained the name Petrel, from the apostle Peter, who, as Scripture informs us, also walked on the water.

As these birds often come up immediately under the stern, one can

* Tome xxiii., p. 299.

examine their form and plumage with nearly as much accuracy as if they were in the hand. They fly with the wings forming an almost straight horizontal line with the body, the legs extended behind, and the feet partly seen stretching beyond the tail. Their common note of "weet, weet," is scarcely louder than that of a young Duck of a week old, and much resembling it. During the whole of a dark, wet and boisterous, night which I spent on deck, they flew about the after-rigging, making a singular hoarse chattering, which in sound resembled the syllables *patret tu cuk cuk tu tu*, laying the accent strongly on the second syllable *tret*. Now and then I conjectured that they alighted on the rigging, making then a lower curring noise.

Notwithstanding the superstitious fears of the seamen, who dreaded the vengeance of the survivors, I shot fourteen of these birds one calm day, in lat. 33° , eighty or ninety miles off the coast of Carolina, and had the boat lowered to pick them up. These I examined with considerable attention, and found the most perfect specimens as follow:

Length six inches and three-quarters; extent thirteen inches and a half; bill black, nostrils united in a tubular projection, the upper mandible grooved thence, and overhanging the lower like that of a bird of prey; head, back and lower parts, brown sooty black; greater wing-coverts pale brown, minutely tipped with white; sides of the vent, and whole tail-coverts, pure white; wings and tail deep black, the latter nearly even at the tip, or very slightly forked; in some specimens, two or three of the exterior tail feathers were white for an inch or so at the root; legs and naked part of the thighs black; feet webbed, with the slight rudiments of a hind toe; the membrane of the foot is marked with a spot of straw yellow, and finely serrated along the edges; eyes black. Male and female differing nothing in color.

On opening these I found the first stomach large, containing numerous round semitransparent substances, of an amber color, which I at first suspected to be the spawn of some fish; but on a more close and careful inspection, they proved to be a vegetable substance, evidently the seeds of some marine plant, and about as large as mustard seed. The stomach of one contained a fish, half digested, so large that I should have supposed it too bulky for the bird to swallow; another was filled with the tallow which I had thrown overboard; and all had quantities of the seeds already mentioned, both in their stomachs and gizzards; in the latter were also numerous minute pieces of barnacle shells. On a comparison of the seeds above mentioned with those of the *gulf-weed*, so common and abundant in this part of the ocean, they were found to be the same. Thus it appears, that these seeds floating perhaps a little below the surface, and the barnacles with which ships' bottoms usually abound, being both occasionally thrown up to the surface by the action of the vessel through the water, in blowing weather, entice these birds

to follow in the ship's wake at such times, and not, as some have imagined, merely to seek shelter from the storm, the greatest violence of which they seem to disregard. There is also the greasy dish-washings, and other oily substances, thrown over by the cook, on which they feed with avidity; but with great good nature, their manners being so gentle, that I never observed the slightest appearance of quarrelling or dispute among them.

One circumstance is worthy of being noticed, and shows the vast range they take over the ocean. In firing at these birds, a quill feather was broken in each wing of an individual, and hung fluttering in the wind, which rendered it so conspicuous among the rest, as to be known to all on board. This bird, notwithstanding its inconvenience, continued with us for nearly a week, during which we sailed a distance of more than four hundred miles to the north. Flocks continued to follow us until near Sandy Hook.

The length of time these birds remain on wing is no less surprising. As soon as it was light enough in the morning to perceive them, they were found roaming about as usual; and I have often sat in the evening, in the boat which was suspended at the ship's stern, watching their movements, until it was so dark that the eye could no longer follow them, though I could still hear their low note of *weet weet*, as they approached near to the vessel below me.

These birds are sometimes driven by violent storms to a considerable distance inland. One was shot some years ago on the river Schuylkill, near Philadelphia; and Bewick mentions their being found in various quarters of the interior of England. From the nature of their food, their flesh is rank and disagreeable; though they sometimes become so fat, that, as Mr. Pennant, on the authority of Brunnich, asserts, "the inhabitants of the Feroe Isles make them serve the purposes of a candle, by drawing a wick through the mouth and rump, which being lighted, the flame is fed by the fat and oil of the body."*

NOTE.—When this work was published, its author was not aware that those birds observed by navigators in almost every quarter of the globe, and known under the name of Stormy Petrels, formed several distinct species; consequently, relying on the labors of his predecessors, he did not hesitate to name the subject of this chapter the *Pelagica*, believing it to be identical with that of Europe. But the investigations of later ornithologists having resulted in the conviction that Europe possessed at least two species of these birds, it became a question whether or not those which are common on the coasts of the United States would form a third species; and an inquiry has established the fact that the Ameri-

* Brit. Zool. vol. ii., p. 434.

can Stormy Petrel, hitherto supposed to be the true *Pelagica*, is an entirely distinct species. For this discovery we are indebted to the labors of Charles Bonaparte, from whose interesting paper on the subject, published in the Journal of the Academy of Natural Sciences of Philadelphia, we shall take the liberty of making an extract. The author of the paper in question first describes and figures the true *Pelagica* of the systems; secondly, the *Leachii*, a species described by Temminck, and restricted to the vicinity of the Island of St. Kilda, but which the former found diffused over a great part of the Atlantic, east of the Banks of Newfoundland; and thirdly, the species of our coasts. He also indicates a fourth, which inhabits the Pacific Ocean; but whether or not this last be in reality a species different from those named, has not yet been determined.*

"When I first procured this species," says Mr. Bonaparte, "I considered it a nondescript, and noted it as such; the citation of Wilson's *pelagica*, among the synonymes of the true *pelagica*, by the most eminent ornithologist of the age, M. Temminck, not permitting a doubt of their identity. But having an opportunity of inspecting the very individual from which Wilson took his figure, and drew up his description, I was undeceived, by proving the unity of my specimens with that of Wilson, and the discrepancy of these with that of Temminck. The latter had certainly never seen an individual from America, otherwise the difference between the two species would not have eluded the accurate eye of this naturalist. I propose for this species the name of *Wilsonii*, as a small testimony of respect to the memory of the author of the American Ornithology, whose loss science and America will long deplore. The yellow spot upon the membrane of the feet distinguishes this species, at first sight, from the others; and this character remains permanent in the dried specimens."—*G. Ord.*

* Charles Bonaparte, Prince of Musignano, has recently established this species under the name of *Procellaria Oceanica*; and assigns to it the following essential characters: *Tail* slightly emarginate, the *wings* when closed extending more than an inch beyond its tip; length of the *tarsus* nearly one inch and three-quarters (eighteen French lines).

We extract from his paper, in the Zoological Journal, the following observations: "In comparing this species (*P. oceanica*) to the three others (*P. pelagica*, *P. Leachii*, and *P. Wilsonii*), it will be seen that it is the largest and the most varied with white of the subgenus, and that it can be confounded only with *P. Wilsonii*, to which it bears a strong resemblance in shape and color, both having the tarsi greatly elongated, the tube of the nostrils equally recurved, the upper tail-coverts entirely white, &c. But in addition to its much greater size, proportionally longer bill and tarsi, and lighter color, this new species may at first sight be distinguished from it by its wings extending so much beyond the tail, and by the want of the yellow spot on the interdigital membrane, which is found in *P. Wilsonii* only."—*J. H.*

GENUS XCVI. MERGUS. MERGANSER.

SPECIES I. *M. MERGANSER.*

GOOSANDER.

[Plate LXVIII. Fig. 1, Male.]

L'Harle, BRISS. VI., p. 231, 1, pl. 22.—BUFF. VIII., p. 267, pl. 23.—*Arct. Zool.* No. 465.—LATH. *Syn.* III., p. 418.*

THIS large and handsomely marked bird belongs to a genus different from that of the *Duck*, on account of the particular form and serratures of its bill. The genus is characterized as follows: “*Bill toothed, slender, cylindrical, hooked at the point; nostrils small, oval, placed in the middle of the bill; feet four toed, the outer toe longest.*” Naturalists have denominated it *Merganser*. In this country the birds composing this genus are generally known by the name of Fishermen, or Fisher ducks. The whole number of known species amount to only nine or ten, dispersed through various quarters of the world; of these, four species, of which the present is the largest, are known to inhabit the United States.

From the common habit of these birds in feeding almost entirely on fin and shell fish, their flesh is held in little estimation, being often lean and rancid, both smelling and tasting strongly of fish; but such are the various peculiarities of tastes, that persons are not wanting who pretend to consider them capital meat.

The Goosander, called by some the Water Pheasant, and by others the Sheldrake, Fisherman, Diver, &c., is a winter inhabitant only, of the seashores, fresh-water lakes, and rivers of the United States. They usually associate in small parties of six or eight, and are almost continually diving in search of food. In the month of April they disappear, and return again early in November. Of their particular place and manner of breeding we have no account. Mr. Pennant observes that they continue the whole year in the Orkneys; and have been shot in the Hebrides, or Western Islands of Scotland, in summer. They are also found in Iceland, and Greenland, and are said to breed there;

* *Mergus Merganser*, GMEL. *Syst.* I., p. 544, No. 2.—LATH. *Ind. Orn.* p. 828, No. 1.—*Le Harle*, BUFF. *Pl. Enl.* 951, male.—*Grand Harle*, TEMM. *Man. d'Orn.* p. 881.

some asserting that they build on trees; others that they make their nests among the rocks.

The male of this species is twenty-six inches in length, and three feet three inches in extent, the bill three inches long, and nearly one inch thick at the base, serrated on both mandibles; the upper overhanging at the tip, where each is furnished with a large nail; the ridge of the bill is black, the sides crimson red; irides red; head crested, tumid, and of a black color glossed with green, which extends nearly half way down the neck, the rest of which, with the breast and belly, are white tinged with a delicate yellowish cream; back and adjoining scapulars black; primaries and shoulder of the wing brownish black; exterior part of the scapulars, lesser coverts, and tertials white; secondaries neatly edged with black, greater coverts white, their upper halves black, forming a bar on the wing, rest of the upper parts and tail brownish ash; legs and feet the color of red sealing-wax; flanks marked with fine semicircular dotted lines of deep brown; the tail extends about three inches beyond the wings.

This description was taken from a full plumaged male. The young males, which are generally much more numerous than the old ones, so exactly resemble the females in their plumage for at least the first, and part of the second year, as scarcely to be distinguished from them; and what is somewhat singular, the crests of these and of the females are actually longer than those of the full grown male, though thinner towards its extremities. These circumstances have induced some late Ornithologists to consider them as two different species, the young, or female, having been called the *Dun Diver*. By this arrangement they have entirely deprived the Goosander of his female; for in the whole of my examinations and dissections of the present species, I have never yet found the female in *his* dress. What I consider as undoubtedly the true female of this species is figured beside him. They were both shot in the month of April, in the same creek, unaccompanied by any other, and on examination the sexual parts of each were strongly and prominently marked. The windpipe of the female had nothing remarkable in it; that of the male had two very large expansions, which have been briefly described by Willoughby, who says: "It hath a large bony labyrinth on the windpipe, just above the divarications; and the windpipe hath besides two swellings out, one above another, each resembling a powder puff." These labyrinths are the distinguishing characters of the males; and are always found even in young males who have not yet thrown off the plumage of the female, as well as in the old ones. If we admit these Dun Divers to be a distinct species, we can find no difference between their pretended females and those of the Goosander, only one kind of female of this sort being known, and this is contrary to the usual analogy of the other three species, viz., the *Red-breasted Mer-*

ganser, the *Hooded* and the *Snew*, all of whose females are well known, and bear the same comparative resemblance in color to their respective males, the length of crest excepted, as the female Goosander we have figured bears to him.

Having thought thus much necessary on this disputed point, I leave each to form his own opinion on the facts and reasoning produced, and proceed to describe the female.

MERGUS. MERGANSER.

GOOSANDER.

[Plate LXVIII. Fig. 2, Female.]

Dun Diver, LATH. *Syn.* III., p. 420.—*Arct. Zool.* No. 465.—BEWICK's *Brit. Birds*, II., p. 23.—TURT. *Syst.* p. 335.—*L'Harle femelle*, BRISS. VI., p. 236.—BUFF. VIII., p. 272.—*Pl. Enl.* 953.*

THIS generally measures an inch or two shorter than the male; the length of the present specimen was twenty-five inches, extent thirty-five inches; bill crimson on the sides, black above; irides reddish; crested head and part of the neck dark brown, lightest on the sides of the neck, where it inclines to a sorrel color; chin and throat white; the crest shoots out in long radiating flexible stripes; upper part of the body, tail, and flanks an ashy slate, tinged with brown; primaries black; middle secondaries white, forming a large speculum on the wing; greater coverts black, tipped for half an inch with white; sides of the breast, from the sorrel colored part of the neck downwards, very pale ash, with broad semicircular touches of white; belly and lower part of the breast a fine yellowish cream color, a distinguishing trait also in the male; legs and feet orange red.

* *Mergus Castor*, GMEL. *Syst.* I., p. 545, et var.—LATH. *Ind. Orn.* p. 829, No. 2.—*Dun Diver*, MONTAGU, *Orn. Dict. Sup.*

SPECIES II. *MERGUS SERRATOR.*

RED-BREASTED MERGANSER.

[Plate LXIX. Fig. 2.]

L'Harle huppée, BRISS. VI., p. 237, 2, pl. 23.—BUFF. VIII., p. 273.—*Pl. Enl.* 207.—BEWICK, II., p. 235, EDW. pl. 95.—LATH. *Syn.* III., p. 432.

THIS is much more common in our fresh waters than either of the preceding, and is frequently brought to the Philadelphia market from the shores of the Delaware. It is an inhabitant of both continents. In the United States it is generally migratory; though a few are occasionally seen in autumn, but none of their nests have as yet come under my notice. They also frequent the seashore, keeping within the bays and estuaries of rivers. They swim low in the water, and when wounded in the wing, very dexterously contrive to elude the sportsman or his dog, by diving and coming up at a great distance, raising the bill only, above water, and dipping down again with the greatest silence. The young males of a year old are often found in the plumage of the female; their food consists of small fry, and various kinds of shell fish.

The Red-Breasted Merganser is said by Pennant to breed on Loch Mari in the county of Ross, in North Britain; and also in the Isle of Ilay. Latham informs us that it inhabits most parts of the north of Europe on the continent, and as high as Iceland; also in the Russian dominions about the great rivers of Siberia, and the Lake Baikal. Is said to be frequent in Greenland, where it breeds on the shores. The inhabitants often take it by darts thrown at it, especially in August, being then in moult. At Hudson's Bay, according to Hutchins, they come in pairs about the beginning of June, as soon as the ice breaks up, and build soon after their arrival, chiefly on dry spots of ground in the islands; lay from eight to thirteen white eggs, the size of those of a duck; the nest is made of withered grass, and lined with the down of the breast. The young are of a dirty brown like young goslings. In October they all depart southward to the lakes, where they may have open water.

This species is twenty-two inches in length, and thirty-two in extent; the bill is two inches and three-quarters in length, of the color of bright sealing-wax, ridged above with dusky; the nail at the tip large, blackish,

and overhanging; both mandibles are thickly serrated; irides red; head furnished with a long hairy crest which is often pendent, but occasionally erected, as represented in the plate; this and part of the neck is black glossed with green; the neck under this for two or three inches is pure white; ending in a broad space of reddish ochre spotted with black, which spreads over the lower part of the neck and sides of the breast; shoulders, back, and tertials deep velvety black, the first marked with a number of singular roundish spots of white; scapulars white; wing coverts mostly white, crossed by two narrow bands of black; primaries black, secondaries white, several of the latter edged with black; lower part of the back, the rump and tail coverts gray speckled with black; sides under the wings elegantly crossed with numerous waving lines of black; belly and vent white; legs and feet red; the tail dusky ash; the black of the back passes up the hind neck in a narrow band to the head.

The female is twenty-one inches in length, and thirty in extent; the crested head and part of the neck are of a dull sorrel color; irides yellow; legs and bill red, upper parts dusky slate; wings black, greater coverts largely tipped with white, secondaries nearly all white; sides of the breast slightly dusky; whole lower parts pure white; the tail is of a lighter slate than the back. The crest is much shorter than in the male, and sometimes there is a slight tinge of ferruginous on the breast.

The windpipe of the male of this species is very curious, and differs something from that of the Goosander. About two inches from the mouth it swells out to four times its common diameter, continuing of that size for about an inch and a half. This swelling is capable of being shortened or extended; it then continues of its first diameter for two inches or more, when it becomes flattish, and almost transparent for other two inches; it then swells into a bony labyrinth of more than two inches in length by one and a half in width, over the hollow sides of which is spread a yellowish skin like parchment. The left side of this, fronting the back of the bird, is a hard bone. The divarications come out very regularly from this at the lower end, and enter the lungs.

The intention of Nature in this extraordinary structure is probably to enable the bird to take down a supply of air to support respiration while diving; yet why should the female, who takes the same submarine excursions as the male, be entirely destitute of this apparatus?

SPECIES III. *MERGUS ALBELLUS.*

THE SMEW, OR WHITE NUN.

[Plate LXXI. Fig. 4.]

Le petit Harle huppé, ou la Piette, BRISS. VI., p. 243, 3, pl. 24, fig. 1.—BUFF. VIII., p. 275, pl. 24.—*Pl. Enl.* 449, male 450, female.—BEWICK, II., p. 238.—LATH. *Syn.* III., p. 428.—*Arct. Zool.* No. 468.

THIS is another of those Mergansers commonly known in this country by the appellation of Fishermen, Fisher Ducks, or Divers. The present species is much more common on the coasts of New England than farther to the south. On the shores of New Jersey it is very seldom met with. It is an admirable diver, and can continue for a long time under water. Its food is small fry, shell fish, shrimps, &c. In England, as with us, the Smew is seen only during winter; it is also found in France, in some parts of which it is called *la Piette*, as in parts of England it is named the Magpie Diver. Its breeding place is doubtless in the Arctic regions, as it frequents Iceland; and has been observed to migrate with other Mergansers and several kinds of Ducks up the river Wolga in February.*

The Smew, or White Nun, is nineteen inches in length, and two feet three inches in extent; bill black, formed very much like that of the Red-breasted M., but not so strongly toothed; irides dark; head crested; crown white, hind head black, round the area of the eye a large oval space of black; whole neck, breast, and belly white, marked on the upper and lower part of the breast with a curving line of black; back black; scapulars white, crossed with several faint dusky bars; shoulder of the wing and primaries black, secondaries and greater coverts black broadly tipped with white; across the lesser coverts a large band of white; sides and flanks crossed with waving lines; tail dark ash; legs and feet pale bluish slate.

The female is considerably less than the male; the bill a dark lead color; crest of the same peculiar form as that of the male, but less, and of a reddish brown; marked round the area of the eyes with dusky; cheeks, fore part of the neck, and belly white; round the middle of the neck a collar of pale brown; breast and shoulders dull brown and

* Dec. Russ. II., p. 145.

whitish intermixed; wings and back marked like those of the male; but of a deep brownish ash in those parts which in him are black; legs and feet pale blue. The young birds, as in the other three species, strongly resemble the female during the first and part of the second year. As these changes of color, from the garb of the female to that of the male, take place in the remote regions of the north, we have not the opportunity of detecting them in their gradual progress to full plumage. Hence, as both males and females have been found in the same dress, some writers have considered them as a separate species from the Smew, and have given to them the title of the Red-headed Smew.

In the ponds of New England, and some of the lakes in the state of New York, where the Smew is frequently observed, these red-headed kind are often found in company, and more numerous than the other, for very obvious reasons, and bear, in the markings, though not in the colors, of their plumage, evident proof of their being the same species, but younger birds or females. The male, like the Muscovy Drake and many others, when arrived at his full size is nearly one-third heavier than the female, and this disproportion of weight, and difference of color, in the full grown males and females are characteristic of the whole genus.

SPECIES IV. *MERGUS CUCULLATUS.*

HOODED MERGANSER.

[Plate LXIX. Fig. 1.]

L'Harle huppé de Virginie, BRISS. VI., p. 258, 8.—*Pl. Enl.* 935 male, 936 female.—*L'Harle couronné*, BUFF. VIII., p. 280.—*Round-crested Duck*: EDW. pl. 360.—CATESB. I., pl. 94.—*Arct. Zool.* No. 467.—LATH. *Syn.* 10, p. 426.

THIS species on the seacoast is usually called the *Hairy head*. They are more common, however, along our lakes and fresh-water rivers than near the sea; tracing up creeks, and visiting mill ponds, diving perpetually for their food. In the creeks and rivers of the Southern States they are very frequently seen during the winter. Like the *Red-breasted* they are migratory, the manners, food, and places of resort of both being very much alike.

The Hooded Merganser is eighteen inches in length, and two feet in extent; bill blackish red, narrow, thickly toothed, and furnished with a projecting nail at the extremity; the head is ornamented with a large circular crest, which the bird has the faculty of raising or depressing at pleasure; the fore part of this, as far as the eye, is black, thence to

the hind head white and elegantly tipped with black; it is composed of two separate rows of feathers, radiating from each side of the head, and which may be easily divided by the hand; irides golden; eye very small; neck black, which spreads to and over the back; part of the lesser wing coverts very pale ash, under which the greater coverts and secondaries form four alternate bars of black and white, tertials long, black, and streaked down the middle with white; the black on the back curves handsomely round in two points on the breast, which, with the whole lower parts, are pure white; sides under the wings and flanks reddish brown, beautifully crossed with parallel lines of black; tail pointed, consisting of twenty feathers of a sooty brown; legs and feet flesh colored; claws large and stout. The windpipe has a small labyrinth.

The female is rather less, the crest smaller and of a light rust or dull ferruginous color, entirely destitute of the white; the upper half of the neck a dull drab, with semicircles of lighter, the white on the wings is the same as in the male; but the tertials are shorter and have less white; the back is blackish brown; the rest of the plumage corresponds very nearly with the male.

This species is peculiar to America; is said to arrive at Hudson's Bay about the end of May; builds close to the lakes; the nest is composed of grass lined with feathers from the breast; is said to lay six white eggs. The young are yellow, and fit to fly in July.*

* Hutchins, as quoted by Latham.

GENUS XCVII. ANAS. DUCK

SPECIES I. *ANAS CANADENSIS.*

CANADA GOOSE.

[Plate LXVII. Fig. 4.]

L' Oye sauvage de Canada, BRISS. vi., p. 272, 4, pl. 26.—*L' Oie à cravate*, BUFF. ix., p. 82.—EDW. pl. 151.—*Arct. Zool.* No. 471.—CATESBY, i., pl. 92.—LATH. *Syn.* iii., p. 450.*

THIS is the common Wild Goose of the United States, universally known over the whole country; whose regular periodical migrations are the sure signals of returning spring, or approaching winter. The tracts of their vast migratory journeys are not confined to the seacoast or its vicinity. In their aerial voyages to and from the north, these winged pilgrims pass over the interior on both sides of the mountains, as far west, at least, as the Osage river, and I have never yet visited any quarter of the country where the inhabitants are not familiarly acquainted with the regular passing and repassing of the Wild Geese. The general opinion here is that they are on their way to the *lakes* to breed; but the inhabitants on the confines of the great lakes that separate us from Canada, are equally ignorant with ourselves of the particular breeding places of those birds. *There* their journey north is but commencing, and how far it extends it is impossible for us at present to ascertain, from our little acquaintance with these frozen regions. They were seen by Hearne in large flocks within the arctic circle, and were then pursuing their way still further north. Captain Phipps speaks of seeing Wild Geese feeding at the water's edge, on the dreary coast of Spitzbergen, in lat. $80^{\circ} 27'$. It is highly probable that they extend their migrations under the very pole itself, amid the silent desolation of unknown countries, shut out ever since creation from the prying eye of man by everlasting and insuperable barriers of ice. That such places abound with their suitable food we cannot for a moment doubt; while the absence of their great destroyer man, and the splendors of a perpetual day, may render such regions the most suitable for their purpose.

Having fulfilled the great law of nature, the approaching rigors of

* *Anas Canadensis*, GMEL. *Syst.* i., p. 514.—*Pl. Enl.* 346.—*Ind. Orn.*, p. 838, No. 17.

that dreary climate oblige these vast congregated flocks to steer for the more genial regions of the south. And no sooner do they arrive at those countries of the earth inhabited by man, than carnage and slaughter is commenced on their ranks. The English at Hudson's Bay, says Pennant, depend greatly on Geese, and in favorable years kill three or four thousand, and barrel them up for use. They send out their servants as well as Indians to shoot these birds on their passage. It is in vain to pursue them; they therefore form a row of huts, made of boughs, at musket-shot distance from each other, and place them in a line across the vast marshes of the country. Each stand, or *hovel*, as they are called, is occupied by only a single person. These attend the flight of the birds, and on their approach mimic their cackle so well, that the Geese will answer and wheel and come nearer the stand. The sportsman keeps motionless, and on his knees with his gun cocked the whole time, and never fires till he has seen the eyes of the Geese. He fires as they are going from him, then picks up another gun that lies by him and discharges that. The Geese which he has killed he sets upon sticks, as if alive, to decoy others; he also makes artificial birds for the same purpose. In a good day, for they fly in very uncertain and unequal numbers, a single Indian will kill two hundred. Notwithstanding every species of Goose has a different call, yet the Indians are admirable in their imitations of every one. The autumnal flight lasts from the middle of August to the middle of October; those which are taken in this season, when the frosts begin, are preserved in their feathers, and left to be frozen for the fresh provisions of the winter stock. The feathers constitute an article of commerce, and are sent to England.

The vernal flight of the Geese lasts from the middle of April until the middle of May. Their first appearance coincides with the thawing of the swamps, when they are very lean. Their arrival from the south is impatiently attended; it is the harbinger of the spring, and the month named by the Indians the Goose moon. They appear usually at their settlements about St. George's Day, O. S., and fly northward to nestle in security. They prefer islands to the continent, as farther from the haunts of man.*

After such prodigious havoc as thus appears to be made among these birds, and their running the gauntlet, if I may so speak, for many hundreds of miles through such destructive fires, no wonder they should have become more scarce, as well as shy, by the time they reach the shores of the United States.

Their first arrival on the coast of New Jersey is early in October, and their first numerous appearance is the sure prognostic of severe weather. Those which continue all winter frequent the shallow bays and marsh

* Arct. Zool.

islands; their principal food being the broad tender green leaves of a marine plant which grows on stones and shells, and is usually called sea-cabbage; and also the roots of the sedge, which they are frequently observed in the act of tearing up. Every few days they make an excursion to the inlets on the beach for gravel. They cross, indiscriminately, over land or water, generally taking the nearest course to their object; differing in this respect from the Brant, which will often go a great way round by water rather than cross over the land. They swim well; and if wing-broken, dive and go a great way under water, causing the sportsman a great deal of fatigue before he can kill them. Except in very calm weather they rarely sleep on the water, but roost all night in the marshes. When the shallow bays are frozen, they seek the mouths of inlets near the sea, occasionally visiting the air holes in the ice; but these bays are seldom so completely frozen as to prevent them from feeding on the bars.

The flight of the Wild Geese is heavy and laborious, generally in a straight line, or in two lines approximating to a point, thus >; in both cases the van is led by an old gander, who every now and then pipes his well known *honk*, as if to ask how they come on, and the honk of "all's well" is generally returned by some of the party. Their course is in a straight line, with the exception of the undulations of their flight. When bewildered in foggy weather, they appear sometimes to be in great distress, flying about in an irregular manner, and for a considerable time over the same quarter, making a great clamor. On these occasions should they approach the earth, and alight, which they sometimes do, to rest and re-collect themselves, the only hospitality they meet with is death and destruction from a whole neighborhood already in arms for their ruin.

Wounded Geese have, in numerous instances, been completely domesticated, and readily pair with the tame Gray Geese. The offspring are said to be larger than either; but the characteristic marks of the Wild Goose still predominate. The gunners on the seashore have long been in the practice of taming the wounded of both sexes, and have sometimes succeeded in getting them to pair and produce. The female always seeks out the most solitary place for her nest, not far from the water. On the approach of every spring, however, these birds discover symptoms of great uneasiness, frequently looking up into the air, and attempting to go off. Some whose wings have been closely cut, have travelled on foot in a northern direction, and have been found at the distance of several miles from home. They hail every flock that passes overhead, and the salute is sure to be returned by the voyagers, who are only prevented from alighting among them by the presence and habitations of man. The gunners take one or two of these domesticated Geese with them to those parts of the marshes over which the wild ones

are accustomed to fly; and concealing themselves within gun-shot, wait for a flight, which is no sooner perceived by the decoy Geese, than they begin calling aloud, until the whole flock approaches so near as to give them an opportunity of discharging two and sometimes three loaded muskets among it, by which great havoc is made.

The Wild Goose, when in good order, weighs from ten to twelve, and sometimes fourteen pounds. They are sold in the Philadelphia markets at from seventy-five cents to one dollar each; and are estimated to yield half a pound of feathers a piece, which produces twenty-five or thirty cents more.

The Canada Goose is now domesticated in numerous quarters of the country, and is remarked for being extremely watchful, and more sensible of approaching changes in the atmosphere than the common Gray Goose. In England, France, and Germany, they have also been long ago domesticated. Buffon, in his account of this bird, observes, "within these few years many hundreds inhabited the great canal at Versailles, where they breed familiarly with the Swans; they were oftener on the grassy margins than in the water;" and adds, "there is at present a great number of them on the magnificent pools that decorate the charming gardens of Chantilly." Thus has America already added to the stock of domestic fowls two species, the Turkey and the Canada Goose, superior to most in size, and inferior to none in usefulness; for it is acknowledged by an English naturalist of good observation, that this last species "is as familiar, breeds as freely, and is in every respect as valuable as the common Goose."^{*}

The strong disposition of the wounded Wild Geese to migrate to the north in spring, has been already taken notice of. Instances have occurred where, their wounds having healed, they have actually succeeded in mounting into the higher regions of the air, and joined a passing party to the north; and, extraordinary as it may appear, I am well assured by the testimony of several respectable persons, who have been eye-witnesses to the fact, that they have been also known to return again in the succeeding autumn to their former habitation. These accounts are strongly corroborated by a letter which I some time ago received from an obliging correspondent at New York; which I shall here give at large, permitting him to tell his story in his own way, and conclude my history of this species.

"Mr. Platt, a respectable farmer on Long Island, being out shooting in one of the bays which, in that part of the country, abound with water fowl, wounded a Wild Goose. Being wing-tipped, and unable to fly, he caught it, and brought it home alive. It proved to be a female; and turning it into his yard, with a flock of tame Geese, it soon became

* Bewick, v. ii., p. 255.

quite tame and familiar, and in a little time its wounded wing entirely healed. In the following spring, when the Wild Geese migrate to the northward, a flock passed over Mr. Platt's barn yard; and just at that moment their leader happening to sound his bugle-note, our Goose, in whom its new habits and enjoyments had not quite extinguished the love of liberty, and remembering the well-known sound, spreads its wings, mounted into the air, joined the travellers, and soon disappeared. In the succeeding autumn the Wild Geese (as was usual) returned from the northward in great numbers, to pass the winter in our bays and rivers. Mr. Platt happened to be standing in his yard when a flock passed directly over his barn. At that instant, he observed three Geese detach themselves from the rest, and after wheeling round several times, alight in the middle of the yard. Imagine his surprise and pleasure, when by certain well remembered signs, he recognised in one of the three his long lost fugitive. It was she indeed! She had travelled many hundred miles to the lakes; had there hatched and reared her offspring; and had now returned with her little family, to share with them the sweets of civilized life.

"The truth of the foregoing relation can be attested by many respectable people, to whom Mr. Platt has related the circumstances as above detailed. The birds were all living, and in his possession, about a year ago, and had shown no disposition whatever to leave him."

The length of this species is three feet, extent five feet two inches; the bill is black; irides dark hazel; upper half of the neck black, marked on the chin and lower part of the head with a large patch of white, its distinguishing character; lower part of the neck before white; back and wing-coverts brown, each feather tipped with whitish; rump and tail black; tail coverts and vent white; primaries black, reaching to the extremity of the tail; sides pale ashy brown; legs and feet blackish ash.

The male and female are exactly alike in plumage.

SPECIES II. *ANAS HYPERBOREA.*

S N O W G O O S E.

[Plate LVIII. Fig. 5, Male.]

L'Oye de Neige, BRISS. vi., p. 288, 10.—*White Brant*, LAWSON's *Carolina*, p. 157.—
Arct. Zool. No. 477.—*Phil. Trans.* 62, p. 413.—*LATH.* *Syn. III.*, p. 445.*

THIS bird is particularly deserving of the further investigation of naturalists; for, if I do not greatly mistake, English writers have, from the various appearances which this species assumes in its progress to perfect plumage, formed no less than four different kinds, which they describe as so many distinct species, viz., the *Snow Goose*, the *White fronted* or *Laughing Goose*, the *Bean Goose*, and the *Blue-winged Goose*; all of which, I have little doubt, will hereafter be found to be nothing more than perfect and imperfect individuals, male and female, of the Snow Goose, now before us.†

This species, called on the seacoast the Red Goose, arrives in the river Delaware from the north, early in November, sometimes in considerable flocks, and is extremely noisy, their notes being shriller and more squeaking than those of the Canada, or common Wild Goose. On their first arrival they make but a short stay, proceeding, as the depth of winter approaches, farther to the south; but from the middle of February until the breaking up of the ice in March, they are frequently numerous along both shores of the Delaware, about and below Reedy Island, particularly near Old Duck Creek, in the state of Delaware. They feed on the roots of the reeds there, tearing them up from the marshes like hogs. Their flesh, like most others of their tribe that feed on vegetables, is excellent.

The Snow Goose is two feet eight inches in length, and five feet in extent; the bill is three inches in length, remarkably thick at the base, and rising high in the forehead; but becomes small and compressed at the extremity, where each mandible is furnished with a whitish rounding

* *Anas hyperborea*, GMEL. *Syst.* i., p. 504, No. 54.—*Ind. Orn.* p. 837, No. 14.—*TEMM. Man. d'Orn.* p. 816.

† This conjecture of our author is partly erroneous. The Snow Goose and the Blue-winged Goose are synonymous; but the other two named are distinct species, the characters of which are well defined by late ornithologists.

nail; the color of the bill is a purplish carmine; the edges of the two mandibles separate from each other in a singular manner for their whole length, and this gibbosity is occupied by dentated rows resembling teeth, these and the parts adjoining being of a blackish color; the whole plumage is of a snowy whiteness, with the exception, first of the fore part of the head all round as far as the eyes, which is of a yellowish rust color intermixed with white, and second, the nine exterior quill feathers, which are black shafted with white, and white at the root, the coverts of these last, and also the bastard wing, is sometimes of a pale ash color; the legs and feet of the same purplish carmine as the bill; iris dark hazel; the tail is rounded, and consists of sixteen feathers; that and the wings when shut, nearly of a length.

The bill of this bird is singularly curious; the edges of the upper and lower gibbosities have each twenty-three indentations, or strong teeth on each side; the inside or concavity of the upper mandible has also seven lateral rows of strong projecting teeth; and the tongue, which is horny at the extremity, is armed on each side with thirteen long and sharp bony teeth, placed like those of a saw with their points directed backwards; the tongue, turned up and viewed on its lower side, looks very much like a human finger with its nail. This conformation of the mandibles, exposing two rows of strong teeth, has probably given rise to the epithet *Laughing*, bestowed on one of its varieties; though it might with as much propriety have been named the Grinning Goose.

The specimen from which the above figure and description were taken, was shot on the Delaware, below Philadelphia, on the fifteenth of February; and on dissection proved to be a male; the windpipe had no labyrinth, but for an inch or two before its divarication into the lungs, was inflexible, not extensile like the rest, and rather wider in diameter. The gullet had an expansion before entering the stomach; which last was remarkably strong, the two great grinding muscles being nearly five inches in diameter. The stomach was filled with fragments of the roots of reeds, and fine sand. The intestines measured eight feet in length, and were not remarkably thick. The liver was small. For the young and female of this species, see Plate LXIX., fig. 5.

Latham observes that this species is very numerous at Hudson's Bay; that they visit Severn river in May, and stay a fortnight, but go farther north to breed; they return to Severn Fort the beginning of September, and stay till the middle of October, when they depart for the south, and are observed to be attended by their young in flocks innumerable. They seem to occupy also the western side of America, as they were seen at Aoonalashka* as well as Kamtschatka.† White Brant with black tips to their wings, were also shot by Captains Lewis and

* Ellis's Narr.

† Hist. Kamtsch.

Clark's exploring party, near the mouth of the Columbia river, which were probably the same as the present species.* Mr. Pennant says "they are taken by the Siberians in nets, under which they are decoyed by a person covered with a white skin, and crawling on all-fours; when others driving them, these *stupid* birds mistaking him for their leader, follow him, when they are entangled in the nets, or led into a kind of pound made for the purpose!" We might here with propriety add—*This wants confirmation.*

• *ANAS HYPERBOREA.*

YOUNG OF THE SNOW GOOSE.

[Plate LXIX. Fig. 5, Female.]

Bean Goose? LATH. *Syn.* III., p. 464.—*White-fronted Goose?* Ibid. III., p. 463.—*Arct. Zool.* No. 474. *Blue-winged Goose?* LATH. *Syn.* III., p. 469.†

THE full plumaged perfect male bird of this species has already been figured in the preceding plate, and I now hazard a conjecture, founded on the best examination I could make of the young bird here figured, comparing it with the descriptions of the different accounts above referred to, that the whole of them have been taken from the various individuals of the present, in a greater or lesser degree of approach to its true and perfect colors.

These birds pass along our coasts, and settle in our rivers, every autumn; among thirty or forty there are seldom more than six or eight pure white, or old birds. The rest vary so much that no two are exactly alike; yet all bear the most evident marks in the particular structure of their bills, &c., of being the same identical species. A gradual change so great, as from a bird of this color to one of pure white, must necessarily produce a number of varieties, or differences in the appearance of the plumage, but the form of the bill and legs remains the same, and any peculiarity in either is the surest means we have to detect a species under all its various appearances. It is therefore to be regretted, that the authors above referred to in the synomyms, have paid so little attention to the singular conformation of the bill; for even in their

* GASS's *Journal*, p. 161.

† *Anas carunculata*, GMEL. *Syst.* I., p. 513, No. 12.—*Ind. Orn.* p. 836, No. 13. *Blue-winged Goose*, LATH. *Sup.* II., p. 346, No. 8.—*L' Oye sauvage de la Baye de Hudson*, BRISS. VI., p. 275, No. 5.—*L' Oye des Esquimaux*, BUFF. IX., p. 80.

description of the Snow Goose, neither that nor the internal peculiarities, are at all mentioned.

The length of the bird represented in our plate, was twenty-eight inches, extent four feet eight inches; bill gibbous at the sides both above and below, exposing the teeth of the upper and lower mandibles, and furnished with a nail at the tip on both; the whole being of a light reddish purple or pale lake, except the gibbosity, which is black, and the two nails, which are of a pale light blue; nostril pervious, an oblong slit, placed nearly in the middle of the upper mandible; irides dark brown; whole head and half of the neck white; rest of the neck and breast, as well as upper part of the back, of a purplish brown, darkest where it joins the white; all the feathers being finely tipped with pale brown; whole wing coverts very pale ash, or light lead color, primaries and secondaries black; tertials long, tapering, centered with black, edged with light blue, and usually fall over the wing; scapulars cinereous brown; lower parts of the back and rump of the same light ash as the wing coverts; tail rounded, blackish, consisting of sixteen feathers edged and tipped broadly with white; tail coverts white; belly and vent whitish, intermixed with cinereous; feet and legs of the same lake color as the bill.

This specimen was a female; the tongue was thick and fleshy, armed on each side with thirteen strong bony teeth, exactly similar in appearance as well as in number, to those on the tongue of the Snow Goose; the inner concavity of the upper mandible was also studded with rows of teeth. The stomach was extremely muscular, filled with some vegetable matter, and clear gravel.

With this another was shot, differing considerably in its markings, having little or no white on the head, and being smaller; its general color dark brown intermixed with pale ash, and darker below, but evidently of the same species with the other.

SPECIES III. *ANAS BERNICLA.*

THE BRANT.

[Plate LXXII. Fig. 1.]

Le Cravant, BRISS. VI., p. 304, 16, pl. 31.—BUFF. IX., p. 87.—BEWICK, II., p. 277.
—LATH. *Syn.* III., p. 467.—*Arct. Zool.* No. 478.*

THE Brant, or as it is usually written *Brent*, is a bird well known on both continents, and celebrated in former times throughout Europe for the singularity of its origin, and the strange transformations it was supposed to undergo previous to its complete organization. Its first appearance was said to be in the form of a barnacle shell adhering to old water-soaked logs, trees, or other pieces of wood taken from the sea. Of this *Goose-bearing tree* Gerard, in his Herbal, published in 1597, has given a formal account, and seems to have reserved it for the conclusion of his work as being the most wonderful of all he had to describe. The honest naturalist however, though his belief was fixed, acknowledges that his own personal information was derived from certain shells, which adhered to a rotten tree that he dragged out of the sea between Dover and Romney in England; in some of which he found “living things without forme or shape; in others which were nearer come to ripeness, living things that were very naked, in shape like a birde; in others the birds covered with soft downe, the shell half open and the birde readie to fall out, which no doubt were the foules called Barnakles.”† Ridiculous and chimerical as this notion was, it had many advocates, and was at that time as generally believed, and with about as much reason too, as the present opinion of the annual submersion of swallows, so tenaciously insisted on by some of our philosophers, and which, like the former absurdity, will in its turn disappear before the penetrating radiance and calm investigation of truth.

The Brant and Barnacle Goose, though generally reckoned two different species, I consider to be the same.‡ Among those large flocks

* *Anas Bernicla*, GMEL. *Syst.* I., p. 513, No. 13.—*Ind. Orn.* p. 844, No. 32.—*Le Cravant*, BUFF. *Pl. Enl.* 342. *Oie Cravant*, TEMM. *Man. d'Orn.* p. 824.

† See Gerard's Herbal, Art. *Goose-bearing Tree*.

‡ The ridiculous account of the origin of the Barnacle Goose, extracted from the Herbal of Gerard, is retained for the amusement of the reader; but it is necessary to state, that the opinion of our author with respect to the identity of the Brant and Barnacle is erroneous, these birds forming distinct species.

that arrive on our coasts about the beginning of October, individuals frequently occur corresponding in their markings with that called the Barnacle of Europe, that is, in having the upper parts lighter, and the front, cheeks, and chin whitish. These appear evidently a variety of the Brant, probably young birds; what strengthens this last opinion is the fact that none of them are found so marked on their return northward in the spring.

The Brant is expected at Egg Harbor on the coast of New Jersey about the first of October, and has been sometimes seen as early as the twentieth of September. The first flocks generally remain in the bay a few days, and then pass on to the south. On recommencing their journey, they collect in one large body, and making an extensive spiral course, some miles in diameter, rise to a great height in the air, and then steer for the sea, over which they uniformly travel; often making wide circuits to avoid passing over a projecting point of land. In these aerial routes they have been met with many leagues from shore, travelling the whole night. Their line of march very much resembles that of the Canada Goose, with this exception, that frequently three or four are crowded together in the front, as if striving for precedence. Flocks continue to arrive from the north, and many remain in the bay till December, or until the weather becomes very severe, when these also move off southwardly. During their stay they feed on the bars at low water, seldom or never in the marshes; their principal food being a remarkably long and broad-leaved marine plant, of a bright green color, which adheres to stones, and is called by the country people sea cabbage; the leaves of this are sometimes eight or ten inches broad by two or three feet in length; they also eat small shell fish. They never dive, but wade about feeding at low water. During the time of high water they float in the bay in long lines, particularly in calm weather. Their voice is hoarse and honking, and when some hundreds are screaming together, reminds one of a pack of hounds in full cry. They often quarrel among themselves, and with the Ducks, driving the latter off their feeding ground. Though it never dives in search of food, yet when wing broken the Brant will go one hundred yards at a stretch under water; and is considered, in such circumstances, one of the most difficult birds to kill. About the fifteenth or twentieth of May they reappear on their way north; but seldom stop long, unless driven in by tempestuous weather.

The breeding place of the Brant is supposed to be very far to the north. They are common at Hudson's Bay, very numerous in winter on the coasts of Holland and Ireland; are called in Shetland Harra Geese, from their frequenting the sound of that name; they also visit the coast of England. Buffon relates, that in the severe winters of 1740 and 1765, during the prevalence of a strong north wind, the Brant

visited the coast of Picardy in France, in prodigious multitudes, and committed great depredations on the corn, tearing it up by the roots, trampling and devouring it; and notwithstanding the exertions of the inhabitants, who were constantly employed in destroying them, they continued in great force until a change of weather carried them off.

The Brant generally weighs about four pounds avoirdupois, and measures two feet in length, and three feet six inches in extent; the bill is about an inch and a half long, and black; the nostril large, placed nearly in its middle; head, neck, and breast black, the neck marked with a spot of white, about two inches below the eye; belly pale ash edged with white; from the thighs backwards white; back and wing coverts dusky brownish black, the plumage lightest at the tips; rump and middle of the tail coverts black, the rest of the tail coverts pure white, reaching nearly to the tip of the tail, the whole of which is black, but usually concealed by the white coverts; primaries and secondaries deep black; legs also black; irides dark hazel.

The only material difference observable between the plumage of the male and female, is, that in the latter the white spot on the neck is less, and more mottled with dusky. In young birds it is sometimes wanting, or occurs on the front, cheeks, and chin; and sometimes the upper part of the neck, only, is black,* but in full plumaged birds, of both sexes, the markings are very much alike.

The Brant is often seen in our markets for sale. Its flesh, though esteemed by many, tastes somewhat sedgy, or fishy.

* The figure of this bird given by Bewick, is in that state.

SPECIES IV. *ANAS CLYPEATA.*

SHOVELLER.

[Plate LXVII. Fig. 7.]

Le Souchet, BRISS. VI., p. 329, 6, pl. 32, fig. 1.—BUFF. IX., 191.—*Pl. Enl.* 971.—*Arct. Zool.* No. 485.—CATESB. I., pl. 96, female.—LATH. *Syn. III.*, p. 509.*

If we accept the singularly formed and disproportionate size of the bill, there are few Ducks more beautiful, or more elegantly marked than this. The excellency of its flesh, which is uniformly juicy, tender, and well tasted, is another recommendation to which it is equally entitled. It occasionally visits the seacoast; but is more commonly found on our lakes and rivers, particularly along their muddy shores, where it spends great part of its time in searching for small worms, and the larvae of insects, sifting the watery mud through the long and finely set teeth of its curious bill, which is admirably constructed for the purpose; being large, to receive a considerable quantity of matter, each mandible bordered with close-set, pectinated rows, exactly resembling those of a weaver's reed, which fitting into each other form a kind of sieve, capable of retaining very minute worms, seeds, or insects, which constitute the principal food of the bird.

The Shoveller visits us only in the winter, and is not known to breed in any part of the United States. It is a common bird of Europe, and, according to M. Baillon, the correspondent of Buffon, breeds yearly in the marshes in France. The female is said to make her nest on the ground, with withered grass, in the midst of the largest tufts of rushes or coarse herbage, in the most inaccessible part of the slaky marsh, and lays ten or twelve pale rust-colored eggs; the young, as soon as hatched, are conducted to the water by the parent birds. They are said to be at first very shapeless and ugly, for the bill is then as broad as the body, and seems too great a weight for the little bird to carry. Their plumage does not acquire its full colors until after the second moult.

* We add the following synónymes.—*Anas clypeata*, GMEL. *Syst.* I., p. 518, No. 19. *A. Mexicana*, Id. p. 519, No. 81?—*A. rubens*, Id. No. 82.—LATH. *Ind. Orn.* p. 856, No. 60; p. 857, No. 61, No. 62. *Gen. Syn.* III., p. 511, No. 56; p. 512, No. 57. *Blue-wing Shoveller*, CATESBY, I., pl. 96, female.—*Br. Zool.* No. 280, No. 281.—*Le Souchet du Mexique*, BRISS. VI., p. 337. *Le Canard Sauvage du Mexique*, Id. p. 327, No. 5.—*Canard Souchet*, TEMM. *Man. d'Orn.* p. 842.—BEWICK, II., p. 310, 313

The Blue-winged Shoveller is twenty inches long, and two feet six inches in extent; the bill is brownish black, three inches in length, greatly widened near the extremity, closely pectinated on the sides, and furnished with a nail on the tip of each mandible; irides bright orange; tongue large and fleshy; the inside of the upper and outside of the lower mandible are grooved so as to receive distinctly the long, separated reed-like teeth; there is also a gibbosity in the two mandibles, which do not meet at the sides, and this vacuity is occupied by the sifters just mentioned; head and upper half of the neck glossy, changeable green; rest of the neck and breast white, passing round and nearly meeting above; whole belly dark reddish chestnut; flanks a brownish yellow, pencilled transversely with black, between which and the vent, which is black, is a band of white; back blackish brown, exterior edges of the scapulars white; lesser wing coverts and some of the tertials a fine light sky-blue; beauty spot on the wing a changeable resplendent bronze green, bordered above by a band of white, and below with another of velvety black; rest of the wing dusky, some of the tertials streaked down their middles with white; tail dusky, pointed, broadly edged with white; legs and feet reddish orange, hind toe not finned.

With the above another was shot, which differed in having the breast spotted with dusky, and the back with white; the green plumage of the head intermixed with gray, and the belly with circular touches of white; evidently a young male in its imperfect plumage.

The female has the crown of a dusky brown; rest of the head and neck yellowish white, thickly spotted with dark brown; these spots on the breast become larger, and crescent-shaped; back and scapulars dark brown, edged and centered with yellow ochre; belly slightly rufous, mixed with white; wing nearly as in the male.

On dissection the labyrinth in the windpipe of the male was found to be small; the trachea itself seven inches long; the intestines nine feet nine inches in length, and about the thickness of a crow quill.

SPECIES V. *ANAS BOSCHAS.*

THE MALLARD.

[Plate LXX. Fig. 7.]

LATH. *Syn.* III., p. 489.—BEWICK, II., p. 291.—*Le Canard Sauvage*, BRISS. VI., p. 318, 4.—BUFF. IX., p. 115, pl. 7, 8.*

THE Mallard, or common Wild Drake, is so universally known as scarcely to require a description. It measures twenty-four inches in length, by three feet in extent, and weighs upwards of two pounds and a half;† the bill is greenish yellow; irides hazel; head and part of the neck deep glossy changeable green, ending in a narrow collar of white; the rest of the neck and breast are of a dark purplish chestnut; lesser wing coverts brown ash, greater crossed near the extremities with a band of white, and tipped with another of deep velvety black; below this lies the speculum, or beauty spot, of a rich and splendid light purple, with green and violet reflections, bounded on every side with black; quills pale brownish ash; back brown, skirted with paler; scapulars whitish, crossed with fine undulating lines of black; rump and tail coverts black glossed with green, tertials very broad and pointed at the ends; tail consisting of eighteen feathers, whitish, centered with brown ash, the four middle ones excepted, which are narrow, black glossed with violet, remarkably concave, and curled upwards to a complete circle; belly and sides a fine gray, crossed by an infinite number of fine waving lines, stronger and more deeply marked as they approach the vent; legs and feet orange red.

The female has the plumage of the upper parts dark brown broadly bordered with brownish yellow; and the lower parts yellow ochre spotted and streaked with deep brown; the chin and throat for about two inches, plain yellowish white; wings, bill, and legs, nearly as in the male.

The windpipe of the male has a bony labyrinth, or bladder-like knob

* *Anas Boschas*, GMEL. *Syst.* I., p. 538, No. 40.—*Ind. Orn.* p. 850, No. 49.—*Arct. Zool.* No. 494.—*Br. Zool.* No. 279.—*Le Canard Sauvage*, *Pl. Enl.* 776, male; 777, female.

† Mr. Ord shot a male on the Delaware, in the month of April, which weighed three pounds five ounces; and he saw them in Florida, in the winter, when they are fatter than in the spring, of greater weight. In the month of March he shot two females, in East Florida, weighing two pounds each.

puffing out from the left side. The intestines measure six feet, and are as wide as those of the Canvas-back. The windpipe is of uniform diameter until it enters the labyrinth.

This is the original stock of the common domesticated Duck, reclaimed, time immemorial, from a state of nature, and now become so serviceable to man. In many individuals the general garb of the tame Drake seems to have undergone little or no alteration; but the stamp of slavery is strongly imprinted in his dull indifferent eye, and grovelling gait; while the lofty look, long tapering neck, and sprightly action of the former, bespeak his native spirit and independence.

The common Wild Duck is found in every fresh-water lake and river of the United States in winter; but seldom frequents the seashores or salt marshes. Their summer residence is the north, the great nursery of this numerous genus. Instances have been known of some solitary pairs breeding here in autumn. In England these instances are more common. The nest is usually placed in the most solitary recesses of the marsh, or bog, amidst coarse grass, reeds, and rushes, and generally contains from twelve to sixteen eggs of a dull greenish white. The young are led about by the mother in the same manner as those of the tame Duck; but with a superior caution, a cunning and watchful vigilance peculiar to her situation. The male attaches himself to one female, as among other birds in their native state, and is the guardian and protector of her and her feeble brood. The Mallard is numerous in the rice fields of the Southern States during winter, many of the fields being covered with a few inches of water, and the scattered grains of the former harvest lying in abundance, the Ducks swim about and feed at pleasure.

The flesh of the common Wild Duck is in general and high estimation; and the ingenuity of man, in every country where it frequents, has been employed in inventing stratagems to overreach these wary birds, and procure a delicacy for the table. To enumerate all these various contrivances would far exceed our limits; a few, however, of the most simple and effective may be mentioned.

In some ponds frequented by these birds, five or six wooden figures, cut and painted so as to represent ducks, and sunk, by pieces of lead nailed on their bottoms, so as to float at the usual depth on the surface, are anchored in a favorable position for being raked from a concealment of brush, &c., on shore. The appearance of these usually attracts passing flocks, which alight, and are shot down. Sometimes eight or ten of these painted wooden ducks are fixed on a frame in various swimming postures, and secured to the bow of the gunner's skiff, projecting before it in such a manner that the weight of the frame sinks the figures to their proper depth; the skiff is then dressed with sedge or coarse grass in an artful manner, as low as the water's edge; and

under cover of this, which appears like a party of ducks swimming by a small island, the gunner floats down sometimes to the very skirts of a whole congregated multitude, and pours in a destructive and repeated fire of shot among them. In winter, when detached pieces of ice are occasionally floating in the river, some of the gunners on the Delaware paint their whole skiff or canoe white, and laying themselves flat at the bottom, with their hand over the side silently managing a small paddle, direct it imperceptibly into or near a flock, before the Ducks have distinguished it from a floating mass of ice, and generally do great execution among them. A whole flock has sometimes been thus surprised asleep, with their heads under their wings. On land, another stratagem is sometimes practised with great success. A large tight hogshead is sunk in the flat marsh, or mud, near the place where Ducks are accustomed to feed at low water, and where otherwise there is no shelter; the edges and top are artfully concealed with tufts of long coarse grass and reeds, or sedge. From within this the gunner, unseen and unsuspected, watches his collecting prey, and when a sufficient number offers, sweeps them down with great effect. The mode of catching Wild Ducks, as practised in India,* China,† the Island of Ceylon, and some parts of South America,‡ has been often described, and seems, if reliance may be placed on those accounts, only practicable in water of a certain depth. The sportsman covering his head with a hollow wooden vessel or calabash, pierced with holes to see through, wades into the water, keeping his head only above, and thus disguised, moves in among the flock, which take the appearance to be a mere floating calabash, while suddenly pulling them under by the legs, he fastens them to his girdle, and thus takes as many as he can conveniently stow away, without in the least alarming the rest. They are also taken with snares made of horse hair, or with hooks baited with small pieces of sheep's lights, which floating on the surface, are swallowed by the ducks, and with them the hooks. They are also approached under cover of a stalking horse, or a figure formed of thin boards or other proper materials, and painted so as to represent a horse or ox. But all these methods require much watching, toil, and fatigue, and their success is but trifling when compared with that of the *Decoy* now used both in France and England,§ which, from its superiority over every other mode, is well deserving the attention of persons of this country residing in the neighborhood of extensive marshes frequented by Wild Ducks; as, by this method, Mallard and other kinds may be taken by thousands at a time. The following circumstantial account of these decoys, and the manner of taking Wild Ducks in them in England, is extracted from Bewick's History of British Birds, vol. ii., p. 294.

* Naval Chron. vol. ii., p. 473.

† Du Halde, Hist. China, vol. ii., p. 142.

‡ Ulloa's Voy. i., p. 53.

§ Particularly in Picardy, in the former country, and Lincolnshire in the latter

"In the lakes where they resort," says the correspondent of that ingenious author, "the most favorite haunts of the fowl are observed: then in the most sequestered part of this haunt, they cut a ditch about four yards across at the entrance, and about fifty or sixty yards in length, decreasing gradually in width from the entrance to the farther end, which is not more than two feet wide. It is of a circular form, but not bending much for the first ten yards. The banks of the lake, for about ten yards on each side of this ditch (or pipe, as it is called) are kept clear from reeds, coarse herbage, &c., in order that the fowl may get on them to sit and dress themselves. Across this ditch, poles on each side, close to the edge of the ditch, are driven into the ground, and the tops bent to each other and tied fast. These poles at the entrance form an arch, from the top of which to the water is about ten feet. This arch is made to decrease in height, as the ditch decreases in width, till the farther end is not more than eighteen inches in height. The poles are placed about six feet from each other, and connected together by poles laid lengthwise across the arch and tied together. Over them a net with meshes sufficiently small to prevent the fowl getting through, is thrown across, and made fast to a reed fence at the entrance, and nine or ten yards up the ditch, and afterwards strongly pegged to the ground. At the farther end of the pipe, a tunnel net, as it is called, is fixed, about four yards in length, of a round form, and kept open by a number of hoops about eighteen inches in diameter, placed at a small distance from each other, to keep it distended. Supposing the circular bend of the pipe to be to the right, when you stand with your back to the lake, on the left hand side a number of reed fences are constructed, called *shootings*, for the purpose of screening from sight the *decoy-man*, and in such a manner, that the fowl in the decoy may not be alarmed, while he is driving those in the pipe: these shootings are about four yards in length, and about six feet high, and are ten in number. They are placed in the following manner—



From the end of the last shooting, a person cannot see the lake, owing to the bend of the pipe: there is then no farther occasion for shelter. Were it not for those shootings, the fowl that remain about the mouth of the pipe would be alarmed, if the person driving the fowl already under the net should be exposed, and would become so shy as to forsake the place entirely. The first thing the decoy-man does when he approaches the pipe, is to take a piece of lighted turf or peat and hold it near his mouth, to prevent the fowl smelling him. He is attended by a dog taught for the purpose of assisting him: he walks very silently about half way up the shootings, where a small piece of wood

is thrust through the reed fence, which makes an aperture just sufficient to see if any fowl are in; if not, he walks forward to see if any are about the mouth of the pipe. If there are, he stops and makes a motion to his dog, and gives him a piece of cheese or something to eat; upon receiving it he goes directly to a hole through the reed fence (No. 1), and the fowl immediately fly off the bank into the water; the dog returns along the bank between the reed fences and the pipe, and comes out to his master at the hole (No. 2). The man now gives him another reward, and he repeats his round again, till the fowl are attracted by the motions of the dog, and follow him into the mouth of the pipe. This operation is called working them. The man now retreats farther back, working the dog at different holes till the fowl are sufficiently under the net: he now commands his dog to lie down still behind the fence, and goes forward to the end of the pipe next the lake, where he takes off his hat and gives it a wave between the shooting; all the fowl under the net can see him, but none that are in the lake can. The fowl that are in sight fly forward; and the man runs forward to the next shooting and waves his hat, and so on, driving them along till they come to the tunnel net, where they creep in: when they are all in, he gives the net a twist, so as to prevent their getting back: he then takes the net off from the end of the pipe with what fowl he may have caught, and takes them out one at a time, and dislocates their necks and hangs the net on again; and all is ready for working again.

"In this manner five or six dozen have been taken at one drift. When the wind blows directly in or out of the pipe, the fowl seldom work well, especially when it blows in. If many pipes are made in a lake, they should be so constructed as to suit different winds.

"Duck and Mallard are taken from August to June. Teal or Wigeon, from October to March. Becks, Smee, Golden Eyes, Arps, Cricks, and Pintails or Sea Pheasants, in March and April.

"Poker Ducks are seldom taken, on account of their diving and getting back in the pipe.

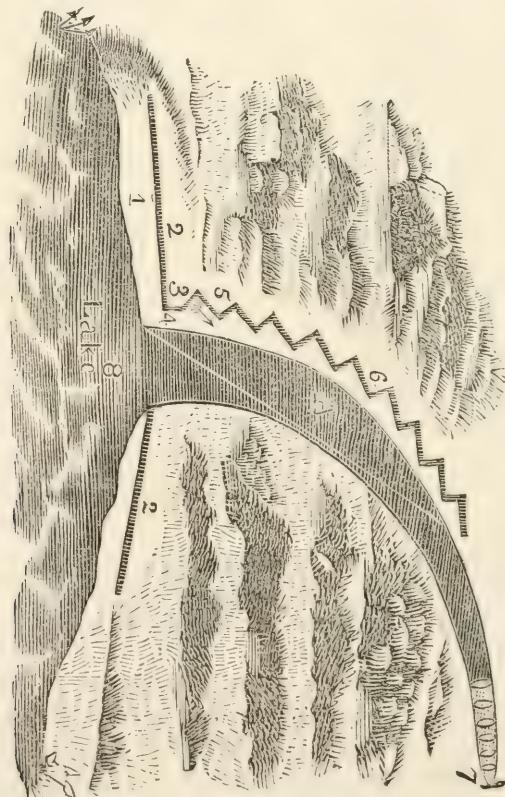
"It may be proper to observe here, that the Ducks feed during the night, and that all is ready prepared for this sport in the evening. The better to entice the Ducks into the pipe, hemp seed is strewed occasionally on the water. The season allowed by act of parliament for catching these birds in this way, is from the latter end of October till February.

"Particular spots or decoys, in the fen countries, are let to the fowlers at a rent of from five to thirty pounds per annum; and Pennant instances a season in which thirty-one thousand two hundred Ducks, including Teals and Wigeons, were sold in London only, from ten of these decoys near Wainfleet, in Lincolnshire. Formerly, according to Willoughby, the Ducks, while in moult and unable to fly, were driven

by men in boats, furnished with long poles, with which they splashed the water between long nets, stretched vertically across the pools, in the shape of two sides of a triangle, into lesser nets placed at the point; and in this way, he says, four thousand were taken at one driving in Deeping-Fen; and Latham has quoted an instance of two thousand six hundred and forty-six being taken in two days, near Spalding in Lincolnshire; but this manner of catching them while in moult is now prohibited."

REFERENCES TO THE CUT.

- No. 1. Dog's hole, where he goes to unbank the fowl.
2. Reed fences on each side of the mouth of the pipe.
3. Where the decoy-man shows himself to the fowl first, and afterwards at the end of every shooting.
4. Small reed fence to prevent the fowl seeing the dog when he goes to unbank them.
5. The shootings.
6. Dog's holes between the shootings, used when working.
7. Tunnel net at the end of the pipe.
8. Mouth of the pipe.



SPECIES VI. *ANAS STREPERA.*

THE GADWALL.

[Plate LXXI. Fig. 1, Male.]

Le Chipeau, BRISS. VI., p. 339, 8, pl. 33, fig. 1.—BUFF. IX., 187.—*Pl. Enl.* 958.—*Arct. Zool.* p. 575.—LATH. *Syn.* III., p. 515.*

THIS beautiful Duck I have met with in very distant parts of the United States, viz., on the Seneca Lake in New York, about the twentieth of October, and at Louisville on the Ohio, in February. I also shot it near Big Bone Lick in Kentucky. With its particular manners or breeding place, I am altogether unacquainted.

