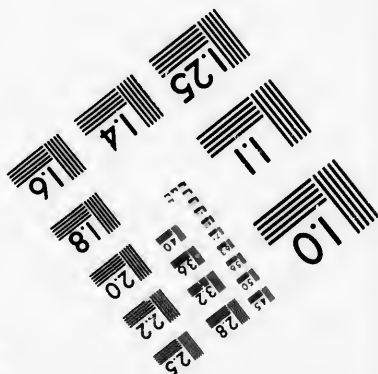
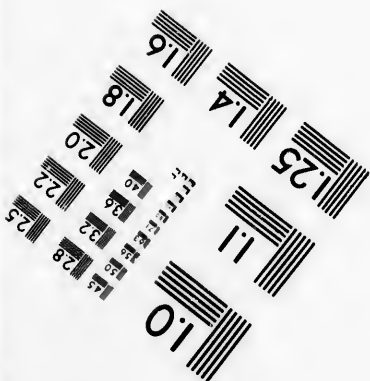
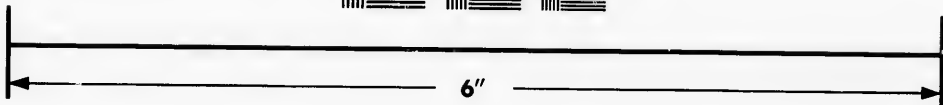
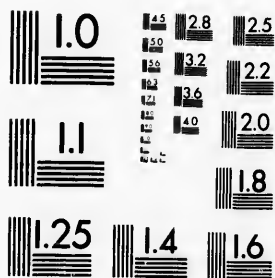


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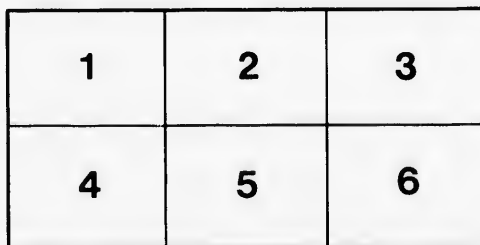
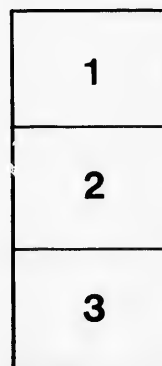
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ORNITHOLOGY
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EASTERN NORTH AMERICA.



IN TWO VOLUMES.

VOL. II.



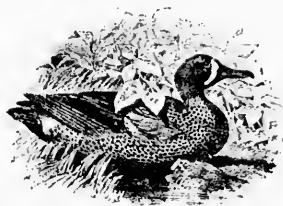
A POPULAR HANDBOOK
OF THE
ORNITHOLOGY
OF
EASTERN NORTH AMERICA.

BY
THOMAS NUTTALL.

SECOND REVISED AND ANNOTATED EDITION

By MONTAGUE CHAMBERLAIN.

WITH ADDITIONS
AND ONE HUNDRED AND TEN ILLUSTRATIONS IN COLORS.



Vol. II.
Game and Water Birds.

BOSTON:
LITTLE, BROWN, AND COMPANY.

1897.

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PASSENGER PIGEON.

WILD PIGEON.

Ectopistes migratorius.

CHAR. Above, grayish blue, deeper on head and rump, back tinged with brown; primaries blackish with border of pale blue; middle tail-feathers dusky, the remainder shading through blue to white; neck with metallic reflections of golden purple and wine color; under parts brownish red with a purple tint shading through purplish pink to white.

Nest. In tree. — a frail platform of twigs.

Eggs. 1 or 2; dull white; 1.45×1.05 .

The Wild Pigeon of America, so wonderful for its gregarious habits, is met with more or less according to circumstances

from Mexico to Hudson Bay, in which inhospitable region it is seen even in December, weathering the severity of the climate with indifference, and supporting itself upon the meagre buds of the juniper when the ground is hidden by inundating snows. To the west it is found to the base of the Northern Andes, or Rocky Mountains, but does not appear to be known beyond this natural barrier to its devious wanderings. As might be supposed from its extraordinary history, it is formed with peculiar strength of wing, moving through the air with extreme rapidity, urging its flight also by quick and very muscular strokes. During the season of amorous address it often flies out in numerous hovering circles; and while thus engaged, the tips of the great wing-feathers are heard to strike against each other so as to produce a very audible sound.

The almost incredible and unparalleled associations which the species form with each other appear to have no relation with the usual motives to migration among other birds. A general and mutual attachment seems to occasion this congregating propensity. Nearly the whole species, which at any one time inhabit the continent, are found together in the same place; they do not fly from climate, as they are capable of enduring its severity and extremes. They are even found to breed in the latitude of 51 degrees, round Hudson Bay and the interior of New Hampshire, as well as in the 32d degree in the dense forests of the great valley of the Mississippi. The accidental situation of their food alone directs all their movements; while this continues to be supplied they sometimes remain sedentary in a particular district, as in the dense forests of Kentucky, where the great body remained for years in succession, and were scarcely elsewhere to be found; and here, at length, when the mast happened to fail, they disappeared for several years.

The rapidity of flight, so necessary in their vast domestic movements, is sufficiently remarkable. The Pigeons killed near the city of New York have been found with their crops full of rice collected in the plantations of Georgia or Carolina;

and as this kind of food is digested by them entirely in twelve hours, they must have travelled probably three or four hundred miles in about the half of that time, or have sped at the rate of a mile in a minute. With a velocity like this, our Pigeon might visit the shores of Europe in less than three days; and, in fact, according to Flemming, a straggler was actually shot in Scotland in the winter of 1825. Associated with this rapidity of flight must also be the extent and acuteness of its vision, or otherwise the object of its motions would be nugatory; so that while thus darting over the country almost with the velocity of thought, it still keeps up a strict survey for its fare, and in passing over a sterile region sails high in the air with a widely extended front, but instantly drops its flight at the prospect of food, flying low till it alights near an ample supply.

The associated numbers of Wild Pigeons, the numerous flocks which compose the general swarm, are without any other parallel in the history of the feathered race; they can indeed alone be compared to the finny shoals of herrings, which, descending from the Arctic regions, discolor and fill the ocean to the extent of mighty kingdoms. Of their amazing numbers and the circumstances attendant on this fact, the reader will do well to consult the indefatigable Wilson and the celebrated Audubon. Our limits and more bounded personal information will not allow us to enlarge on this curious and extraordinary subject. To talk of hundreds of millions of individuals of the same species habitually associated in feeding, roosting, and breeding, without any regard to climate or season as an operating cause in these gregarious movements, would at first appear to be wholly incredible if not borne out by the numerous testimony of all the inhabitants of the neighboring districts. The approach of the mighty feathered army with a loud rushing roar and a stirring breeze attended by a sudden darkness, might be mistaken for a fearful tornado about to overwhelm the face of Nature. For several hours together the vast host, extending some miles in breadth, still continues to pass in flocks without diminution. The whole air is filled

with birds ; their muting resembles a shower of sleet, and they shut out the light as if it were an eclipse. At the approach of the Hawk their sublime and beautiful aërial evolutions are disturbed like the ruffling squall extending over the placid ocean : as a thundering torrent they rush together in a concentrating mass, and heaving in undulating and glittering sweeps towards the earth, at length again proceed in lofty meanders like the rushing of a mighty animated river.

But the Hawk is not their only enemy : tens of thousands are killed in various ways by all the inhabitants far and near. The evolutions of the feeding Pigeons as they circle round are both beautiful and amusing. Alighting, they industriously search through the withered leaves for their favorite mast ; those behind are continually rising and passing forward in front, in such rapid succession that the whole flock, still circling over the ground, seem yet on the wing.

As the sun begins to decline, they depart in a body for the *general roost*, which is often hundreds of miles distant, and is generally chosen in the tallest and thickest forests, almost divested of underwood. Nothing can exceed the waste and desolation of these nocturnal resorts ; the vegetation becomes buried by their excrements to the depth of several inches. The tall trees for thousands of acres are completely killed, and the ground strewed with massy branches torn down by the clustering weight of the birds which have rested upon them. The whole region for several years presents a continued scene of devastation, as if swept by the resistless blast of a whirlwind. The Honorable T. H. Perkins informs me that he has seen one of these desolated roosting-grounds on the borders of Lake Champlain in New York, and that the forest to a great extent presented a scene of total ruin.

The *breeding-places*, as might naturally be expected, differ from the *roosts* in their greater extent. In 1807, according to Wilson, one of these immense nurseries, near Shelbyville in Kentucky, was several miles in breadth and extended through the woods for upwards of forty miles. After occupying this situation for a succession of seasons they at length abandoned

it, and removed sixty or eighty miles off to the banks of Green River in the same State, where they congregated in equal numbers. These situations seem regulated by the prospect of a supply of food, such as beech and oak mast. They also feed on most kinds of pulse and grain, as well as whortleberries, with those of the holly and nettle tree. Wilson often counted upwards of ninety nests in a single tree, and the whole forest was filled with them. These frail cradles for the young are merely formed of a few slender dead twigs negligently put together, and with so little art that the concavity appears scarcely sufficient for the transient reception of the young, who are readily seen through this thin flooring from below. The eggs are white, as usual, and only two in number, one of them abortive, according to Wilson, and producing usually but a single bird. Audubon, however, asserts that there are two, as in the tame Pigeons, where the number of the sexes in this faithful tribe are almost uniformly equal. Their *cooing* call, billing, and general demeanor are apparently quite similar to the behavior of the domestic species in the breeding-season. Birds of prey, and rapacious animals generally, are pretty regular attendants upon these assailable communities. But their most destructive enemy is man; and as soon as the young are fully grown, the neighboring inhabitants assemble and encamp for several days around the devoted Pigeons with wagons, axes, and cooking utensils, like the outskirts of a destructive army. The perpetual tumult of the birds, the crowding and fluttering multitudes, the thundering roar of their wings, and the crash of falling trees, from which the young are thus precipitated to the ground by the axe, produces altogether a scene of indescribable and almost terrific confusion. It is dangerous to walk beneath these clustering crowds of birds, from the frequent descent of large branches broken down by the congregating millions; the horses start at the noise, and conversation can only be heard in a shout. These *squabs*, or young Pigeons, of which three or four broods are produced in the season, are extremely fat and palatable, and as well as the old birds killed at the roosts are often, with

a wanton prodigality and prodigious slaughter, strewed on the ground as fattening *food for the hogs*. At the roosts the destruction is no less extensive; guns, clubs, long poles, pots of burning sulphur, and every other engine of destruction which wanton avarice can bring forward, are all employed against the swarming host. Indeed for a time, in many places, nothing scarcely is seen, talked of, or eaten, but Pigeons.

In the Atlantic States, where the flocks are less abundant, the gun, decoy, and net are put in operation against the devoted throng. Twenty or even thirty dozen have been caught at a single sweep of the net. Wagon-loads of them are poured into market, where they are sometimes sold for no more than a cent apiece. Their combined movements are also sometimes sufficiently extensive. The Honorable T. H. Perkins remarks that about the year 1798, while he was passing through New Jersey, near Newark, the flocks continued to pass for at least two hours without cessation; and he learnt from the neighboring inhabitants that in descending upon a large pond to drink, those in the rear, alighting on the backs of the first that arrived (in the usual order of their movements on land to feed), pressed them beneath the surface, so that tens of thousands were thus drowned. They were likewise killed in great numbers at the roosts with clubs.

Down to twenty years ago immense flocks of Pigeons were seen yearly in every State of New England, and they nested in communities that were reckoned by thousands. Now, in place of the myriads that gathered here, only a few can be found, and these are scattered during the breeding-season, — each pair selecting an isolated site for the nest.

Twenty years ago the Wild Pigeon was exceedingly abundant in the Maritime Provinces of Canada; now it is rare. McIlwraith sends a similar report from Ontario. Wheaton, in Ohio, finds it "irregular and uncommon," and writes of the "throngs" that formerly nested there. Ridgeway says nothing of its occurrence in Illinois to-day, but repeats the story of the older observers, to whom it was familiar. Warren says it appears in Pennsylvania in the fall, but no longer in the abundance of former years. To-day we must go to the upper regions of the Mississippi valley and

to the heavily timbered districts of Michigan to find large flocks of Pigeons, and even there we can find but a remnant of the hosts that assembled in those regions a few years ago.

The most important of recent contributions to the biography of this species is Mr. William Brewster's article in "The Auk" for October, 1889. He tells there of a "nesting" in Michigan in 1877 that covered an area twenty-eight miles long and three to four miles wide, and says: "For the entire distance of twenty-eight miles every tree of any size had more or less nests, and many trees were filled with them."

Brewster visited Michigan in 1888, and heard that a large flock had passed over the northern section of the southern peninsula, but it had gone farther north before nesting. — he could not find it. He thinks the flock was sufficiently large to stock the Western States again, were these birds protected for a few years from the terrific slaughter that now imperils their existence; for it is simply this slaughter that has diminished the numbers of the birds. There is no mystery about their disappearance, as many writers have tried to represent. Doubtless this species has been irregular in appearing in any given locality at all times, the movements of the flocks being influenced by the food supply. But the Pigeons have been exterminated in the East just as they are being exterminated in the West, — by "netting." One old netter told Mr. Brewster that during 1881 as many as five hundred men were engaged in netting Pigeons in Michigan, and, said he, "They captured on the average twenty thousand apiece during the season." At this rate the Pigeon will soon join the buffalo on that list so disgraceful to humanity, "the extinct species," — a list that will be filled rapidly if a check is not put on men's avarice and the law's shameful negligence.

WHITE-CROWNED PIGEON.

COLUMBA LEUCOCEPHALA.

CHAR. General color dark slate blue, darker on wings and tail, paler below; upper part of head white; cape on hind neck of rich maroon, and below it a band of metallic green, each feather bordered with scale-like patches of black. Length about 13½ inches.

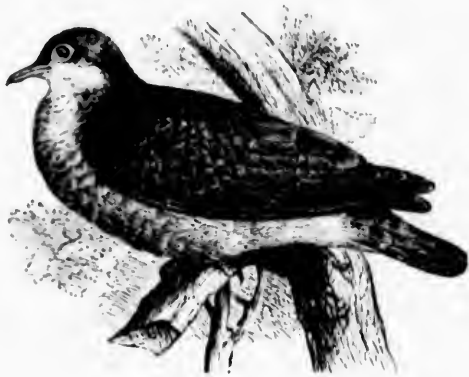
Nest. In low tree or bush, made of twigs and roots, lined with grass.

Eggs. 2; white; 1.40 × 1.05.

This species, well known as an inhabitant of Mexico and the West Indies, is also gregarious, and found in great numbers

on the rocks of the Florida Keys, where it breeds in society and when first seen in the spring feeds principally upon the beech-plum and the berries of a kind of palm. From the peculiar selection of its breeding-places it is known in some of the West Indies, particularly Jamaica, St. Domingo, and Porto Rico, by the name of Rock Pigeon. It likewise abounds in the Bahama islands, and forms an important article of food to the inhabitants, — particularly the young birds as they become fully grown.

According to Audubon, these birds arrive on the southern keys of the Floridas, from the island of Cuba, from the 20th of April to the 1st of May, remaining to breed during the summer season. They are at all times extremely shy and wary, remaining so indeed even while incubating, skipping from the nests and taking to wing without noise, and remaining off sometimes as much as half an hour at a time. In the month of May the young squabs are nearly able to fly, and are killed in great numbers by the wreckers who visit the keys. The nest is placed on the summit of a cactus shoot a few feet from the ground or on the upper branches of a mangrove, or quite low impending over the water; externally it is composed of small twigs, and lined with grass and fibrous roots. The eggs are two, white, rather roundish, and as large as those of the domestic Pigeon. This bird has apparently several broods in the season. His cooing may be heard to a considerable distance; after a kind of crowing prelude he repeats his *koo koo koo*. When suddenly approached, he utters a hollow guttural sound, like the Common Pigeon. White-crowned Pigeons are easily domesticated, and breed in that state freely. About the beginning of October they are very numerous, and then return to pass the winter in the West India islands.



KEY WEST QUAIL-DOVE.

PARTRIDGE PIGEON.

GEOTRYGON MARTINICA.

CHAR. Above, reddish purple, the neck and head with metallic reflections of green; below, pale vinaceous, fading to white on chin, and to buff on under tail-coverts; white of chin extends below the eyes. Length about 11 inches.

Nest. In low branches, sometimes on the ground; made of light twigs.

Eggs. 2; white; 1.40 × 1.00.

This beautiful species, originally discovered in Jamaica, was found by Audubon to be a summer resident on the island of Key West, near the extremity of East Florida; it retires in winter to the island of Cuba. Its flight is low, swift, and protracted, keeping in loose flocks or families of from five or six to a dozen. These dwell chiefly in the tangled thickets, but go out at times to the shore to feed and dust themselves. This bird contracts and spreads out its neck in the usual manner of Pigeons. Its cooing is not so soft or prolonged as that of the Common Dove; the sound resembles *whoe whoe-oh-oh-oh-oh*. When surprised, it gives a guttural, gasping sound, somewhat like that of the Common Pigeon in the same circumstances. Quail Doves keep usually near shady secluded ponds in the thickest places, and perch on the low branches of the trees. The nest is formed of light dry twigs, sometimes

on the ground, on the large branches of trees, or even on slender twigs. On the 20th of May it will contain two white eggs, almost translucent. In July these pigeons come out of the thickets in flocks of all ages, and frequenting the roads to dust themselves, are then easily procured and considered good food. They feed chiefly on berries and seeds, and particularly the sea-grape. They depart for Cuba or the other West India islands about the middle of October.

This species is now met with only on Key West and the extreme southern islands of Florida, and even there is a rare bird.

NOTE. — A specimen of the RUDDY QUAIL-DOVE (*Geotrygon montana*) was captured on Key West in December, 1888. — the first taken within the borders of North America.

ZENAIDA DOVE.

ZENAIDA ZENAIDA.

CHAR. Above, olive gray with a red tinge; top of head and under parts purplish red; neck with metallic reflections; a black patch on wing-coverts; tail with terminal band of black tipped with white. Length about 10 inches.

Nest. In low bush; a slight affair of fine twigs. The nests are sometimes placed on the sand and concealed by tufts of grass, and these ground-nests are compactly built of leaves and grass.

Eggs. 2; white; 1.20 × 0.95.

This beautiful little species inhabits the Keys of Florida, but is rare. Individuals have been found in the neighboring island of Cuba. They keep much on the ground, where they dust themselves and swallow gravel to assist digestion. When rising on the wing, the same whistling noise is heard from the motion of their wings, as is the case of the common Carolina Turtle Dove.



MOURNING DOVE.

CAROLINA DOVE. TURTLE DOVE.

ZENAIIDURA MACROURA.

CHAR. Male: above, grayish blue, the back washed with brownish olive; sides of head and neck and breast purplish red; belly buffish; sides of neck with metallic reflections; a black spot on the cheeks; tail with bar of black, outer feathers broadly tipped with white. Female: similar, but duller; breast brownish. Length about 12 inches.

Nest. In a tree or bush or on fence rail or rock.—a mere platform rudely made of twigs.

Eggs. 2-4 (usually 2); white; 1.15×0.85 .

This almost familiar Pigeon in the course of the spring leisurely migrates through the interior as far as to Canada, though in the Eastern States it is rarely met with to the north of Connecticut. Many appear sedentary in the warmer States, where they breed as far south as Louisiana. They are also said to inhabit the Antilles, and we saw them not uncommon in the Territory of Oregon. In the warmer parts of the Union they commence laying early in April, and in South Carolina I heard their plaintive *coo* on the 29th of January; but at the extremity of their range they scarcely begin to breed before the middle of May. They lay, as usual, two eggs, of a pure white, and make their nest in the horizontal branches of a tree. It is formed of a mere layer of twigs so loosely and slovenly put together as to appear scarcely sufficient to prevent the young from falling out.

By the first fine days of the early Southern spring we hear from the budding trees of the forest, or the already blooming thicket, the mournful call of the Carolina Turtle Dove, commencing as it were with a low and plaintive sigh, *a'gh còo còo còo*, repeated at impressive intervals of half a minute, and heard distinctly to a considerable distance through the still and balmy air of the reviving season. This sad but pleasing note is also more distinguished at this time, as it seeks the noon-day warmth in which to utter its complaint, and where it is now heard without a rival.

The flight of this species is rapid and protracted, and, as usual in the genus, accompanied by a very audible whistling noise; the birds fly out often in wide circles, but seldom rise above the trees, and keep out near the skirt of the forest or round the fences and fields, which they visit with considerable familiarity, gleaning after the crop has been removed, and seldom molesting the farmer except by now and then raising up a few grains in sowing time, which may happen to be exposed too temptingly to view. The usual food of this species is various kinds of grain and small acorns, as well as the berries of the holly, dogwood, poke, whortle, and partridge berries, with other kinds according to the season. In the nuptial period the wide circling flight of the male is often repeated around his mate, towards whom he glides with wings and tail expanded, and gracefully alights on the same or some adjoining tree, where she receives his attentions or fosters her eggs and infant brood. On alighting, they spread out their flowing train in a graceful attitude, accompanying the motion by a clucking and balancing of the neck and head evincing the lively emotion and mutual affection they cherish. When the female now confines herself to her eggs, her constant mate is seen feeding her with a delicate and assiduous attention.