The length of this species is twenty inches, extent thirty-one inches; bill two inches long, formed very much like that of the Mallard, and of a brownish black; crown dusky brown, rest of the upper half of the neck brownish white, both thickly speckled with black; lower part of the neck and breast dusky black, elegantly ornamented with large concentric semicircles of white; scapulars waved with lines of white on a dusky ground, but narrower than that of the breast; primaries ash; greater wing-coverts black, and several of the lesser coverts immediately above chestnut red; speculum white, bordered below with black, forming three broad bands on the wing of chestnut, black, and white; belly dull white; rump and tail coverts black, glossed with green; tail tapering, pointed, of a pale brown ash edged with white; flanks dull white elegantly waved; tertials long, and of a pale brown, legs orange red.

The female I have never seen. Latham describes it as follows: “differs in having the colors on the wings duller, though marked the same as the male; the breast reddish brown spotted with black; the feathers on the neck and back edged with pale red; rump the same instead of black; and those elegant semicircular lines on the neck and breast wholly wanting.”

The flesh of this duck is excellent, and the windpipe of the male is furnished with a large labyrinth.

The Gadwall is very rare in the northern parts of the United States;

* *Anas strepera*, GMEL. *Syst.* I., p. 520, No. 20.—*Ind. Orn.* p. 849, No. 69.—TEMM. *Man. d'Orn.* p. 837.—BEWICK, II., p. 314.

is said to inhabit England in winter, and various parts of France and Italy; migrates to Sweden, and is found throughout Russia and Siberia.*

It is a very quick diver, so as to make it difficult to be shot; flies also with great rapidity, and utters a note not unlike that of the Mallard, but louder. Is fond of salines and ponds overgrown with reeds and rushes. Feeds during the day, as well as in the morning and evening.

NOTE.—A male specimen shot by Mr. Ord in East Florida, in the month of February, had its crown of a pale ferruginous, mixed with brown; head and neck yellowish white, barred and mottled with brown; back, outer scapulars, vent and flanks, brown, with pale zigzag lines; some of the inner scapulars reddish and cinereous brown; upper and under tail-coverts velvet black; legs and feet *yellow ochre*, part of the webs dusky. Weight two pounds.

This species is very rare on the Delaware; but in East Florida it is common. On the fresh-water ponds, in the vicinity of the river St. John, Mr. Ord shot many of them; and found them in good condition, and excellent eating.

SPECIES VII. *ANAS ACUTA.*

PINTAIL DUCK.

[Plate LXVIII. Fig. 3.]

Le Canard à longue queue, BRIS. VI., p. 369, 16, pl. 34, fig. 1, 2.—BUFF. IX., p. 199, pl. 13.—*Pl. Enl.* 954.—*Arct. Zool.* No. 500.—LATH. *Syn.* III., p. 526.

THE Pintail, or as it is sometimes called, the Sprigtail, is a common and well known Duck in our markets, much esteemed for the excellency of its flesh, and is generally in good order. It is a shy and cautious bird, feeds in the mud flats, and shallow fresh-water marshes; but rarely resides on the seacoast. It seldom dives, is very noisy, and has a kind of chattering note. When wounded they will sometimes dive, and coming up conceal themselves under the bow of the boat, moving round as it moves. Are vigilant in giving the alarm on the approach of the gunner, who often curses the watchfulness of the Sprigtail. Some Ducks when aroused disperse in different directions; but the Sprigtails when alarmed cluster confusedly together as they mount, and

* Latham.

thereby afford the sportsman a fair opportunity of raking them with advantage. They generally leave the Delaware about the middle of March, on the way to their native regions the north, where they are most numerous. They inhabit the whole northern parts of Europe and Asia, and doubtless the corresponding latitudes of America. Are said likewise to be found in Italy. Great flocks of them are sometimes spread along the isles and shores of Scotland and Ireland, and on the interior lakes of both these countries. On the marshy shores of some of the bays of Lake Ontario they are often plenty in the months of October and November. I have also met with them at Louisville on the Ohio.

The Pintail Duck is twenty-six inches in length, and two feet ten inches in extent; the bill is a dusky lead color; irides dark hazel; head and half of the neck pale brown, each side of the neck marked with a band of purple violet, bordering the white, hind part of the upper half of the neck black, bordered on each side by a stripe of white, which spreads over the lower part of the neck before; sides of the breast and upper part of the back white, thickly and elegantly marked with transverse undulating lines of black, here and there tinged with pale buff; throat and middle of the belly white tinged with cream; flanks finely pencilled with waving lines, vent white, under tail coverts black; lesser wing coverts brown ash, greater the same, tipped with orange, below which is the speculum or beauty spot of rich golden green bordered below with a band of black, and another of white; primaries dusky brown; tertials long, black, edged with white, and tinged with rust; rump and tail coverts pale ash centered with dark brown; tail greatly pointed, the two middle tapering feathers being full five inches longer than the others and black, the rest brown ash edged with white; legs a pale lead color.

The female has the crown of a dark brown color; neck of a dull brownish white, thickly speckled with dark brown; breast and belly pale brownish white, interspersed with white; back and root of the neck above black, each feather elegantly waved with broad lines of brownish white, these wavings become rufous on the scapulars; vent white, spotted with dark brown; tail dark brown spotted with white; the two middle tail feathers half an inch longer than the others.

The Sprigtail is an elegantly formed, long bodied Duck, the neck longer and more slender than most others.

SPECIES VIII. *ANAS AMERICANA.*

AMERICAN WIDGEON.

[Plate LXIX. Fig. 4.]

Le Canard Jensen, Pl. Enl. 955.—*BUFF.* ix., p. 174.—*Arct. Zool.* No. 502.—*LATH.*
Syn. iii., p. 520.

THIS is a handsomely marked and sprightly species, very common in winter along our whole coast, from Florida to Rhode Island; but most abundant in Carolina, where it frequents the rice plantations. In Martinico great flocks take short flights from one rice field to another during the rainy season, and are much complained of by the planters. The Widgeon is the constant attendant of the celebrated *Canvas-back Duck*, so abundant in various parts of the Chesapeake Bay, by the aid of whose labor he has ingenuity enough to contrive to make a good subsistence. The Widgeon is extremely fond of the tender roots of that particular species of aquatic plant on which the *Canvas-back* feeds, and for which that Duck is in the constant habit of diving. The Widgeon, who never dives, watches the moment of the *Canvas-back's* rising, and before he has his eyes well opened, snatches the delicious morsel from his mouth and makes off. On this account the *Canvas-backs* and Widgeons, or as they are called round the bay, *Bald-pates*, live in a state of perpetual contention. The only chance the latter have is to retreat, and make their approaches at convenient opportunities. They are said to be in great plenty in St. Domingo and Cayenne, where they are called *Vingeon* or *Gingeon*. Are said sometimes to perch on trees. Feed in company and have a sentinel on the watch, like some other birds. They feed little during the day, but in the evenings come out from their hiding places, and are then easily traced by their particular whistle or *whew whew*. This soft note or whistle is frequently imitated with success, to entice them within gunshot. They are not known to breed in any part of the United States. Are common in the winter months along the bays of Egg Harbor and Cape May, and also those of the Delaware. They leave these places in April, and appear upon the coasts of Hudson's Bay in May, as soon as the thaws come on, chiefly in pairs; lay there only from six to eight eggs; and feed on flies and worms in the swamps; depart in flocks in autumn.*

* Hutchins.

These birds are frequently brought to the market of Baltimore, and generally bring a good price, their flesh being excellent. They are of a lively frolicsome disposition, and with proper attention might easily be domesticated.

The Widgeon or Bald-pate measures twenty-two inches in length, and thirty inches in extent, the bill is of a slate color, the nail black; the front and crown cream colored, sometimes nearly white, the feathers inflated; from the eye backwards to the middle of the neck behind, extends a band of deep glossy green gold and purple; throat, chin, and sides of the neck before, as far as the green extends, dull yellowish white, thickly speckled with black; breast and hind part of the neck hoary bay, running in under the wings, where it is crossed with fine waving lines of black; whole belly white; vent black; back and scapulars black, thickly and beautifully crossed with undulating lines of vinous bay; lower part of the back more dusky; tail coverts long, pointed, whitish, crossed as the back; tail pointed, brownish ash, the two middle feathers an inch longer than the rest, and tapering; shoulder of the wing brownish ash, wing coverts immediately below white, forming a large spot; primaries brownish ash, middle secondaries black glossed with green, forming the speculum; tertials black edged with white, between which and the beauty spot several of the secondaries are white.

The female has the whole head and neck yellowish white, thickly speckled with black, very little rufous on the breast; the back is dark brown. The young males, as usual, very much like the females during the first season, and do not receive their full plumage until the second year. They are also subject to a regular change every spring and autumn.

NOTE.—A few of these birds breed annually in the marshes in the neighborhood of Duck Creek, in the state of Delaware. An acquaintance brought me thence, in the month of June, an egg, which had been taken from a nest situated in a cluster of alders; it was very much of the shape of the common Duck's egg; the color a dirty white; length two inches and a quarter, breadth one inch and five-eighths. The nest contained eleven eggs.

This species is seen on the Delaware as late as the first week of May. On the thirtieth of April last, I observed a large flock of them, accompanied by a few Mallards and Pintails, feeding upon the mud-flats, at the lower end of League Island, below Philadelphia. In the fresh-water ponds, situated in the neighborhood of the river St. John, in East Florida, they find an abundance of food during the winter; and they become excessively fat. It is needless to add that they are excellent eating.—*G. Ord.*

SPECIES IX. *ANAS OBSCURA.*

D U S K Y D U C K.

[Plate LXXII. Fig. 5.]

Arct. Zool. No. 469.—*LATH. Syn.* III., p. 545.

THIS species is generally known along the seacoast of New Jersey and the neighboring country by the name of the *Black Duck*, being the most common and most numerous of all those of its tribe that frequent the salt marshes. It is only partially migratory. Numbers of them remain during the summer, and breed in sequestered places in the marsh, or on the sea islands of the beach. The eggs are eight or ten in number, very nearly resembling those of the domestic duck. Vast numbers, however, regularly migrate farther north on the approach of spring. During their residence here in winter they frequent the marshes, and the various creeks and inlets with which those extensive flats are intersected. Their principal food consists of those minute snail shells so abundant in the marshes. They occasionally visit the sandy beach in search of small bivalves, and on these occasions sometimes cover whole acres with their numbers. They roost at night in the shallow ponds, in the middle of the salt marsh, particularly on islands, where many are caught by the foxes. They are extremely shy during the day; and on the most distant report of a musket, rise from every quarter of the marsh in prodigious numbers, dispersing in every direction. In calm weather they fly high, beyond the reach of shot; but when the wind blows hard, and the gunner conceals himself among the salt grass in a place over which they usually fly, they are shot down in great numbers, their flight being then low. Geese, Brant, and Black Duck are the common game of all our gunners along this part of the coast during winter; but there are at least ten Black Ducks for one Goose or Brant, and probably many more. Their voice resembles that of the Duck and Mallard; but their flesh is greatly inferior, owing to the nature of their food. They are, however, large, heavy bodied Ducks, and generally esteemed.

I cannot discover that this species is found in any of the remote northern parts of our continent; and this is probably the cause why it is altogether unknown in Europe. It is abundant from Florida to New

England; but is not enumerated among the birds of Hudson's Bay, or Greenland. Its chief residence is on the seacoast, though it also makes extensive excursions up the tide waters of our rivers. Like the Mallard they rarely dive for food, but swim and fly with great velocity.

The Dusky, or Black Duck, is two feet in length, and three feet two inches in extent; the bill is of a dark greenish ash, formed very much like that of the Mallard, and nearly of the same length; irides dark; upper part of the head deep dusky brown, intermixed on the fore part with some small streaks of drab; rest of the head and greater part of the neck pale yellow ochre, thickly marked with small streaks of blackish brown; lower part of the neck, and whole lower parts, deep dusky, each feather edged with brownish white, and with fine seams of rusty white; upper parts the same, but rather deeper; the outer vanes of nine of the secondaries bright violet blue, forming the beauty spot, which is bounded on all sides by black; wings and tail sooty brown; tail feathers sharp pointed; legs and feet dusky yellow; lining of the wings pure white.

The female has more brown on her plumage; but in other respects differs little from the male, both having the beauty spot on the wing.

NOTE.—Of all our Ducks this is perhaps the most sagacious and the most fearful of man. In the neighborhood of Philadelphia they are found in great numbers, they are notwithstanding hard to be obtained, in consequence of their extreme vigilance, and their peculiar habits. During the day they chiefly abandon the marshes; and float in considerable bodies on the Delaware, taking their repose, with the usual precaution of employing wakeful sentinels, to give notice of danger. In the evening they resort to the muddy flats and shores, and occupy themselves throughout the greater part of the night in seeking for food. When searching out their feeding grounds, every individual is on the alert; and on the slightest appearance of an enemy the whole mount and scatter, in such a manner, that, in a flock of a hundred, it would be difficult to knock down more than two or three at one shot. Their sense of smelling is uncommonly acute, and their eyesight, if we may judge from their activity at night, must be better than that of most species. When wounded on the water, they will immediately take to the shore, if in the vicinity, and conceal themselves under the first covert, so that one accustomed to this habit can have no difficulty in finding them.—*G. Ord.*

SPECIES X. *ANAS SPONSA.*

SUMMER DUCK, OR WOOD DUCK.

[Plate LXX. Fig. 3, Male.]

Le Canard d'Eté, BRISS. VI., p. 351, 11, p. 32, fig. 2.—*Le beau Canard huppé*, BUFF. IX., p. 245.—*Pl. Enl.* 980, 981.—*Summer Duck*, CATESBY, I., pl. 97.—EDW. pl. 101.—*Arct. Zool.* No. 943.—LATH. *Syn.* III., p. 546.*

THIS most beautiful of all our Ducks, has probably no superior among its whole tribe for richness and variety of colors. It is called the *Wood Duck*, from the circumstance of its breeding in hollow trees; and the *Summer Duck*, from remaining with us chiefly during the summer. It is familiarly known in every quarter of the United States, from Florida to Lake Ontario, in the neighborhood of which latter place I have myself met with it in October. It rarely visits the seashore, or salt marshes; its favorite haunts being the solitary deep and muddy creeks, ponds, and mill dams of the interior, making its nest frequently in old hollow trees that overhang the water.

The Summer Duck is equally well known in Mexico and many of the West India Islands. During the whole of our winters they are occasionally seen in the states south of the Potomac. On the tenth of January I met with two on a creek near Petersburg in Virginia. In the more northern districts, however, they are migratory. In Pennsylvania the female usually begins to lay late in April or early in May. Instances have been known where the nest was constructed of a few sticks laid in a fork of the branches; usually, however, the inside of a hollow tree is selected for this purpose. On the eighteenth of May I visited a tree containing the nest of a Summer Duck, on the banks of Tuckahoe river, New Jersey. It was an old grotesque white oak, whose top had been torn off by a storm. It stood on the declivity of the bank, about twenty yards from the water. In this hollow and broken top, and about six feet down, on the soft decayed wood, lay thirteen eggs, snugly covered with down, doubtless taken from the breast of the bird. These eggs were of an exact oval shape, less than those of a hen, the surface exceedingly fine grained, and of the highest polish and slightly yellowish, greatly resembling old polished ivory. The egg measured

* *Anas sponsa*, GMEL. *Syst.* I., p. 539, No. 43.—*Ind. Orn.* p. 876, No. 97.

two inches and an eighth by one inch and a half. On breaking one of them, the young bird was found to be nearly hatched, but dead, as neither of the parents had been observed about the tree during the three or four days preceding; and were conjectured to have been shot.

This tree had been occupied, probably by the same pair, for four successive years, in breeding time; the person who gave me the information, and whose house was within twenty or thirty yards of the tree, said that he had seen the female, the spring preceding, carry down thirteen young, one by one, in less than ten minutes. She caught them in her bill by the wing or back of the neck, and landed them safely at the foot of the tree, whence she afterwards led them to the water. Under this same tree, at the time I visited it, a large sloop lay on the stocks, nearly finished, the deck was not more than twelve feet distant from the nest, yet notwithstanding the presence and noise of the workmen, the ducks would not abandon their old breeding place, but continued to pass out and in as if no person had been near. The male usually perched on an adjoining limb, and kept watch while the female was laying; and also often while she was sitting. A tame Goose had chosen a hollow space at the root of the same tree, to lay and hatch her young in.

The Summer Duck seldom flies in flocks of more than three or four individuals together, and most commonly in pairs, or singly. The common note of the drake is *peet, peet*; but when, standing sentinel, he sees danger, he makes a noise not unlike the crowing of a young cock, *oe eek! oe eek!* Their food consists principally of acorns, seeds of the wild oats, and insects. Their flesh is inferior to that of the Blue-winged Teal. They are frequent in the markets of Philadelphia.

Among other gaudy feathers with which the Indians ornament the calumet or pipe of peace, the skin of the head and neck of the Summer Duck is frequently seen covering the stem.

This beautiful bird has often been tamed, and soon becomes so familiar as to permit one to stroke its back with the hand. I have seen individuals so tamed in various parts of the Union. Captain Boyce, collector of the port of Havre-de-Grace, informs me that about forty years ago, a Mr. Nathan Nicols, who lived on the west side of Gunpowder creek, had a whole yard swarming with Summer Ducks, which he had tamed and completely domesticated, so that they bred and were as familiar as any other tame fowls; that he (Capt. Boyce) himself saw them in that state, but does not know what became of them. Latham says that they are often kept in European menageries, and will breed there.*

The Wood Duck is nineteen inches in length, and two feet four inches in extent; bill red, margined with black; a spot of black lies between

* Gen. Syn. III., p. 547.

the nostrils, reaching nearly to the tip, which is also of the same color, and furnished with a large hooked nail; irides orange red; front, crown, and pendent crest rich glossy bronze green ending in violet, elegantly marked with a line of pure white running from the upper mandible over the eye, and with another band of white proceeding from behind the eye, both mingling their long pendent plumes with the green and violet ones, producing a rich effect; cheeks and sides of the upper neck violet; chin, throat, and collar round the neck pure white, curving up in the form of a crescent nearly to the posterior part of the eye; the white collar is bounded below with black; breast dark violet brown, marked on the fore part with minute triangular spots of white, increasing in size until they spread into the white of the belly; each side of the breast is bounded by a large crescent of white, and that again by a broader one of deep black; sides under the wings thickly and beautifully marked with fine undulating parallel lines of black, on a ground of yellowish drab; the flanks are ornamented with broad alternate semicircular bands of black and white; sides of the vent rich light violet; tail-coverts long, of a hair-like texture at the sides, over which they descend, and of a deep black glossed with green; back dusky bronze, reflecting green; scapulars black; tail tapering, dark glossy green above, below dusky; primaries dusky, silvery hoary without, tipped with violet blue; secondaries greenish blue, tipped with white; wing-coverts violet blue, tipped with black; vent dusky; legs and feet yellowish red, claws strong and hooked.

The above is as accurate a description as I can give of a very perfect specimen now before me, from which the figure in the plate was faithfully copied.

The female has the head slightly crested, crown dark purple, behind the eye a bar of white; chin, and throat for two inches, also white; head and neck dark drab; breast dusky brown, marked with large triangular spots of white; back dark glossy bronze brown, with some gold and greenish reflections. Speculum of the wings nearly the same as in the male, but the fine pencilling of the sides, and the long hair-like tail-coverts, are wanting; the tail is also shorter.

SPECIES XI. *ANAS DISCORS.*

BLUE-WINGED TEAL.

[Plate LXVIII. Fig. 4, Male.]

La Sarcelle d' Amerique, BRISS. VI., p. 452, 35.—BUFF. IX., p. 279.—*Pl. Enl.* 966.—CATESE. I., pl. 100.—*White-faced Duck*, LATH. *Syn.* III., p. 502.—*Arct. Zool.* No. 503.*

THE Blue-winged Teal is the first of its tribe that returns to us in the autumn from its breeding place in the north. They are usually seen early in September, along the shores of the Delaware, where they sit on the mud close to the edge of the water, so crowded together that the gunners often kill great numbers at a single discharge. When a flock is discovered thus sitting and sunning themselves, the experienced gunner runs his batteau ashore at some distance below or above them, and getting out, pushes her before him over the slippery mud, concealing himself all the while behind her; by this method he can sometimes approach within twenty yards of the flock, among which he generally makes great slaughter. They fly rapidly, and when they alight drop down suddenly like the Snipe or Woodcock, among the reeds or on the mud. They feed chiefly on vegetable food, and are eagerly fond of the seeds of the reeds or wild oats. Their flesh is excellent; and after their residence for a short time among the reeds, becomes very fat. As the first frosts come on, they proceed to the south, being a delicate bird, very susceptible of cold. They abound in the inundated rice fields in the Southern States, where vast numbers are taken in traps placed on small dry eminences that here and there rise above the water. These places are strewed with rice, and by the common contrivance called a *figure four*, they are caught alive in hollow traps. In the month of April they pass through Pennsylvania for the north; but make little stay at that season. I have observed them numerous on the Hudson opposite to the Catskill Mountains. They rarely visit the seashore.

This species measures about fourteen inches in length, and twenty-two inches in extent; the bill is long in proportion, and of a dark dusky slate; the front and upper part of the head are black, from the eye to the chin is a large crescent of white, the rest of the head and half of

* *Anas discors*, GMEL. *Syst.* p. 535, No. 37.—LATH. *Ind. Orn.* p. 854, No. 55.—*Blue-winged Teal*, CATESB. pl. 99, female.—*La Sarcelle de Virginie*, BRISS. VI., p. 455, No. 36.—*La Sarcelle Soucrouou*, BUFF. IX., p. 279.—*Pl. Enl.* 403, female.

the neck is of a dark slate richly glossed with green and violet, remainder of the neck and breast is black or dusky, thickly marked with semi-circles of brownish white, elegantly intersecting each other; belly pale brown, barred with dusky, in narrow lines; sides and vent the same tint, spotted with oval marks of dusky; flanks elegantly waved with large semicircles of pale brown; sides of the vent pure white; under tail-coverts black; back deep brownish black, each feather waved with large semi-ovals of brownish white; lesser wing-coverts a bright light blue; primaries dusky brown; secondaries black; speculum or beauty spot, rich green; tertials edged with black or light blue, and streaked down their middle with white; the tail, which is pointed, extends two inches beyond the wings; legs and feet yellow, the latter very small; the two crescents of white before the eyes meet on the throat.

The female differs in having the head and neck of a dull dusky slate instead of the rich violet of the male, the hind head is also whitish. The wavings on the back and lower parts more indistinct; wing nearly the same in both.

SPECIES XII. *ANAS CRECCA.*

GREEN-WINGED TEAL.

[Plate LXX. Fig. 4, Male.]

LATH. *Syn.* III., p. 554.—BEWICK's *Br. Birds*, II., p. 338.*

THE naturalists of Europe have designated this little Duck by the name of the American Teal, as being a species different from their own. On an examination, however, of the figure and description of the European Teal by the ingenious and accurate Bewick, and comparing them with the present, no difference whatever appears in the length, extent, color, or markings of either, but what commonly occurs among individuals of any other tribe; both undoubtedly belong to one and the same species.

This, like the preceding, is a fresh-water Duck, common in our markets in autumn and winter; but rarely seen here in summer. It frequents ponds, marshes, and the reedy shores of creeks and rivers. Is

* *Anas crecca*, GMEL. *Syst.* I., p. 532, No. 23.—*Anas Carolinensis*, ID. p. 533, No. 103.—*Ind. Orn.* p. 872, No. 100; p. 874, No. 101.—*Common Teal*, GEN. *Syn.* III., p. 551, No. 88.—*American Teal*, ID. p. 554, No. 90.—*European Teal*, ARCT. *Zool.* II., p. 305, P. 4to. *American Teal*, ID. No. 504. *Br. Zool.* No. 290.—*La petite Sarcelle*, BRISS. I., p. 436, No. 32, pl. 40, fig. 1.—*BUFF.* IX., p. 265, pl. 17, 18.—*Pl. Enl.* 947. TEMM. *Man. d'Orn.* p. 846.

very abundant among the rice plantations of the Southern States; flies in small parties, and feeds at night. Associates often with the Duck and Mallard, feeding on the seeds of various kinds of grasses and water plants, and also on the tender leaves of vegetables. Its flesh is accounted excellent.

The Green-winged Teal is fifteen inches in length, and twenty-four inches in extent; bill black, irides pale brown, lower eyelid whitish; head glossy reddish chestnut; from the eye backwards to the nape runs a broad band of rich silky green edged above and below by a fine line of brownish white, the plumage of the nape ends in a kind of pendent crest; chin blackish; below the chestnut, the neck, for three-quarters of an inch is white, beautifully crossed with circular undulating lines of black; back, scapulars, and sides of the breast white, thickly crossed in the same manner; breast elegantly marked with roundish or heart-shaped spots of black on a pale vinaceous ground, variegated with lighter tints; belly white; sides waved with undulating lines; lower part of the vent feathers black; sides of the same brownish white, or pale reddish cream; lesser wing-coverts brown ash, greater tipped with reddish cream; the first five secondaries deep velvety black, the next five resplendent green, forming the speculum or beauty spot, which is bounded above by pale buff, below by white, and on each side by deep black; primaries ashy brown; tail pointed, eighteen feathers, dark drab; legs and feet flesh-colored. In some a few circular touches of white appear on the breast, near the shoulder of the wing. The wind-pipe has a small bony labyrinth where it separates into the lungs; the intestines measure three feet six inches, and are very small and tender.

The female wants the chestnut bay on the head, and the band of rich green through the eye, these parts being dusky white speckled with black; the breast is gray brown, thickly sprinkled with blackish, or dark brown; the back dark brown, waved with broad lines of brownish white; wing nearly the same as in the male.

This species is said to breed at Hudson's Bay, and to have from five to seven young at a time.* In France it remains throughout the year, and builds in April, among the rushes on the edges of ponds. It has been lately discovered to breed also in England, in the mosses about Carlisle.† It is not known to breed in any part of the United States. The Teal is found in the north of Europe as far as Iceland; and also inhabits the Caspian Sea to the south. Extends likewise to China, having been recognised by Latham among some fine drawings of the birds of that country.

* Latham.

† Bewick.

SPECIES XIII. *ANAS MOLLISSIMA.*

E I D E R D U C K.

[Plate LXXI. Fig. 2, Male.]

L' Oye à duvet, ou l'Eider, BRISS. VI., p. 294, pl. 29, 30.—BUFF. IX., p. 103, pl. 6.—*Pl. Enl.* 209.—*Great Black and White Duck*, EDW. pl. 98.—BEWICK, II., p. 279.—*Arct. Zool.* No. 480.—LATH. *Syn.* III., p. 470.*

THE Eider Duck has been long celebrated in Europe for the abundance and excellence of its *down*, which for softness, warmth, lightness, and elasticity surpasses that of all other Ducks. The quantity found in one nest more than filled the crown of a hat; yet weighed no more than three-quarters of an ounce;† and it is asserted that three pounds of this down may be compressed into a space scarce bigger than a man's fist; yet is afterwards so dilatable as to fill a quilt five feet square.‡

The native regions of the Eider Duck extend from 45° north to the highest latitudes yet discovered, both in Europe and America. Solitary rocky shores and islands are their favorite haunts. Some wandering pairs have been known to breed on the rocky islands beyond Portland in the district of Maine, which is perhaps the most southern extent of their breeding place. In England the Fern Isles, on the coast of Northumberland, are annually visited by a few of these birds, being the only place in South Britain where they are known to breed. They occur again in some of the Western Isles of Scotland. Greenland and Iceland abound with them, and here, in particular places, their nests are crowded so close together that a person can scarcely walk without treading on them. The natives of those countries know the value of the down, and carry on a regular system of plunder both of it and also of the eggs. The nest is generally formed outwardly of drift grass, dry seaweed, and such like materials, the inside composed of a large quantity of down plucked from the breast of the female; in this soft elastic bed she deposits five eggs, extremely smooth and glossy, of a pale olive color; they are also warmly covered with the same kind of down. When the whole number is laid, they are taken away by the natives, and also the down with which the nest is lined, together with that which covers the eggs. The female once more strips her breast of

* *Anas mollissima*, GMEL. *Syst.* I., p. 514, No. 15.—*Ind. Orn.* p. 845, No. 35.

† Pennant.

‡ Salern. *Orn.* p. 416.

the remaining down, and lays a second time; even this, with the eggs is generally taken away, and it is said that the male in this extremity furnishes the third quantity of down from his own breast; but if the cruel robbery be a third time repeated, they abandon the place altogether. One female, during the whole time of laying, generally gives half a pound of down; and we are told, that in the year 1750, the Iceland Company sold as much of this article as amounted to three thousand seven hundred and forty-five banco dollars, besides what was directly sent to Gluckstadt.* The down from dead birds is little esteemed, having lost its elasticity.

These birds associate together in flocks, generally in deep water, diving for shell fish, which constitute their principal food. They frequently retire to the rocky shores to rest, particularly on the appearance of an approaching storm. They are numerous on the coast of Labrador, and are occasionally seen in winter as far south as the capes of Delaware. Their flesh is esteemed by the inhabitants of Greenland; but tastes strongly of fish.

The length of this species is two feet three inches, extent three feet; weight between six and seven pounds; the head is large, and the bill of singular structure, being three inches in length, forked in a remarkable manner, running high up in the forehead, between which the plumage descends nearly to the nostril; the whole of the bill is of a dull yellowish horn color somewhat dusky in the middle; upper part of the head deep velvet black, divided laterally on the hind head by a whitish band; cheeks white; sides of the head pale pea green, marked with a narrow line of white dropped from the ear feathers; the plumage of this part of the head, to the throat, is tumid, and looks as if cut off at the end, for immediately below the neck it suddenly narrows, somewhat in the manner of the Buffel-head, enlarging again greatly as it descends, and has a singular hollow between the shoulders behind; the upper part of the neck, the back, scapulars, lesser wing coverts, and sides of the rump are pure white; lower part of the breast, belly, and vent black; tail, primaries and secondaries brownish black, the tertials curiously curved, falling over the wing; legs short, yellow; webs of the feet dusky.

Latham has given us the following sketch of the gradual progress of the young males to their perfect colors: "In the first year the back is white, and the usual parts, except the crown, black; but the rest of the body is variegated with black and white. In the second year the neck and breast are spotted black and white, and the crown black. In the third the colors are nearly as when in full plumage, but less vivid, and

* Letters on Iceland, by Uno Van Troil, p. 146.

a few spots of black still remaining on the neck; the crown black, and bifid at the back part.

"The young of both sexes are the same, being covered with a kind of hairy down: throat and breast whitish; and a cinereous line from the bill through the eyes to the hind head."*

ANAS MOLLISSIMA.

E I D E R D U C K.

[Plate LXXI. Fig. 3, Female.]

THE difference of color in these two birds is singularly great. The female is considerably less than the male, and the bill does not rise so high in the forehead; the general color is a dark reddish drab, mingled with lighter touches, and everywhere spotted with black; wings dusky, edged with reddish; the greater coverts and some of the secondaries are tipped with white; tail brownish black, lighter than in the male; the plumage in general is centred with bars of black, and broadly bordered with rufous drab; cheeks and space over the eye light drab; belly dusky, obscurely mottled with black; legs and feet as in the male.

Van Troil, in his Letters on Iceland, observes respecting this Duck, that "the young ones quit the nest soon after they are hatched, and follow the female, who leads them to the water, where having taken them on her back, she swims with them a few yards, and then dives, and leaves them floating on the water! In this situation they soon learn to take care of themselves, and are seldom afterwards seen on the land; but live among the rocks, and feed on insects and seaweed."

Some attempts have been made to domesticate these birds, but hitherto without success.

* Synopsis, III., p. 471.

SPECIES XIV. *ANAS PERSPICILLATA.*

BLACK, or SURF DUCK.

[Plate LXVII. Fig. 1.]

Le grande Macreuse de la Baye de Hudson, BRISS. VI., p. 425, 30.—*La Macreuse à large bec*, BUFF. IX., p. 244.—*Pl. Enl.* 995.—*EDW.* pl. 155.—*LATH. Syn.* III., p. 479.—*Phil. Trans.* LXII., p. 417.*

THIS Duck is peculiar to America, and altogether confined to the shores and bays of the sea, particularly where the waves roll over the sandy beach. Their food consists principally of those small bivalve shell fish already described, spout fish, and others that lie in the sand near its surface. For these they dive almost constantly, both in the sandy bays and amidst the tumbling surf. They seldom or never visit the salt marshes. They continue on our shores during the winter; and leave us early in May for their breeding places in the north. Their skins are remarkably strong, and their flesh coarse, tasting of fish. They are shy birds, not easily approached, and are common in winter along the whole coast from the river St. Lawrence to Florida.

The length of this species is twenty inches, extent thirty-two inches; the bill is yellowish red, elevated at the base, and marked on the side of the upper mandible with a large square patch of black, preceded by another space of a pearl color; the part of the bill thus marked swells or projects considerably from the common surface; the nostrils are large and pervious; the sides of the bill broadly serrated or toothed; both mandibles are furnished with a nail at the extremity; irides white, or very pale cream; whole plumage a shining black, marked on the crown and hind head with two triangular spaces of pure white; the plumage on both these spots is shorter and thinner than the rest; legs and feet blood red; membrane of the webbed feet black, the primary quills are of a deep dusky brown.

On dissection the gullet was found to be gradually enlarged to the gizzard, which was altogether filled with broken shell fish. There was a singular hard expansion at the commencement of the windpipe; and another much larger about three-quarters of an inch above where it separates into the two lobes of the lungs; this last was larger than a Spanish hazel-nut, flat on one side and convex on the other. The

* *Anas perspicillata*, GMEL. *Syst.* I., p. 524, No. 25.—*Ind. Orn.* p. 847, No. 42.

protuberance on each side of the bill communicated with the nostril, and was hollow. All these were probably intended to contain supplies of air for the bird's support while under water; the last may also protect the head from the sharp edges of the shells.

The female is altogether of a sooty brown, lightest about the neck; the prominences on the bill are scarcely observable and its color dusky.

This species was also found by Captain Cooke at Nootka Sound, on the north-west coast of America.

SPECIES XV. *ANAS FUSCA.*

V E L V E T D U C K .

[Plate LXXII. Fig. 3, Male.]

Le grande Macreuse, BRiSS. VI., p. 423, 29.—BUFF. IX., p. 242.—*Pl. Enl.* 956.—*Arct. Zool.* No. 482.—BEWICK, II., p. 286.—LATH. *Syn.* III., p. 482.*

THIS and the following are frequently confounded together as one and the same species by our gunners on the sea coast. The former, however, differs in being of greater size; in having a broad band of white across the wing; a spot of the same under the eye, and in the structure of its bill. The habits of both are very much alike; they visit us only during the winter; feed entirely on shell fish, which they procure by diving; and return to the northern regions early in spring to breed. They often associate with the Scoters, and are taken frequently in the same nets with them. Owing to the rank fishy flavor of its flesh, it is seldom sought after by our sportsmen or gunners, and is very little esteemed.

The Velvet Duck measures twenty-three inches in length, and two feet nine inches in extent, and weighs about three pounds; the bill is broad, a little elevated at the base, where it is black, the rest red, except the lower mandible, which is of a pale yellowish white; both are edged with black, and deeply toothed; irides pale cream; under the eye is a small spot of white; general color of the plumage brownish black, the secondaries excepted, which are white, forming a broad band across the wing; there are a few reflections of purple on the upper plumage; the legs are red on the outside, and deep yellow sprinkled with blackish on the inner sides; tail short and pointed.

* *Anas Fusca*, GMEL. *Syst.* I., p. 507, No. 6.—*Ind. Orn.* p. 848, No. 44.—*Canard double Macreuse*, TEMM. *Man. d'Orn.* p. 858.

The female is very little less than the male; but differs considerably in its markings. The bill is dusky, forehead and cheeks white, under the eye dull brownish; behind that a large oval spot of white; whole upper parts and neck dark brownish drab; tips of the plumage lighter, secondaries white; wing quills deep brown; belly brownish white; tail hoary brown; the throat is white, marked with dusky specks; legs and feet yellow.

Latham informs us that this species is sometimes seen on the coast of England, but is not common there; that it inhabits Denmark and Russia, and in some parts of Siberia is very common. It is also found at Kamtschatka, where it is said to breed, going far inland to lay; the eggs are eight or ten, and white; the males depart, and leave the females to remain with the young until they are able to fly. In the river Ochotska they are so numerous that a party of natives, consisting of fifty or more, go off in boats and drive these ducks up the river before them, and when the tide ebbs fall on them at once, and knock them on the head with clubs, killing such numbers that each man has twenty or thirty for his share.*

SPECIES XVI. *ANAS NIGRA.*

SCOTER DUCK.

[Plate LXXII. Fig. 2.]

Le Macreuse, BRISS. VI., p. 420, pl. 38, fig. 2.—BUFF. IX., p. 234, pl. 16.—*Pl. Enl.* 978.—BEWICK, II., p. 288.—*Arct. Zool.* No. 484.—LATHE, *Syn.* III., p. 480.†

THIS Duck is but little known along our seacoast, being more usually met with in the northern than southern districts; and only during the winter. Its food is shell fish, for which it is almost perpetually diving. That small bivalve so often mentioned, small muscles, spout fish, called on the coast *razor handles*, young clams, &c., furnish it with abundant fare; and wherever these are plenty the Scoter is an occasional visitor. They swim, seemingly at ease, amidst the very roughest of the surf; but fly heavily along the surface, and to no great distance. They rarely penetrate far up our rivers, but seem to prefer the neighborhood of the ocean; differing in this respect from the Cormorant, which often makes extensive visits to the interior.

* *Hist. Kamtschatka*, p. 160.

† *Anas nigra*, GMEL. *Syst.* I., p. 508, No. 7.—*Ind. Orn.* p. 848, No. 43.—TEMM. *Man. d'Orn.* p. 856.

The Scoters are said to appear on the coasts of France in great numbers, to which they are attracted by a certain kind of small bivalve shell fish called *vameaux*, probably differing little from those already mentioned. Over the beds of these shell fish the fishermen spread their nets, supporting them, horizontally, at the height of two or three feet from the bottom. At the flowing of the tide the Scoters approach in great numbers, diving after their favorite food, and soon get entangled in the nets. Twenty or thirty dozen have sometimes been taken in a single tide. These are sold to the Roman Catholics, who eat them on those days on which they are forbidden by their religion the use of animal food, fish excepted; these birds, and a few others of the same fishy flavor, having been exempted from the interdict, on the supposition of their being cold blooded, and partaking of the nature of fish.*

The Scoter abounds in Lapland, Norway, Sweden, Russia, and Siberia. It was also found by Osbeck, between the islands of Java and St. Paul, lat. 30 and 34, in the month of June.†

This species is twenty-one inches in length, and thirty-four in extent, and is easily distinguished from all other Ducks by the peculiar form of its bill, which has at the base a large elevated knob, of a red color, divided by a narrow line of yellow, which spreads over the middle of the upper mandible, reaching nearly to its extremity, the edges and lower mandible are black; the eyelid is yellow, iris dark hazel; the whole plumage is black, inclining to purple on the head and neck; legs and feet reddish.

The female has little or nothing of the knob on the bill; her plumage above a sooty brown, and below of a grayish white.

* Bewick.

† Voy. i., p. 120.

SPECIES XVII. *ANAS RUBIDUS.*

RUDDY DUCK.

[Plate LXXI. Fig. 5, Adult Male.]

THIS very rare Duck was shot, some years ago, on the river Delaware, and appears to be an entire new species. The specimen here figured, with the female that accompanies it, and which was killed in the same river, are the only individuals of their kind I have met with. They were both preserved in the superb Museum of my much respected friend, Mr. Peale, of this city.

On comparing this Duck with the description given by Latham of the *Jamaica Shoveller*, I was at first inclined to believe I had found out the species; but a more careful examination of both satisfied me that they cannot be the same, as the present differs considerably in color; and besides has some peculiarities which the eye of that acute ornithologist could not possibly have overlooked, in his examination of the species said to have been received by him from Jamaica. Wherever the general residence of this species may be, in this part of the world, at least, it is extremely rare, since among the many thousands of Ducks brought to our markets during winter, I have never heard of a single individual of the present kind having been found among them.

The Ruddy Duck is fifteen inches and a half in length, and twenty-two inches in extent; the bill is broad at the tip, the under mandible much narrower, and both of a rich light blue; nostrils small, placed in the middle of the bill; cheeks and chin white: front, crown, and back part of the neck down nearly to the back, black; rest of the neck, whole back, scapulars, flanks and tail-coverts deep reddish brown, the color of bright mahogany; wings plain pale drab, darkest at the points; tail black, greatly tapering, containing eighteen narrow pointed feathers; the plumage of the breast and upper part of the neck is of a remarkable kind, being dusky olive at bottom, ending in hard bristly points of a silvery gray, very much resembling the hair of some kinds of seal skins; all these are thickly marked with transverse curving lines of deep brown; belly and vent silver gray, thickly crossed with dusky olive; under tail-coverts white; legs and feet ash-colored.

NOTE.—It is a circumstance in ornithology well worthy of note, that migratory birds frequently change their route, and, consequently, be-

come common in those districts where they had been either unknown, or considered very rare. Of the *Sylvia magnolia*, Wilson declares that he had seen but two individuals, and these in the western country; the *Muscicapa cecullata* he says is seldom observed in Pennsylvania, and the Northern States; the *Muscicapa pusilla*, and the *Muscicapa Canadensis*, he considered rare birds with us; notwithstanding, in the month of May, 1815, all of these were seen in our gardens; and the editor noted the last mentioned as among the most numerous of the passenger birds of that season.

The subject of this chapter affords a case in point. The year subsequent to the death of our author this Duck began to make its appearance in our waters. In October, 1814, the editor procured a female, which had been killed from a flock, consisting of five, at Windmill Island, opposite to Philadelphia. In October, 1818, he shot three individuals, two females and a male; and in April last another male, all of which, except one, were young birds. He has also at various times, since 1814, seen several other male specimens of this species, not one of which was an adult. In effect, the only old males which he has ever seen were one in Peale's Museum, and another in the Cabinet of the Academy of Natural Sciences of Philadelphia.

The Duck figured in the plate as the female was a young male, as the records of the Museum show; the great difference between its colors and markings, and those of the full-plumaged male, having induced the author to conclude it was a female, although he was perfectly familiar with the fact, that the young males of several species of this genus so nearly resemble the other sex, it requires a very accurate eye, aided by much experience, to distinguish them by their external characters. This is precisely the case with the present species; the yearlings, of both sexes, are alike; and it is not until the succeeding spring that those characters appear in the males which enable one to indicate them, independent of dissection.

The opinion of our author that this species is not the Jamaica Shoveller of Latham the editor cannot subscribe to, it appearing to him that the specimen from which Latham took his description was a young male of the Duck now before us. The latter informs us that the species appears in Jamaica in October or November; remains till March; and then retires to the north. This account coincides with ours: we see the bird on its way to the south in October; it reaches Jamaica in November; it departs thence in March, and revisits us, in regular progression, in April. Where its summer residence is we are not informed; and we are equally ignorant whether the species is numerous in any part of our continent or not.

Judging from the descriptions of the Ural Duck of European writers, there should seem to be a great affinity between that and the present.

Through the polite attention of Mr. Charles Bonaparte, the editor was enabled to examine a female specimen of the former; and as he perceived some differences, he will here note them. The bill of the Ural Duck, from the angle of the mouth, is two inches long; that of our Duck is one inch and three-quarters, it is also less gibbous at the base than in the former, and it is less depressed above; the tail feathers of the Ural Duck are guttered their whole length: those of the Ruddy Duck are slightly canaliculated at their tips; the lateral membrane of the inner toe of the latter is not half the breadth of that of the former. In other respects the females of the two species much resemble each other. In order to draw a just parallel, it would be necessary to examine a male specimen of the European bird, which our cabinets do not possess.

The female is fifteen inches in length; bill to the angle of the mouth one inch and three-quarters long, its lower half very broad, of a deep dusky olive, the nail resembling a narrow clasp of iron; nostrils oval, with a curved furrow below them; eyes small and dark; the upper part of the head, from the bill to the hind-head, variegated with shining bronze and blackish brown, the latter crossing the head in lines; cheeks white, mixed with dusky, and some touches of bronze; lores drab and dusky, mixed with a small portion of white; neck short and thick, its lower half above, extending between the shoulders, drab, mixed with dusky; throat, and whole lower parts, dusky ash, the plumage tipped with dull white, having a silver gray appearance; the upper parts are dusky, marked or pencilled with pale ferruginous, and dull white; breast slightly tinged with reddish brown; the wings are small, greatly concave, and, when closed, are short of the extremities of the tail-coverts about three-quarters of an inch—they are dusky, their coverts finely dotted or powdered with white; tail dusky, marked at its extremity with a few very fine dots of reddish white, it extends beyond its upper coverts two inches and a half; under tail-coverts white; legs and feet dusky slate; weight sixteen ounces and a half. The gizzard of the above contained sand and some small seeds. Her eggs were numerous and tolerably large; hence, as she was shot in the month of October, it was conjectured that she was a bird of the preceding year.

The young male, shot in April last, measured fifteen inches in length; its irides were dark brown; bill elevated at the base, slightly gibbous, and blue ash, from the nostrils to the tip mixed with dusky, lower mandible yellowish flesh color, marbled with dusky; crown brown black; throat and cheeks, as far as the upper angle of the bill, white, stained with bright yellow ochre; auriculars almost pure white; the black from the crown surrounded the eyes, and passed round the white of the auriculars; hind-head black, mixed with ferruginous; breast and shoulders bright ferruginous; belly ash and silver white; back and scapulars

liver brown, finely pencilled with gray and reddish white; rump and upper tail-coverts the same ground color, but the markings not so distinct; wings light liver brown, the lesser coverts finely powdered with gray; on the back and scapulars, the flanks, and round the base of the neck, the brownish red or bright mahogany colored plumage, which distinguishes the adult male, was coming out; inner webs of the tail partly dusky, outer webs, for two-thirds of their length, and the tip, dirty ferruginous; legs blue ash in front, behind, the toes and webs, dusky. When the tail is not spread, it is somewhat conical, and its narrow, pointed feathers, are slightly guttered at their tips; when spread, it is wedge-shaped. The trachea is of nearly equal diameter throughout; and has no labyrinth or enlargement at its lower part.

Another young male, shot in October, measured fifteen and a quarter inches in length, and twenty-three inches in breadth; bill greenish black, lower mandible yellowish flesh color, mixed with dusky; from the bill to the hind-head a deep liver brown, the tips of the plumage bronzed; whole upper parts dark umber brown, pencilled with pale ferruginous, buff, and white; from the corner of the mouth a brown marking extended towards the eye; tail dusky, ash colored at its extremity; legs and feet dusky ash, toes paler, having a yellowish tinge, webs dusky, claws sharp.

The shafts of the tail feathers of all these specimens, except that shot in April, projected beyond the webs; in one specimen the shaft of one of the middle feathers projected an inch, and was ramified into rigid bristles, resembling those of the tail of Buffon's *Sarcelle à queue épineuse de Cayenne*, Pl. Enl. 967; in all the specimens there was the appearance of the tail feathers having been furnished with the like process, but which had been rubbed off. Can it be that this Duck makes use of its tail in climbing up the fissures of rocks, or the hollows of trees? Its stiff, narrow feathers, not unlike those of the tail of a Woodpecker, would favor this supposition. It is worthy of note that the tail of Mr. Bonaparte's female specimen, alluded to above, is thus rubbed.

The plumage of the neck and breast, which Wilson says is of a remarkable kind, that is, stiff and bristly at the tips, is common to several Ducks, and therefore is no peculiarity.

The body of this species is broad, flat and compact; its wings short and concave; its legs placed far behind; and its feet uncommonly large; it consequently is an expert diver. It flies with the swiftness, and in the manner, of the Buffal-head; and it swims precisely as Latham reports the Ural Duck to swim, with the tail immersed in the water as far as the rump; but whether it swims thus low with the view of employing its tail as a rudder, as Latham asserts of the Ural, or merely to

conceal itself from observation, as the Scaup Duck is wont to do when wounded, and as all the divers do when pursued, I cannot determine.

This is a solitary bird; and with us we never see more than five or six together, and then always apart from other Ducks. It is uncommonly tame, so much so, that, by means of my skiff, I have never experienced any difficulty in approaching within a few yards of it. Its flesh I do not consider superior to that of the Buffel-head, which, with us, is a Duck not highly esteemed.

I should not be surprised if Buffon's *Sarcelle à queue épineuse de Cayenne* should turn out to be this species. The characters of the two certainly approximate; but as I have not been enabled to settle the question of their identity in my own mind, I shall, for the present, let the affair rest.—*G. Ord.*

ANAS RUBIDUS.

RUDDY DUCK.

[Plate LXXI. Fig. 6, Female.*]

THIS is nearly of the same size as the male; the front, lores, and crown, deep blackish brown; bill as in the male, very broad at the extremity, and largely toothed on the sides, of the same rich blue; cheeks a dull cream; neck plain dull drab, sprinkled about the auriculars with blackish; lower part of the neck and breast variegated with gray, ash, and reddish brown; the reddish dies off towards the belly, leaving this last of a dull white shaded with dusky ash; wings as in the male, tail brown; scapulars dusky brown thickly sprinkled with whitish, giving them a gray appearance; legs ash.

A particular character of this species is its tapering sharp pointed tail, the feathers of which are very narrow; the body is short; the bill very nearly as broad as some of those called Shovellers; the lower mandible much narrower than the upper.

* This is a young male, and not a female.

SPECIES XVIII. *ANAS VALISNERIA.*

CANVAS-BACK DUCK.

[Plate LXX. Fig. 5.]

THIS celebrated American species, as far as can be judged from the best figures and descriptions of foreign birds, is altogether unknown in Europe. It approaches nearest to the Pochard of England, *Anas ferina*, but differs from that bird in being superior in size and weight, in the greater magnitude of its bill, and the general whiteness of its plumage. A short comparison of the two will elucidate this point. The Canvas-back measures two feet in length, by three feet in extent, and when in the best order weighs three pounds and upwards. The Pochard, according to Latham and Bewick, measures nineteen inches in length, and thirty in extent, and weighs one pound twelve or thirteen ounces. The latter writer says of the Pochard, "the plumage above and below is wholly covered with prettily freckled slender dusky threads disposed transversely in close set zigzag lines, on a pale ground, more or less shaded off with ash;" a description much more applicable to the bird figured beside it, the *Red Head*, and which very probably is the species meant. In the figure of the Pochard given by Mr. Bewick, who is generally correct, the bill agrees very well with that of our Red Head; but is scarcely half the size and thickness of that of the Canvas-back; and the figure in the *Planches Enluminées* corresponds in that respect with Bewick's. In short, either these writers are egregiously erroneous in their figures and descriptions, or the present Duck was altogether unknown to them. Considering the latter supposition the more probable of the two, I have designated this as a new species, and shall proceed to detail some particulars of its history.

The Canvas-back Duck arrives in the United States from the north about the middle of October, a few descend to the Hudson and Delaware, but the great body of these birds resort to the numerous rivers belonging to and in the neighborhood of the Chesapeake Bay, particularly the Susquehanna, the Patapsco, Potomac, and James rivers, which appear to be their general winter rendezvous. Beyond this to the south, I can find no certain accounts of them. At the Susquehanna they are called *Canvas-backs*, on the Potomac *White-backs*, and on James river *Sheldrakes*. They are seldom found at a great distance up any of these rivers, or even in the salt-water bay; but in that

particular part of tide water where a certain grass-like plant grows, on the roots of which they feed. This plant, which is said to be a species of *Valisneria*, grows on fresh-water shoals of from seven to nine feet (but never where these are occasionally dry), in long narrow grass-like blades of four or five feet in length; the root is white, and has some resemblance to small celery. This grass is in many places so thick that a boat can with difficulty be rowed through it, it so impedes the oars. The shores are lined with large quantities of it torn up by the Ducks, and drifted up by the winds, lying like hay in windrows. Wherever this plant grows in abundance the Canvas-backs may be expected, either to pay occasional visits or to make it their regular residence during the winter. It occurs in some parts of the Hudson; in the Delaware near Gloucester, a few miles below Philadelphia; and in most of the rivers that fall into the Chesapeake, to each of which particular places these Ducks resort; while in waters unprovided with this nutritive plant they are altogether unknown.

On the first arrival of these birds in the Susquehanna, near Havre-de-Grace, they are generally lean; but such is the abundance of their favorite food, that towards the beginning of November they are in pretty good order. They are excellent divers, and swim with great speed and agility. They sometimes assemble in such multitudes as to cover several acres of the river, and when they rise suddenly, produce a noise resembling thunder. They float about these shoals, diving and tearing up the grass by the roots, which is the only part they eat. They are extremely shy, and can rarely be approached unless by stratagem. When wounded in the wing they dive to such prodigious distances, and with such rapidity, continuing it so perseveringly, and with such cunning and active vigor, as almost always to render the pursuit hopeless. From the great demand for these Ducks, and the high price they uniformly bring in market, various modes are practised to get within gunshot of them. The most successful way is said to be, decoying them to the shore by means of a dog, while the gunner lies closely concealed in a proper situation. The dog, if properly trained, plays backwards and forwards along the margin of the water, and the Ducks observing his manœuvres, enticed perhaps by curiosity, gradually approach the shore, until they are sometimes within twenty or thirty yards of the spot where the gunner lies concealed, and from which he rakes them, first on the water and then as they rise. This method is called *tolling them in*. If the Ducks seem difficult to decoy, any glaring object, such as a red handkerchief, is fixed round the dog's middle, or to his tail, and this rarely fails to attract them. Sometimes by moonlight the sportsman directs his skiff towards a flock whose position he had previously ascertained, keeping within the projecting shadow of some wood, bank, or headland, and paddles along so silently and imperceptibly as often to

approach within fifteen or twenty yards of a flock of many thousands, among whom he generally makes great slaughter.

Many other stratagems are practised, and indeed every plan that the ingenuity of the experienced sportsman can suggest, to approach within gunshot of these birds; but of all the modes pursued, none intimidate them so much as shooting them by night; and they soon abandon the place where they have been thus repeatedly shot at. During the day they are dispersed about; but towards evening collect in large flocks, and come into the mouths of creeks, where they often ride as at anchor, with their head under their wing, asleep, there being always sentinels awake ready to raise an alarm on the least appearance of danger. Even when feeding and diving in small parties, the whole never go down at one time, but some are still left above on the look out.

When the winter sets in severely, and the river is frozen, the Canvas-backs retreat to its confluence with the bay, occasionally frequenting air holes in the ice, which are sometimes made for the purpose, immediately above their favorite grass, to entice them within gunshot of the hut or bush which is usually fixed at a proper distance, and where the gunner lies concealed, ready to take advantage of their distress. A Mr. Hill, who lives near James river, at a place called Herring Creek, informs me, that one severe winter he and another person broke a hole in the ice about twenty by forty feet, immediately over a shoal of grass, and took their stand on the shore in a hut of brush, each having three guns well loaded with large shot. The Ducks, which were flying up and down the river in great extremity, soon crowded to this place, so that the whole open space was not only covered with them, but vast numbers stood on the ice around it. They had three rounds firing both at once, and picked up eighty-eight Canvas-backs, and might have collected more had they been able to get to the extremity of the ice after the wounded ones. In the severe winter of 1779-80, the grass, on the roots of which these birds feed, was almost wholly destroyed in James river. In the month of January the wind continued to blow from W. N. W. for twenty-one days, which caused such low tides in the river that the grass froze to the ice everywhere, and a thaw coming on suddenly, the whole was raised by the roots and carried off by the fresh. The next winter a few of these Ducks were seen, but they soon went away again; and for many years after, they continued to be scarce; and even to the present day, in the opinion of my informant, have never been so plenty as before.

The *Canvas-back*, in the rich juicy tenderness of its flesh, and its delicacy and flavor, stands unrivalled by the whole of its tribe in this or perhaps any other quarter of the world. Those killed in the waters of the Chesapeake are generally esteemed superior to all others, doubtless from the great abundance of their favorite food which these rivers pro-

duce. At our public dinners, hotels, and particular entertainments, the Canvas-backs are universal favorites. They not only grace but dignify the table, and their very name conveys to the imagination of the eager epicure the most comfortable and exhilarating ideas. Hence on such occasions it has not been uncommon to pay from one to three dollars a pair for these ducks; and, indeed, at such times, if they can they must be had, whatever may be the price.

The Canvas-back will feed readily on grain, especially wheat, and may be decoyed to particular places by baiting them with that grain for several successive days. Some few years since a vessel loaded with wheat was wrecked near the entrance of Great Egg Harbor, in the autumn, and went to pieces. The wheat floated out in vast quantities, and the whole surface of the bay was in a few days covered with Ducks of a kind altogether unknown to the people of that quarter. The gunners of the neighborhood collected in boats, in every direction, shooting them, and so successful were they, that, as Mr. Beasley informs me, two hundred and forty were killed in one day, and sold among the neighbors, at twelve and a half cents apiece, without the feathers. The wounded ones were generally abandoned, as being too difficult to be come up with. They continued about for three weeks, and during the greater part of that time a continual cannonading was heard from every quarter. The gunners called them *Sea Ducks*. They were all *Canvas-backs*, at that time on their way from the north, when this floating feast attracted their attention, and for a while arrested them in their course. A pair of these very Ducks I myself bought in Philadelphia market at the time, from an Egg Harbor gunner, and never met with their superior either in weight or excellence of flesh. When it was known among those people the loss they had sustained in selling for twenty-five cents what would have brought them from a dollar to a dollar and a half per pair, universal surprise and regret were naturally enough excited.

The Canvas-back is two feet long, and three feet in extent, and when in good order weighs three pounds; the bill is large, rising high in the head, three inches in length, and one inch and three-eighths thick at the base, of a glossy black; eye very small, irides dark red; cheeks and fore part of the head blackish brown; rest of the head and greater part of the neck bright glossy reddish chestnut, ending in a broad space of black that covers the upper part of the breast, and spreads round to the back; back, scapulars, and tertials white, faintly marked with an infinite number of transverse waving lines or points as if done with a pencil; whole lower parts of the breast, also the belly, white, slightly pencilled in the same manner, scarcely perceptible on the breast, pretty thick towards the vent; wing coverts gray with numerous specks of blackish; primaries and secondaries pale slate, two or three of the

latter of which nearest the body are finely edged with deep velvety black, the former dusky at the tips; tail very short, pointed, consisting of fourteen feathers of a hoary brown; vent and tail coverts black; lining of the wing white; legs and feet very pale ash, the latter three inches in width, a circumstance which partly accounts for its great powers of swimming.

The female is somewhat less than the male, and weighs two pounds and three-quarters; the crown is blackish brown, cheeks and throat of a pale drab; neck dull brown; breast as far as the black extends on the male, dull brown skirted in places with pale drab; back dusky white crossed with fine waving lines; belly of the same dull white, pencilled like the back; wings, feet, and bill, as in the male; tail coverts dusky, vent white waved with brown.

The windpipe of the male has a large flattish concave labyrinth, the ridge of which is covered with a thin transparent membrane; where the trachea enters this it is very narrow, but immediately above swells to three times that diameter. The intestines are wide, and measure five feet in length.

NOTE.—It is a circumstance calculated to excite our surprise, that the Canvas-back, one of the commonest species of our country, a Duck which frequents the waters of the Chesapeake in flocks of countless thousands, should yet have been either overlooked by the naturalists of Europe, or confounded with the Pochard, a species whose characters are so obviously different. But that this is the fact I feel well assured, since I have carefully examined every author of repute, to which I have had access, and have not been enabled to find any description which will correspond to the subject before us. The species, then, we hope, will stand as Wilson's own; and it is no small addition to the fame of the American Ornithology that it contains the first scientific account of the finest Duck that any country can boast of.

The Canvas-back frequents the Delaware in considerable numbers. The *Valisneria* grows pretty abundantly, in various places, from Burlington, New Jersey, to Eagle Point, a few miles below Philadelphia. Wherever this plant is found there will the Ducks be; and they will frequently venture within reach of their enemies' weapons rather than abstain from the gratification of their appetite for this delicious food. The shooters in the neighborhood of Philadelphia for many years were in the habit of supplying our markets with this species, which always bore the name of Red-heads or Red-necks; and their ignorance of its being the true Canvas-back was cunningly fostered by our neighbors of the Chesapeake, who boldly asserted that only their waters were favored with this species, and that all other Ducks, which seemed to claim affinity, were a spurious race, unworthy of consanguinity. Hence at

the same time when a pair of legitimate Canvas-backs, proudly exhibited from the mail-coach, from Havre-de-Grace, readily sold for two dollars and fifty cents, a pair of the identical species, as fat, as heavy, as delicious, but which had been unfortunately killed in the Delaware, brought only one dollar, and the lucky shooter thought himself sufficiently rewarded in obtaining twenty-five per cent. more for his *Red-necks* than he could obtain for a pair of the finest Mallards that our waters could afford. But the delusion is now passed; every shooter and huckster knows the distinctive characters of the Canvas-back and the Red-head; and prejudice no longer controverts the opinion that this species is a common inhabitant of the Delaware; and epicures are compelled to confess that they can discern no difference between our Canvas-back, when in season, and that from Spesutie, or Carroll's Island, the notorious shooting ground of the *bon-vivants* of Baltimore.

The last-mentioned place, though commonly termed an island, is properly a peninsula, situated on the western side of the Chesapeake Bay, a few miles from Baltimore. It is a spot highly favorable for the shooting of water fowl. It extends for a considerable distance into the bay; and, being connected to the main land by a narrow neck, the shooters are enabled to post themselves advantageously on the isthmus, and intercept the fowl, who, in roving from one feeding ground to another, commonly prefer crossing the land to taking a long flight around the peninsula. In calm weather the shooters have not much luck, the Ducks keeping out in the coves, and, when they do move, flying high; but should a fresh breeze prevail, especially one from the eastward, rare sport may be anticipated; and it is no unusual circumstance for a party of four or five gentleman, returning home, after a couple of days' excursion, with fifty or sixty Canvas-backs, besides some other Ducks of inferior note. The greatest flight of Ducks commonly takes place between daybreak and sunrise, and while it lasts the roaring of the fowling pieces, the bustle of the sportsmen, the fluttering of the fowl, and the plunging of the dogs, constitute a scene productive of intense interest. The dog in most esteem for this amusement is a large breed, partaking of the qualities of the Newfoundland variety. They trust altogether to their sight, and it is astonishing what sagacity they will manifest in watching a flock of Ducks that had been shot at, and marking the birds that drop into the water, even at a considerable distance off. When at fault, the motion of their master's hand is readily obeyed by them; and when unable to perceive the object of their search, they will raise themselves in the water for this purpose, and will not abandon the pursuit while a chance remains of succeeding. A generous, well-trained dog, has been known to follow a Duck for more than half a mile; and, after having been long beyond the reach of seeing or hearing his master, to return, puffing and snorting under

his load, which seemed sufficient to drag him beneath the waves. The editor having been an eye-witness of similar feats of these noble animals, can therefore speak with confidence as to the fact.

On the Delaware but few of this species, comparatively, are obtained, for the want of proper situations whence they may be shot on the wing. To attempt to approach them, in open day, with a boat, is unproductive labor, except there be floating ice in the river, at which time, if the shooter clothe himself in white, and paint his skiff of the same color, he may so deceive the Ducks as to get within a few feet of them. At such times it is reasonable to suppose that these valuable birds get no quarter. But there is one caution to be observed, which experienced sportsmen never omit: it is to go always *with* the current; a Duck being sagacious enough to know that a lump of ice seldom advances *against* the stream. They are often shot, with us, by moonlight, in the mode related in the foregoing account; the first pair the editor ever killed was in this manner; he was then a boy, and was not a little gratified with his uncommon acquisition.

As the *Vallisneria* will grow in all our fresh-water rivers, in coves, or places not affected by the current, it would be worth the experiment to transplant this vegetable in those waters where it at present is unknown. There is little doubt the Canvas-backs would, by this means, be attracted; and thus would afford the lovers of good eating an opportunity of tasting a delicacy, which, in the opinion of many, is unrivalled by the whole feathered race.

In the spring, when the Duck-grass becomes scarce, the Canvas-backs are compelled to subsist upon other food, particularly shell-fish; their flesh then loses its delicacy of flavor, and although still fat, it is not esteemed by epicures; hence the Ducks are not much sought after; and are permitted quietly to feed until their departure for the north.

Our author states that he had had no certain accounts of this species to the southward of James river, Virginia. In the month of January, 1818, I saw many hundreds of these Ducks feeding in the Savannah river, not far from Tybee light-house. They were known by the name of Canvas-backs; but the inhabitants of that quarter considered them as fishing Ducks, not fit to be eaten: so said the pilot of the ship which bore me to Savannah. But a pair of these birds having been served up at table, after my arrival, I was convinced, by their delicate flavor, that they had lost little by their change of residence, but still maintained their superiority over all the water fowl of that region. In the river St. John, in East Florida, I also saw a few scattered individuals of this species; but they were too shy to be approached within gunshot.

The Canvas-backs swim very low, especially when fat; and when pursued by a boat, they stretch themselves out in lines, in the manner of the Seaup Ducks, so that some of the flock are always enabled to

reconnoitre the paddler, and give information, to the rest, of his motions. When the look-out Ducks apprehend danger, the stretching up of their necks is the signal, and immediately the whole squadron, facing to the wind, rise with a noise which may be heard at the distance of half a mile.

The guns employed in Canvas-back shooting should be of a medium length and calibre; and of the most approved patent breech. My experience has taught me that a barrel of three feet seven inches, with a bore short of seven-eighths of an inch, is quite as effective as one of greater dimensions; and is certainly more convenient. It may appear a work of supererogation to speak of the quality of powder to be used in this kind of sporting; and yet so often are shooters deceived in this article, either through penuriousness or negligence, that a word of advice may not be unprofitable. One should obtain the best powder, without regard to price; it being an indisputable maxim in shooting, but which is too often forgotten, that the best is always the cheapest.

SPECIES XIX. *ANAS FERINA?**

RED-HEADED DUCK.

[Plate LXX. Fig. 6, Male.]

THIS is a common associate of the Canvas-back, frequenting the same places, and feeding on the *stems* of the same grass, the latter eating only the *roots*; its flesh is very little inferior, and it is often sold in our markets for the Canvas-back, to those unacquainted with the characteristic marks of each. Anxious as I am to determine precisely whether this species be the Red-headed Wigeon, Pochard, or Dun † bird of England, I have not been able to ascertain the point to my own satisfaction; though I think it very probably the same, the size, extent, and general description of the Pochard agreeing pretty nearly with this.

The Red-head is twenty inches in length, and two feet six inches in extent; bill dark slate, sometimes black, two inches long, and seven-

* *Anas Ferina*, GMEL. I., p. 530, No. 31.—*Anas rufa*, Id. p. 515.—*Ind. Orn.* p. 862, No. 77; p. 863, No. 78.—*Rufous-necked Duck*, Gen. Syn. III., p. 477, No. 32.—*Pochard*, Id. p. 523, No. 68.—*Red-headed Duck*, LAWSON's *Carolina*, p. 150.—BEWICK, II., p. 320.—*Arct. Zool.* No. 491. *Br. Zool.* No. 284.—*Le Millouin*, BRISS. VI., p. 384, No. 19, pl. 35, fig. 1; *Le Millouin noir*, Id. p. 389, *A young male?*; *Le Millouin du Mexique*, Id. p. 390, No. 20, female, BUFF. IX., p. 216. *Pl. Enl.* 803 TEMM. *Man. d'Orn.* p. 669.—WILLOUGHBY, p. 367, § xi.—MONTAGU, *Orn. Dict.*

† Local names given to one and the same Duck. It is also called the *Poker*.

eighths of an inch thick at the base, furnished with a large broad nail at the extremity; irides flame-colored; plumage of the head long, velvety, and inflated, running high above the base of the bill; head, and about two inches of the neck deep glossy reddish chestnut; rest of the neck and upper part of the breast black, spreading round to the back; belly white, becoming dusky towards the vent by closely marked undulating lines of black; back and scapulars bluish white, rendered gray by numerous transverse waving lines of black; lesser wing coverts brownish ash; wing quills very pale slate, dusky at the tips; lower part of the back and sides under the wings brownish black, crossed with regular zigzag lines of whitish; vent, rump, tail, and tail coverts black; legs and feet dark ash.

The female has the upper part of the head dusky brown, rest of the head and part of the neck a light sooty brown; upper part of the breast ashy brown, broadly skirted with whitish; back dark ash, with little or no appearance of white pencilling; wings, bill, and feet nearly alike in both sexes.

This Duck is sometimes met with in the rivers of North and South Carolina, and also in those of Jersey and New York; but always in fresh water, and usually at no great distance from the sea. Is most numerous in the waters of the Chesapeake; and with the connoisseurs in good eating, ranks next in excellence to the Canvas-back. Its usual weight is about a pound and three-quarters, avoirdupois.

The Red-head leaves the bay and its tributary streams in March, and is not seen until late in October.

The male of this species has a large flat bony labyrinth on the bottom of the windpipe, very much like that of the Canvas-back, but smaller; over one of its concave sides is spread an exceeding thin transparent skin, or membrane. The intestines are of great width, and measure six feet in length.

SPECIES XX. *ANAS MARILA.*

SCAUP DUCK.

[Plate LXIX. Fig. 3.]

Le petit Morillon rayé, BRISS. VI., p. 416, 26. A.—*Arct. Zool.* No. 498.—LATH. *Syr.* III., p. 500.

THIS Duck is better known among us by the name of the *Blue-bill*. It is an excellent diver; and according to Willoughby feeds on a certain small kind of shell fish called *scaup*, whence it has derived its name. It is common both to our fresh-water rivers and seashores in winter. Those that frequent the latter are generally much the fattest, on account of the greater abundance of food along the coast. It is sometimes abundant in the Delaware, particularly in those places where small snails, its favorite shell fish, abound; feeding also, like most of its tribe, by moonlight. They generally leave us in April, though I have met with individuals of this species so late as the middle of May, among the salt marshes of New Jersey. Their flesh is not of the most delicate kind, yet some persons esteem it. That of the young birds is generally the tenderest and most palatable.

The length of the Blue-bill is nineteen inches, extent twenty-nine inches; bill broad, generally of a light blue, sometimes of a dusky lead color; irides reddish; head tumid, covered with plumage of a dark glossy green, extending half way down the neck; rest of the neck and breast black, spreading round to the back; back and scapulars white, thickly crossed with waving lines of black; lesser coverts dusky, powdered with veins of whitish, primaries and tertials brownish black; secondaries white, tipped with black, forming the speculum; rump and tail-coverts black; tail short, rounded, and of a dusky brown; belly white, crossed near the vent with waving lines of ash; vent black; legs and feet dark slate.

Such is the color of the bird in its perfect state. Young birds vary considerably, some having the head black mixed with gray and purple, others the back dusky with little or no white, and that irregularly dispersed.

The female has the front and sides of the same white, head and half of the neck blackish brown; breast, spreading round to the back, a dark sooty brown, broadly skirted with whitish; back black, thinly sprinkled with grains of white, vent whitish; wings the same as in the male.

The windpipe of the male of this species is of large diameter; the labyrinth similar to some others, though not of the largest kind; it has something of the shape of a single cockle shell; its open side or circular rim, covered with a thin transparent skin. Just before the windpipe enters this, it lessens its diameter at least two-thirds, and assumes a flattish form.

The Scaup Duck is well known in England. It inhabits Iceland and the more northern parts of the continent of Europe, Lapland, Sweden, Norway, and Russia. It is also common on the northern shores of Siberia. Is very frequent on the river Ob. Breeds in the north, and migrates southward in winter. It inhabits America as high as Hudson's Bay, and retires from this last place in October.*

NOTE.—Pennant and Latham state that the male weighs a pound and a half; and the female two ounces more. This is undoubtedly an error, the female being less than the male, and the latter being generally the fattest. Montagu says that the species weighs sometimes as much as thirty-five ounces, which statement comes nearer the truth than that of the foregoing. On the eighth of April, of the present year (1824), I shot, on the Delaware, an adult male which weighed two pounds and three-quarters. I have frequently shot them of two pounds and a half; and on the Chesapeake, and on the coast, they are still heavier.

In the Delaware there are several favorite feeding grounds of the Blue-bill along the Jersey shore, from Burlington to Mantua creek; but the most noted spot appears to be the cove which extends from Timber creek to Eagle Point, and known by the name of Ladd's Cove. Thither the Blue-bills repair in the autumn, and never quit it until they depart in the spring for the purpose of breeding, except when driven away, in the winter, by the ice. It is no uncommon circumstance to see many hundreds of these birds at once constantly diving for food; but so shy are they, that even with the aid of a very small and well-constructed skiff, cautiously paddled, it is difficult to approach them within gunshot. So very sagacious are they, that they appear to know the precise distance wherein they are safe; and, after the shooter has advanced within this point, they then begin to spread their lines in such a manner that, in a flock of a hundred, not more than three or four can be selected in a group at any one view. They swim low in the water; are strong feathered; and are not easily killed. When slightly wounded, and unable to fly, it is almost hopeless to follow them, in consequence of their skill great in diving. Their wings being short they either cannot rise with the wind, when it blows freshly, or they are unwilling to do so, for

* Latham.

they are invariably seen to rise against the wind. In a calm they get up with considerable fluttering.

The Blue-bills when disturbed by the fishermen along the Jersey shore, in the spring, resort to other feeding places; and they are frequently observed a short distance below the Philadelphia Navy-yard, particularly at the time when their favorite snail-shells begin to crawl up the muddy shore for the purpose of breeding. Though often seen feeding in places where they can reach the bottom with their bills, yet they seldom venture on the shore, the labor of walking appearing repugnant to their inclinations. When wounded they will never take to the land if they can possibly avoid it; and when compelled to walk they waddle along in the awkward manner of those birds whose legs, placed far behind, do not admit of a free and graceful progression.

SPECIES XXI. *ANAS FULIGULA*.*

TUFTED DUCK.

[Plate LXVII. Fig. 5.]

Arct. Zool. p. 573.—*Le petit Morillon*, BRISS. VI., 411, 26, pl. 37, 1.—BUFF. IX., p. 227, 231, pl. 15.—LATH. *Syn.* III., p. 540.

THIS is an inhabitant of both continents; it frequents fresh-water rivers, and seldom visits the seashore. It is a plump, short-bodied Duck; its flesh generally tender, and well tasted. They are much rarer than most of our other species, and are seldom seen in market. They are most common about the beginning of winter, and early in the spring. Being birds of passage they leave us entirely during the summer.

The Tufted Duck is seventeen inches long, and two feet two inches in extent; the bill is broad and of a dusky color, sometimes marked round the nostrils and sides with light blue; head crested, or *tufted*, as its name expresses, and of a black color, with reflections of purple; neck marked near its middle by a band of deep chestnut; lower part of the neck black, which spreads quite round to the back; back and scapulars black, minutely powdered with particles of white, not to be observed but on a near inspection; rump and vent also black; wings ashy brown; secondaries pale ash or bluish white; tertials black, reflecting green; lower part of the breast and whole belly white; flanks crossed with fine

* *Anas rufitorques*, BONAPARTE, *Journal of the Academy of Natural Sciences of Philadelphia*, III., p. 385; pl. 13, fig. 6, the trachea.

zigzag lines of dusky; tail short, rounded, and of a dull brownish black; legs and feet greenish ash, webs black, irides rich orange; stomach filled with gravel and some vegetable food.

In young birds the head and upper part of the neck are purplish brown; in some the chestnut ring on the fore part of the middle of the neck is obscure, in others very rich and glossy, and in one or two specimens which I have seen it is altogether wanting. The back is in some instances destitute of the fine powdered particles of white; while in others these markings are large and thickly interspersed.

The specimen from which the drawing was taken, was shot on the Delaware on the 10th of March, and presented to me by Dr. S. B. Smith of this city. On dissection it proved to be a male, and was exceedingly fat and tender. Almost every specimen I have since met with has been in nearly the same state; so that I cannot avoid thinking this species equal to most others for the table, and greatly superior to many.

NOTE.—It is remarkable that our author should not have observed the difference between this species and the *fuligula* of Europe; and still more worthy of note that Mr. Temminck, whose powers of discrimination are unusually acute, should also have been misled by the opinions of others, and concluded, with Wilson, that the Tufted Duck figured in our plate was of the same species as the Tufted Duck of Europe. The only apology which we can make for our author is, that he had never had an opportunity of examining a specimen of the *fuligula*; otherwise the specific differences of the two would have been obvious at the first glance. The bill of the *fuligula* has not those white bands or markings which are so conspicuous in our bird, its neck is also destitute of the chestnut collar; the speculum of the former is pure white, that of the latter is pale ash; and, what is a still more striking characteristic, its head is merely tufted, while the *fuligula*'s is ornamented with a pendent crest, of two inches in length.

The credit of having been the first to publicly announce our bird as a new species belongs to Mr. Charles Bonaparte, who, in the publication quoted at the head of this article, has given a comparative description of the two birds, and named the subject of this article *rufitorques*.

The American Tufted Duck is said to be common on the Ohio, and the Mississippi; Messieurs Say and Peale procured it on the Missouri; Lewis and Clark shot it on the Columbia;* and myself in East Florida. It is, properly speaking, a fresh-water Duck, although it is sometimes found on the coast. On the Delaware we observe it in the spring and autumn; and, if the weather be moderate, we see it occasionally

* Hist. of the Exped. vol. II., p. 195, 8vo.

throughout the winter. With us it is not a numerous species; and is rather a solitary bird, seldom more than four or five being found together. It is more common in the month of March than any other time. It is a plump, short-bodied Duck; its flesh tender, and well tasted; but in no respect to be compared to that of the Canvas-back; it is even inferior to the Mallard.

The American Tufted Duck is seventeen inches long, and twenty-seven inches in breadth; the bill is broad, of a dull bluish ash color, the base of the upper mandible marked with a stripe of pure white, which extends along its edges, and then forms a wider band across near the tip, which is of a deep black—this white band changes after death to gray or bluish white; irides rich orange; a spot of white on the chin; head tufted, and, with the upper part of the neck, black, with reflections of rich purple, predominating on the back part of the neck; about the middle of the neck there is an interrupted band of a rich deep glossy chestnut; throat, lower part of the neck, breast, back, scapulars, rump, and tail-coverts, of a silky brownish black; primaries and wing-coverts brown; tertials dark brown, with strong reflections of green; secondaries pale ash, or bluish white, forming the speculum, some tipped with brown and others with white; back and scapulars powdered with particles of dull white, not to be observed but on a near inspection, and presenting the appearance of dust; lower part of the breast, and whole belly, white, with a yellowish tinge; vent dusky; sides under the wings, and flanks, beautifully marked with fine zigzag lines of dusky; tail dull brown, cuneiform, and composed of fourteen feathers; the primaries, wing-coverts, back and scapulars, are glossed with green; webs of the feet black. The color of the legs and feet varies: those of the figure in the plate were greenish ash; those of the specimen above described were pale yellow ochre, dashed with black; and those of Mr. Bonaparte's specimen were bluish ash. The above description was taken from a fine adult male, shot by myself on the 1st of April, 1814.

On the 8th of March, 1815, I shot from a flock, consisting of five individuals, two males; and an adult female in full plumage.

Female: Length sixteen inches and a half; bill darker than that of the male, without the white at its base, above the nail with a band of dull bluish white; beneath the eyes a spot of white; chin and front part of the lores white; throat spotted with dusky; cheeks and auriculars finely powdered with white; neck without the chestnut band; head, neck, breast, upper parts of the back, lower parts of the belly, and vent, a snuff-colored brown; belly whitish; lower part of the back dusky; the under tail-coverts pencilled with fine zigzag lines; neck rather thicker than that of the male, but the head equally tufted; the wings, feet, legs, tail and eyes, resemble those parts of the male. The dust-

like particles, which are so remarkable upon the back and scapulars of the male, are wanting in the female.

In young males the head and upper part of the neck are purplish brown, in some the chestnut band of the neck is obscure.

The stomachs of those specimens which I dissected were filled with gravel and vegetable food. The trachea, according to the observations of Mr. Bonaparte, resembles that of the *fuligula*.

This species is in no respect so shy and cunning as the Scaup Duck, and is more easily shot.—*G. Ord.*

SPECIES XXII. *ANAS CLANGULA.*

GOLDEN EYE.

[Plate LXVII. Fig. 6.]

Le Garrot, BRISS. VI., p. 416, 27, pl. 37, fig. 2.—BUFF. IX., p. 222.—*Arct. Zool.* No. 486.—LATH. *Syn.* III., p. 535.*

THIS Duck is well known in Europe, and in various regions of the United States, both along the seacoast and about the lakes and rivers of the interior. It associates in small parties, and may easily be known by the vigorous whistling of its wings, as it passes through the air. It swims and dives well; but seldom walks on shore, and then in a waddling awkward manner. Feeding chiefly on shell fish, small fry, &c., their flesh is less esteemed than that of the preceding. In the United States they are only winter visitors, leaving us again in the month of April, being then on their passage to the north to breed. They are said to build, like the Wood Duck, in hollow trees.

The Golden-eye is nineteen inches long, and twenty-nine in extent, and weighs on an average about two pounds; the bill is black, short, rising considerably up in the forehead; the plumage of the head and part of the neck is somewhat tumid, and of a dark green with violet reflections, marked near the corner of the mouth with an oval spot of white; the irides are golden yellow; rest of the neck, breast, and whole lower parts white, except the flanks, which are dusky; back and wings black; over the latter a broad bed of white extends from the middle of the lesser coverts to the extremity of the secondaries; the exterior scapulars are also white; tail hoary brown; rump and tail-coverts black; legs

* *Le Garrot*, Pl. Enl. 802.—*Morrillon*, *Arct. Zool.* II., p. 300, F.—*Br. Zool.* No. 276, 277.—LATH. *Supp.* II., p. 535, No. 26.—*Ind. Orn.* p. 867, No. 87; *A. glancion*, Id. p. 868, No. 88.—GMEL. *Syst.* I., p. 523, No. 23; Id. p. 525, No. 26.—TEMM. *Man. d'Orn.* I., p. 870.—BEWICK, II., p. 330.

and toes reddish orange; webs very large, and of a dark purplish brown; hind toe and exterior edge of the inner one broadly finned; sides of the bill obliquely dentated; tongue covered above with a fine thick velvety down of a whitish color.

The full plumaged female is seventeen inches in length, and twenty-seven inches in extent; bill brown, orange near the tip; head and part of the neck brown, or very dark drab, bounded below by a ring of white; below that the neck is ash, tipped with white; rest of the lower parts white; wings dusky, six of the secondaries and their greater coverts pure white, except the tips of the last, which are touched with dusky spots; rest of the wing-coverts cinereous, mixed with whitish; back and scapulars dusky, tipped with brown; feet dull orange; across the vent a band of cinereous; tongue covered with the same velvety down as the male.

The young birds of the first season very much resemble the females; but may generally be distinguished by the white spot, or at least its rudiments, which marks the corner of the mouth. Yet, in some cases, even this is variable, both old and young male birds occasionally wanting the spot.

From an examination of many individuals of this species of both sexes, I have very little doubt that the Morillon of English writers (*Anas glaucion*) is nothing more than the young male of the Golden-eye.

The conformation of the trachea, or windpipe of the male of this species, is singular. Nearly about its middle it swells out to at least five times its common diameter, the concentric hoops or rings, of which this part is formed, falling obliquely into one another when the windpipe is relaxed; but when stretched, this part swells out to its full size, the rings being then drawn apart; this expansion extends for about three inches; three more below this it again forms itself into a hard cartilaginous shell, of an irregular figure, and nearly as large as a walnut; from the bottom of this labyrinth, as it has been called, the trachea branches off to the two lobes of the lungs; that branch which goes to the left lobe being three times the diameter of the right. The female has nothing of all this. The intestines measure five feet in length, and are large and thick.

I have examined many individuals of this species, of both sexes and in various stages of color, and can therefore affirm, with certainty, that the foregoing descriptions are correct. Europeans have differed greatly in their accounts of this bird, from finding males in the same garb as the females; and other full plumaged males destitute of the spot of white on the check; but all these individuals bear such evident marks of belonging to one peculiar species, that no judicious naturalist, with all these varieties before him, can long hesitate to pronounce them the same.

SPECIES XXIII. *ANAS ALBEOLA.*

BUFFEL-HEADED DUCK.

[Plate LXVII. Fig. 2, Male; Fig. 3, Female.]

La Sarcelle de la Louisiane, BRISS. VI., p. 461, pl. 41, fig. 1.—*Le petit Canard à grosse tête*, BUFF. IX., p. 249.—EDW. pl. 100.—*Arct. Zool.* No. 487.—CATESBY, I., 95.—LATH. *Syn.* III., p. 533.*

THIS pretty little species, usually known by the name of the *Butter-box*, or *Butter-ball*, is common to the seashores, rivers and lakes of the United States, in every quarter of the country, during autumn and winter. About the middle of April, or early in May, they retire to the north to breed. They are dexterous divers, and fly with extraordinary velocity. So early as the latter part of February the males are observed to have violent disputes for the females; at this time they are more commonly seen in flocks; but during the preceding part of winter they usually fly in pairs. Their note is a short *quack*. They feed much on shell fish, shrimps, &c. They are sometimes exceedingly fat; though their flesh is inferior to many others for the table. The male exceeds the female in size, and greatly in beauty of plumage.

The *Buffel-headed Duck*, or rather as it has originally been, the *Buffaloc-headed Duck*, from the disproportionate size of its head, is fourteen inches long, and twenty-three inches in extent; the bill is short, and of a light blue or leaden color; the plumage of the head and half of the neck is thick, long and velvety, projecting greatly over the lower part of the neck; this plumage on the forehead and nape is rich glossy green, changing into a shining purple on the crown and sides of the neck; from the eyes backward passes a broad band of pure white; iris of the eye dark; back, wings and part of the scapulars black; rest of the scapulars, lateral band along the wing, and whole breast, snowy white; belly, vent, and tail-coverts, dusky white; tail pointed, and of a hoary color.

The female is considerably less than the male, and entirely destitute of the tunid plumage of the head; the head, neck, and upper parts of the body, and wings, are sooty black, darkest on the crown; side of the head marked with a small oblong spot of white; bill dusky; lower part of the neck ash, tipped with white; belly dull white; vent cinereous;

* *Le Canard d'hyver*, BRISS. VI., p. 349; *La Sarcelle de la Caroline*, Id. p. 464.
(122)

outer edges of six of the secondaries and their incumbent coverts white, except the tips of the latter, which are black; legs and feet a livid blue; tail hoary brown; length of the intestines three feet six inches; stomach filled with small shell fish. This is the Spirit Duck of Pennant, so called from its dexterity in diving (Arct. Zool. No. 487), likewise the Little Brown Duck of Catesby (Nat. Hist. Car. pl. 98).

This species is said to come into Hudson's Bay about Severn river in June, and make their nests in trees in the woods near ponds.* The young males during the first year are almost exactly like the females in color.

SPECIES XXIV. *ANAS GLACIALIS.*

LONG-TAILED DUCK.

[Plate LXX. Fig. 1, Male.]

Le Canard à longue queue de Terre Neuve, BRISS. VI., p. 382, 18.—BUFF. IX., p. 202.
Pl. Enl. 1008.—EDW. pl. 280.—Arct. Zool. No. 501.—LATH. Syn. III., p. 528.†

THIS Duck is very generally known along the shores of the Chesapeake Bay by the name of *South Southerly*, from the singularity of its cry, something imitative of the sound of those words, and also, that when very clamorous they are supposed to betoken a southerly wind; on the coast of New Jersey they are usually called *Old Wives*. They are chiefly salt-water Ducks, and seldom ramble far from the sea. They inhabit our bays and coasts during the winter only; are rarely found in the marshes, but keep in the channel, diving for small shell fish, which are their principal food. In passing to and from the bays, sometimes in vast flocks, particularly towards evening, their loud and confused noise may be heard in calm weather at the distance of several miles. They fly very swiftly, take short excursions, and are lively restless birds. Their native regions are in the north, where great numbers of them remain during the whole year; part only of the vast family

* Latham.

† *Anas Glacialis*, GMEL. Syst. I., p. 529, No. 30; *A. hyemalis*, Id. No. 29; *Mergus surcifer*, Id. 548, No. 7.—*Ind. Orn.* p. 864, No. 82, et var.; *Mergus surcifer*, Id. p. 832, No. 8; *Gen. Syn.* p. 528, No. 73; Id. p. 529, young male called the female; Id. p. 531, var. A.; *Forked Merganser*, Id. sup. II., p. 339, No. 5.—*Le Canard à longue queue d'Islande*, BRISS. VI., p. 379. *La Sarcelle de Ferroe*, Id. p. 466, pl. 40, fig. 2.—BUFF. IX., p. 278. Pl. 1008, old male; 999, yearling.—EDWARDS, pl. 280, old male, pl. 156, young male.—*Br. Zool.* No. 283.—BEWICK, II., p. 327.—*Canard de Millon*, TEMM. *Man. d'Orn.*, p. 860.

migrating south to avoid the severest rigors of that climate. They are common to the whole northern hemisphere. In the Orkneys they are met with in considerable flocks, from October to April; frequent in Sweden, Lapland, and Russia; are often found about St. Petersburgh, and also in Kamtschatka. Are said to breed at Hudson's Bay, making their nest among the grass near the sea, like the Eider Duck, and about the middle of June, lay from ten to fourteen bluish white eggs, the size of those of a pullet. When the young are hatched the mother carries them to the water in her bill. The nest is lined with the down of her breast, which is accounted equally valuable with that of the Eider Duck, were it to be had in the same quantity.* They are hardy birds, and excellent divers. Are not very common in England, coming there only in very severe winters; and then but in small straggling parties; yet are found on the coast of America as far south at least as Charleston in Carolina, during the winter. Their flesh is held in no great estimation, having a fishy taste. The down and plumage, particularly on the breast and lower parts of the body, are very abundant, and appear to be of the best quality.

The length of this species is twenty-two inches, extent thirty inches; bill black, crossed near the extremity by a band of orange; tongue downy; iris dark red; cheeks and frontlet dull dusky drab, passing over the eye, and joining a large patch of black on the side of the neck, which ends in dark brown; throat and rest of the neck white; crown tufted, and of a pale cream color; lower part of the neck, breast, back, and wings black; scapulars and tertials pale bluish white, long and pointed, and falling gracefully over the wings; the white of the lower part of the neck spreads over the back an inch or two, the white of the belly spreads over the sides, and nearly meets at the rump; secondaries chestnut, forming a bar across the wing; primaries, rump, and tail-coverts black; the tail consists of fourteen feathers, all remarkably pointed, the two middle ones nearly four inches longer than the others; these, with the two adjoining ones, are black, the rest white; legs and feet dusky slate.

On dissection, the intestines were found to measure five feet six inches. The windpipe was very curiously formed; besides the labyrinth, which is nearly as large as the end of the thumb, it has an expansion immediately above that, of double its usual diameter, which continues for an inch and a half; this is flattened on the side next the breast, with an oblong window-like vacaney in it, crossed with five narrow bars, and covered with a thin transparent skin, like the panes of a window; another thin skin of the same kind is spread over the external side of the labyrinth, which is partly of a circular form. This

* Latham.

singular conformation is, as usual, peculiar to the male, the female having the windpipe of nearly an uniform thickness throughout. She differs also so much in the colors and markings of her plumage as to render a figure of her in the same plate necessary; for a description of which see the following article.

LONG-TAILED DUCK.

[Plate LXX. Fig. 2, Female.]

Anas hyemalis, LINN. *Syst.* 202, 29.—LATH. *Syn.* III. p. 529.*

THE female is distinguished from the male by wanting the lengthened tertials, and the two long pointed feathers of the tail, and also by her size, and the rest of her plumage, which is as follows: length sixteen inches, extent twenty-eight inches; bill dusky; middle of the crown and spot on the side of the neck blackish; a narrow dusky line runs along the throat for two inches; rest of the head and upper half of the neck white; lower half pale vinaceous bay blended with white; all the rest of the lower parts of the body pure white; back, scapulars, and lesser wing-coverts bright ferruginous, centered with black, and interspersed with whitish; shoulders of the wing, and quills black; lower part of the back the same, tinged with brown; tail pale brown ash, inner vanes of all but the two middle feathers white; legs and feet dusky slate. The legs are placed far behind, which circumstance points out the species to be great divers. In some females the upper parts are less ferruginous.

Some writers suppose the singular voice, or call, of this species, to be occasioned by the remarkable construction of its windpipe; but the fact, that the females are uniformly the most noisy, and yet are entirely destitute of the singularities of this conformation, overthrows the probability of this supposition.

* This is a young male and not a female.

SPECIES XXV. *ANAS LABRADORA.*

PIED DUCK.

[Plate LXIX. Fig. 6.]

Arct. Zool. No. 488.—*LATH.* *Syn.* III., p. 497.*

THIS is rather a scarce species on our coasts, and is never met with on fresh-water lakes or rivers. It is called by some gunners the Sand Shoal Duck, from its habit of frequenting sand bars. Its principal food appears to be shell fish, which it procures by diving. The flesh is dry, and partakes considerably of the nature of its food. It is only seen here during winter; most commonly early in the month of March a few are observed in our market. Of their particular manners, place, or mode of breeding nothing more is known. Latham observes that a pair in the possession of Sir Joseph Banks were brought from Labrador. Having myself had frequent opportunities of examining both sexes of these birds, I find that, like most others, they are subject when young to a progressive change of color. The full plumaged male is as follows: length twenty inches, extent twenty-nine inches; the base of the bill, and edges of both mandibles for two-thirds of their length, are of a pale orange color, the rest black, towards the extremity it widens a little in the manner of the Shovellers, the sides there having the singularity of being only a soft, loose, pendulous skin; irides dark hazel; head and half of the neck white, marked along the crown to the hind-head with a stripe of black; the plumage of the cheeks is of a peculiar bristly nature at the points, and round the neck passes a collar of black, which spreads over the back, rump, and tail coverts; below this color the upper part of the breast is white, extending itself over the whole scapulars, wing coverts, and secondaries; the primaries, lower part of the breast, whole belly, and vent are black; tail pointed, and of a blackish hoary color; the fore part of the legs and ridges of the toes pale whitish ash; hind part the same bespattered with blackish, webs black; the edges of both mandibles are largely pectinated. In young birds, the whole of the white plumage is generally strongly tinged with a yellowish cream color; in old males these parts are pure white, with the exception sometimes of the bristly pointed plumage of the cheeks, which retains

* *Anas Labadora*, GMEL. *Syst.* I., p. 526, No. 97.—*Ind. Orn.* p. 861, No. 74.—*Le Canard Jansen*, *Pl. Enl.* 955.—*BUFF.* IX., p. 174.

its cream tint the longest, and, with the skinny part of the bill, form two strong peculiarities of this species.

The female measures nineteen inches in length, and twenty-seven in extent; bill exactly as in the male; sides of the front white; head, chin, and neck ashy gray; upper parts of the back and wings brownish slate; secondaries only, white; tertials hoary; the white secondaries form a spot on the wing, bounded by the black primaries, and four hoary tertials edged with black; whole lower parts a dull ash skirted with brownish white, or clay color; legs and feet as in the male; the bill in both is marked from the nostrils backwards by a singular heart-shaped outline.

The windpipe of the male measures ten inches in length, and has four enlargements, viz., one immediately below the mouth, and another at the interval of an inch; it then bends largely down to the breast bone, to which it adheres by two strong muscles, and has at that place a third expansion. It then becomes flattened, and before it separates into the lungs, has a fourth enlargement much greater than any of the former, which is bony, and round, puffing out from the left side. The intestines measured six feet; the stomach contained small clams, and some glutinous matter; the liver was remarkably large.

SPECIES XXVI. *ANAS HISTRIONICA.*

HARLEQUIN DUCK.

[Plate LXXII. Fig. 4, Male.]

Le Canard à Collier de Terre Neuve, BRISS. VI., p. 362, 14.—BUFF. IX., p. 250.—PL. ENL. 798.—*Arct. Zool.* No. 490.—LATH. *Syn.* III., p. 484.*

THIS species is very rare on the coasts of the Middle and Southern States, though not unfrequently found off those of New England, where it is known by the dignified title of the *Lord*, probably from the elegant crescents and circles of white which ornament its neck and breast. Though an inhabitant of both continents, little else is known of its particular manners than that it swims and dives well; flies swift, and to a great height; and has a whistling note. It is said to frequent the small rivulets inland from Hudson's Bay, where it breeds. The female

* *Anas Histrionica*, GMEL. *Syst.* I., p. 534, No. 35; *A. minuta*, Ib. No. 36, female.—*Ind. Orn.* p. 849, No. 45.—*Gen. Syn.* III., p. 484, 485, female.—*Dusky and Spotted Duck*, EDWARDS, pl. 99; *Little Brown and White Duck*, Id. pl. 157, female.—*La Sarcelle de la Baye de Hudson*, BRISS. VI., p. 469, No. 41, female.—TEMM. *Man. d' Orn.* p. 878.

lays ten white eggs on the grass; the young are prettily speckled. It is found on the eastern continent as far south as Lake Baikal, and thence to Kamtschatka, particularly up the river Ochotska; and was also met with at Aoonalashka and Iceland.* At Hudson's Bay it is called the Painted Duck, at Newfoundland and along the coast of New England, the Lord; it is an active vigorous diver, and often seen in deep water, considerably out at sea.

The Harlequin Duck, so called from the singularity of its markings, is seventeen inches in length, and twenty-eight inches in extent; the bill is of a moderate length, of a lead color tipped with red, irides dark; upper part of the head black; between the eye and bill a broad space of white, extending over the eye, and ending in reddish; behind the ear a similar spot; neck black, ending below in a circle of white; breast deep slate, shoulders or sides of the breast, marked with a semi-circle of white; belly black; sides chestnut; body above black or deep slate, some of the scapulars white; greater wing coverts tipped with the same; legs and feet deep ash; vent and pointed tail black.

The female is described as being less, "the forehead, and between the bill and eye, white, with a spot of the same behind the ear; head, neck, and back, brown, palest on the fore part of the neck; upper part of the breast and rump red brown, lower breast and belly barred pale rufous and white; behind the thighs rufous and brown; scapulars and wing coverts rufous brown; outer greater ones blackish; quills and tail dusky, the last inclining to rufous; legs dusky."*

The few specimens of this Duck which I have met with, were all males; and from the variation in their colors it appears evident that the young birds undergo a considerable change of plumage before they arrive at their full colors. In some the white spot behind the eye was large, extending irregularly half way down the neck; in others confined to a roundish spot.

The flesh of this species is said to be excellent.

* Latham.

GENUS CI. PLOTUS. DARTER.

SPECIES. *P. ANHINGA.*

DARTER, OR SNAKE-BIRD.*

[Plate LXXIV. Fig. 1, Male.]

Plotus anhinga, LINN. *Syst. ed.* 12, tom. I., p. 218.—*Gmel. Syst. I.*, p. 580, 1.—*Ind. Orn.* p. 895, 1. *Plotus melanogaster*, Id. p. 896, var. B., var. C.—*Anhinga Brasiliensis Tupinamb.* MARCGRAV. *Hist. Nat. Bras.* p. 218.—*L' Anhinga*, BRISS. VI., p. 476.—*SALERNE*, p. 375.—*BUFF. Ois. VIII.*, p. 448. *Anhinga noir de Cayenne*, *Pl. Enl.* 960.—*White-bellied Darter*, *LATH. Gen. Syn.* III., p. 622, 1. *Black-bellied Darter*, Id. p. 624, var. A. pl. 106. Id. p. 625, var. B.—*Colymbus colubrinus*, *Snake-bird*, *BARTRAM*, p. 132, 295.

HEAD, neck, whole body above and below, of a deep shining black, with a green gloss, the plumage extremely soft, and agreeable to the touch; the commencement of the back is ornamented with small oblong ashy white spots, which pass down the shoulders, increasing in size according to the size of the feathers, and running down the scapulars; wings and tail of a shining black, the latter broadly tipped with dirty white; the lesser coverts are glossed with green, and are spotted with ashy white; the last row of the lesser coverts, and the coverts of the secondaries, are chiefly ashy white, which forms a large bar across the wing; the outer web of the large scapulars is crimped; tail rounded, the two under feathers the shortest, the two upper feathers, for the greater part of their length, beautifully crimped on their outer webs, the two next feathers in a slight degree so; bill dusky at the base and above, the upper mandible brownish yellow at the sides, the lower mandible yellow ochre; inside of the mouth dusky; irides dark crimson; the orbit of the eye, next to the plumage of the head, is of a greenish blue color, this passes round, in the form of a zigzag band, across the front—the next color is black, which entirely surrounds the eye; eyelids of a bright azure, running into violet next to the eyeball; lores greenish blue; naked skin in front black; jugular pouch jet black; hind-head suberested; along the sides of the neck there runs a line of loose unwebbed feathers, of a dingy ash color, resembling the plumage of callow young, here and there on the upper part of the neck one perceives a feather of the same; on the forehead there is a small knob or

* Named in the plate Black-bellied Darter.

protuberance; the neck, near its centre, takes a singular bend, in order to enable the bird to dart forward its bill, with velocity, when it takes its prey; legs and feet of a yellowish clay color, the toes, and the hind part of the legs, with a dash of dusky; claws greatly falcate; when the wings are closed, they extend to the centre of the tail.

Length from the tip of the bill to the end of the tail two feet ten inches,* breadth three feet ten inches; bill to the angle of the mouth full four inches; tail ten inches and a half, composed of twelve broad and stiff feathers. Weight three pounds and a half.

The serratures of the bill are extremely sharp, so much so, that when one applies tow, or such like substance, to the bird's mouth, it is with difficulty disengaged.

The lower mandible and throat, as in the Divers, are capable of great expansion, to facilitate the swallowing of fish, which constitute the food of this species. The position of these birds, when standing, is like that of the Gannets.

The above description was taken from a fine adult male specimen, which was shot by my fellow-traveller, Mr. T. Peale, on the first of March, 1818, in a creek below the Cow Ford, situated on the river St. John, in East Florida. We saw some others in the vicinity, but owing to their extreme vigilance and shyness, we could not procure them.

From the description of the White-bellied Darter of Latham and others, which is unquestionably this species, one would be inclined to conjecture, that the bird figured in our plate, as the female, is the young male. But this point it is not in my power to ascertain. The specimens in Peale's Museum, from which Wilson took his figures, were labelled male and female. All the Darters which I saw, while in Florida, were males.

The Snake-bird is an inhabitant of the Carolinas, Georgia, the Floridas and Louisiana; and is common in Cayenne and Brazil. It seems to have derived its name from the singular form of its head and neck, which, at a distance, might be mistaken for a serpent. In those countries where noxious animals abound, we may readily conceive, that the appearance of this bird, extending its slender neck through the foliage of a tree, would tend to startle the wary traveller, whose imagination had portrayed objects of danger lurking in every thicket. Its habits, too, while in the water, have not a little contributed to its name.

* The admeasurement of the specimen, described in the first edition of this work, was made by Wilson himself, from the stuffed bird in Peale's Museum. It differed considerably from that described above; but as our specimen was a very fine one, there is room to conjecture that there was some error in the admeasurement of the former, ours being described immediately after death.

It generally swims with its body immerged, especially when apprehensive of danger, its long neck extended above the surface, and vibrating in a peculiar manner. The first individual that I saw in Florida, was sneaking away to avoid me, along the shore of a reedy marsh, which was lined with alligators, and the first impression on my mind was that I beheld a snake; but the recollection of the habits of the bird soon undeceived me. On approaching it, it gradually sank; and my next view of it was at many fathoms distance, its head merely out of the water. To pursue these birds at such times is useless, as they cannot be induced to rise, or even expose their bodies.

Wherever the limbs of a tree project over, and dip into, the water, there the Darters are sure to be found, these situations being convenient resting places for the purpose of sunning and preening themselves; and, probably, giving them a better opportunity, than when swimming, of observing their finny prey. They crawl from the water upon the limbs, and fix themselves in an upright position, which they maintain in the utmost silence. If there be foliage, or the long moss, they secrete themselves in it in such a manner that they cannot be perceived, unless one be close to them. When approached, they drop into the water with such surprising skill, that one is astonished how so large a body can plunge with so little noise, the agitation of the water being, apparently, not greater than that occasioned by the gliding of an eel.

Formerly the Darter was considered by voyagers as an anomalous production, a monster partaking of the nature of the snake and the Duck; and in some ancient charts which I have seen, it is delineated in all the extravagance of fiction.

From Mr. William Bartram we have received the following account of the subject of our history:

"Here is in this river,* and in the waters all over Florida, a very curious and handsome bird, the people call them Snake-birds; I think I have seen paintings of them on the Chinese screens, and other Indian pictures; they seem to be a species of *Colymbus*, but far more beautiful and delicately formed than any other that I have ever seen. They delight to sit in little peaceable communities, on the dry limbs of trees, hanging over the still waters, with their wings and tails expanded, I suppose to cool and air themselves, when at the same time they behold their images in the watery mirror. At such times when we approach them, they drop off the limbs into the water as if dead, and for a minute or two are not to be seen; when on a sudden, at a great distance, their long slender head and neck appear, like a snake rising erect out of the water; and no other part of them is to be seen when swimming, except sometimes the tip end of their tail. In the heat of the day they are

* The river St. Juan, East Florida.

seen in great numbers, sailing very high in the air, over lakes and rivers.

"I doubt not but if this bird had been an inhabitant of the Tiber in Ovid's days, it would have furnished him with a subject for some beautiful and entertaining metamorphoses. I believe they feed entirely on fish, for their flesh smells and tastes intolerably strong of it: it is scarcely to be eaten, unless one is constrained by insufferable hunger. They inhabit the waters of Cape Fear river, and, southerly, East and West Florida."*

PLOTUS ANHINGA.

DARTER, OR SNAKE-BIRD.

[Plate LXXIV. Fig. 2, Female.]

Anhinga de Cayenne, Pl. Enl. 959.

THE Female Darter measures three feet five inches in length; and differs in having the neck before of a roan color or iron gray, the breast the same, but lighter and tinged with pale chestnut; the belly as in the male; where the iron gray joins the black on the belly, there is a narrow band of chestnut; upper head, and back of the neck, dark sooty brown, streaked with blackish; cheeks and chin pale yellow ochre; in every other respect the same as the male, except in having only a few slight tufts of hair along the side of the neck; the tail is twelve inches long to its insertion, generally spread out like a fan, and crimped like the other on the outer vanes of the middle feathers only.

The above is a description of the supposed female Darter, which was preserved in Peale's Museum; Wilson's figure was taken from this specimen. It was contrary to his practice to make his drawings from stuffed birds, but as he had never had an opportunity of beholding this species in a living or recent state, he was compelled, in this instance, to resort to the museum.

The author having written to Mr. John Abbot, of Georgia, relative to this species, and some others, received from this distinguished naturalist a valuable communication, from which the following extract is made: "Both the Darters I esteem as but one species. I have now by me a drawing of the male, or Black-bellied, only; but have had speci-

* Bartram's Travels, p. 132.—MS. in the possession of the author. [From Mr. Ord's Supplementary Volume.]

mens of both at the same time. I remember that the upper parts of the female were similar to those of the male, except that the color and markings were not so pure and distinct; length thirty-six inches, extent forty-six. These birds frequent the ponds, rivers and creeks, during the summer; build in the trees of the swamps, and those of the islands in the ponds; they construct their nests of sticks; eggs of a sky blue color. I inspected a nest, which was not very large; it contained two eggs and six young ones, the latter varying much in size; they will occupy the same tree for a series of years. They commonly sit on a stump, which rises out of the water, in the mornings of the spring, and spread their wings to the sun, from which circumstance they have obtained the appellation of Sun-birds. They are difficult to be shot when swimming, in consequence of only their heads being above the water."

Never having seen a specimen of the Black-bellied Darter of Senegal and Java, I cannot give an opinion touching its identity with ours.*

* From Mr. Ord's Supplementary Volume.

BONAPARTE'S
AMERICAN ORNITHOLOGY.

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P R E F A C E

TO THE ORIGINAL EDITION IN FOUR VOLUMES.

AMERICAN ORNITHOLOGY has uniformly presented a highly interesting subject of investigation to naturalists and liberally educated persons, even when the means of gratifying general curiosity were few and difficult of attainment. Wilson's invaluable work removed the obstacles preventing access to this attractive study, conferred on him an imperishable renown, improved the taste and elevated the scientific character of his fellow-citizens, and secured the approbation of the judicious and enlightened in all countries.

Placed where he could derive little or no aid from scientific books or men, Wilson's ardent and perspicacious mind triumphed over circumstances, and enabled him to exhibit the truths he discovered in that warm, lucid, and captivating language, which never fails to reach the heart of his reader, because it flowed direct from his own; whilst his clearness of arrangement, accuracy of description, and faithfulness of delineation, show, most advantageously, the soundness of his judgment and the excellence of his observation. We may add, without hesitation, that such a work as he has published in a new country, is still a desideratum in any part of Europe.

It was the inspiration derived from that pure and perennial source, the contemplation of nature, which gave Wilson the power of illustrating every object of his research, and imparting to the most abstruse discussions the charm of vigorous originality. Unfortunately for the interests of science, his eagerness to augment his stock of knowledge by more incessant application, impaired his constitution to such a degree, that he sunk under the hand of death, before his great work was completed, and before he could reap that rich harvest of fame which

has followed the appearance of his writings, wherever the English language is understood, or natural history admired.

A love for the same department of natural science, and a desire to complete the vast enterprise so far advanced by Wilson's labors, has induced us to undertake the present work, in order to illustrate what premature death prevented him from accomplishing, as well as the discoveries subsequently made in the feathered tribes of these States. This undertaking was not precipitately decided on, nor until the author had well ascertained that no one else was willing to engage in the work. He was aware of his inability to portray the history and habits of birds in a style equal to that of his distinguished predecessor, principally because he does not write in his own language ; and were his abilities equal to his wishes, the species recorded in the following pages are, for the most part, so rare, and their history so little known, as to preclude the possibility of making the attempt.

To compensate for such disadvantages, the author has throughout endeavored to give accurate descriptions, correct synomymes, and a nomenclature as conformable to nature as possible. He has been equally solicitous to procure the best representations of his birds; in which he hopes he has succeeded, through the happy pencil of Mr. Titian Peale, who has invariably drawn from the recent bird, and not from the preserved specimen ; this being the principal advantage of works on Natural History, published in the country where the animals figured are found. The want of such opportunities of making drawings, causes the chief defect of various magnificent European works, in which beauty and brilliancy of coloring scarcely compensate for the unnatural stiffness, faithfully copied from stuffed skins. With the birds always before him, Mr. Lawson has transferred our drawings to the copper with his usual unrivalled accuracy and ability. This artist, who acquired so much distinction by the engravings in Wilson's work, has become perfectly master of his art, and so intimately acquainted with the various parts of a bird, that he may be justly styled the first ornithological engraver of our age. That important part of the work, the coloring of the plates, has not been intrusted to inexperienced persons, but has throughout been executed from nature by Mr. A. Rider himself, whose talents as an artist are well known.

To my friends Mr. Thomas Say, and Dr. John D. Godman, my sin-

cere thanks are due, for the care they have bestowed in preventing the introduction of foreign expressions, or phrases not idiomatic, into my composition.

As the birds of Florida were principally wanting, and it is even supposed that several of those belonging to Cuba, and other West India Islands, may occasionally resort to the southern part of Florida, and thus be entitled to a place in our work, a painter-naturalist was selected to visit that part of the Union which Wilson had been so desirous of exploring. A better choice could not have been made than that of Mr. Titian Peale, whose zeal in the cause of natural history had previously induced him to join those useful citizens, who, under the command of that excellent officer, Major Long, explored the western wilds as far as the Rocky Mountains. Mr. Peale's success in that expedition, where he procured and drew on the spot almost all the new birds contained in this volume, will warrant us in anticipating much from his exertions in Florida.

We expect that our American Ornithology will extend to three volumes, so, that with the nine previously published by Wilson, the whole subject will be embraced in twelve. The present volume contains land birds only; and in evidence of Wilson's industry we may state, that we have been unable to adduce a new Pennsylvanian bird. For the contents of this volume, we have been obliged to resort to birds inhabiting the western territories, the greater part of which were first made known by Say, in the Account of Long's Expedition to the Rocky Mountains, a work that has justly acquired a high degree of celebrity, and is no less creditable to the nation than to the individuals concerned in its production.

The second volume will be devoted to water birds, some of which are common in the very city of Philadelphia. The third will contain birds of both sub-classes indiscriminately, and will chiefly consist of Mr. Peale's gleanings in Florida.

PREFACE

TO THE SECOND AND THIRD VOLUMES.

THE author's original intention, as announced in the preface to the first volume of this work, was to have devoted the second exclusively to water birds, reserving for the third the few unpublished land birds which he at that time possessed. Having since, however, by extending his researches to the most opposite and remote parts of the Union, fortunately succeeded in procuring a sufficient number of land birds to make up a volume, or perhaps two, by themselves, he has changed his original plan for one which is more systematical, and which moreover enables him to complete the series of the numerous and interesting order of Passeres. All the remaining land birds of the United States will then be, the three large Vultures, the most interesting of which, the Condor, is already drawn; the *Strix cinerea*, the largest Owl known; and the Californian Quail.*

* Two of the Vultures are figured by Temminck in the *Planches Coloriées*; *Cathartes californianus*, Pl. 31, and *Cathartes gryphus*, Pl. 133, the male, and Pl. 408, the young female. The latter species had also been previously figured by Humboldt, *Obs. de Zool.* The third, *Cathartes papa*, was long since figured by Buffon, *Pl. Ent.* 428; and also by Vieillot, *Gal. des Ois.* Pl. 3, under the name of *Gypagus papa*.

Strix cinerea has never been represented, and was ranked by us among those species which from their not having for a long period come under the observation of naturalists, we considered obsolete. We have recently ascertained that it inhabits near Lake Superior, and intend that it shall occupy a plate in a future volume, along with several Hawks, which though represented by Wilson, we think it necessary to figure in various states of plumage in order to clear up the intricacy of their history.

Perdix californica has been figured by Lapeyrouse, Shaw, and others.

By all the land birds of the United States, we must be understood to mean those we have personally ascertained. While discoveries are daily making in the Ornithology of Europe, nay even among the feathered tribes of the island of Great Britain, whose limited extent, peculiar situation, and high degree of civilization, ought to have long since rendered her productions thoroughly known, it would be highly presumptuous to imagine that no bird remained to be discovered in a country embracing such a vast extent of unexplored territory as this. Mr. J. J. Audubon, painter-naturalist, who has devoted twenty years of his life to studying nature in the forests of the West, has gratified us with the sight of several drawings of new species which will appear among the plates he is now engaged in publishing. It is greatly to be wished, for the advancement of American Ornithology, that while his work, so magnificent, but necessarily so slow in coming forth, is preparing, a scientific abstract of his discoveries should be drawn up without delay.

Besides the new discoveries that may be daily expected, many known species will probably hereafter be found entitled to enter the Fauna of these states. They may be arranged in two classes, of which the first will comprise those already well known to inhabit the more northern regions of America, and which may at some future period be ascertained to extend their range within our limits: these are all common to both continents; as instances we may adduce *Loxia pytiopsittacus*, *Saxicola œnanthe*, *Tetrao albus*, and *T. lagopus*, &c. Already in the present volume their companions, *Emberiza lapponica* and *Picus tridactylus*, take their station, for the first time, among the birds of the United States. The other class will include those tropical American birds which in all probability visit, either occasionally or at regular periods, the southern borders of Florida and Louisiana, thus entitling them to a place in this work. The *Falco dispar*, and *Columba leucocephala*, of the present volumes, may be cited as examples of the latter description.

But in our opinion the most interesting, and towards which we most earnestly desire to direct the attention of American naturalists and collectors, are those species once noticed by former authors, but from not having been since observed, now become in a manner obsolete, though still without being declared nominal. Such was for a period the case with *Garrulus stelleri* of this volume, and is yet with *Sylvia velata* and

others established by Vieillot, of whose existence as distinct species there can hardly be any reasonable doubt. In order more clearly to explain our meaning, it may be proper to enter into the following calculations:

In Linné's last edition of his *Systema Naturæ*, a work professing to contain, like all others, all the then known birds of the United States, which had been chiefly taken from the original sources of Catesby and Edwards, only one hundred and eighty-three are assigned to North America. It is true that he was acquainted with several other North American birds which also inhabit other countries, those common to Europe especially; but as many of the one hundred and eighty-three are merely nominal, we may allow them to counterbalance those omitted. Of the entire number, one hundred and three are land birds, all which we have verified either as real or nominal, four excepted, of which *Picus hirundinaceus* alone (a real species) may have escaped Wilson and ourselves, though we do not believe it. Of the three remaining, two, *Lanius canadensis* and *Loxia canadensis*, are now well known to be South American birds given as North American through mistake; and the third, *Sylvia trochilus* of Europe, may have been reckoned as American on account of the resemblance between it and the female of some American Warbler, probably *Sylvia trichas*.

Since the time of Linné however, great attention has been paid to American Ornithology, and very numerous contributions made to the Fauna of the United States, particularly in the standard works of Pennant and Latham. As all these are embodied in Latham's vast compilation, the *Index Ornithologicus*, we shall take that as our guide. We there find that no less than four hundred and sixty-four species are set down as North American! It is hardly necessary to remark how greatly surcharged with nominal species this number must be, when we consider that after the lapse of many years, and the addition of so many genuine species by Wilson and ourselves, the number we admit is still short of four hundred. A work professing to review with care the North American part of Latham's *Index*, species by species, on the plan of our "Observations on the Nomenclature of Wilson's Ornithology," is still a desideratum; and if executed with accuracy and judgment, would be as advantageous to science, as arduous for the naturalist who should undertake it. For the present, leaving what we have to say concerning the water birds to the volume wherein they

are to be especially treated of, we shall content ourselves with stating, that out of Latham's four hundred and sixty-four species, two hundred and sixty-nine are land birds. Of these, one hundred and fifty at most are admitted by us, and though it would not be difficult to prove nominal about sixty, there will still remain about sixty others, whose habitat is false, or which are not sufficiently investigated. Such is the state of things to which we call the attention of ornithologists.

However this may be, Wilson only described two hundred and seventy species, of which one hundred and seventy-nine were land birds. Sixteen more are added in the first volume of this work. The second and third will contain an additional sixteen, after which there yet remain five others whose existence we have ascertained, making a total of two hundred and sixteen.*

The large size and importance of some of the birds given in the two present volumes, among which are three Hawks and four Grouse, have obliged us to distribute the sixteen new species that they contain, together with nine others, of which two only are reduced, upon twelve plates. It therefore rested with our publishers to issue one large, or two smaller volumes, and the latter course is that which they have thought proper to adopt.

* These may all be found in our *Synopsis of the Birds of the United States*, and *Appendix*, published in the *Annals of the Lyceum of Natural History of New York*, Vol. II.

AMERICAN ORNITHOLOGY.

MUSCICAPA SAVANA.

FORK-TAILED FLYCATCHER.

[Plate I. Fig. 1.]

Muscicapa tyrannus, LINN. *Syst. I.*, p. 325, Sp. 4.—Gmel. *Syst. I.*, p. 931, Sp. 4.—Lath. *Ind.* p. 484, Sp. 69.—*Tyrannus savana*, Vieill. *Ois. de l'Am. Sept.* I., p. 72, pl. 43 (a South American specimen).—Vieill. *Nouv. Dict. d'Hist. Nat.* xxxv., p. 87.—*Muscicapa tyrannus cauda bifurca*, Briss. *Av.* II., p. 395, Sp. 20, pl. 39, fig. 3.—*Le Moucherolle savana*, Buff. *IV.*, 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. II.*, Part 1, p. 355, Sp. 59.

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, by the individual represented in the annexed plate, to remove all doubt on the subject. The specimen from which our drawing was made is a beautiful male, in full plumage; it was shot near Bridgeton, 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 favored 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 King-bird, which is unquestionably a *Muscicapa* and not a *Lanius*. As the King-bird 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 endeavored 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 sub-genus 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 one wing to that of the other is fourteen inches. The bill is somewhat more slender and depressed at base than that of the King-bird, 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 color 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 color 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 proportionably 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 recognised, by being destitute of that spot, as well as by having the head cinereous, instead of black; the color 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 colored 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. That our drawing of this graceful bird is far superior to those above mentioned, will at once be evident on comparison; this superiority is owing to the circumstance of this drawing, like all the others given in the present work, being made from the recent specimen. Buffon's plain figure is a more faithful representation than that given in his colored 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 occasionally 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 color that bird strongly resembles our *Muscicapa savana*, but it is considerably smaller, and has different habits, being gregarious; whilst the *savana*, as we have already stated, 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 color with the other superior parts of the body; the remaining under parts being of the same color, 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.

MYIOTHERA OBSOLETA.
ROCKY MOUNTAIN ANTCATCHER.

[Plate I. Fig. 2.]

Troglodytes obsoleta, SAY, in *Long's Expedition to the Rocky Mountains*, vol. II., p. 4.

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. This may be easily ascertained, by comparing the annexed representation with the figures given by Buffon and Temminck. The figure which our Rocky Mountain Anteatecher resembles most, is Buffon's Pl. Enc. 823, fig. 1 (*Myiothera lineata*). The colors of our bird are also similar to those of a Wren, but this similitude is likewise observed in other *Myiotheræ*.

The bird now before us was brought from the Arkansas river, in the neighborhood 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 *Certhia*, 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 favorite 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 odor 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 color. The size of the sexes is different, the female being much larger than the male. Such variations may have induced natural-

ists 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 genetically 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 color, 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 color 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 Arkansas, in the neighborhood 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.

SYLVIA CHRYSOPTERA.

FEMALE GOLDEN-WINGED WARBLER.*

[Plate I. Fig. 3.]

Motacilla chrysoptera, LINN. *Syst.* I., p. 333, Sp. 20. GMEL. *Syst.* I., p. 971, Sp. 20. Male.—*Sylvia chrysoptera*, LATH. *Ind.* p. 541, Sp. 123. VIEILL. *Ois. de l'Am.* Sept. II., p. 37, pl. 97, Male.—*Motacilla flavifrons*, GMEL. *Syst.* I., 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.* v., p. 311, Male.—*Golden-winged Flycatcher*, EDWARDS, *Glean.* II., 189, pl. 299, Male.—*Gold-winged Warbler*, PENN. *Arct. Zool.* Sp. 295. LATH. *Syn.* II., Part II., p. 492, Sp. 118, Male.—*Yellow-fronted Warbler*, PENN. *Arct. Zool.* Sp. 296. LATH. *Syn.* II., Part II., p. 461, Sp. 67, Male.—*Parus alis aureis*, the *Golden-winged Flycatcher*, BARTRAM, *Trav.* p. 292, Male.

THE female of this pretty little Warbler, hitherto unknown to any naturalist, is now figured and described for the first time. For the opportunity of presenting it to the reader, we are indebted to Mr. Titian Peale, who shot it on the twenty-fourth 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 figure and description, in order to be recognised; yet we cannot fail to perceive a kind of family resemblance between the sexes; and, by comparing the two descriptions and accompanying figures, 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

* See WILSON'S *American Ornithology*, II., p. 182, pl. 15, fig. 5, for the Male.

really similar in both sexes; but in the female the colors are paler, and green prevails on those parts which, in the male, are of a dark slate color.

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-colored 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-color, becoming still paler on the breast. The remaining under parts are whitish, occasionally tinged with yellow, and with slate-color on the flanks. The wings are of the same color 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 color; 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 sub-genus, which would include this bird, the *Sylvia vermicivora*, and some other species. In this opinion Cuvier has coincided, by forming his sub-genus *Dacnis*, which he places under his extensive genus *Cassicus*, remarking that they form the passage to *Motacilla*. This sub-genus 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.

MUSCICAPA FORFICATA.

SWALLOW-TAILED FLYCATCHER.

[Plate II. Fig. 1.]

Muscicapa forficata, GMEL. *Syst.* I., p. 931, Sp. 22.—LATH. *Ind.* p. 485, Sp. 70.—VIEILL. *Ois. de l'Am.* Sept. I., p. 71.—STEPHENS, *Cont. of SHAW's Zool.* xx., p. 413, *Pl. 3.* *Tyrannus forficatus*, SAY, in *Long's Expedition to the Rocky Mountains*, II., p. 224.—*Moucherolle à queue fourchue de Mexique*, BUFF. *Ois.* IV., p. 564.—*Gobe-mouche à queue fourchue de Mexique*, BUFF. *Pl. Enl.* 667.—*Swallow-tailed Flycatcher*, LATH. *Syn.* II., Part. I., p. 356, Sp. 60.

THIS rare and beautiful bird is, I believe, now figured from nature for the second time; and, as the plate given by Buffon conveys but an imperfect idea of its characters, the representation in the accompanying engraving will certainly prove the more accessible to naturalists. That author had the merit of publishing the first account of this 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 specimen before us, which is a fine adult male, was shot by Mr. Titian Peale, on the twenty-fourth of August, on the Canadian fork of the Arkansas 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 King-bird, the type of the sub-genus.

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 color, 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 color. The tail is greatly elongated and excessively forked; it is of a deep velvet-black color, 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 color, 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 colors 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 King-bird, 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 recognising 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; and, 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-Mississippi territories, lying on the south-western frontier

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

MUSCICAPA VERTICALIS.

ARKANSAS FLYCATCHER.

[Plate II. Fig. 2.]

Tyrannus verticalis, SAY, in *Long's Expedition to the Rocky Mountains*, II., p. 60.

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 Arkansas 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 color, 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 color of the superior tail coverts. The chin is whitish; the throat and upper part of the breast are of the same color 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 color, 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 Arkansas Flycatcher might more readily be mistaken;

of these, we may mention the Crested Flycatcher (*Muscicapa crinita*), so well described and figured 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 color of the latter is, besides, much paler, and the tail is less deeply emarginated.

The Arkansas 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.

MUSCICAPA SAYA.

SAY'S FLYCATCHER.

[Plate II. Fig. 3.]

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 Arkansas 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

* 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 was 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*).

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 color 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.

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 color on the disc. The feet are blackish; the irides are brown. The general color of the whole upper parts is dull cinnamon-brown, darker on the head; the plumage at base is of a lead color. 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 color; 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 color.

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.

* Nouv. Dict. d'Hist. Nat. xxi., p. 451.

REGULUS CRISTATUS.

FEMALE GOLDEN-CROWNED GOLD-CREST.*

[Plate II. Fig. 4.]

Motacilla regulus, LINN. *Syst.* I., p. 338, Sp. 48. GMEL. *Syst.* I., p. 995, Sp. 48.—*Sylvia regulus*, LATH. *Ind.* p. 548, Sp. 152. TEMM. *Man. d'Orn.* p. 229. RANZANI, *Elem. di Zool.* III., Part v., p. 105, Pl. 16, fig. 3.—*Regulus cristatus*, RAY, *Syn.* p. 79, Sp. 9. ALDR. *Orn.* II., p. 649. WILL. *Orn.* p. 163, Pl. 42. VIEILL. *Nouv. Dict. d'Hist. Nat.* xxix., p. 420.—*Regulus vulgaris*, STEPHENS, *Cont. of Shaw's Zool.* xx. p. 758, Pl. 59.—*Parus calendula*, *Regulus cristatus vulgo Dicta*, BRISS. *Av.* III., p. 579, Sp. 17.—*Le Roitelet*, GERARDIN, *Tabl. Elem. d'Orn.* I., p. 318, Sp. 26, Pl. 15, (not of BUFF. *Ois.* v., p. 363, Pl. 16, fig. 2, nor *Pl. Enl.* 651, fig. 3, which represent *Sylvia ignicapilla* of BREHM.)—*Regolo*, *Storia degli uccelli*, iv. Pl. 390.—*Gold-crested Wren*, LATH. *Syn.* II., Part II., p. 508, Sp. 145. PENN. *Brit. Zool.* Sp. 153. PENN. *Arct. Zool.* Sp. 321.—*Golden-crowned Wren*, EDW. *Glean.* v., p. 95, Pl. 254, lower fig. Male.