The roosting places preferred by the Carolina Turtle Doves are among the long and unshorn grass of neglected fields, in the slight shelter of corn-stalks, or the borders of meadows; they also occasionally seek harbor among the rustling and falling leaves, and amidst the thick branches of various ever-

greens. But in every situation, even though in darkness, they are so vigilant as to fly at the instant of approach. They do not huddle together, but take up their rest in solitude, though a whole flock may be in the same field; they also frequently resort to the same roosting places, if not materially molested. It is a hardy species, enduring considerable cold, and individuals remain even in the Middle as well as the Southern States throughout the year. These birds are far less gregarious and migratory than is the common Wild Pigeon. When their food becomes scanty in the fields in the course of the winter, they approach the farm, feeding among the poultry with the Blackbirds, Sparrows, and other guests of the same accidental bounty, and if allowed without reprisal, appear as gentle as Domestic Doves. Raised from the nest, they are easily tamed, and instances are known of their breeding in confinement. Their flesh is also much esteemed, and by some considered as scarcely inferior to that of the Snipe or Woodcock.

The Mourning Dove is a common summer resident of portions of southern New England, and occurs sparingly northward to New Brunswick. Mr. McIlwraith reports it breeding sparingly in southern Ontario.

GROUND DOVE. *Smith*

COLUMBIGALLINA PASSERINA TERRESTRIS.

CHAR. Back and rump grayish olive, head and neck purplish red glossed with blue, the feathers edged with grayish olive; wings like back, but tinged with purple and spotted with steel blue; central tail-feathers like back, outer feathers blackish with paler tips; lower parts purplish red, the feathers of the breast streaked with grayish olive; bill yellow, tipped with black; feet yellow. Female and young paler, grayer, and without the purple tints. Length $6\frac{1}{2}$ inches.

Nest. On a tree, usually on a low branch, but sometimes 15 to 20 feet from the ground; little more than a platform of twigs.

Eggs. 2; dull white or creamy; 0.85×0.65 .

The Ground Dove is an inhabitant of all the States of the Union south of Virginia, and is met with also in the West Indies. It is common in the sea islands of the Southern

States, particularly in South Carolina and Georgia, where it is seen in small flocks of from fifteen to twenty. These birds are found usually upon the ground, and prefer the open fields and cultivated tracts to the woods; their flight is seldom protracted, as they fly out commonly only to short distances, though on the approach of winter they retire to the islands and milder parts of the continent, arriving again at their northern resorts early in April. Like some other species, they have a frequent jutting motion with the tail, and the usual tender cooing and gesticulations of the tribe. They feed on various seeds and berries, particularly on those of the tooth-ache tree, near which they are frequently seen in the season. They likewise feed on rice and other small grain, and become easily tamed and reconciled to the cage; in this way they are also occasionally fattened for the table, and are particularly esteemed by the French planters.

The Ground Dove is still a common bird in the South, and wanders occasionally as far north as the District of Columbia.

BLUE-HEADED QUAIL-DOVE.

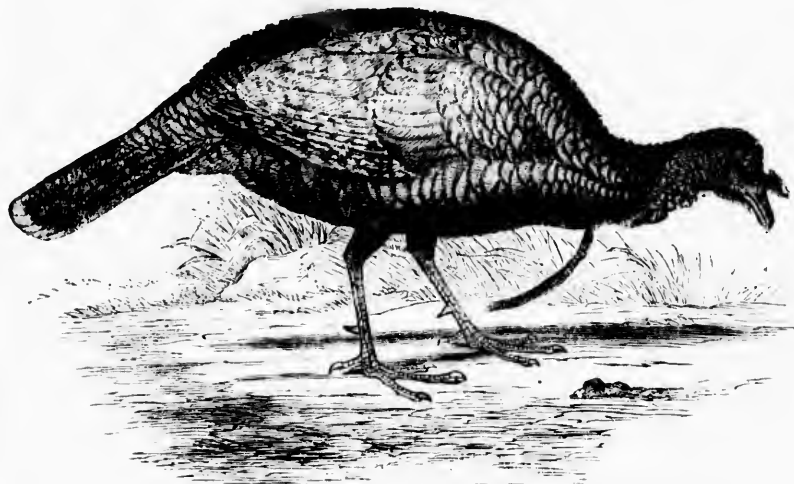
STARNONAS CYANOCEPHALA.

CHAR. Above, olive brown; crown rich blue, bordered by black; a wide stripe of white from chin to back of neck; below, russet, the breast tinged with purple; throat black, edged with white. Length 11 inches.

Nest. On a tree or low bush; a platform of loosely arranged twigs.

Eggs. 1-2; white; 1.40 × 1.05.

This species was observed by Audubon on the island of Key West early in May, — probably soon after its arrival from Cuba, where it abounds. It is rarely to be seen, from its habit of keeping on the ground and living among dense thickets. These birds also inhabit Jamaica and Cuba, and in the latter island they are commonly caught in traps, and brought to market in great numbers, being esteemed as food. They admit of being tamed, but when tame refuse to propagate. The tail is carried downwards, as in the Partridge. They keep in small bands, are chiefly seen on the ground, on which they often squat, and do not roost on trees.



WILD TURKEY. *Wm. Brewster.*

MELEAGRIS GALLOPAVO.

CHAR. General plumage coppery bronze, with metallic reflections of copper color, green, and purple, the feathers edged with rich black; head and neck naked, and of blue color studded with excrescences of purplish red; tail dark chestnut, with bars and a broad subterminal band of black; upper tail-coverts and tips of tail-feathers chestnut; wings dusky, banded by dull white. Male with a conspicuous tuft of bristles depending from the breast. Female similar, but paler and duller. Length about 48 inches.

Nest. Under a bush or amid thick undergrowth or tall weeds, or beneath brush heap; a depression in the ground — natural or scratched out — lined with leaves, grass, or feathers.

Eggs. 10-15 (usually 12); rich cream color or pale buff, spotted with bright brown; size variable, averaging about 2.50×1.50 .

The Wild Turkey, once prevalent throughout the whole continent of North America, from Mexico and the Antilles to the forests of Lower Canada, is now, by the progress and density of population, chiefly confined to the thickly wooded and uncultivated tracts of the Western States, being particularly abundant in the unsettled parts of Ohio, Kentucky, Illinois, Indiana, and throughout the vast forests of the great valleys of the Mississippi and Missouri. On the banks of the latter

river, however, where the woods disappear beyond the confluence of the Platte, the Turkey no longer appears; and the feathers of the wings, for the purpose of pluming arrows, form an article of small commerce between the other natives and their Western countrymen. For a thousand miles up the Arkansas and Red River, in the wooded alluvial lands, they are not uncommon. They are met with in small numbers in Tennessee, Alabama, and West Florida, and are also abundant in Texas; but none have been found in the Rocky Mountains or to the westward of them. From the Atlantic States generally they are now nearly extirpated. According to Audubon, a few of these valuable birds are yet found in the States of New York, Massachusetts, Vermont, and Maine.

The Wild Turkey is neither gregarious nor migratory, but from the necessity of wandering after food; it is otherwise resident throughout the whole of the vast region it inhabits, including the greatest diversity of climate, and it is prolific in proportion to its natural resources; so that while in the United States and Canada it only breeds once in the year, in Jamaica and the other West India islands it is said to raise two or three broods in the same period. In quest of mast, these birds therefore spread themselves through the country and insensibly assemble in considerable numbers to the district where their food abounds. These movements are observed to take place early in October. The males, or *gobblers*, as they are often called, from their note, are now seen apart from the other sex in companies varying from ten to a hundred. The females move singly, or accompanied by their almost independent brood, who all at first assiduously shun the persecuting society of the selfish male. Yet after a while, when their food proves abundant, separate mixed flocks of all ages and sexes often promiscuously join in the bounteous repast. Their migration — very unlike that of the rapid Pigeons — is made almost entirely on foot until their progress is perhaps arrested by a river. Their speed, however, is very considerable, and when surprised they more commonly trust to their legs than their wings, running nearly with the velocity of a

hound. On meeting with an impediment of this kind, after considerable delay they ascend to the tops of the tall trees, and at the cluck of the leader they launch into the air for the opposite shore. The transit is a matter of little difficulty, though considerable labor, for the older birds; but the younger and less robust sometimes fall short of the bank, and are either drowned or attain the land by swimming. After crossing, it is remarked that they often become an easy prey to the hunter, as they seem bewildered by the new country in which they have arrived, or more probably are fatigued by the novelty and extent of their excursion. After long journeys and privations, particularly in frosty weather or while the ground is covered with snow, they are sometimes reduced to the necessity of making their appearance near farm-houses, where they now and then even associate with the poultry and enter the stables and cribs after grain. In this desultory and foraging manner they spend the autumn and winter.

According to the latitude and the advancement of the season, though always very early in the spring, they begin to be actuated by the instinct of propagation. The males commence their gobbling and court the society of their retiring mates. The sexes roost apart, but in the same vicinity, and at the yelp of the female the gobbling becomes reiterated and extravagant. If heard from the ground, a general rush ensues to the spot; and whether the hen appears or not, the males, thus accidentally brought together, spread out their train, quiver and depress their rigid wings, and strutting and puffing with a pompous gait, often make battle, and directing their blows at the head, occasionally destroy each other in a fit of jealousy. As with our domestic fowls, several hens usually follow a favorite cock, roosting in his immediate neighborhood until they begin to lay, when they withdraw from his resort to save their eggs, which he would destroy if discovered. The females are therefore seen in his company only for a few hours in the day. Soon after this period, however, the male loses his ardor, and the advances of affection now become reversed, the hen seeking out the society of her reluctant mate. In moonlight nights

the gobbling of the male is heard at intervals of a few minutes for hours together, and affords often a gratifying means of their discovery to the wakeful hunter. After this period the males become lean and emaciated so as to be even unable to fly, and seek to hide themselves from their mates in the closest thickets, where they are seldom seen. They now also probably undergo their moult, and are so dry, lean, and lousy, until the ripening of the mast and berries, as to be almost wholly indigestible and destitute of nutriment as food. So constant is this impoverished state that the Indians have a proverb, "As lean as a Turkey in summer."

About the middle of April, in Kentucky, the hens begin to provide for the reception of their eggs and secure their prospects of incubation. The nest, merely a slight hollow scratched in the ground and lined with withered leaves, is made by the side of a fallen log or beneath the shelter of a thicket in a dry place. The eggs, from 10 to 15, are whitish, covered with red dots and measuring two and seven eighths inches in length by two in breadth, and rather pointed. While laying, the female, like the domestic bird, always approaches the nest with great caution, varying the course at almost every visit and often concealing her eggs entirely by covering them with leaves. Trusting to the similarity of her homely garb with the withered foliage around her, the hen, as with several other birds, on being carefully approached sits close without moving. She seldom indeed abandons her nest, and her attachment increases with the growing life of her charge. The domestic bird has been known, not unfrequently, to sit steadfastly on her eggs until she died of hunger. As soon as the young have emerged from the shell and begun to run about, the parent by her cluck calls them around her and watches with redoubled suspicion the approach of their enemies, which she can perceive at an almost inconceivable distance. To avoid moisture, which might prove fatal to them, they now keep on the higher sheltered knolls; and in about a fortnight, instead of roosting on the ground, they begin to fly at night to some wide and low branch, where they still continue to nestle

under the extended wings of their protecting parent. At length they resort during the day to more open tracts or prairies, in quest of berries of various kinds, as well as grasshoppers and other insects. The old birds are very partial to pecan nuts, winter grapes, and other kinds of fruits. They also eat buds, herbs, grain, and large insects; but their most general and important fare is acorns, after which they make extensive migrations. By the month of August the young are nearly independent of their parent, and become enabled to attain a safe roost in the higher branches of the trees. The young cocks now show the tuft of hair upon the breast and begin to strut and gobble, and the young hens already purr and leap.

One of the most crafty enemies which the Wild Turkey has to encounter is the lynx, or wild-cat, who frequently seizes his prey by advancing round and waiting its approach in ambush.

Like most other Gallinaceous birds, these Turkeys are fond of wallowing on the ground and dusting themselves. When approached by moonlight, they are readily shot from their roosting-tree, one after another, without any apprehension of their danger, though they would dodge or fly instantly at the sight of the Owl. The Gobblers, during the season of their amorous excitement, have been known even to strut over their dead companions while on the ground, instead of seeking their own safety by flight.

In the spring the male Turkeys are called by a whistle made of the second joint-bone of the wing of the bird, which produces a sound somewhat similar to the voice of the female; and on coming up to this call they are consequently shot. They are likewise commonly caught in quadrangular pens made of logs crossing each other, from which is cut a slanting covered passage sufficient to allow the entrance of the Turkey. Corn is then scattered in a train to this cage for some distance as well as within; and the neighboring birds in the surrounding woods having discovered the grain, call on each other by a clucking, and entering one at a time, they become secured in the pen, as, for the purpose of escape, they constantly direct their view upwards instead of stooping to go out by the path which they had entered.

The male Wild Turkey weighs commonly from 15 to 18 pounds, is not unfrequently as much as 25, and sometimes, according to Audubon, even 36. The hen commonly weighs about 9 pounds, and the usual price for a Turkey from the Indians is 25 cents. The domestic bird, when irritated by the sight of any remarkable object, struts out with expanded tail, and drooping his stiffened wings, swells out his wattles, which become red and turgid, and advancing with a grave and haughty air, utters a humming sound, now and then accompanied by a harsh and dissonant *ruk, orook, orook*, repeating it at every whistle or unusual sound that strikes his ear. The exhibition of a red rag is also sure to excite his wrath and induce him to rush with stupid temerity at the disagreeable object which he exerts himself to injure or destroy. A whole flock sometimes will unite in chasing a common cock from the poultry yard in consequence merely of some whimsical antipathy. From these singular dislikes, this cowardice and folly, the Turkey bears in France the same proverbial imputation of stupidity which in England is bestowed on the Goose. The feathers of the wild bird, attached to strips of bass, were anciently employed by the aborigines for tippetts and cloaks, and were so arranged that the brilliant surface formed the outside of the dress; and in later times similar dresses have also been made by the Cherokees.

The Turkey was first sent from Mexico to Spain in the sixteenth century, and in the reign of Henry VIII., in the year 1524, it was introduced into England, and soon after into France and other portions of Europe.

Since Nuttall wrote, this famous bird has become extinct in the New England States, as well as in Canada. Very early in colonial days it had disappeared from the Province of Quebec, for at the height of its abundance this bird was found only within a limited area along the valley of the Ottawa, in the vicinity of the Chaudière Falls, — if I correctly interpret the words of Pierre Bouche, who was governor of the Province in 1663. By some chance several small flocks survived to a much later date in Ontario. McIlwraith reports that it was numerous along the southern border as late as 1856, and he thinks a few still remain.

In New England, as in Quebec, the early settlers made havoc with the flocks, and drove into the wilderness those they did not destroy. John Josselyn, writing in 1672, states that the bird was becoming rare, while thirty years before it had been abundant; but probably Turkeys were plentiful during part, at least, of the last century, though frequenting less accessible localities. They were, however, being gradually reduced in numbers by the combined attacks of the whites and Indians, and the lessened flocks continued retiring farther and farther from the settlements.

In Connecticut the year 1813 is given as that in which the last example was seen, while a few remained hidden among the hills of southern Vermont until 1842; and the last Wild Turkey that is known to have been seen in Massachusetts was shot on Mount Tom in 1847.

At the present day some small flocks are to be found in a few of the heavily timbered and thinly populated districts of Michigan, Illinois, Indiana, Ohio, and Pennsylvania, and in the wild mountainous regions of the Southern States. A few may be hidden also in isolated forests in Louisiana and Mississippi; but in all of these States the number of birds must be small, and is being rapidly reduced. Probably nowhere east of the Mississippi River are Turkeys at all numerous, excepting in Florida, and in that State they may continue numerous long after they have been exterminated elsewhere, owing to the almost inaccessible nature of the country to which the remaining flocks have retreated. Beyond the Mississippi these birds are still common, especially along the lower Rio Grande and (probably) in Indian Territory and southern Missouri, though Colonel Goss reports them diminishing rapidly in Kansas.

Farther west, Wild Turkeys are plentiful; but the major portion of these are of the Mexican form, which differs from the type principally in having the upper tail-coverts and the tips of the tail-feathers whitish instead of chestnut.

NOTE. — The Florida Wild Turkey (*M. g. osceola*) has lately been separated from true *gallopavo*, being smaller and with "broken white markings" on the wings.

ENGLISH PHEASANT.

PHASIANUS COLCHICUS.

CHAR. Male: plumage exquisitely beautiful, but too variegated to be minutely described in a short paragraph. The principal colors are brown of several shades, orange-red, yellow, and black; and these are distributed in handsome markings and pencillings. Head and neck steel blue, with metallic reflections of green and purple; breast golden red, each feather edged with velvet black; tail-feathers very long, — the two middle feathers sometimes measuring two feet, — yellowish brown, with narrow bars of black. Female: duller; yellowish brown, with markings of darker brown and some black. Length of male, including tail-feathers, about 3 feet; of female about 2 feet.

Nest. In thicket or dense hedge, a slight hollow scratched out by female, partially lined with loosely arranged leaves and grass. Occasionally a deserted nest in a tree has been used.

Eggs. 8-14 (usually about 12, sometimes 16 or 20), olive brown, sometimes bluish green; 1.85×1.45 .

I have called this the "English" Pheasant to distinguish it from other species that have been introduced into this country. In England it is known as "Pheasant," or "Common Pheasant." It is not indigenous to Great Britain, though when it was introduced there is not known, some writers asserting that it was carried by the Romans, while others consider the Norman Conquest responsible for its introduction. The true home of the bird is the valleys of the Caucasus and the eastern shores of the Caspian Sea, but it has been introduced into almost every country of Europe. In Great Britain very few thorough-bred specimens are to be found, most of the birds displaying a collar of white, — which proves their relationship to the Ring-necked Pheasants brought from China. Other species, as well, have been introduced and successfully bred with both true *colchicus* and hybrids.

Within a few years the present species has been introduced into this country by Mr. C. B. Cory — who loosed several pairs on Great Island, off the southern shore of Cape Cod — and by a club of sportsmen who have stocked Jekyl Island, on the Georgian coast. Both colonies have become naturalized and are increasing. Several other species have been imported from China and Japan, and liberated in Oregon and British Columbia, where they are increasing rapidly.



BOB-WHITE.

QUAIL. PARTRIDGE.

COLINUS VIRGINIANUS.

CHAR. Above, reddish brown, mottled with gray, black, white, and buff; stripe over eyes and patch on throat white or buffy white, darkest in females; lower parts buffy white with brown and black markings. Length about 10 inches.

Nest. In pasture or field, hid amid thick growth or under a bush or tuft of long grass; made of grass, weeds, and leaves loosely arranged.

Eggs. 8-20 (usually 15 to 18, and a set of 28 has been recorded); white; 1.20 X 1.00.

The Partridge of America, exceedingly prolific, has extended its colonies from the inclement coasts of New England and the western plains of Missouri to the mild latitudes of Mexico and Honduras. In Jamaica, where it has long been introduced and naturalized, the inhabitants distinguish it as the *Partridge*, — an appellation sufficiently prevalent in various parts of the United States. At the north, these birds are rarely seen to the

extremity of New Hampshire, and this limit, no doubt, is determined by the length and severity of the winters which prevail in this rigorous climate. They seldom migrate, except to short distances in quest of food, and consequently often perish beneath deep drifts of snow, so that their existence is rendered impossible in the Arctic winters of our high latitudes. Indeed, sometimes they have been so thinned in this part of the country that sportsmen acquainted with their local attachments have been known to introduce them into places for breeding and to prevent their threatened extermination. So sedentary are the habits of this interesting bird that until the flock is wholly routed by the unfeeling hunter they continue faithfully attached to the neighborhood of the spot where they have been raised and supported.

Johnston, Willoughby, and Ray distinguished the Mexican bird by the quaint title of the "Quail's Image." The first settlers of New England also thought they saw in this familiar bird the Quail of the country they had relinquished. The two birds are, however, too different to require any critical comparison. Ours is even justly considered by European ornithologists as the type of a peculiar American genus, to which has been given the name of *ORTYX* by Stevens, — the original appellation of the Quail, or *Verdix coturnix*, as known to the ancient Greeks. The name of *COLIX*, contracted by Buffon from the barbarous appellation of some Mexican species, has been adopted by Cuvier, Temminck, and Vieillot.

Although there is some general resemblance between the Quail of the old and new continent in their external appearance, their habits and instincts are exceedingly different. The true Quail is a noted bird of passage, with a favorable wind leaving Europe for the warmer parts of Asia at the approach of winter; and with an auspicious gale again returning in the spring, in such amazing numbers that some of the islands of the Archipelago derived their name from their abundant visits. On the west coast of Naples, within the small space of four or five miles as many as a hundred thousand have been taken in a day by nets. Our Partridge, though occupying so wide an extent of the

Atlantic and Western States, and even penetrating into Mexico, is scarcely ever a bird of passage; it only assembles in single families, which may sometimes be reduced to four or five by accidents, and at others increased to twenty or thirty. The instinctive sociability of this bird continues uniformly, until interrupted in the spring by the desire of pairing. At this season the eager call of the male is often heard, but it nearly ceases when he is mated, and is only long continued by those who are dissatisfied and have been unsuccessful in their connections; and by imitating the reply of the female, the male is easily decoyed to approach towards the enemy who thus allures him. On these occasions, when the rival candidates happen to meet, they exhibit, the only time in their lives, a quarrelsome disposition, fighting with obstinacy, until the contented victor at last gains the field with his submissive mate. The conjugal selection being now concluded, they are not exceeded by any of the feathered race in their mutual attachment and common affection for their brood. In the vagrant Quail, the want of reciprocal and durable attachment gives rise to a wholly different character in instinctive morality, a common concubinage prevailing among them, as with our Cow Troopials. Instead of the mild sociability so prevalent with our Partridge, they are pugnacious to a proverb: "As quarrelsome as Quails in a cage," was an ancient reproof to striving children. Their selfishness forbids all mutual alliance, and they only find safety from each other in roaming solitude.

Partridges are not partial to the depths of the forest, though they sometimes seek the shelter of trees, and perch on the low branches or hide amongst the brush and underwood. Their favorite food, however, commonly conducts them to the open fields, where they glean up various kinds of grain, and are particularly fond of rye and buckwheat, as well as Indian corn; and when not too much disturbed by the sportsman, will often, particularly in the autumn and winter, fearlessly assemble along the most public roads, or around the barn and stable, in search of a scanty pittance among the domestic fowls; like them, also, very industriously scratching up

straw, and probably the ground, in quest of grain and insects which, with seeds and various kinds of buds and berries, as well as broken acorns, according to the season, often constitute a considerable part of their native diet.

Remaining with us commonly the whole year, the little social band often suffer from the inclemency of the seasons. At this time they perch together on some rising ground beneath the shelter of brush or briars, and forming a close circle, with their heads outward to discern any approach of danger, they thus greatly aid each other by their mutual warmth to resist the chilling effects of frost. It is probable, however, they have no great fear of snow when together, as they may often be seen patiently encountering the storm, as its white wreaths invade them, and frequently on the arrival of a thaw, unfortunate coveys, suspecting no danger, are found buried beneath the inundating waste, huddled together in their accustomed manner. They are observed even, on the approach of danger, to rush into the snow for shelter; and it is only when the drift becomes so consolidated by a frozen glazing of sleet as to resist all their efforts to move that it proves their grave, rather than their retreat.

As they happen to afford a favorite and delicate article of food, every means which gun and trap can effect are put in operation against the innocent race. Their very sociability often affords means for their destruction: for while crowded together in a ring, a dozen or more have been killed at a shot; and the small remains of the unfortunate covey, feeling their weakness and solitude, are said to join some neighboring brood, for whom they soon form the same friendly attachment they had for the fraternity they have lost.

From the latter end of August to the month of March, the markets of all our principal cities are often stocked with this favorite game.

Some time in the month of May the Quail, at the bottom of a sheltering tuft of grass, scratches out a cavity for her nest, which is usually lined substantially with such withered leaves and dry grass as happen to be convenient. Though generally

open, it is sometimes partially covered by art and accident ; but no studious concealment is ever practised by this artless bird. The eggs are from 15 to 20 ; and unlike the spotted charge of the true Quail, are white, and rather suddenly narrowed at the smaller end. The period of incubation is about four weeks. They have generally two broods in a season, as young birds scarcely fledged may be observed here as late as the beginning of October. When this happens, it is not uncommon to find both coveys still associating with their parents. Like most other Gallinaeous birds, the young run about as soon as they are freed from the shell, and gain the complete use of their wings in about a fortnight from hatching. They are now attentively conducted by the mother, and occasionally by either parent, in quest of their appropriate food, and called together in a voice resembling the low twittering of chickens. At times they shelter beneath the wings of the mother ; but if the little busy flock are startled by danger, artifice rather than courage is the instinctive means of safety employed by all the party. The parents flutter in the path in real as well as simulated distress ; and the young, instantly aware of their critical situation, make no useless attempts to fly, but vanish singly, and closely hiding among the withered grass, which they almost resemble in color, are thus fortunately rendered nearly altogether invisible. The alarm at length dissipated, the tender, cautious call of the parents again reassembles the little grateful family.

The eggs of the Quail have been often hatched by the domestic hen ; but the vagrant disposition of the diminutive brood, the difficulty of procuring their proper food, and the superior attention they require over chickens, prevent the possibility of their domestication ; and even when they have survived the winter in this state, the return of spring leads them to wander off in compliance with that powerful instinct which inspires them to a mutual separation.

So familiar are these little birds that occasionally, as described by Wilson, they have been known to lay their eggs in the nest of the domestic hen, when situated at any considerable

distance from the habitation. From two eggs thus deposited were raised a pair of young Quails which, when abandoned by the hen, showed their social attachment by accompanying the cows. These they followed night and morning from the pasture, and when the cattle were housed for the winter our little Partridges took up their humble abode in the stable. But even these, so docile, and separated from all their race, on the return of spring obeyed the instinct of nature, and wandered away to their congenial woods and thickets. It is probable at times, as asserted by observers, that our Quails, like some other birds, lay their eggs in the nests of each other, — a fact which would only be in accordance with their usual friendship and mutual familiarity.

The American Quail, according to Wilson, has likewise, in turn, been employed to hatch the eggs of the domestic hen, which she brought out, defended, and fed as her own offspring. She even succeeded in imparting to them a portion of her own instinct to such a degree that when alarmed they hid in the grass and ran timidly from sight like so many young Partridges, exhibiting all the wildness of unreclaimed birds. A flock of these Quails, however attentively fed, and confined, always exhibit a great degree of fear and shyness; their attachments remaining truly natural, they appear only to recognize the company of each other. But a solitary individual becomes friendly and familiar to the hand that feeds it, and for want of more congenial society forms a similar attachment to its keeper. In the month of September, the little brood, now nearly full grown, assemble in families; and at this period, as well as in the spring and early part of summer, the clear, whistling call of the male is often heard. This well-known note is very similar to the pronunciation of the words *'bob white*, to which is often added a suppressed introductory whistle. While seated, perhaps on a fence-rail, or the low limb of an orchard tree, this peculiar note, sometimes interpreted in showery hay-weather into the augury of *more wet, more wet*, continues uninterruptedly, at short intervals, for more than half an hour at a time. Du Pratz says these birds are known

to the aborigines by the name of *ho-ouy* ('*ho-wee*'), which is also imitative of the call they sometimes utter, as I have heard, early in the morning, from a partly domesticated covey. When assembled in a corner and about to take wing, the same low, chicken-like twittering, as is employed by the mother towards her more tender brood, is repeated; but when dispersed, by necessary occupation, or alarm, they are reassembled by a loud and oft-repeated call of anxious and social inquiry. This note, '*ho-wee*', is, however, so strongly instinctive as to be commonly uttered without occasion, by the male even in a cage, surrounded by his kindred brood; so that this expression, at stated times, is only one of general sympathy and satisfaction, like that of a singing bird uttered when solitary and confined to a cage.

In consequence of the shortness and concavity of its wings, in common with most other birds of the same family the American Quail usually makes a loud whirring noise in its flight, which is seldom long continued, always laborious, and generally so steady as to afford no difficult mark for the expert sportsman. According to the observations of Audubon, the flight of our Partridge and Grouse, when not hurried by alarm, is attended with very little more noise than that of other birds. Whatever may be the fact, when our little Partridges alight on the ground, they often run out to very considerable distances, when not directly flushed, and endeavor to gain the shelter of briars and low bushes, or instinctively squat among the fallen leaves of the woods, from which, with their brown livery, it is difficult to distinguish them. No great destruction is made among them while on the wing, as they do not take a general alarm on being approached, but rise at intervals only by two or three at a time.

Bob-White has been so long and so persistently called by this nickname that that conservative body, the American Ornithologists' Union, has been constrained to approve of it, and has dignified it with their sanction — throwing to the winds for one brief moment the "canon of priority," and adopting Seeböhm's favorite *auctorum plurimorum*. The bird is also known as "Quail" in

New England, and as "Partridge" farther south. Bob-White is still a common bird in southern New England, though of somewhat local distribution. It is rarely found north of Massachusetts, but a few scattered flocks are occasionally met with along the southern borders of the three northern States.

In Canada it occurs only in the southern peninsula of Ontario north to Gravenhurst, and though quite common near London and Hamilton, is reported "rare" about Toronto and Lucknow.

NOTE. — The FLORIDA BOB-WHITE (*Colinus virginianus floridanus*) is a smaller race with darker colors and broader black markings. It is found in the northern and middle regions of Florida.

The CUBAN BOB-WHITE (*C. virginianus cubanensis*) differs chiefly from the type in the markings of the plumage. It is restricted in the United States to the southwestern or tropical region of Florida.

The MESSINA QUAIL (*Coturnix coturnix*) has been imported from Europe by hundreds during the last fifteen years and let loose in various parts of the country; but though a few young and old birds appeared in the neighborhood for a year or two following their release, the effort to naturalize the species is considered a failure. In 1878 a number were released near St. Stephen, New Brunswick, and during the next three years I heard occasionally of small bevies being seen near the Bay of Fundy shore between St. Stephen and St. John, as well as in the Kennebecasis valley as far east as Sussex; but either the climate or the food was unsuited to them.

RUFFED GROUSE.

PHEASANT. PARTRIDGE. BIRCH PARTRIDGE.

BONASA UMBELLUS.

CHAR. Upper parts mottled brown and gray, with markings of black and dull white; head with crest; a "ruff" of long black feathers on sides of neck; tail with broad sub-terminal band of black; under parts pale tawny, throat unmarked, breast and belly barred with brown; legs completely covered with feathers. Length 16 to 18 inches.

Nest. Amid a thicket or under cover of a bush, — usually on border of heavy timber; a mere cushion of leaves, grass, moss, etc.

Eggs. 6-20 (usually 10 or 12); color varies from pale cream to dark buff, often marked with faint spots of brown; 1.60 × 1.15.

This beautiful species of Grouse, known by the name of *Pheasant* in the Middle and Western States, and by that of *Partridge* in New England, is found to inhabit the continent from Hudson Bay and the parallel of 56° to Georgia, but are most abundant in the Northern and Middle States, where they often prefer the most elevated and wooded districts: and at the South they affect the mountainous ranges and valleys which border upon or lie within the chains of the Alleghanias. They are also prevalent in the Western States as far as the line of the Territory of Mississippi; and though not found on the great Western plains, they reappear in the forests of the Rocky Mountains and follow the Columbia nearly to the Pacific.

Although, probably speaking, sedentary, yet at the approach of autumn, according to Audubon, they make, in common with the following species, partial migrations by single families in quest of a supply of food, and sometimes even cross the Ohio in the course of their peregrinations. In the northern parts of New England they appear also to be partially migratory at the approach of winter, and leave the hills for lower and more sheltered situations. So prompt, indeed, at times are their movements that in November, 1831, in travelling nearly to the extremity of New Hampshire, not a single bird of the species was now to be seen, as they had no doubt migrated southward with the first threatening and untimely snow which had fallen, being indeed so unusually abundant previously to that period as to sell in the market of Boston as low as twelve and a half cents apiece. Although elevated countries and rocky situations thickly overgrown with bushes and dense evergreens by rivers and brooks are their chosen situations, yet at times they frequent the lowlands and more open pine-forests in the vicinity of our Northern towns and cities, and are even occasionally content to seek a retreat far from their favorite hills in the depth of a Kentucky cane-brake or the barrens of New Jersey. They are somewhat abundant in the shrubby oak-barrens of Kentucky and Tennessee, in which their food abounds. This consists commonly in the spring and fall of

the buds of trees, the catkins of the hazel and alder, even fern-buds, acorns, and seeds of various kinds, among which I have met with the capsules, including the seeds of the common small Canadian *Cistus* (*Helianthemum*). At times I have seen the crop almost entirely filled with the buds of the apple-tree, each connected with a portion of the twig, the wood of which appears to remain a good while undigested; cinquefoil and strawberry-leaves, buds of the Azaleas and of the broad-leaved *Kalmia*, with the favorite partridge-berries (*Gaultheria procumbens*), ivy-berries (*Cissus hederacea*), and gravel pebbles are also some of the many articles which form the winter fare of our bird. In summer it seems often to prefer berries of various kinds, particularly dewberries, strawberries, grapes, and whortleberries.

In the month of April the Ruffed Grouse begins to be recognized by his peculiar *drumming*, heard soon after dawn and towards the close of evening. At length, as the season of pairing approaches, it is heard louder and more frequent till a later hour of the day, and commences again towards the close of the afternoon. This sonorous, crepitating sound, strongly resembling a low peal of distant thunder, is produced by the male, who as a preliminary to the operation stands upright on a prostrate log, parading with erected tail and ruff and with drooping wings in the manner of the Turkey. After swelling out his feathers and strutting forth for a few moments, at a sudden impulse, like the motions of a crowing Cock, he draws down his elevated plumes, and stretching himself forward, loudly beats his sides with his wings with such an accelerating motion, after the first few strokes, as to cause the tremor described, which may be heard reverberating in a still morning to the distance of from a quarter to that of half a mile. This curious signal is repeated at intervals of about six or eight minutes. The same sound is also heard in autumn as well as spring, and given by the caged bird as well as the free, being, at times, merely an instinctive expression of hilarity and vigor. To this parading ground, regularly resorted to by the male for the season, if undisturbed, the female flies with alacrity; but,

as with other species of the genus, no lasting individual attachment is formed, and they live in a state of limited concubinage. The drumming parade of the male is likewise often the signal for a quarrel; and when they happen to meet each other in the vicinity of their usual and staid walks, obstinate battles, like those of our domestic fowls for the sovereignty of the dung-hill, but too commonly succeed. When this sound, indeed (according to Audubon), is imitated by striking carefully upon an inflated bladder with a stick, the jealous male, full of anger, rushes forth from his concealment and falls an easy prey to the wily sportsman.

Some time in May a female selects some thicket or the side of a fallen log in the dense part of the woods for the situation of her nest. This is formed merely of a handful of withered leaves collected from the surrounding and similar surface of the ground. The eggs, ten to fifteen, more or less, are of a uniform dull yellowish color. The young run about as soon as hatched, and in about a week or ten days are able in some degree to make use of their wings. The mother now leads them out in search of their appropriate and delicate food, and broods them at night beneath her wings like the common hen; she likewise defends them by every stratagem which affection can contrive. On the appearance of an enemy she simulates lameness, to impose on the unwelcome spectator; while the young themselves squat on the ground, by which they are secured, from their similarity to its surface.

During summer these birds are fond of basking and dusting themselves, and for this purpose are now and then seen in the public roads. When flushed, and on the instant of rising from the ground, the bird usually utters a cackling note quickly repeated about half a dozen times, and also before rising utters a very peculiar lispng whistle. Like the Ptarmigan, the Ruffed Grouse when alarmed in winter is frequently known to plunge into the soft snow and burrow out at such a distance as frequently to elude the pursuit of the hunter. Besides other successful methods of destruction which await the devoted Grouse, snares and traps of various kinds are employed to

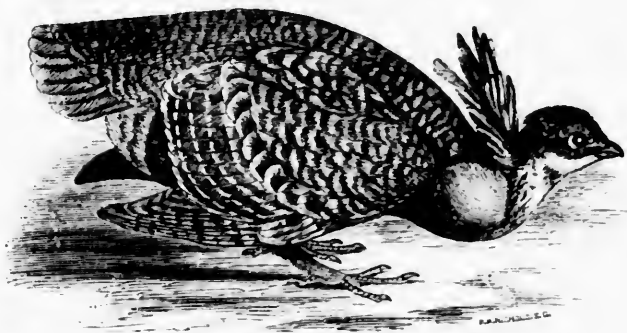
arrest them. They are even smoked to death in the same manner as the Wild Pigeons in the Western country, while sleeping harmlessly and unsuspectingly on their leafy roosts. By this system of indiscriminate extirpation they are now greatly thinned throughout the more populous parts of the Union, and sell in Philadelphia and New York from seventy-five cents to a dollar apiece. The common price of these birds (decidedly, as I think with Audubon, superior in flavor to the Pinnated Grouse) is in the market of Boston from 40 to 50 cents the pair, showing how much more abundant the species is in the rocky regions of New England than in any other part of America. Deleterious effects have sometimes occurred from eating this game, supposed to arise from their feeding on the buds of the broad-leaved *Kalmia*; yet most persons eat them with safety at all seasons of the year, even when these kind of buds have been found almost filling the stomach.

The systematists have recently separated the Ruffed Grouse distributed over the Northern and Middle States and the more southern sections of Canada from those found along the northern border of New England and in the adjacent portions of Canada, making the latter a sub-species and giving to it the name of CANADIAN RUFFED GROUSE (*B. umbellus togata*).

The Canadian race is in general darker colored, and lacks a reddish tinge on the back; also the markings of the under parts are more conspicuous.

The range of true *umbellus* is from Vermont to Virginia and the hills of Georgia, and west to Minnesota.

"Birch Partridges," as they are commonly called by the gunners of northern Maine and the Maritime Provinces, are still fairly abundant, though the markets have been generously supplied with them every year.



PRAIRIE HEN.

PRAIRIE CHICKEN. PINNATED GROUSE.

TYMPANUCHUS AMERICANUS.

CHAR. Above, brownish ochraceous, tinged with gray; back barred with black; below, white, barred with dusky brown; throat buffish; head with slight crest; erectile tufts of 7 to 10 long stiff feathers on sides of neck, and below these, patches of bare and elastic skin. Length about 18 inches.

Nest. On the open prairie amid tufts of long grass or at the foot of a bush; a slight hollow scratched out and thinly lined with grass and feathers.

Eggs. 8-16 (usually about 12); dull buff or greenish yellow, sometimes with a reddish tinge, and occasionally spotted slightly with brown; 1.70×1.25 .

Choosing particular districts for residence, the *Grouse*, or Prairie Hen, is consequently by far less common than the preceding species. Confined to dry, barren, and bushy tracts of small extent, these birds are in several places now wholly or nearly exterminated. Along the Atlantic coast they are still met with on the Grouse plains of New Jersey, on the brushy plains of Long Island, in similar shrubby barrens in Westford, Connecticut, in the island of Martha's Vineyard on the south side of Massachusetts Bay, and formerly, as probably in many other tracts, according to the information which I have received from Lieut.-Governor Winthrop, they were so common on the ancient bushy site of the city of Boston that laboring people or servants stipulated with their employers not to have the *Heath Hen* brought to table oftener than a few times in the

week. According to Wilson, they are also still met with among the scrub-oak and pine-hills of Pocono, in Northampton county, Pennsylvania. They are also rather common throughout the barrens of Kentucky and on the prairies of Indiana, and as far south as Nashville in Tennessee, but I believe nowhere more abundant than on the plains of Missouri, whence they continue to the Rocky Mountains. Dislike of moisture, as with the Turkey, but principally the nature of their food, appears to influence them in the choice of their resort. The small acorns of the dwarf-oaks, and various kinds of wild fruits, as strawberries, whortleberries, and partridge-berries, with occasional insects abounding in these wooded thickets, appear to be the principal inducement to their residence; from which they rarely wander at any season, unless compelled by a failure of their usual food, and so become, notwithstanding the almost inaccessible nature of the ground, a sure prey to the greedy and exterminating hunter. In the Western States, where they appear as an abundant species, they are at times observed to traverse the plains and even cross extensive rivers in quest of the means of subsistence. In winter they likewise feed on buds as well as mast, sometimes swallowing leaves, and occasionally the buds of the pine. At times, if convenient, they have been known to visit the buckwheat field for their fare, or even devour the leaves of clover. In wintry storms they seek shelter by perching in the evergreens; but in spring and summer they often roost on the ground in company. They feed mostly in the morning and evening; and when they can stir abroad without material molestation, they often visit arable lands in the vicinity of their retreats. In the inclemency of winter, like the Quail, they approach the barn, basking and perching on the fences, occasionally venturing to mix with the poultry in their repast, and are then often taken in traps.

The season for pairing is early in the spring, in March or April. At this time the behavior of the male becomes remarkable. Early in the morning he comes forth from his bushy roost and struts about with a curving neck, raising his ruff, expanding his tail like a fan, and seeming to mimic the ostenta-

tion of the Turkey. He now seeks out or meets his rival, and several pairs at a time, as soon as they become visible through the dusky dawn, are seen preparing for combat. Previously to this rencontre, the male, swelling out his throat, utters what is called a *tooting*, — a ventrioquial, humming call on the female, three times repeated; and though uttered in so low a key, it may yet be heard three or four miles in a still morning. About the close of March in the plains of Missouri we heard this species of Grouse tooting or humming in all directions, so that at a distance the sound might be taken almost for the grunting of the bison or the loud croak of the bull-frog. While uttering his vehement call, the male expands his neck-pouches to such a magnitude as almost to conceal his head, and blowing, utters a low drumming bellow like the sound of 'k'-tom-boo, 'k'-tom-boo, once or twice repeated, after which is heard a sort of guttural squeaking crow or *kōāk*, *kōak*, *koak*. In the intervals of feeding we sometimes hear the male also cackling, or as it were crowing like 'ko ko ko ko, *koo* *koo*. While engaged in fighting with each other, the males are heard to utter a rapid, petulant cackle, something in sound like excessive laughter. The tooting is heard from before daybreak till eight or nine o'clock in the morning. As they frequently assemble at these *scratching-places*, as they are called, ambuscades of bushes are formed round them, and many are shot from these coverts.

The female carefully conceals her nest in some grassy tussock on the ground, and is but seldom discovered. The eggs are from ten to twelve, and of a plain brownish color. The young are protected and attended by the female only, who broods them under her wings in the manner of the common fowl, and leads them to places suitable for their food, sometimes venturing with her tender charge to glean along the public paths. When thus surprised, the young dart into the neighboring bushes, and there skulk for safety, while the wily parent beguiles the spectator with her artful pretences of lameness. The affectionate parent and her brood thus keep together throughout the whole season. By the aid of a dog

they are easily hunted out, and are readily set, as they are not usually inclined to take wing. In the prairies, however, they not unfrequently rise to the low boughs of trees, and then, staring about without much alarm, they become an easy prey to the marksman.