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, and we have therefore concluded, that the faithful representation in the accompanying plate will be acceptable to ornithologists. A slight inspection of this specimen leaves no doubt as to its being the female of the *Regulus cristatus*; and, should the *Regulus ignicapillus*, contrary to our expectations, also prove to be an inhabitant of this country, it will appear, 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 distin-

* See Wilson's *American Ornithology*, II., p. 169, Pl. 8, fig. 2, for the Male.
(164)

guishes two varieties of *Regulus cristatus*, and again describes the *ignicapillus* as the one he saw in America. If this observation could be relied 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 Gold-crest (*Regulus calendulus*), so well figured and 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 neighborhood 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 plate, and more especially his description, as well as the inspection of the very individual he delineated, 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 colors 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 color, 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 color; 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.

ICTERUS ICTEROCEPHALUS.

YELLOW-HEADED TROOPIAL.

[Plate III. Fig. 1, Male; 2, Female.]

Oriolus Icterocephalus, LINN. *Syst.* I., p. 163, Sp. 16. GMEL. *Syst.* I., p. 392, Sp. 16. LATH. *Ind.* p. 183, Sp. 32, Male.—*Icterus Icterocephalus*, DAUDIN, *Orn.* II., p. 337, Sp. 9, Male.—*Pendulinus Icterocephalus*, VIEILL. *Nouv. Dict. d'Hist. Nat.* v., p. 317, Male.—*Icterus Xanthornus Icterocephalus Cayanensis*, BRISS. *Av.* II., p. 124, Sp. 27, Pl. 12, fig. 4, Male.—*Cornix atra; capite, collo, pectoreque flavis*, KOELREUTER, *Nov. Comm. Ac. Sc. Petrop.* xi., p. 435, Pl. 15, fig. 7, Male.—*Les Coiffes jaunes*, BUFF. *Ois.* III., p. 250, Male.—*Carouge de Cayenne*, BUFF. *Pl. Enl.* 343, Male.—*Yellow-headed Starling*, EDWARDS, *Glean.* III.. p. 241, Pl. 323, Male.—*Yellow-headed Oriole*, LATH. *Syn.* I., Part II., p. 441, Sp. 30, Male.

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 being extremely imperfect, from the circumstance of their having been drawn from wretchedly stuffed specimens, we may safely state, that this sex also is, for the first time, represented with a due degree of accuracy in our plate. 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 Réaumur'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 color, 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 sub-genus. They differ, however, in color, 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 color 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 color 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.

The fine specimens represented in our plate were killed near the Pawnee villages, on the river Platte, where they were seen in great numbers about the middle of May. The males and females were sometimes observed in separate flocks.

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 *Yphantes*, 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 sub-genera, the present bird belonging to the second, to which we apply the name of *Xanthornus*. The species of this sub-genus 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 labor 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.

*SYLVIA MARITIMA.**

FEMALE CAPE MAY WARBLER.

[Plate III. Fig. 3.]

I WAS so fortunate as to obtain this undescribed little Warbler in a small wood near Bordentown, New Jersey, on the fourteenth 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

* See Wilson's *American Ornithology*, II., p. 209, Pl. 54, fig. 3, for the Male.

recognised 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 color 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*.

QUISCALUS MAJOR.

GREAT CROW BLACKBIRD.

[Plate IV. Fig. 1, Male; 2, Female.]

Quiscalus major, VIEILL. *Nouv. Dict. d'Hist. Nat.* xxviii., p. 487.—*Gracula quis- cala*, ORD., *Journ. Acad. Nat. Sc. Philad.* I., p. 253.—*Gracula barita*, WILSON, *Am. Orn.* vi., Index p. viii.—*Gracula quiscalala*, the Purple Jackdaw of the sea-coast, BARTRAM, *Travels*, p. 290.—*Corvus mexicanus?* GMEL. *Syst.* I., p. 375, Sp. 42. LATH. *Ind.* p. 164, Sp. 36, Male.—*Corvus zanoe?* GMEL. *Syst.* I., p. 375, Sp. 44. LATH. *Ind.* p. 164, Sp. 37, Female.—*Pica mexicana major?* BRISS. *Av.* II., p. 43, Sp. 4, male.—*Pica mexicana minor?* BRISS. *Av.* II., p. 44, Sp. 5, Female—*L'Hocizana?* BUFF. *Ois.* III., p. 103, Male.—*Le Zanoë?* BUFF. *Ois.* III., p. 106, female.—*Mexican Crow?* LATH. *Syn.* I., p. 396, Sp. 34, Male.—*Lesser Mexican Crow?* LATH. *Syn.* I., p. 397, Sp. 36, Female.—*Hocitzanatl, seu magnus Sturnus?* HERNAND. *Hist. An. Nov. Hisp.* p. 21, Male.—*Tzanahoei?* HERNAND. *Hist. An. Nov. Hisp.* p. 22, Female.—*Hocitzanatl?* RAY, *Syn. Av.* p. 162, Male.—*Tzanahoei, seu Pica mexicana Hernandezii?* RAY, *Syn. Av.* p. 162, Female.

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 colored 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 cognisable situation. With these views we now give a faithful representation of both sexes of the Great Crow-Blackbird, drawn by that zealous observer of nature and skilful artist Mr. John J. Audubon, and hope thereby to remove all doubt relative to this interesting species.

For the same purpose we give in the following plate a figure of the female Common Crow Blackbird, which differs so little from its mate (admirably represented in the first volume of Wilson's Ornithology), that it would be otherwise unnecessary. This measure we believe will be acceptable to ornithologists, as it furnishes them with means of comparing the females of both the species in question, whence the most striking distinctive characters are obtained; that of one species differing considerably in size and color from the male, while the sexes of the other are very similar in appearance.

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 synomyms, 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 endeavor 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 uncontestedly: 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 *quiscala* of Wilson unquestionably the true *quiscala* of authors; this is so obvious, that 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 synonymes, 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 Grackle, is evidently the same with the *quiscalala*:* Gmelin's *barita* is taken partly from that of Linné, and partly from the Boat-tailed Grackle 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 *Cassici*, 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 *Quiscalalus*; 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 *Quiscalalus* is peculiar to America, and is composed of four well ascertained species, three of which are found in the United States: these are, *Quiscalalus major*,† *versicolor*, and *ferrugineus*; the fourth, *Quiscalalus 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, 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

* 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 *quiscalala*, he inferred, that the *quiscalala* was the *barita*.

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

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 color, 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 osseous carina, and brilliancy of coloring, 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 favorite 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 neighboring 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 neighborhood of marshes and ponds: they lay about five eggs, which are whitish, spotted with dark-brown, as represented in the plate.

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 San 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 zanoe* the female, is corroborated by the male and female Great Crow Blackbird being seen in separate flocks.

*QUISCALUS VERSICOLOR.**

FEMALE COMMON CROW BLACKBIRD.

[Plate V. Fig. 1.]

Quiscalus versicolor, VIEILL, *Nouv. Dict. d'Hist. Nat.* xxviii., p. 488.—NOBIS. *Obs. Nom. Wils. Orn. Journ. Acad. Nat. Sc. Philad.* iii., p. 365.—*Gracula quiscala*, LINN. *Syst. I.*, p. 165, Sp. 7. GMEL. *Syst. I.*, p. 397, Sp. 7. LATH. *Ind.* p. 191, Sp. 7.—*Gracula barila*, GMEL. *Syst. I.*, p. 396, Sp. 4. LATH. *Ind.* p. 191, Sp. 6. ORD. *Journ. Acad. Nat. Sc. Philad.* i., p. 254 (not of LINN.).—*Oriolus ludovicianus*, GMEL. *Syst. I.*, p. 387, Sp. 31 (pied variety).—*Oriolus leucocephalus*, LATH. *Ind.* p. 175, Sp. 4 (pied variety).—*Pica jamaicensis*, BRISS. *Av.* ii., p. 41, Sp. 3.—*Monedula purpurea*, the Purple Jackdaw, CATESBY, *Carolina*, i., p. 12, Pl. 12.—*Gracula purpurea*, the Lesser Purple Jackdaw, or Crow Blackbird, BARTR. *Trav.* 291.—*Pie de la Jamaique*, BUFF. *Ois.* iii., p. 97.—*Cassique de la Louisiane*, BUFF. *Ois.* iii., p. 242. *Pl. Enl.* 646 (pied variety).—Purple Grackle, PENN. *Arct. Zool.* Sp. 153. LATH. *Syn. I.*, Part II., p. 462, Sp. 6.—Boat-tailed Grackle, PENN. *Arct. Zool.* Sp. 154. LATH. *Syn. I.*, Part II., p. 460, Sp. 5.—White-headed Oriole, PENN. *Arct. Zool.* Sp. 147. LATH. *Syn. I.*, Part II., p. 422, Sp. 4 (pied variety).

THE female Common Crow Blackbird is figured in the annexed plate, that naturalists may have an opportunity of comparing it with the corresponding sex of the Great Crow Blackbird, and thus receive a distinct idea of the difference between the two species, so well manifested in their females.

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 color 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

* See Wilson's *American Ornithology*, i., p. 156, Pl. 21, fig. 4, for the Male, and history.

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 color, 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 colors; 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.

The individual represented in the annexed plate, is a remarkably fine one, in the most perfect state of plumage. It therefore more strongly resembles the male than is usual with its sex, which are generally much less brilliant in coloring, and more sooty-brown. This bird was obtained at Great Egg Harbor on the twenty-first of May, and was selected as the best female of several pairs, assembled to breed at one of the identical Fish-Hawks nests, in the interstices of which Wilson mentions having seen them building. One of their nests contained three eggs, and the species had not ceased to lay.

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.

SYLVIA CELATA.
ORANGE-CROWNED WARBLER.

[Plate V. Fig. 2.]

Sylvia celata, SAY, in *Long's Expedition to the Rocky Mountains*, I., p. 169.

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 further north. It is more particularly interesting, inasmuch as it enriches the Fauna of the United States with another species of the small sub-genus *Daenis*, which may be ascertained by inspecting the bill, represented in the annexed plate.

The Orange-crowned Warbler is full five inches long, and seven in extent. The bill is dark horn color, 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 color. 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 sub-equal; 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 *Daenis*, and scarcely differs from our species, except in the white belly, the light ash color of the head and neck, and the deep chestnut color disposed in small touches on the crown, instead of an uniform orange color.

The figure given in our plate is that of a male; and the only difference observable between the sexes is, that the rump of the male is of a brighter color, approaching, in old birds, to a pure yellow.

During winter, the Orange-crowned Warbler is one of the most common birds in the neighborhood of St. Augustine, 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.

FRINGILLA GRAMMACA.

LARK FINCH.

[Plate V. Fig. 3.]

Fringilla grammaca, SAY, in *Long's Expedition to the Rocky Mountains*, I., p. 139.

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 color, with a slight elevation on the roof of the upper mandible. The feet are pale flax color, 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 interseapular region having a blackish-brown disc; 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 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 colors 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.

PYRRHULA FRONTALIS.

CRIMSON-NECKED BULLFINCH.

[Plate VI. Fig. 1, Male; Fig. 2, Female.]

Fringilla frontalis, SAY, in Long's Expedition to the Rocky Mountains, II., p. 40.

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 figured, and permanently established by that author.* But several other allied species

* 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

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, considering 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 Arkansas, 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 endeavors 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 color; 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 eyes is cinereous-gray, as well as the cheeks, and the small feathers immediately around the bill; the

doubt in his Synopsis, whether the birds in the neighborhood 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*.

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 color 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 coloring of this bird is probably much more brilliant in its full spring dress, the crimson extending much further down on the back, &c. As the season advances, the tips of the feathers, which are the only parts of a crimson color, 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 color, 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 Tem-

minek, 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 *Pyrrhula* 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 Arkansas 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*.

FRINGILLA PSALTRIA.

ARKANSAS SISKIN.

[Plate VI. Fig. 3.]

Fringilla psaltria, SAY, in Long's Expedition to the Rocky Mountains, II., p. 40.

"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 colors 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 Arkansas 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 sixteenth of July, near Boiling Spring creek: on the annexed plate, it is figured in company with the American Goldfinch in autumnal plumage, for the sake of comparison.

The Arkansas Siskin is four inches and a quarter long; the bill is yellowish, tipped with blackish; the feet are flesh color; 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 colors less vivid and less pure.

The Arkansas 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 Arkansas 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 Arkansas 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 applicable 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 sub-genus *Carduelis*, having a more slender, acute, and elongated bill, than other *Fringillæ*.

FRINGILLA TRISTIS.

FEMALE AMERICAN GOLDFINCH.*

[Plate VI. Fig. 4.]

Fringilla tristis, LINN. *Syst.* I., p. 320, Sp. 12, Male.—GMEL. *Syst.* I., p. 907, Sp. 12. LATH. *Ind.* p. 452, Sp. 64. VIEILL. *Nouv. Dict. d'Hist. Nat.* XII., p. 167.—*Fringilla spinus*, var. γ GMEL. *Syst.* I., p. 914, Sp. 25, Male, in winter plumage.—*Carduelis Americana*, BRISS. *Av.* III., p. 64, Sp. 3.—*Carduelis Americanus*, the *American Goldfinch*, CATESBY, *Carolina*, I., p. 43, pl. 43, Male in spring dress. BARTR. *Trav.* p. 291.—*Chardonneret jaune*, BUFF. *Ois.* IV., p. 212.—*Chardonneret du Canada*, BUFF. *Pl. Enl.* 202, fig. 2, Male, in spring dress.—*Tarin de la Nouvelle York*, BUFF. *Ois.* IV., 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.* II., p. 133, pl. 274, Male and Female.—LATH. *Syn.* II., Part I., p. 288, Sp. 57. Id. 1st Suppl. p. 166.—*Siskin*, var. B., LATH. *Syn.* II., Part I., p. 291, Sp. 58, Male changing.

WE have been induced by the analogy existing between the preceding new species and this common bird, to figure them as companions on the same plate, that they may be immediately and readily compared. To give the present figure more interest, we have chosen the female, though we might with equal propriety have selected the male in winter plumage, as the latter differs but slightly from its mate during that season. 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, quoted above, 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, represented by Wilson in his first plate, is four and a half inches long, and eight in extent. The bill resembles that of the European Goldfinch, and, as well as tho-

* See Wilson's *American Ornithology*, II., p. 99, pl. 1, fig. 2, for the male, and history.

feet, is of a reddish-cinnamon color; 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 colors 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 color 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 colors, 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 coloring, 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. From this statement it follows, that Wilson's figure represents the adult male in that brilliant dress in which it appears for the space of four or five months only; whilst the figure in the annexed plate exhibits the invariable colors of the female and young, as well as the appearance of the male for the remaining seven months in the year.

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.

FRINGILLA AMœNA.

LAZULI FINCH.

[Plate VI. Fig. 5.]

Emberiza amœna, SAY, in Long's Expedition to the Rocky Mountains, II., p. 47.

THE genus *Emberiza*, though very natural, and distinguished by well marked characters, has, notwithstanding 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 *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, shows 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*, Wils.), but is emarginated near the tip, being horn color, 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 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 color, and otherwise less brilliantly adorned.

This species appears to be rather rare; it is found along the Arkansas 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.

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

HIRUNDO FULVA.

FULVOUS OR CLIFF SWALLOW.

[Plate VII. Fig. 1.]

Hirundo fulva, VIEILL. *Ois. de l'Am. Sept.* I., p. 62, Pl. 32. STEPHENS, *Cont. of Shaw's Zool.* x., Part I., p. 126. DEWITT CLINTON, *Ann. Lyceum Nat. Hist. N. Y.* I., p. 156.—*Hirundo lunifrons*, SAY, in *Long's Expedition to the Rocky Mountains*, II., p. 47.

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 colored 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 hind head; 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 color, 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, which is also represented in the plate; 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 color 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, Ken-

tucky, &c., whence they are extending very rapidly, and have recently appeared in the western part of New York. In order to show 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 out-house, 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 fifth of June, and departed on the twenty-fifth 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. Their 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 labors, 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, as represented in the back-ground of our plate. 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 they disappear as suddenly as they came.

STRIX CUNICULARIA.

BURROWING OWL.

[Plate VII. Fig. 2.]

Strix cunicularia, MOLINA, *Hist. Chili* (Am. ed.), I. p. 184. GMEL. *Syst. I.*, p. 192, Sp. 28. LATH. *Ind.* p. 63, Sp. 38. VIEILL. *Ois. de l'Am. Sept.* I., p. 48. SAY, in *Long's Expedition to the Rocky Mountains*, II., p. 36 and 200.—*Ulula cunicularia*, FEUILLÉE, *Journ. Obs. Phys.* p. 562.—*Noctua coquimbana*, BRISS. *Av.* I., p. 525, Sp. 11.—*Coquimbo Owl*, LATH. *Syn.* I., p. 145, Sp. 33.

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 topmost 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 excellency, 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 honorable and enviable eminence as a naturalist.

In the trans-Mississippi 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 neighborhood 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 further 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 showed 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 villages 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 colors 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. Our figure will be the more acceptable to ornithologists, as it is the first which has been given of the Burrowing Owl: in the distance we have introduced a view of the Prairie Dog village.

The peculiar sub-genus 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 sub-genus *Noctua* of Savigny, having small oval openings to the ears, which are destitute of opereulum, the facial disk of slender feathers

* 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 hypugaea*.

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 color, 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 color 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, and margined with blackish, which color 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 color 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 color.

*PICUS VARIUS.**

YOUNG YELLOW-BELLIED WOODPECKER.

[Plate VIII. . Fig. 1, 2.]

Picus varius, LINN. *Syst.* I., p. 176, Sp. 20. Gmel. *Syst.* I., p. 438, Sp. 20. LATH. *Ind.* p. 232, Sp. 21. VIEILL. *Ois de l'Am. Sept.* II., p. 63, pl. 118, adult Male; pl. 119, very young.—*Picus varius carolinensis*, BRISS. *Av.* IV., p. 62, Sp. 24.—*Picus varius minor, ventre luteo*, the Yellow-bellied Woodpecker, CATESBY, *Carolina*, I., p. 21, pl. 21, left-figure, adult Male. BARTR. *Trav.* p. 291.—*Epeiche ou Pic. varié de la Caroline*, BUFF. *Ois.* VII., p. 77. *Pl. Enl.* 785, adult Male.—Yellow-bellied Woodpecker, PENN. *Arct. Zool.* Sp. 166. LATH. *Syn.* I., p. 574, Sp. 20.

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 those points. The present bird is introduced on account of its anomalous plumage; for, although the color 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.

The specimen before us, 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 color, 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 plumage now represented; and we rather incline to the opinion that it is an accidental variety.

For the purpose of comparison, we have added, on the same plate,

* See Wilson's *American Ornithology*. I., p. 179, Pl. 9, fig. 2, for the adult, and history.

the most interesting portion of a young bird, as it usually appears in November of the first year; and though the sexes are then alike in plumage, we had the figure taken from a young male, in order to complete the iconography of that sex.

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.

COLUMBA FASCIATA.

BAND-TAILED PIGEON.

[Plate VIII. Fig. 3.]

Columba fasciata, SAY, in *Long's Expedition to the Rocky Mountains*, II., p. 10.

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 purplish-cinereous color; the neck, at its junction with the head, has a white semi-band, 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 color 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 color is bluish-ash, and behind dirty grayish: the tail is much lighter on the inferior surface.

This species is closely allied to *Columba caribaea* 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 *caribaea* 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.

MELEAGRIS GALLOPAVO.

WILD TURKEY.

[Plate IX. Male and Female.]

Meleagris gallopavo, LINN. *Syst.* I., p. 268, Sp. 1. GMEL. *Syst.* I., p. 732, Sp. 1. LATH. *Ind.* p. 618, Sp. 1. TEMM. *Hist. Nat. des Pig. et Gall. Index*, III., p. 676.—WILSON, *Am. Orn.* VI., *Index*, p. xvii. STEPHENS, *Cont. of SHAW's Zool.* XI., part I., p. 156, pl. 8. RANZANI, *Elem. di Zool.* III., part I., p. 154.—*Meleagris sylvestris*, VIEILL. *Nouv. Dict. d'Hist. Nat.* IX., p. 447.—*Gallopavo*, ALDROVANDI, *Orn.* II., p. 35, fig. on p. 39, domestic variety, Male; fig. on p. 40, Id. Female. WILLUGBY, *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.* I., p. 158, pl. 16, dom. var. Male.—*Gallus indicus*, Welscher Han, JOHNSTON, *Th. Av.* p. 83, pl. 29, fig. 1, dom. var. Male.—*Gallapavo sylvestris Novæ Angliæ, a New England Wild Turkey*, RAY, *Syn.* p. 51, Sp. 3.—*Gallapavo sylvestris*, CATESBY, *Carolina*, I., App. p. xliv.—*Meleagris Americanus, the Wild Turkey*, BARTR. *Trav.* p. 290.—*Gallo Pavo, Gallo Pavone volgarmente Pollo d'India; Storia degli Uccelli*, II., 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.* II., p. 132, pl. 3.—*Pl. Enl.* 97, dom. whitish var. Male.—TEMM. *Hist. Nat. des Pig. et Gall.* II., p. 374. GERARDIN, *Tabl. Elem. d'Orn.* II., 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.* XVII., p. 992. ID. *Abrigd.* III., p. 590. LAWSON, *Carolina*, p. 149. PENN. *Phil. Trans.* LXXI., p. 67. *Arct. Zool.* Sp. 178.—*American Turkey*, LATH. *Syn.* II., part II., p. 676, Sp. 1.—*Domestic Turkey*, PENN. *Brit. Zool.* I., Sp. 97.

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 degress, 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 north-west 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 endeavoring 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 these birds 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 farm-houses 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 near, 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 favors 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 favorite, and roost in his immediate neighborhood, 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 moon-shining 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 espies 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 show 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 endeavoring to secure the young and mother. "I have lain 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 sideways; 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 ant-hills, 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 unex-

pected 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, who 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 neighborhood. 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 flavor: 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 was 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 sapidity. 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 favorite 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 been already 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 endeavored to recognise 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 *Coq 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 demeanor 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 labor 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 King-bird, 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 *King-birds* 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 flavor 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 showing 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 color 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 color 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 color, 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 colored 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, faithfully represented in the plate. 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 color 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 color, 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 color, 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 color 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 color; 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 color to that of the male. It is proper to remark, that the female which furnished the above description, and is figured in the plate, 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 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 show 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 coloring; 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.

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.

Our plate, which is the first that has been given of the Wild Turkey, represents both sexes, reduced to one-third of their natural size; 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.

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 color; 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

* The extraordinary leanness of this bird, at particular seasons of the year, has become proverbial in many Indian languages. An *Omawhaw*, who wishes to make known his abject poverty, says, "*Wah pawne zezech ha go ba;*" "I am as poor as a Turkey in summer."

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 that magnificent periodical work, the "Planches Coloriées" of Temminck and Laugier. A beautiful specimen has long been exhibited in the Charleston Museum.

Mr. Duponceau, so well known by his philological researches, has favored 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	Skilling, S.	MS. Voc.
Caddoes	Noe, E.	Dr. Sibley.
Chetimachas	Tsante hatineche hase, S.	MS. Voc.
Cherokee	Kainna ; Oocoocoo, E.	MS. Voc.
Chickasaws	Fukit, E.	MS. Voc.
Choctaws	Oopuh, E.	MS. Voc.
Creeks	Pinewau, E.	MS. Voc.
Delaware proper . . .	Tschikenum, G.	Heckewelder and Zeisberger.
Delaware of New Jersey	Tshikuuna, E.	MS. Voc.
Delaware of New Sweden	Sickenem (Swedish) . .	Luther's Catechism.
Huron	Ondetontak, F.	Père Sagard.
Wyandot (same people)	Daigh-ton-tah, E.	Attwater in Archæol. Amer.
Illinois	Pireouah, F.	MS. Voc.
Knisteneaux ,	Mes-sey-thew, E.	Mackenzie.
Miamis	Pilacoh	MS. Voc.
Nenticoke	Pahquum, E.	MS. Voc.
Nottoway*	Kunum, E.	MS. Voc.

* Indians of Virginia, a branch of the Tuscaroras.

Omawhaw (a branch of Sioux)	Ze-ze-kah, E.	Say.
Onondagos (Iroquois) . .	Netachróchwa gatschinak, Zeisberger's Dictionary, G.	MS.
Osage { cock hen	Sukah tingah, E. Inchuga Sukah, E.	MS. Voc. MS. Voc.
Ottos or Wahtoktatah (Sioux)	Wa-ek-kung-ja, E.	Say.
Shawanese	Peléwa, G.	Heckewelder.
Uchee*	Witch-pshah, E.	MS. Voc.
Unquachog (Long Island)	Nahiam, E.	MS. Voc.

FALCO' COOPERII.

COOPER'S HAWK.

[Plate X. Fig. 1.]

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 monograph 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 class popularly called Birds of prey, has always been recognised as a separate, and well defined group. In

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

the Linnean 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 favor 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 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 *Falco*nes 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 recognised 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 co-ordinate 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 par-

taking 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 *Buite*, and has been placed by authors, according to their different views, in both those 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 everywhere 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 color 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 color 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 color 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 sideways, 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 favorite 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 further 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 pensylvanicus*, and in its youth as *Falco velox*, was established on the Sparrowhawk 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 Sparrowhawk (*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, not-

withstanding our most sedulous endeavors, 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 Sparrowhawk. 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.

The perfect accuracy with which Mr. Lawson may be said to have outdone himself in the delineation of this bird, in all the details of its plumage, bill, and feet, will now at least have established the species in the most incontestable manner.

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 color 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 pensylvanicus*, 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 anything, longer than the middle. There is no other North American species for which it can be mistaken.

The bird represented in the plate, 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 favored 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 color 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 color showing 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 colored, 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 oblanceolate 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 color 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 and figured, 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.

SYLVIA PALMARUM.

P A L M W A R B L E R .

[Plate X. Fig. 2.]

Motacilla palmarum, GMEL. *Syst.* I., p. 951, Sp. 53, winter dress.—*Sylvia palmarum*, LATH. *Ind.* p. 544, Sp. 136. VIEILL. *Ois. Am. Sept.* II., p. 21, Pl. 73 (*and the other works of the same author*), winter plumage. NOB. *Add. Orn. U. S. in Jour. Ac. Ph.* v., p. 29. ID. *Cat. Birds U. S. in Contr. Mael. Lyce. Ph.* I., p. 16, Sp. 105. ID. *Syn. Birds U. S.* Sp. 105, *in Ann. Lyceum, N. Y.* II., p. 78.—*Motacilla ruficapilla*, GMEL. *Syst.* I., p. 971, Sp. 106, summer dress.—*Sylvia ruficapilla*, LATH. *Ind.* summer dress (*not of VIEILL.*).—*Ficedula martinicana*, BRISS. *Av.* III., p. 490, Sp. 50, Pl. 22, Fig. 4, perfect plumage.—*Le Bimbelé, ou fausse Linotte*, BUFF. *Ois. v.*, p. 330, winter dress.—*Figuier à tête rousse*, BUFF. *Ois. v.*, p. 306, summer dress.—*Palm Warbler*, LATH. *Syn.* IV., p. 489, Sp. 131, winter dress.—*Bloody-side Warbler*, LATH. *Syn.* IV., p. 489, Sp. 115 (*not of PENN.*), summer plumage.

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 per-

manent 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 neighborhood 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 Wilson). 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 climates of Hudson's Bay, whose natural productions are so well known.

The bird represented in the plate, was shot near Bordentown, on the seventeenth of April, in the morning. It was a fine adult male, in the gayer plumage of the breeding season, in which it is now for the first time figured, 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-color 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 color 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. If 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 color on the crown), where they are of the common color, 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 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 color 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 color 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 resem-

blance, except in its dull state of plumage, to a similar state of the Red-poll Finch. The name of *Bimbelé*, 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 nowhere 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 colors 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 color than those we received from Florida; and these again are far less brilliant than the bird in our plate, represented 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 in the first volume of this work, 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 shown 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, *Daenis*, 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*.

FALCO DISPAR.

WHITE-TAILED HAWK.

[Plate XI. Fig. 1.]

Falco dispar, TEMM. et LAUG. Pl. col. 319, young Female. NOB. 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.* xx., p. 556.—*Falco melanopterus*, NOB. *Jour. Ac. Ph.* v. p. 28. Id. *Cat. Birds U. S.* Sp. 16, in *Contr. MacL. Lyc.* i., p. 11. Id. *Synopsis of N. A. Birds*, Sp. 16, in *Ann. Lyc. N. Y.*—*Le Faucon blanc, Sonnini's d'Azara*, III., p. 96, Sp. 36.

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

* *Falco melanopterus*, Daud. *Orn.* 2, p. 152, Sp. 124. Lath. *Ind. Suppl.* p. vi., Sp. 16.—*Falco sonniniensis*, Lath. *Ind. Suppl.* p. xii., Sp. 38.—*Elanus caesius*, Savigny, Ois. *d'Egypt.* p. 98, pl. ii., f. 2. Vieill. *Nouv. Dict. d'Hist. Nat.* viii., p. 240 (now *Elanoides*).—*Elanus melanopterus*, Leach *Zool. Misc.* iii., p. 4, pl. 122. Vigors *Descr. Austral. Birds in Tr. Lin. Soc.* xv., p. 185.—*Le Blac*, Le Vaillant, Ois. *d'Afr.* 1., p. 147, pl. 36, Male, 37, young Male.—*Black-winged Falcon*, Lath. *Syn. Suppl.* ii., p. 28, Sp. 23.—*Sonnini's Falcon*, Lath. *Syn. Suppl.* ii., p. 52, Sp. 59.

The inspection of original drawings, in a collection that Mr. Gray, of the British Museum, was kind enough to show me lately in London, has enabled me to add to

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 labored descriptions.

This comparison we have carefully instituted between 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 adven-

these already numerous synonyms, *Falco axillaris*, Lath. Ind. Suppl. (*Circus axillaris*, Vieill.!) from New Holland.

turous 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 colors are also similar in the different species, being white, or pale (bluish-white, &c.), with more 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 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."

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

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-color, 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 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 color. 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, fore part of the neck, thighs, flanks, and under tail-coverts are pure white; the breast and belly are of the same color, 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 honorable and fair-dealing naturalists.

Though this bird ranges so widely over the American continent, it is everywhere a rare species, and in the United States appears to be confined to the southern extremity. The specimen figured in the plate of the natural size, was 'shot in December, in the neighborhood 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 represented, 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 Cambdebo, 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 favorite 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 favorite 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 color.

The African species is said to diffuse a musky odor, 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 odor 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.

SYLVIA AZUREA.

FEMALE CŒRULEAN WARBLER.*

[Plate XI. Fig. 2.]

Sylvia azurea, STEPHENS, cont. SHAW's Zool. x., p. 653. NOB. Obs. Jour. Ac. Nat. Sc. Ph. iv., p. 193, Male.—*Sylvia bifasciata*, SAY, in Long's Exp. to the Rocky Mountains, i., p. 170, Male.

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.

* See WILSON's *American Ornithology*, Cœrulean Warbler, *Sylvia cœrulea*, Vol. II., p. 189, Pl. 17, fig. 5, for the Male.

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 an especial notice in this work.

The specimen here represented, was procured on the banks of the Schuylkill, near Mantua village, on the first 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 caerulea*, 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 and figures, he

* 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.

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 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-Mississippi 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 preoccupied 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.

FALCO CYANEUS.

BLUE HAWK, OR HEN-HARRIER.†

[Plate XII.]

Falco cyaneus, LINN. *Syst.* I., p. 126, Sp. 10. GMEL. *Syst.* I., p. 276, Sp. 10. Iter. Poseg. p. 27, adolescent Male. LATH. *Ind. Orn.* I., p. 39, Sp. 94. MONTAGUE, *in Trans. Lin. Soc.* IX., p. 182. MEYER, *Tasch. Deutschl. Vog.* I., p. 145. TEMM. *Man. Orn.* I., p. 72. RANZ. *El. Zool.* III., Pl. 7, p. 137, Sp. 28. BREHM, *Lehrb. Eur. Vog.* I., p. 59. SELBY, *Ill. Brit. Orn.* I., p. 26, Pl. 10, fig. 1, Male, fig. 2, Female. SAVI, *Orn. Tosc.* I., p. 63. NOB. *Cat. and Syn. Birds U. S.* Sp. 22.—*Falco pygargus*, LINN. *Syst.* I., p. 126, Sp. 11. GMEL. *Syst.* I., p. 277, Sp. 11, Female and young.—*Falco Hudsonius*, LINN. *Syst.* I., p. 128, Sp. 19. GMEL. *Syst.* I., p. 277, Sp. 19, young American.—*Falco bohemicus*, GMEL. *Syst.* I., p. 276, Sp. 107. LATH. *Ind.* p. 38, Sp. 93, adult Male.—*Falco albicans*, GMEL. *Syst.* I., p. 276, Sp. 102. LATH. *Ind.* p. 38, Sp. 93, adult Male.—*Falco griseus*, GMEL. *Syst.* I., p. 275, Sp. 100. LATH. *Ind.* p. 37, Sp. 86. GERARD. *Tabl. Elem.* p. 37, adolescent Male.—*Falco montanus*, var. B. GMEL. *Syst.* I., p. 278, Sp. 106.

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

† See WILSON's *American Ornithology*, Vol. I., p. 79, Pl. 51, fig. 1, for the young (under the name of Marsh-Hawk, *Falco uliginosus*).

LATH. *Ind.* p. 48, Sp. 116.—*Falco cinereus*, IT. *Poseg.* p. 27, adolescent Male.—*Falco ulbicollis*, LATH. *Ind.* p. 36, Sp. 81, adult South American Male.—*Falco buffonii*, GMEL. *Syst. I.*, p. 277, Sp. 103, Female and young American.—*Falco uliginosus*, GMEL. *Syst. I.*, p. 278. LATH. *Ind.* p. 40, Sp. 95. SABINE, *Zool. App. to Frankl. Exp.* p. 671, young American.—*Falco rubiginosus*, IT. *Poseg.* p. 29. LATH. *Ind.* p. 27, Sp. 56, young.—*Falco ranivorus*, DAUDIN, *Orn. II.*, p. 170. LATH. *Ind. Suppl.* p. 7, young.—*Falco europogistus*, DAUD. *Orn. II.*, p. 110, adolescent Male.—*Circus europogistus*, VIEILLOT, *Ois. Am. Sept. I.*, p. 36, Pl. 8, adolescent Male.—*Circus Hudsonius*, VIEILL. *l. c. I.*, p. 36, Pl. 9, young.—*Circus uliginosus*, VIEILL. *l. c. I.*, p. 37, Female and young.—*Circus variegatus*, VIEILL. *l. c. I.*, p. 37, Male changing.—*Circus gallinarius*, VIEILL. *Nouv. Dict. d'Hist. Nat. IV.*, p. 459. *Circus cyaneus*, ID. *XXXI.*, p. 410.—*Circus cyaneus*, BOIE. *Circus ranivorus*, VIEILL. *Nouv. Dict. d'Hist. Nat. IV.*, p. 456, young African.—*Falco strigiceps*, NILLS. *Orn. Suec. I.*, p. 21.—*Falco torquatus*, BRISS. *Orn. I.*, p. 345, Sp. 7. ID. 8vo. p. 100, Male and Female, BRUNN, Sp. 14.—*Falco Montanus cinereus*, BRISS. *Orn. I.*, p. 355, Sp. 9, Var. A. ID. 8vo. p. 112, adolescent Male.—*Accipiter Freti Hudsonis*, BRISS. *Orn. VI.*, *App.* p. 18, Sp. 47.—*Lanarius cinereus*, BRISS. *Orn. I.*, p. 365, Sp. 17. ID. 8vo. p. 106.—*Lanarius albicans*, BRISS. *I.*, 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 tesselata*, KLEIN, *Av. p. 52*, Sp. 22.—*Lanarius*, ALDR. *Orn. I.*, 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. I.*, Pl. 35, adult Male.—*Falco Pigargo*, ID. *I.*, Pl. 31, Female.—*Autre Oiseau St. Martin*, BELON, *Hist. Ois. p. 104.*—*L'Oiseau St. Martin*, BUFF. *Ois. I.*, p. 212. ID. *Pl. Enl. 459*, adult Male. GERARDIN, *Tabl. Elem. Orn. I.*, p. 43.—*La Soubuse*, BUFF. *Ois. I.*, p. 215, Pl. 9. ID. *Pl. Enl. 443*, young Female, 480, young Male. GERARDIN, *Tabl. Elem. Orn. I.*, p. 37, Female and young.—*Le Grenouillard*, LE VAILL. *Ois. Afrique I.*, p. 63, Pl. 23, young.—*Kore oder Halbwcyhe*, BECHST. *Tasch. Deutsch.* p. 25, Sp. 20. MEYER & WOLF, *Ois. d'Allem.* liv. 27, Pl. 5, adult Male, Pl. 6, Female. NAUMANN, *Vog. Deutsch.* ed. 2, *I.*, 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. *v.*, p. 33, Pl. 225, adult Male.—*Marsh-Hawk*, EDW. p. 173, Pl. 291. PENN. *Arct. Zool. Sp. 105.* LATH. *Syn. I.*, p. 90, Sp. 75, Var. A. Female and young.—*Ash-colored Mountain Falcon*, LATH. *Syn. I.*, p. 94, Sp. 78. Var. A. adolescent Male.—*Hen-Harrier*, EDW. Pl. 225, very old Male. WILL. (Angl.) p. 172. ALB. *II.*, Pl. 5. HAYES, *Brit. Birds*, Pl. 1. LEWIN, *Brit. Birds*, *I.*, p. 18. PENN. *Brit. Zool. I.*, Sp. 58, p. 28. LATH. *Syn. I.*, p. 88, Sp. 74. ID. *Suppl.* p. 22, adult Male.—*Ring-tail Hawk*, EDW. *III.*, pl. 107. PENN. *Arct. Zool. Sp. 106*, Female and young.—*Ring-tail*, WILL. (Angl.) p. 72. ALB. *III.*, Pl. 3. HAYES, *Brit. Birds*, Pl. 2. LEWIN, *Brit. Birds*, *I.*, Pl. 18, Female. ID. Pl. 2, fig. 4, the egg. PENN. *Brit. Zool. Sp. 59.* LATH. *Syn. I.*, 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. I.*, p. 91, Sp. 76, young.—*White Lanner*, LATH. *Syn. I.*, p. 87, Sp. 73, adult Male.—*Gray Falcon*, PENN. *Brit. Zool. I.*, Sp. 49. LEWIN, *Brit. Birds*, *I.*, Pl. 15. LATH. *Syn. I.*, p. 82, Sp. 67, adolescent Male.—*New York Falcon*, PENN. *Arct. Zool. II.*, 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. I.*, p. 91, Sp. 76, Var. A. young.—*Falco glaucus*, the sharp-winged Hawk, of a pale sky-blue color, the tip of the wings black, BARTR. *Trav. p. 290*, adult Male.—*Falco subcaeruleus*, the sharp-winged Hawk, of a dark or dusky

blue color, BARTR. *Trav.* p. 290, adolescent Male.—*Falco ranivorus*, the Marsh-Hawk, BARTR. *Trav.* p. 290, young.

As will be perceived upon a slight inspection of our long and elaborate list of synomymes, this well-known species is found in almost every part of the globe; and not only does it seem to have been considered everywhere 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-colored 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 *Busard*, 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-colored 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 by more than two inches to the tip of the tail, which is also but slightly rounded in the latter, while in the Ash-colored 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 color, 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 above quoted, 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 colors merely, as bringing it nearer to the Ash-colored 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 might 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 further 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 color. 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 color, 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 favorite haunts, being generally observed sailing low along the surface, or in the neighborhood 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 color, 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 color 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 color 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 color 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 color, 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-color 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-colored 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 hind head 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.

For the greater embellishment of the plate, we have chosen to represent one of these very nearly, but not quite adult males, in preference to a perfectly mature bird, which may be easily figured to the mind by destroying every trace of spot or bar. It is moreover, in this dress that the adult is met with in the Middle and Northern States, where it is very rare, and we have never seen a specimen quite mature, though the young are tolerably common; as if the parents sent their children on a tour to finish their education, then to return and marry, and remain contentedly at home. The specimen here figured, was shot on Long Island, and was preserved in Scudder's Museum, New York.

Its total length is eighteen inches, breadth forty-one; the bill bluish black; cere, irides, and feet yellow; claws black. The plumage above is bluish ashy, much darker on the scapulars, and with the feather-shafts blackish: beneath white, slightly cream-colored on the breast; the belly, flanks, and lower tail-coverts, with small arrow-shaped spots of yellowish rusty; the long axillary feathers are crossed with several such spots, taking the appearance of bands: the upper tail-coverts are pure white; the primaries dusky blackish at the point, edged with paler, and somewhat hoary on the outer vane; at base, white internally and beneath. The tail is altogether of a paler ash than the body, tipped with whitish, and with a broad blackish subterminal band; all the tail-feathers are pure white at their origin under the coverts, the lateral being sub-banded with blackish and white on their inner vanes, and the outer on the greater part of the outer web also; the shafts are variegated with black and white.

The Hen-Harrier's favorite 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-colored 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 everywhere 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 color, 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, *gég, gé, 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.

GARRULUS STELLERI.

S T E L L E R ' S J A Y .

[Plate XIII. Fig. I.]

Corvus stelleri, GMEL. *Syst.* I., p. 370, Sp. 27. LATH. *Ind.* p. 158, Sp. 20. NOB. *Suppl. Syn. Birds U. S.* Sp. 63, bis, in *Zool. Journ. Lond.* v., 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.* I., p. 437, old bird?—*Garrulus stelleri*, VIEILL. *Nouv. Dict. d'Hist. Nat.* XII., p. 481.—*Geai de Steller*, DAUD. *Orn.* II., p. 248.—*Steller's Crow*, PENN. *Arct. Zool.* Sp. 139. LATH. *Syn.* I., p. 387, Sp. 21. ID. 2d *Suppl.* VIII., p. 111, Sp. 8. ID. *Gen. Hist.* III., p. 56, Sp. 58.

To the enlightened liberality and zeal for science of that distinguished collector, Mr. Leadbeater of London, we, and the American public, are now 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 honored 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' 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* (Wilson), 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, color, 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 colors 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 odor, which cause them to be viewed everywhere 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 colors, 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 colors 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 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 favorite 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 nest in the centre against the body, or at the bifurcation of large limbs. The nest is built without art, and is formed of 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 oesophagus, 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 *Aeridotheres*.

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 esti-

mated so widely different. This resemblance extends even to color 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 color 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 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 color, covering the rump and the upper tail-coverts: all the inferior parts from the neck, at the lower part of which the dusky color passes into blue, are blue somewhat tinged with gray, which is the general color 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 the individual represented in the plate, 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 color 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.

EMBERIZA LAPPONICA.

LAPLAND LONGSPUR.

[Plate XIII. Fig. 2, Male; 3, Female.]

Fringilla lapponica, LINN. *Syst.* I., p. 317, Sp. 1. *Faun. Suec.* Sp. 235. GMEL. *Syst.* I., p. 900, Sp. 1. RETZ. *Faun. Suec.* p. 242, Sp. 119. FORST. *Ph. Tr.* LXII., p. 404. FABR. *Faun. Graenl.* p. 119, Sp. 8. LATH. *Ind.* p. 440, Sp. 18. UBERS, I., p. 289, Sp. 18.—*Fringilla montana*, BRISS. *Orn.* III., p. 160, Sp. 38. KLEIN, *Av.* p. 92, Sp. 10.—*Fringilla calcarea*, PALLAS, *It.* p. 710, Sp. 20, t. E. ID. *in 4to. French transl.* III., Pl. 1. MEYER & WOLF, *Tasch. Deutschl.* I., p. 176, Sp. 13.—*Emberiza lapponica*, NILSSON, *Orn. Suec.* I., p. 157, Sp. 76. RANZ. *El. Zool.* VI., p. 24.—*Emberiza calcarea*, TEMM. *Man. Orn.* I., p. 322. BREHM. *Lehrb. Eur. Vog.* I., p. 221. RICHARDSON, *App. to Parry's 2d Voy.* p. 345.—*Passerina lapponica*, VIEILL. *Nouv. Dict. Hist. Nat.* XXV., p. 12.—*Plectrophanes calcareus*, MEYER, *Tasch.* III., p. 176, Sp. 13.—*Plectrophanes lapponica*, SELBY in *Trans. Linn. Soc.* XV., p. 156, Pl. 1, young.—*Montifringilla congener*, ALDROV. *Orn.* II., p. 821, Pl. 823.—*Le Grand Mountain*, BUFF. *Ois.* IV., p. 134.—*Le Pinson de Montagne*, GERARDIN, *Tabl. Elem. d'Orn.* I., p. 186.—*Lerchen Finch*, BECHST. *Naturg. Deutsch.* III., p. 246, Sp. 16. NAUM. *Nachtr.* III., p. 25, Pl. 20, B Female, Pl. 40, Male in autumn.—*Greater Brambling*, ALB. III., p. 59, Pl. 63.—*Lapland Finch*, PENN. *Arct. Zool.* II., Sp. 259. LATH. *Syn.* IV., p. 263, Sp. 14. UBERS, III., p. 256, Sp. 14.

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, show 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 nowhere found in maritime countries.

No figure of the adult male in perfect plumage, has before now, 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 neighborhood of Frankfort on the Maine, 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 synomynes at the head of this article, 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 sub-genus, 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 color; 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. Fore-neck 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 color; 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 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.

The figures represent an old male, and a young female.

GARRULUS FLORIDANUS.

FLORIDA JAY.

[Plate XIV. Fig. 1.]

Garrulus cyaneus, VIEILL. Nouv. Dict. d'Hist. Nat. XII., p. 476.—*Garrulus cœrulescens*, VIEILL. Nouv. Dict. d'Hist. Nat. XII., p. 480.—*Garrulus cœrulescens*, ORD, in Journ. Ac. Nat. Sc. Phila. I., 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.

A SINGLE glance at the plate on which this fine bird is represented, and at that of the preceding, or Steller's Jay, will suffice better than the longest description, to show the error committed by Latham, in quoting in his recent work (General History of Birds), the name of this species among the synonymes 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 further, 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 mentioned, 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 thirteenth 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 Gros-beak, 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 sunrise 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-palmettoes 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 color, 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 a 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 quills 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 color passes down along the breast, and forms a somewhat obscure collar; the under wing, and under tail-coverts are strongly tinged with blue, which color 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 color 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.

PICUS TRIDACTYLUS.

NORTHERN THREE-TOED WOODPECKER.

[Plate XIV. Fig. 2.]

Picus tridactylus, LINN. *Syst.* I., p. 177, Sp. 21. GMEL. *Syst.* I., p. 439, Sp. 21. *Faun. Suec.* Sp. 103. *Act. Holm.* 1740, p. 222. *Phil. Trans.* LXII., p. 388. SCOP. *Ann.* I., Sp. 56. GEORGI, *Reise*, p. 165. BOROWSK. *Nat.* II., p. 138, Sp. 8. LATH. *Ind.* p. 243, Sp. 56. MEYER & WOLF, *Tasch. Deutsch. Vog.* I., p. 125, Sp. 8. TEMM. *Man. Orn.* I., p. 401, young. BREHM. *Lehr. Eur. Vog.* I., p. 142. RANZ. *Elem. Orn.* II., p. 184, Sp. 9, Tab. 7, Fig. 4.—*Picus hirsutus*, VIEILL. *Ois. Am.* Sept. II., p. 68, pl. 124, adult Male.—*Picoides*, LACEFED.—*Dendrocopos tridactylus*, KOCH. *Baierische Zool.*—*Tridactylia hirsuta*, STEPHENS, in *Shaw's Zool.* IX., p. 219.—*Picus tridactylus anomalus*, MUS. PETR. 368.—*Picchio a tre dita*, *Stor. degli Ucc.* II., pl. 180.—*Pic tridactyle, ou Picoidé*, TEMM. l. c.—*Dreizehiger Specht*, BECHST. *Nat. Deutschl.* II., p. 1044. NAUM. *Vog. Nachtr.* pl. 41, Fig. 81. MEYER & 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.* II., p. 600, Sp. 51. ID. *Suppl.* p. 112.

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 Switzer-

land, 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-color, 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 color (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 colors; 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, as the one represented in the plate, 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 feathers 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 recognised 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 color, 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.

PICUS ERYTHROCEPHALUS.

YOUNG RED-HEADED WOODPECKER.*

[Plate XIV. Fig. 3.]

Picus erythrocephalus, LINN. *Syst.* I., p. 174, Sp. 7. *Mus. Adolph. Frid.* II., p. 21. BRISS. *Orn.* IV., p. 52, Sp. 19, Pl. 3, fig. 1. ID. *Svo.* II., p. 50. GMEL. *Syst.* I., p. 429, Sp. 7. BOROWSK. *Nat.* II., p. 136, Sp. 4. LATH. *Ind.* p. 227, Sp. 9, adult. VIEILL. *Ois. Am. Sept.* II., p. 60, Pl. 112, adult; Pl. 113, young.—*Picus obscurus*, GMEL. *Syst.* I., p. 429, LATH. *Ind.* p. 228, Sp. 11, young.—*Picus capite toto rubro*, the Red-headed Woodpecker, CATESBY, *Car.* I., Pl. 20, adult.—*Picus capite colloque rubris*, KLEIN, *Av.* p. 28, Sp. 12, adult.—*Picus capite toto rubro*, KALM, *It.* III., Pl. 43, adult.—*Picchio di testa rossa*, *Storia degli Ucc.* Pl. 170, adult.—*Pic noir à domino rouge*, BUFF. *Ois.* VII., 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.)* II., p. 86. LATH. *Synop.* II., p. 561, adult.—White-rumped Woodpecker, LATH. *Syn.* II., p. 563, Sp. 10, young.

THE state in which the common Red-headed Woodpecker is here represented, has given rise to a nominal species; and it is in fact so difficult to recognise for that bird, that we have thought proper, after the example of Vieillot, to give an exact figure of it. We feel no diffidence in affirming, that in this, through the exertions of Messrs. Rider and Lawson, we have fully succeeded; and it will perhaps be allowed to be the best representation of a bird ever engraved. 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 as represented.

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 color, 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

* See Wilson's *American Ornithology*, I., p. 175, Pl. 9, fig. 1, for the adult.

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 color 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 colors 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: it is one of these specimens with a few streaks of red, that we have selected for the sake of ornamenting the plate, as well as to exemplify the manner in which the change takes place. 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.

FRINGILLA VESPERTINA.

EVENING GROSBEAK.

[Plate XV. Fig. 1.]

Fringilla vespertina, COOPER, in *Ann. Lyce. New York*, I., p. 220. Nob. *Cat. Birds. U. S.* Sp. 188, in *Contr. MacL. Lyce. Phila.* I., p. 21. Id. *Syn. Birds, U. S. Sp. 188*, in *Ann. Lyce. N. Y.* II., p. 113. Id. *Suppl. in Zool. Journ. London*, IV., p. 2.

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. Schoolerraft 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. Schoolerraft, 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. From the more perfect of these, our plate, already engraved from Mr. Cooper's specimen, has been faithfully colored; and 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 as yet to our knowledge: the others have been 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 colors 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 color 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 color, 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.

FRINGILLA LUDOVICIANA.

FEMALE ROSE-BREASTED GROSBEAK.*

[Plate XV. Fig. 2.]

Loxia ludoviciana, LINN. *Syst.* I., p. 306, Sp. 38. GMEL. *Syst.* I., p. 862, Sp. 38. LATH. *Ind.* p. 379, Sp. 25.—*Fringilla punicea*, GMEL. *Syst.* I., p. 291, Sp. 81. LATH. *Ind.* p. 444, Sp. 34, adult Male.—*Loxia maculata*, GMEL. *Syst.* I., p. 861, Sp. 87. LATH. *Ind.* p. 379, Sp. 26, young.—*Loxia obscura*, GMEL. I., p. 862, Sp. 88. LATH. *Ind.* p. 379, Sp. 27, Female.—*Coccothraustes ludoviciana*, BRISS. *Orn.* III., p. 247, Sp. 14, Pl. 12, Fig. 2. ID. *Svo.* I., p. 378.—*Coccothraustes rubricollis*. VIEILL. *Gal. Ois.* I., Pt. II., p. 67, Pl. 58 (very bad), and *Dict.*—*Pyrrhula 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.*

* See Rose-breasted Grosbeak, *Loxia rosea (ludoviciana)*, WILS. *Am. Orn.* II., p. 54, Pl. 17, Fig. 1, for the Male.

Mag. N. S. I., p. 438.—*Le Rose-gorge*, BUFF. *Ois.* III., p. 460.—*Gros-bec de la Louisiane*, BUFF. *Pl. Enl.* 153, fig. 2, Male.—*Moineau à poitrine et ventre pourprés*, SONN. *Buff.* XLVIII., p. 240.—*Red-breasted Grosbeak*, PENN. *Arct. Zool.* Sp. 212. LATH. *Syn.* III., p. 126, Sp. 24.—*Red-breasted Finch*, PENN. *Arct. Zool.* Sp. 275. LATH. *Syn.* III., p. 272, Sp. 30, adult Male.—*Dusky Grosbeak*, PENN. *Arct. Zool.* Sp. 216. LATH. *Syn.* III., p. 127, Sp. 26, Female.—*Spotted Grosbeak*, PENN. *Arct. Zool.* Sp. 213. LATH. *Syn.* III., p. 126, Sp. 25, young.

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 represented. 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 colors 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-color 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 lighter 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 color, 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 color; the middle

of the throat, the belly, and under tail-coverts are unspotted; the base of the plumage is everywhere 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 color, of which the mother is quite destitute, soon begins to make its appearance, principally in small dots on the throat: this color 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, and the figure accurate, 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 favorite 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 labored 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) caerulea*, 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* (as may be seen by comparing this with the Evening Grosbeak), 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. The representation of the bill in Wilson's plate of the male is remarkably exact.

LOXIA LEUCOPTERA.

FEMALE WHITE-WINGED CROSSBILL.*

[Plate XV. Fig. 3.]

Loxia leucoptera, GMEL. *Syst.* I., p. 844, Sp. 12. VIEILL. *Gal. Ois.* I., 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.* XLVII., p. 65. VIEILL. *Nouv. Dict. Hist. Nat.* 2d ed. III., p. 339.—*White-winged Crossbill*, LATH. *Syn.* III., p. 108, Sp. 2. ID. *Suppl.* p. 148. DIXON, *Voy. t. 20*, p. 358, Female. PENN. *Arct. Zool.* II., Sp. 208.

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 gave us the first figure of it, which is that of the male, and promised a representation of 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 give a correct figure of the other sex of this species, which we are also enabled to describe minutely 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*.

* See Wilson's *American Ornithology*, II. p. 61, Pl. 31, for the young Male.
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The English name was bestowed by its discoverer, the scientific was imposed on it 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 color 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 everywhere slate color; 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, as represented in the plate; 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 color 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 colors 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 color 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 emarginate, 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 color predominates in several parts of the plumage, round the eye, on the front, in the 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 favor our opinion. In this state the bird is rare, as might be expected, and has not before been noticed by any naturalist: we have not represented it, only that we might not multiply figures of the same species.

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 colors 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 north-west coast, where it was found by Dixon. Round Hudson's Bay it is common and well known, probably extending far to the north-west, 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 neighboring pines and its favorite 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 manoeuvring 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 favorite food, may be knocked down with sticks or even caught by 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.

FRINGILLA CYANEA.

FEMALE INDIGO FINCH.*

[Plate XV. Fig. 4.]

Tanagra cyanea, LINN. *Syst. I.*, p. 315, Sp. 6, adult Male in full plumage.—*Emberiza cyanea*, GMEL. *Syst. I.*, p. 876, Sp. 54. LATH. *Ind.* p. 415, Sp. 60.—*Emberiza cyanella*, SPARM. *Mus. Carls. II.*, Pl. 42, 43. GMEL. *Syst. I.*, p. 887, Sp. 74.—*Emberiza caerulea*, GMEL. *Syst. I.*, p. 876. LATH. *Ind.* p. 415, Sp. 59, Male in moult.—*Tanagra caerulea?* GMEL. *Syst. I.*, p. 891, Sp. 27. LATH. *Ind.* p. 427, Sp. 27, adult Male.—*Tanagra carolinensis caerulea*, BRISS. *Ar. III.*, p. 13, Sp. 6, adult Male in full dress.—*Emberiza canadensis caerulea*, BRISS. *Ar. III.*, 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*, BART. *Trav.* p. 296.—*Linaria caerulea*, the Blue Linnet, CATESBY, *Car. I.*, p. 45, Pl. 45.—*Le ministre*, BUFF. *Ois. IV.*, p. 86.—*L'azuroux*, BUFF. *Ois. IV.*, p. 369, Male moulting.—*Passe-bleu?* BUFF. *Ois. III.*, p. 495, adult Male in full plumage.—*Moineau bleu de Cayenne?* BUFF. *Pl. Enl.* 203, fig. 2, adult Male in full dress.—*Blue Linnet*, EDW. *Av. IV.*, p. 132, Pl. 273, lower figure.—*Indigo Bunting*, PENN. *Arct. Zool. II.*, Sp. 235. LATH. *Syn. IV.*, p. 205, Sp. 53.—*Blue Bunting*, PENN. *Arct. Zool. II.*, Sp. 234. LATH. *Syn. III.*, p. 205, Sp. 52, Male moulting.—*Blue Tanager?* LATH. *Syn. III.*, p. 234, Sp. 28.

* See WILSON'S *American Ornithology*, II., p. 124, Pl. 6, fig. 5, for the Male.

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 figured 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 recognise the brilliant Indigo-bird of Wilson's first volume, in the humble garb in which it is represented in the annexed plate. 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 at the head of our article, 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 synomyms. 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 observation 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 Africæn bird, now a *Fringilla* of the subgenus *Coccothraustes*. The American bird belongs to *Spiza*, and together with the *Fringilla ciris*, and the beautiful *Fringilla amœna*, 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 color 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 color, much paler on the belly, dingy on the breast, and strongly inclining to drab on the flanks, blending into the color of the back, the shafts of the feathers being darker, giving somewhat of a streaked appearance: the whole base of the plumage is lead color; 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 nar-

row; 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 color 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 moultling process, some being beautifully and regularly spotted with large masses of those colors, symmetrically disposed. In one of these males, but little advanced in its changes, we readily recognise the *Emberiza caerulea* 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.

CINCLUS PALLASII.

PALLAS' DIPPER.

[Plate XVI. Fig. 1.]

Cinclus Pallasii, TEMM. *Man. Orn.* I., p. 177. *Nob. Suppl. Gen. Am. Birds*, Sp. 94 bis, in *Zool. Journ. London*, IV., p. 4. Id, in *Ann. Lyc. New York*, II., p. 438.—*Cinclus mexicanus*, SWAINSON, *Syn. Birds of Mexico*, Sp. 27, in *Phil. Mag. New Series*, I., p. 368.

THE recent discovery of the genus *Cinclus* in America, furnishes an interesting fact in the history of the geographical distribution of birds, this genus being one of the twenty-five European, enumerated in our "Observations" as not known to inhabit this continent. A specimen from the northern countries, communicated by Mr. Leadbeater, first enabled us to introduce it into the American Fauna; and almost simultaneously, Mr. Swainson, in his Synopsis of the Birds discovered in Mexico by Mr. Bullock, announced it as occurring in that country, but in no other part, as he thought, of America. Judging from his short description (and the species does not admit of a long one), we have no 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 color, 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 favorite with recent ornithologists, as they have applied it successively to several different genera, and Temminck has lately attempted to impose it on the genus of Ducks which I had named *Fuligula*. In my system, the genus *Cinclus* must take its place in the family *Canori*, between the genera *Turdus* and *Myiothera*.

The Dippers, or Water-Ouzels, are well distinguished by their peculiar shaped bill, which is compressed-subulate, slightly bent upwards, notched, and with its edges bent in, and finely denticulated from the middle; but more especially by their long, stout, perfectly smooth tarsi, with the articulation exposed, a character which is proper to the order of waders, of which they have also the habits, nay, are still more aquatic than any of them. Their plumage also being thick, compact, and oily,

is impermeable to water, as much so as that of the most decidedly aquatic web-footed birds, for when dipped into it, that fluid runs and drops from the surface. Their head is flat, with the forehead low and narrow; the neck is stout; the body short and compact; the nostrils basal, concave, longitudinal, half covered by a membrane; tongue cartilaginous and bifid at tip. Their wings are short and rounded, furnished with a very short spurious feather, and having the third and fourth primaries longest; the tail short, even, and composed of wide feathers; the nails large and robust; the lateral toes are subequal, the outer united at base to the middle one, the hind toe being short and robust. The female is similar to the male in color, 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 neighborhood of clear and swift-running mountain streams, whose bed is covered with pebbles, and strewed with stones and fragments of rock. They are remarkably shy and cautious, never alight on branches, but keep always on the border of the stream, perched, in an attitude peculiar to themselves, on some stone or rock projecting over the water, attentively watching for their prey. Thence they repeatedly plunge to the bottom, and remain long submerged, searching for fry, crustacea, and the other small aquatic animals that constitute their food. They are also very destructive to mosquitoes, and other dipterous insects and their aquatic larvae, devouring them beneath the surface. They never avoid water, nor hesitate in the least to enter it, and even precipitate themselves without danger amidst the falls and eddies of cataracts. Their habits are in fact so decidedly aquatic, that water may be called their proper element, although systematically they belong to the true land birds. The web-footed tribes swim and dive; the long-legged birds wade as long as the water does not touch their feathers; the Dippers alone possess the faculty of walking at ease on the bottom, as others do on dry land, crossing in this manner from one shore to the other under water. They may be often seen gradually advancing from the shallows, penetrating deeper and deeper, and, careless of losing their depth, walking with great facility on the gravel against the current. As soon as the water is deep enough for them to plunge, their wings are opened, dropped, and agitated somewhat convulsively, and with the head stretched horizontally, as if flying, they descend to the bottom, where they course up and down in search of food. As long as the eye can follow them, they appear, while in the water, covered with bubbles of air, rapidly emanating from their bodies, as is observed in some coleopterous insects.

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

at a distance. When on their favorite 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' 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-color, with the base of the plumage somewhat lighter; at the superior orbit is a slight indication of whitish. The uniform general color 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-color, 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*.

ter. 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 color, 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.

BOMBYCILLA GARRULA.

BOHEMIAN WAX-WING.

[Plate XVI. Fig. 2.]

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

IF the absurd theory advanced by Buffon, that European animals degenerate, or become more or less changed in other climates, needed in our time any additional refutation, the discovery of this bird in the north-western territory near the Rocky Mountains, would afford it. By appearing in its full size and perfection, exactly similar to the European individuals of its species, it would vindicate its smaller relation, the com-

mon and familiar Cedar-bird, from the reproach of degeneracy. But with the more enlightened opinions that now prevail, its occurrence in that unexplored portion of the globe is important chiefly as tending to solve the problem of the place of abode of this mysterious wanderer; especially as, by a singular coincidence, whilst we were proclaiming this species as American it was received by Temminck from Japan, together with a new species, the third known of the genus, which he has caused to be figured and distinguished by the appropriate name of *Bombycilla phœnicoptera* (Boiè). Besides the red band across the wing, whence its name is derived, the length of its crest adorned with black feathers, and the uniform absence in all states, of the corneous appendages of the wings, this new species, resembling more in size and shape the Carolina Wax-wing (Cedar-bird) than the present, is eminently distinguished from both by wanting the small, closely set feathers covering the nostrils, hitherto assigned as one of the characters of the genus. This example evinces the insufficiency of that character, though Illiger considered it of such importance as to induce him to unite in his great genus *Corvus* (comprehending this as well as several other distinct groups), all the species possessing it. It shows especially how erroneous it is to form two separate families for the allied genera with covered or naked nostrils. In fact, the genus as it now stands, is, not the less for this aberration, an exceedingly natural one, though the two species that are now known to inhabit America are still more allied to each other than either of them to the Japanese, the present (Bohemian) differing chiefly by its larger size, mahogany-brown tail-coverts, and cinereous belly, the first being white, and the second yellowish in the Cedar-bird, which also wants the yellow and white markings on the wing. Of the three species now comprehended in the genus, one is peculiar to America, a second to eastern Asia, and the present common to all the Arctic world.

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

The Wax-wings, which we place in our family *Sericati*, having no other representative in Europe or North America, are easily recognised by their short, turgid bill, trigonal at base, somewhat compressed and curved at tip, where both mandibles are strongly notched; their short feet, and rather long, subacute wings. But their most curious trait consists in the small, flat, oblong appendages, resembling in color and substance red sealing-wax, found at the tips of the secondaries in the

adult. These appendages are merely the colored corneous prolongation of the shafts beyond the webs of the feathers. The new species from Japan is, as we have mentioned, at all times without them, as well as the young of the two others. The plumage of all is of a remarkably fine and silky texture, lying extremely close; and they are all largely and pointedly crested, the sexes hardly differing in this respect.

The Wax-wings live in numerous flocks, keeping by pairs only in the breeding season, and so social in their disposition, that as soon as the young are able to fly, they collect in large bands from the whole neighborhood. They perform extensive journeys, and are great and irregular wanderers. Far from being shy, they are simple and easy tamed, but generally soon die in confinement. Their food consists chiefly of juicy fruits, on which they fatten, but to the great detriment of the orchard, where they commit extensive ravages. When fruits are scarce, they seize upon insects, catching them dexterously in the same manner as their distant relatives the Flycatchers. No name could be more inappropriate for these birds than that of Chatterers, as there are few less noisy, and they might even be called mute, with much better reason. They build in trees, and lay twice in a year about five eggs.

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

As we can only arrive at the truth in this matter, by observing facts, and collecting localities, we shall endeavor to do this with the greatest accuracy. In northern Russia and the extreme north of Norway they are seen in great numbers every winter, being observed there earlier than in temperate countries. In northern Asia and eastern Europe their migrations are tolerably regular, very numerous flocks generally pass through Scania in November, and are again seen on their return in the spring. But they appear only at very remote and irregular periods, and merely as occasional and rare visitants in western, southern, or even central and northern Europe, and then only in the coldest months of the most severe winters. Notwithstanding that they at times invade peculiar districts in vast numbers, so remarkable is the appearance of

these winged strangers then considered, that we find it placed upon record. However extraordinary it may seem to those who live in this enlightened age and country, that the unusual appearance of "Cedar-birds of a large kind" should strike terror into the souls of men, such notwithstanding was the effect in more ignorant times. They have been looked upon as the precursors of war, pestilence, and other public calamities. One of their irruptions was experienced in Italy in 1571, when flocks of hundreds were seen flying about in the north of that country in the month of December, and were easily caught. A similar visit had taken place in 1530 in February, marking the epoch when Charles V. caused himself to be crowned at Bologna. Aldrovandi, from whom we learn the above particulars, also informs us that large flocks of them appeared in 1551, when it was remarked that though they spread in numbers through the Modenese, the Plaisantine, and other parts of Italy, they carefully avoided entering the Ferrarese, as if to escape the dreadful earthquake that was felt soon after, causing the very birds to turn their flight. In 1552, Gesner informs us, they appeared along the Rhine near Mentz in Germany in such numbers as to obscure the sun. They have however of late years, in Italy and Germany, and in France especially at all times, been extremely rare, being seen only in small companies or singly, appearing as if they had strayed from their way. In England, the Bohemian Wax-wing has always been a rare visitant, coming only at long and uncertain intervals. In the winter of 1810 large flocks were dispersed through various parts of that kingdom; from which period we do not find it recorded by English writers till the month of February 1822, when a few came under Mr. Selby's inspection, and several were again observed during the severe storm in the winter of 1823. Upon the continent, its returns are subject to similar uncertainty. In M. Necker's very interesting memoir lately published on the birds of Geneva, we read, that from the beginning of this century only two considerable flights have been observed in that canton, one in January 1807, and the other in January 1814, when they were very numerous, and spent the winter there, all departing in March. In 1807 they were dispersed over a great portion of western Europe, and were seen near Edinburgh in the first days of that year.

What extent of country they inhabit or frequent in this continent, and whether numerous or not, we are unable to state. The specimen here figured was obtained, together with others, from the north-western range of the Rocky Mountains, and the species appears to spread widely, as we have been credibly informed by hunters that "Cedar-birds of a large kind" have been shot a little beyond the Mississippi, at a very great distance from the spot where ours was obtained. Thus does this species extend its range round the whole earth, from the coasts of Europe eastwardly to the Rocky Mountains in America; and we are

at a loss to conceive why it should never have been observed on this side of the Mississippi.

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

What can be the cause of their leaving their unknown abodes, of their wide migrations, and extraordinary irruptions, it is very difficult to determine. That they are not compelled to them by cold is well proved. Are they to be ascribed to necessity from excessive multiplication, as is the case with the small quadrupeds called Lemmings, and even with man himself in a savage state, or in over-populous countries? or shall we suppose that they are forced by local penury to seek elsewhere the food they cannot be supplied with at home? Much light may be thrown on the subject by carefully observing their habits and migrations in America.

The Bohemian Chatterer being so well known, we shall here only give a description of our best American specimen, which is a female shot on

the 20th March, 1825, on the Athabasca river, near the Rocky Mountains. The sexes hardly differ in plumage.

Length eight and a half inches; extent fifteen; bill three-quarters of an inch long, black, paler at the base of the under mandible; irides reddish, often quite red: nostrils entirely uncovered. From the base of the ridge of the bill, arises on each side a velvety black line, bordering the forehead, and spreading on the ophthalmic region, and surrounding almost the whole crown; throat also deep black. The anterior part of the head is bright bay, behind passing gradually into vinaceous drab; the feathers of the crown are elongated into a crest measuring nearly an inch 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.

PYRRHULA ENUCLEATOR.

FEMALE PINE BULLFINCH.*

[Plate XVI. Fig. 3.]

Loxia enucleator, LINN. *Syst.* I., p. 299, Sp. 3. *Faun. Suec.* Sp. 223. SCHÆN, *Act. Holm.* 1757, p. 139. GMEL. *Syst.* I., p. 845, Sp. 3. BRUNN. Sp. 239. MULLER, Sp. 246. BOROWSK. *Nat.* III., p. 133, Sp. 3. LATH. *Ind.* I., p. 372, Sp. 5. RETZ, *Faun. Suec.* p. 234, Sp. 211. MEYER & WOLF, *Tascheur. Vog. Deutschl.* I., p. 142. —*Loxia flamengo*, *Mus. Carls.* I., Pl. 17. GMEL. *Syst.* I., p. 864, accid. var.—*Loxia pyrrhula*, var. δ. LATH. *Ind.* I., p. 388, Sp. 56, accid. var.—*Coccothraustes canadensis*, BRISS. *Orn.* III., p. 250, Sp. 15, Pl. 12, fig. 3. ID. 8vo. I., p. 378.—*Pyrrhula enucleator*, TEMM. *Man. Orn.* I., p. 383. SABINE, *Zool. App. to Frank. Exp.* p. 675. BREHM. *Lehr. Eur. Vog.* I., p. 169. RANZ. *ELEM. Orn.* VI., p. 70, Sp. 2. SELBY, *Ill. Brit. Orn.* I., p. 256, Pl. 53, fig. 1, Male, fig. 2, Female. NOB. *Obs. Wils. Nom. Cat. and Syn. Birds U. S.* Sp. 193.—*Corythus enucleator*, CUV. *Règn. Anim.* I., p. 392.—*Strobilophaga enucleator*, VIEILL. *Gal. Ois.* I., Pl. 53, young Male.—*Fringilla enucleator*, MEYER, *Syst. Taschenb.* III., p. 250, Sp. 2.—*Ciufolotto snocciolatore*, RANZ. *loc. cit.*—*Dur-bec*, BUFF. *Ois.* III., p. 457. *Grosbec du Canada*, ID. *Pl. Enl.* 135, fig. 1, Male a year old.—*Haken Kernbeisser*, BECHST. *Nat. Deutsch.* III., p. 28. NAUM. *Vog. Nachtr.* Pl. 19, fig. 36, Male, fig. 37, Female.—*Der Fichten Kernbeisser*, MEYER & WOLF, *Vog. Deutschl.* 12, Pl. 5, fig. 1, young Male, fig. 2, old Female.—*Greatest Bullfinch*, EDWARDS, *Pl.* 123, young Male, *Pl.* 24, adult Female.—*Pine Grosbeak*, PENN. *Brit. Zool.* Sp. 114, *Pl.* 49, fig. 2. *Aret. Zool.* II., Sp. 209. ELLIS, *Narr.* II., p. 15. LEWIN, *Brit. Birds*, II., *Pl.* 68. LATH. *Syn.* II., p. 111, Sp. 5. ID. *Suppl.* p. 148. MONT. *Orn. Dict.* I. WALCK. *Syn. Pl.* 207. DONOV. *Brit. Birds*, I., *Pl.* 17. BEWICK, *Brit. Birds*, I., p. 135. SHAW's *Zool.* IX., p. 238, *Pl.* 43. UBERS. II., p. 106, Sp. 5.—*Flamingo Grosbeak*, LATH. *Spn. Suppl.* p. 155, accid. var. *

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 femoral 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

* See Wilson's *American Ornithology*, *Pine Grosbeak*, *Loxia enucleator*, Vol. II., p. 56, *Pl.* 5, Fig. 2, for the Male at the age of one year.

blackish, margined with whitish exteriorly and widely at tip; the lower coverts are whitish gray; quills blackish, primaries margined with pale greenish orange, secondaries and tertials with broad white exterior margins: the tail is three and three-quarter inches long, blackish, the feathers with narrow pale edges; feet dusky, nails blackish.

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

We have nothing to add to Wilson's history of this bird. Although after the example of Temminck and others, we place this species at the head of the Bullfinches, we cannot avoid remarking that its natural affinities connect it most intimately with the Crossbills, being allied to them closely in its habits and in its form, plumage, general garb, and even in its anomalous change of colors. 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.

COLUMBA LEUCOCEPHALA.

WHITE-CROWNED PIGEON.

[Plate XVII. Fig. 1.]

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

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

The White-crowned Pigeon, well known as an inhabitant of Mexico and the West Indies, is likewise found in great numbers on some of the Florida Keys, such as Key Vacas and others, early in spring, where it feeds almost exclusively on a kind of wild fruit, usually called beach plum, and some few berries of a species of palmetto that appears to be peculiar to those keys. It is also extensively spread in Jamaica and St. Domingo, and is very abundant in the island of Porto Rico, frequenting deep woods, and breeding on rocks, whence they are called by some Rock Pigeons. They are very numerous on all the Bahama Islands, and form an important article of food with the inhabitants, particularly when young, being then taken in great quantities from the rocks where they breed. On the Florida Keys also they breed in large societies, and the young are much sought after by the wreckers. They there feed principally on berries, and especially on those of a tree called sweet-wood. When the fruit of this is ripe they become fat and well flavored, 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 color, and is narrowly margined with black, which passes insensibly into the general deep slate color: on the nape of the neck is a small deep purplish space changing to violet; the remainder of the neck above, and on the sides, is covered by scale-like feathers, bright green with bluish and golden reflections, according as the light falls. The sides of the head, the body above, and whole inferior surface, the wings and tail above and beneath, in short the whole bird without any exception but the parts described, is of a uniform deep bluish slate, much lighter on the belly, more tinged with blue on the stout-shafted rump-feathers, somewhat glossy and approaching to brownish black on the scapulars: the quills are more of a dusky black. The wings are nearly eight inches long, reaching when closed to two-thirds of the tail; the first primary is somewhat shorter than the fourth, and the second and third are longest; the third is curiously scalloped on the outer web, which is much narrowed for two inches from the tip; all are finely edged with whitish. The tail is five inches long, perfectly even, of twelve uniform broad feathers with rounded tips. The feet are carmine red, the nails dusky; the tarsus measures less than an inch, being subequal to the lateral toes, and much shorter than the middle one.

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

The young are distinguished by duller tints, and the crown is at first nearly uniform with the rest of their dark plumage: this part after a time changes to gray, then grayish white, and becomes whiter and whiter as the bird grows older. It is proper to remark, after what has been said under the article of the Band-tailed Pigeon, ante, p. 200, that the white color 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 colored 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.

*COLUMBA ZENAIDA.***ZENAIDA DOVE.**

[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.* I., p. 22. Id. *Syn. Birds U. S.* Sp. 198, in *Ann. Lyc. Nat. Hist. N. Y.* II., p. 119. Id. *Suppl. in Zool. Journ. Lond.* v., p. 6.

THE name of Dove is not commonly used to designate a systematic group, but is employed for all the small Pigeons indiscriminately, whilst the larger Doves are known as Pigeons. Even this distinction of size however does not seem to be agreed upon, as we find authors calling the larger species Doves, and the smaller ones Pigeons, and sometimes even applying both appellations to different sexes or ages of the same species, as in the case of the common American Pigeon, *Columba migratoria*. This extensive family of birds, so remarkable for richness and splendor of colors, 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 splendor; 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 color, 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 color of the body, with a broad black band at two-thirds of its length, obsolete on the two middle feathers (which are of the color 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 color 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 color: 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 color 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.

TETRAO OBSCURUS.

DUSKY GROUSE.

[Plate XVIII. Female.]

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

LINNÉ, in his genus *Tetrao*, brought together so great a number of species bearing no more than a distant resemblance to each other, and differing not only in their external characters, but even in their peculiar

habits, that he might with almost the same propriety have included in it all typical gallinaceous birds. Latham very judiciously separated the genus *Tinamus*, as well as that of *Perdix*, which latter he restored from Brisson. Illiger likewise contributed to our better knowledge of these birds by characterizing two more natural genera, *Syrrhaptes* and *Ortygis*. Temminck, in his *Histoire des Gallinacés*, carried the number to seven, but has since reduced it by reuniting *Coturnix* to *Perdix*.

The true *Tetraones* are divided by Vieillot into two genera, the *Lagopodes* forming a distinct one by themselves. These however we regard as no more than a subgenus, of which we distinguish three in our genus *Tetrao*. I. *Lagopus*, which represents it in the Arctic Polar regions; for whose climate they are admirably adapted by being clothed to the very nails in plumage suited to the temperature, furnished abundantly with thick down, upon which the feathers are closely applied. The color of their winter plumage is an additional protection against rapacious animals, by rendering it difficult to distinguish them from the snows by which they are surrounded. II. *Tetrao*, which is distributed over the more temperate climates; the legs being still feathered down to the toes. III. *Bonasia*, a new division, of which we propose *Tetrao bonasia*, L. as the type, in which only the upper portion of the tarsus is feathered. These occasionally descend still farther south than the others, inhabiting wooded plains as well as mountainous regions, to which those of the second section are more particularly attached. But the entire genus is exclusively boreal, being only found in Europe and the northern countries of America and Asia. The long and sharp-winged Grouse, or *Pterocles* of Temminck, which represent, or rather replace these birds in the arid and sandy countries of Africa and Asia, a single species inhabiting also the southern extremity of Europe, we consider, in common with all modern authors, as a totally distinct genus. That group, composed of but few species, resort to the most desert regions, preferring dry and burning wastes to the cool shelter of the woods. These oceans, as they might be termed, of sand, so terrific to the eye and the imagination of the human traveller, they boldly venture to cross in large companies in search of the fluid so indispensable to life, but there so scarce, and only found in certain spots. Over the intervening spaces they pass with extraordinary rapidity, and at a great elevation, being the only gallinaceous birds furnished with wings of the form required for such flights. This however is not the only peculiarity in which they aberrate from the rest of their order, and approach the Pigeons, being said to lay but few eggs, the young remaining in the nest until they are full-fledged, and fed in the mean time by the parents. .

The Grouse dwell in forests, especially such as are deep, and situated in mountainous districts; the *Bonasiæ* however, and the *Tetrao cupidus*, frequenting plains where grow trees of various kinds. The *Lagopodes*

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

delicacy and lightness. Such are the *Bonasiæ*, *T. umbellus* of America, and *T. bonasia* of Europe.

The Grouse are distinguished by a short stout bill, feathered at base, and they are of all gallinaceous birds those in which the upper mandible is the most vaulted: the feathers of the bill are very thick and close, and cover the nostrils entirely. The tongue is short, fleshy, acuminate, and acute. The eye is surmounted by a conspicuous red and papillous naked space. The tarsi are generally spurless in both sexes, and partly or wholly covered with slender feathers, which in the *Lagopodes* are thicker and longer than in the rest, extending not only beyond the toes, but growing even on the sole of the foot; a peculiarity which, agreeably to the observation of Buffon, of all animals is again met with only in the hare. These feathers in winter become still longer and closer. All the others have the toes seabrous beneath, and furnished with a peetinated row of processes each side.* This roughness of the sole of the feet enables them to tread firmly on the slippery surface of the ground or frozen snow, or to grasp the branches of trees covered with ice. Their nails are manifestly so formed as to suit them for scratching away the snow covering the vegetables which compose their food. The wings of the Grouse are short and rounded, the first primary is shorter than the third and fourth, which are longest. The tail is usually composed of eighteen feathers, generally broad and rounded. The Red Grouse, *T. scoticus*, however, and the European *Bonasiæ*, and *T. canadensis* or Spotted Grouse, have but sixteen; while our two new North American species have twenty, one of them having these feathers very narrow and pointed, the narrowness being also observed in the Sharp-tailed Grouse. They have the head small, the neck short, and the body massive and very fleshy.

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

The genus *Tetrao* is now composed of thirteen species, three *Lago-*

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

podes, two *Bonasiae*, and eight typical *Tetraones*. This enumeration does not include the *Tetrao rupestris*, which we do not consider well established, any more than the new species of Mr. Brehm. The species of *Lagopus*, as might be inferred from their inhabiting high northern latitudes, are common to both continents, with the exception of the Red Grouse, *T. scoticus*, which is peculiar to the British Islands, and which, from its not changing the colors 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 *Bonasiae*, 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 *Bonasiae*, we may consider the Cock of the Woods of Europe, as the parallel of the Cock of the Plains of America. The Black Grouse, *T. tetrix*, will find its equivalent in the Dusky Grouse, *T. obscurus*; but the *T. hybridus* has no representative in America, any more than the *T. scoticus*. These however are more than replaced as to number, by the *T. phasianellus*, *T. cupido*, and *T. canadensis*, all American species which have none corresponding to them in the old world.

Perhaps no other naturalist has personally inspected all the known species of this genus of both continents, and having examined numerous specimens even of some of the rarest, and possessing all but one in my own collection, my advantages are peculiar for giving a monography of this interesting genus. Such a work it is my intention hereafter to publish, illustrated with the best figures, and accompanied with further details respecting their habits. In the mean time I shall merely state, that being replaced in Africa by *Pteroeles*, 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 anywhere, 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 uribellus*, 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 color, the Dusky Grouse may be compared to the Black Grouse of Europe, so remarkable for the outward curvature of the lateral feathers of the tail.

The figure in our plate is taken from the specimen on which Say established the species: this was killed on a mountain in the great chain dividing the waters of the Mississippi from those which flow towards the Pacific; at a spot where, on the 10th of July 1820, the exploring party of Major Long were overlooking from an elevation of one or two thousand feet, a wide extent of country. A small river poured down the side of the mountain through a deep and inaccessible chasm, forming a continued cascade of several hundred feet. The surface of the country appeared broken for several miles, and in many of the valleys could be discerned columnar and pyramidal masses of sand-stone, 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 color of the plumage is blackish brown, much lighter on the neck and beneath, all

the feathers having two or three narrow bars of pale ochreous, much less pure and bright on the neck and breast; the small short feathers at the base of the bill covering the nostrils are tinged with ferruginous, those immediately nearest the forehead have but a single band, and are slightly tipped, while the larger ones of the neck, back, rump, and even the tail-coverts, as well as the feathers of the breast, have two bands and the tip. These rufous terminal margins, on the upper portion of the back, and on the tail-coverts, are broad, and sprinkled with black, so as to be often blended with the lower band. The sides of the head, and the throat, are whitish dotted with blackish, the black occupying both sides of each feather, deepening and taking a band-like appearance on the inferior portion of the upper sides of the neck; on each feather of the breast is a whitish band that becomes wider on those nearest the belly; the flanks are varied with rufous, each feather having besides the small tip, three broad cross lines of that color, 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 color, with about two bands, the second of which is sprinkled as well as the tip, each feather being white on the shaft at tip; the primaries, secondaries, and outer wing-coverts, including their shafts, are plain dusky; the secondaries have ochreous zigzag marks on their outer webs, and are slightly tipped with dull whitish; the primaries themselves are somewhat mottled with dingy white externally, but are notwithstanding entirely without the regular white spots so remarkable in other Grouse; the lower wing-coverts and long axillary feathers are pure white. The tail measures in length seven and a half inches, is very slightly rounded, of twenty broad feathers, of which the lateral are plain blackish, with the exception of a few whitish dots at the base of their outer webs, and the middle ones being varied with rufous dots disposed like the bands across their whole width; all are thickly dotted with gray for half an inch at tip, which in the specimen figured, but by no means so much so in others, gives the tail an appearance of having a broad terminal band of cinereous sprinkled with blackish. This circumstance evinces the inutility of describing with the extreme minuteness to which we have descended in this instance, as after all the pains bestowed, the description is only that of an individual. The tail is pure black beneath, considerably paler at tip and on the undulations of the middle feathers. The tarsus is three-quarters of an inch long; the feathers with which it is covered, together with the femorals, are pale grayish ochreous undulated with dusky; the toes are dusky, and the nails blackish.

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

TETRAO PHASIANELLUS.

SHARP-TAILED GROUSE.

[Plate XIX.]

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

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

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

Say introduced the species regularly into the scientific records of his country. The expedition under Major Long brought back a specimen now in the Philadelphia Museum, from which, though a female, and unusually light colored, we have had our drawing made, on account of its having been procured in the American territory. The bird is never seen in any of the Atlantic States, though numerous in high northern latitudes. It is common near Severn river and Albany Fort, inhabiting the uncultivated lands in the neighborhood 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 color, 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 color 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 color being there much lighter and approaching to white, and even constituting the ground color. The breast is brown, approaching chocolate, each feather being terminated by a white fringe, with a large arrow-shaped spot of that color on the middle of each feather, so that when the plumage lies close the feathers appear white with black crescents, and are generally described so. On the lower portion of the breast the white spots as they descend become longer and narrower, the branches forming the angle coming closer and closer to each other till the spot becomes a mere white streak along the shaft, but at the same time the white marginal fringe widens so considerably that the feathers of the belly may be properly called white, being brown only at their base, but the shaft is white even there, with no more than a brown heart-shaped spot visible on the middle. The heart-shaped brown spots of the belly become so very small at the vent, that this part appears pure white with a few very small blackish spots: the long flank feathers are broadly banded with black and white, somewhat tinged with ochraceous exteriorly; the under tail-coverts are white, blackish along the shafts, and more or less varied with black in different specimens, which also vary considerably as to the size and shape of all the spots, being in some more acute, in others more rounded, &c. The wings are eight inches long, the third and fourth primaries being the longest; the scapulars are uniform with the back, but besides the rusty sprinkling of the margins and tip, the largest have narrow band-like spots of a pure bright rufous, a slight whitish streak along the shaft in the centre, and a large white spot at the end. The smaller wing-coverts are plain chocolate brown; the spurious wing, and outer coverts, are of the same brown, but each feather bears at the point a large and very conspicuous pure white spot; all the other superior coverts are blackish, sprinkled and banded with rusty, each furnished with a conspicuous terminal spot; the under wing-coverts, together with the long axillary feathers, are pure white, each with a single small dusky spot, and are marbled with white and brownish on the outer margin; the quills are plain dusky brown, the primaries being regularly marked with pure white spots half an inch apart on their outer webs, except at the point of the first; the longest feather of the spurious wing, and the larger outer coverts have also a pair of these spots: the secondaries, besides the outer spots, which assume the appearance of bands, are tipped with pure white, forming

a narrow terminal margin, those nearest the tertials are also slightly marked with rusty; the tertials themselves are similar to the scapulars, that is, they are black, banded and sprinkled with different shades of rusty. The tail is strongly cuneiform and graduated, of eighteen feathers, with the middle five inches long, which is three more than the outer. According to some accounts, the two middle feathers are by more than two inches longer than the adjoining, but in all we have examined the difference was little more than an inch. The four middle are similar in shape, texture, and color, being narrow, flaccid, equal in breadth throughout, though somewhat dilated and cut square at the end. In color 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 colors being at one time pure, at another sprinkled with blackish, and assuming various tints; in one specimen they are disposed in spots, in another in bands, lines, chains, angles, &c., but generally in a long stripe on each side of the shaft at base, and in transverse spots at the point of the two longest, while they are in round spots all along each side of the two shortest: in one specimen the latter are even almost plain, being dingy white, sprinkled with blackish on the whole of their outer web: all the other lateral feathers, entirely concealed by the coverts, are pure white at the point, but with dusky shafts, and are more or less broadly dark cinereous at base: these feathers are very rigid, and of a curious form, tapering from the base to the point, where they suddenly dilate; they are deeply emarginate at tip, and their inner lobe projects considerably. The tarsus is two inches long; the slender hair-like feathers covering it are, as well as the femorals, of a dingy grayish white, obsoletely waved with dusky; the toes are strongly pectinated, and are, as well as the nails, of a blackish dusky, while the long processes are whitish.

The foregoing minute description is chiefly taken from a handsome male specimen from Arctic America. There is no difference between the sexes, at least we have not been able to detect any in all the specimens of both that we have examined: hence we conclude that the difference generally described by authors, and which we have ourselves copied in our Synopsis, that of the breast being chocolate brown in the male, and uniform with the rest of the plumage in the female, does not exist. The female is merely less bright and glossy. Both sexes, like other Grouse, have a papillous red membrane over the eye, not always seen in stuffed skins, and which is said to be very vivid in the male of this species in the breeding season. This membrane, an inch in length, becomes distended, and projects above the eye in the shape of a small crest, three-eighths of an inch high. The male at this season, like that of other species, and indeed of most gallinaceous birds, struts about in a very stately manner, carrying himself very upright. The middle

feathers of the tail are more or less elongated, in young birds scarcely exceeding the adjoining by half an inch.

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

The female represented in the figure was fifteen inches long. Its general color 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 color 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 webb dotted with blackish ; they are deeply emarginate at tip, the inner lobe being longer, acute, and singularly shaped.

TETRAO CANADENSIS.

SPOTTED GROUSE.

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

Tetrao canadensis, LINN. *Syst. I.*, p. 274, Sp. 3. GMEL. *Syst. I.*, p. 749, Sp. 3. LATII. Ind. p. 637, Sp. 6. FORSTER, in *Phil. Tr. LXII.*, p. 389. TEMM. *Ind. Gall. in Hist. Pig. et Gall. III.*, p. 702. VIEILL. *Nouv. Dict. Hist. Nat.* SABINE, *Zool. App. Frankl. Exp.* p. 683. NOB. *Cat. Birds U. S.* Sp. 207. ID. *Syn. Birds U. S.* Sp. 208.—*Tetrao canace*, LINN. *Syst. I.*, p. 25, Sp. 7, Female.—*Lagopus Bonasa Freti Hudsonis*, BRISS. *Orn. I.*, p. 201, Sp. 6. ID. *Suppl.* p. 10. ID. 8vo. IV., p. 56, Male.—*Lagopus Bonasa canadensis*, BRISS. *Orn. I.*, p. 203, Sp. 7, Pl. 20, fig. 2. ID. 8vo. IV., p. 57, Female.—*Lagopus Freti Hudsonis*, KLEIN, *Av.* p. 117, Sp. 6.—*La Gelinotte du Canada*, BUFF. *Ois. II.*, p. 279.—ID. *Pl. enl.* 131, Male, 132, Female. SONN. *Buff. VI.*, p. 58. BONAT. *Tabl. Enc. Orn.* p. 197, Pl. 91, fig. 2.—*Tetras tacheté, ou Acaho*; TEMM. *Pig. et Gall. III.*, p. 160, bis.—*Black and Spotted Heathcock*, EDW. *Glean.* p. 118, Pl. 118, Male.—*Brown and Spotted Heathcock*, EDW. *Glean.* p. 71, Pl. 71, Female. ELLIS, *Hudson Bay*, I., t. p. 50.—*Spotted Grouse*, PENN. *Arct. Zool. Sp.* 182. LATH. *Syn. IV.*, p. 735, Sp. 6. ID. *Suppl.* p. 214, accid. var.—*The small speckled Pheasant*, LEWIS and CLARK, *Exp. II.*, p. 182, Male.—*The small brown Pheasant*, ID. ID. *Exp. II.*, p. 182, Female.

As may be seen by the synonymy, two separate species have been made of the present, the male and female being taken for different birds. This error, which originated with Edwards and Brisson, from whom it was copied by Linné, was rectified by Buffon, Forster, and others ; and in their decision Gmelin, Latham, and all subsequent writers have acquiesced. Both sexes were tolerably well figured by Buffon, as they had also been previously by Edwards ; but we feel justified in saying that none of their plates will bear a comparison with the present.

The Spotted Grouse is well characterized by its much rounded tail,

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

This bird is common at Hudson's Bay throughout the year, there frequenting plains and low grounds, though in other parts of America it is found on mountains, even of great elevation. It inhabits Canada in winter, and was seen by Vieillot in great numbers during the month of October in Nova Scotia. Lewis and Clark met with it on the elevated range of the Rocky Mountains, and brought back from their western expedition a male specimen and deposited it in the Philadelphia Museum, where it was long exhibited under the name of Louisiana Grouse. This, as truly observed by Say, first entitled it to rank among the birds of the United States. But the Rocky Mountains are not the only region of the United States territory where the Spotted Grouse is found. We have traced it with certainty as a winter visitant of the northern extremity of Maine, Michigan, and even of the state of New York; where, though very rare, it is found in the counties of Lewis and Jefferson. On the frontiers of Maine it is abundant, and has been seen by Professor Holmes, of the Gardiner Lyceum, near Lake Umbagog and others. In these countries the Spotted Grouse is known by the various names of Wood Partridge, Swamp Partridge, Cedar Partridge, and Spruce Partridge. The American settlers of Canada distinguish it by the first. In Michigan and New York it goes generally by the second. In Maine it bears the third, and in other parts of New England, New Brunswick, &c., more properly the last. We have been informed by General Henry A. S. Dearborn, that they are sent from Nova Scotia and New Brunswick to Boston in a frozen state; as in the north they are known to be so kept hanging throughout the winter, and when wanted for use, they need only be taken down and placed in cold water to thaw. General Dearborn, to whom we are much indebted for the information which his interest for science has induced him voluntarily to furnish, further mentions, that he has heard from his father that during the progress of the expedition under Arnold through the wilderness to Quebec in 1775, these Grouse were occasionally shot between the tide waters of Kennebec 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 Chippeway language, *Mushcodassee*, i. e., Partridge of the Plains. .

The favorite 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 flavor 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 unsuspicious, 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 color 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 color, 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 color, 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 colors, being black brown, thickly sprinkled on the margins with grayish rusty, and a pretty well defined band of that color 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, con-

tinued 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 colors; 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 color: 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 color 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 colors 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 variegated 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 color. 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-colored tip being moreover not so pure, and also sprinkled.

The bird represented in the plate comes from the Rocky Mountains: it is a male, and remarkably distinguished from the common ones of his species by having the tail-feathers entirely black to the end. This difference I have observed to be constant in other specimens from the same wild locality; whilst all the northern specimens, of which I have examined a great number, are alike distinguished by the broad rufous tip, as in those described, and as also described by Linné and all other writers, who have even considered that as an essential mark of the species. The Rocky Mountain specimens are moreover somewhat larger, and their toes, though likewise strongly pectinated, are perhaps somewhat less so, and the tail-coverts are pure white at tip, as represented in the plate. But heaven forbid that our statements should excite the remotest suspicion that these slight aberrations are characteristic of different species. If we might venture an opinion not corroborated by observation, we would say, that we should not be astonished if the most obvious discrepancy, that of the tail, were entirely owing to season, the red tip being the full spring plumage; though it is asserted that this species does not vary in its plumage with the seasons. However this may be, we have thought proper to give a representation of the anomalous male bird from the Rocky Mountains in our plate, whilst the female, placed with the Cock of the Plains, that its reduced size may be properly estimated, has been chosen among the ordinary specimens

having the tails tipped with red; the red tip being still more conspicuous in the common males, from which in order to comprehend all, our description has been drawn up.

TETRAO UROPHASIANUS.

COCK OF THE PLAINS.

[Plate XXI. Fig. 2.]

Tetrao urophasianus, Nob. in Zool. Journ. Lond. Id. App. to *Syn. Birds U. S.* p. 442, in Ann. Lyceum Nat. Hist. New York.—*The Cock of the Plains*, LEWIS and CLARK, *Exp. II.*, p. 180, Sp. 2.

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

This fine bird, like its European analogue, seems to be restricted within certain bounds, and is probably 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 representation of at least one sex.

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

The name of Cock of the Plains was given by Lewis and Clark, and we have retained it, as being not only appropriate, but at the same time analogous to that of the large European species called Cock of the Woods. Similar reasons have influenced us in selecting the scientific name, which though perhaps too long, and ill compounded, has never-

theless 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 anything, the lateral rather broader at the tip.

Lewis and Clark first met with this bird on their journey westward near the fountain of the Missouri, in the heart of the Rocky Mountains. They inform us that it is found on the plains of the Columbia in great abundance, from the entrance of the south-east fork of the Columbia to that of Clark's river. It appears also to extend to California, for there can be but little doubt that it is the bird erroneously called Bustard by the travellers who have visited that country. Lewis and Clark state that in its habits it resembles the Grouse (meaning probably *T. phasianellus*), except that its favorite 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 flavor, and is not so palatable as either that of the Phéasant 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 tatt mottles, and occupies so much of the plumage of its analogue. This, the total want of beard-like appendages, and the singular shape of the tail, are the prominent discriminative features; to which may be added, that the under wing-coverts marbled with black in the European, are pure white in our new species, though this, as well as the want of reddish, might be ascribed to the youth of

our specimen. However this may be, the remaining differences will be better estimated by attending to the following minute and accurate description.

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

measures two inches; the toes are dusky black, and the pectinated row of processes long, strong, and dingy whitish; the nails blackish. The whole base of the plumage, with the exception of that of the neck beneath (which is white), is of a dusky gray. The tail is ten inches long, and in color is, as well as its coverts, in harmony with the rest of the plumage; the ground color is blackish, and crossed or rather mottled with bands of whitish spots disposed irregularly, between which are small additional darker spots; the two middle ones are mottled all over, but the others are almost immaculate on their inner vane and ~~at~~ the point; hence the lower surface of the unexpanded tail is of a silvery gray much darker than that of the wings; at the very tip of the tail-feathers, the middle excepted, appears a very small whitish spot, the two outer pairs being rather broadly yellowish white, dotted with blackish on that part. The tail is composed of twenty feathers, the highest number ever met with in any tribe of birds. Although it appears strongly cuneiform, owing to the remarkable shape and curve of the feathers, it is when expanded and properly examined, nothing more than much rounded, the two in the middle, which are the longest, reaching but a trifle beyond the adjoining, and so on in succession, the difference in length increasing progressively, but very gradually at first, and more and more as they are distant from the centre, there being nearly an inch difference between the third and second, and full that between the second and the outer, which is only six inches long, while the middle is ten. All the twenty are narrow, tapering, acute, and falciform, turning inward. Those toward the middle are less curved, but more conspicuously acuminate and narrow for nearly two inches, all but the middle ones being slightly square at their narrow tips.

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

CATHARTES GRYPHUS.

CONDOR.

[Plate XXII. Young Male.]

Vultur Gryphus, LINN. *Syst.* I., p. 121, Sp. 1. GMEL. *Syst.* I., p. 245, Sp. 1. LATH. *Ind. Orn.* I., p. 1, Sp. 1. *Encycl. Brit.* XVIII., p. 695, pl. 510. HUMBOLDT, *Hist. Nat. in Obs. Zool.* I., p. 26, pl. 8, 9.—*Vultur magellanicus*, LEVER. *Mus.* p. 1, pl. 1, Female.—*Vultur condor*, DAUD. *Orn.* II., p. 8. SHAW, *Zool.* VII., p. 2, pl. 2, 3, 4.—*Cathartes gryphus*, TEMM. RANZANI, Nob. *Cat. & Syn. Bds. U. S.* Sp. 2.—*Gypagus griffus*, VIEILL. *Enc.* III., p. 1174. ID. *Nouv. Dict.*—*Sarcoramphus Cuntur*, DUMERIL. *Sarcoramphus gryphus*, GOLDFUSS, *Nat. Atlas*, pl. 107, adult Male.—*Sarcoramphus condor*, LESS. *Orn.* I., pl. 7, adult Male.—*Vultur Gryps Gryphus*, KLEIN, *Av.* p. 45. BRISS. *Av.* I., p. 473. ID. *8vo.* p. 137. BOROWSKY, *Nat.* II., p. 62.—*Cuntur*, LAET. *Am.* p. 401. RAY, *Av.* p. 11.—*Catarte condoro*, RANZ. *ELEM.* VII., p. 24, Sp. 2, tab. XXII., fig. 2, adult Male.—*Il Condoro*, MOLINA, *St. Nat. Chili*, p. 223.—*Manque*, MOLINA, *Chili*, p. 236 (French edition).—*Condor*, FREZIER, *Voy.* p. III. LA CONDAMINE, *Voy. Amaz.* p. 175. BRISS. *Orn.* I., p. 473, Sp. 12. BUFF. *Ois.* I., p. 184. ID. (ed. 1770) I., p. 143, v. MARTINET, *Hist. Ois.*—*Le Condor, ou Grand Vautour des Andes*, CUV. *Règn. An.* I., p. 306. ID. ed. 2, p. 316.—*Cathartes Condor*, TEMM. & LAUG. pl. col. 133, adult Male, 494, head of the adult living Male, 408, young Female.—*Condur Vulture*, LATH. *Syn.* p. 4. ID. *Suppl.* p. 1. ID. *Suppl.* II., p. 1, pl. cxx. ID. *Gen. Hist.* I., p. 4, pl. 1, adult Male. HAWKESW. *Voy.* I., p. 75. WOOD'S *Zoography*, I., p. 371. STEVENSON, *Voy. Am.* II., p. 59.—*Der Condor Geier*, of German authors.—*Cabinet of the Academy of Natural Sciences*.

To such a degree has its history been exaggerated by fable, that the mention of the Condor immediately recalls to mind the Roc, of Marco Polo and the Arabian Tales. Some authors have indeed referred this name to it, and even go so far as to make it the subject of one of the labors of Hercules, the destruction of the Stymphalian birds. Such in fact were the stories related by the early travellers, that even when reduced to what in the judgment of Buffon was their real value, it cannot but now appear unaccountable that they should ever have found credence, and still more so that compilers should have gone on accumulating under the Condor's history not merely the tales told of it, but others collected from every quarter of the globe, however remote or different in climate, not hesitating to give currency to the most revolting absurdities. The accounts of Father Feuillée, who was the first describer, Frezier, and especially Hawkesworth's, appear however to be tolerably correct; while the ardent imagination of Garcilasso led him to indulge in the wildest extravagances in relation to this bird. Abbeville and de Laet, no less than Acosta, in his History of the Indies,

cribed to this cowardly Vulture the strength, courage, and raptorial habits of an Eagle, and even in a higher degree, thus doing him the honor to represent him as formidable to every living creature, and the dreaded enemy of man himself. Desmarchais improves if possible upon these stories, giving the Condor still greater size and strength, and stating that it is well known to carry off in its prodigious talons a hind, or even a heifer, with as much ease as an Eagle would a rabbit! Such a creature could not of course dwell in forests, for how could it among trees display its enormous wings? They were therefore limited to savannahs and open grounds. Antonio de Solis, Sloane in the Philosophical Transactions, and even the learned La Condamine, who saw the bird himself, and certainly witnessed no such exploits as had been related of it, indulged in wild theories depending on popular tales and superstitions. The obscurity created by so much misrepresentation could not however conceal its true Vulture-like nature from the acuteness of Ray, who pointed out its appropriate place in the system. His opinion was adopted by Brisson and Linné, and it became among naturalists generally a settled point, notwithstanding the eloquently expressed doubts of Buffon, who wanted rather on account of its supposed great strength and agility to elevate the Condor to the rank of an Eagle, these qualities not permitting him to degrade it so low as the Vultures. But a still greater error of the French Pliny, as he may be on every account so appositely styled, was to consider the Condor as not peculiar to America, but as a genuine cosmopolite, of which happily there were but few, however, for otherwise the human race would not have been able to stand against them. But it was only in its imaginary character that the Condor of Buffon was truly cosmopolite, having no other existence than what was based upon absurd and ridiculous fictions gathered in all parts of the globe; for no living bird could be placed in competition with one for whose powers of flight distance was no impediment, and whose strength and swiftness united would have rendered him lord of creation.

We should, however, make some allowance for the credulity of our forefathers, in believing upon the reports of weak or lying travellers all the romantic and extravagant tales related of this wondrous Condor. They had not, as we have, the means of personally ascertaining the sober truth. But it is almost incredible, and remarkably illustrates the force of preconceived opinions, that in the year 1830, a traveller could be found with assurance enough to impose upon us, and journals, even of respectable standing, to copy as positive and authentic, a description of a Condor of *moderate size*, just killed, and actually lying before the narrator, so large that a single quill-feather was twenty good paces long! This indeed might have lifted an Elephant, and it is quite unfortunate that Peru and Chili should no longer produce them for prey for such a

bird, and that the Mastodon is now extinct. So much for human credulity, which is often exercised upon more serious occasions, with equal impudence and much worse results.

As in so many other instances of power based upon prejudice, or great reputation unjustly usurped, a near and close examination has shown the falsity of these pretensions. The wonderful Condor now proves to be nothing more than a rather large Vulture. The same has happened, as Humboldt observes, with its countrymen, the gigantic Patagonians, who are found at last not to exceed the stature of ordinary men.

Notwithstanding the faithful accounts of a few of the older authors, the true history of the Condor had remained involved in the obscurity created by mingling it with so many childish tales, when the celebrated Humboldt, studying it living with the sober eye of truth and philosophy, furnished a correct description, a good drawing, and an excellent memoir upon it. Since that time several stuffed as well as living specimens have reached the menageries and museums of the United States and Europe, which with the three plates published by Temminck, have rendered it familiar to all. It is but just, however, to mention that Latham had, long before Humboldt, given in his second Supplement a tolerably correct description of both sexes, with a figure of the adult male, and taken also from the identical specimens, now at Vienna, and originally brought to England by Captain Middleton from the straits of Magellan, that furnished the subjects of Temminck's plates.

The adults of both sexes, and a young female, having been tolerably well represented, it is the young male that we have preferred to figure in this work, in order thus to complete the iconography of so interesting a species. And we trust that through the exertions of our artists, our figure, which is reduced three and a half times from nature, will be found for minuteness of accuracy much superior to all, owing to the extraordinary pains taken by Mr. Lawson, who besides being furnished with a correct drawing, made repeated visits to the living bird, carefully verifying its form and dimensions in all their details.

The genus *Vultur* of Linné, now the family *Vulturini* (or *Vulturidæ*), a family first established by Duméril under the appellation of *Ptilodères*, or *Nudicolles*, though much less numerous as well as less intricate in the characters of the species than the *Falconidæ*, of which we have treated under the head of *Falco cooperii*, has nevertheless much exercised the ingenuity of ornithologists, who nearly all disagree both as to its limits and its subdivisions. With respect to the former, those recognised by us will be clear and well defined, this family being constituted of the two modern genera *Vultur* and *Cathartes*, of Illiger, which we adopt with some modifications, as will be seen hereafter. Contrary to the general practice, we discard from it the aberrant genera forming the passage to

other groups, in which we prefer arranging them. The groups towards which a direct passage is the most obvious are the family of *Rapaces*, or *Falconidæ*; and some typical *Gallinæ* and aberrant Waders. With neither the *Passeres* nor the webfooted orders (unless it may be with the Frigate-Bird), do we perceive any immediate relations. The passage to these takes place through the intervention of the three other orders, in the first of which the genera *Gypaëtus* and *Gypogeranus* approach so near them as even to have strong claims to be included in the same family, being almost exactly intermediate between *Falconidæ* and *Vulturidæ*.

Although the *Vulturidæ* are far from exhibiting the same diversity of conformation, habits, and appetites, as the numerous tribe of the Falcons, and form indeed as a whole a much more compact mass, and much less numerous in species, yet even those naturalists with Illiger at their head, who have left untouched the great genus *Falco*, have joined unanimously with the reformers in dividing that of *Vultur* into two great equivalent genera. This course, though we imitate it ourselves, we must confess to be more expedient than consistent, and it is probable that for the very reason that differential traits are less numerous and complicated in the different species, that the divisions have been more easily made and admitted. Let us analyze them. Illiger was the first to separate the species into his two genera *Cathartes* and *Vultur*: we say the first, excluding Storr and Lacépède, who long since with so much reason withdrew *Gypaëtus* from the genus, and not adverting to the artificial section made by Duméril in the year 1806, under the name of *Sarcoramphus*, for the stout-billed carunculated species indiscriminately. The characters assigned by Illiger were precise and natural, and the species he cited as examples correctly typical. But Temminck in adopting Illiger's two genera, misapplied the characters, and rendered them unnatural by declaring the *Vultur Perenopterus* a *Cathartes*, whilst it is in fact a slender-billed *Vultur*, as the Condor is a stout-billed *Cathartes*. Deceived by Temminck, we at first adopted this erroneous view, which we have finally rectified in our Observations on the second edition of the *Règne Animal* of Cuvier. In returning to what we consider the principles of Illiger, as they certainly are the dictates of reason, it so happens that this genus *Cathartes*, as is often the case, is found to correspond to a geographical division, being exclusively American, whilst that of *Vultur* is in like manner confined to the old continent. The other genera which have been proposed among the *Vulturidæ* may be considered as groups of secondary importance.

Thus the three European species* belong, according to Savigny, to

* Ruppel reckons four. He makes two of *V. fulvus*, considering the *Chassefiente* of Le Vaillant a distinct species.

as many separate genera, namely *Gyps*, *Aegypius*, and *Neophron*. The last, restricted to its proper limits, is a very well marked subgenus, which we adopt under the name of *Perenopterus* (Cuvier). It contains to my knowledge but two well ascertained species, which are the *Slender-billed Vultures of the old continent*.

The other European Vultures, with stout bills, are comprised in my subgenus *Vultur*, composed of ten well known species. But we must confess that the *Vultur cinereus* and *Vultur fulvus* differ materially, and that even their skeletons present differences that in other cases might be considered as even more than generic, while one uniform osseous structure is found to prevail throughout the numerous species of Falcons. This observation I believe has never before been made. Savigny founded his groups, which are excellent as subdivisions, on the different conformation of the nostrils, on the tongue, aculeated on its margin in *Gyps*, and not in *Aegypius*, and on the number of tail-feathers, which is twelve in the latter, as in the American genus, and fourteen in his genus *Gyps*, as well as in *Neophron*.

Thus are the twelve species constituting my genus *Vultur* divided into two very natural subgenera, corresponding to the two genera of Vieillot, *Vultur* (comprising ten species), and *Neophron* (comprising but two), the first being subdivisible into the two minor groups of Savigny. The three might indeed be considered as co-ordinate subgenera.

As for the genus *Cathartes*, it is by no means so easy to divide, and the two groups or subgenera which we admit are perhaps artificial and blended too much together. The first, comprising the Condor, the Californian Condor, and the King Vulture, that is, the *Stout-billed American Vultures*, may be called *Sarcoramphus*, a name confined by Dumérit and Cuvier to those that have caruncles or fleshy appendages on the head, but to which Vieillot very justly added *C. californianus*, calling the group *Gypagus*.

The second subgenus of *Cathartes* may be called *Catharista* (Vieillot), or the *Slender-billed American Vultures*, analogous in a parallel series, where the strength of the bill is considered, to the *Perenopteri*, but having no immediate affinity with them. The only known species are the two of Wilson's work, *Cathartes aura*, and *Cathartes iota* of my Synopsis, the former of which is a link between its own group and the preceding.

The best discriminating mark between the two principal genera of this family, one which is obvious and easily understood, is the striking character of the perviousness of the nostrils in *Cathartes*, through which light appears broadly from one side to the other, while in the *Vultures* they are separated by an internal cartilaginous partition. This will make it at once evident that it was for want of proper examination that the *Perenopterus*, merely on account of its slender bill, was ever considered

a *Cathartes*. The remaining characters being more of a relative than a positive kind, we shall not here notice them, except remarking that the hind toe being much shorter and set on higher up in the American genus, shows a greater affinity with the Gallinaceous birds, an affinity which may be traced in other features of their organization. The number of tail-feathers is fourteen in several species of *Vultures*, whilst no *Cathartes* has ever been found to have more than twelve. The principal traits, both moral and physical, are the same in all the birds composing this highly natural family.

All in fact are distinguished by having their head, which is small, and their neck, more or less naked, these parts being deprived of feathers, and merely furnished with a light down, or a few scattered hairs. Their eyes are prominent, being set even with the head, and not deep sunk in the socket, as in Eagles and other rapacious birds. They have the power of drawing down their head into a sort of collar formed by longer feathers at the base of the neck: sometimes they withdraw the whole neck and part of the head into this collar, so that the bird looks as if it had drawn its whole neck down into the body. They have a crop covered with setaceous feathers, or sometimes woolly or entirely naked, and prominent, especially after indulging their voracious appetite. Their feet are never feathered like those of an Eagle, although they have been unnaturally so represented in the plates of some authors. The tarsus is shorter than the middle toe, which is connected at its base by a membrane with the outer one. The claws are hardly retractile, comparatively short, and from these birds' habit of keeping much on the ground, instead of always perching, as the *Falconidae*, they are neither sharp pointed nor much curved. Their wings are long and subacute, the third and fourth primaries being longest: they are lined beneath with a thick down of a peculiar and very soft nature.

The young birds have their head entirely covered with down, which gradually falls off as they advance in age. The female is larger than the male: their plumage varies greatly with age, and they moult but once a year. The young are easily distinguished by their downy head and neck, these parts in the adult being naked, and by the absence of the caruncles which in some species are found on the adult. These fleshy appendages are of the same nature as the wattles, &c., of Gallinaceous birds.

No part of Ornithology has been more confused in its details than that relative to the Vultures, and their synonymy, especially the European species, is almost inextricable: the old authors have heedlessly multiplied and even composed species, whilst the modern have brought together the most confused citations under those which at last they founded on the actual observation of nature. We congratulate our-

selves that the task of pointing out all these errors, from which no writer without exception appears free, does not belong to us.

Vile, gluttonous, and pre-eminently unclean, the *Vulturidæ* are the only birds of prey that keep together in flocks all the year round: as cowardly as they are indiscriminately voracious, they are too pusillanimous, notwithstanding their numbers, to attack living prey, and content themselves with the abundant supply of food which is offered by the putrid carcasses of dead animals. In fact, they appear to give the preference to these, with all their disgusting concomitants, and only resort to freshly slaughtered animals when impelled by extreme hunger. Their want of courage is denoted by their crouching attitude and the humility of their demeanor. Creatures with such dispositions did not require from nature strength or powerful weapons; nothing was needed but perfection of smelling, that they might from a distance discover their appropriate food, and this faculty they possess in an eminent degree. Their nostrils have two large external apertures, and an extensive olfactory membrane within.

Though regarded with disgust for their filthy habits, these well known birds are extremely serviceable in hot climates, by devouring all sorts of filth and impurities, and thus preserving the atmosphere from the contamination of noxious effluvia. On this account their cowardice is protected by man, who in civilized as well as savage life always looks to his own advantage, and does not disdain to make use of those for whom he cannot help feeling contempt. Besides their usefulness during life, the Vultures have an additional security in their utter uselessness when dead. In consequence of their food their body exhales a disgusting effluvium, and their flesh is so rank, stringy, and unsavory, that nothing short of absolute famine can bring any one to taste of it. No skill nor precautions in cooking can overcome its natural bad odor, which prevails over the most powerful spices. But though not eatable themselves, they excel in picking clean to the very bones the carrion they feed upon, leaving them as bare as if they had been carefully scraped. With this food they gorge themselves to such a degree as to be incapable of flight, and hardly able to move for some time, and then allow of a very close approach. In fact their indolence, filthiness, and voracity, are almost incredible.

They are birds of slow flight at all times, and raise themselves from the ground with difficulty, though when surprised and closely pursued after overfeeding, when they are almost helpless, they can lighten themselves by vomiting up their superfluous meal, sometimes to the great annoyance of the pursuer, and then at once take flight. Their sight is exceedingly keen, and is only inferior in power to their sense of smelling, which enables them to discover their peculiar food at great and incredible distances. They are dull and heavy, fond of assembling in

flocks upon trees, where they may be seen perched for hours together, sitting with their wings open as if ventilating their plumage. They walk with the body inclined forward, the wings drooping, the tail brushing the ground. When they wish to take flight, they are obliged to run a few paces, and then contract the body violently. Their flight, though slow, is protracted for a greater length of time than even perhaps that of the Eagle, though more laborious and heavy. They elevate themselves to such wonderful heights, that as they describe circle after circle, they gradually appear no larger than a swallow, next a mere speck is visible, then disappearing altogether from the limited power of human wisdom. Not, however, beyond their own, for as they hover over the country beneath, they can discover a carcass or carrion anywhere over a very wide district. In the East they are well known to follow the caravans; in Africa and South America they accompany and wait upon the hunter's steps. If a beast is flayed and abandoned, calling to each other with shrill but resounding voice, they pour down upon the carcass, and in a short time, so dexterously do they manage the operation, nothing remains but the naked skeleton. If the skin should be left on the prey they discover, an entrance is soon made through the belly, by which they extract all but the bones, which are left so well covered by the skin as hardly to show that they have been at work there. Should a sickly ox or smaller animal be accidentally exposed defenceless, or from any cause unable to resist, the Vultures fall upon and devour him without mercy in the same manner. Thus in the mountainous districts of hot countries, in which they are very numerous, the hunter who wishes to secure his game does not quit an animal he may have killed, for fear of its immediately becoming their prey. Le Vaillant, while in Africa, met with frequent losses through the rapacity of these parasites, which, immediately notified by the calling of the Crows, flocked around in multitudes, and speedily devoured large animals that he had killed, depriving him not only of his own meal, but of many a valuable specimen intended as a contribution to science. They may be frequently seen tearing a carcass in company with dogs or other ravenous quadrupeds, such associations producing no quarrel, however lean and hungry both may be. Harmony always subsists, so long as they have plenty, among creatures of dispositions so congenial. But the Eagle drives them to a distance till he is satisfied, and only permits them to enjoy the fragments of the prey he has conquered. With the same expectation of feeding upon the leavings, they attend upon the ferocious quadrupeds of the Cat kind, and may thus indicate the vicinity of these dangerous beasts. That it is cowardice which prevents them from attacking animals capable of making any defence is evident. The innate cruelty of their disposition is often manifested towards the helpless. To a deserted lamb they show no mercy, and living serpents

and whatever other minor animals they can overpower are their usual food. They are also, it is said, extremely fond of crocodiles' and alligators' eggs, to obtain which they keep watch unseen in the adjacent forest while the female is laying, and as soon as she is gone descend, and removing the sand where they are buried, greedily devour them.

The Vultures are mostly found in warm climates, although by no means afraid of cold, as they prefer the vicinity of lofty mountains; those which inhabit in the north retiring southward in winter in the northern hemisphere. Their favorite abodes are rocks and caverns among broken precipices, where they retire to sleep and to digest their meals when overfed, which happens as often as an opportunity offers: in such retreats they may be often observed in great numbers together, enjoying the exhilarating air of the morning. Their nest is made with hardly any preparation on inaccessible cliffs or other places where they can seldom be found by man. They reside generally where they breed, seldom coming down into the plains, except when frost and snow have driven all living things from the heights: they are then compelled to brave danger in pursuit of food. The Vultures generally lay but two eggs at a time, sometimes three or four, especially the North American species; and are faithfully monogamous. In their mode of supplying their young with food, there is a striking difference between them and other rapacious birds. The latter place before their progeny the quivering limbs of their prey, that they may learn to employ their beak and talons. The Vultures, whose claws are not fitted for seizing and bearing off their spoils, disgorge into the mouth of their young the contents of their crop, from the nature of which this operation, so interesting when performed by a dove or a canary, becomes in this case one of the most disgusting imaginable.

According to Belon, the Latin name *Vultur* is but a contraction of *volatu tardo*: the name *Cathartes* imagined by Illiger, means in Greek, purger. *Condor* is a corruption of *Cuntur*, the true appellation of our species in the *Qquichua* language, derived, according to Humboldt, from the verb *cunturi*, to smell.

Although the largest of American Vultures, the Condor is inferior in size to several of those which inhabit the old continent, and even to the large Golden Vulture of eastern Europe. Both sexes are very nearly of equal size; but the superiority, if any, is found as usual upon the side of the female; so that the common statement of writers, that this sex is of less size, has no foundation in fact.

The adult male is always more than three feet long, and measures nine feet from tip to tip of the extended wings. Some gigantic individuals are met with four feet long and twelve in extent. The bill is dark brown color at the base, somewhat of a lemon white at tip. The tongue is entire, cartilaginous, membranous, ovate-cuneate, concave

beneath, serrated with spines on the margin. A longitudinal compressed caruncle, or firm fleshy crest extends from the top of the head to the front, and to the brown portion of the bill. It is rounded before and behind, a sinus on the upper border, the lower free for a short space at each extremity, papillous, or strongly wrinkled, and, as well as the cere, of a bluish color. The nostrils are oval-linear, and with no hairs surrounding them. The skin of the neck and crop is bare, with the exception of some scattered short and rigid hairs; it is reddish, and has two short pear-shaped processes depending from it. Two inter-twisted fleshy strings arise from the bill, pass over the auditory region, and descend along the sides of the neck: these fleshy cords acquire by desiccation, in stuffed specimens, the appearance of a series of tubercles or wrinkled protuberances: a double string of a similar substance passes above the eye, which is small, much lengthened, and lateral, being set far back from the bill: the irides are of an olive gray. Their cavernous structure enables the bird to swell out all these appendages at pleasure, like the Turkey: the crest, however, must be excepted, which is very dissimilar to the flaccid, pendulous cone of the Turkey, and incapable of dilatation. The orifice of the ear is very large, subrounded, but hidden under the folds of the temporal membrane. The occiput exhibits a few short brown bristles. Around the lower part of the neck above is a beautiful half collar of silky and very soft down as white as snow, which separates the naked parts from the feathered body. In front this collar is interrupted, and the neck is bare down to the black plumage: this gap in the collar can however only be discovered on close inspection. The whole plumage is of a very deep blue black; the tips of the secondaries and the greater wing-coverts on the outer web only being of a whitish pearl-gray: the first seven outer quills are wholly black, twenty-seven being white on their outer web: the third quill is the longest. The wings are three feet nine inches long, reaching nearly to the tip of the tail, but not passing beyond, as in the closely related species the Californian Condor. The tail is very slightly rounded at the end, rather short in proportion to the bird, measuring thirteen inches. The feet are bluish: the toes connected at their base by a membrane.

The female is entirely destitute of crest or other appendages. The skin which covers the head is uniformly blackish, like the plumage, in which there is only a little cinereous on the wings: in this sex the wing-coverts, which in the male are white at tip from the middle, are of a blackish gray. This circumstance is very conclusive, inasmuch as the white forms a very conspicuous mark on the wings of the male, which has occasioned it to be said that some Condors had a white back.

For several months during the early part of their life, the young are covered with very soft whitish down, curled, and resembling that of young owls: this down is so loose as to make the bird appear a large

shapeless mass. Even at two years old the Condor is by no means black, but of an obscure fulvous brown, and both sexes are then destitute of the white collar.

The following description and admeasurements are from a pair of young living birds, said to be nine months old, caught on the Peruvian Andes. One of these (which are precisely alike) was captured by an Indian, who discovering two in the nest, ran up at great speed, fearing to be overtaken by the old ones, and succeeded in securing it by putting it in his pocket, not larger than a full grown chicken. I have carefully compared this with, and found perfectly similar to it, a bill and a quill-feather brought from the Columbia river by Lewis and Clark and preserved in the Philadelphia Museum. These remains prove the existence of the Condor within the United States, and sufficiently authorize its introduction into this work.

Length three feet nine inches. Breadth nine feet. Bill to the corner of the mouth two inches six-eighths; to the cere one inch and a half, to the down three and a quarter inches. Bill curved and hooked, with several flexures; upper mandible passing over the lower, which is rounded and scalloped: nostrils pervious, rounded-elliptical, cut in the cere. Bill outside, cere, and all the surrounding naked parts black; ears without any covering, the skin rugose: inside of the bill yellowish white, margined with black, palate furnished with a fleshy skin, having the appearance of a row of teeth in the middle, then of a hard ridge looking like a file, and two marginal rows: tongue broadly concave, and serrated on the turned up edges with sharp pointed cutting serratures: an elevation of the skin indicating the frontal caruncle; the place where the bristles begin to appear is also indicated by an elevation. Eye full and rounded: iris blackish: membrane of the throat very dilatable: head and neck covered by a thick silky down of a brownish black color; on the front more dark and bristly; general color dark brown, each feather having a banded appearance, tipped with more or less of umber; quill and tail-feathers black, with a gloss of blue. The number of tail-feathers is twelve, the closed wings not reaching beyond, though very nearly to the tip. Feet black: acrotarsus beautifully colligate, acrodactylus scutellated: the whole leg measures one foot in length, of which the tarsus is five and a quarter inches, and the middle toe and nail six, the nail being one and a half: lateral toes connected with the middle as far as the first joint by a membrane; the inner two and a half inches long without the nail, which is one and a half; the outer with the nail a quarter of an inch shorter; hind toe articulated inside, bearing on the ground only with the point of the nail, an inch and a half long, the nail one inch more, and much incurved: sole of the foot granulated: fat part of the heel large and rough. The feet have been generally described as white or whitish, owing to their being commonly stained

with the excrements, which the bird throws much forward, but they are in fact of a fine blue horn color when washed clean, and these birds seemed to be fond of washing themselves.