The ordinary weight of a full-grown bird is about three pounds, and they now sell, when they are to be had, in New York and Boston, from three to five dollars the pair. They have been raised under the common hen, but prove so vagrant as to hold out no prospect of domestication.

This species is common now only in the prairie region of Indiana and Illinois and westward: a few scattered flocks occur in the adjacent States and in southwestern Ontario.

It is supposed that the Pinnated Grouse, which occurred in the Atlantic States in Nuttall's day, should be referred to the Heath Hen. — a distinct race, a remnant of which is still found on Martha's Vineyard.

HEATH HEN.

TYMPANUCHUS CUPIDO.

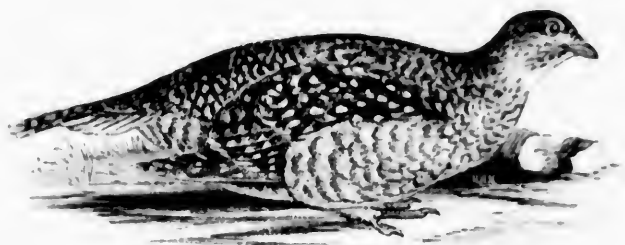
CHAR. Similar to the Prairie Hen, but reddish brown above, and beneath rusty white, barred with dark reddish brown; neck tufts composed of four or five acutely lance-pointed feathers.

Nest. In woodland of scrub-oak or pine; a slight hollow, thinly lined with leaves and feathers.

Eggs. 6-8; yellowish green and unspotted: 1.70×1.25 .

This interesting bird was discovered in 1885 by Mr. William Brewster: or rather, to be more exact, at that date the discovery was made that the birds of Martha's Vineyard were distinct from the Western Prairie Hen, — distinct in coloration as well as in habits. — the one being a bird of the open prairie, the other haunting groves of scrub-oak or low pines, and feeding largely on acorns.

Mr. Brewster tells us ("Auk," January, 1885) that the bird is common on Martha's Vineyard, and is so well protected as not likely to become extinct.



SHARP-TAILED GROUSE.

PRAIRIE CHICKEN.

PEDICULETES PHASIANELLUS.

CHAR. Above, black and brown irregular stripes; wings and wing-coverts spotted with white; head with slight crest, a naked patch of orange color over the eyes; two middle tail-feathers longer than the others; lower parts white, with dark V-shaped markings; legs and feet feathered. Length about 17 inches.

HAZ. In open woodland or on border of grove, or in thicket along a stream, hidden under brush or at foot of a low bush; a slight depression in the ground scantily lined with grass and feathers.

EGGS. 6-14 (usually about 12); reddish brown or yellowish brown, marked with fine spots of a darker shade of brown; 1.70 X 1.25.

This curious species of Grouse is also principally an inhabitant of the coldest habitable parts of the American continent, being found around Hudson Bay in the larch thickets throughout the whole year. It is not uncommon in the forests of the Rocky Mountains, and Mr. Say saw it in the spring likewise in Missouri but little beyond the settlements, at which season it also visits the vicinity of Fort William, on Lake Superior. We met with it on Larimie's Fork of the Platte in June, where it was breeding. As an article of food it proved plump and well flavored, superior almost to any other of the large species in the United States. These birds are, as usual, shy and solitary, living only in pairs throughout the summer, when they subsist much upon berries. In autumn and winter they are seen moving in families, and frequent the thickets of juniper and larch, on whose buds, as well as those of the birch, alder, and poplar, they now principally live. They usually keep on the ground,

but if disturbed, take to trees. When hard pressed by the hunter, they sometimes seek safety by plunging into the snow, and quickly burrowing beneath it, come out at a distance, and often from a situation the least expected, so that they frequently make good their retreat from their enemies.

The Sharp-tailed Grouse makes its nest on the ground, near some bush, with loose grass and a few feathers; the eggs are from 9 to 13, white, with dusky spots. The young are hatched about the middle of June, and utter a piling note something like chickens. Unsuccessful attempts have been made to domesticate them. The male has a shrill, rather feeble, crowing note; and both sexes, when disturbed, and on taking wing, repeat a reiterated cry of *kuk, kuk, kuk*, accompanied by a smart flirting of the tail-feathers, nearly similar to the opening and closing of a fan. In the breeding-season the male struts about proudly, in the usual manner of the genus and order to which he belongs. The weight of this bird is about two pounds, and the flesh is light brown when cooked, and is much esteemed.

The northern limit of the range of this species, according to Richardson, is Great Slave Lake, in 61 degrees; and its most southern recorded station is in 41 degrees, on the Missouri. It abounds on the outskirts of the Saskatchewan plains, and is found throughout the woody districts of the fur countries, in open glades and thickets on the borders of lakes, particularly in the partially cleared tracts contiguous to the trading posts. In winter, like the Pinnated Grouse, it perches generally on trees, but in summer it is much on the ground, and is at all times associated in coveys of ten to sixteen individuals. Early in spring a family of these birds selects a level spot, whereon they meet every morning, and run round in a circle of fifteen or twenty feet diameter, on which the grass becomes worn quite bare. On approaching this ring, the birds squat close to the ground, but in a short time stretch out their necks to survey the intruder, and if not scared by any nearer advance, they soon resume their circular course, some running to the right, and others to the left, thus meeting and crossing each

other. These "Partridge dances" last for a month or more, until concluded by the more serious employ of incubation. In imitation of this curious amusement of the Sharp-tailed Grouse, the Indians of the upper Missouri have what they call a Partridge-Dance, in which the old men chiefly join.

The true Sharp-tail is not found south of the Canadian border. It occurs in the wooded districts along the north shore of Lake Superior, and hence north to the timber limit, and west to British Columbia and Alaska.

NOTE. — The "PRAIRIE CHICKEN" is a paler race, called by the systematists the PRAIRIE SHARP-TAILED GROUSE (*P. phasianellus campestris*). It differs from the type in displaying more of the gray shades, with tints of buff and drab, and less of the red tinge in the upper parts. Also the dark tints are much paler in *campestris*, so that the white spots on the wings do not stand in such marked contrast. This sub-species ranges east to the prairie districts of Illinois and Wisconsin, and is reported by Mr. Thompson as abundant in Manitoba.

CANADA GROUSE.

SPOTTED GROUSE. SPRUCE PARTRIDGE.

DENDRAGAPUS CANADENSIS.

CHAR. Male: prevailing color black, varied above irregularly with gray and tawny; below, spotted with white; a comb of reddish colored naked skin over the eyes; tail with terminal band of orange brown; legs feathered to the toes. Female: prevailing color brown, varied with black and gray. Length about 16 inches.

Nest. In deep forest, hidden by a low hanging branch; a mere depression in the turf; sometimes leaves, grass, and bits of moss are loosely arranged as a lining.

Eggs. 8-14 (usually about 10); ground color varies from dull white to buff and reddish brown, marked irregularly with several shades of reddish and orange brown and umber; 1.70×1.20 .

This dark species of Grouse inhabits the cold regions of Hudson Bay up to the 67th parallel, throughout the whole year, where it frequents the bushy plains. To the south of this country it appears to seek out the alpine elevations.

being met within the White Mountains of New Hampshire and throughout a great portion of the Northern Andes, towards the sources of the Missouri and Oregon. In winter it visits Canada, the interior of Maine, Michigan, sometimes the State of New York; and it even breeds round Halifax in Nova Scotia, as well as in the State of Maine. In Canada it is known by the name of the Wood Partridge; by others it is called the Cedar, or Spruce, Partridge. Sometimes the birds are sent in a frozen state from Nova Scotia and New Brunswick to Boston.

The favorite resort of this species is in pine and spruce woods and cedar swamps, which they frequent in the winter for the purpose of feeding on the buds, oily seeds, and evergreen foliage, to which they also add juniper-berries. Their flesh, though palatable at all times, is considered best in summer, when they feed much on berries, as the buds of the resinous evergreens communicate an unpleasant flavor to the game. As usual, they nest on the ground with little art, in the slight shelter of fallen leaves and bushes, and are said by Audubon to lay 8 to 14 eggs of a deep fawn color, irregularly splashed with different tints of brown. They are readily approached, and sometimes are said to be so unsuspecting as, like the Ptarmigan, to allow of being knocked down with a stick; and round Hudson Bay are commonly caught by the aborigines in a simple noose fastened to a stake. When much disturbed, however, they betake themselves to trees, where they are readily approached and shot down.

In the month of May, where they breed, in the State of Maine, the male struts before his mate, and beating his wings briskly against his body, produces a drumming noise, clearer than that of the Ruffed Grouse, which can be heard to a considerable distance. The males leave their mates as soon as incubation has commenced, and do not join them again until late in autumn.

The "Spruce Partridge," as the bird is called by the gunners "down East," is a fairly common resident of the timber districts in northern New England and the Provinces; it occurs also in the

forest regions of northern New York, and westward to Minnesota and north to Labrador.

The retiring disposition of the bird has caused its habits to be little known, and the nest is generally so well concealed that few collectors have succeeded in procuring specimens of the eggs. Several pairs of these birds have been successfully domesticated by Mr. Watson Bishop, of Kentville, Nova Scotia, and an article from his pen, published in the "Ornithologist and Oologist" for January, 1889, contains much that is new concerning their habits. The birds were easily tamed, and soon became so fearless as to hop on Mr. Bishop's knee and take food from his hand.

When strutting before the hen, the male poses and puffs after the manner of a Gobbler. The feathers on his breast and collar are raised on end; the combs over the eyes, which can be enlarged at will, almost meet above the crown; and the erect and expanded tail is kept swaying from side to side with a silk like rustling. The females during the nesting season are very quarrelsome, so that only a few can be kept in one pen; but this unfriendliness disappears after the broods scatter.

The hen will occasionally cover the first egg with grass, but not often, though after several eggs have been deposited, she usually flings behind her, with her claws, any leaves, grass, or similar material that may chance to lie near the nest. But she never turns to arrange this covering; though when on the nest she will sometimes pick up with her bill any straws that may be within reach, and these she tucks under her.

The first egg of a clutch has the least amount of marking, and the number of spots increases with each successive egg. The spots are entirely on the surface, and are easily rubbed off.

WILLOW PTARMIGAN.

WHITE GROUSE.

LAGOPUS LAGOPUS.

CHAR. Bill black; legs and feet thickly feathered to the claws. Winter plumage pure white; tail-feathers black, tipped with white. Male in summer; head and neck chestnut; body orange brown, more tawny on back and rump, barred with black; wings mostly white. Female: similar, but more heavily barred with black. Length about 16 inches.

Nest. A mere depression, with a slight lining of leaves and grass, — sometimes a few feathers.

Eggs. 8-16 (usually about 10); buff or reddish brown, marked with darker brown; 1.50 X 1.25.

White Grouse, or Ptarmigan.

The Ptarmigan is one among the very few animated beings which, by choice and instinct, constantly reside in the coldest Arctic deserts, and in the lofty mountains of central Europe, where ... the snow begins to melt away, it seeks out its frozen bed by ascending to the limits of eternal ice. Like so many other animals of this inclement boreal region, this bird is common to both the old and new continent. It is met with in Siberia, Kamtschatka, Greenland, most parts of northern Europe, the Highlands of Scotland, and even as far south as the romantic scenes of the lakes of Cumberland, a few being still seen in the lofty hills which surround the vale of Keswick, as well as in Wales. This species has scarcely been met with on the American continent, except on Melville Island and Churchill River.

The Ptarmigan feeds on many sorts of berries, particularly the crow-berry (*Empetrum nigrum*) and cow-berry (*Vaccinium vitis idæa*), as well as the tops of the same plant: it also collects catkins, buds, and the young shoots of the pine, heath, rosehips, and sometimes the different kinds of lichens, which it searches out in the extensive burrows it makes beneath the snow. To all this bill of frugal fare, it also sometimes adds a few insects. These birds search out their food chiefly in the morning and evening, and in the middle of the day are observed sometimes to bask in the sun. Like the Esquimaux of the human family, whose lot is cast in the same cold and dreary region, they seek protection from the extreme severity of the climate by dwelling in the snow; it is here that they commonly roost and work out subterraneous paths. In the morning, as soon as they leave their frozen dens, they fly out vigorously into the air in an upward direction, shaking the snow from their warm and white clothing. While thus feeding they socially call on one another at intervals in a loud tone, and sometimes utter a sort of cackling cry, almost like a coarse and mocking laugh.

The nest, about the middle of June, is made in open places

where moss abounds, or in the shelter of the low, creeping bushes, forming the only woody growth of these naked and sterile regions. The eggs, 7 to 15, are oblong, of a rufous yellow, from the great number of large and small spots of black or of reddish black with which they are covered. From the lingering attachment of the male to his mate when killed, it is probable that the species may be monogamous, or even constantly mated. After the young are fully grown, and released from the care of their parents, they and the old are seen to assemble in flocks of two or three hundred, about the beginning of October, when they appear to migrate a little to the south in quest of food, or rather from the mountains towards the plains. At this time they are seen in great numbers round Hudson Bay, where they assemble for subsistence; and as the store diminishes, they push their tardy migrations in other directions for a fresh supply. Unsuspicious of the wiles and appetites of man, Ptarmigans appear often as tame as domestic chickens, more particularly when the weather is mild; they are allured even by crumbs of bread, and on throwing a hat towards them, or any strange object, they are so attracted by the appearance as to allow of an approach so near that a noose may be thrown round their necks, or, approached from behind, they may be knocked down with poles. Sometimes, however, they become wild enough to fly, but soon grow weary, and as tame as usual. When about to fly off to a distance from the hunters, they are instantly brought to settle down by imitating the cry of their enemy the Hawk. At times, trusting to the concealment of their winter livery, they will remain motionless upon the snow, from which they are still distinguishable by their more dazzling whiteness.

They are much esteemed as food in every country where they occur, and are commonly taken in nets, which are merely made to fall over the place where they assemble, or to which they are driven; and so numerous are they at Hudson Bay that fifty or seventy are sometimes obtained at a single haul of a net about twenty feet square. Between November and April as many as ten thousand are taken for the use of the settle-

ment ; and in Europe, during the winter, they are carried in thousands to the market of Bergen in Norway, and when half-roasted or jerked, are put into barrels and transported to other countries as an article of commerce.

Willow Grouse, or Large Ptarmigan.

This larger species, called the Willow Grouse by Hearne, the Wood Grouse of the Norwegians, is another inhabitant of both continents, extending its residence to the eternal limits of the polar ice. In America they abound around Hudson Bay, where they are said to breed along the coast, making their nests on dry ridges on the ground. In the ancient continent they shelter their nests in the high tufts of the heath, and in the dwarf willows. Their eggs, 10 to 12, are longer than those of the preceding species, of a muddy white, or inclining to pale rufous, covered and marbled with great numbers of spots, of the color of clotted blood. They even breed in Labrador about the beginning of June. According to Audubon, they are sometimes seen in the State of Maine and around Lake Michigan. This species also appears to be monogamous, as both sexes remain together and show an equal anxiety for the safety of their brood.

It is somewhat remarkable that this species, still more boreal than the Common Ptarmigan in Europe and Asia, should constantly inhabit to the south of that species in North America, where it seems, as it were, to have usurped its residence. The general habits of these birds are very similar to those of the preceding. Like them, they become gregarious at the setting in of winter, roaming after their food in flocks of as many as two hundred, living then and at most seasons on the tops, buds, and even seeds of the dwarf-willow, and hence called *Willow Partridges*. They also subsist on most kinds of northern berries, and many other kinds of buds and leaves, with the tops of the heath and the seeds of the birch. As food, this species is preferred to the smaller Ptarmigan.

Nuttall followed Audubon in thus separating this species and recognizing as a distinct form the White Ptarmigan. — the *ameri-*

canus of Audubon, — but Baird doubted its validity, and it has been entirely omitted from recent works. I have given above the two biographies as they appeared in Nuttall's book, for together they tell about all that is known of the present species.

The Willow Ptarmigan ranges through boreal America from Labrador to Alaska, and in winter is quite abundant on the north shore of the Gulf of St. Lawrence. During some seasons a number have wandered sufficiently near to Quebec and Montreal to get into the markets.

There are only two instances recorded of the occurrence of this bird south of the St. Lawrence, — one secured by Mr. C. B. Cory on the Magdalen Islands, and the second shot by Dr. C. Hart Merriam in Lewis County, northern New York.

NOTE. — A variety of this species — ALLEN'S PTARMIGAN (*L. lagopus alleni*) was described by Dr. Stejneger in 1884. It differs from true *lagopus* in having the wing-feathers mottled with black, and black shafts. This race is restricted to Newfoundland.

ROCK PTARMIGAN.

LAGOPUS RUPESTRIS.

CHAR. Similar to the Willow Ptarmigan, but smaller (length about 14 inches), and in summer displays more black and less of the rufous tint. Also distinguished by a line of black running through the eyes.

Nest. A mere depression, with a slight covering of grass and moss.

Eggs. 8-16 (usually 10); buff or pale reddish brown, marked with darker brown; 1.70 × 1.20.

This species is nearly allied to the Common Ptarmigan, but is smaller, has more of the brownish yellow in its summer dress, broader bars of black, and none of the cinereous tint which prevails in the livery of the Ptarmigan. In winter it is only distinguishable by its size. This species is, according to Hutchins, numerous at the two extremities of Hudson Bay, but does not appear at the middle settlements (York and Severn factories) except in very severe seasons, when the Willow Grouse are scarce. It abounds in Melville Island in the dreary latitude of 74 and 75 degrees in the short summers

of that frigid and cheerless region. It is also found on Melville Peninsula and the Barren Grounds, and indeed seldom proceeds farther south in winter than the 63d parallel in the interior, but descends along the coasts of Hudson Bay to latitude 58 degrees, and in severe seasons still farther to the south. It is met with in the range of the Rocky Mountains as far to the south as the latitude of 55 degrees. In its habits and mode of living it resembles the Willow Grouse, but does not retire so far into the woody country in winter. It frequents the open woods on the borders of lakes at the same season, particularly in the 65th parallel, though the bulk of the species remains on the skirts of the Barren Grounds. It hatches in June.

The usual habitat of this species is the barren ground region of the Arctics, though one example was shot on Anticosti by Mr. William Brewster.

NOTE. — In REINHARDT'S PTARMIGAN (*L. rupestris reinhardi*) the male in summer plumage is more mottled, above, than true *rupestris*, and the female is black, above, varied with grayish buff.

This race is found in Greenland and on the western shore of Cumberland Bay and the northern extremity of Labrador.

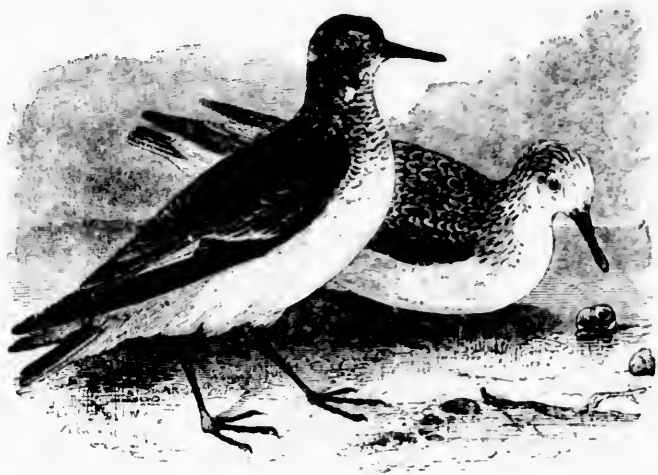
WELCH'S PTARMIGAN.

LAGOPUS WELCHI.

CHAR. In winter similar to *rupestris*. Male in summer: above, dark brownish gray blended with whitish gray and reddish gray; head and neck lighter; wings white; breast and sides like back; throat, belly, and legs white; tail dusky gray; bill and claws black. Female: similar, but of lighter color, and the back and breast tinged with yellow. Length about 15 inches.

Nest and Eggs. Unknown, but probably similar to *rupestris*.

This species, which is closely related to the Rock Ptarmigan, is restricted to Newfoundland, where it ranges over the rocky hills and barrens of the interior. It was first described by Brewster, in 1885, from specimens taken by George O. Welch, of Lynn.



SANDERLING.

RUDDY PLOVER. BEACH-BIRD.

CALIDRIS ARENARIA.

CHAR. No hind toe; bill somewhat similar to a Plover. In summer: above, mottled rufous and blackish brown, most of the feathers tipped with grayish white; head and neck pale chestnut spotted with brown; wing-coverts tipped with white; outer tail-feathers white; lower parts white. In winter the rufous tints are replaced by pearl gray, and the spring plumage displays a mixture of the two. In young birds the head, neck, and back are tinged with buff. Length about 8 inches.

Nest. Under a bush or amid a tuft of weeds; a depression lined with dry grass.

Eggs. 2-4; greenish buff or brownish olive, spotted chiefly around the larger end with brown; 1.40×0.95 .