The Condor is diffused over the continent of South America from the Straits of Magellan, extending its range also to Mexico and California, and the western territory of the United States beyond the Rocky Mountains. It was not seen by Lewis and Clark until they had passed the great falls of the Columbia, and it is by no means common or numerous anywhere in the northern parts of America, those individuals that have been observed here appear to have been stragglers from their native country, which is no doubt South America. It might even be limited to the great chain of the Andes, especially their most elevated ranges, being plentiful in Quito, Peru, New Granada, and Antioquia, and much more rare where they are less lofty, the Condor inhabiting pretty nearly the same altitude with the *Cinchonæ* and other subalpine plants. It is moreover, according to the observations of Humboldt, the invariable companion of the Guanaco for an extent of nearly three thousand miles of coast, after which this animal is no longer seen, but the Condor continues to be met with much beyond this, as if quite indifferent to climate, or because it can regulate it by varying its elevation with the change of latitude. In the eastern or even southern United States a Condor has never been seen, though the King Vulture of South America has been occasionally observed. The chief abode of the Condor is indeed on the highest summits of the Andes, some of which are covered with perpetual snow, and is fixed by Humboldt at between three thousand one hundred and four thousand nine hundred metres. Every time, says he, that I have been herborizing near the limits of perpetual snow, we were sure to be surrounded by Condors. These mountains and the forests that clothe their sides are the Condor's home, and from these their excursions are extended over the whole neighborhood to the very sea, from which they may be often seen hovering at prodigious heights and describing vast circles, but always ready to lower themselves by degrees whenever they espied a chance of satisfying their voracious appetite. They are only known, however, to descend towards the seashore during the rainy season, corresponding to our winter, when they come in search of food and warmer weather: they then obtain the bodies of large fishes or marine animals, such as Whales or Seals, and the prospect of finding these is their principal attraction to the shore: they arrive here at evening, and as a journey of several hundred miles requires for them but little time or exertion, as soon as their meal is digested, and they begin to feel lighter, they return to their favorite rocks, often during the following day. They have sometimes been killed at sea, floating on the dead body of a Whale which they were tearing for food. They exhibit the common propensity of their tribe

for carrion, and nothing but the urgent stimulus of hunger can bring them to attack living creatures, and then their cowardice will not allow them to meddle with any but the feeble or diseased which are incapable of defending themselves. They will also combine together to overpower their prey, if they see the least danger of resistance. A single Cougar, or even a courageous bird, will drive from their prey a whole troop of Condors, which however seldom amounts to more than five or six, as they do not collect in such numerous bodies as their fellow Vultures. When feeding on a Cow, a Guanaco, or a Paco, they first pick out the eyes, then tear away and devour the tongue, and next the entrails, at last picking the flesh from the bones. Smaller animals they generally swallow whole. Guided by their amazingly acute faculty of smell, the Condor will arrive, performing circular evolutions, from the highest regions of the atmosphere upon a carrion, and often, trusting to their powers of digestion, they swallow bones and flesh together. The Indians, too indolent to keep clean their butchering or similar places, and often neglecting to bury their dead with sufficient carefulness, have a great veneration for this bird and others of its kind, to which they trust to rid them of such nuisances. The regard with which they are treated makes them so familiar, that Humboldt relates his being able to approach within two yards of a troop of Condors before they retreated, though he had other persons in his company. When full-fed the Condor will remain motionless on a projecting rock, and has then a sinister appearance; if on the ground, however, he allows of a close chase before having recourse to his ample wings, hopping along before his pursuer. When on the contrary he is pressed by hunger and light from emptiness, he will soar to extreme heights in the atmosphere, especially in clear weather, whence he can discover prey at any possible distance. They lay in the most inaccessible parts of the Andes, near the limit of perpetual snow, on the most broken and terrific precipices, where no other living creature can dwell. Nests have been found at the extraordinary elevation of fifteen thousand feet. Their eggs are usually laid on the naked rock, or with very little preparation, and never on trees, which they even avoid alighting on, unlike their congeners in this respect, and always on rocks or the ground, the straightness of their nails making this easier for them. The eggs are white, and three or four inches long. The young are entirely covered with very soft whitish down, and the mother is said to provide for them during a long time. The facts relative to their propagation are not, however, sufficiently ascertained, for how are we to verify assertions relating to operations performed so much beyond the reach of ordinary observation.

Authors describe various modes that have been resorted to for destroying the Condors in their native countries, where they sometimes become a nuisance; such as poisoning carrion, seizing them by the legs by

hiding under the skin of a calf, and by building narrow enclosures in which is placed putrid flesh, when the birds flying down and feeding greedily, are unable to take wing again for want of space to get a start by running. But we scarcely see any advantage in such stratagems, since they may be caught with running knots while disabled by repletion, or even, as it is reported, knocked down with clubs; and in any case we are at a loss to reconcile such persecutions with the protection so wisely granted them both by civilized and savage man.

In captivity, the Condor is easily tamed if taken young, and does not refuse any kind of animal food whatever, nor do they appear to dread or suffer in the least from the extreme changes of the climate in Europe and the north-eastern parts of America. But it is almost impossible to keep the adults, which are always exceedingly wild and mischievous. They are incredibly tenacious of life: the bones are so hard as to resist a musket-ball, to which also the thick down of their plumage is impenetrable. They can resist strangulation for hours, even when hanged and hard pulled by the feet. A remarkable fact is that in domesticity they will not refuse water, drinking it in a very peculiar manner, by holding their lower mandible in it for some time, and using it as a spoon to throw the liquid into their throat. The individual represented in our plate was remarkable for playfulness and a kind of stupid good nature. During Mr. Lawson's almost daily visits for the purpose of measuring and examining accurately every part for his engraving, he became so familiar and well acquainted that he would pull the paper out of the artist's hands, or take the spectacles from his nose, so that Mr. Lawson, seduced by these blandishments, and forgetting its character in other respects, does not hesitate to declare the Condors the gentlest birds he ever had to deal with.

IBIS FALCINELLUS.

GLOSSY IBIS.

[Plate XXIII. Fig. 1.]

Tantalus falcinellus, LINN. *Syst.* I., p. 241, Sp. 2. GMEL. *Syst.* I., p. 648, Sp. 2. LATH. *Ind.* II., p. 707, Sp. 14. BRUNN. *Orn.* Sp. 167. SCOP. *Ann.* I., Sp. 131. KRAM. *Austr.* p. 350. BOROWSKY, III., p. 72. FAUN. *Helv.* RETZ, *Faun. Suec.* p. 171, Sp. 135. NILSS., *Orn. Suec.* II., p. 43, Sp. 160.—*Ibis falcinellus*, VIEILL. *Nouv. Dict. Id. Enc. Met. Orn.* TEMM. *Man. Orn.* II., p. 598. SAVI, *Orn. Tosc.* II., p. 327. NOB. *Obs. Nom. Wils. Orn. note to No. 199.* ID. *Syn. Birds U. S.* Sp. 241. ID. *Cat.* ID. *Specie. Comp.* WAGLER, *Syst. Av. Ibis*, Sp. 1. ROUX, *Orn. Prov.* Pl. 309. GOLDFUSS, *Nat. Atlas*, Pl. 95.—*Ibis sacra*, TEMM. *Man. Orn.*

ed. 1, p. 385.—*Tantalus igneus*, GMEL. *Syst.* I., p. 649, Sp. 9. LATH. *Ind.* II., p. 708, Sp. 16, very old individual.—*Tantalus viridis*, GMEL. *Syst.* I., p. 648, Sp. 8. LATH. *Ind.* II., p. 707, Sp. 15. MONTAGU, in *Linn. Trans.* IX., p. 198.—*Tantalus mexicanus?* ORD, in *Journ. Ac. Philad.* I., p. 53 (*and perhaps of other authors, in that case the Acalot of Ray and Buffon, and its derivatives.**)—*Numenius castaneus*, BRISS. *Orn.* v., p. 329, Sp. 5. ID. 8vo. II., p. 294 (*old indiv.*)—*Numenius viridis*, BRISS. *Orn.* v., p. 326, Sp. 4, t. 27, fig. 2. ID. 8vo. II., p. 293, two years old.—*Numenius viridis*, S. G. GMEL. *Reis.* I., p. 167. ID. in *Nov. Comm. Petrop.* xv., p. 462, t. 19, young.—*Numenius igneus*, S. G. GMEL. *Reise.* I., p. 166. ID. in *Nov. Comm. Petrop.* xv., p. 460, t. 13, old specimen.—*Tringa autumnalis*, HASSELQUIST, *Iter Palest.* II., p. 306, Sp. 26, 27, two years old.—*Falcinellus*, GESSNER, *Av.* p. 220.—*Falcata*, GESSNER, *Ic. Av.* p. 116, with a bad figure.—*Falcinellus, sive Avis falcata*, ALDRORV. *Av.* III., pp. 422 and 423. JONSTON, *Av.* p. 105. CHARLETON, *Excit.* p. 110, Sp. 7. ID. *Onomat.* p. 103, Sp. 7.—*Falcinellus Gesneri & Aldrovandi*, WILLOUGHBY, *Orn.* p. 218.—*Arcuata minor*, &c., MARSIGLI, *Danub.* v., p. 42, tab. 18, adult, 20, young.—*Numenius sub-aquilus*, KLEIN, *Av.* p. 110, Sp. 8.—*Falcinellus, or Sithebill*, RAY, *Av.* p. 103, Sp. 3. WILL. *Orn.* p. 295, tab. 54. ID. *Engl.* p. 295, tab. 54, fig. 4.—*Le Fauconneau! Falcinellus*, SALERNE, *Orn.* p. 322.—*Courlis vert*, BUFF. *Ois.* VIII., p. 29 (*ed. 1783*), VIII., p. 379, *Vers. Germ.* OTTO, *xxii.*, p. 170, fig.—*Courlis d'Italie*, BUFF. *Pl. Eul.* 819, adult Male.—*Courlis brillant*, SONNINI, *Buff. Ois.* XXII., p. 238, old Female.—*Ibis vert*, CUV. *Règn. Anim.* I., p. 485. ID. 2d ed. I., p. 520. ROUX, *loco citato*. SAVIGNY, *Egypt. Ois.* tab. VII., left hand fig. two years old.—*Ibis noir*, SAVIGNY, *Hist. Nat. et Mythol. de l'Ibis*, p. 36, tab. 4.—*Ibis sacré*, TEMM. *Man. Orn.* first ed. but not of Cuvier.—*Ibis falcinelle*, of most French authors and of the Dictionaries.—*Chiurlo*, &c., *Storia degli Uccelli*, IX., p. 439, old Male.—*Ibi falcinello*, RANZANI, *Elem.* III., pt. VIII., p. 185, Sp. 3.—*Mignattajo*, SAVI, *loco citato*.—*Bay Ibis*, PENN. *Arct. Zool.* II., p. 460, A. LATH. *Syn.* III., pt. 1, p. 113, Sp. 13. ID. *Suppl.* p. 67. *Germ. trans.* by BECHST. V., p. 67, tab. 81, young. LATH. *Gen. Hist.* IX., p. 152, Sp. 15. *Brit. Miscell.* tab. 18. MONTAG. *Orn. Dict. Suppl.*—*Green Ibis*, LATH. *Syn.* III., pt. 1, p. 114, Sp. 13, young. *Linnean Trans.* IX., p. 198. MONTAG. *Orn. Dict. Suppl.* LATH. *Gen. Hist.* IX., p. 154, Sp. 18.—*Glossy Ibis*, LATH. *Syn.* III., pt. 1, p. 115, Sp. 14, old specimen. ID. *Gen. Hist.* IX., p. 154, Sp. 17. *Brit. Zool.* 1812, II., p. 30. MONTAG. *Orn. Dict. Suppl.*—*Brazilian Curlew*, NAT. *Miscell.* tab. 705?—*Sichel-snabiger Nimmerzatt*, BECHST. *Nat. Deutschl.* IV., p. 116. MEYER & WOLF, *Tasch. Deutschl. Vog.* II., p. 352. NAUM. *Vog. Nacht.* t. 28, adult Male.—*Braune Ibis*, BREHM. *Lehrb. Eur. Vog.* II., p. 528.

THOUGH it may appear very extraordinary, it is not less true, that one of the two species of Ibis worshipped by the ancient Egyptians, their Black Ibis, has a claim to be included in our work as being an

* The following are the indications of that obscure species, the Mexican Ibis:—*Tantalus mexicanus*, GMEL. *Syst.* I., p. 652, Sp. 18. LATH. *Ind.* II., p. 704, Sp. 4.—*Ibis mexicana*, of later compilers. *Ibis acalot* of French compilers and Dictionaries.—*Numenius mexicanus varius*, BRISS. v., p. 335, Sp. 7. ID. 8vo. II., p. 295.—*Acacolotl*, RAY, *Syn.* p. 104, Sp. 5. WILL. p. 218. ID. *Engl.* p. 296.—*Acalot*, BUFF. *Ois.* VIII., p. 45.—*Mexican Ibis*, LATH. *Syn.* III., pt. 1, p. 108, Sp. 5. ID. *Gen. Hist.* IX., p. 146, Sp. 5.

This bird is said to inhabit Mexico: it will not be superfluous to remark, that the proportions assigned to it are much larger than those of our *Ibis falcinellus*.

occasional visitant of the eastern shores of these states. This fact, which we would be among the first to disbelieve were we to read of it in the eloquent pages of Buffon, is authenticated by the specimen here figured, which moreover is not a solitary instance of the kind. Thus, instead of being limited to a peculiar district of Egypt, as stated by Pliny, Solinus, and others, and reiterated by the host of compilers, this celebrated bird is only limited in its irregular wanderings by the boundaries of the globe itself.

The credit of having added this beautiful species to the Fauna of the United States is due to Mr. Ord, the well known friend and biographer of Wilson, who several years ago gave a good history and minute description of it in the Journal of the Academy of Philadelphia, under the name of *Tantalus mexicanus?* His excellent memoir would have been sufficient to establish its identity with the species found so extensively in the old world, even if the specimen itself, carefully preserved in the Philadelphia Museum, did not place this beyond the possibility of doubt.

Among the natural productions which their priests had through policy taught the superstitious Egyptians to worship, the Ibis is one of the most celebrated for the adoration it received, though for what reason it is not easy to understand. The dread of noxious animals, formidable on account of their strength or numbers, may induce feelings of respect and veneration, or they may be felt still more naturally for others that render us services by destroying those that are injurious, or ridding man of anything that interferes with his enjoyments, or by ministering to his wants. We can conceive how a sense of gratitude should cause these to be held sacred, in order to insure their multiplication, and that this sentiment should even be carried to adoration. But why grant such honors to the wild, harmless, and apparently useless Ibis? It is perfectly well proved at this day that the Ibis is as useless as it is inoffensive, and if the Egyptian priests who worshipped the Deity in his creatures declared it pre-eminently sacred; if while the adoration of other similar divinities was confined to peculiar districts, that of the Ibis was universal over Egypt; if it was said, that should the gods take mortal forms it would be under that of the Ibis that they would prefer to appear on earth, and so many things of the kind, we can assign no other reason than the fact of their appearing with the periodical rains, coming down from the upper country when the freshening Etherian winds began to blow, when they were driven in search of a better climate by the very rains that produce the inundation of the Nile, doing Egypt such signal benefit. The Ibis, whose appearance accompanied these blessings, would disappear also at the season when the south desert winds from the internal parts of Africa brought desolation in their train, which could be averted only by the periodical return of the

circumstances represented by the Ibis, which seemed like Providence to control them, and was therefore declared the real Providence of Egypt, though merely the concomitant, and by no means the cause of those blessings, by which they profited in common with all. It thus became so identified with the country as to be used as its hieroglyphic representative, and was said to be so attached to its native land that it would die of grief if carried out of it, and it was on account of its fidelity to the soil that it was honored as its emblem. So good a citizen could not of course from selfish motives migrate periodically, and its absence must have been for its country's sake! Hence the ridiculous tale current throughout antiquity, and strengthened by the testimony of Herodotus, *Ælian*, Solinus, Marcellinus, copied by Cicero (who went as far as to assign to the Ibis proper instruments for the purpose, such as a strong bill), by Pliny and others, and credited in our days to a certain extent by Buffon, who thus accounted for the divine honors it received. I allude to the story of their attacking and destroying periodically on the limits of civilization immense flocks of small but most pernicious winged serpents generated by the fermentation of marshes, which without the generous protection afforded by the Ibis would cause the utter ruin of Egypt.

Still more unaccountable is it that naturalists and philosophers should have been so long in finding out the true meaning of this oriental figure. How could the Ibis with its feeble bill, whose pressure can be hardly felt on the most delicate finger, and which is only calculated for probing in the mud after small mollusca and worms in places just left bare after an inundation, how could such a weapon cut to pieces and destroy so many monsters if they had existed? How could these learned men (notwithstanding that Herodotus relates his seeing heaps of their bones or spines) believe for an instant in the existence of these winged serpents; and why try to reconcile truth with a barefaced falsehood, or with expressions manifestly figurative? We are aware that some modern translators of Herodotus, by forcing the Greek original to meet their own views, have attempted to write instead of winged serpents, the word *locustæ*, which insects are known to come in vast swarms, causing periodically great devastation even in some parts of Europe. But nothing is gained by this plausible and apparently learned supposition, since the conformation of the Ibis would prevent it from making any havoc among these enemies, whose being winged would not moreover save their author from the difficulty, locusts having certainly neither bones nor spines. The figure intended is still plainer, and Savigny, who first pointed it out, could in my opinion have saved himself many a page of his classical dissertation, and without any recourse to the idea of the *Cerastes*, for to me it is evident that by the winged serpents were originally signified the exhalations from the marshes, so noxious

in Egypt when brought by the south-easterly or *Typhonian* winds against which the Ibis was observed to direct its flight and to conquer, aided, it is true, by the powerful sweeping *Etherian* winds.

Be this as it may, no animal was more venerated by the Egyptians than the Ibis: there was none whose history was more encumbered with fictions. Notwithstanding the ridicule thrown upon it by Aristotle, the Ibis was believed to be so essentially pure and chaste, as to be incapable of any immodest act. The priests declared the water to be only fit for ablutions and religious purposes when the Ibis had deigned to drink of it. Yet by some unaccountable contradiction Roman authors made of it an unclean animal. It is needless here to repeat all the fanciful and extravagant things said of the Ibis among a people whose credulity, superstition, and wildness of imagination knew no bounds. It was represented by the priests as a present from Osiris to Isis, or the fertilized soil, and as such was carefully brought up in the temples, those first menageries of antiquity. It was forbidden under pain of severest punishment to kill or injure in the least these sacred beings, and their dead bodies even were carefully preserved in order to secure eternity for them. It is well known with what art the Egyptians endeavored to eternize death, notwithstanding the manifest will of nature that we should be rid of its dreaded images, and that many animals held sacred shared with man himself in these posthumous honors. In the Soccora plains many wells containing mummies are rightly called birds' wells, on account of the embalmed birds, generally of the Ibis kind, which they contain. These are found enclosed in long jars of baked earth, whose opening is hermetically closed with cement, so that it is necessary to break them to extract the mummy. Buffon obtained several of these jars, in each of which there was a kind of doll enveloped in wrappers of linen cloth, and when these were removed the body fell in a blackish dust, but the bones and feathers retained more consistence, and could be readily recognised. Dr. Pearson, who received some of these jars from Thebes, gives a more minute description, as does also Savigny. E. Geoffroy, and Grobert, also brought from Egypt some very perfect embalmed Ibises, and I have availed myself of every opportunity to examine such as were within my reach, and especially those preserved in the Kircherian Museum at Rome, one of which, containing a most perfect skeleton, is now before me.

By far the greater part of the jars contain nothing but a kind of fat black earth, resulting from the decomposition of the entrails and other soft parts buried exclusively in them. Each bird is enclosed in a small earthen jar with a cover used for the purpose. The body is wrapped up in several layers of cloth, about three inches broad, saturated with some resinous substance, besides a quantity of other layers fixed in their place by a great many turns of thread crossed with much

art, so much indeed that it is by no means easy to lay the parts bare for inspection without injuring them. Space appears to have been considered of much value in preparing these mummies, and every means was used to secure them within the least possible compass, by bending and folding the limbs one upon another. The neck is twisted so as to bring the crown of the head on the body, a little to the left of the stomach, the curved bill with its convexity upward is placed between the feet, thus reaching beyond the extremity of the tail: each foot with its four claws turned forward, one bent upward and elevated on each side of the head; the wings brought close to the sides, much in their natural position. In separating them to discover the interior, nothing of the viscera nor any of the soft parts remain, the bones exhibit no traces of muscle or tendon adhering to them, and the joints separate at the least touch. Most of these mummies, it must be admitted, are not of the species of which we are writing (and which also is but seldom represented hieroglyphically), but of the white kind, which was more venerated, the *Ibis religiosa* of Cuvier; and some authors even deny that a well authenticated Black Ibis has ever been unwrapped. Complete birds even of the white species are extremely rare. Cuvier obtained the entire skeleton from an embalmed subject, and Dr. Pearson was so fortunate as to discover the perfect bird in two brought among other mummies from Thèbes. They have been accurately described in the scientific journals of England under the name of true Egyptian or Theban Ibis. The Egyptian Ibis of Latham is however nothing but the *Tantalus Ibis*.

Buffon by means of his mummies was enabled to verify the real size of the Ibis, and as he found two bills entire among those he examined, he settled the genus to which the sacred bird belonged, and stated very correctly that its place was between the Stork and the Curlew, where later naturalists have arranged it. But it is to be regretted that a pre-conceived opinion should have so blinded him that he could not see the furrows of the upper mandible, which do exist in a very eminent degree, as I have personally ascertained, notwithstanding his statements to the contrary, in making which he must have had before him the bill of the *Tantalus*, which he mistook for the Ibis. These furrows it is of the more consequence to note, inasmuch as they form the principal discrimination between the genera *Tantalus* and *Ibis*, and serve to put an end to a controversy to which the sacred Ibis has given rise.

Although every traveller in Egypt has used his exertions to collect all the facts relative to a bird which plays such a part in the sacred legends of that country, a bird associated with so many of the wonders of antiquity, yet it was for a long period a question among naturalists and scholars to what species the name of Ibis was properly to be applied. As, however, contrary to the general practice of the ancients,

the description of the bird did exist, and even a representation, tolerably good, among their sculptured hieroglyphics, it could only be because it was supposed that divine honors must have been the reward of signal services that any dispute could ever arise on the subject. A sacred bird must of course, it was concluded, be a great destroyer of venomous animals, which the timid Ibis *is not*; hence the misapplication of the name. To such an extent did this idea prevail, and predominate over all others, that Buffon, who could only feel contempt for the idle tales related of the Ibis, so involved their true history as to attribute to them the most violent antipathy to serpents, on which he supposed they fed, and destroyed them by all possible means, and assigns to them the habits of a species of Vulture. Others maintained, notwithstanding its long and falcate bill, that it was in fact a Vulture, which was indeed the most natural conclusion after they had begun by giving it such habits. Cuvier himself, who cleared up and rectified everything else in relation to the Ibis, because he found in a mummy some skins and scales of serpents, most probably embalmed as companions, which was frequently done with different kinds of animals, declared it a true snake-eater.

Two different kinds of Ibis were known to the ancients, and looked upon by the Egyptians as sacred; the White, common throughout Egypt, and the Black, which was said to be found only in a peculiar district. It is the latter of which we are now to treat, a bird long known to, but not recognised by naturalists; whilst the white was only rediscovered, in later times, by the courageous Abyssinian traveller Bruce, who first among the moderns obtained correct notions respecting it. Bruce's Ibis has been since proclaimed by Cuvier and Savigny the true Ibis, in place of the *Tantalus Ibis* of Linné, which he so called for want of knowing the real Ibis, believing this to be it, though but very seldom even found in Egypt. This opinion, which though more plausible than that which it superseded, was still erroneous, originated with Perrault, and was adopted and maintained by Buffon, Brisson, Linné, Blumenbach, and all others until lately, when Colonel Grobert returning from Egypt presented Foureroy with mummies which enabled Cuvier first to perceive that the Ibis was not a *Tantalus*, but a true *Ibis*, which genus he did not then distinguish from *Numenius*. Savigny in the year 1806 by an admirable work on the Ibis, put the question at rest.

The sacred White Ibis, though not in reality peculiar to Egypt, where it is seen only at certain seasons of the year, does not however migrate to far distant countries: it is spread throughout Africa, and species extremely similar to it are found in India and Ceylon. But it is not our province to treat of it, and it has already formed the subject of several volumes.

We have already remarked that Buffon justly indicated the natural relations of the Ibis by stating that it was intermediate between the Stork and the Curlew. What he said of the species we shall extend to the three families to which the three birds belong in our system. In the transition from one group to another Nature seems often to make the passage by insensible intermediate steps, and it sometimes happens that the species placed on the limits of two groups belong decidedly to one or the other, and even when it may be impossible to say to which they ought to be referred, we still cannot admit them as types of an intermediate group. At other times the intermediate species form a small group by themselves, and although a portion of such a connecting group shows great affinity to that which follows it, while another portion is equally connected with a preceding group, yet the two parts are still more related between themselves. So it is with the family of *Tantallidae* or *Falcati*, formed from the genus *Tantalus* of Linné, and composed of but two very natural genera, *Tantalus* and *Ibis*, the former of which retains a resemblance to the *Ardeidae* or *Cultriostres*, while the latter claims a stronger affinity with the *Scolopacidae* or *Limicolæ*. Nothing, in our opinion, shows more the propriety and even necessity of distinguishing this small intermediate group from those which touch upon it.

Buffon and Brisson, who used as a character the artificial one of the curved bill, did not separate the *Tantallidae* from the Curlews, which are real *Scolopacidae*, though somewhat allied to *Ibis*. Linné, whose philosophical tact was seldom at fault, and who crowded all the *Scolopacidae* into his arbitrary genera *Tringa* and *Scolopax*, did not however confound the two families, for he employed as a distinguishing mark of his genus *Tantalus* the important character of the naked face. He was followed by Latham and others. The *Ibis* of Lacépède is equivalent to the *Tantalus* of Linné, though by giving the genus this name (which Latham had done in English), he obtained the credit of being the founder of the genus *Ibis*, but unjustly, as he included in it all the smooth and thick-billed *Tantali*. To Illiger belongs the merit of having first made the distinction between them, and Cuvier, Vieillot, Temminck, and most others have followed his course, though some German authors call the restricted genus *Falcinellus*. The present family was instituted by Illiger under the name of *Falcati*. Vieillot and Ranzani adopted it under the name of *Falcirostres*. Boie called it "of the *Ibides*," but Cuvier and Latreille placed the two genera of which it is composed within the respective limits of the two families which they connect, and which they called *Cultriostres* and *Longirostres*. Although Mr. Vigors and the modern English school have not adopted it (probably because it interfered with their whimsical quinary arrangement), they do not dismember it, but force the whole into their family *Ardeidae*,

with which even *Ibis* has, it is true, more real, though less apparent affinity than with *Scolopacidae*: as for *Tantalus* there could be no doubt. Goldfuss has done the same.

The *Tantaliidae* all have a very long bill, stout at the base, subulate, falcate, and cylindrical at tip, the edges bent in and sharp. Their corneo-membranous tongue is remarkably short, flat, cuneate-acuminate, entire, posteriorly furcate-emarginate. Their face is destitute of feathers, and their throat somewhat dilatable into a pouch. Their neck is long. Their feet long, equilibrare, and always four-toed: the naked space of the tibia considerable: the toes long, bordered with a narrow membrane connecting the fore toes at base. The hind toe is articulated with the tarsus low down, and is half as long as the middle, bearing with its whole length on the ground. The wings are moderate, obtuse, tubercular. The tail short, composed of but twelve feathers. The falcate shape of the bill will at once distinguish them from any of the *Ardeidae*; and the nakedness of the face from the *Scolopacidae*.

The *Ibis* may be known from the true *Tantalus* by having a comparatively slender bill, depressed and curved from the base; instead of being very stout at the base, compressed, and curved only towards the tip. In *Ibis*, the upper mandible is deeply furrowed its whole length, and entire. In *Tantalus* it is not furrowed, and is notched. The nostrils are pervious and wide open in the latter; half closed by a membrane in the former. The head is warty and entirely bald in *Tantalus*, while in *Ibis* the nakedness generally extends over the face and throat merely.

Tantalus only contains four species, one in each of the five divisions of the globe, Europe excepted. In *Ibis* there are about twenty well ascertained species, three inhabiting the United States, of which the present is the only one that ever visits Europe. In South America are found several beautiful species. The true Ibises may be subdivided into two secondary groups; those with the tarsi reticulated, and those which like the present species have them scutellated. The former have shorter feet, and by their stouter bill, and the more extended nudity of the face, approach nearest to the *Tantali*. Temminck wishes to divide them into the sections *Sylvains* and *Riverains*. Dr. Wagler distributes them into three sections, which he calls *Ibides lepopodiae*, *Ibides aspidolepopodiae*, and *Ibides aspidopodiae!* this last section being formed for our species alone, principally on account of its having the middle toenail pectinated.

In the Ibises, as in their kindred *Tantali*, the females are considerably smaller than the males, but perfectly like them in colors. The young differ greatly from the adults until the third year. Their moult is annual and regular.

They are dull and stupid birds, fearless and allowing of a very close

approach, so that they are easily shot. They frequent inundated places, the shores of lakes and rivers, and particularly grounds just left bare by floods, where their favorite food abounds. They live in flocks, but when once paired the sexes remain united for life. They feed on insects, worms, mollusca, and the Ibises also on vegetable substances: they search their food in mud, and often throw it up with their bill, catching it as it descends in their throat. Shells, even of considerable size, they swallow entire, trusting to the muscular power of their stomach to crush them, for which their bill is too weak. The *Tantali* are also well known to use their powerful bills against fishes and reptiles, but the true Ibis never, notwithstanding the popular belief to the contrary. When satisfied with feeding, they retire for digestion to the highest trees, where they stand in an erect posture, resting their heavy bill upon their breast. The *Ibides* more than the *Tantali* migrate periodically and to vast distances. The habit of resting upon trees, as indeed the whole animal economy (a thing never sufficiently considered in the formation of natural families) of the Ibis separate them from the *Scolopacidae*. They are monogamous; build on high trees, both sexes assisting in the construction of the nest: the female lays two or three whitish eggs, which she alone incubates, but is then fed by the male, and both feed the young, which require for a long period the care of the parents, and do not leave the nest till able to flutter. They walk slowly, often sinking deeply in the mud while watching for prey: their gait is measured, and they never run rapidly. Their flight is heavy, but high and protracted. Their voice is loud and monotonous. In domesticity, like many other birds, they become omnivorous. As to anatomical conformation, the Ibises resemble the genera of *Scolopacidae*: a very thick muscular stomach occupies nearly two-thirds of the anterior capacity of the abdomen: the swelling of the oesophagus at its origin is considerable and very glandulous: the intestines form an elliptic mass, composed of a double spiral, besides first a turn bordering the gizzard; they measure upwards of three feet in length in the species we treat of. There are two rather short and obtuse cæcums.

The Bay or Glossy Ibis is twenty-six inches in length, and more than three feet in extent. The bill is of a greenish lead color, somewhat reddish at tip, and varies much in length in different specimens,—the longest we have measured was five and a half inches from the corners of the mouth: in many it is but four inches: it is slender, thicker at base, and higher than broad, rather compressed and obtusely rounded at tip, and less arcuated than in the other North American species; the upper mandible is somewhat longer than the lower, thickened and sub-angulated at base, and flattened at its origin: two deep furrows run from the nostrils to the extremity, dividing it into three portions; the edges of both mandibles are quite entire, and being bent in, they form

together when closed another deep channel: the upper mandible is filled inside to a great extent with the bony substance of the bill, so as to be hardly concave. The under mandible follows exactly the curve of the upper, and is but half as high on the sides: it is strongly canaliculated below from the base to the tip; the channel from the tip to the middle is narrow, but then widens considerably, and is extremely wide at base, where it is filled by a naked membrane forming a kind of jugular pouch. The nostrils are placed near the base of the mandible, at the origin of the lateral furrows, and are oblong, narrow, longitudinal, furnished in the upper part with a naked membrane. The tongue is sagittate and less than three-fourths of an inch from the acute point of its lateral lobe to its tip: the jugular pouch is dusky: the small naked part of the face, the lora and region around the eyes are of a greenish gray, which passes into whitish on the limits of the feathers: the irides are dark brown. The crown of the head and cheeks are of a brownish black with purplish reflections; the throat immediately below the pouch is of the same color, though somewhat less brilliant, and with more green reflections; the feathers of the head are pointed, those of the occiput being moreover suberecile: the whole base of the plumage is of a pale sooty gray. The feathers of the back and wing-coverts are compact and rounded; those of the inferior parts are rather loose in texture at their margins: hind head, neck, upper portion of the back, inner wing-coverts to the shoulder of the wing, and all the internal parts of the body, together with the thighs, of a vivid brownish chestnut, very brilliant and purplish on the interscapular region: lower portion of the back, rump, vent, tail and wings entirely, including the upper and lower coverts and the long axillary feathers, glossy golden green, with purple reflections, except the primaries, which are pure golden green. The wings are one foot long, and when closed reach precisely to the tip of the tail, which is four and a half inches in length, and even at the tip: the first primary is hardly shorter than the third, the second longest. The feet are rather slender, and the tarsus much longer than the middle toe: their color is greenish lead, somewhat reddish at the joints: tarsus scutellated, four inches long; the naked part of the tibia nearly three inches; the toes are slender, the middle without the nail is two and a half, and the hind toe one inch long: the nails are long and slender, but truncated and of a dark horn color: the middle one is the longest, and slightly curved outwards, dilated on the inner side to a thin edge, which is irregularly and broadly pectinated. This character is particularly worthy of remark, inasmuch as none of the genus but this exhibit it, and it may be of great use in deciding at once whether mummies belong to this species or not, though we regret that no one appears ever to have thought of having recourse to it to determine this controverted question.

The adult female is perfectly similar to the male in all except size, being very sensibly smaller.

Under two years of age they resemble the adult, but the head and neck are of a much darker color, the chestnut having nothing vivid, but rather verging upon blackish brown, and all speckled with small dashes of white disposed longitudinally on the margins of the feathers, and disappearing gradually as the bird advances in age: the under parts and the thighs are of a blackish gray, more or less verging upon chestnut according to age, the back acquiring its brilliant colors in the same manner. It is in this state that most authors, Brisson especially, have described their *Numenius viridis*, which for a long time usurped the privilege of somewhat representing the type of the species.

The young has these white lines longer and more numerous, and the lowest parts of a darker blackish gray.

This bird does not appear in its full plumage until the third year, and is so different from the adult as to furnish an excuse for those who in that state have considered it as a distinct species. The bill is brown: the feathers of the head and of the throat are dark brownish with a whitish margin, wider in proportion as the bird is younger: the breast, belly, vent, under tail-coverts and thigh-feathers are grayish brown or slate color: the lower portion of the back, wings, and tail of a somewhat golden green, passing into reddish, with but very little gloss in specimens under one year old, and richer as they advance in age. The feet are wholly blackish.

No bird ranges more widely over the globe than the Glossy Ibis: it has long been known to inhabit Europe, Asia, Oceanica, and Africa, where it gained its celebrity. It is now proclaimed as American, though we are not able to tell how numerous or extended the species may be on this continent. We can hardly doubt, however, that it is found along almost all the shores of North and South America, though far from common in any of these states. From the fact of this bird having been known to stray occasionally from Europe to far distant Iceland, we may infer that the individuals met with in the United States are merely stragglers from that part of the world, just as the *Scolopax grisea* of the same plate is an American bird well known to push its accidental migrations as far as the old continent.

Lest the discovery of the Glossy Ibis on the continent of America should give weight to an erroneous supposition of Vieillot, we think proper to mention that the Cayenne Ibis of Latham, *Tantalus cayanensis*, Gmel., represented by Buffon, pl. enl. 820 (Vieillot's own *unseen Ibis sylvatica*), is by no means this bird, but a real species examined by us, and which must be called *Ibis cayanensis*.

Let it come whence it may, the Glossy Ibis is only an occasional visitant of the United States, appearing in small flocks during the

spring season at very irregular periods, on the coasts of the Middle States. The specimen Mr. Ord described, and which produced a strong sensation even among experienced gunners and the oldest inhabitants as a novelty, was shot on the seventh of May, 1817, at Great Egg Harbor, and we have seen others from the same locality and obtained at the same season, as also from Maryland and Virginia. A beautiful specimen preserved in the American Museum at New York, was shot a few miles from that city in June, 1828. In central Italy they arrive periodically about the middle of April, or the beginning of May, and pass a month among us, after which they disappear entirely, and a pair of the Glossy Ibis is of very rare occurrence, though they have been known to remain here so late as August. A few pairs are brought every year in spring to the market of Rome, and in Tuscany and near Genoa they are more plentiful. The Italian and United States specimens that have come under my observation were all adults. During their stay among us they occupy places near marshes and grounds subject to be overflowed, where there are no trees, but abundance of grass, and plenty of their favorite food. They search for this collected in flocks of from thirty to forty, and explore the ground with great regularity, advancing in an extended line, but closely side by side: when they wish to leave one side of the meadow for another, they do not take wing, but walk to the selected spot. When they have alighted on a newly discovered rich spot of ground, they may be observed on it for hours, continually boring the mud with their bill. They never start and run rapidly like the Curlew and Sandpiper, but always walk with poised and measured steps, so that Ælian says the Ibis's motions can only be compared to those of a delicate virgin. The body is kept almost horizontal, the neck much bent, like the letter S, and lifting their feet high. If alarmed, or when about to depart, they rise to wonderful heights, ascending first in an inclined but straight flight, and then describing a wide spiral, the whole flock are heard to cry out in a loud tone, their voice resembling that of Geese: finally having reached what they consider the proper height, taking a horizontal direction, they soon disappear from the sight: their flight is vigorous and elevated, their pectoral muscles being very thick: they fly with the neck and legs extended horizontally, like most Waders, and as they float along, send forth from time to time a low and very hoarse sound. Their food consists chiefly of small aquatic testaceous mollusca, and they do not disdain such small worms and insects as they may meet with: they are supposed to live chiefly on Leeches (whence their Tuscan name *Mignattajo*), but erroneously, none of these having ever been found in their stomachs either by Prof. Savi or myself. From what is observed in Europe, the regular migration of these birds appears to be in the direction of southwest and north-east. Every circumstance leads to the belief that they

come to us in central Italy through Sardinia and Corsica from the coasts of Barbary, and continue their journey hence to the vast marshes of eastern Europe and the Caspian Sea, where they are well known to breed, though nothing is yet ascertained of their mode of propagation. Be this as it may, the Glossy Ibis in the north and west of Europe is a very rare bird, and merely a straggler, whilst it is common at its passage in Poland, Hungary, southern Russia, Turkey and Greece, especially the islands of the Archipelago. It is found also in Austria and Bavaria, and in other parts of Germany, especially on the Danube; and occasionally near the lakes of Switzerland, but hardly ever in Holland, the north of France, or England. In Sweden it is also met with, though extremely rare: it has been observed in Gothland, along the marshes of the interior parts of the island, and been killed in Scania: it is registered among the rare birds that visit Iceland. It has been found common along the rivers of the Islands of Java and the Celebes; is periodically known during seven months in Egypt, coming in October and disappearing in March: it is later in coming, and disappears after, and in quite a different direction from the white sacred kind: like this they follow the overflowing of the Nile, retiring gradually as the water becomes too deep. It is very common about the Black, and especially the Caspian Seas, the great rendezvous and breeding place of Waders, where appears to be their chief quarters, and whence they spread into Siberia and Tartary. Great numbers are also met with in the Ural Desert. The Arabs in Egypt kill the Glossy Ibis by shooting them, and catch many in nets, so that in autumn the markets of the cities of Lower Egypt, that of Damietta especially, are abundantly furnished with Ibises of this species, as well as the White, now no longer sacred, which are exposed for sale with the heads cut off. When taken alive, these birds appear really very low spirited, and reject food: they stand upright, the body horizontal, the neck much bent, the head inclined, moving it from right to left, advancing or withdrawing it, and striking the ground with the point of their bill. They often stand on one leg like the Stork: are by no means shy, and will open their bill to defend themselves if you stretch out your hand, but their bite is scarcely felt.

It should be mentioned that although this is the Black Ibis of antiquity, it is by no means that of systematical writers, which they describe as really black, with a red bill and feet. Such a species is very seldom if ever seen in Egypt.

TRINGA PECTORALIS.

PECTORAL SANDPIPER.

[Plate XXIII. Fig. 2.]

Pelidna pectoralis, SAY, in *Long's Exp.* I., p. 171.—*Tringa pectoralis*, NOB. *Cat. Birds U. S.* ID. *Synops.* Sp. 250. ID. *Specch. comp.*—*Tringa campestris?* LICHT. *Cat.* II., *Vogel.* p. 74, Sp. 764. *Tringa cinclus dominicensis?* BRISS. *Av.* v., p. 219, Sp. 12, pl. 24, fig. 1.—*Chorlito a cou brun?* AZARA, IV., p. 284, Sp. 404.—*Alouette de mer de St. Domingue*, BRISS. *loc. cit.*

THIS humble species, well marked, though closely allied to several other Sandpipers, is, as well as I can judge, accurately described and figured by Brisson; but since then unnoticed even by compilers, his description had become obsolete, when Say found the bird in the western territory, and we replaced it in the records of the science. We have since shot it repeatedly on the shores of New Jersey, where it is common. The species appears to be spread throughout the states, extending farther into the interior than most of its family: beyond the Mississippi it is very common; many flocks of them were seen by Major Long's party both in the spring and autumn at Engineer Cantonment, and it is often met with in small parties on the coasts of the Middle States in the latter part of autumn. It also inhabits the West Indies, and, if we are correct in our reference to Azara, is found in Brazil and Montevideo.

Unlike other Sandpipers, this is not addicted to bare sandy places, but on the contrary is fond of damp meadows, where it shows some of the habits of the Snipe. Solitary individuals are often seen, starting up from before the sportsman's feet much in the manner of that bird.

The family to which this bird belongs has been admitted by all authors, under various names, and comprehending more or less aberrant genera. It was first established by Illiger, but he excluded from it those which by an unimportant deviation are destitute of a hind toe, which he placed in his artificial family of *Littorales*, while he included in it some true *Charadridæ* on account of the presence of a rudiment of this member. Vieillot took the same view, calling the two artificial families *Helionomi*, and *Ægialites*; as did Ranzani and Savi under the names of *Limicole* and *Tachidrome*; and Mr. Vigors erred in like manner by distributing the genera between his too extensive families of *Charadriadæ* and *Scolopacidæ*. The arrangement of Cuvier and Latreille is in this instance much more consonant to nature: these authors called their better composed, though still far from perfect family, *Longirostres*.

This family, which we shall call *Limicolæ* or *Scolopacidae*, is strictly natural, especially since we have still farther reformed it by withdrawing the genus *Himantopus*, with which we had encumbered it in our Synopsis. The family now comprises the six genera *Numenius*, *Tringa*, *Totanus*, *Limosa*, *Scolopax*, and *Rhynchæa*, all possessing the most marked affinity in form and habits.

The *Scolopacidae* have either a moderate or generally a long bill, slender, feeble, and extremely soft, being partially or entirely covered with a nervous and sensitive skin: it is nearly cylindrical, and mostly obtuse at the point. Their face is completely feathered, and their neck of a moderate length and size. The feet, though rather long, are moderate and quite slender; the tarsus is scutellated: but the chief character which, combined with the bill, will always distinguish them from the allied families, consists in the hind toe, which is short, slender, articulated high up on the tarsus, and the tip hardly touching the ground: in some quite typical species this toe is entirely wanting, and this fact corroborates what we have so often repeated in our writings, that the mode of insertion, or use made of this toe is of more importance than its being absent or present. In all the *Limicolæ* the wings are elongated, falciform, acute and tuberculated; and the tail rather short.

The females are generally larger than the males, but luckily for naturalists, similar to them in color. I say luckily, for as the young differ greatly from the adults, and as the moult which takes place twice a year produces additional changes in the confused plumage of most of these birds, sexual diversity, if it existed, would render the species still more difficult to determine.

All the *Scolopacidae* inhabit marshy, muddy places, and around waters; and never alight on trees. On the ground they run swiftly. Their food consists of insects, worms, mollusca, and other aquatic animals, which they seek in the mud, feeling and knowing where to seize their prey without seeing it, by means of the delicacy of touch of their bill. They are monogamous; breed on the ground in grassy marshes, or on the sand; and lay mostly four pyriform eggs, both parents sitting upon them, and afterwards attending their young with care, though these latter leave the nest, run about, and pick up food as soon as hatched. All these habits contrast strongly with those of the Ibis, which can only be forced into this family on account of the softness of the bill, and its great similarity to that of the Curlews.

Our genus *Tringa* is much more extensive than that of most modern, though much less so than that of former writers, for we arrange in it all the *Scolopacidae*, whose bill, short, or moderately so, straight or slightly curved, is soft or flexible for its whole length, and with the point smooth, depressed, somewhat dilated and obtuse; not taking into consideration the feet, especially the hind toe, which we think in this case hardly

proper to represent subgeneric divisions. Ornithologists will perceive at once from this that our genus thus constituted reunites in a natural group species that were dispersed by Linné in his genera *Tringa Scopulipax* and *Charadrius*; and even some that Latham placed in his restricted genus *Numenius*. It coincides more nearly with the better formed genus *Tringa* of Brisson, and especially of Vieillot, Temminck, and Ranzani, but with the addition of their *Arenaria* or *Calidris*; and with the same addition, is wholly included in the *Actitis* of Illiger; although that learned systematist does not cite under his comprehensive genus a single typical *Tringa*, and probably never examined one, as they do not possess the character he assigns to the group "pedes colligati." Our *Tringa* embraces and is formed of the groups *Calidris*, *Pelidna*, *Falcinellus*, *Machetes*, *Eurynorhynchus* and *Arenaria* of Cuvier; and we subdivide it pretty nearly into these very groups, which we regard as subgenera, adding moreover to them another which we call *Hemipalama*.

All our *Tringae* have a bill compressed at the base, with both mandibles furrowed each side their whole length, the lower a little the shorter: the nostrils are in the furrows, basal, linear, and pervious, but half closed by a membrane: their tongue is moderately long, slender, subfiliform, canaliculated above, entire and acute. The tarsus is slender, longer, or subequal to the middle toe, and always scutellated: the fore toes rather elongated, and slender, the hind toe when present, is extremely short, slender, much elevated, and hardly reaching the ground: the nails are moderate, compressed, curved and acute. The wings moderate for this family, though in reality long, with the first primary longest; the tertials and scapulars shorter than the primaries. The tail is rather short, subequal to the wings when closed, and always of twelve feathers and no more.

With the exception of the subgenera *Falcinellus*, distinguished by an arched bill, and *Calidris*, by a short, straight one, and both three-toed, all our *Tringae* are tetradactyle, having the short hind toe. With the exception of my subgenus *Hemipalama*, whose character is to have the fore toes all connected at base by a membrane, and of *Machetes*, which has only the outer ones connected, all the *Tringae* have the feet cleft to the base. Of the species that remain after the separation of these four well marked groups, and which are still the most numerous, we form our subgenus *Tringa*. We must not however pass by unnoticed the *Eurynorhynchus* of Nilsson, a group so important as perhaps to merit generic distinction: it is the *Platalea pygmaea* of Linné, of which a single specimen of uncertain nativity is known.* In this, by an extreme development of the *Tringa* character, the bill is remarkably flattened and widened at tip, somewhat in the manner of the Spoonbill.

* See Thunberg, Av. Sv. Holm. 1816, p. 194, tab. vi.

In the Sandpipers the female is similar to the male, being only somewhat larger. The young differ from the adult, and they moult twice a year, changing greatly the colors of their plumage. These are a mixture of white and cinereous, changing in summer to rufous and black.

The Sandpipers are maritime birds that live in flocks, oftentimes composed of different species, on sandy beaches or muddy shores, preferring mostly salt water. They migrate with the changes of the seasons along coasts and rivers, and are seldom seen in the temperate climates of North America and Europe, except during autumn, winter, and more especially in spring, when they are the most numerous. They retire to the north to breed, which they do socially among the grass near the water, but never in our climates. They feed on insects, mollusca, and other small animals, which they seek in soft ground by thrusting in their flexible bill, or among the rejectamenta of the sea. They run rapidly, and generally fly near the surface of the water in a straight line, and during the day, only short distances. Their flesh, though esculent, is by no means palatable, being too fishy: they grow amazingly fat in autumn, though their fat is not firm, but very oily. They are caught however in Italy by spreading nets on their feeding grounds, and in the United States great numbers are destroyed by the gun.

Spread over all the globe, some of the species even, the Sandpipers are very difficult to distinguish from one another, marked traits being few, and detailed descriptions applying mostly to individual specimens. The species have been wantonly multiplied by superficial observers, and too much reduced perhaps by scientific men. We must chiefly rely on the relative dimensions of the bill and the length of the tarsus in fixing them. In North America are found at least ten of the subgenus *Tringa*, most of which likewise inhabit Europe, that has eight: the Pectoral Sandpiper is the only one besides the *T. pusilla* of those American registered in our Synopsis that is not found in Europe.

This new species, though it is quite as large, if not larger than the *Tringa alpina*, has a shorter bill; which is besides reddish at base, distinguishing it at once from all the species it could be confounded with, since each of them has the bill entirely black: the *T. maritima* and *T. platyrhynca* have a similarly colored bill, but are otherwise too well marked to be mistaken; the former by the restricted naked space of the tibia, and the latter by the depressed form of its bill.

The Pectoral Sandpiper is eight and a half inches long, some females being nearly nine: the bill is little more than an inch long, compressed throughout, reddish yellow at base, the rest black, and with a few Snipe-like punctures near the tip. The crown of the head is black, each feather margined with rufous: the orbits, a line over the eye, and the forehead narrowly are whitish, minutely dotted with blackish; the irides

are dark: a very distinct brown line passes from the eye to the upper mandible: the cheeks, neck above, sides of the neck, and beneath down to the breast are grayish with a rufous tinge, and beautifully streaked with blackish, occupying the middle of each feather, along the shaft: surrounded and well defined (in perfect specimens) by these markings the throat and chin are of a purer white than in other *Tringæ*: the remaining lower parts from the breast to the lower tail-coverts, including the flanks and long axillary feathers are white, the base of the plumage dark plumbeous, and a few blackish streaks along the shafts of some of the flank and vent feathers: the feathers of the neck above, owing to the circumstance of the blackish central line widening considerably, become gradually dusky, the feathers there being merely bordered with the grayish buff. The interscapular region, the scapulars and small wing-coverts are shining black with greenish reflections; they are margined with ferruginous, and near the exterior tips with whitish: the lower part of the back, the rump, and the upper tail-coverts are jet black and without margins. The wings are five inches long, lined with white, which predominates on the under wing-coverts: these are however a little varied with blackish and gray: the primaries are dusky as well as the outer wing-coverts, and are slightly edged with whitish: the shaft of the outer quill is white; of the others entirely dusky: the first primary is longest, and after the second they decrease rapidly. The tail is two inches to the tip of the lateral feathers, and a quarter of an inch more to the tip of the middle ones, which are longest by that much, and somewhat tapering, and are black edged with rufous, while the others are pale dusky, margined with white all around the tip. The feet are greenish yellow, the bare space above the knee five-eighths of an inch: the tarsus very nearly one inch, and equal to the middle toe; the outer toe is connected at the very base with the middle by a very small membrane hardly visible in young individuals, which is also the case with *T. platyrhynca*: the nails are of a blackish horn color. Such is this bird as it appears in the end of summer and early in autumn on the New Jersey coasts, still apparently in its perfect nuptial dress, or nearly so. Mr. Say informs us that all the individuals of the many flocks observed at Engineer Cantonment both in the spring and autumn were of equal size; and we have also found the sexes to agree in this respect, perhaps more than is usual in other Sandpipers: in the spring dress, according to the same author, the color of the upper part of the bird is much paler, almost destitute of black, and the feathers margined with pale cinereous. The upper part of the head is always darker than any part of the neck, and margined with ferruginous: the plumage of the neck beneath and the breast does not appear to undergo so much change as that of the upper part of the body. We have not seen the bird in this plumage, but it will be evident to every ornithologist con-

versant with the Sandpipers that the specimens described by Say were still in the winter dress, and we may conclude that the changes in this species are analogous to those of its allies.

Several specimens of both sexes that we shot in New Jersey, evidently young birds, as they were killed at the same season as the adults described, are considerably paler and duller, the tints being blended and ill defined: the white even of the throat is dingy, the quills and tail-feathers almost uniformly dusky and destitute of margins: they have not the least trace of the outer toe membrane.

SCOLOPAX GRISEA.

RED-BREASTED SNIPE.*

[Plate XXIII. Fig. 3.]

Scolopax grisea, GMEL. *Syst.* I., p. 658, Sp. 27. LATH. *Ind.* II., p. 724, Sp. 33. *Suppl.* I., p. 444, Sp. 42, winter dress. TEMM. *Man. Orn.* II., p. 679. NOB. *Obs. Wils.* Sp. 205. ID. *Cat. and Syn. Birds U. S.* Sp. 267. ID. *Speech. Comp.* Sp. 206. ID. *Monog. Scolop.* in *Obs. Cuv.* p. 115, Sp. 2.—*Scolopax noveboracensis*, GMEL. *Syst.* I., p. 658, Sp. 28. LATH. *Ind.* II., p. 723, Sp. 32, summer dress.—*Scolopax Paykulli*, NILSS. *Orn. Suec.* II., p. 106, Sp. 186, tab. xi.—*Scolopax leucophœa*, VIEILL. *Gal. Ois.* II., p. 110, tab. 291, changing to the summer dress.—*Scolopax grisea*, VIEILL. *Nouv. Dict.* winter dress.—*Totanus griseus*, VIEILL. *Nouv. Dict.* winter dress.—*Totanus ferrugineicollis*, VIEILL. summer dress.—*Totanus noveboracensis*, SABINE, *Zool. App. Franklin's Exp.* p. 687, summer dress.—*Macroramphus griseus*, LEACH, *Cat. Mus. Brit.*—*Limosa scolopacea*, SAY, in *Long's Exp.* II., p. 170, winter plumage.—*Beccaccia grigia*, RANZ. *Elem.* III., pt. VIII., p. 162, Sp. 5.—*Becassine grise*, VIEILL. *Nouv. Dict.* III., p. 358.—*Becassine ponctuée*, TEMM. *loc. cit.*—*Brown Snipe*, PENN. *Arct. Zool.* II., Sp. 369. LATH. *Syn.* v., p. 154, Sp. 26. ID. *Gen. Hist.* ix., p. 216, Sp. 25. MONT. *Orn. Dict.* with a good fig. in the *Suppl.* winter dress.—*Red-breasted Snipe*, PENN. *Arct. Zool.* II., Sp. 368. LATH. *Syn.* v., p. 153, Sp. 26. ID. *Gen. Hist.* ix., p. 215, Sp. 24, summer dress.—*Graubraune Schnepfe*, MEYER & WOLF, *Tasch.* III., p. 46.

WE can add nothing to the excellent account given by our predecessor of this remarkable species, but as he only figured it in its summer and more familiar dress, our representation of the winter plumage will not be thought superfluous upon referring to our elaborate synonymy, and still less if we bear in mind that even a distinct genus has been instituted for it in this vesture, when it chanced to come under more critical inspection. We shall therefore merely dwell upon the literary

* See Wilson's *American Ornithology*, *Red-breasted Snipe*, *Scolopax noveboracensis*, Vol. II., p. 331, pl. 58, fig. 1, for the summer dress.

and systematical history of the species, referring the reader to Wilson for its natural one.

In its winter plumage the adult Red-breasted Snipe, then called Brown Snipe, is so different from the young and from the perfect bird in summer dress, that it is no wonder that it should have been considered a distinct species, especially as it is the only Snipe that undergoes such changes, and analogy could therefore no longer serve to guide us. While passing gradually from one plumage to another, the feathers assume so many appearances as to excuse in some degree even the errors of those who have been led to multiply the nominal species by taking a wrong view of the genus to which it belonged.

Pennant, soon followed by Latham, was the first to make known our Snipe, which they described in both vestures, and the bird was registered accordingly in the ill-digested compilation of Gmelin. Wilson perceived that the two supposed species were one and the same, retaining for it the name of *Scolopax noveboracensis*, which appertained originally to the summer dress alone. That given to the winter dress is now however with more propriety adopted by all modern ornithologists. As some birds of the old continent are known occasionally to stray to the American shores,* so this common American bird visits accidentally the north of Europe, and especially its islands. There are several instances of its having been killed in the British Isles, where more than one English specimen is preserved, small parties even of these birds having been seen there at different periods and in their different dresses. But these instances are by no means so frequent as reported in authors, the *Limosa rufa* and *Tringa islandica* having been mistaken for it. A specimen in ambiguous plumage, straying into Sweden from the marshes of Lapland (where they may be more common), afforded Nilsson the opportunity of contributing his part to the confusion, but as he gave a figure, besides describing the bird with his characteristic accuracy, it was at once detected. Since Temminck, it is only wilful obstinacy or gross ignorance that can persist in regarding as species the different states of a bird so well marked in its natural genus as to deserve a subgenus for itself, and still more on account of its habits than its conformation (notwithstanding Temminck's statements to the contrary), as will be evident from the following generalities on the genus *Scolopax*.

This genus, as instituted by Linné, and adopted by authors from Latham to Wilson, was, like *Tringa*, a great receptacle, though with the advantage of not containing a single species that is not still admitted as of at least the same family. But however extensive it may have

* The *Tringa pugnax* of Europe, we are informed by Mr. Cooper, who has compared the specimen with one of this species from Austria in analogous plumage, has been shot on Long Island in the state of New York.

been, had Linné been consistent in arranging under it all the species that possessed the character he assigned to it, he ought to have added to it the greater part of his *Tringæ*, many of which took rank unperceived in both genera. Cuvier rectified this course, thus forming a vast genus *Scolopax*, more extensive than our whole family of *Scolopacidae*. His subgenus *Scolopax* corresponds, however, exactly to my genus of that name, which I subdivide into three natural subgenera, *Rusticola*, *Scolopax*, and *Macroramphus*, which is the present bird. Illiger first reduced the genus *Scolopax* within proper limits, but including, it is true, *Rhynchæa*, since established by Cuvier as a genus. Modern ornithologists in general agree with us, except that some, as Vieillot and Savi, consider *Rusticola* a true genus, leaving the name of *Scolopax* to the rest. *Macroramphus* and *Scolopax* are in fact more closely related than is *Rusticola* to any of them.

All the species of our genus *Scolopax* are very similar as to the bill, which in all is long, slender, straight, compressed, especially at base, where it is elevated, soft and flexible its whole length, with the point depressed, dilated, tumid, and obtuse: owing to the desiccation of the delicate nervous apparatus of this part, it becomes wrinkled after death, exhibiting at the point a dorsal groove and numerous indentations. Both mandibles are furrowed to the middle on each side; the upper, serrated inside along the palate with spinelike processes pointing backwards, is terminated by an internal knob; the lower being shorter, channelled, and somewhat truncated: the nostrils are in the furrows, basal, marginal, linear and pervious, but half closed by a membrane. The tongue is moderate, filiform and acute. The head is in all large, compressed, and angular, low forward and high behind: the eyes are very large, placed high and far back, but perhaps less so in the bird which is more immediately the subject of our remarks: the neck is of moderate length, and stout; the body compressed and very fleshy.

But if they have all these traits in common, the feet, tail, and wings present material differences. The feet are in all, it is true, moderately long, slender, and four-toed, there being to this no exception as in the *Tringæ*. But in *Rusticola* there is no naked space on the tibia, whilst it exists, though small, in *Scolopax*, and is considerable in the present subgenus. In this the tarsus is much longer than the middle toe, while in the true Snipes it is subequal, and in the Woodcocks decidedly shorter. In the present the outer toe is connected to the first joint with the middle by a membrane, whilst in the two others all the toes are cleft: in this and *Scolopax* the hind nail is falculate and acute, as well as the others, and projects beyond the toe, which is not the case in the Woodcocks, which have that nail quite blunt and drawn back. On the other hand, *Macroramphus* agrees with *Rusticola* in the tail, that part having the regular number of twelve feathers, whilst in the typical

Snipes the number of feathers as well as their shape varies amazingly in the different, and otherwise strikingly similar species. Some have it of twelve, others of fourteen, sixteen, eighteen, and one even of *twenty-four* feathers, a number before unheard of in any other bird whatsoever. In all these groups the tail is nevertheless short, equal, or more or less rounded. In both the groups of Snipes the first quill is the longest; but in the species of Woodcocks the quills vary in length and shape, affording the same anomalies and useful marks as the tail-feathers in the true Snipes. In the European Woodcock the primaries are of equal breadth and the two first longest, while in the American the three outer quills are very narrow, linear, and the fourth and fifth longest.

The females in this genus are similar in color to the males, but larger, considerably so in the American Woodcock. They moult twice in the year, but the present is the only one that varies much with age or season.

It will not be wronging any to call them all stupid birds, though the present is less so: this only of its genus is gregarious, associating and flying in numerous flocks. Like the Snipes, and contrary to the Woodcocks, they do not dwell in damp woods or forests, but frequent open marshy grounds and morasses: but unlike the Snipes, they prefer the vicinity of the sea. They might indeed be called salt-water Snipes, in contradistinction to the others, which are fresh-water Snipes. Their flight is high, rapid, and irregular, having nothing of the heaviness of the Woodcocks. The flesh of all these birds is exquisite food, and much sought after.

The *Rusticola* of Vieillot, which we adopt as a subgenus for the Woodcocks, is distinguished, and even from most water birds, by the want of nudity of the tibia, which is completely covered with feathers, as in land birds. It contains but the two species alluded to, that are closely allied, though they have specific traits that might constitute genera in other cases. This shows the difficulty in our science of knowing where to seek for generic and specific traits in the different groups. The two species of Woodcocks vary greatly in their respective habits, one being a summer, the other a winter visitant in temperate climates, and one of course retiring south, the other northward from them. Some authors prefer for this group the name of *Scolopax*, because it is to its type that the Greeks gave this name.

Our subgenus *Scolopax*, of which we have published a monograph in our Observations on the second edition of Cuvier's Animal Kingdom, is composed of nine or ten species, all of which, with their characteristic details, will be carefully figured in our inedited work "Lithographic Monography of obscure genera of Aquatic Birds." In these

the tail-feathers furnish the specific characters. The number, shape, and disposition of these afford a sure clue, as in *Numenius* it is the rump, under wing-coverts, and long axillary feathers which are our best guide to a knowledge of the species. Without this clue they cannot well be distinguished, and those who undertake to make phrases with this object in a group to which they have not the clue, will only make pedantic nonsense, as is done every day. This very natural group is called *Talmaias* by Boie, and *Gallinago* by the English.

As for *Macroramphus*, as we have observed, it forms the transition to *Totanus*, which would be enough to show the impropriety of Boie's course in considering the genus *Scolopax* as a family of itself. Temminck's name of *Becassine Chevalier* is peculiarly descriptive, and alone contradicts his unjust censure of Dr. Leach's genus, a group whose scientific characters were first laid down by our friend Mr. Say, though he referred the species to *Limosa*.

In its winter plumage the Red-breasted Snipe instead of the mottled garb in which it is familiar, is of an uniform dusky-cinereous: the specimen lying before us is eleven and a half inches long and nineteen in extent. The bill is two and a quarter inches long, of a dull greenish, the tip is black, and obtains the strongly marked dorsal groove that so well distinguishes a *Scolopax* from the allied genera. The prevailing dusky-cinereous color extends over the head, neck and wing-coverts, the back and scapulars being of a lighter dusky-cinereous, and each feather darker on its margin and tip: a broad line from the upper mandible passing over the eye, and the lower orbit, are white: between the eye and bill is a dusky line; the irides are brown: the cheeks, throat, and upper portion of the breast are pale cinereous, each feather being margined with whitish: the lower part of the back, the rump and upper tail-feathers are white, beautifully and closely fasciated with black: the breast, belly and thighs are white, the sides being spotted and waved with blackish: the lower tail-coverts are white with short black bands, narrower than those of the upper parts. The wings are six inches long: the lesser wing-coverts of the color of the body, but they are margined with whitish; the middle and greater wing-coverts are darker with pure white margins and a little white along the shafts: the primaries are plain blackish-dusky, the inner one slightly edged with white: the secondaries are broadly margined and narrowly shafted with white: the first quill is longest, the shaft white: the under wing-coverts and long axillary feathers are white, fasciated with black. The tail is two and a half inches long, composed of twelve feathers, all full and rounded, the two middle a little longer, and marked like the coverts already described, that is white and densely fasciated with black bands. The feet are of a dull green: naked space on the tibia one inch long: tarsus nearly one inch and a half: middle toe without the nail hardly an inch: hind toe more

than a quarter; the toes webbed at base, the outer web reaching to the first joint of the outer toes, the inner being hardly visible.

Wilson's description of the summer plumage being sufficient, we omit it here, though admitting of much more detail: in few words it may be stated that however great the apparent difference, it may be reduced to this: 1. All those parts that are plain cinereous in winter take on a mottled appearance, being strongly tinged with reddish, and varied with black and yellowish. 2. The anterior parts that are white, such as the superciliar line, and breast, become reddish. The strongly characteristic marks of the other parts remain unchanged.

The young birds of the year have the plumage above generally black, the back of the head dusky, and the feathers broadly margined with bright rufous, the superciliar line, and the inferior parts are of a dingy white, inclining to rufous; this color predominates on the breast, where the feathers, as well as on the flanks and the superciliar line, have numerous dusky dots: the middle tail-feathers are terminated by reddish.

Notwithstanding the statements of Wilson, we do not perceive any difference in plumage in the female, which is merely of a larger size. As the species breeds in high northern latitudes, visiting the temperate regions of America in spring and autumn, on its passage to and from its winter quarters, it is the more extraordinary that it should not equally extend these regular migrations to Europe.

PHALAROPUS WILSONII.

WILSON'S PHALAROPE.*

[Plate XXIV., Fig. 1, Adult. Plate XXV., Fig. 1, Young.]

Phalaropus Wilsonii, SABINE, Zool. App. Franklin's Exp. p. 691. Nob. Obs. Wils. Sp. 233. Id. Add. Orn. U. S. in Ann. Lyc. N. Y. II., p. 159. Id. Suppl. Syn. in Zool. Journ. Lond. Id. Cat. and Syn. Birds U. S. Sp. 279. Id. Specch. Comp.—*Phalaropus frenatus*, VIEILL. Gal. Ois. II., p. 178, Pl. 271.—*Phalaropus fimbriatus*, TEMM. Pl. Col. 370.—*Lobipes fimbriatus*, SELBY and JARDINE, Orn. Ill. 1, Syn. Sp. 2, Adult.—*Lobipes incanus*, SELBY and JARD. Orn. Ill. 1, Syn. Sp. 3, tab. 16, Young.—*Phalarope liseré*, TEMM. loc. cit.—*Phalarope bridé*, VIEILL. loc. cit.—*American Phalarope*, SABINE, loc. cit. LATH. Gen. Hist. x., p. 4, Sp. 2.

THIS beautiful, and as regards system, so remarkable bird, was first

* See Wilson's *American Ornithology*, *Gray Phalarope*, *Phalaropus lobatus*, vol. III., p. 9, Pl. 73, fig. 2, for a very bad figure and imperfect account; and a much better one illustrating the same figure in the second edition of the same volume, called by Mr. Ord, *Supplement to the American Ornithology of Wilson*, under the name of *Brown Phalarope*, *Phalaropus lobatus*, p. 12.

discovered by Wilson, who, had he lived to publish the species himself, would doubtless have fixed it on the same firm basis as in other instances of the kind. But death put an end to his labors, and to the advantage which science daily realized from them, when among other important materials this Phalarope remained in his portfolio. It became the task of friendship to publish a few rough notes and unfinished sketches, the present among the rest, and a figure was thus produced impossible to be recognised except upon actual reference to the specimen itself. The description which accompanied it was as defective as the figure, the author's pencil notes having been found partly illegible, and it was marked by him as a *Tringa*. In a second and much improved edition, which it has pleased the author to call an original work, though the plates are identical with the former, Mr. Ord's description and personal observations are very correct and ingenious, but the name and synonyms are altogether misapplied, through his mistaking it for the *Phalaropus hyperboreus*. In a paper published in the Annals of the Lyceum of New York, I availed myself of the first opportunity that offered to explain the confusion respecting the three species, and finally distinguished among them three groups which were exemplified in my Synopsis.

Mr. Sabine was not aware when he applied to this bird the name of our predecessor, that he was performing not merely an act of courtesy and respect, but one of justice also towards its first discoverer. It was only by actual inspection of the specimen examined by Wilson, and preserved in the Albany Museum, that we could identify the species, and it does not appear surprising to us that some who have not thus verified the fact for themselves should still express doubts, as Baron Cuvier has done by implication in the new edition of his *Règne Animal*. We ourselves, when we first procured the bird, had not the least suspicion that it was contained in Wilson's work. Every one will therefore be sensible of the propriety of publishing a new figure, more needed in fact in this case than if the species had been new. The description in Sabine's Appendix to Franklin's Expedition could not however be misunderstood, and Temminck and Vieillot by its perusal would have spared this bird two synonyms, as they simultaneously figured and described it in their respective works under the different names quoted in our list, though Vieillot perceived it to be the species intended by Wilson. The authors of the Illustrations of Ornithology did not recognise in their *Lobipes incanus* the young of this, which is not much to be wondered at; but it is rather extraordinary that writers so justly scrupulous about the rights of priority should adopt, though greatly posterior, Temminck's name instead of Sabine's, thus slighting over one of the best of the few positive zoological labors

of their own countrymen, and after it had been already sanctioned by strangers.

That the *Lobipes incanus* is the young of this species, which any one familiar with the changes of plumage of the Phalaropes might have suspected, will, it is hoped, be placed beyond future question by the figure we now give also of it.

If the bill only were considered, this species might with some propriety be united subgenerically with the *P. hyperboreus*, but as by its feet it differs considerably from both the other Phalaropes, which agree in this particular, we have instituted for it a peculiar subgenus under the name of *Holopodius*, which we regard as in all respects more essentially different from the old groups than they are from each other. In what respect Mr. Sabine found this species, which he so well established, intermediate between the two, we are at a loss to imagine.

In fact, in *Holopodius*, so opposite to Cuvier's *Lobipes* both in name and character, the toes have a narrow border formed by a subentire membrane; the outer connected to the first joint only; the inner almost cleft, and the hind toe long and resting on the ground: the two other groups having the toes broadly bordered with a deeply scalloped membrane and semipalmated: the hind toe is very short, the nail only touching the ground. The *Lobipes* of Cuvier differs from the *Crymophilus* of Vieillot only in the shape of the bill, stout, flattened, and carinated in the latter, slender and cylindrical in the former, as well as in ours.

Edwards first brought the Phalaropes into notice, and it was from his works that Linnæus and Brisson registered these singular birds in their general works: the former, however, thrust them into that storehouse of species, his *Tringa*, whilst the latter established for them the genus *Phalaropus*, than which no group is more natural, and in our opinion equivalent to a family.

Latham and all modern authors have retained very properly this genus in their systems. But if they are so far unanimous, they are greatly at variance when they come to assign it a place, some referring it to one order or family and some to another. That these birds belong to the *Grallæ* or Waders, though still more aquatic in their habits even than some of the webfooted birds, does not in my opinion admit of doubt.

Before the recent discovery of the species now under consideration, *Phalaropus* contained but two real species, out of which as many had been formed as their changeable plumage exhibits phases, and what is worse, the nominal species founded on the one had been confounded with those taken from the other, and the different plumage of each taken for varieties of its relative, so that not even the two real species were accurately known apart; though so different as to form each of

them the type of a peculiar group, in the same manner as we have observed is the case with the *P. wilsonii*. They are found in the north of both continents, the present being peculiar to America, which possesses them all. Cuvier, losing sight of the strong common tie that connects the Phalaropes, has separated his two groups, *Phalaropus* and *Lobipes*, and has placed the one near *Tringa*, and the other near *Totanus*, on account of the analogy of the bill, regarding the *Phalaropus* as a pinnate-footed *Tringa*, and the *Lobipes* as a pinnate-footed *Totanus*. Vieillot, in adopting these groups as genera, placed them adjoining each other in a separate family, but he changed Cuvier's names into *Crymophilus* and *Phalaropus*, transposing the latter name to the other group, the *Lobipes* of Cuvier. All the three known Phalaropes are distinguished by a moderate, slender, straight and subcylindrical bill: both mandibles are furrowed each side nearly their whole length, and the upper somewhat curved at the point; the lower is hardly shorter, quite straight, and the point subulate. The nostrils are in the furrows, basal, longitudinal, linear, half closed by a membrane. Their head is small, completely feathered, compressed and rounded above; the eyes are small, the neck well proportioned, and the body roundish. The feet are moderately long, four-toed; the naked space on the tibia rather extensive; the tarsus as long as the middle toe, moderate, robust, somewhat compressed, and scutellated; the toes are moderate and rather slender, the three anterior bordered by a festooned membrane, and the outer at least is always connected at base to the middle one; the hind toe is short, bordered only on the inside with a small entire membrane, articulated rather high and internally, touching the ground at tip: the nails are short, curved, and acute. The wings long, falciform, and acute, the first primary being the longest: the quills twenty-five in number. The tail is short, and consists of twelve feathers, with its under coverts extending quite to the tip.

The female is but little different from the male, but larger and handsomer in full plumage. The young are very different from the adults, and they vary much with age. They moult twice in the year, their colors changing strangely, which has occasioned the wanton multiplication of species. Their plumage is close, thick, abundantly furnished with down, and impermeable to water. Their colors are principally brownish and reddish, changing in winter to gray and white, which is always to be found on their under parts.

Their habits are essentially aquatic. They inhabit the seacoasts, the shores of lakes and occasionally of rivers; are gregarious, but never collect in large flocks. Probably from being so seldom met with, they show little dread of mankind, and allow of the nearest approach, and not being alarmed at the report of a gun, it is easy to kill several without moving from one spot. Their food consists of aquatic insects and

other small animals that are found in the water. They are strictly monogamous, and are generally seen in pairs, carrying fidelity to an extreme: delighting in their peculiar element, they even copulate on the sea, and reluctantly leave it to build their nest on shore, among grasses: they lay from four to six eggs, which both sexes incubate, the male being even more strongly marked on the belly by the naked places which this causes: they share between them all the parental duties, and the young leave the nest, run about and swim as soon as they are hatched. The Phalaropes are hardly ever seen on dry ground, where, however, they walk and run swiftly, without the embarrassment of some other birds of less aquatic propensities. Though certainly the smallest of swimmers, they perform this operation with great dexterity, resisting the heaviest waves, or rising over their top, but are never known to dive: they notwithstanding swim with perfect ease, when they have all the appearance of a miniature Duck, with their head carried close to their back. While swimming they dip their bill often in the water, frequently turning round, with much elegance in all their motions. Their flight is rapid. Their flesh is oily and unpalatable.

The abode of these diminutive swimmers is the arctic and polar regions, to which their thick coat of feathers is well adapted. Hence they migrate in autumn to the temperate regions of both continents, where they are also seen in spring. They are essentially arctic birds, and breed in the most northern parts of the world, and although they retire more to the south in winter, yet their visits to our temperate climates are rare and casual. From such a combination of traits as are above related it will be evident that though much restricted in the number of species the Phalaropes are entitled to a conspicuous rank in classification. They can only be compared with the allied genera *Himantopus* and *Recurvirostra*, and we see how materially they differ from them. They may be said to connect the *Scolopacidae* with the *Laridae*, forming a beautiful link between the order of Waders and that of the Web-footed birds.

Our subgenus *Holopodius*, which resembles *Lobipes* in the bill, while *Crymophilus* resembles it in the feet, is furnished with a long, very slender, smooth, flexible, and cylindrical bill, of equal breadth throughout, subulate to the tip, with the point narrow, sharp, and slightly curved: the nostrils are quite basal, and linear-elongated: the tongue is filiform and acute. The tarsi are elongated, and much compressed, in which it comes nearer to the *Anseres*, and compensates for the other traits which remove it farther from them than the other Phalaropes. Thus do we find ourselves baffled in all attempts at a regularly symmetrical or mathematical arrangement, Nature acknowledges no artificial nor contracted limits. The toes are long, and by no means semipalinated, the outer being connected to the middle only as far as the first

joint, and the inner almost divided; the bordering membrane narrow and subentire; the hind toe long, and resting on the ground. The wings are long, even for the genus, and the tertials very long, reaching nearly to the tip of the primaries when the wings are closed. The tail is moderate, being neither so long as in *Crymophilus*, nor so short as that of *Lobipes*. The general form is slender, and together with the bill and other traits, gives this bird a strong resemblance to the *Totani*, a bare analogy, however, which we should not with Cuvier mistake for affinity.

The American or Wilson's Phalarope has been so well described from the recent specimen, by Mr. Ord, as not to be susceptible of improvement, and the following description is merely intended to elucidate our figure, which represents of the natural size a beautiful female in the perfect plumage of spring. This individual was nine and a half inches long and sixteen in extent of wings. The form of the bill we have described above: it is black, and more than an inch and a quarter long, though only a line in thickness: the irides are dark brown. The upper part of the head is of a bluish delicate pale ash color, the hind head and that part of the neck adjoining it are whitish; a white stripe passes over the eye, and beneath it is a spot of the same color: a large curving band of black includes the eye and spreads out towards the nucha, descending a good space down the neck, and gradually passes into a reddish brown, which becomes the color of the sides of the neck; this tint deepens into bright chestnut on the back part of the neck, and descends on each side, thus mingling with the plumage of the back and scapulars, which are dark ash, each feather slightly tipped with whitish: the upper tail-coverts are ash color. The throat and sides of the head to the black mark, and all beneath, including the lower tail-coverts, are pure white, somewhat tinged with rufous on the lower part of the neck beneath. The wings are five inches long, and in color dark ash, larger coverts and secondaries very slightly edged with white, under coverts white, most of the smaller wing-coverts being marked with ferruginous: the upper tail feathers are tinged with reddish at their tips, and the under marked with white on their inner webs. The feet are dark plumbeous; the claws of a dark horn color, the naked part of the tibia is nearly an inch long, the tarsus more than one inch and a quarter, and sharpish; the middle toe without the nail is scarcely one inch, and the remarkably long hind toe five sixteenths without the nail.

There are fewer variations caused in this Phalarope than in the others by sex and season: the young however is surprisingly different, for which reason we have figured it also of the full size. The bill is like that of the adult, somewhat gaping beyond the middle: the face is whitish mixed with dusky, and with a dusky stripe from the bill to the eye: the crown, neck above, back and wings are dusky brown, darker

on the middle of the feathers: the rump, upper tail-coverts and flanks broadly are white; the throat is pure white: the sides of the neck are tinged with rusty: the neck beneath and breast are white, slightly tinged with reddish-dusky; the belly of a purer white with a little dusky; the vent, and long lower tail-coverts, which reach to the tip of the tail, are pure white: the wings are four and three-quarter inches long, the lower coverts white. The scapulars blacker, with pale rusty edges: the primaries are blackish, with pale brown shafts, of which the outer is white. The tail is broad and rounded, the middle and outer feathers somewhat longest; all of a pale dusky gray with white shafts, the exterior being also white on the best part of the inner web. All the tail-feathers are also edged with white. The feet are reddish black, the tarsus an inch and a quarter long.

We are acquainted as yet with no peculiarity of this fine Phalarope, and even the few facts registered concerning it have been obscured by the heedlessness of compilers. Though it appears to extend its migrations more to the south than its congeneric species, it is decidedly like them (notwithstanding Temminck's supposition to the contrary), an Arctic bird, and the only remarkable circumstance about it is that it should not also be found in Europe. As far as we know it is exclusively North American, for the specimen of the young inadvertently said by the authors of the Ornithological Illustrations to have come from South America, was found in the Vera Cruz market, as appears from their own account. As for Senegal, it was merely a gratuitous supposition on the part of Temminck, too rashly converted by the same English authors into certainty, and it therefore remains strictly North American, for which country we have, besides Wilson's and our experience, the unquestioned authorities of Vieillot and Sabine.

TRINGA SCHINZII.

SCHINZ'S SANDPIPER.

[Plate XXIV. Fig. 2.]

Tringa cinclus, var. SAY, in Long's Exp. 1., p. 172.—Tringa Schinzii, BREHM, Lehrb. Eur. Vog. II., p. 571. Nob. Obs. on Wils. before Sp. 213. Id. Cat. and Syn. Birds U. S. Sp. 249.—Scolopax pusilla? GMEL. Syst. I., p. 663, Sp. 40?—Tringa cinclus var. a minor? BRISS.—Tringa alpina? VIEILL. (not of authors.)

IN Mr. Say's valuable notes to Long's Expedition, he describes as follows the bird which we have had carefully represented in the annexed plate in order that naturalists may judge whether or not we are right in referring it to the new European species hitherto confounded with

Tringa alpina, and lately separated by Brehm in his work on the birds of Europe, under the name of *Tringa Schinzii*. It is so difficult to say what is a species and what a variety in this most intricate genus, that we shall not undertake to decide from a single specimen, especially when, as in this case, it involves the identity of the bird in the two continents.

"*Pelidna cinclus* var. Above blackish brown, plumage edged with cinereous or whitish; head and neck above cinereous with dilated fuscous lines; eyebrows white; a brown line between the eye and corner of the mouth, above which the front is white; cheeks, sides of the neck and throat cinereous lined, with blackish-brown, bill short, straight, black; chin, breast, belly, vent, and inferior tail-coverts pure white, plumage plumbeous at base; scapulars and lesser wing-coverts margined with white; greater wing-coverts with a broad white tip; primaries surpassing the tip of the tail, blackish, slightly edged with whitish, exterior shaft white, shafts whitish on the middle of their length; rump blackish, plumage margined at tip with cinereous tinctured with rufous; tail-coverts white, submargins black; tail-feathers cinereous margined with white, two middle ones slightly longer, black margined with white; legs blackish. Adult male. Length to tip of tail seven inches. Bill seven-eighths of an inch."

This bird was shot in November, near Engineer Cantonment; and Mr. Say thought it was probably a variety of the very changeable *cinclus* (*Tringa alpina*) in its winter plumage. It is this very specimen that we have had represented of its full size in the annexed figure in order that naturalists may judge if we are right in the course that we have chosen. Be it as it may, we are satisfied that *Tringa Schinzii* is a good species, well distinguished from *Tringa alpina* by its smaller size, and proportionally even shorter bill. The more extensively white upper tail-coverts are the best and most conspicuous mark: it is also to be observed that in the summer dress the ferruginous color of the upper part is paler, the black spot of the breast more restricted and less pure; and the neck more broadly streaked. Both sexes are moreover perfectly alike in color, which is never the case in the *alpina* in spring dress. It belongs to the subgenus *Tringa*, of which we have already treated, and it is common to both continents. In America it is found from far beyond the Mississippi to the Atlantic shores, and is rather common in autumn on the coasts of New Jersey, either in flocks by themselves, or mixing in company with other Sandpipers, with which it has every habit in common.

The specimens that we shot in New Jersey measured seven inches in length and above fourteen in extent. The bill is very nearly but not quite an inch long, compressed and black from the base: the crown, neck above, and interscapular region are of an ashy-brown, much

darker in the centre of each feather and lighter on their margins; on the lower portion of their back this darker color widening, predominates, and becomes black, so that the tips of the feathers only are of the general pale ashy color; the upper tail-coverts are white, blackish along the shaft and towards the margin of the outer vane: a whitish stripe runs from the very origin of the bill over each eye; the cheeks, sides of the neck and breast are whitish streaked with ashy dusky along the shaft of the feathers, giving these parts an obscurely lineated appearance, the throat quite to the bill, and all the remaining under parts are white, the bottom of the plumage being plumbeous, and a few bands of that color appearing across the lower flank feathers. The wings are four inches and a quarter long, with the tertials and scapularies remarkably tapering and acuminate, shorter by a good inch than the two first quill-feathers: all the wing-coverts are of the color of the body, but a little darker, each having a pale gray margin, the inner great coverts have a very pure white tip: the shafts of all the quill-feathers are pure white at least for a good portion near the centre: the primaries are blackish ash: the secondaries paler and margined with whitish, the tertials are again blackish edged with pale grayish: the under surface of the wing is of a silvery gray; the under wing-coverts white marbled with dusky. The tail is two and a quarter inches long: the four lateral feathers each side are very nearly equal in length, of a pale ash color margined and shafted with white: they become gradually darker as they are nearer the centre, the fifth each side is blackish ash, a trifle longer than those already described, and has a very conspicuous pure white marginal tip on the inner web; the two middle surpass the others by a quarter of an inch, are somewhat pointed and entirely blackish. The feet are blackish; the naked space above the heel half an inch; the tarsus seven-eighths of an inch long, and much longer than the middle toe, the toes are cleft at the base; the nails are blackish. As will easily be perceived the specimen described is in the winter dress.

This Sandpiper is well known to appear in a summer vesture analogous to that of *Tringa alpina* at the same season; but we have never met with an American specimen in that state.

In the full plumaged males the bill and feet are black: irides brown: before the eye a small blackish patch surmounted by a white stripe dotted with blackish gray. Head above, back and wing-coverts bright rufous, the feathers with merely a black centre: colors not so bright as in *Tringa alpina*: wings above blackish gray with black shafts; point of the primaries black, with white shafts: the ten middle tail-feathers as well as their upper coverts are blackish: the lateral cinereous with their coverts white: the chin is white, the sides of the head and hind neck are of a ferruginous gray: throat white, longitudinally

spotted with rufous gray; the breast almost entirely of a jet-black color, always interrupted by some insulated white feathers, and never so broadly black as in *Tringa alpina*: all the remaining under parts are white, with a very few dusky streaks on the sides.

At one year of age the male is on the back of a less bright rufous spotted with black: on the breast the black consists merely of a spot, and is mixed with many white feathers. The female much resembles the male at the same age. The very young is above of a ferruginous color varied with white, yellowish, and black; all beneath white, streaked with dusky ferruginous on the throat.

They frequent marshy shores, and the borders of lakes and brackish waters. They are very social even in the breeding time, and are then by no means shy: during autumn they join company even with different birds, and become very wild. Their voice resembles that of *Tringa alpina*, but is more feeble. They feed on worms, aquatic insects and similar food: build near marshes and lakes, among weeds: they lay four eggs, smaller and much less in diameter than those of *Tringa alpina*, of a yellowish-gray spotted with olive or chestnut brown.

CHARADRIUS MELODUS.

PIPING PLOVER.*

[Plate XXIV. Fig. 3.]

Charadrius melodus, ORD, in the reprint of Wilson's *Orn.* vii., p. 71, and *Gen. Ind. of the Water Birds*, *Suppl. Orn. Wils.* (ix.), p. cexii. NOB. *Obs. Wils. Orn. Sp.* 220. ID. *Cat. and Syn. Birds U. S. Sp.* 217. ID. *Specch. Comp. sp. Philad.*—*Charadrius Okenii*, WAGLER, *Syst. Av.* 1., *Charad. Sp.* 24.—*Ringed Plover*, var. B. LATH. *Gen. Hist.* ix. p. 327, Sp. 12, var. B.

THE well merited elevation of this bird to the rank of a species fully vindicates our predecessor from the unjust censure of Temminck, who thought his figure of it intended for the *Charadrius hiaticula*. The same censure is repeated and aggravated by Mr. Sabine, who probably thought it intended for the *C. semipalmatus*. But if the figure is free from the supposed fault of incorrectness, its extremely diminished size, which renders it almost useless, requires that the bird should now appear in this work in its full dimensions.

* See Wilson's *American Ornithology*, *Ringed Plover*, *Charadrius Hiaticula*, Vol. ii. p. 355, pl. 37, fig. 3, for a reduced representation of the adult in spring dress, and the history.

Not only is the true *C. hiaticula* of Europe not found on the American continent, but the birds hitherto mistaken for it constitute two very distinct and exclusively American species, notwithstanding the awkward quotations in the new edition of Cuvier's *Règne Animal*, which, in this instance, as in several others, is as far behind its age as the former was in advance of it.

Although the never too much lamented Wilson gave, in his fifth volume, the present bird as a variety of which he intended figuring the type in a future part of his work, when he came to it in his seventh volume, he clearly and positively pointed out the difference in markings, habits, migrations, and voice, between the two which he then considered as distinct species: he thus in reality established the species, and indeed so well, that we cannot do better than refer to his conclusive reasonings. The only essential point he omitted was to impose a name on his species, which he undoubtedly would have done had he lived to publish himself the index to the water birds, as, in some instance, he supplied similar deficiencies for the land birds. Mr. Ord has, however, filled this void by calling the bird *C. melodus*, which appropriate name we feel bound to adopt; and the more so, as Mr. Ord informs us that it would have been Wilson's own choice. Almost simultaneously with our endeavors in this country for permanently fixing the species, Dr. Wagler in Europe, on his part, was also giving it a name, so that it is now furnished with two.

In the circumstance of its inner toe being cleft to the base, this bird approaches more closely to *C. hiaticula* of Europe, than to *C. semipalmatus*; but in colors it differs greatly from these so similar species, and the membrane that connects the outer toe is considerably smaller than in any. The synonyms of Wilson do not of course apply to this new species; and what is worse, though this is common to all writers upon the Ring-Plover, they do not belong to one and the same species.

Although, without doubt, related to the *Tringæ*, which are *Scolopacidæ*, the Plovers belong to another family, that of the *Pressirostres* of Cuvier—which may be called *Charadridæ*—and through *Otis* and *Ædienemus* these Waders are connected somewhat with the Gallinaceous birds. This natural family of ours, very different from the artificial one formed by so many authors for the three-toed Waders indiscriminately, and adopted under the name *Charadriadæ* by the new English school, though professing to adhere to a natural arrangement—is well distinguished by its short (or moderately so) rather robust bill, the hind toe wanting, or when present, very short. It is composed of but eight genera, of which only three are found in North America, two aberrant, and the present, the only typical American, which is well distinguished by its bill, very short rounded, obtuse, and somewhat turgid at tip. In

order to exemplify how different from that of authors is this family, as we understand it, we may remark that the birds forming it are scattered by Illiger through his *Campestres*, *Littorales*, and *Limicolæ*; by Cuvier and Latreille divided between their *Longirostres* and *Pressirostres*; by Vieillot placed in *Pedionomi*, *Ægialites*, *Helionomi*; in *Tachidromi* and *Limose* by Ranzani and Savi; in *Charadriidae* and *Scolopacidae* by Vigors, &c.

Our genus *Charadrius* has different limits from those of perhaps any recent or former author, being more extensive than in many, but more contracted than that of Wagler, which comprehends all our typical *Charadridæ*. Linné, who made it a sort of receptacle for nearly all three-toed Waders, has placed in *Tringa* some of our Plovers that are furnished with a rudiment of hind toe, and the same has been done by Gmelin, Latham, Illiger, and even, though to a less extent, by Cuvier. As long since restricted by the separation of *Himantopus* and *Calidris*, which are not of the same family, and of *Ædienemus*, which truly is, it is much more natural; especially if with Wilson we unite with it, as nature dictates, those species that happen to possess the rudiment of a fourth toe. Among the earlier writers Brisson was the first who assigned more natural limits to the genus which he called *Pluviatis*, and his two well enough composed genera, *Pluvialis* and *Vanellus*, include all our Plovers. Cuvier, Temminck, Vieillot, and Ranzani place the four-toed Plovers with the Lapwings, *Vanellus*. Savi more recently has evinced his good judgment by separating them at least from *Vanellus*, if he does not unite them with *Charadrius*, which his professedly artificial system did not allow.

I distinguish two subgenera in my extensive genus *Charadrius*, regarding *Squatarola* of Cuvier and Savi as no more than a section of my first subgenus, of so little importance do I consider the anomaly of the hind toe, the sole characteristic of that artificial group. These subgenera are: 1. *Pluvialis*, for the large mottled species without a collar, and with variegated plumage. Such are amongst the three-toed the European and Asiatic *C. pluvialis* and *mornellus*, and the American *virginicus* (or *marmoratus*); and among the four-toed the Europeo-Asiatic bird *C. gregarius*, and the cosmopolite *C. helveticus*. 2. *Ægilialis*, Boie, or the Ring-Plovers, which have a broad white collar around the neck. This is the more numerous in species, and the present belongs to it: it may form two sections, one for the semipalmated Ring-Plovers, whose toes are all connected at base by a membrane, and the other for this and the remaining Ring-Plovers, in which the inner toe is separated down to the base. As for the armed or spur-winged Plovers, as well as the wattled species, all I have examined were perfectly similar to the armed and wattled Lapwing, and they constitute in my arrangement a very natural subgenus under the name of *Hoplopterus*, which

group, like *Pluvialis*, may be sectioned into those with three and those with four toes. This group of *Hoplopterus*, both by its tarsus and wings, takes place under my genus *Vanellus*, and differs subgenerically from the typical species merely by its longer legs, and hind toe less developed, or often wanting. *Pluvianus*, Vieillot, distinguished by a stouter bill, I never have examined, but have no doubt that it will find its place in my genus *Vanellus*, where it may be united to my three-toed *Hoplopteri*, or possibly become a subgenus by itself.

Both the three-toed and four-toed species that form my subgenus *Charadrius*, and are so easily known by their greater size and want of a collar, live in large damp meadows, or open and muddy champaign countries. They hardly ever alight on the beach, or even accidentally on river shores. During the nuptial season the males assume a brighter vesture. They do not breed in the temperate climates of Europe or North America, but only show themselves there in autumn and winter. Their flesh is exquisite food.

The Ring-Plovers on the contrary are shore birds in their habits, and may be known by their diminutive size and broad white collar. They frequent invariably the banks of rivers and sandy sea beaches, and it is by accident if they are seen at a distance from their favorite element. Their plumage does not undergo extreme changes, and merely from darker to lighter. Several species breed in our climates, and their flesh is hardly esculent. Although not marked by any striking physical character, we regard the extensive group *Aegialitis* as a very natural one: it has numerous species in every part of our globe. The three European are modelled precisely after the same type as the present species, while the three other North American have each a strong distinctive character peculiar to itself: in the Semipalmated it is the webbed toes, in the Wilson's the powerful and acute bill, and in the Kildeer its large stature and oddly colored wedge-shaped tail.

In all our Plovers the bill is shorter than the head, rather slender, straight, cylindrical, depressed at base, obtuse and somewhat turgid at tip: the upper mandible is longitudinally furrowed two-thirds of its length, the lower is shorter: a remarkable character consists in the small opening of the bill, which is hardly cleft beyond the origin of the feathers. This peculiarity affords an excellent means of distinguishing them from the *Ædienemi*, in which the gape extends to beneath the eye. The nostrils are basal, lateral, placed in the furrow, and covered by a membrane, leaving only a narrow longitudinal opening: the tongue is entire, obtusely lanceolate, channelled somewhat above, convex beneath. The head is large in proportion to the body, and the eyes large even for the head: the forehead is prominent and the face wholly feathered. The feet are either three or four-toed, with the hind toe exceedingly small and raised from the ground: the naked part of the tibia is mod-

erate; the tarsi are longer than the middle toe and *reticulated*; the toes scutellate, margined by a narrow squamulose membrane: the middle toe is longest and connected to the outer, at least to the first joint, by a membrane: even in the species that have the inner toe cleft there are traces of the membrane, which is so much developed in the Semipalmented Ring-Plover: the nails are compressed, curved, and acute. The wings are elongated, acute, and tuberculate: the first primary is longest, and after the second they decrease rapidly, thus presenting a most useful mark for discriminating between this and the kindred genus *Vanellus*, which has obtuse wings, the third primary being the longest, and the others decreasing gradually. The tail is more or less rounded, always composed of twelve feathers, rounded or lanceolate. The plumage of the under parts is soft, the feathers being numerous, wide, rather dense in the centre, with the barbs rather loose, and well furnished with down at base: the plumage of the upper parts is rather dense, and the feathers more or less rounded at the tips: the scapularies are long, at the tips attenuated and very flexible. In most of the species the males and females are alike, the young somewhat different from them. They moult generally twice in the year, when the colors of their plumage undergo some changes.

The Plovers are all more or less gregarious in disposition: their haunts are either meadows, as the mottled Plovers, or the seashores, like the Ring-Plovers: they have a very remarkable habit of stirring the soil with their feet, to put in motion worms and aquatic insects, their exclusive food. They are more nocturnal than diurnal. They lay in the sand about four large eggs. The young very soon after they are hatched follow the mother, and pick up the food which she with great care points out to them.

The Piping Plover is seven inches long, and fourteen in extent: the bill is bright yellow slightly tinged with orange for half its length, thence black: the eyelids are bright yellow and the irides dark brown. The plumage above generally, with the mere interruption of the ring on the neck, is of an extremely pale brownish or dusky, inclining strongly to whitish ash: the front, part of the head between the bill and eyes, and the whole inferior surface from the chin to the tip of the lower tail-coverts, and including the under wing-coverts and long axillary feathers, is pure white: the head and breast are ornamented, the former with a black crescent, that runs transversely between the eyes and bounds the white forehead on one side, and the ash-colored parts of the head on the other; the latter by a curved band round its sides, forming the ring or half-collar round the neck, but narrow and almost interrupted before. The wings are four and three-quarter inches long, and reach when closed to the tip of the tail; the wing-coverts are darker than the back feathers, and are all edged with white: the larger coverts are broadly

terminated with white, constituting the band across the wings: the quill-feathers are dusky; the secondaries are broadly white inside with margins of the same: the primaries are blackish at the point, shafted and obliquely centered with white; the four outer ones are blackish on their outer margins where the others are white. The tail is two and a half inches in length, nearly square at tip, being much less rounded than in the Semipalmated species, white beneath for half its length, and blackish at tip; the outer tail-feather is wholly white, the next is also white, and with a single spot of black, which on the third extends much more, and still more on the fourth, and fifth, till the last is merely terminated with white, the middle ones being wholly dusky from the white of the base. The feet are greenish yellow tinged with orange, and the nails black.

Those authors who describe the autumnal plumage as much darker, are still laboring under the erroneous opinion which they had rejected, of this being the same with the *C. semipalmatus*. On the contrary, it is if anything still paler at that season, and considerably resembles that of the young birds, which are distinguished by the absence of the neck ring and sincipital crescent, and the bill being entirely blackish.

As will appear by referring to Wilson's two articles on the Ring Plovers, this species is commonly met with during the whole summer along the sandy coasts of the United States, on the approach of winter retiring south: it lays in the month of July on the sandy beach, three or four eggs, very large for the bird, of an obscure clay color, all sprinkled with numerous reddish spots. It runs rapidly, holding the wings half expanded; and utters a very soft and mellow cry.

PHALAROPUS HYPERBOREUS.

HYPERBOREAN PHALAROPE.

[Plate XXXV. Fig. 2.]

Tringa hyperborea, LINN. *Syst.* I., p. 249, Sp. 9. GMEL. *Syst.* I., p. 675, Sp. 9. RETZ, *Faun. Suec.* p. 183, Sp. 152. MULL. *Prod. Zool. Dan.* Sp. 196.—*Tringa lobata*, LINN. *Syst.* I., p. 249, Sp. 8. ID. *Faun. Suec.* p. 64, Sp. 179. RETZ, *Faun. Suec.* 152, young. MULL. *Prod. Zool. Dan.* p. 195. FABR. *Faun. Græn* p. 109, Sp. 75, adult and young and history. BRUNN. *Orn. Bor.* p. 51, Sp. 171, young (N. B. Not of Gmel. who under this name had in view the *Ph. fulicarius*, though he unaccountably retained the Linnean phrase).—*Tringa fusca*, GMEL. *Syst.* I., p. 675, Sp. 33, young.—*Phalaropus hyperboreus*, LATH. *Ind. Orn.* II., p. 775, Sp. 1. MULLER, Sp. 196. *Trans. Linn. Soc. Memoir Birds of Greenland*, XII., p. 535. TEMM. *Man. Orn.* 1st ed. p. 457. ID. *Man. Orn.* 2d ed. II., p. 709. SABINE, *App. Franklin's Exp.* p. 690. NOB. *Add. Orn. U. S.* in *Ann. Lyc. N.*

F., II., p. 159. ID. *Cat. Syn. Birds U. S.* Sp. 279. ID. *Specch. Comp.*—*Phalaropus fuscus*, BRISS. *Orn.* VI., p. 15, Sp. 3. ID. 8vo. II., p. 363. LATH. *Ind. Orn.* II., p. 776, Sp. 4. LINN. *Trans. XIII.*, p. 535, young.—*Phalaropus cinereus*, BRISS. *Orn.* VI., p. 15, Sp. 2. ID. 8vo. II., p. 362, adult. NILSS. *Orn. Suec.* II., p. 120, Sp. 193. MEYER & WOLF, *Tasch. loc. cit.* BREHM, *Lehrb. Eur. Vog.* II., p. 665. ROUX, *Orn. Provenc.* Pl. 337, adult Male.—*Phalaropus Williamsii*, HAWORTH, *Linn. Trans. VIII.*, p. 264.—*Lobipes hyperboreus*, SELBY & JARDINE, *Orn. Ill.* I., *Synops.* Sp. 1.—*Larus fidipes alter nostras*, RAY, *Syn. Av.* p. 132, A. 7. WILL. p. 270.—*Tringa fusca rostro tenui*, KLEIN, *Av.* p. 151, Sp. 3.—*Falaropo iper-*
boreo, RANZ. *Elem. Zool.* III., pt. VIII., p. 283, Sp. 1.—*Le Coq d'Odin*, ANON. *Icon. Rer. Nat.* II., p. 8, Pl. 20, adult.—*Phalarope cendré*, BUFF. *Ois.* VIII., p. 224. ID. ed. 1784, IX., p. 124. German Translation by OTTO, XXX., p. 111, cum figura. ROUX, *tab. cit.*—*Phalarope de Siberie*, BUFF. *Pl. Enl.* 766, Male.—*Phalarope hyperboré*, TEMM. *loc. cit.* VIEILL. *Orn. Franc.* Pl. 278, fig. a, summer dress, fig. b, winter.—*Lobipède à hausse-col*, CUV. *Règn. Anim.* I., p. 532.—*Cock coot-footed Tringa*, EDW. *Glean.* Pl. 143, adult Female.—*Coot-footed Tringa*, EDW. *Glean.* Pl. 46, young.—*Jonston's small cloven-footed Gull*, WILL. *Engl.* p. 355, § VII.—*Red Phalarope*, LATH. *Syn.* v., p. 70, Sp. 1. *Ubersetz (translation)*, v., p. 289, Sp. 1, tab. 94, Male. ID. *Gen. Hist.* x., p. 1, Sp. 1, and var. A and B (Pl. 163). (N. B. Var. C is *P. fulicarius*, taken from Wilson's work.) PENN. *Brit. Zool.* II., p. 219, Pl. 76. ID. ed. 1812, II., p. 125, Pl. 21. *Arct. Zool.* II., p. 494. BEWICK, II., p. 139. LEWIN, v., Pl. 193. WALCK. II., Pl. 127. MONT. *Orn. Dict. Suppl. and App.*—*Brown Phalarope*, LATH. *Syn.* v., p. 274, Sp. 4. PENN. *Arct. Zool.* II., Sp. 214, young.—*Red-necked Phalarope*, BEWICK, *Brit. Birds*, II., p. 149.—*Seeschneppé*, CRANTZ, *Hist. Grænl.* p. 113.—*Der Wasserstretter*, SCHMID. *Vog.* p. 128, tab. 111.—*Aschgrauer Wasserstretter*, BECHST. *Nat. Deutschl.* IV., p. 372. MEYER & WOLF, *Tasch.* II., p. 417.—*Rothalrige Wasserstretter*, WOLF & MEYER, *Vog. Deutschl.* I., *Heft.* 15, fig. 1, adult Male, fig. 2, young Female, fig. 3, young Male. SELIGMANN'S *Voy.* v., tab. 38.—*Gemeine Wasserstretter*, BECHST. *Nat. Deutschl.* II., p. 317. MEYER, *Vog. Deutschl.* I., *Heft.* 15, fig. 2 and 3, young at different ages. NAUM. *Vog. Nachts.* II., p. 80, fig. 24, young.—*Fisklita*, ACT. NIDR. III., p. 575. BAM. II., p. 407.—*Norduest fugl*, BOM. *Nat. Hist.* v., p. 599.—*Nuorteladde*, v. BIEGGUSH, *Lieur. Finmark*, p. 290.

By giving a representation of this Phalarope, besides that we add a species to the American Ornithology, we make good our promise of settling an important question. A glance at our figure of the Hyperborean Phalarope, here brought into comparison with the young Wilson's Phalarope, will at once evince the incorrectness of Mr. Ord's refined distinctions, and ultimate decision that they were the same bird. This comparison shows more conclusively than any argument to be found in our respective writings on this subject, what are the real facts. We have previously observed, when illustrating the former species, that they even differ subgenerically, and that this one alone ought to form the genus *Lobipes* of Cuvier.

The *Lobipes* of Cuvier, since called by the recent English writers *Lobefoot*, and on which Vieillot imposed the name of *Phalaropus*, is formed in our opinion of this single species, notwithstanding that Cuvier and some English authors include the *P. wilsonii* in it on account of its bill being similar. But the feet are too different to allow of such a

reunion, being in this one precisely similar to those of the flat-billed species.

The bill of the Lobefoot is moderate in length, slender, smooth, cylindrical throughout, and a little stoutish at base, subulate to the tip, with the point narrow and sharp: the upper mandible curves slightly upon the lower at tip, where they do not quite meet, as occurs in some *Totani*: the nostrils are not quite basal, as in the *Holopodius*, and are linear instead of the subovate form of the *Crymophilus*, or true Phalarope: the tongue is also filiform and acute, and by no means broad, fleshy, and obtuse, as in the same group. The tarsi are however longer than in this, though shorter and less compressed than in the *Holopodius*: the toes are likewise intermediate as to length between the two other groups: the middle one is connected with the inner to the first joint, and with the outer to the second; the edging membrane is broad, deeply scalloped, and finely pectinated: the hind toe is very short, only the nail touching the ground. The wings are more elongated than in *Crymophilus*: the tail on the contrary is shorter, and the general form slender, in which respect, and some others also, they bear a resemblance to *Totanus*.

The Hyperborean Lobefoot, as represented in its summer, though not its perfect plumage, is seven and a half inches long, and fourteen and a quarter in extent. The bill is less than an inch long, black, exceedingly slender, and with both mandibles remarkably acute, the upper being rather longer and somewhat inflected at tip. The irides are brown. The head, neck above, back, and wing-coverts, are very dark gray, which comes forward and round on the lower part of the neck, thus encircling the white throat: through the eye from the bill passes a broad dusky stripe to the hind head; a rufous line arises behind the eye, which dilates into a large patch on each side of the neck, the two nearly joining at the back part: the sides of the neck and throat are white, the eyelids white; the back and scapulars are of a darker color than the adjoining parts, with large spots of ferruginous on the upper part of the back, occupying the outer side of the feathers: the rump and upper tail-coverts are banded dusky and white. The sides of the breast are dark cinereous, all the remaining lower parts are white, the base of the plumage being blackish ash, which rather predominates on the flanks, giving to these parts a very dark mixed appearance. The wings are four and a quarter inches long, and when closed reach precisely to the tip of the tail; the under wing-coverts are varied with white and blackish ash; the lesser and middle upper coverts are dark blackish gray, the latter with a few white streaks at the tip of the outer one: the greater are almost blackish, and broadly pure white at the tips, which makes a conspicuous band of pure white across the wings: the primaries are blackish, slightly edged with paler, and with whitish

shafts; the secondaries are white at their base, and on the margin of their blackish tips, some of them being also white on their inner web, so that the white much predominates: the tertials are very long and wholly blackish. The tail is little more than two inches long; the feathers are blackish gray, edged with pale ferruginous at tip. The feet are of a greenish lead; the naked space on the tibia nearly half an inch; the tarsus little more than three-quarters of an inch, and precisely of the same length with the middle toe; the hind toe no more than three-sixteenths of an inch.

In old and perfect specimens, especially old females, this sex being larger and much handsomer, the back, scapulars, and wing-coverts are of a very intense shining black, the anterior part of the back and scapulars being skirted with fulvous, and the wing-coverts edged near the tip with pure white; the sides and also the inferior portion of the neck are of a bright rufous: the two middle tail-feathers are of the same deep black as the back, and the lateral ashy ones are edged with white. It will be remarked that the chief difference between the specimen figured and the quite perfect state resides in the ferruginous coloring of the sides of the neck, which does not meet on the breast, as it does quite broadly in adult birds: considerable variation takes place in this respect, which is entirely owing to the more or less advanced maturity of the bird.

The young before the summer moult are well distinguished by having the forehead, cheeks, throat, sides of the neck and neck beneath pure white, as well as all the under parts, the neck and flanks being the only parts tinged with cinereous: a slight yellowish tinge appears on the sides of the neck: the top of the head only, a band along the nucha, and a patch around the eyes are blackish gray slightly skirted with rufous: the back and scapulars blackish, each feather broadly skirted with bright ferruginous: the wing-coverts blackish, lesser margined with white; greater white at the tip: the inner part of the tarsus is yellow; the exterior and the toes of a yellowish green.

During summer this bird resorts to lakes and fresh waters, though preferring at all times brackish water: in winter they betake themselves to the sea, and are even met with at great distances from land, floating among icebergs in the desolate seas of the north: they swim still better than the other Phalaropes, and are met with farther at sea. This species is mostly seen in pairs, though sometimes in small flocks, and busily engaged in dipping their bill into the water after the minute and almost invisible animals of the ocean. They are also much on the wing, somewhat like the Gulls and Terns, and their cry resembles that of the Greater Tern.

Although the Hyperborean Phalarope is a very rare visitant in the United States, there being a few instances only of its being shot in

Boston Bay and on Long Island, it breeds regularly at Hudson's Bay; arriving there annually in the beginning of June. In the middle of this month they lay three or four eggs on a dry spot among the grass: the nest is placed on a small hillock near a pond, and contains four very small pyriform eggs, resembling those of a Snipe in shape, but much less, and of a deep olive color, blotched with dusky, so thickly as nearly to obscure the ground color. The young fly in August, and they all depart in September for less rigorous climes. In Greenland the species also arrives regularly in April and departs in September. This bird inhabits the Orkney and Shetland Islands, as well as those of the Norwegian sea, in considerable numbers during summer, breeding there. It is very common in the marshes of Sanda and Westra, but especially Landa and North Ronaldsha, the two most northerly of the Orkney Isles, in the breeding season, but leaves them in autumn for milder regions. Its favorite abode is the shores of lakes situated within the Arctic circle: it is plentiful in the northern parts of Sweden, Russia, and Norway, as well as the northern coasts of Siberia, and between Asia and America, extending its irregular wanderings even to the Caspian Sea. In Iceland it is observed to come about the middle of May, and remain in flocks at sea ten miles from the shore, retiring early in June to mountain ponds: remarkably faithful to each other, both sexes are quarrelsome with strangers, and the males are very pugnacious, fighting together running to and fro on the surface of the water while the females are sitting. The species passes regularly along the north coasts of Scotland and the continental coasts of the Baltic Sea. It appears also, though rarely, during spring and autumn in the southern Scandinavian provinces. In England it is very rare, and quite as accidental as in the United States, though it has been casually observed in Germany, France, and even on the great lakes of Switzerland: an individual was killed on the Lake of Geneva in August, 1806, the only one ever seen on that lake, where the flat-billed Phalarope is by no means so excessively rare: the specimen alluded to was killed while swimming and picking up small diptera from the surface of the water. These wanderers are always young birds; but never within my knowledge has an individual been known to stray into any part of Italy. The favorite food of this species is water insects, especially diptera, that abound at the mouths of rivers. The old ones hover round their young when exposed to any imminent danger, repeating *prip, prip*, and at the commencement of August carry them out to sea, at the end of that month being no longer to be found inland. The Greenlanders kill them with their arrows, and eat the flesh, which being oily, suits their taste: they also keep the very soft skin, making use of it to rub their eyes with, and thinking it efficacious in curing a species of ophthalmia to which they are subject.

Although the specific name of *lobata* was given first by Linné to the present species before he bestowed upon it the additional one of *hyperborea*, we have thought it proper to retain the latter, which is also Linnean, because that of *lobata* has been successively applied to each of the three species, and by Latham exclusively appropriated to another, whilst the present has never been so misapplied, and is long since unanimously consecrated to this species. By adopting the prior name of *lobata*, we should have been compelled to quote our own authority, and say *Ph. lobatus*, NOB., since *Ph. lobatus*, LATH., is the *Ph. fulicarius*, and *Ph. lobatus*, ORD., the *Ph. wilsonii*.

TRINGA HIMANTOPUS.

LONG-LEGGED SANDPIPER.

[Plate XXV. Fig. 3.]

Tringa himantopus, Nob. in *Ann. Lyc. New York*, II, p. 157. Id. *Cat. and Syn. Birds U. S.* Sp. 245. Id. *Speech. comp. sp. Philad.*

THE figure of this remarkable bird cannot fail to create a sensation among naturalists, and a careful examination may induce them to attach more importance to our subgenus *Hemipalama* than Baron Cuvier has done, and to admit that it is quite as distinct as his *Machetes*. That this has not already been done is no doubt because the real type, which is this species, was so little known. The *Tringa semipalmata* of Wilson, which we have united with it merely on account of its semipalmented toe, has no real affinity with it, but is similar to the other Sandpipers, and we should never have thought of instituting a separate group for it alone, more than for the *Charadrius semipalmatus*.

The Long-legged Sandpiper is in fact one of those beings that although intimately connected with several groups, with which they have many things in common, yet possess peculiarities sufficient to insulate them completely from all that surround them. It is very remarkable for its anomalous characters. Though decidedly a *Tringa*, it connects, still more evidently than the other species with long subarched bills, that have been placed in *Numenius* by German authors, this latter genus with its own, since to the other common traits of resemblance it unites the semipalmented toes; so that in fact instead of placing it at the head of the *Tringæ*, it should rather be arranged last of the *Numenii*, were this not forbidden by the long and delicate legs and toes, as well as some other peculiarities easier to perceive than to express by words. As a species, in form, dimensions, and especially in plumage, this bird greatly resembles *Tringa subarquata* of Temminck (*Numenius*

africanus, Lath.), from which it is however clearly distinguished by its still longer and semipalmated feet, in which latter only it resembles *T. semipalmata*. It cannot for a moment be mistaken for any other *Tringa*, differing widely from all, and by a complication of anomalies resembling more in general garb and plumage a *Totanus* than a *Tringa*.

We are unable to say much of the habits of this curious Sandpiper, further than that we met with it in the month of July, 1826, near a small freshwater pond at Long Branch. Being there in company with my friend Mr. Cooper, we observed a flock flying about, at which I fired, and killed the one here represented. On first picking it up, I mistook it for a time for *T. subarquata*, a species very rare in the United States, though one of the most common in Italy, but was undeceived upon observing the web between the toes. This is the only specimen I have ever seen, though the gentleman just mentioned informs me that he has recently procured another that was shot in the month of May on the south shore of Long Island.

This new species is nearly nine and a half inches long. The bill, much longer than the head, is decidedly subarched, and measures one inch and five-eighths, and is black. The general plumage is of the same gray color usual in other Sandpipers: the crown is dusky, mixed with whitish and blackish, and with a little bright rusty on the margins; a broad whitish line is above the eye; between the bill and eye dusky, a patch of rust-color on the auriculars: the neck above and on the sides is mixed with whitish; the back and scapulars black, the feathers tipped with dusky gray and marked with pale rusty: the rump is plain dusky gray, and the upper tail-coverts white, regularly banded with black. The throat is whitish, obsoletely dotted with blackish; the whole under surface is then, including the tail-coverts, white, each feather being banded with blackish, and one of the bands terminal. The wings are five and a half inches long; all the coverts plain dusky with lighter margins; the under coverts are marbled with blackish and whitish: the primaries are blackish, the first with a white shaft; the secondaries are pale dusky, edged with whitish. The tail is gray, even, and two inches long, the two middle feathers are acute, projecting beyond the others the length of their points; the outer on each side is also somewhat longer than the others: all are pale dusky with white shafts, the white spreading somewhat along the middle, but particularly at the base, where all the feathers but the middle ones are white, as well as the two outer also on the greater part of their inner vane. The feet are black, and the legs very long: the naked space on the tibia one inch and a quarter: the tarsus one and three-quarters long: the middle toe is very nearly one inch without the nail, and about as much over an inch including it: all the front toes are half-webbed, that is with a membrane connecting them at base.

CHARADRIUS SEMIPALMATUS.

YOUNG SEMIPALMATED PLOVER.*

[Plate XXV. Fig. 4.]

Charadrius semipalmatus, Nob. *Obs. Nom. Wils.* Sp. 219. *Id. Cat. and Syn. Birds U. S.* Sp. 216. *Id. Specch. comp. sp. Philad.* CAUP, *Isis*, XII., 1825, p. 1375, t. 14 (the head and foot). WAGLER, *Syst. Av. I.*, *Charadrius*, Sp. 23.

THE credit of first pointing out the curious though obscure character which distinguishes the present bird from its very near relative the *Ch. hiaticula* of Europe, is due to Mr. Ord, and after verifying it in all our American specimens, we feel satisfied that the true *hiaticula* does not inhabit this continent, and those authors who have recorded it as American, must have mistaken the present species for it: we might therefore have swelled our limited list of synomyms with quotations of all their American specimens described under this name. The species was first established in our "Observations on the Nomenclature of Wilson," and in our "Synopsis," and nearly at the same time by Mr. Caup also, on a single specimen in the Museum of Darmstadt, whose origin was doubtful, but the real one suspected. By a fortunate coincidence, Mr. Caup and myself were led to select the same appropriate name for our bird, which is the less extraordinary, as being suggested by so material an anomaly in the characters; Natural History conducting us in this instance to the result of one of the most exact sciences.

The distinctions between the three European species of Ring-Plovers having been until lately but little understood, it is not to be wondered at if those inhabiting these states were not at once well established: North America counts also three, independently of the Kildeer, and several others not yet properly determined inhabit other parts of the world.

Being now regarded as a new and very distinct species, we have not hesitated to reproduce of its natural size a bird that Wilson has already represented reduced one-half; but his figure of the adult being remarkably good, we have thought it best to give the young, with the subjoined description, referring the reader for other particulars to the accurate account of our predecessor.

The Young Semipalmated Plover is seven inches long, and fourteen in extent: the bill is almost entirely black, being destitute of orange,

* See Wilson's *American Ornithology, Ring-Plover, Charadrius* (*Tringa*, by a typographical error) *hiaticula*, vol. II., p. 357 (ORD's ed. p. 69), pl. 59, fig. 3, for the adult in spring dress, and the history.

and with no more than a little dirty yellowish flesh-color at the base of the under mandible. The frontlet, continued into the lora, and dilating broadly on the auriculars, is of a darkish gray color, somewhat tinged with brown: a frontal band obscurely continued over the eyes is white; there is no sincipital black band: the top of the head is grayish brown down to the neck, which color unites and forms a single mass with the auriculars already described: the throat to the very origin of the bill, and all the under parts, are pure white, with the exception of a collar on the breast, which, as a continuation of the color of the back, is of a brownish gray: the white encroaches somewhat upon the middle of this collar on the lower side; and extends in a broad ring all round the neck: after this collar, the whole upper parts of the body are brownish gray, precisely of the same hue as the top of the head, and like it have each feather slightly edged with pale. The wings are four and three-quarter inches long, exactly reaching the tip of the tail, the smaller and middle coverts and tertials are of the color of the body; the larger are darker, white at the tips, and they form a conspicuous band across; the spurious wing and under wing-coverts are white, somewhat mixed with dingy: the quill-feathers are dark gray, blackish at their point, and on their outer web: the shaft of all is white towards the middle, and the secondaries have moreover a white spot along it. The tail is two and a half inches long, slightly rounded: the outer and shortest feather is white, with a small elongated spot towards the middle of its inner web; the second each side has a much broader and darker one extending on both webs, dingy at base and pure white on the shaft and at tip only: all the remaining ones are dusky at base, with a broad black space towards the point, and are terminated with white, less pure and less extended according as they are nearer to the true middle ones, which are merely edged with whitish. The feet are yellowish; the tarsus is almost an inch long, and the middle toe three-quarters; the outer is connected to the second joint with the middle one by a membrane; and the inner is also connected with the middle, but no farther than the first joint.

In the adult, well described by Wilson, the bill is orange beyond the middle, black at the point: the margins of the eyelids are orange: the irides are brown: the front, throat, neck broadly round, and all beneath pure white: the head is of a gray color, somewhat tinged with reddish: a broad sincipital band, and a broad ring round the base of the neck jet black: lora, continued through the eye into a broad patch dilating on the auriculars, blackish: the back and wing-coverts are rufo-cinereous: the quills are blackish, the fifth, sixth, seventh and eighth being white along the shaft: the secondaries are rufo-cinereous, white at the tips: the tail is blackish, and quite black towards the point; the outer tail-feather is white, the second, third and fourth being also white at their tips.

In size, this species comes nearest *Charadrius curonicus (minor)* of Europe, but in color and all else most resembles *C. hiaticula*.

On the coasts of New Jersey, this species arrives late in April, keeping then in flocks, and until late in May, when they depart in search of more northern climes. No instance is known of their breeding in the United States, but their flocks reappear periodically in September, protracting their stay till the last of October. They run with rapidity, uttering a rather hissing short note, resembling the syllable *thyk, thyk*. It is a remarkable fact that these closely related species of Ring-Plovers, hardly cognisable at a distance by the eye, are at once detected by a practised ear, their note being so very different. For who could mistake the hissing voice of the present for the soft and musical tones of the Piping species, so happily compared by Wilson to a German flute? It is equally well known that the species of Europe differ also in this respect from each other, the true *hiaticula* having very nearly the same hissing voice as the Semipalmated, whilst the *curonicus* has a very melancholy cry, resembling *kirw! kirw!*

ARDEA PEALII.

PEALE'S EGRET HERON.

[Plate XXVI. Fig. 1.]

Ardea Pealii, Nob. in *Ann. Lyc. New York*, II., p. 155. Id. *Cat. Birds U. S.* in *Contr. MacL. Lyc.* Id. *Syn. Birds U. S.*

AMONG the numerous and still badly known tribes of Herons—a genus which even as reduced according to the sounder views of modern authors, yet consists of about fifty species, spread pretty nearly in equal numbers over all parts of the world—a small group has been distinguished in common language before it was recognised by naturalists, under the name of Egret, and it may be admitted into the system as a secondary division of the subgenus *Ardea*, as this is distinguished from *Botaurus*, *Nycticorax*, &c. Their elegance of shape, long and slender bill, but especially their snowy whiteness, and the flowing train of plumes by which they are adorned in a perfect state, make them easily cognisable even at a distance, and seem fully to entitle them to such a distinction. But this very similarity, as one may well imagine, renders the several species, for there are several of them, liable to be easily confounded together. Besides their remarkable similarity of form, colors are wanting to discriminate them; and we are reduced to those exhibited by the bills, lora and feet, to the proportions of the bird and its respec-

tive members, and to the nature of the plumage of the crest and trains that ornament the adults. The privation of these ornaments in the young, and in the adults also when moulting, increases the difficulty, and has caused them to be taken until lately for distinct species: fortunately this source of confusion has been removed; and the females have been ascertained to be similar to their males. The species of Europe and Northern Asia were therefore upon good grounds reduced to two, the Great and the Small, *A. alba* and *A. Garzetta*; but both formerly, and one even till now, were confounded with their two American analogues described by Wilson. In my "Observations on the Nomenclature" of that author, as well as my subsequent writings, without excepting my Synopsis, I admitted the two North American species, and added as a third, the bird now represented in our plate, but I also erred in considering the large American species as the same with the large European: they are in fact no less distinct from each other, however closely related, than *Ardea candilissima* and *A. Garzetta*. The name of *alba* belongs to the European, and that of *egretta* to the American; although Illiger, Lichtenstein, (and Temminck?) not perceiving that it was the legitimate *egretta* of Gmelin and Latham, and having applied that name to the European *alba*, have given the American the new one of *A. leuce*.

Mr. Ord, in the second edition of Wilson's Ornithology, was therefore right in doubting the identity of the two species, and I was mistaken when I declared his doubts unfounded: but he ought not to have quoted as synonymous *A. egretta* of Temminck, &c. Indeed, I am unacquainted with a single instance in which upon due examination the rule will not hold good, that no bird is common to both continents that does not inhabit during summer the high northern latitudes, and the *Ardea alba* and *A. egretta* are not winter birds, but on the contrary summer visitants of Europe and the United States, and do not even then range far to the north: the European moreover is chiefly found in the east, and hardly ever seen in the west of that continent. This alone ought to have led us to detect the discrepancy. In order to clear up this point before taking up the species which more immediately forms our subject, I think it proper to fix all the species of Egrets of which I have a perfect knowledge. These are:—

1. *Ardea alba*, L. (*Ardea Egretta*, Temm., *Ardea candida*, Briss.), which can easily be distinguished by its large stature, combined with a small crest (which is wholly wanting in the American), a much longer bill and longer tarsi, and the fusco-corneous color of the legs. It is well figured by Naumann, Vog. Nachr. tab. 46, f. 91, and the young by Roux, Ornithologie Provençale, pl. 314 (under the name of *Egretta*). It inhabits Europe, especially the oriental parts, and is very common in the Caspian Sea, in Asiatic Turkey, &c.

2. The second species is *Ardea Egretta*, Gmel. Lath. (*Ardea leuce*, Temm.), the one figured by Wilson, whose tall stature allows it to be confounded with the preceding, from which, however, it may be readily distinguished by its perfectly smooth head, its light orange and shorter bill, and black legs. It is found both in North and South America, being mentioned by d'Azara, and we have ourselves received it from Surinam.

3. The third is *Ardea flavirostris*, Temm., not yet figured. A smaller bird, with black legs also, at once known from its two above-mentioned close analogues; from the European by its yellow bill, from the American by its small crest. It is found in Southern Africa and the Australian Islands.

4. The fourth Egret in point of stature is the one we are treating of, well distinguished by its bill, which is flesh color at base, besides the different texture of the ornamental feathers.

As a fifth species we shall cite the *Ardea candidissima* of Wilson, which is the analogue of the *Ardea Garzetta* of Europe, figured by Roux, Orn. Prov. pl. 315. Both these are alike in stature and dimensions, and differ only, as is well known, by the crest, which in the latter consists of but two or three elongated, narrow, subulate feathers; while in the American the crest is formed of numerous elongated pendulous feathers, with loose flowing barbs.

Specimens that we have received from Java under the name of *Ardea nigripes*, Temm., we consider as the young of *A. Garzetta*, and are confirmed in this opinion by the fact of young birds that we possess of the American *candidissima* that stand precisely in the same relation to this species that the supposed *nigripes* does to the *Garzetta*.*

The family of the *Herodii*, *Cultriostres*, or *Ardeidae*, especially when the group *Gruinæ* is withdrawn, and restricting it to our former *Ardeinae*, is a highly natural one. It still comprises, it is true, many aberrant genera, birds of peculiar forms, and remarkable for their strange and oddly shaped bills, though still not so far different as to rank them more properly with any other class; and in their general structure, as well as their habits and dispositions, too much identified with these to justify their separation into an independent family. But the *Gruinæ*, of which the Crane is the type, bear a strong analogy, and even in many respects so much affinity to the Gallinaceous birds, having shorter feet, vegetable food, and even their habits being terrestrial, that we think proper to unite them as a subdivision or subfamily with the *Alectrides*. The artificial character (which, as we are not now treating of them, is all that

* I have lately been informed of the discovery of two new European species of Egrets, one from Sardinia, the other from Moldavia, of which the names and characters are not yet given.

need be mentioned) by which they may be at once distinguished from the *Ardeidæ*, consists in having the hind toe short, and inserted so high up as to be raised from the ground except merely at the tip; while in the *Ardeidæ* it is long and bears with its whole length on the ground, or nearly so. But as, according to the axiom of the great Linné, the character does not constitute the genus, even if the most general and characteristic mark should fail us, it is still no reason why the group is not natural which it has hitherto been believed to represent. A minute peculiarity may furnish a most useful though artificial generic or specific character, while an apparently important and evidently natural one may be of no use for this purpose. In our system the family *Ardeidæ* is composed of nine genera, of which none is subdivided except *Ardea* itself, which with *Ciconia* are all that are strictly typical. Besides the more direct relations, this family is connected with the *Rallidæ* by the curious though anomalous Courlan, also allied to the *Gruinæ* by its feet, as well as to the *Scolopacidæ*. But to these the genus *Eurypyga* forms a very strongly marked and still better passage. At the same time the *Platalea*, which in its feet shows the transition to *Phænicopteridæ*, and by its curiously flattened bill stands alone, is so similar in internal conformation, and especially the sternal apparatus, to the genus *Ibis* that they ought in this respect to go together; though *Tantalus*, one of the *Ibidæ*, is constructed rather upon the osseous plan of the *Ardeidæ*! *Scopus*, *Anastomus*, *Canchroma*, and even *Dromas* to a minor extent, each and all exhibit striking anomalies in their bills, so that *Ardea* and *Ciconia* are the only two typical genera with sharp-pointed bills of the whole group. In order to comprehend all these forms of bills, it becomes necessary to restrict greatly the physical characters of the family, and we can merely observe that in the *Ardeidæ* the bill, whatever be its form, is longer than the head, very robust, and almost always sharp, with cutting edges. The neck is long. The feet long, and always four-toed, the hind toe strong and well developed: the tarsus is longer than the middle toe, and toes and nails both are also long. The wings are of moderate length, and obtuse. The tail is never long, nor otherwise remarkable, and consists of twelve, or only of ten feathers.