The Sanderlings, in accumulating flocks, arrive on the shores of Massachusetts from their remote northern breeding-places towards the close of August. They are seen also about the same time on the coast of New Jersey and still farther to the South, where they remain throughout the greater part of the winter, gleaning their subsistence exclusively along the immediate borders of the ocean, and are particularly attached to sandy flats and low, sterile, solitary coasts divested of vege-

tation and perpetually bleached by the access of tides and storms; in such situations they are often seen in numerous flocks running along the strand, busily employed in front of the moving waves, gleaning with agility the shrimps, minute shell-fish, marine insects, and small moluscous animals which ever-recurring accident throws in their way. The numerous flocks keep a low circling course along the strand, at times uttering a slender and rather plaintive whistle nearly like that of the smaller Sandpipers. On alighting, the little active troop, waiting the opportunity, scatter themselves about in the rear of the retiring surge. The succeeding wave then again urges the busy gleaners before it, when they appear like a little pigmy army passing through their military evolutions; and at this time the wily sportsman, seizing his opportunity, spreads destruction among their timid ranks; and so little are they aware of the nature of the attack that after making a few aerial meanders the survivors pursue their busy avocations with as little apparent concern as at the first. The breeding-place of the Sanderlings, in common with many other wading and aquatic birds, is in the remote and desolate regions of the North, since they appear to be obliged to quit those countries in America a little after the middle of August. According to Mr. Hutchins, they breed on the coast of Hudson Bay as low as the 55th parallel; and he remarks that they construct, in the marshes, a rude nest of grass, laying four dusky eggs, spotted with black, on which they begin to sit about the middle of June.

Flemming supposes that those seen in Great Britain breed no farther off than in the bleak Highlands of Scotland, and Mr. Simmonds observed them at the Mull of Cantyre as late as the second of June. They are found in the course of the season throughout the whole Arctic circle, extending their migrations also into moderate climates in the winter. They do not, however, in Europe proceed as far south as the capital of Italy, as we learn from the careful and assiduous observations of the Prince of Musignano. According to Latham the Sanderling is known to be an inhabitant even of the remote

coast of Australia, and is found on the shores of Lake Baikal in Siberia. In the month of May, or as soon as they have recovered from the moult of spring, they leave us for the north, but are seldom in good order for the table until autumn, when, with their broods, they arrive remarkably plump and fat, and are then justly esteemed as a delicacy by the epicure. Besides the various kinds of insect food already mentioned on which they live, they likewise swallow considerable portions of sand in order apparently to assist the process of digestion.

The Sanderling is almost cosmopolitan in its distribution, and is usually abundant wherever it occurs. In America it breeds in high Arctic regions, and winters in the far South, — some flocks going to Chili and Patagonia: and in their migrations the birds follow the water-ways of the interior as well as the coast-line.

A few stragglers have been seen on the New England shores in summer, but no nest has been found south of about latitude 55°; and Captain Feilden reports finding a number breeding on the shores of the Frozen Ocean, at the extreme northern limit of animal life.

Flemming's opinion that some of these birds nested in Scotland has not been confirmed by recent observers. Even on the Faroe Islands the Sanderling occurs as a migrant only; but nests have been taken in Iceland.

These birds are exceedingly active and by no means shy. When flushed they fly out to sea, but soon return; and when a flock is fired into, the remnant make no great effort to escape, though a wounded bird will dive into the surf or swim off on the surface of the water.

The food of the Sanderling while in this region is confined chiefly to small bivalves and crustaceans; but on its breeding-ground the bird is more insectivorous, and has been known to eat also the buds of plants.

BLACK-NECKED STILT.

HIMANTOPUS MEXICANUS.

CHAR. Legs bright pink and exceedingly long; bill black, slender, and longer than the head; crown, back of neck, back, and wings black; forehead, patch over the eyes, throat, and under parts white. Length about 15 inches.

Nest. On marshy margin of stream or pond; a slight depression in the turf, lined with dry grass. Sometimes — if the ground is very wet — a high platform is built, of weed-stems and twigs.

Eggs. 3-4; pale olive or greenish buff, spotted with brownish black; size exceedingly variable, average about 1.75 × 1.20.

The Black-necked Stilt is common to many parts of South as well as North America; it is known at any rate to inhabit the coast of Cayenne, Jamaica, and Mexico. In the United States it is seldom seen but as a straggler as far to the north as the latitude of 41°. About the 25th of April, according to Wilson, the Stilts arrive on the coast of New Jersey in small flocks of twenty or thirty together. These again subdivide into smaller parties, but they still remain gregarious through the breeding-season. Their favorite residence is in the higher and more inland parts of the greater salt-marshes, which are interspersed and broken up with shallow pools, not usually overflowed by the tides during summer. In these places they are often seen wading up to the breast in water, in quest of the larvæ, spawn, flies, and insects which constitute their food.

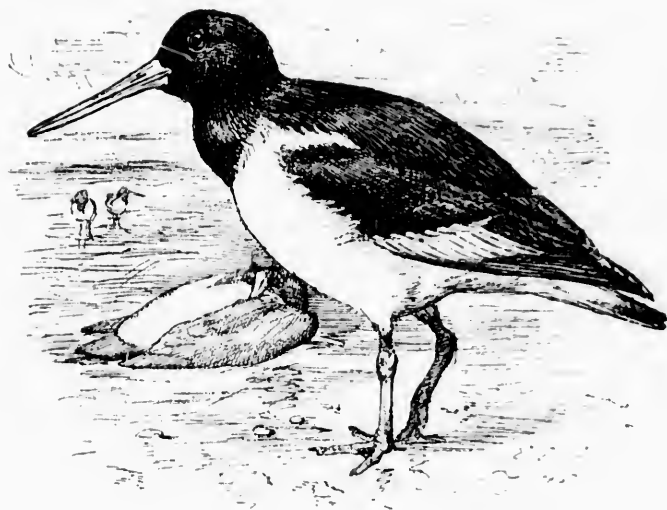
In the vicinity of these bare places, among thick tufts of grass, small associations of six or eight pair take up their residence for the breeding-season. They are, however, but sparingly dispersed over the marshes, selecting their favorite spots, while in large intermediate tracts few or none are to be seen. Early in May they begin to make their nests, which are at first slightly formed of a mere layer of old grass, just sufficient to keep the eggs from the moisture of the marsh; in the course of incubation, however, either to guard against the rise of the tides, or for some other purpose, the nest is in-

creased in height with the dry twigs of salt marsh shrubs, roots of grass, sea-weed, and any other coarse materials which may be convenient, until the whole may now weigh two or three pounds. The eggs, four in number, are of a dark yellowish drab, thickly marked with large blotches of brownish black. These nests are often situated within fifteen or twenty yards of each other, the respective proprietors living in mutual friendship.

While the females are sitting, their mates are either wading in the adjoining ponds, or traversing the marshes in the vicinity: but on the approach of any intruder in their peaceable community, the whole troop assemble in the air, and flying steadily with their long legs extended behind them, keep up a continual yelping note of *click, click, click*. Alighting on the marsh, they are often seen to drop their wings, and standing with their legs half bent, and trembling, they seem to sustain their bodies with difficulty. In this singular posture they will sometimes remain for several minutes, uttering a curring sound, and quivering their wings and long shanks as if in the act of laboriously balancing themselves on the ground. A great deal of this motion is, however, probably in manœuvre, to draw the spectators' attention from their nests.

Although so sedentary in the breeding-season, at times they extend their visits to the shores, wading about in the water and mud in quest of their food, which they scoop up with great dexterity. On being wounded, while in the water, they sometimes attempt to escape by diving, — at which, however, they are by no means expert. In autumn their flesh is tender and well flavored. They depart for the South early in September, and proceed probably to pass the winter in tropical America.

The Stilt is a rare bird in this Eastern faunal province, excepting in Florida. It is occasionally seen along the sandy beaches of Massachusetts, and a few examples have been taken in Maine and New Brunswick and in Michigan.



AMERICAN OYSTER-CATCHER.

HEMATOPUS PALLIATUS.

CHAR. Bill red, long, stout, straight, and compressed towards the point; feet red, no hind toe, outer and middle toes united by a membrane as far as the middle joint. Head and neck black, changing to blackish brown on back and wings; rump, wing-band, tail, and belly white. Length 18 inches.

Nest. On the border of a salt-marsh or upper edge of a sea-beach; a mere depression scratched in the sand.

Eggs. 2-3; bluish white or pale buff marked with several shades of brown; 2.20×1.55 .

The Oyster-catcher is common to the north of both continents, breeding in Great Britain, France, Norway, and along the borders of the Caspian; it is even seen as far south as Senegal in Africa. But though common in New Jersey and the Southern States as far as the Bahamas, where these birds likewise pass the period of reproduction, they are but rarely seen to visit the coast of Massachusetts. In Europe they are said to retire somewhat inland at the approach of winter; in the United States they are seen at this season along the coasts which lie south of Cape Hatteras, on the borders of

the Atlantic. They return to New Jersey by the close of April, and frequenting the sandy sea-beach, are now seen in small parties of two or three pairs together. They are generally wild and difficult to approach, except in the breeding-season, and at times may be seen walking erectly and watchfully along the shore, now and then probing the sand in quest of marine worms, mollusca, and minute shell-fish. Their larger prey is sometimes the small burrowing crabs called fiddlers, as well as mussels, solens, and oysters, their reputed prey in Europe. They seldom, however, molest the larger shell-fish in the United States, preferring smaller and less precarious game. Catesby, at the same time, asserts that he found oysters in the stomach, and Willoughby adds that they sometimes swallowed entire limpets. According to Belon, the organ of digestion is indeed spacious and muscular, and the flesh of the bird is black, hard, and rank flavored. Yet in the opinion of some, the young, when fat, are considered as agreeable food. The nests of the Oyster-catchers are said often to be made in the herbage of the salt-marshes, but on the Atlantic coast these birds commonly drop their eggs in slight hollows scratched in the coarse sand and drift, in situations just sufficiently elevated above the reach of the summer tides. The eggs are laid from the first to the third week in May, and from the 15th to the 25th the young are hatched, and run about nimbly almost as soon as they escape from the shell. At first they are covered with a down nearly the color of the sand, but marked with a line of brownish black on the back, rump, and neck. In some parts of Europe Oyster-catchers are so remarkably gregarious in particular breeding-spots that a bushel of their eggs in a few hours might be collected from the same place.

Like Gulls and other birds of this class, incubation costs much less labor than among the smaller birds, for the female sits on her eggs only during the night and morning, or in cold and rainy weather; the heat of the sun and sand alone being generally sufficient to hatch them, without the aid of the bird by day. The nest is, however, assiduously watched with the

usual solicitude of parental affection, and on the least alarm the male starts off with a loud scream, while the female, if present, to avoid the discovery of her charge, runs out some distance previous to taking wing. The young, as soon as released from the shell, follow the guiding call of the mother, and on any imminent danger threatening, instinctively squat on the sand, when, from the similarity of their color, it is nearly impossible to discover their artless retreat. On these occasions, the parents make wide circuits on either hand, now and then alighting, and practising the usual stratagem of counterfeited imbecility, to draw away attention from their brood. The note of this species consists commonly of a quick, loud, and shrill whistling call like *'wheep, 'wheep, wheo,* or *peep, peep,* often reiterated, as well at rest as while on the wing.

While migrating, they keep together in lines like a marshalled troop, and however disturbed by the sportsman, they still continue to maintain their ranks. At a later period the flock will often rise, descend, and wheel about with great regularity, at the same time bringing the brilliant white of their wings into conspicuous display. When wounded, and at other times, according to Baillon, they betake themselves to the water, on which they repose, and swim and dive with celerity. They have sometimes also been brought up and tamed so as to associate familiarly with ducks and other poultry.

This bird is still rare in New England, though plentiful along the shores of the Middle States. Two examples have been taken on the Bay of Fundy.

Mr. Walter Hoxie, in the "Ornithologist and Oologist" for August, 1887, gave an interesting account of a pair of these birds moving their eggs when the nest was discovered. While Mr. Hoxie was watching the parents they carried the eggs about one hundred yards from the old nest, and deposited them safely in a nest which he saw the birds prepare.

NOTE. — The European OYSTER-CATCHER (*Hamatopus ostralegus*) occurs occasionally in Greenland.

AMERICAN GOLDEN PLOVER.

COMMON PLOVER. WHISTLING PLOVER. PALE-BELLY.
GREEN PLOVER.

CHARADRIUS DOMINICUS.

CHAR. No hind toe. Above, spotted with black and lemon yellow; forehead and line over the eyes white; tail grayish brown with imperfect bars of ashy white; beneath, black. In winter plumage the black of the lower parts is replaced by mottled gray and white, the throat and breast spotted with dusky.

Nest. At the upper edge of a sea-beach; a mere depression in the soil lined with a few bits of grass.

Eggs. 3-4 (usually 4); of sharply pointed pyriform shape; dark brownish buff, sometimes tinged with drab or grayish white; spotted and blotched with various shades of brown; 2.00×1.40 .

The Common Plover is, according to the season of the year, met with in almost every part of the world, particularly in Asia and Europe, from Kamtschatka to China, as well as in the South Sea Islands; and on the present continent from Arctic America, where it breeds, to the Falkland Islands; it is also seen in the interior at least as far as Missouri. It breeds in Siberia and in the northern parts of Great Britain, but not in France or Italy, where it is also common. At such times it selects the high and secluded mountains, sheltered by the heath, where, without much attempt at a nest, the female deposits about four, or sometimes five, eggs of a pale-olive color, marked with blackish spots.

These Plovers arrive on the coast of the Middle and Northern States in spring and early autumn. Near to Nantasket and Chelsea Beach they are seen on their return from their inclement natal regions in the north by the close of August, and the young remain in the vicinity till the middle of October, or later, according to the state of the weather. They live principally upon land insects, or the larvæ and worms they meet with in the saline marshes, and appear very fond of grasshoppers. About the time of their departure they are, early in the morning, seen sometimes assembled by thousands; but they all

begin to disperse as the sun rises, and at length disappear high in the air for the season. They usually associate, however, in small flocks and families, and when alarmed, while on the wing, or giving their call to those who are feeding around them, they have a wild, shrill, and whistling note, and are at most times timid, watchful, and difficult to approach. Though they continue associated in numbers for common safety during the day, they disperse in the evening, and repose apart from each other. At day-break, however, the feeling of solitude again returns, and the early sentinel no sooner gives the shrill and well-known *call* than they all assemble in their usual company. At this time they are often caught in great numbers by the fowler, with the assistance of a clap-net stretched, before dawn, in front of the place they have selected to pass the night. The fowlers, now surrounding the spot, prostrate themselves on the ground when the call is heard; and as soon as the birds are collected together, they rise up from ambush, and by shouts and the throwing up of sticks in the air, succeed so far in intimidating the Plovers that they lower their flight, and thus striking against the net, it falls upon them. In this and most other countries their flesh, in the autumn, and particularly that of the young birds, is esteemed as a delicacy, and often exposed for sale in the markets of the principal towns.

The Golden Plover is common, and in some localities abundant, in the autumn along the shores of New England and the Maritime Provinces, but in the spring migrations it is rarely or never seen.

Dr. Wheaton found it abundant in the spring, and common in the fall, in Ohio; but some observers in Ontario consider it a rare bird in that province.

NOTE.—The European GOLDEN PLOVER (*Charadrius aprincarius*) has been seen occasionally in Greenland.

PIPING PLOVER.

ÆGIALIUS MELODA.

CHAR. Above, pale ash tinged with pale brown; forehead and interrupted ring about the neck black; below, white; black patches on side of chest; feet orange; bill orange, tipped with black. In young birds the black of the head and neck is replaced by brown. Length $6\frac{1}{4}$ to $7\frac{1}{2}$ inches.

Nest. Amid the shingle of a sea-beach; a shallow depression in the sand.

Eggs. 2-4 (usually 4); pale buff or creamy, marked with fine spots of blackish brown and a few spots of lavender; 1.30×1.00 .

This species is a common inhabitant of our sea-coast, arriving in the Middle States from its Southern hibernal retreats towards the close of April. It does not, however, proceed so far to the north, but resides and breeds in the United States, from the shores of New Jersey to Nova Scotia. Along the low, sandy, and solitary borders of the sea, in small scattering flocks, the Piping Plovers are therefore seen throughout the summer, rapidly cursing over the strand, either in quest of their food or to elude the search of the intruding spectator. After gliding swiftly along for a little distance, they often stop for a short interval to watch any approach or pick up some insect, occasionally bending forward and jerking the head up in a balancing attitude: when still, their pale livery so nearly resembles the color of the sand that for the instant they are rendered nearly invisible. On approaching their nests, which are mere shallow hollows in the sand and gravel, they usually exhibit considerable emotion, running along with outspread wings and tail, and fluttering as if lame, to attract attention from their eggs and young. They will sometimes practise this artifice at a considerable distance from their brood, and often follow the spectator for a mile or two, making their shrill, mournful, monotonous call, frequently alighting and running, with a view to deception, near any place which happens to be examined; and by these reiterated feints and fears it becomes often nearly impossible to discover their breeding-haunts. About

the 20th of May, or later, as they proceed to the North, they commence laying, the eggs, being about four, rather large, of a pale cream color, or nearly white, irregularly spotted and blotched nearly all over with blackish brown and many subdued tints of a much paler color.

The cry of this species, uttered while running along the strand, is rather soft and musical, consisting chiefly of a single, varied, and repeated plaintive note. On approaching the breeding-spot, the birds wheel around in contracting circles, and become more clamorous, piping out, in a tone of alarm, 'ké-*bee*,¹ and *keeb, keeb*, then falling off into a more feeble *kée-boo*, with occasionally a call of *kib*. At times, in the same sad and wild accent with the vociferous Lapwing, we hear a cry of *kee-wee*, and even the same *pai-wee*, *pee-too*, and *pai-too*. When in hurry and consternation, the cry resembled 'pit, 'pit, 'pit, 'pt. Sometimes, in apparent artifice, for the defence of their tender brood, besides practising alarming gestures, they even squeak like young birds in distress.

The food of this species is quite similar with that of the Semi-palmated Ring Plover; indeed, the birds are scarcely to be distinguished but by the paleness of the plumage in the present species, and the shortness of the web between the exterior toes. They are usually fat, except in the breeding-season, and much esteemed as game.

The Piping Plover is a common summer resident of New England and the Maritime Provinces, though rare in some localities on the Bay of Fundy. Mr. C. B. Cory found it abundant on the Magdalen Islands.

Mr. Thompson thinks it a migrant near Toronto; but Mr. Saunders found it breeding at Point Pelee, on Lake Erie.

NOTE.—The BELTED PIPING PLOVER (*A. meloda circumcincta*) is a Western variety, restricted chiefly to the Missouri River region, though it has been occasionally seen on the Atlantic coast. It differs from true *meloda* in having "the black patches on the sides of the chest more or less completely coalesced" instead of separated.

¹ The first syllable uttered with a guttural lisp.

WILSON'S PLOVER.

ÆGIALIUS WILSONIA.

CHAR. Above, olive ash or pale ashy brown, tinged on the nape with rufous; under parts and forehead white; patches on front of crown, and band on breast black; tail dark olive; bill black, long, and stout. Length about $7\frac{3}{4}$ inches. Easily distinguished from the other small "ring-necked" Plover by its large black bill.

Nest. Amid the shingle on a sea-side beach; an extremely slight hollow in the sand, without lining.

Eggs. Usually 3; pale olive-buff thickly marked with blackish brown; size variable, average 1.30×1.00 .

This species was described by Ord in 1813, and dedicated to his friend Wilson. It is a Southern bird, and restricted probably to the sea-coast, though some few observers have reported finding it in the interior. It was "not very common" on Long Island in Giraud's day, and later authorities have reported it extremely rare there; but it occurs in more or less abundance from Virginia to Florida and on both coasts of Central America. A few examples have been credited to New England, and Colonel Goss shot one on Brier Island, at the mouth of the Bay of Fundy.

Dr. Coues describes the habits of this Plover as much the same as those of its congener, the Semi-palmated. He says the Wilson's Plovers move north in flocks of six to twenty; but these separate on the nesting ground, and two nests are never placed in close neighborhood. They are gentle and unsuspecting birds; but when a nest is approached, the parents become intensely excited, flitting to and fro hurriedly and wildly, and continually uttering cries of alarm and dismay in most pathetic tones. Their note is described as "half a whistle and half a chirp, and very different from the clear mellow piping of the other species."

They begin to lay about the middle of May or first of June, according to location. The young run as soon as they are clear of the shell, and easily escape detection by squatting on the sand, which is very similar in color.

The flight of Wilson's Plover is swift and graceful; and as the birds skim above the water—barely clearing the crests of the waves—they continually utter their cry in clear, soft tones. Giraud described them as of a sociable tendency; but Audubon thought they rarely mingled with other species, and called them solitary. Their food is small shell-fish, worms, and insects, with which they mingle fine particles of sand.

KILLDEER.

ÆGIALITIS VOCIFERA.

CHAR. Above, grayish brown; band on forehead above and behind eyes white bordered with black; two bands across chest black; rump and base of tail rufous; tail with subterminal band of black and tipped with white; patch of white on wing; under parts white. Length 10 inches.

Nest. On the edge of a sandy beach or margin of a marshy meadow; a mere depression in the sand or turf, sometimes slightly lined with dry grass.

Eggs. Usually 4; buff, sometimes drabish, marked with fine spots of dark brown, 1.55 × 1.10.

The well-known, restless, and noisy Killdeer is a common inhabitant throughout the United States, in nearly all parts of which it is known to breed, wintering, however, generally to the south of Massachusetts. In the interior it also penetrates to the sources of the Mississippi, the remote plains of the Saskatchewan, and Vieillot met with it even in St. Domingo. On the return of spring it wanders from the coast, to which it had been confined in winter, and its reiterated and shrill cry is again heard as it passes through the air, or as it courses the shore of the river, or the low meadows in the vicinity of the sea. About the beginning of May it resorts to the fields or level pastures which happen to be diversified with pools of water, and in such situations, or the barren sandy downs in the immediate vicinity of the sea, it fixes upon a place for its nest which is indeed a mere slight hollow lined with such straw and dry weeds as come most convenient. In one instance Wilson saw a nest of the Killdeer curiously paved and bordered with fragments of clam and oyster shells; at other times no vestige of an artificial nest was visible. The eggs, usually four, large and pointed at the smaller end, are of a yellowish cream color thickly marked with blackish blotches.

At all times noisy and querulous to a proverb, in the breeding-season nothing can exceed the Killdeer's anxiety and alarm; and the incessant cry of *kildeer, kildeer*, or *te te de dit*, and *te dit*, as they waft themselves about over head or descend

and fly around you, is almost deafening. At the same time, to carry out this appearance of distress they run along the ground with hanging wings, counterfeiting lameness to divert the intention of the intruder. Indeed, no person can now approach the breeding-place, though at a considerable distance, without being molested with their vociferous and petulant clamor. During the evening and till a late hour, in moonlight nights, their cries are still heard both in the fall and spring. They seek their fare of worms and insects often in the twilight, so that their habits are in some degree nocturnal; but they also feed largely on grasshoppers, crickets, carabi, and other kinds which frequent grassy fields by day.

The flight of these birds is remarkably vigorous, and they sometimes proceed at a great height in the air. They are also fond of washing themselves and wading in the pools, which they frequent for insects; their gait is perfectly erect, and, like most of their tribe, they run with great celerity. As game, their flesh, like that of the Lapwing is musky, and not generally esteemed; in the fall, however, when fat they are by some considered as well flavored. Towards autumn families descend to the sea-shore, where their behavior now becomes more circumspect and silent.

At one time the Killdeer was not uncommon in New England, but of late years it has been quite rare, though a few pairs still breed on Rhode Island. It is seldom seen in the Maritime Provinces, but is common along the Great Lakes. Farther west it ranges north to the Saskatchewan.

An extraordinary flight of these birds visited the New England coast late in November, 1888. Dr. Arthur P. Chadbourne — who contributed a paper on the subject to "The Auk" for July, 1889 — proved by reports received from various points on the Atlantic coast that the birds had been driven off shore by a severe gale while migrating along the Carolinian coast, and had been carried north on the eastern edge of the storm and finally to the land. After the storm the birds were abundant for several days from Nova Scotia to Rhode Island.

SEMI-PALMATED PLOVER.

ÆGIALIUS SEMIPALMATA.

CHAR. Above, brownish ash; forehead white, bordered with black; cheeks black; throat and band round neck white; breast and band round neck black; bill orange, tipped with black; under parts white. Length about 7 inches.

HAZ. On the margin of a salt-marsh or a swampy inlet of the sea; a slight hollow partially lined with grass or weeds.

Eggs. 2-4 (usually 4); greenish buff or olive drab, marked with several shades of brown; size variable, average 1.30×0.95

This small species, so nearly related to the Ring Plover of Europe, arrives from the South along our sea-coasts and those of the Middle States towards the close of April, where it is seen feeding and busily collecting its insect fare until the close of May. These birds then disappear on their way farther north to breed, and in the summer are even observed as far as the icy shores of Greenland. According to Richardson they abound in Arctic America during the summer, and breed in similar situations with the Golden Plover. Mr. Hutchins adds, its eggs, generally four, are dark colored and spotted with black. The aborigines say that on the approach of stormy weather this species utters a chirping noise and claps its wings, as if influenced by some instinctive excitement. The same, or a very similar species, is also met with in the larger West India islands and in Brazil according to the rude figure and imperfect description of Piso.

The early commencement of inclement weather in the cold regions selected for their breeding haunts induces the Ring Plovers to migrate to the South as soon as their only brood have acquired strength for their indispensable journey. Flocks of the old and young are thus seen in the vicinity of Boston by the close of the first week in August, and they have been observed on the shores of the Cumberland, in Tennessee, by the ninth of September.

The Semi-palmated Ring Plover, though so well suited for an almost aquatic life, feeds on land as well as marine insects, collecting weavels and other kinds, and very assiduously cours-

ing the strand at low water. In general, when not too eagerly hunted, they are but little suspicious, and may readily be approached by the fowler, as well as detained sometimes by whistling in imitation of their quailing call. On most occasions, and when flushed, they utter a reiterated, sharp, twittering, and wild note, very much in unison with the ceaseless echoes of the breaking surge and the lashing of the waves, near which they almost perpetually course, gliding and running with great agility before the retiring or advancing waters. Their flesh is commonly fat and well flavored, and in early autumn they are not uncommon in the markets of Boston and New York.

These pretty and interesting birds are abundant throughout the United States during both the spring and the autumn migrations; but excepting an occasional pair that are found in Maine, none breed south of the Canadian boundary. Dr. Louis B. Bishop reported numbers breeding on the Magdalen Islands, in 1888, and the birds are abundant during the summer on the coast of Labrador. In winter they range into South America, many going as far as Brazil and Peru.



RING PLOVER.

ÆGIALITIS HIATICULA.

CHAR. Above, rich brown: forehead and stripe behind the eyes white; crown, cheeks, and collar black. — the collar widest on the breast; patch on wings white; central tail-feathers brown, tipped with white; outer feathers mostly white; beneath, white; bill yellow, tipped with black. Length $7\frac{3}{4}$ inches.

Nest. A cavity among the pebbles of a sea-washed beach, sometimes slightly lined with weeds, — occasionally the lining is of small stones about the size of peas.

Eggs. Usually 4; dull buff, marked with brownish black; 1.40×1.00 .

This European bird, known to many of the old country gunners as the Ringed Dotterell, and closely allied to our well-known Semipalmated Plover, was found by Kumlien breeding in numbers on the western shore of Cumberland Bay. The same observer reports it common also at Disco Island, Greenland. It is not known to

occur regularly elsewhere in America, though one example has been taken at Great Slave Lake: but it is found throughout Europe, and ranges over northern Asia to Bering's Straits. It is met with throughout the entire year in England, breeding as far south as Kent and Sussex, and ranges north to lat. 80° 45', and south (in winter) to the shores of Africa.

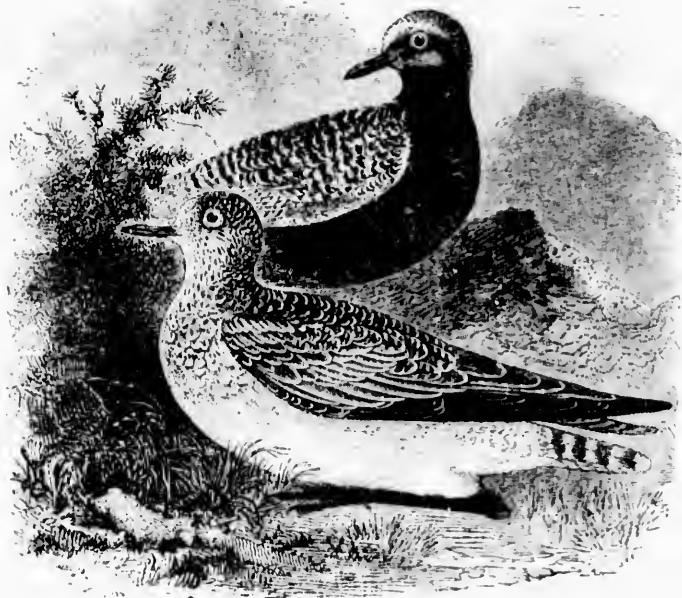
Seebohm thinks that the bird found nesting in the British Islands is a larger and lighter-colored race, laying a larger egg, and he proposes to make it a sub-species and name it *hiaticula major*.

Like others of the family, the Ringed Plover feeds on small thin-shelled crustaceans, such as shrimps, etc., and sea-worms, as well as on insects, which it catches with much adroitness: and with its food it mingles small pebbles and particles of sand to aid digestion.

The usual note of this bird is a melodious whistle: but the call-note is harsh, while the cry of alarm, though noisy, is rather plaintive. This last note has been written *pew-y-et* and *too-it*. The male, however, uses a distinct call-note during the mating-season. It is the same note as the usual call, but repeated so rapidly it forms a trill, and it is also delivered in more liquid tones.

This Plover is described by Seebohm as a wild, wary bird when feeding in its winter-quarters, but quite the opposite when on its breeding-grounds in the Far North. It there becomes an unobtrusive little creature, neither shy nor wary, and rarely displaying more than a shade of anxiety in its actions, — running but a little distance from an intruder, or flying to an adjacent knoll to watch his movements: sometimes squatting close to the sand until almost under one's feet. It runs with great swiftness, pausing now and then, and darting away again. Keeping close to the edge of the water, it follows the receding waves picking up what food may have been stranded, and hastening shoreward as the waves return.

NOTE. — A few examples of the MOUNTAIN PLOVER (*Ægialitis montana*) have been taken in Florida. The usual habitat of this species is from the Great Plains westward.



BLACK-BELLIED PLOVER.

BEETLE-HEAD. BULL-HEAD. SWISS PLOVER.

CHARADRIUS SQUATAROLA.

CHAR. Summer plumage: above, spotted black and white or ashy; beneath, black. Winter plumage: above, spotted black and brownish yellow; beneath, black mixed with white. Distinguished from all other Plovers by having a hind toe. Length about 12 inches.

Nest—On dry hill-side; a slight depression in the soil, lined with a few leaves and bits of grass.

Eggs.—4, buffish olive or greenish drab thickly marked with brownish black; 2.00 × 1.40

The Black-bellied or large Whistling Field Plover is met with in most parts of the northern hemisphere, and in America is known to breed from the open grounds of Pennsylvania to the very extremity of the Arctic regions. It is common around

Hudson Bay. How far this bird extends its migrations to the southward is not satisfactorily ascertained, though there is little doubt but that it ranges to the confines of Mexico, and it has been seen in considerable numbers in Louisiana and the Carolinas during the winter. According to Wilson it generally arrives in the inland parts of Pennsylvania in the latter part of April; and less timid than the Golden Plover, it often selects the ploughed field for the site of its nest, where the ordinary fare of earth-worms, larvæ, beetles, and winged insects now abounds. The nest, as in most of the birds of this class, is very slightly and quickly made of a few blades of stubble or withered grass, in which are generally deposited four eggs, large for the size of the bird (being scarcely a line short of two inches in length), of a cream color slightly inclining to olive, and speckled nearly all over with small spots and blotches of lightish brown, and others of a subdued tint, bordering on lavender purple; the specks, as usual, more numerous towards the large end. In the more temperate parts of the United States it rears often two broods in the season, though only one in Massachusetts, where, indeed, the nests are of rare occurrence. During the summer the young and old now feed much upon various kinds of berries, particularly those of the early bramble, called dew-berries; and their flesh at this time is highly esteemed. About the last week in August the Betel-headed Plovers (as they are called in New England) descend with their young to the borders of the sea-coast, where they assemble in great numbers from all their Northern breeding-places. Now passing an unsettled and roving life, without any motive to local attachment, they crowd to such places as promise them the easiest and surest means of subsistence; at this time small shell-fish, shrimps, and other minute marine animals, as well as the grasshoppers, which abound in the fields, constitute their principal fare.

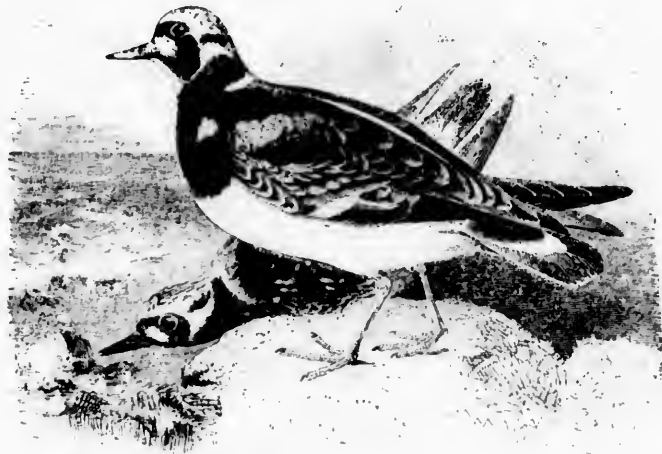
The Black-bellied Plover is at all times extremely shy and watchful, uttering a loud, rather plaintive whistling note as it flies high and circling in the air, and is so often noisy, particularly in the breeding-season, as to have acquired among many

of the gunners along the coast the name of the Black-bellied Killdeer. From a supposed similarity, probably in the note, it is remarkable that the inhabitants of the Faroe Islands denominate the Oyster-catcher *kielder*, and in Iceland the male is named *tilldur*, and the female *tilldra*. Indeed, the compass of voice in a great portion of this tribe of birds, more or less related to the Plovers, is remarkable for its similarity. The Betel-headed Plovers usually linger round the sea-coast in the Middle States till the commencement of November, when, the frosts beginning sensibly to diminish their prospect of subsistence, they instinctively move off towards the South, proceeding probably, at this time, under the shade of twilight, as moving flocks are nowhere, as far as I can learn, seen by day. About the middle of September in the marshes of Chelsea (Mass.), contiguous to the beach, they sometimes assemble at day-break in flocks of more than a thousand individuals together, and soon after disperse themselves in companies to feed, on the shores, upon small shell-fish and marine insects. This crowding instinct takes place a short time previous to their general migration southward.

Wilson originated the error that this species breeds in the mountains of Pennsylvania, and Audubon, Richardson, Nuttall, and others have helped to perpetuate it. There is no good evidence obtainable that the bird has nested south of the Hudson Bay district, but numerous observers have met with it in summer on the Barren Ground region and along the shores of the Arctic Ocean. It has been found in winter in the West Indies and South America. On its spring migration it goes north by various routes, — across the interior as well as along the coast-line, — but on the Atlantic shores it is more abundant in autumn than in spring.

I did not meet with any examples during spring on the Bay of Fundy or the New Brunswick shores of the Gulf of St. Lawrence, but Mr. Boardman informs me that the species occurs sparingly at the mouth of the St. Croix River. Stearns reported it common in southern Labrador, but Turner did not find it at Ungava.

NOTE. — Occasionally an example of the LAPWING (*Vanellus vanellus*) — a European species — visits Greenland. It has been taken on Long Island also.



TURNSTONE.

CHICKEN PLOVER. BRANT BIRD. RED-LEGGED PLOVER.

ARENARIA INTERPRES.

CHAR. Head, neck, breast, and shoulders variegated black and white; back streaked chestnut and black; wings with band of white; rump white; tail-coverts and most of tail-feathers dark brown; beneath, white. Legs and feet orange red; hind toe turning *inward*. Bill black, stout, and acute. Length 9 inches.

Nest. Under shelter of bushes or among herbage near the sea-shore; a slight depression, lined with a few leaves and blades of grass or weed-stems.

Eggs. 2-4 (usually 4); greenish gray, spotted and streaked with brown and bluish ash; 1.00 x 1.10.

These singular marine birds are not only common to the whole northern hemisphere, but extend their colonies even to Senegal and the Cape of Good Hope, in the southern half of the globe. Their favorite breeding-resorts are, however, confined to the inclement regions of the North, to which they are in no haste to return, but linger along the coast in the temperate climates for several months before they attain to the remote and desolate shores of their nativity. Their southern

progress in America is in all probability continued as far as the tropics, since their race even extends itself into the other hemisphere. Buffon, in fact, figures a specimen of the young bird from Cayenne. In New Jersey, according to Wilson, these birds arrive in the month of April, and there linger until June, very soon after which they are seen at their breeding-quarters on the shores of Hudson Bay and along the desolate strand of the Arctic Sea, where they have been met with by the northern navigators as far as the 75th parallel. They already begin to depart from these remote boreal regions in August, in which month, and even towards the close of July, I have seen young birds for sale in the market of Boston. They visit the shores of Great Britain also about the same time, arriving thence probably from the Arctic shores of Siberia. Five or six weeks later they are observed to visit the borders of the Delaware, and proceed onward to the South as the weather increases in coldness. The most southern summer residence of these birds known, if Mr. Flemming be correct, is the Scottish isles of Zetland. They are also said to inhabit the isles of the Baltic during summer. In a mere depression of the sand or gravel, along the sea-coast, they are said to drop their eggs, which are four in number, and according to Mr. Hutchins are of an olive green spotted with blackish brown.

This bird is naturally of a wild and solitary disposition, coursing along the shore by pairs or in small families which have been bred together. In the months of May and June, in New Jersey, they almost wholly feed upon the spawn of the king-crab, or horse-foot (*Monoculus polyphemus*, Lix.), which affords them and other animals an abundant and almost inexhaustible supply.

The Turnstone, while flying, often utters a loud twittering note, and runs at times with its wings lowered, but is less swift in its movements than most of the Sandpipers, and more patient and intent in obtaining its fare. Like the Wood-neckers, it is content to search over the same place for a considerable length of time; the mechanism of its bill seems well provided for this purpose, and it is often seen in this way

turning over stones and pebbles from side to side in search of various marine worms and insects. The young feed also upon shrimps and different kinds of small shell-fish, particularly minute mussels which are occasionally cast up by the tides. According to Catesby, this habit, of turning over stones in quest of insects is retained by the species even when subjected to domestication.

The Turnstone is a common spring and autumn migrant throughout this Eastern region, but near the Atlantic is found only on the sea-shore. It makes its nest in the Arctic regions, from Hudson Bay northward, and during the winter ranges throughout South America to the Straits of Magellan.

The food of these birds is the usual shore-bird diet; but they have been known to thrive upon boiled rice and bread soaked in milk. They make interesting pets, as they are gentle and confident, and are readily reconciled to confinement.

WHOOPING CRANE.

GREAT WHITE CRANE.

GRUS AMERICANA.

CHAR. General plumage white; outer wing-feathers, or primaries black; crown and cheeks nearly naked and colored orange; the sparse hair-like feathers black; tail covered with long and narrow plume-feathers. Bill greenish yellow, 6 inches long, stout, and pointed. Length over 4 feet.

Nest. On a dry mound in a marsh or on margin of a swamp, made of heavy marsh grass and placed on high platform of sedges.

Eggs. 2-3; rough and coarse, bluish ash sometimes tinged with brown; marked with pale brown; 3.80 x 2.60.

This stately Crane, the largest of all the feathered tribes in the United States, like the rest of its family dwelling amidst marshes and dark and desolate swamps, according to the season is met with in almost every part of North America, from the islands of the West Indies, to which it retires to pass the winter, to the utmost habitable regions and fur countries of the North. A few of these birds hibernate in the warmer parts of the Union, and some have been known to linger through

the whole of the inclement season in the swamps of New Jersey, near to Cape May. When discovered in their retreats, they are observed wandering along the marshes and muddy flats near the sea-shore, in quest of reptiles, fish, and marine worms. Occasionally they are seen sailing along from place to place with a heavy, silent flight, elevated but little above the surface of the earth. Ever wary, and stealing from the view of all observers, these gaunt shades of something which constantly avoids the social light impress the mind no less with curiosity than aversion; and it is surprising that, furtive and inharmonious as owls, they have not excited the prejudice of the superstitious.

At times they utter a loud, clear, and piercing cry that may be heard to a very considerable distance, and which, being not unaptly compared to the whoop or yell of the savages when rushing to battle, has conferred upon our bird his peculiar appellation. Other species of the genus possess also the same sonorous cry. When wounded they attack those who approach them with considerable vigor, so much so as to have been known to dart their sharp and dagger-like bill through the incautious hand held out for their capture. Indeed, according to Dr. Richardson, they have sometimes driven the fowler fairly out of the field.

In the winter season, dispersed from their native haunts in quest of subsistence, they are often seen prowling in the low grounds and rice-fields of the Southern States in quest of insects, grain, and reptiles; they swallow also mice, moles, rats, and frogs with great avidity, and may therefore be looked upon at least as very useful scavengers. They are also at times killed as game, their flesh being well flavored, as they do not subsist so much upon fish as many other birds of this family. It is with difficulty, however, that they can be approached or shot, as they are so remarkably shy and vigilant. They build their nests on the ground, after the manner of the common Crane of Europe, selecting a tussock of long grass in some secluded and solitary swamp, raising its sides to suit their convenience so as to sit upon it with extended legs. The

eggs are two in number, as large as those of the swan, and of a bluish-white color blotched with brown.

Whooping Cranes rise with difficulty from the ground, flying low for a time, and thus afford an easy mark for the sportsman. At other times they fly around in wide circles as if reconnoitring the surrounding country for fresh feeding ground: occasionally they rise spirally into the air to a great height, mingling their screaming voices together, which are still so loud, when they are almost out of sight, as to resemble a pack of hounds in full cry. Early in February Wilson met with several of these Cranes in South Carolina: at the same season and in the early part of the following month I heard their clamorous cries nearly every morning around the enswamped ponds of West Florida and throughout Georgia, so that many individuals probably pass either the winter or the whole year in the southern extremity of the Union.