There is no marked external difference between the sexes, but the young vary greatly from the adults, and do not gain their complete plumage till their third year.

In habits and internal conformation these birds are all much more alike than in external. They have all a grave, deliberate, and well poised gait: their flight is slow, though light and elevated, and they stretch back their legs like sticks in flying, even more so than other Waders. They are faithfully monogamous in their loves: their nests are built with more art than those of aquatic birds generally, being

placed in trees, thickets, aquatic grasses, and some of the species, half domesticated, even nestle on house tops: the female incubates, while the male merely watches and supplies her with food. Both unite in nursing and rearing their young, which remain in the nest until they are full-fledged. The flesh of these Waders is quite unpalatable.

The genus *Ardea*, when disengaged from the several species forced into it by ancient authors, is a very natural one, differing from the Storks by having the inner toe cleft, whilst they have all the toes semi-palmated at base: the Storks also have the tarsi reticulated, and the middle toe-nail entire, whilst the Herons have the former scutellated and the latter toothed like a saw, to assist in seizing and securing their slippery prey. A peculiarity of the Herons, in which they not only differ from the Storks, but from all other birds, is found in their anatomy: they have but one cæcum, like quadrupeds, while other birds have two. The genus *Ardea* is admitted by all authors, though some modern writers have cut it up into several, which we employ as sub-genera, or groups of still minor importance. Generally divided into three, and by Boie into five, they might with the same propriety be carried to seven or eight; we recognise no more than three, comprising eight secondary groups. The first, which we call more properly Heron (*Ardea*), is well distinguished by its long and slender neck, all well clothed with shortish appressed feathers; and by having a very large part of the tibia naked.

The second, called Bittern (*Botaurus*), has the neck shortish, with loose, longish feathers, and the posterior more or less distichous and lanuginous: the naked part of the tibia is much limited.

In all the Herons the bill is more or less longer than the head, cleft to beneath the eyes, straight, compressed, conic-elongate, acuminate and very acute, higher than wide, and more or less robust. Both mandibles are near their base covered with a kind of very thin cere or membrane: the upper is scarcely longer than the lower mandible, and equal in height: it is longitudinally impressed on the sides with a straight furrow obliterated before: the upper ridge is therefore rather distinct and flat at base, terminated by the frontal feathers transversely placed; towards the point the ridge is perfectly smooth, compressed, and slightly and gradually inclined at tip: the edges, nearly vertical, in some species are perfectly entire, in others obliquely and finely denticulated, in all emarginated at the extreme tip: the palate has in the middle a longitudinal sword-like process, perfectly straight, which towards the throat is more or less conspicuously doubled: the lower mandible has strong and flattened sides, more or less impressed towards the base; it is sharply acute, with the edges drawn in, excessively sharp, quite straight, either entire or slightly serrated obliquely: the inferior ridge is slightly compressed, rather acute, and more or less ascending; the mental angle

is extended beyond the middle of the mandible, is exceedingly narrow, very acute, and feathered: the lora are naked, as well as a portion of the orbits. The nostrils, not quite basal, are placed in the furrow, and are linear, longitudinal, pervious, and above half closed by a naked membrane. The tongue is half the length of the bill, acute, very entire, narrow, membranous, and rather flattened. The body is much compressed. The feet are equilibrat, long and four-toed: the tarsus is always longer than the middle toe, sometimes barely so, sometimes a great deal: in some species the tibia is almost entirely naked, whilst in others it is on the contrary nearly all feathered: the toes are elongated, slender, narrowly bordered by a membrane, all unequal; the middle is connected to the outer one by a membrane that extends to the end of the first joint; the inner toe, a little shorter than the outer, is merely furnished with a very minute basal membrane: the hind toe is long, half equal to the middle one, and all bearing on the ground, being inserted opposite to the inner toe: the nails are compressed, falcate, the hind one largest: the middle one is dilated on the inside into a pectinated sharp edge. The coverings of the tarsi are transversely clypeate, the upper and lower clypei being scutelliform, the opistotarsus and knee are covered with small hexagonal scales; the toes are scutellated. These various forms of the scales are represented with inimitable accuracy by Mr. Lawson in the plate of Peale's Egret. The wings are broad, obtuse, tuberculated, the three outer primaries being longest, and the third hardly shorter than the two first. The tail is short and obtuse, and composed of ten or twelve feathers. The feathers of the lower neck before in the adult bird are pendulous, elongated, mostly acuminate, narrow or ragged: on the occiput and back they are in many species elongated, sericeous, either linear, or laciniate-lacerated, seldom dense, oblong or rounded at the end; the neck is bare at base on the sides, but concealed by a tuft of longish plumes originating at the shoulders: the neck-feathers in some species are short and closely pressed to the body; in others they are softer, longer, especially on the sides, and woolly at base: the tail-feathers are always rounded at the end; those of the lower parts of the body are longish with the webs disjoined, and the barbs plumulose at base: the down is silky.

The females are like the males: the young are different from the adults, only obtaining their full plumage after the third year. They moult annually. The adults are ornamented by long slender feathers, which they lose in moulting, and do not acquire again for some time, when they resemble the young.

These birds are remarkably dull: they inhabit marshes, or watch perched on trees near the water for their prey, which the conformation of their feet enables them to do with ease. They feed exclusively on animals, especially fishes and reptiles, but likewise large insects, and

even small mammalia. They often stand motionless on the margins of ponds or marshes, concealed by the tall grass and weeds, with the neck so bent as to rest the head on the back, waiting patiently for their prey to pass within their reach, when they dart forward their sharp bill with inevitable aim: but when tired of this, which is often unsuccessful, they overcome their natural indolence so far as to move slowly through the mud or water, stirring up as they walk by means of their long toes the frogs or fishes that may be lurking in such places. Timid and cowardly to a great degree, the smallest Hawk will turn their flight and often master them, though capable of inflicting a dangerous blow with their powerful beak. They build in companies in high trees, laying about four eggs. The parents are, to a proverb, tender of their offspring, and carefully provide for them during the long time that they require their assistance. Their voice is loud, hoarse, and monotonous, and heard chiefly at night, when most of them are in motion. Their flight is full of grace, and is performed with the neck bent backwards, and the head resting against the back.

The numerous species of this genus are dispersed over all climates and countries excepting the very coldest. In no group does the size vary to the same extent, as is exemplified in the American species by the gigantic *Ardea herodias* and diminutive *Ardea exilis*.

The Herons properly so called, forming our subgenus *Ardea*, of which the group *Egretta* is a subdivision, have the bill much longer than the head, at base as broad, or even broader than high, and quite straight. Their neck is very long, slender, and ornamented beneath with slender, elongated, pendent plumes: their flanks are thin, their legs very long, and have an extensive naked space above the heel.

They are more diurnal than nocturnal in their habits, are the tallest of the genus, and for the most part feed on fishes. There is scarcely a fish, however large, that a Heron will not strike at and wound, even if unable to carry it off. They both seize them in shallow water by darting their bill, or in deep water by plunging it under as they pass on the wing: they are therefore extremely injurious to fish-ponds, which they devastate to an incredible extent, and consume so great a quantity that a single Heron will destroy in a year several thousand large fishes, without taking into account the small fry which are their chief dependence. Even when gorged with prey, these greedy birds will sit meditating further mischief, with their long necks sunk between their shoulders, and their heads turned to one side, intently eyeing the pool; and their extraordinary power of digestion soon enables them to recommence their task. But like other lean and hungry gluttons, the Heron is never satisfied, his food avails him not, and he is generally an emaciated mass of skin and bones. They do not hide themselves in grassy places, nor attempt to escape danger by retreating to them, but on the contrary

are careful to seek their prey where the weeds are not too high to prevent them from observing the approach of an enemy, to escape whom flight is their only resource. Highly social in their disposition, they travel, fish, and keep together in parties, and build on trees or hanging cliffs, hundreds in company, in retired haunts, where they may expect to enjoy perfect quiet and security. Several of these retreats are celebrated both in America and Europe. The naturalist whose courage and perseverance enable him to penetrate the swamps, and a thousand difficulties that surround one of these recesses, and render them nearly inaccessible, is amply repaid by the astonishing spectacle he witnesses. He finds every branch, every fork, the top of every bush covered with the nests of these birds; and the ear is stunned with the cries and flapping of the wings of the alarmed multitude. The parents, and such of the young as can fly, at once depart, their numbers obscuring the sky: but their attachment for their offspring overcoming their fears, the parents soon return to their defence, and boldly attack any enemy, so that even the blows of sticks, or the report of the fatal gun has no terror for them. Their nests are made with sticks, and lined with wool; but if they find a nest already made, they do not take the pains to build a new one. Their young are as voracious and hard to satisfy as themselves.

The Egret Herons are entirely of a snowy whiteness, without any colored markings on the plumage whatever. We even exclude from them the *Ardea russata* that visits occasionally the south of Europe, and possesses when adult in the greatest degree the long flowing ornamental plumes. This, with the *ralloides*, *speciosa* of Java, &c., we consider as forming a group equivalent in rank to Egret, and we apply to it Boie's name of *Buphus*.

Our second subgenus, *Botaurus*, including the Bittern, Night Herons, and other groups of authors, is characterized by the bill being hardly longer than the head, much compressed, higher than broad, with the upper mandible somewhat curved. Their legs are comparatively short, and the naked space on the tibia restricted: their neck is rather short, thickly and closely covered with long, broad, and loose erectile feathers, and merely downy above: their body is comparatively plump, even fleshy, and sometimes good eating. They are chiefly nocturnal, and haunt in marshy and sedgy places. Their food is principally reptiles, insects, worms, fish-spawn, and they even eat vegetables, and are not by any means so destructive as the Herons proper, nor so skilful at fishing. The birds of this subgenus never sit in open places, but on the contrary keep concealed amongst the highest reeds or grasses, and if an enemy approaches their retreat, they either squat on the ground, or escape between the reeds, and never resort to their slow, heavily raised flight, but in the last extremity. Instead of high trees, the Bitterns

place their nest in a sedgy margin, or among the rushes; and instead of sticks and wool, they are contented with simpler materials, such as sedge, leaves of water-plants or rushes; and they lay seven or eight eggs, twice the number of the true Herons. The young do not require for so long a period the parental care, but on the contrary follow the mother after a few days. When excited, the Bitterns have a curious mode of erecting their loose neck-feathers, causing it to appear very much enlarged. Although well defined as a group, these birds are connected with the true Herons by means of intermediate species that might with propriety be placed in either: as an example of the intermediate species more allied to the Herons, we might quote the beautiful *A. ralloides* of southern Europe, which we look upon as the type of the group *Buphus*. Of those nearer to *Botaurus*, *A. virescens* is an example, with the form of the Herons, but the plumage of the Bitterns: we establish it as the type of a natural though secondary group, to which we cannot do better than apply the name of *Herodias*, proposed by Boie. In the subgenus *Botaurus* also, nature has pointed out several small sections, of which nomenclators have eagerly availed themselves: as among the Herons we have noticed the Egrets, Herons proper, *Herodias*, and *Buphus*, we may also indicate the *Nycticoraces* among the Bitterns, which are distinguished by wearing in the adult state long, tapering occipital feathers; and the *A. stellaris* of Europe, together with its close analogue, *A. minor* of Wilson, may be regarded as the types of a similar small group: another group hardly distinct had been called *Crabier* by the French, but without any fixed character: we have divided these *Crabiers* into two groups, and made them regular by arranging them near the limits of our two subgenera: the larger striated species of *Bitterns* have also been called *Onorés*, (*Tigri-soma*, Sw.)

A third subgenus, which we first instituted, and called *Ardeola*, contains only three species, the smallest of the tribe, and closely allied in form and even markings: one is the European *Ardea minuta*, the other the American *Ardea exilis*, and the third a still less, the New Holland *Ardea pusilla*. In these the female differs somewhat from the male, and the young is different from both. The bill of these small Herons is much the same as that of the true Heron, being longer than the head, higher than broad at base, and with the upper mandible nearly straight: the neck likewise is elongated and rather slender; but, as in the Bitterns, it is merely downy above, and thickly covered on the remaining parts with long, loose, and broad erectile feathers: the body is slender, and exceedingly compressed, like that of the Rails, of which they remind one: the legs are comparatively short, but what strikes most, as a circumstance extraordinary in the Waders, their tibiae are

completely feathered, as in the Woodcock and the land birds: the membrane that unites the toes is moreover simply rudimental.

These birds, which are chiefly nocturnal, have much of the habits of the Rails. They live and propagate in marshy grounds, hiding closely amongst the reeds, and running far and very fast in them rather than take wing. They feed on small fishes, reptiles, spawn, but more especially on water insects.

Returning to our Egret, whose claims to be considered new have been set forth in the first page of this article, we have to state that it is dedicated to Mr. Titian Peale, by whom it was first shot for us in Florida, as a just compliment to a naturalist to whom American Zoology owes so much, and from whom so much may still be expected, retaining as he does all that zeal for science for which his family has been long conspicuous.

We regret not being able to relate any peculiarity in the habits of this bird, which besides Florida, inhabits other analogous climates of America. It is never seen in the Middle States, but appears not to be rare in Florida, for since the individual first brought by Mr. Peale, we have observed it in almost all the collections of birds sent from that country.

Peale's Egret Heron is twenty-six inches long: the bill five inches, flesh-color for nearly three inches from the base, then black to the point; the lora and naked parts of the face are of the same flesh-color, but more delicate: the plumage is uniformly and without exception snowy white, as in all the Egrets: the head nearly from the origin of the bill down to the neck, is thickly and densely set with a large crest, formed of numerous, compact, subulate feathers, more than three inches long; a bunch of these feathers, precisely of the same texture, and even longer, hangs down from the front part of the neck. The structure of these feathers most resembles that of the corresponding plumes of the *A. Garzetta*, and is totally different from those of the *candidissima*. The long flowing plumes of the back are filiform, or eriniform, rather than silky, being by no means delicate, and reach much beyond the tail, with their rays quite straight and rather stiff, and by no means curled, nodding, or divaricate, as in the *candidissima*. The wings are thirteen inches long: the tail is four. The legs, including the toes and nails, are all black, the toes yellow beneath: the nakedness of the tibia extends more than three inches: the tarsus is full six inches long, that is, twice as long as the middle toe and nail: the hind toe without the nail measures more than an inch.

The young is distinguished by smaller proportions, a circumstance for which this group is more than usually remarkable, and by the absence of the ornamental feathers: we have, however, always observed, even in very young specimens, the tendency of the head-feathers to be long and pointed to a considerable extent, indicating the future crest.

ARAMUS SCOLOPACEUS.

SCOLOPACEOUS COURLAN.

[Plate XXVI. Fig. 2.]

Ardea scolopaceus, GMEL. *Syst. Nat.* I., p. 647, Sp. 87. LATH. *Ind. Orn.* II., p. 701, Sp. 89, a very bad description.—*Aramus scolopaceus*, VIEILL. *Nouv. Dict.* VIII., p. 300. ID. *Gal. Ois.* II., p. 134, Pl. 252. NOB. *Ann. Lyc. New York*, II., p. 155.—ID. *Speech. Comp. sp.* Philad. ID. *Cat. and Syn. Birds U. S.* Sp. 237.—*Aramus Carau*, VIEILL. *Nouv. Dict.* VIII., p. 301.—*Rallus Guarauna*, ILL. (*mentio duntaxati*).—*Rallus gigas*, LICHT. *Berlin. Vög. Verz.* p. 79, Sp. 815.—*Rallus ardeoides*, SPIX, *Av. Brasil*, II. Pl. 91.—*Rallus giganteus*, NOB. *Add. Orn. U. S.* in *Journal Ac. Nat. Sc. Philad.* V., p. 31.—*Nothorodius Guarauna*, WAGLER, *Syst. Avium*, I., Sp. 1. GOLDFUSS, *Nat. Atlas, Aves*, Pl. 239.—*Courliri Courlan*, VIEILL. *loc. cit.*—*Guarauna*, MARCGR. *Brasil*, p. 204.—*Courlan ou Courliri*, BUFF. *Ois.* VII., p. 442. ID. *ed.* 1783, VIII., p. 266. ID. *Pl. Enl.* 848.—*Carau*, d'AZARA, *Voy.* IV., p. 223, Sp. 366, an excellent description.—*Scolopaceous Heron*, LATH. *Syn.* V., p. 102, Sp. 79. ID. *Gen. Hist.* VIII., p. 135, Sp. 116.

HERE is a bird, which, if any, might be considered as partaking of a double nature, some authors having regarded it as a Heron allied to the Rails, and others as a Rail somewhat analogous to the Herons. But notwithstanding these more striking affinities, and many besides that shall be carefully pointed out, for it is not contented with these, it fully deserves to constitute a genus by itself. After due consideration, therefore, we have withdrawn it from the Rails, where, unconsciously coinciding in this with Spix, Illiger, and Lichtenstein, we at first arranged it; and finding the genus *Aramus* already proposed for it by Vieillot, willing as we are to admit it to this rank, we do not hesitate a moment to adopt his name, and although we must acknowledge ourselves equally unable with Dr. Wagler to explain the meaning or etymology of the word, we do not think this any reason why we should, with the German ornithologist, apply to this bird a new compound signifying *Spurious Heron*.

It was supposed that South America might furnish us with a second species of Courlan, but it being now a well ascertained fact that the *Carau* of d'Azara is the same as the *Guarauna* of Maregrave, the bird must stand alone in his genus unless new discoveries shall supply him with a companion. This being settled, we shall proceed to give a minute description, that will therefore comprehend both its generic and specific characters.

Although there can be no doubt that our bird is the *Guarauna* of Maregrave, it would be committing a great error to take it for the *Scolopax* (or *Numenius*) *Guarauna* of systematical writers, that being

a very different bird, a species of genuine *Ibis*, which they ought to place under their *Tantalus*, and which has nothing in common with our bird except a somewhat similar speckled appearance, the only source of all this confusion.

Instituting a genus for this bird does not however decide the question where it ought to be placed, for it may still be inquired in what part of the system shall we arrange the genus. The reader cannot fail to be surprised that we, who made a species of Rail of the same bird, should place it, as a genus, in a very distant family. But this is the result of more mature reflection, and however apparently remote may appear to be at first sight the two families *Rallidae* and *Ardeidae*, we have already seen that the subgenus *Ardeola* claims some analogy with the former, and the *Aramus* forms a still better and closer link. It was principally on account of the greatly compressed form of its body that we called it a Rail, and upon well examining the singular form of its bill, which is not observed in any other bird, every ornithologist will be satisfied of the propriety of the course we have finally adopted. We have no hesitation in placing it in the *Ardeidae*, where it is eminently distinguished from all its fellow genera by its toes cleft to the base and entirely separated. Together with *Eurypyga*, it aberrates somewhat towards the *Scolopacidae*, whilst by the manner of insertion of its hind toe, it tends a little towards the *Psophidae*, subfamily *Gruine* (Cuvier even going so far as to make it a genuine *Grus*), and claims again a well-founded resemblance to the most typical form of the genus *Rallus*.

The Scolopaceous Courlan inhabits principally Cayenne, Brazil, and Paraguay, where it is rather common : it is numerous in the Island of Cuba, and other warm parts of America. In the United States, Florida appears to be its most natural residence, and a few instances have occurred of its visiting the Middle States. The Courlan leads a solitary life, or at most keeps in pairs ; night and day they cry out in a loud, sonorous, and resounding voice, *Caraau!* being in the full sense of the word a *Crying-bird*: its chief food is mollusea, and other aquatic animals, and even frogs ; but not snakes nor fishes : when frightened they move their tail. Like all solitary and reserved characters, this bird is remarkably shy : it carefully hides itself, but as soon as aware of being discovered it starts rapidly to a great elevation, its flight being long continued : they walk also with great agility, but never willingly wade into the water : they alight on the very summit of trees : they build in the grass near stagnant water, concealing their nest with much art : they lay but two eggs : the young follow their parents soon after they are hatched ; and are covered with blackish down, the throat only being whitish.

The specimen figured was a female, killed on the fifth of February

by Mr. Titian Peale, at Key Tavernier, on the Florida reef. Mr. Peale took it for the much disputed Crying Bird of Bartram. Mr. Peale saw no other individual, but that we have described was brought by Mr. F. Cozzens from Florida: one or two killed on the coast of New Jersey near Long Branch may be seen in the American Museum at New York. Mr. Peale did not hear the bird utter any sound; it was very unwilling to fly, and caused him some trouble to make it rise from the thick mangroves and other bushes where it kept. It appears to inhabit the low shores and swamps of the rivers and lakes of Florida, and perhaps Georgia, being merely a straggler north of this. Even there we must conclude it to be rather a scarce species, as Mr. Peale could never get information about it, and even upon showing it to the most experienced sportsmen, they declared themselves unacquainted with it, except a few who called it Indian Hen, as they probably would any other rare bird of its size. It runs through the grass exactly in the manner of the Rails, compressing its narrow body to pass through a small hole, and very difficult to catch when wounded.

The Scolopaceous Courlan is two feet and three-fourths of an inch long, and three feet eight inches in extent. The bill, which has but a small gape, and by no means extending like that of the Herons to beneath the eyes, measures four and three-quarter inches in length: of course it is no longer than the head, and may be called much lengthened; it is slender, quite straight, much compressed, being more than thrice higher than broad, and of a corneous consistence: the upper mandible is of equal height almost throughout, slender, from the base to the middle it is compressed, and channelled each side with a deep furrow covered by a kind of cere-like membrane; from where the furrow ends it swells slightly on each side, being there quite smooth, and even appearing polished: there is no vestige of a notch, as in the Herons, and the margins are perfectly entire: these margins from the middle to the angle of the mouth are revolute inside and obtuse, towards the tip they are nearly vertical and acute, forming throughout inside a straight medial channel; the upper ridge is somewhat depressed at base, then slightly inclined to the tip, being obtuse, and nowhere sharp: the lower mandible at base and beyond the middle is of nearly equal height, straightish in the middle; on the sides at base it is covered by a very thin membrane, and slightly furrowed lengthwise; from the middle to the point it is as smooth and polished as the upper one, excessively compressed, with the ridge prominent, rather acute at tip, the margins are perpendicular, approximated, very entire; the bifurcation of the sides is very long, extending beyond the middle of the mandible; it is narrow, and the mental angle formed by it naked, acute, entering the corneous substance of the bill. The nostrils are placed rather distant from the base, and in the lateral furrow, they are entirely perforated,

longitudinal, and somewhat elliptical : the tongue is elastic, narrow, and acute. The bill is yellow at base, and of a corneous blue-black at tip : the eyelids are yellow, the iris brown : the legs pale lead-color, and the nails black.

The feet are elongated, and much of the tibia naked, the bare space measuring three inches : the tarsus, four and a half inches long, much exceeds the middle toe : the four toes are slender, all cleft from the base, long, unequal, and compressed ; the inner is a little shorter than the outer, the middle longest, measuring three inches without the nail ; the hind toe is rather more than one inch, and slender : it is inserted in an unusual manner, opposite to the base of the inner toe, but much higher, and with only the last joint, which is very short, resting on the ground. The unfeathered part of the tibia is covered behind with transverse scutella, the anterior with large angulose scales ; the tarsus behind has a double longitudinal series of knobs, before it is covered with oblique scutella ; the enemidia, that is, the lower part of the naked tibia, are squamulose ; the toes scutellate, and warty beneath : the nails are moderate, arcuated, acute ; the hind nail is rather the smallest : the middle is the largest, and dilates internally into a sharp edge, perfectly entire, and by no means pectinated, any opinions or statements to the contrary notwithstanding.

The body is compressed, but fleshy : the neck cylindrical and slender : the face and lora entirely feathered. When it is stated that some specimens have these parts bare, it is because the other *Guarauna*, which is an *Ibis*, has been confounded with it. The tail is moderate, scarcely six inches long, plane, broad, rounded, and composed of twelve broad feathers.

The wings are twelve and a half inches long, ample, and rounded-obtuse : the first quill is moderately long, and equal with the eighth, and by more than two inches shorter than the second, which is equal to the sixth : it is peculiarly shaped, narrower at base than at tip, where it is very blunt : the third is the longest of all, being however but little longer than the fourth.

The feathers of the neck are short, and rather narrow : those of the body and wing-coverts are rounded on their margins, and soft and dense, the inferior are somewhat loose on their borders. There is no naked place on the sides of the breast, as in the Herons. The general color of the Courlan is a deep chocolate brown, or fuscous sooty hue, reigning all over the bird : the feathers are however paler on their margins, and there is on each from the base along the middle, including the shaft, with the exception of the tip, a large, broad lanceolate, pure white spot. (In the *Ibis Guarauna*, the white occupies the margin instead of the middle of the feathers.) This white spot is larger in proportion to the size of the feather, so that it is more conspicuous on the wing-

coverts, both upper and under, especially as on the back, not reaching to the tip, it is mostly concealed by the overlapping of the feathers: on the larger coverts, however, it consists of a mere streak, as well as on a few of the lower tail-coverts and femorals: generally speaking, however, these parts, as well as the rump, upper and lower tail-coverts, outer large wing-coverts, vent, all the quills, and tail-feathers are unspotted, and of a bright chocolate brown, with even a greenish gloss, darker, and with purplish reflections on the quills and tail: on the contrary, on the head and neck all round, the brown color is paler and duller, and as the feathers are on these parts much smaller, the more extended white longitudinal spots are more closely set, producing a thickly striated appearance. On the crown and cheeks the white is moreover neither so pure nor well defined, which, together with the much less intense ground color, gives these parts a rufous gray look: the throat is entirely whitish.

The sexes present no difference, and the young soon put on the adult plumage.

NUMENIUS BOREALIS.

ESQUIMAUX CURLEW.

[Plate XXVI. Fig. 3.]

Numenius borealis, LATH. Ind. II., p. 712, Sp. 9 (not of Ord, which is *N. hudsonicus*).
Nob. Obs. Wils. Orn. notes. ID. *Cat. and Syn. Birds U. S.* Sp. 244. ID. *Monogr. Num. in Osserv. Cuv. Règn. An.* ID. *Sp. comp. Rom. Phil. sp. Phil.* 187.—*Scolopax borealis*, FORST. *Phil. Trans.* LXII., p. 431 (not of Gmel., &c., which is *Numenius hudsonicus*).—*Numenius brevirostris*, LICHT. *Cat. II.*, *Vog.* p. 75, Sp. 774. TEMM. pl. col. 381.—*Numenius cinereous*, *Sea-side lesser Curlew*, BARTR. *Trav.* p. 292.—*Courlis demi-bec*, TEMM. loc. cit.—*Chorlito champêtre?* AZARA, IV., p. 275, Sp. 307.—*Esquimaux Curlew*, LATH. *Gen. Syn. v.*, p. 125. LATH. *Gen. Hist. ix.*, p. 180, Sp. 10. FORSTER, loc. cit. not of Pennant, which is *N. hudsonicus*.

IN Wilson's standard work are described but two species of Curlew, and no more than this are given by Temminck in his very complete and excellent European Ornithology. We have brought forward three North American and three European species, which, contrary to the generally received opinion, are all distinct from each other, and different in both continents, not one being found in Europe that is also an inhabitant of America. These facts, independent of any reference to the almost interminable confusion pervading the works of preceding authors, will sufficiently justify us in repeating here and stating with more details what we have published in our Monography; in which, if no new species be introduced (and the list is already too long), we

hope to have placed the old ones in a new and more advantageous light.

Perhaps no genus of birds has been less accurately studied, and notwithstanding that it is exceedingly natural, it has but very recently been restricted within its appropriate limits. The appellation it bears was first given by Brisson, yet he was far from assigning its true boundaries. In addition to the Curlews, he comprised in *Numenius* a few other birds (the *Tantali* of Linne), now forming the natural family of *Tantaliidae*, and divided into the genera *Tantalus* and *Ibis*. The true *Numenii* had been much more philosophically classed by Linne in his extensive genus *Scolopax*, which, though not well formed, was still, with very few exceptions, entirely composed of birds belonging to the natural family *Scolopacidae*. Under all circumstances, the union of *Numenius* with *Scolopax* was far more natural than that with *Tantaliidae*; and although we make use of the name given by Brisson, the credit of establishing it in its present acceptation is due to Latham, or perhaps to Illiger, who freed it from extraneous species, and we, with Temminck, Vieillot, and others, adopt it as we find it. The species now regarded as *Numenii* form a very natural group, being closely allied in manners, colors, and somewhat even in size. Hence they have been continually mistaken for each other, erroneously united, or wantonly multiplied, as will be made amply apparent by the synonyms and scientific history of each species.

All the species of Curlews have the bill very long, slender, feeble, much arched, slightly compressed, almost cylindrical, hard and obtuse at tip, and entire: the upper mandible is longest, furrowed for three-fourths of its length, rounded towards the tip; the lower a little shorter. The nostrils are basal, lateral, longitudinal, linear, being placed in the furrow. The tongue is very short, small, and acute. The face is attenuated, and wholly feathered. The feet are rather elongated, slender, bare above the heel; the tarsi cylindrical, half longer than the middle toe, with their integument reticulated: the three fore toes are short, fimbriated, scutellated beneath, *all connected at base by a short membrane* extending to the first articulation; the hind toe is inserted high upon the tarsus, slender, short, but longer than a phalanx of the fore toes, bearing on the ground only at tip; the claws are arcuate, rather short, bluntish; the cutting edge of the middle one being entire.

The wings are long, acute, falconiform, with from twenty-eight to thirty stiff quills: the first primary is longest; the scapulars are elongated. The tail, rather short, is somewhat rounded, and of twelve feathers.

They moult once annually: the females perfectly resemble the males in color, and the young only differ, but can be known at once, by their bill being much shorter and less bent.

Possessing numerous general features common to the Waders of their family, and a few of those which distinguish the *Ibis* and *Tantali*, the Curlews have nevertheless some peculiar traits of their own more easy to perceive than to define. Their physiognomy may be thus described. They have a rather small head, with a remarkably long, slender, and arched beak, longish neck, and body deeper than broad, and apparently gibbous. The wings are long, the tail moderate, the feet rather slender, though not so much so as in the allied genera, and bare for a considerable space above the heel (commonly, but improperly, called the knee). The toes remarkably short and stout. The plumage of the Curlews is composed of a rather thick covering of somewhat loose, though silky feathers, abundantly furnished with down. The colors, consisting of a mixture of grayish brown, white, and blackish, are very dull, and hardly vary in the different species. The sexes are not distinguishable by difference of color or stature; the female is perhaps a trifle smaller than the male. The young scarcely differ in plumage from the adults, but are well marked by their much shorter and straighter bill. They moult but once during the year, and late in the season. We have detected a clue to the species in the medial line of the crown, the color of the rump and of the under wing-coverts and long axillary feathers.

The Curlews are mute, timid, shy and wary. They frequent and seek their food in salt marshes, and along muddy coasts and inlets, where at low water they may be observed in company with other Waders on the mud flats, or at high water roaming along the marshes. They but seldom alight on wet sands, and only when muddy shores are not to be found; always preferring such on account of their flexible bill. They seldom desert the salt water, and are very rarely met with inland, at a distance from the sea or large rivers: during summer, however, they often frequent dry fields in search of berries. They run swiftly, being much upon the ground: their flight is high, very rapid, and long sustained. The voice of the Curlews is loud and whistling: when about to commence their great periodical journeys they congregate in large flocks, rise to a great height, and extend themselves into a vast line: whilst thus travelling onward, they keep up an almost incessant whistling, carefully waiting for each other. These companies only separate during the breeding season. In captivity, though they may linger for weeks or months, they seem to perish at last from the continued operation of melancholy and want of proper food.

Their food is chiefly animal, and in a great degree marine. They prey indifferently upon worms, insects, mollusea, crustacea, and occasionally small fish, and are very dexterous in probing the mud with their long, soft and slender bill, and pulling out of their holes small shell-fish and crabs. In summer, however, they are very fond of ber-

ries, especially those of *Rubus trivialis* or Dewberries, and *Empetrum nigrum*, on which they soon fatten.

The spring is their season for breeding, and the northern regions the place they prefer for this purpose. They are monogamous, lay four or five pyriform eggs, which are deposited with little art on a few bits of reeds or grass placed in the midst of tufts, or in small bushes, for shelter; sometimes they are merely dropped in sand-holes, or on wild open shores. Both sexes sit on the eggs; but the young receive little attention from their parents, and almost as soon as hatched provide for themselves, without requiring their assistance.

This genus, though by no means numerous in species, is not confined to any particular regions of either continent; but is distributed everywhere along the shores from the frozen regions of the North to those of the South Pole, and they appear also in the torrid zone in winter. Their migrations may be traced from North to South according to the seasons. They pass the winter in our temperate regions, generally returning in May from the South, and in September from the North.

In the economy of nature, these birds seem to be of some importance in preventing the superabundant multiplication of numerous marine animals, thus assisting to maintain the equilibrium and preserve the harmony of the Animal Kingdom; as the Flycatching birds serve to check the too great increase of land insects. It is perhaps on this account that they are so generally diffused. In relation to man they appear to be of no less importance, since without being delicious, their flesh is very palatable, and even, when they have fed and fattened on berries, tender and excellent meat: when their nourishment has been derived from the sea it is much inferior. They are pursued both in Europe and America in various ways, and brought in numbers to the city markets. In some districts their eggs are much sought after, but those of other aquatic birds are mixed with them, and offered for sale under the same name.

Wherever the Curlews may be classed by ornithologists, their rank in the system of Nature is at the head of the family *Limicolar*, which they connect with the *Falcatai*. Their *linear* place, therefore, is between the genera *Ibis* of the latter, and *Tringa* of their own family: species of the latter genus are so closely related to them as almost to fluctuate between the two genera. There is a striking affinity on the one hand between some species of *Ibis* and *Numenius*, and on the other between the smaller *Numenii* and *Tringæ* with slightly curved bills, such as *Tringa subarquata*, and also those with semipalmated feet, but especially when they combine both these characters, as our new *Tringa himantopus*. In their own very natural family, the Curlews are more immediately related to *Tringa* and *Limosa*, both in aspect and manners. The

genus *Seolopax* we do not consider as approaching them within several degrees.

Cuvier had attempted to divide this genus into two independent sub-genera, but unsuccessfully, and they must be relinquished even as sections, inasmuch as the characters on which they are based have no existence in nature, as he has since virtually acknowledged by omitting all mention of the group *Phœopus* in his new edition of the *Règne Animal*. This is in fact one of those very natural small genera which do not admit even of well based sections. If the species were numerous, we might perhaps divide them into those with white rumps, and those which have no white on that part, or into those showing the crown of the head marked with a central line, and those without this line. There being however but few species, we consider it to be more philosophical to view them as an undivided genus, beginning with the larger and ending with the smaller species: but at all events the marks we have indicated (of the head and croupe), together with those of the under wing-coverts and long axillary feathers, furnish us with what we have called the clue of the genus. For example, the *Numenius arquata* of Europe is distinguished by its head, not parted by the central line, its large size, long arched bill, white rump, white under wing-coverts and axillary feathers: its American analogue, whose still longer bill has gained for it the name of *longirostris*, has the croupe of the same dark color as the body, with the under wing-coverts, &c., rust-colored. The *phœopus* of Europe, and *hudsonicus* of North America, similar in color and stature, and each ornamented with the medial coronal line, are in like manner distinguishable, the former by the white, the other by the dark-colored croupe; and by the under coverts, in the European white banded with black, whilst in the American they are banded with black and rusty.

The two smallest, the present American species, and the *N. tenuirostris* of Europe, though less completely analogous, are nevertheless both destitute of the coronal line: the present has the rump dark, and the under wing-coverts banded with black and rusty; while the *slender-billed* has them pure white, as well as the rump, and ground of the tail-feathers. The diminutive size of the Esquimaux Curlew will certainly prevent its being confounded with the gigantic *N. longirostris*, especially as its bill is remarkably short, and but little arcuated.

The reader will here have already remarked, we are confident, the curious fact, that all the European species of *Numenius* have white rumps and white under wing-coverts; whilst the American all have the former uniform in color with the remainder of the plumage, and the latter rust-colored.

The true Esquimaux Curlew (we say the *true*, for it is neither the Esquimaux Curlew of Wilson nor of the Arctic Zoology) is one of the

four species that are destitute of the medial coronal line. It is easily known from the large species by its diminutive size, from the small ones by wanting the white rump, from all by its very short bill.

It is but half the size of the species that has usurped its name of *Short-billed*, being hardly fourteen inches in length, and twenty-four in breadth. The bill is no more than two and a half inches long, but little arched, remarkably slender, blackish, the lower mandible rufous at base: the head is pale, with longitudinal lines of brown: the forehead is deep brown, with pale spots; although there is no medial line, it is somewhat indicated by yellowish marks on that part: the eyebrows and chin are whitish: the neck, breast, belly and vent are rufous-white, the two first dashed with brown streaks and arrowheads, and a few slender streaks on the vent: the feathered parts of the thighs are rufous-white, spotted with brown; the sides under the wings, rufous, transversely fasciated with brown: the back is of a deep brown, the feathers margined with yellowish-gray in a serrated manner, and the croupe is uniform with the rest. The wings are long, reaching much beyond the tail; they are brown; the shafts of the prime quills are white; the secondaries and lesser coverts margined with gray: the lower coverts, as well as the long axillary feathers, are ferruginous banded with brown: the rump is brown, the feathers edged and spotted with whitish. The tail is short, brown-ash crossed with darker bands, and slightly edged with whitish. The legs are bluish black; the tarsus is one and three-quarter inches long. The female is perfectly similar to the male, except a very little inferiority in size.

This exclusively American bird is widely spread throughout both sections of the new continent, being traced from the fens of Hudson's Bay in the extreme north, to the warm climates of Brazil, Monte Video, and Paraguay, a circumstance which, however recently observed, or extraordinary, is often repeated with the Waders that are peculiar to America. D'Azara informs us that in Paraguay this species makes its passage in the month of September, and keeps in the open champaigns, either wet or dry, and never on the borders of rivers or marshes: hence he calls it Field Curlew, *Chorlito champêtre*.

At Hudson's Bay this Curlew makes its appearance early in May, coming from the south, and going further north, returning again to Albany Fort in August: it remains there till September, when it departs for the south. It is common in Maine and Nova Scotia during the months of October and November, and still more so at Newfoundland. We have received it from Maine, and from Prairie du Chien in Michigan, and have occasionally met with it also in the markets of New York and Philadelphia: in the Middle States, however, it is by no means common, having escaped the industrious Wilson. This fact proves that our Curlew is fond of extremely remote regions, without

remaining for any length of time in the intervening countries between its winter and summer residences. They collect in small flocks of from ten to twenty; and when starting on the wing utter a cry resembling *bibi*; this whistling note may be heard at a distance. The Esquimaux Curlew lays four eggs, and keeps in flocks composed of young and old together: they feed much on the berries of *Empetrum nigrum*, which imparts to their flesh a delicate flavor.

It has been the lot of all the species of Curlews to be wantonly confounded with each other: only two were reckoned as European, and in them were merged as identical the three American. The *longirostris* was first definitively disunited from the *arquata* by Wilson. Vieillot unaccountably confounded as one two very different species, giving it more than one name, however. The *hudsonicus*, though correctly described by Latham, was referred by all writers, including Temminck, to the European Whimbrel, *N. phaeopus*. The present one he forbore, through extreme caution, to unite also with it, observing that it might be a real species, or at least a constant variety. But when the bird actually fell into his hands, he called his specimens, which were from South America, *Numenius brevirostris*, not recognising in them the *N. borealis* of Latham.

Although we call this bird Esquimaux Curlew, it would perhaps be better to condemn this name altogether, and give this one the really appropriate name of Short-billed Curlew, although this as well as the former appellation has been misapplied. As for the legitimate scientific name, this also might be disputed. *Borealis* was first given by Gmelin to the Hudsonian Curlew, but as he called them *Scolopax*, we have preferred retaining the appellation of Latham, who is admirably correct with respect to the Curlews, being only wrong perhaps in the choice of the name, and certainly in the citation of Gmelin. As for Temminck, in declaring that the new species of Lichtenstein differs essentially from Latham's *N. borealis* (a fact which was doubted by the accurate German himself), he must have had in view our *N. hudsonicus*, Lath., the *Scolopax borealis* of Gmelin.

We can form no opinion on the *N. rufiventris* of Vigors, a supposed new Curlew from the North West Coast: the diagnosis is certainly inconclusive, not embracing the essential characters; and establishes no difference between it and *N. hudsonicus*, of which it also has the size.

The *N. madagascariensis* of Brisson forms a seventh species of *Numenius* peculiar to Southern Africa and Oceanica, allied to the *arquata* and *longirostris*: it is figured on the Pl. Enl. 198 of Buffon. We do not know either *N. virgatus*, or *N. lineatus* of Cuvier, but one of them at all events will have to be referred to the *madagascariensis*.

GALLINULA GALEATA.

FLORIDA GALLINULE.

[Plate XXVII. Fig. 1.]

Crex galeata, LICHTENSTEIN, Verzeich. Mus. Berlin, p. 81, Sp. 826.—*Gallinula chloropus*, NOB. Cat. and Syn. Birds U. S. Sp. 275.—*Fulica major pulla, fronte cera coccinea oblongo-quadrata glabra obducta, membrana digitorum angustissima*, BROWNE, Nat. Hist. of Jam. p. 479 (Red-faced Coote).—The Coot, SLOANE, Jamaica, II., p. 320, Sp. 15.

IN all cases wherein we find two animals, however similar or apparently identical in other respects, but restricted within very far distant localities, between which no line of communication can be traced, and beyond which, as in the present case, they are not known to perform great periodical migrations, we may boldly assert that the individuals of the different countries belong to distinct species, having sprung from a different centre of creation, and not being descendants of the same original type. The few known exceptions to this excellent general rule are daily falling in with it, as they come under the closer observation of the more and more practised eye of the naturalist; and since the separation into different species of the Gallinules that inhabit the different parts of the globe, there is reason to think that no exception whatever will be admitted to exist, and that all that remain are owing to the want of sufficiently minute comparison and examination. No birds, in fact, reappear in widely separated longitudes under forms and colors so similar as the Gallinules, of which we are treating, and if all the species were found in the same country, they would hardly be looked upon even as individual varieties. Yet upon the principle we have set forth, and which we do not fear to maintain, they have a right, and ought properly to be considered, as real species. How different is the stand we now take, fortified by observations in the great field of nature, from that arbitrarily adopted by Buffon; who on the contrary saw everywhere the same species reproduced, but changed by climate, or I know not what, and whenever he could referred every new bird he met with to the paltry creations of Europe.

But to come to facts, and without longer indulging in theory, we shall merely state that the Florida Gallinule differs specifically from the common Gallinule of Europe no less than the Java Gallinule (*Gallinula ardosiaea*, Vieill.), although the differences are almost imperceptible, so as to justify those who have not hitherto distinguished between them, among whom we are to be included ourselves. The true *Gallinula chloropus* is spread over all Europe and the temperate parts of Asia, and is

also met with throughout the continent of Africa from east to west, and from north to south. We have examined specimens from Egypt, others from Senegambia, and from the Cape of Good Hope. The size varies much, even in specimens from the same country, but the *G. chloropus* and *ardosiacea* have always the toes shorter than our American analogue. In fact, even in the largest specimen examined by Lichtenstein, which was from Caffraria, and measured fourteen and a half inches, the middle toe without the nail was only twenty-six lines long: whilst in the Florida specimens of the ordinary size of fourteen inches, the same toe measures at least thirty-four lines. The tarsus likewise, and the other toes, are proportionally longer, and this forms the best discriminating mark. Another might also be drawn from the frontal elypus, but as this extends with age in the different species, it may be deceptive: in full grown birds, however, it is proper to observe, that both the American and Javan species differ from the common kind in having it much wider, and differently shaped: in the American it extends still further back, and is cut somewhat square behind, whilst the Javan has it exactly rounded: in the European it is much less extended, narrow, and comparatively acute. In point of form, markings, proportions of the primaries, and every other particular we could think of, we have been unable to find any distinction, however trifling, between the three species.

The genus Gallinule, restrained within its just limits,* is a small group composed of but five or six species spread over all the warm and temperate climates of the globe, and exceedingly similar in form and colors: only one, that figured by Wilson, assumes the brilliant vesture of its near relations the *Porphyriones*, for which reason some authors have considered it as one of them. Together with the Rails, the Coots, and some others it forms the natural family *Macrodactylî* (*Rallide*), and is more aquatic in its habits than many web-footed birds. Unlike the Coots, however, the Gallinules dislike salt or brackish water, and confine themselves to fresh, and to rivers and streams especially, and they are solitary, or at most the hen is seen with her family, like the Gallinaceous birds of that sex. Being chiefly nocturnal, the Gallinules hide carefully by day among reeds and other aquatic plants; and even in a state of captivity they are so remarkable for this habit, that some which I kept in a yard would take advantage of every hiding-place to escape the eye of man. It was only at the approach of night that they would willingly display on the water their graceful evolutions, swimming in circles, and often striking the water with their tails. From time to time they would rest awhile, placing their necks on the reeds or large leaves of aquatic plants.

* The greater part of authors, and among them Latham and Temminck, improperly unite the Short-billed Rails with them.

Not gifted by nature with the long wings of other Waders, the Water Hens, being anything but wanderers, obey both their conformation and natural disposition by not undertaking long periodical migrations, but are permanently resident in their native countries, merely removing from one station to another within certain provinces, and without roaming over the adjacent districts. They run with rapidity; fly badly; always in motion, and frequently carry their tail high, as represented in the plate, showing the white plumage of the vent, especially when running on the ground. They dive when frightened, but never after food. They feed on small fishes, insects, and some vegetables, picking them up as they swim. They seldom leave the pond or river where they get their food and exercise, and are peculiarly attached to such as are bordered with sedge and bushes; and standing waters, green with vegetation, furnish them with abundant provision of animalcula and pond-weeds. They lay twice or thrice in a season, building their nest upon low trees, stumps and bogs, with sticks and fibrous substances, rushes and weeds, or other coarse materials in great abundance, invariably placing it by the water side. The eggs are very long, of a greenish white, spotted with rufous, and very pointed at the small end. There are nine or ten in the first brood, the subsequent ones less and less numerous, and the mother never leaves the nest without carefully covering them with weeds. The chicks are no sooner hatched than they swim, with instinctive dexterity, pursuing their parent, and imitating all her motions. Thus are two or three broods reared in a season, which while under her care she regularly after their evening's sport leads back to the nest, where she uses every exertion to make them warm, dry, and comfortable: but when grown up and taught to provide for themselves, she turns them off.

The Florida Gallinule, or Water Hen, is fourteen inches long: the bill one and a quarter to the corner of the mouth, and one and an eighth to the posterior portion of the clypeus; it is red, as well as the clypeus, with the point greenish. This clypeus, or bare red membrane spreading over the forehead, is more than half an inch wide between the eyes, occupying a great portion of the head, and being posteriorly cut somewhat square or slightly cordate, the reverse of what is observed in the European, which is rather pointed at this place. The whole plumage from the very base is of a dark plumbous hue, or sooty black, the head and neck being a shade darker, and the lower portion lighter and more tinged with bluish, so that they might be styled cinereous. The mantle, that is, the whole back with the wing-coverts, are highly tinged with olivaceous: the quills are blackish, and the tail deep black, much more than in the other allied species. The under tail-coverts are also deep black, with the lateral pure white: the white also lines the wings externally from all round the shoulder, almost, but not quite to the tip.

of the outer quill, which is white on half the outer part of its narrow web: a few white longitudinal spots may likewise be seen on the under wing-coverts, and very large and conspicuous ones along the flanks, and a few whitish streaks mixed with the plumbeous on the belly. The wings are nearly seven inches long, and the tail more than three. The feet are greenish, with a red ring like a garter surrounding the tibia: the bare space on this is nearly three-quarters, and the tarsus two inches and three-eighths: the middle toe without the nail is more than two and a half, and the nail itself three-quarters: the lateral toes measure more than two, and the hind, one and an eighth. The sexes are precisely alike.

The little that is known of the habits of this Gallinule does not allow us to doubt that it has all those of its close analogues. It is common in Florida and Jamaica on the streams and pools, and extends over a great portion of the southern continent of America: in the middle and northern United States it appears to be quite accidental, for although a few well authenticated instances are known of its having been seen and shot, even as far as Albany in the state of New York, it has escaped the researches of Wilson, as well as my own. It is by no means, therefore, a common bird, and is not known as inhabiting arctic America, ranging much less to the north, even as a straggler, than its European analogue. Its voice is sonorous, resembling *Ka, ka, ka!*

The genus *Gallinula* has the bill shorter than the head, rather stout, much higher than broad, tapering, compressed, straight, convex at the point: both mandibles are furrowed, the upper covers the margins of the lower, is inclined at the point, and spreads at base into a naked membrane occupying the forehead. This conformation, found also in the *Fulicæ*, to which Linné united them, more judiciously than they have since been united with the Rails, in which the front is feathered, is in my opinion of considerable importance: the lower mandible is navicular: the tongue is moderate, compressed, entire. The legs have been described among the characters of the family, the anterior toes being in all extremely long, flattened beneath, and bordered by a narrow membrane, which circumstance alone distinguishes the Gallinules from the Coots, that have a broad membrane cut into festoons. The hind toe bears on the ground with several joints: the nails are compressed, subarched, and rather acute. The wings are convex, rounded, the first primary is shorter than the fifth, the second and third being longest. The tail is so short as hardly to appear from under the coverts. The females scarcely differ from the males, but the young are different from the adults. They moult annually.

The family *Macroductyli*, or *Rallidae*, when restricted to the five genera of which we compose it (one being *Fulica*, which nothing but blind caprice could separate from them), is surprisingly natural. The

bill is short, or of moderate length in the long-billed Rails, hard, thick at the base, straight, compressed, entire, curved at the point, and sharp on the edges. The head is small, the neck well proportioned; the body slender and much compressed. The feet are moderate, rather robust, and without exception four-toed: the naked space on the tibia is rather limited; the tarsus not longer, generally shorter than the middle toe, and *scutellated*: the toes are three before and one behind, remarkably long (the most obvious trait of the family), slender, quite divided, and edged with a decurrent membrane: the hind toe is rather long, articulated almost on a level with the others, resting on the ground a good part of its length: the nails are slender, compressed, and acute. The wings rather short, wide, somewhat rounded, concave and tuberculated; the first primary is not much shorter than the second, the third or fourth being the longest. The tail is short, and of twelve feathers.

The female is smaller, but otherwise differs little from the other sex: the young often differ from the adults: even those that moult twice in a year do not change their colors in moulting.

All these birds have very similar habits: they are all solitary; all fond of concealment and the immediate neighborhood of water: they move nimbly about on marsh plants, walking on the softest mud, and even floating weeds, their characteristic long toes serving admirably the purpose of a broad base. Their food is small animals, seeds and vegetables. They are monogamous, and breed several times in the year: they build their nests on, or close to the water, some being even afloat, and therefore liable to be carried away in floods. The number of eggs varies from five to sixteen, and they are rounded: both sexes alternately sit upon them. The young run about under the parental care, and provide for themselves as soon as hatched; they are remarkably brisk and lively, being born with a thick down of a beautiful velvet black color, whatever else it may finally become. Those that migrate travel by night: owing to their short rounded wings, composed of flaccid feathers, their flight is slow and limited, and by no means rapid, so that they only have recourse to it in the last extremity, when it is performed with the legs hanging down in a way peculiar to themselves, and not stretched out as in the other Waders, or drawn up to the belly as in the generality of birds. It is in running that they excel, and with their long compressed body they make their way so adroitly and swiftly amongst the grass or weeds, that their pursuers are left far behind. They also swim well, and even dive occasionally when there is necessity for it. Their flight is however rapid when elevated, and fairly started. Their voice is strong but hoarse. Their flesh is well-flavored.

RALLUS NOVEBORACENSIS.

YELLOW-BREASTED RAIL.

[Plate XXVII. Fig. 2.]

Gallinula noveboracensis, LATH. Ind. II., p. 771, Sp. 16.—*Fulica noveboracensis*, GMEL. Syst. I., p. 701, Sp. 15.—*Rallus ruficollis*, VIEILL. Gal. Ois. II., p. 168, pl. 266. (A bad figure.)—*Rallus noveboracensis*, NOB. Cat. Birds U. S. Id. Syn. Sp. 273. Id. Sp. comp. Sp. Phil. 212.—*Perdix hudsonica*? LATH. Ind. II., p. 655, Sp. 41.—Le Râle varié à gorge rousse, VIEILL. Nouv. Dict. XVIII., p. 556.—Yellow-breasted Gallinule, LATH. Syn. III., p. 262, Sp. 15. Id. Gen. Hist. IX., p. 419, Sp. 30. PENN. Arct. Zool. II., Sp. 410.—Hudsonian Quail? LATH. Ind. Orn. Suppl. p. 224. Id. Gen. Hist. VIII. p. 330, Sp. 72.

THE genus Rail, and that of the Gallinules, are so closely related, that many authors have either confounded them together, or by their various definitions and acceptations made them to interfere with each other. Thus, for Latham, Temminck, and others, the Short-billed Rails, among which ranks the present species, are Gallinules, although they want that obvious character upon which Linné founded his natural, though too much extended group *Fulica*, and which we also, with Vieillot and others, adopt as its best representative character, namely, the naked frontal clypeus. The genus Rail is therefore very comprehensive and numerous in species, which are spread over all the globe, and may with propriety be divided into two subgenera or groups, the first of which will contain the Long-billed species, under the more restricted name of *Rallus*, containing the true *Ralli* of all authors, whilst the name *Crex*, or rather *Porzana*, or *Ortygometra*, may be consecrated to the Short-billed Rails, improperly ranked by authors with the Gallinules. I say rather *Porzana* or *Ortygometra*, because the name *Crex* might be reserved for a secondary group, instituted for the *Corn-crake* alone (*Rallus crex*, L.) an European bird, whose *dry-land* habits, so different from those of its congeners, have, with apparent propriety, induced Bechstein and others to elevate it to the rank of a full genus. Its land habits are so peculiar, resembling more those of Gallinaceous birds than of Waders, that notwithstanding a perfect similarity of conformation, we do not hesitate to grant it the distinction of a section for itself, especially as we are at last, after a minute examination, able to assign it a character drawn from the respective proportions of the toes and tarsus. This is, however, the result of extraordinary pains. In the Land Crake of Europe (and probably in a few analogous foreign species) the middle toe without the nail is shorter than the tarsus, whilst in the Water Crakes it is longer. The hind toe is also shorter and

rather more elevated from the ground. All the other Rails and Crakes are, though much less aquatic than the Gallinules and Coots, always found in marshes, swamps, lakes, and their reedy margins, or in their vicinity, and they even swim occasionally, though not habitually. The *Ortygometræ*, or Crakes, are again subdivided by the modern English school into two groups, which they elevate to the dignity of genera, under the names of Crake and Craker, but to which they assign no character. At least, Dr. Leach, the author of the genus *Zapornia*, did not, as far as I know, characterize the group, nor is my good friend at present able to point out the difference. However this may be, the only species referred to it is the European *Rallus pusillus*, whilst its close relative the *porzana*, and even the *R. baillonii* are left in *Ortygometra* with the *Rallus crex*, which with great inconsistency the same writers omit to distinguish separately, as has been done by some Germans and Italians. It will not be useless here to bear in mind that even the two chief divisions of this natural genus pass so insensibly into each other as to make it impossible to separate the connecting species, so that a great many Brazilian Rails are arbitrarily placed in either subgenus, notwithstanding that the extremes—which among the four North American species may be exemplified by this, the Yellow-breasted namely, and the Virginia Rail—are so widely different: and this furnishes additional proof of the inexpediency of Latham's arrangement, however it may have since been admired and imitated. Our genus Rail, which we maintain to be natural, though closely related to *Gallinula*, and especially *Porphyrio*, is easily known at once from them all by the feathered front, common to all the species.

The bill, varying in length, which affords the means of distinguishing the two subgenera, is in all the Rails more or less thick at base, generally straight, and always compressed: the upper mandible is furrowed each side, somewhat vaulted and curved at tip, its base extending upwards between the feathers of the front: the nostrils, placed in the furrow, are medial, oblong or longitudinal, open and pervious beneath, and covered at base by a membrane (by which conformation they differ essentially from the Porphyrios): the tongue is moderate, narrow, compressed, entire, acute, fibrous at tip: the forehead is feathered: the body very compressed and thin flanked. The naked space on the tibia is small, the tarsi subequal to the middle toe, somewhat compressed, so as to make up for the want of membrane in the analogy to the Web-footed, that other less aquatic Wading birds exhibit. We are particular in remarking this, for the toes are entirely divided, and the decurrent membrane extremely narrow. The hind toe equals in length one phalanx of the middle, and is inserted a little higher than the others: the nails are short, compressed, curved, and acute. The first primary is shorter than the fifth; the second, third, and fourth being the longest. The

tail is very short, the feathers flaccid, not appearing from beneath the coverts.

The female is generally, though not always, similar to the male, an exception being met with in one of the small European species. The young differ much from the adult. They moult twice a year.

The bill of the subgenus *Rallus* (true Rails) may be thus described: longer than the head, slender, straight, subequal throughout, compressed at base, cylindrical and obtuse at the point; upper mandible furrowed beyond the base: nostrils more basal, linear.

In the Crakes, of which the present is an example, the bill is shorter than the head, robust, much higher than broad at base, tapering, compressed and acute at the point: upper mandible furrowed at base only, a little curved at tip: the lower is navicular: the nostrils exactly medial, oblong. Apparently the group is easy to define, but as if nature took delight in baffling our attempts at exactness, the species are found to pass from one form to another by nice and insensible degrees.

This Rail, like all others, inhabits swamps, marshes, and the reedy margins of ditches and lakes. By a singular coincidence, it was in the market of New York that, in the beginning of February, 1826, I first met with this pretty species, which appears to have escaped the industrious research of Wilson, although found equally in Pennsylvania in winter, where it is, however, very rare. We can hardly believe it is to be found in the south or south-west, notwithstanding we have been credibly informed of the circumstance. But we have no hesitation in declaring it an arctic bird, for we do not doubt that it is the Hudsonian Quail of Latham, thus miscalled by superficial observers on account of its general resemblance in plumage and size to the true Quail of Europe; besides which we have received it ourselves from the extreme northern limits of the American continent, and have information of its inhabiting near the most north-western lakes, such as the Athabasca.

The Crakes, as well as the true Rails, lead a solitary life: they are timid and shy, screening themselves from observation amidst the tall reeds, so as hardly ever to be seen except when surprised, which does not very often happen, and forced for a moment to have recourse to their short wings. But they prefer to evade dangers by their rapid movements among the aquatic herbage, which the compressed form of their body enables them to execute with the greatest facility, however entangled the stalks, or narrow the interstices. They also swim and dive tolerably well, when compelled to take the water, hiding all but the tip of the bill, but are by no means so essentially aquatic as the Gallinules, or their close relatives the *Porphyriones*. They also breed in marshes, among weeds and thickets, placing the nest near the water's edge, or, fastening it to the reeds, they build a floating habitation. In most of the species (how it is in the present we do not know), the eggs are about

eight, generally seven or nine in number, their color being always of a green more or less tinged with olive, and very oval in shape. Different in this from the Gallinules, they prefer stagnant to clear waters, and always keep where the grass is high, and particularly avoid sand and exposed shores. Notwithstanding their apparently limited powers of flight, and a conformation similar to that of the sedentary and unenterprising Gallinules, they periodically undertake great journeys. They walk with agility and ease, raising their head, elevating their feet, and jerking up their tail: they alight sometimes on low branches, never on trees, except to escape a very close chase. Of a nocturnal disposition, they hide closely by day, seeking their food in the morning and evening, or by moonlight when they emerge from their retreats. Their food is both animal and vegetable; they search eagerly after worms and snails, and are no less fond of certain leaves, and the seeds of marsh plants.

The following description is taken from a fine male, procured, as we have mentioned, in the neighborhood of New York in the winter.

Length hardly six inches, extent about ten: bill six-eighths of an inch long, exceedingly compressed, of a greenish-dusky, at base beneath on the margins of both mandibles, and the ridge near the front, dull yellowish-orange; irides dark drab: feet dirty flesh-color; tarsus one inch; middle toe an inch and one-eighth long. Base of the whole plumage slate. Head above chocolate-brown, the feathers being slightly skirted with cinnamon-ferruginous, and on the hind part minutely dotted at tip with white; over each eye a broad stripe of cinnamon-ferruginous, a chocolate spot between the bill and eye inconspicuously continued beyond it, the chocolate-brown color descends from the nucha to the back on the upper part of the neck in a broad stripe, the feathers of which are widely skirted with cinnamon-ferruginous, and crossed by two narrow white bands, one of which is terminal; those nearer to the neck, and the feathers of the rump having only the terminal band; sides of the neck and whole under surface yellowish-ferruginous, each feather being tipped with darker ferruginous, which gives a waved appearance to those parts, the waves being more intense on the lateral parts: throat and belly whitish, but passing insensibly into the general color; flanks and thighs darker, with the two white transverse lines, as on the back. Wings when closed reaching to the tip of the tail; upper wing-coverts dark slate broadly margined with olive-ferruginous, and each with two white narrow spots representing the usual lines; margin and spots becoming by degrees inconspicuous towards the outer coverts; inferior wing-coverts and axillary feathers white; quill-feathers plain grayish, considerably lighter beneath, and with the shafts above darker; last of the primaries and first of the secondaries with two or three white dots very irregularly disposed, five or six nearest to the body white on a great part at tip, the last becoming, however, more generally grayish, and

only mottled with white; tertials, or rather scapulars, blackish, very widely bordered each side with different shades of yellowish-ferruginous, of which the palest is outside, and crossed by the two narrow white lines, having besides a rudiment of a third, equidistant; these scapulars form a whole with the wing-coverts and the feathers of the back, being of the same color, only somewhat more brilliant. Tail very short, feathers blackish, each side ferruginous, with the two white lines, but interrupted, and neither at the tip; the tail is altogether concealed in its upper and lower coverts; the upper are of the same color, but have only a terminal white band, whilst the inferior are black at base, and with a broad and vividly ferruginous tip.

This is the most brilliant specimen I have seen, and I must declare that it had all the appearance of being adult. Others did not, however, differ in anything except in having the colors duller and less decided: nor did I notice any difference between the sexes, except a little in size, the female being smaller. According to Vieillot, however, the plumage I have so minutely described could have been only that of the young bird: he states the adult male to be different in color both from the adult female and the young, but as the differences appear to consist more in the language of his imperfect descriptions than in anything else, we shall bestow no further notice upon them.

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