It is impossible to describe the clamor of one of these roosting flocks, which they begin usually to utter about sunrise. Like the howling-monkeys, or preachers, of South America (as they are called), a single individual seemed at first as if haranguing or calling out to the assembled company, and after uttering a round number of discordant, sonorous, and braying tones, the address seemed as if received with becoming applause, and was seconded with a reiteration of jingling and trumpeting hurrahs. The idea conveyed by this singular association of sounds was so striking, quaint, and ludicrous that I could never hear it without smiling at the conceit. Captain Amidas (the first Englishman who ever set foot in North America) thus graphically describes their clamor on his landing on the isle of Wokokou, off the coast of North Carolina, in the month of July: "Such a flock of Cranes (the most part white) arose under us, with such a cry, redoubled by many echoes, as if an army of men had shouted all together." But though this display of their discordant calls may be amusing, the bustle of their great migrations and the passage of their mighty armies fills the mind with wonder. In the month of December, 1811, while leisurely descending on the bosom of

the Mississippi in one of the trading boats of that period, I had an opportunity of witnessing one of these vast migrations of the Whooping Cranes, assembled by many thousands from all the marshes and impassable swamps of the North and West. The whole continent seemed as if giving up its quota of the species to swell the mighty host. Their flight took place in the night, down the great aerial valley of the river, whose southern course conducted them every instant towards warmer and more hospitable climes. The clangor of these numerous legions passing along high in the air seemed almost deafening; the confused cry of the vast army continued with the lengthening procession, and as the vocal call continued nearly throughout the whole night without intermission, some idea may be formed of the immensity of the numbers now assembled on their annual journey to the regions of the South.

The Whooping Crane is almost entirely confined to the central portions of the continent, breeding from about the forty-third parallel northward, and wintering in Texas and the swampy interior of Florida. It is doubtful if this species ever occurred in New England, and at this day it is not seen near the Atlantic to the north of the Chesapeake. It is a rare spring and fall migrant in Ohio, and a few pairs nest annually in the prairie region of Illinois.

LITTLE BROWN CRANE.

GRUS CANADENSIS.

CHAR. General color bluish gray, washed in places with tawny; cheeks and throat ashy, sometimes white; crown partially covered with black hair-like feathers; wings ashy brown; bill blackish. Young brownish gray washed with tawny. Length about 3 feet.

Nest. On the marshy bank of a river or pond; a hollow in the turf lined with dry grass.

Eggs. Usually 2; olive drab or ashy yellow or sea-green, marked with brown; 3.65×2.30 .

For the distribution of this species, see the account of the Sandhill Crane.

SANDHILL CRANE.

BROWN CRANE.

GRUS MEXICANA.

CHAR Similar to the Little Brown Crane, but larger. Length about 4 feet.

Wet and Eggs. Similar to the smaller race. The eggs larger; 4.00 X 2.45.

This species, scarcely inferior to the *americana* in magnitude, visits all parts of the fur countries in summer up to the shores of the Arctic Sea, and is indeed, according to the season, spread more or less throughout North America, having been observed in Mexico, Louisiana, and Florida. It also probably breeds in the interior of the continent, as Major Long saw it in the Illinois country on the 15th of July. As early as the 7th of February Kalm observed flocks passing over New Jersey and Pennsylvania on their way either to the North or West; but as the Atlantic coast has become more settled and populous, these shy birds have, for the most part, altered their route, and now proceed more within the wilder interior of the continent. In May they are seen about Hudson Bay; and like the Whooping Crane, which they resemble in manners, they nest on the ground, laying two eggs, of an oil green, irregularly and rather thickly spotted with yellowish brown and umber, the spots confluent and dark on the greater end. The flesh is accounted good food, resembling that of the Swan (*Cygnus buccinator*) in flavor.

It is not surprising that the older writers should have treated *canadensis* and *mexicana* as one species, for in appearance and in general distribution they are very similar, though the larger of the two may be termed a Southern race, as it breeds south to Florida, while the smaller race breeds north to the Arctic regions: but both forms are found on the Western plains.

Along the valley of the Mississippi these birds are very abundant: but excepting an occasional wanderer, they are seen to the eastward of that river in Georgia and Florida only. One example of the Little Brown Crane has been shot in Rhode Island and another in South Carolina.

GREAT BLUE HERON.

BLUE CRANE.

ARDEA HERODIAS.

CHRY. General color ashy blue, darker on the wings; thighs and edge of wings chestnut; crest white, bordered by black, from which extend two long, slender black feathers; spots of dusky and chestnut on front of the neck; under parts dusky, broadly striped with white; long and slender plumes of pale pearly gray hang from the breast and fall gracefully over the wings (these plumes are wanting in the autumn); bill longer than the head, stout, and acute, of yellow color; legs and feet black. Length about 42 to 50 inches.

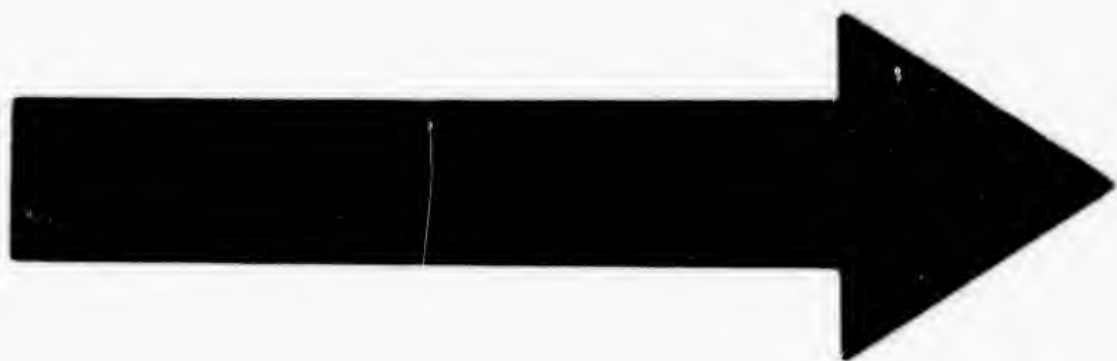
Nest. Usually with a community situated in a sycamore or cypress swamp, or (at the North) in a grove of deciduous trees; placed on the upper branches of tall trees, — sometimes on bare rocks; made of small dry twigs, and lined each year with fresh green twigs.

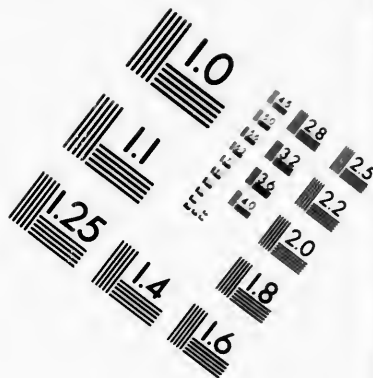
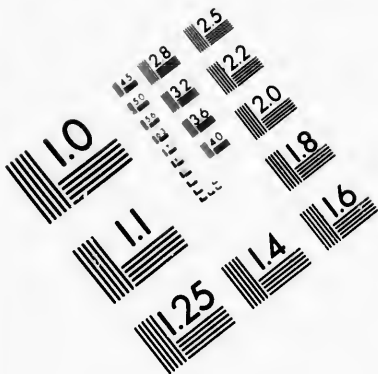
Eggs. 3-5 (usually 4); greenish blue; 2.50 × 1.50.

The Great Heron of America, nowhere numerous, may be considered as a constant inhabitant of the Atlantic States, from New York to East Florida, in the storms of winter seeking out open springs, muddy marshes subjected to the overflow of tides, or the sheltered recesses of the cedar and cypress swamps contiguous to the sea-coast. As a rare or accidental visitor, it has been found even as far north as Hudson Bay, and commonly passes the breeding-season in small numbers along the coasts of all the New England States and the adjoining parts of British America. Mr. Say also observed this species at Pembino, in the 49th parallel. Ancient natural heronries of this species occur in the deep maritime swamps of North and South Carolina; similar associations for breeding exist also in the lower parts of New Jersey. Its favorite and long-frequented resorts are usually dark and enswamped solitudes or boggy lakes, grown up with tall cedars, and entangled with an under-growth of bushes and *Kalmia* laurels. These recesses defy the reclaiming hand of cultivation, and present the same gloomy and haggard landscape they did to the aborigines of the forest, who, if they existed, might still pursue through the tangled mazes of these dismal swamps the retreating bear and

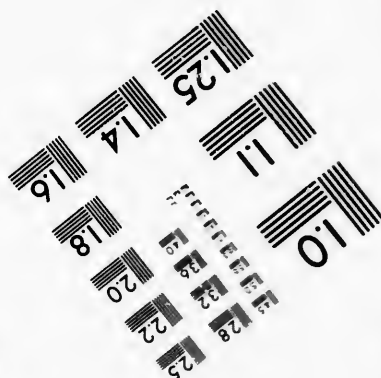
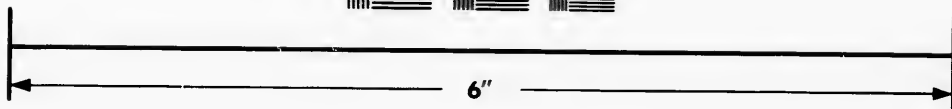
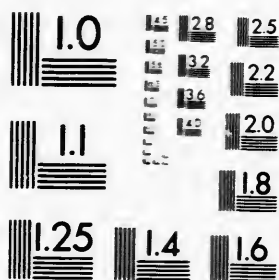
timorous deer. From the bosom of these choked lakes, and arising out of the dark and pitchy bog, may be seen large clumps of the tall cypress (*Cupressus disticha*), like the innumerable connecting columns of the shady mangrove, for sixty or more feet rising without a branch; and their spreading tops, blending together, form a canopy so dense as almost to exclude the light from beneath their branches. In the tops of the tallest of these trees the wary Herons, associated to the number of ten or fifteen pair, construct their nests, each one in the top of a single tree: these are large, formed of coarse sticks, and merely lined with smaller twigs. The eggs, generally four, are somewhat larger than those of the hen, of a light-greenish blue, and destitute of spots. The young are seen abroad about the middle of May, and become extremely fat and full grown before they make any effective attempts to fly. They raise but a single brood; and when disturbed at their eyries, fly over the spot, sometimes honking almost like a goose, and at others uttering a loud, hollow, and guttural grunt.

Fish is the principal food of the Great Herons, and for this purpose, like an experienced angler, they often wait for that condition of the tide which best suits their experience and instinct. At such times they are seen slowly sailing out from their inland breeding-haunts during the most silent and cool period of the summer's day, selecting usually such shallow inlets as the ebbing tide leaves bare or accessible to their watchful and patient mode of prowling; here, wading to the knees, they stand motionless amidst the timorous fry till some victim coming within the compass of their wily range is as instantly seized by the powerful bill of the Heron as if it were the balanced poniard of the assassin or the unerring pounce of the Osprey. If large, the fish is beaten to death, and commonly swallowed with the head descending, as if to avoid any obstacle arising from the reversion of the fins or any hard external processes. On land the Herons have also their fare, as they are no less successful anglers than mousers, and render an important service to the farmer in the destruction they make among most of the reptiles and meadow shrews.





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Grasshoppers, other large insects, and particularly dragon-flies they are very expert at striking, and occasionally feed upon the seeds of the pond-lilies contiguous to their usual haunts. Our species, in all probability, as well as the European Heron, at times also preys upon young birds which may be accidentally straggling near their solitary retreats. The foreign kind has been known to swallow young snipes and other birds when they happen to come conveniently within reach.

The Heron, though sedate in its movements, flies out with peculiar ease, often ascending high and proceeding far in its annual migrations. When it leaves the coast and traces on wing the meanders of the creek or river, it is believed to prognosticate rain; and when it proceeds downwards, dry weather. From its timorous vigilance and wildness it is very difficult to approach it with a gun; and unheeded as a depredator on the scaly fry, it is never sought but as an object of food, and for this purpose the young are generally preferred.

The present is very nearly related to the Common Heron of Europe, which appears to be much more gregarious at its breeding-places than ours; for Pennant mentions having seen as many as eighty nests on one tree, and Montague saw a heronry on a small island in a lake in the north of Scotland whereon there was only one scrubby oak-tree, which being insufficient to contain all the nests, many were placed on the ground sooner than the favorite situation should be abandoned. The decline in the amusement of hawking has now occasioned but little attention to the preservation of heronries, so that nine or ten of these nurseries are nearly all that are known to exist at present in Great Britain. "Not to know a Hawk from a *Heronshaw*" (the former name for a Heron) was an old adage which arose when the diversion of Heron-hawking was in high fashion; and it has since been corrupted into the absurd vulgar proverb, "not to know a hawk from a handsaw"! As the Rooks are very tenacious of their eyries, and piratical to all their feathered neighbors, it might be expected that they would at times prove bad and encroaching neighbors to the quiet Herons; and I have been credibly informed by a friend

that at Mr. Wilson's, at Dallam Tower, near Milthorp in Westmoreland, a battle took place betwixt the Rooks and Herons for the possession of certain trees and old nests which was continued for five days in succession, with varying success and loss of life on both sides, when, I believe, they at length came to the sage conclusion that their betters had at times acceded to after an equally fruitless contest; namely, to leave things *in statu quo ante bellum*.

The European Heron appears to give a preference to fresh-water fish, and for the purpose of taking its prey, gently wades into the water where they abound, and standing on one leg up to the knee, with its head drawn in, reclined upon its breast, it quietly watches the approach of its prey. It has been remarked by many that the fish generally swarm around the Herons, so as to afford an ample supply without much exertion; and Bechstein remarks, after repeated observations, that the source of this attraction to the Heron is merely the excrement of the bird, which the fish, according to experiment, devour with avidity. Its time of fishing, like that of our own species, is usually before or after sunset. Though there is no ground for believing that the Heron acquires a macilent constitution by privation, it is certain that in Europe, from a scarcity of food, it becomes extremely lean. It is known frequently to feed by moonlight, at which time it becomes tolerably fat, being then unmolested; and it is observed that the fish at this time come into the shoaler waters.

The Great Blue Heron is not an abundant bird, but it is found more or less commonly throughout this Eastern region north to about the 48th parallel.

There are two heronries of this species within a few miles of St. John. N. B., where one hundred to two hundred pairs breed annually. They are in groves of white birch about a mile back from the river. I have found this bird also in the heart of the wilderness districts fishing in the smaller streams and along the margins of the rivers.

NOTE. — A few examples of the BLUE HERON (*Ardea cinerea*) — the "Common Heron" of European books — have been taken in southern Greenland.

WARD'S HERON.

ARDEA WARDI.

CHAR. Similar to the Great Blue Heron, but larger and of paler tint; under parts white, narrowly streaked with black; plumes silvery gray; legs and feet olive. Length 48 to 54 inches.

Nest. With a community in a swampy grove; placed on a high branch of a tall mangrove; made of twigs and lined with fresh green twigs.

Eggs. 3-4; bluish green; 2.65×1.85 .

This species was first described by Mr. Ridgway, from specimens taken by Mr. Charles W. Ward in 1881.

There has been considerable discussion concerning the status of these large Herons, some authorities expressing the opinion that both Ward's Heron and the Great White Heron are but geographical races of the Great Blue Heron; but the weight of opinion is in favor of considering the three as distinct species.

Ward's Heron is said to be dichromatic,—having a dark and light phase of plumage; the light-colored birds being indistinguishable from *occidentalis*.

In habits the present species does not differ from the Great Blue Heron; but Ward's Heron has been found in Florida only.

GREAT WHITE HERON.

FLORIDA HERON. WURDEMAN'S HERON.

ARDEA OCCIDENTALIS.

CHAR. *White phase*. Plumage white; crest with two long narrow plumes, and plumes droop over the breast and wings also; bill yellow; legs yellow and olive, feet brown. *Blue phase*. Similar to *herodias*, but larger and lighter in color,—the head and crest white, and the under parts with less black; legs and feet yellowish olive. Length 45 to 54 inches.

Nest. With a community; placed usually on a low branch of a mangrove, sometimes on a high branch; a platform of dry twigs.

Eggs. 3-4; bluish green; size variable, average about 2.60×1.85 .

This is doubtless the "Great White Crane" mentioned by Nuttall as found by Audubon in Florida. The description was not published until 1835, after Nuttall's work had been issued.

In 1859 Spencer Baird described the blue-colored bird as a dis-

inct species, which he named *A. wardemanni*; and in the "Key," issued in 1872, Coues also gave *wardemanni* specific rank. In the "History of North American Birds," issued in 1884, for which work Baird and Ridgway contributed the technical matter, *wardemanni* was relegated to the synonymy of *occidentalis*; and to the opinion thus emphasized, that the blue color merely represents a dichromatic phase of the White Heron. Coues added the weight of his authority in the 1887 edition of the "Key." Ridgway, however, in his "Manual," also published in 1887, returned to Baird's first decision, and gave *wardemanni* specific rank; but the A. O. U. still retain it on their "hypothetical list," adding in a note that it is believed to be the colored phase of *occidentalis* or an abnormal specimen of *wardi*. This last suggestion has been made by several writers as a possible solution of the problem which these birds offer, while others have contended that both blue and white specimens, as well as those referred to *wardi*, are but variations of the Great Blue Heron. I have treated the blue bird as a phase of the present species partly because this seemed the most convenient pigeon-hole in which to place the fact of its existence, but more especially because I think this is where it will finally rest.

The difficulty in reaching a decisive solution of this problem lies chiefly in the fact that very little reliable evidence has been obtained. The birds are found only in an out-of-the-way corner of southwestern Florida and in Jamaica, and even in these localities are not common, — indeed, blue-colored specimens are quite rare. And the problem is likely to remain unsolved for many a year to come, if not forever. For the plume-hunters have discovered the haunts of the White Herons, and are gathering them in, — shooting the birds, cutting off their plumes, and throwing the carcasses to the Vultures, — in an effort to meet the demands of fashion.

In habits the White Heron does not differ materially from its more common congeners. It is a little less inclined for companionship, and is somewhat fiercer.

Examples of this species have been taken in Indiana and Illinois, but these were probably accidental wanderers.

AMERICAN EGRET.

ARDEA EGRETTA.

CHAR. Plumage white; no crest; long silky plume-feathers, from the back, fall over the wings and tail; bill yellow; legs and feet black. Length about 38 inches.

Nest. With a community amid a swamp or on the border of a lake; placed on a high branch of a cypress or mangrove tree, sometimes on a low bush close to the water; made of twigs.

Eggs. 2-5; bluish green; size variable, average 2.30×1.50 .

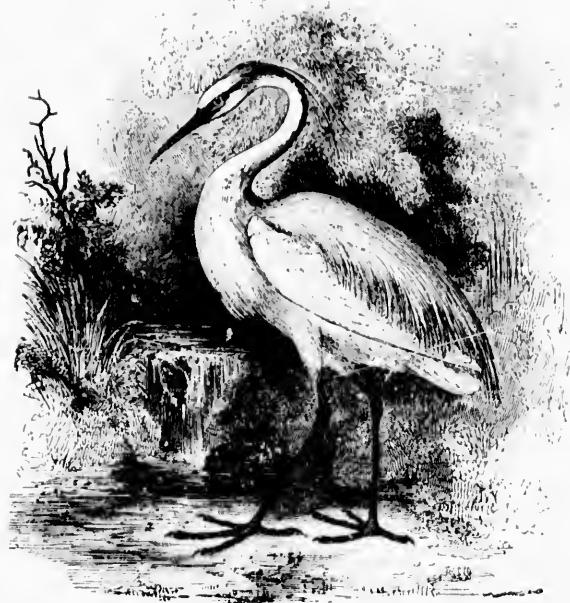
This tall and elegant Heron is in America chiefly confined to the warmer and more temperate regions. From Guiana, and even far beyond the equator in South America, it is seen to reside as far to the north as the State of New York. In the old continent the very nearly allied *A. alba* is met with on the borders of the Caspian and Black Seas, on the shores of the Irtysh and the lakes of Tartary, even as far as the 53d parallel; and a straggler is now and then met with in Great Britain. Towards the close of February our species is seen to arrive in Georgia from its warmer hibernal resorts. At all times it appears to have a predilection for swamps, rice-fields, and the low, marshy shores of rivers and lagoons, where from its size and color it becomes conspicuous at a distance, yet from its vigilance and timidity rarely allows of an approach within gunshot. It is known to breed in several of the great cedar-swamps in the lower maritime parts of New Jersey. Like most of the tribe, it associates in numbers at the eyries, and the structure and materials of the nest are entirely similar to those of the Snowy Heron. The eggs, about four, are of a pale blue color. In July and August, the young are seen abroad in the neighboring meadows and marshes in flocks of twenty or thirty together. It is particularly frequent in the large and deep tide ditches in the vicinity of Philadelphia. Its food, as usual, consists of frogs, small fish, lizards, mice, and moles, insects, small water-snakes, and at times the seeds of the pond-lilies.

This Egret does not occur regularly near the Atlantic coast north of New Jersey, but it is a rather common visitor to Ohio, and a small number of the birds are seen every year in the southern portions of Ontario and Illinois. Stragglers are found occasionally in New England, and a few have been met with on the Bay of Fundy and the Gulf of St. Lawrence.

The birds are said to breed no farther north than Virginia and Illinois, though wandering beyond these latitudes after the young broods are independent of assistance.

The food of this bird consists chiefly of small fish, frogs, lizards, and such; but it refuses nothing eatable that comes within its reach, and is expert at catching mice and insects. Although shy when in a wild state, it is easily reconciled to captivity, says Dr. Brewer; and its elegant plumage and graceful carriage combine to make it an attractive ornament to courtyard or garden.

Unfortunately, and to man's or woman's discredit, very few of these birds are now to be seen, — they have been slaughtered for their plumes. Mr. W. E. D. Scott, who is familiar with the heronries of Florida, tells us of one of these breeding-grounds, where "thousands" were nesting six years before, but was entirely deserted when he visited it in 1887. He saw only two or three frightened birds: the "thousands" had been exterminated by the plume-hunters.



SNOWY HERON.

LITTLE WHITE EGRET. SMALL WHITE HERON.

ARDEA CANDIDISSIMA.

CHAR. Plumage pure white; crest long, with numerous elongated hair-like plumes extending down the back of the neck; plumes on the breast and back long and hair-like, those of the back reaching to the end of the tail or beyond, and recurved at the tips. (These plumes are worn only during the nesting season, and are not seen on young birds.) Bill black, yellow at the base; legs black, feet yellow. Length 20 to 27 inches.

Nest. With a community; placed usually on a low cedar or willow, — a mere platform of dry twigs.

Eggs. 2-5 (usually 4); greenish blue: 1.85 × 1.25.

This elegant Heron, so nearly related to the little Egret of Europe, inhabits the marshes and swamps of the sea-coast nearly from the isthmus of Darien to the estuary of the St. Lawrence, generally omitting, however, the maritime range of

the central parts of New England. It arrives in the United States from the South early in April, and passing inland, at length proceeds up the valley of the Mississippi, and even ascends the borders of the Arkansas, thus pursuing an extensive inland route to the final destination in the wilds of Canada. It departs from the Middle States, towards its hibernal destination in the South, in the course of the month of October.

Like most of the summer visitors of this family, the Snowy Heron confines its residence to the salt-marshes, where its brilliant whiteness renders it a conspicuous object at a distance. Its food, as usual, consists of small crabs, worms, snails, frogs, and lizards, to which fare it also adds at times the seeds of the pond-lilies and other aquatic plants. About the middle of May nest-building commences; and Wilson describes one of these heronries situated in a sequestered clump of red cedars, at Summer's Beach, on the coast of Cape May. The spot chosen, with the usual sagacity of the tribe, was separated on the land side by a fresh-water pond, and sheltered from the view of the Atlantic by ranges of sand-hills. The cedars, though low, were so densely crowded together as scarcely to permit a passage through them. Some of the trees contained three or four nests in each, constructed wholly of sticks. The eggs, about three in number, were of a pale greenish-blue color, and measured one inch and three quarters in length. On approaching the premises, the birds silently rose in great numbers; and alighting on the tops of the neighboring trees, they appeared to watch the result of the intruding visit in silent anxiety. Assembled with them were numbers of the Night Herons, and two or three of the purple-headed species. Great quantities of egg-shells lay scattered under the trees, occasioned by the depredations of the Crows who were hovering in the vicinity. Wherever the Snowy Herons happen to wander through the marshes, or along the borders of the rivers and inlets, they regularly return in the evening to their favorite roost in the cedars of the beach.

The young, of both this and the preceding species, are generally fat, and esteemed by some as palatable food.

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The Snowy Heron occurs regularly, in summer, from the Gulf States to Long Island. It is occasionally seen also along the Atlantic coast as far as Nova Scotia, and in the interior has been taken in Ohio and Ontario.

One writer has called this species a *scraper*, or *raker*, because it uses its legs and claws to start from their hiding-places the animals it desires to secure for food. In this movement it is said to surpass all other species in adroitness and rapidity, using the feet so rapidly as to cause the whole body to quiver. The scraping is done sometimes in water so deep that it reaches to the bird's belly.

Our bird wears the most beautiful plumes of all the Herons, and in consequence has been nearly exterminated by the plume-hunters. Instead of the thousands that gathered at their heronries a few years ago, only a few scattered birds can now be found.

REDDISH EGRET.

PEALE'S EGRET.

ARDEA RUFESCENS.

CHAR. Colored phase. General plumage grayish blue, darker on the back, paler below; head and neck with long, narrow feathers, — longest on the back of the neck and the lower part of the breast, — of rich reddish brown, sometimes tinged with purple; scapular plumes and train — the latter extending beyond the tail — grayish blue, tinged with brown towards the ends; bill pink, tipped with black; legs blue, claws black.

White phase. Plumage entirely white; bill pink, tipped with black; legs and feet olive, soles yellow. Length about 30 inches.

Young of both phases similar to the adult, but lacking the nuptial plumes. Sometimes the blue and white colors are displayed by the same specimen in a "pied" form.

Nest. With a community close by the sea-shore; placed on a low tree or bush, sometimes on the ground, — a platform of dry twigs.

Eggs. 2-6 (usually 3); pale blue tinged with green; size variable, average about 1.90 × 1.45.

This is another of those dichromatic species that have caused confusion and controversy, and given to both systematists and book-makers a deal of trouble.

The white phase has in this instance been made to play the shuttlecock; and appearing first as a distinct species, under the name of "Peale's Egret," it has been tossed hither and yon by the numerous writers who have laid claim to a solution of the problem which these varied phases of plumage present. At one time made out to be the young of *A. rufa*, later set up as a white phase of this species, again seized upon by the hungry variety-makers

eager to convert it into a geographical race, it was at last, through the conservatism of the A. O. U., laid to rest in that refuge for questionable cases, the "hypothetical list," there to await the gathering of more decisive data.

In the mean time, as it becomes necessary for me to describe its characteristics, I treat the white bird as an individual variation or phase of the present species, because I think this will be its ultimate destiny. But these white specimens have always been comparatively rare, — in a flock of thirty birds not more than four or five will wear white plumes, — and the plume-hunters may exterminate them before any naturalist can have any opportunity to make further study of their origin. Indeed, as I write, the remnant may be yielding their plumes to the insatiable crew, for the heronries of the South have been almost wiped out during the last few years.

Nuttall makes no mention of the Reddish Egret, though he does give a short note telling of the discovery of *pealei*, — the white phase. Our bird is not well known even at this day, few observers having met with it. It occurs regularly within the United States only in Florida and along the Gulf coast, though examples occasionally wander up the Mississippi valley as far as Illinois.

These birds are said to begin breeding in March, and eggs have been taken through April. The young are nearly naked when hatched, wearing nothing but a few patches of down; but it is a disputed point whether *all* the young are white, or a part of them are blue. Audubon says that they are fed by regurgitation, grow fast, and soon become noisy. They leave the nest when about seven weeks old, fully fledged and able to fly.

The favorite feeding-ground of these Egrets is a mud flat over which the outgoing tide leaves but about six to ten inches of water. In this they stand, and silently and motionless watch for their prey, or using their feet among the water-plants, drive the fish — their principal food — from under cover. If they miss the object at their first dart, they give chase; and though appearing so clumsy and awkward as to present a ridiculous figure while in pursuit of a scudding fish, are much more expert at this chasing than are any others of their kin. The red-and-blue specimens and the white always gather in one flock, and it has been remarked that they quarrel with each other persistently, — white against white, as well as white against red; but neither white nor red birds have been observed to attack any other species.

The flight of this species is strong and graceful, and when two males combat in mid-air their evolutions are performed with rare skill. Like many other birds, — *aye*, like most birds, — this Egret is less shy during the breeding-season than at other times. Some observers deny them all credit for shyness, but admit that they seem

extremely fearless when mate and young demand their protection. Said Audubon, writing of the fearlessness of the Herons during this period. "As the strength of their attachment toward their mate, or progeny increases through the process of time, as is the case with the better part of our own species, lovers and parents perform acts of heroism which individuals having no such attachment to each other would never dare to contemplate." He was of the opinion that under the influence of affection the *thoughts* of birds change: they become careless of themselves, and thus appear fearless and indifferent to danger. No one can study birds in the field without becoming convinced that these creatures have thoughts, and that they are capable of heroic devotion. Few men will fight more valiantly for home and young than will many of these timid and gentle birds.

YELLOW-CROWNED NIGHT HERON.

NYCTICORAX VIOLACEUS.

CHAR. General plumage ashy blue, darker on wings and tail, paler beneath; feathers of upper parts with medial stripe of black; dorsal plumes narrow and extremely long, reaching beyond the tail; crown, patch on side of head, and long narrow plumes creamy yellow; bill stout and black, sometimes tinged in patches with greenish yellow; legs yellowish green. Young grayish brown, feathers of upper parts with medial stripe of pale buff. Length 22 to 28 inches.

Nest. In a community usually near a stream; placed on a lower branch of a tree. — a mere platform of dry twigs.

Eggs. 3-6 (usually 4); pale and dull blue, slightly tinged with green; 2.00 x 1.45.

This species has been frequently named the White-crowned Night Heron by authors because the yellow color of the head and plumes fades very soon after death, and finally the feathers become entirely white. It is found in the warmer portions of this Eastern Province, breeding in the Carolinas and the Ohio valley, and south to the Gulf States. It is found also in South America. Occasionally examples are met with to the northward of the usual habitat, two having been captured in Massachusetts.

In habits, as in appearance, this bird differs little from its Northern congener, though it is less tamable and not so easily domesticated: rebelling to the end against captivity, and yearning ever for a return to the freedom of a wild life. Sometimes these birds search for food during the daytime, but in general they are strictly nocturnal, and feed as well as migrate at night. Their diet consists chiefly of small reptiles and young birds.



BLACK-CROWNED NIGHT HERON.

SQUAWK. QUA BIRD.

NYCTICORAX NYCTICORAX NÆVIUS.

CHAR. Top of head and back greenish black; forehead, sides of head, and throat white; wings and sides of neck bluish gray; no plumes excepting two long narrow white feathers at back of head; lower parts white tinged with pale creamy yellow. Young: above, grayish brown; beneath, dull white, streaked with brownish. Body stout; bill thick and black; legs short and yellow. Length 23 to 26 inches.

Nest. In a community situated near the bank of a stream; placed on an upper branch of a tall tree, — sometimes placed on the ground in a swamp; a simple platform of dry twigs.

Eggs. 4-6; pale green tinged with blue; 2.00×1.50 .

The Great Night Heron of America extends its migrations probably to the northern and eastern extremities of the United

States, but is wholly unknown in the high boreal regions of the continent. In the winter it proceeds as far south as the tropics, having been seen in the marshes of Cayenne, and their breeding-stations are known to extend from New Orleans to Massachusetts. It arrives in Pennsylvania early in the month of April, and soon takes possession of its ancient nurseries, which are usually (in the Middle and Southern States) the most solitary and deeply shaded part of a cedar-swamp, or some inundated and almost inaccessible grove of swamp-oaks. In these places, or some contiguous part of the forest, near a pond or stream, the timorous and watchful flock pass away the day until the commencement of twilight, when the calls of hunger and the coolness of evening arouse the dozing throng into life and activity. At this time, high in the air, the parent birds are seen sallying forth towards the neighboring marshes and strand of the sea in quest of food for themselves and their young; as they thus proceed in a marshalled rank at intervals they utter a sort of recognition call, like the guttural sound of the syllable 'kwa'h', uttered in so hollow and sepulchral a tone as almost to resemble the retchings of a vomiting person. These venerable eyries of the Kwah Birds have been occupied from the remotest period of time by about eighty to a hundred pairs. When their ancient trees were levelled by the axe, they have been known to remove merely to some other quarter of the same swamp; and it is only when they have been long teased and plundered that they are ever known to abandon their ancient stations. Their greatest natural enemy is the Crow; and according to the relation of Wilson, one of these heronries, near Thompson's Point, on the banks of the Delaware, was at length entirely abandoned through the persecution of these sable enemies. Several breeding-haunts of the Kwah Birds occur among the red-cedar groves on the seabeach of Cape May; in these places they also admit the association of the Little Egret, the Green Bittern, and the Blue Heron. In a very secluded and marshy island in Fresh Pond, near Boston, there likewise exists one of these ancient heronries; and though the birds have been frequently robbed of their eggs in

great numbers by mischievous boys they still lay again immediately after, and usually succeed in raising a sufficient brood. The nests, always in trees, are composed of twigs slightly interlaced, more shallow and slovenly than those of the Crow; and though often one, sometimes as many as two or three nests are built in the same tree. The eggs, about four, are as large as those of the common hen, and of a pale greenish blue color. The marsh is usually whitened by the excrements of these birds: and the fragments of broken egg-shells, old nests, and small fish which they have dropped while feeding their young, give a characteristic picture of the slovenly, indolent, and voracious character of the occupants of these eyries.

On entering these dark and secluded retreats of the Night Heron, the ear is assailed by the confused and choking noise uttered by the old and young, which, however, instantly ceases the moment the intruder is observed; and the whole throng, lately so clamorous, rise into the air in silence, and fly to the tops of the trees in some other part of the wood, while parties of the old birds, of from eight to ten, make occasional reconnoitring circuits over the spot, as if to observe what may be going on in their surprised domicile.

However deficient these nocturnal birds may be in vision by day, their faculty of hearing is so acute that it is almost impossible, with every precaution, to penetrate near their residence without being discovered. As soon as the young are able to fly, and long before they are capable of sustained flight, they climb to the highest part of the trees near their nests, as if to solicit the attention and watch the return and protection of their officious parents; and yet, with every precaution, the young fall victims to the prowling Hawks, who, hovering round, make an occasional sweep among their timorous ranks.

About the middle of October the Qua Birds begin to retire from this part of Massachusetts towards their southern winter quarters, though a few of the young birds still linger occasionally to the 29th or 30th of that month. Their food consists chiefly of small fish, which they collect in the twilight or

towards night, and in the wide gullet which commences at the immediate base of the bill they probably carry a supply for the use of their young.

In the month of October I obtained two specimens of the young Night Heron in their second plumage; these were so extremely fat that the stomach was quite buried in cakes of it like tallow. Their food had been *Ulva latissima*, small fish, grasshoppers, and a few coleopterous insects; so that at this cool season of the year these birds had ventured out to hunt their fare through the marsh by day, as well as evening. In the stomach of one of these birds, towards its upper orifice, were parasitic worms like tænia. About the time of their departure the young, in their plumbeous dress, associate together early in the morning, and proceed in flocks, either wholly by themselves, or merely conducted by one or two old birds in a company.

I have visited two heronries of this species in northern New Brunswick, on streams emptying into the Gulf of St. Lawrence at about latitude 47°. It is common in the Muskoka district of Ontario, and Mr. Gunn reports it numerous at Shoal Lake in Manitoba. He found the nests placed on the ground among the reeds.

The bird is a common summer resident of New England, though extremely local in its distribution. The heronry at Fresh Pond, Cambridge, which was celebrated in former years, has been deserted for some time.

LITTLE BLUE HERON.

BLUE EGRET.

ARDEA CERULEA.

CHAR. General plumage dark ashy blue; head and neck rich maroon; plumes on back of head, breast, and back, the last extending over and beyond the tail; bill slender, curved at the point, and of blue color shading to black at the tip; legs and feet black; eyes yellow. Sometimes the plumage is "pied,"—of blue and white,—and occasionally it is almost entirely white, with some traces of blue. The young are usually white, spotted more or less with blue. Length 22 to 26 inches.

Nest. Usually in a large community or "heronry;" placed on a top branch of a tree or bush; made of twigs loosely laid.

Eggs. 2-5; bluish green; size variable, averaging about 1.75 × 1.30.

The Blue Heron may be considered almost a restricted native of the warmer climates of the United States, from whence it migrates at the approach of winter into the tropical parts of the continent, being found in Cayenne, Mexico, and the island of Jamaica. The muddy shores of the Mississippi from Natchez downward are its favorite resort.

In the course of the spring, however, a few migrate to New England, restricting their visits, like many other of the tender species, to the confines of the ocean and its adjoining marshes, where their proper food of reptiles, worms, and insect larvæ abound. They also often visit the fresh-water bogs in the vicinity of their eyries, and move about actively, sometimes making a run at their prey. Like the Snowy Herons, with which they sometimes associate, they are also, when the occasion requires, very silent, intent, and watchful. These nocturnal and indolent birds appear tacitly to associate and breed often in the same swamps, leading towards each other, no doubt, a very harmless and independent life. Patient and timorous, though voracious in their appetites, their defence consists in seclusion, and with an appropriate instinct they seek out the wildest and most insulated retreats in nature. The undrainable morass grown up with a gigantic and gloomy forest, imperviously filled with tangled shrubs and rank herbage, abounding with disgusting reptiles, sheltering wild beasts, and denying a foot-hold to the hunter, are among the chosen resorts of the sagacious Herons, whose uncouth manners, harsh voice, rank flesh, and gluttonous appetite allow them to pass quietly through the world as objects at once contemptible and useless; yet the part which they perform in the scale of existence, in the destruction they make amongst reptiles and insects, affords no inconsiderable benefit to man.

A few of the Blue Herons, for common safety, breed among the Night Herons, the Snowy species, and the Green Bittern, among the cedars (or Virginian junipers) on the sea-beach of Cape May.

The Blue Egret nests regularly, though in small numbers, as far north as Virginia and Illinois. An occasional straggler has

been taken in New England, and in 1884 one was shot near Halifax, N. S.

Some naturalists place this among the dichromatic species, while others consider that the white phase, so called, is seen only in young birds, — that all the young are white or pied.

LOUISIANA HERON.

ARDEA TRICOLOR RUFICOLLIS.

CHAR. Above, ashy blue, darker on head and neck; crest reddish purple, excepting the long narrow plume-feathers, which are white; plumes of the breast mixed, maroon and blue; train of straight hair-like plumes from the back extending beyond the tail, of light drab color, lighter towards the tips; under parts white. Length 24 to 27 inches.

Nest. Usually in a community; placed on a low tree or bush; made of small twigs.

Eggs. 2-6. blue with a slight tinge of green; 1.75×1.35 .

This richly apparelled bird, sometimes called the "Lady of the Waters," occurs in numbers in the Carolinas and southward to the Gulf, and is very abundant in Central America. An occasional straggler has been found as far north as Long Island and Indiana.

Those who are familiar with the bird's habits say that it is extremely sociable, and is usually found in company with other species, — the White Egret, Blue Heron, Night Heron, etc. In its movements are combined rare grace and dignity. Even when hunting for prey it displays less impetuosity than any other of the group. The usual feeding-place is a sand-bar or shallow pond, and there it saunters with stately tread, or stands calmly waiting and watching. If a coveted leech or water-bug halts beyond reaching distance, the Heron stalks upon it in a crouched and cat-like attitude, and then strikes quick and straight. The flight is rather irregular, but is swifter than that of any other Heron. If one of a flock is wounded, its companions hover about it with cries of sympathetic interest.

GREEN HERON.

ARDEA VIRESCENS.

CHAR. The smallest of the Heron family, excepting the Least Bittern. Top of head and crest dark metallic green; rest of head and neck rich chestnut, sometimes with a tint of maroon; throat with a line of white with dark spots; back dark ash, more or less tinged with green; wings and tail dark green; under parts brownish ash. Length 16 to 20 inches.

Nest. On the border of a swamp or near the margin of a stream, placed on a branch of tree or bush; made of small twigs loosely laid.

Eggs. 3-6; bright blue of a rather pale shade, strongly tinged with green; 1.50 × 1.15.

The Green Bittern, known in many parts much better by a contemptible and disgusting name, is the most common and familiar species of the genus in the United States. Early in April, or as soon as the marshes are so far thawed as to afford these birds the means of subsistence, they arrive in Pennsylvania, and soon after are seen in New England, but are unknown in the remote and colder parts of Canada. Many winter in the swamps of the Southern States, though others retire in all probability to the warmer regions of the continent, as they are observed at that season in the large islands of Hayti and Jamaica.

In common with other species, whose habits are principally nocturnal, the Green Bittern seeks out the gloomy retreat of the woody swamp, the undrainable bog, and the sedgy marsh. It is also a common hermit on the inundated, dark willow and alder shaded banks of sluggish streams and brushy ponds, where it not only often associates with the kindred Kwa Birds and Great Herons, but frequently with the more petulant herd of chattering Blackbirds. When surprised or alarmed, it rises in a hurried manner, uttering a hollow guttural scream and a 'k'w, 'k'w, 'k'w, but does not fly far, being very sedentary; and soon alighting on some stump or tree, looks round with an outstretched neck, and balancing itself for further retreat, frequently jets its tail. It sometimes flies high, with neck reclining and legs extended, flapping its wings and proceed-

ing with considerable expedition. It is also the least shy of all our species, as well as the most numerous and widely dispersed, being seen far inland, even on the banks of the Missouri, nearly to the River Platte, and frequent near all the maritime marshes, and near ponds and streams in general. It is also particularly attracted by artificial ponds for fish, not refraining even to visit gardens and domestic premises which any prospect of fare may offer. It is at the same time perhaps as much in quest of the natural enemy of the fish, the frog, as of the legitimate tenants of the pond. These bold and intrusive visits are commonly made early in the morning or towards twilight, and it not unfrequently, when pressed by hunger, or after ill-success, turns out to hunt its fare by day, as well as dusk; and at such times collects various larvæ, particularly those of the dragon-fly, with grasshoppers and different kinds of insects. At other times it preys upon small fish, crabs, and frogs, for which it often lies patiently in wait till they reappear from their hiding-places in the water or mud, and on being transfixed and caught,—an operation which is effected with great dexterity,—they are commonly beaten to death, if large, and afterwards swallowed at leisure.

The Small Bittern in the Middle States usually begins to build about the 15th of April, sometimes in solitary pairs, in dark and swampy woods, at other times in companies, and as already remarked, by similarity of taste and habit frequently joins the heronries of the larger species as its sort of humble dependant and watchful defender of the general eyry. The young, as usual, slowly acquire the full use of their limbs, and remain patiently in the nest until able to fly.

The Green Heron is a common summer resident of New England, and though usually rather rare as far north as the Maritime Provinces, is sometimes quite common there. It is common also in Ontario and abundant in Ohio, and occurs westward to the Mississippi and northward to Manitoba. In winter the major portion of these birds retire to the West Indies and northern South America, though a few remain in the Gulf States.

AMERICAN BITTERN.

STAKE DRIVER.

BOTAURUS LENTIGINOSUS.

CHAR. Upper parts brownish buff thickly spotted or mottled—“freckled”—with reddish brown and black; neck buff; line down the throat white, spotted with brown; a patch of black or dark brown or gray on the sides of the neck; under parts pale buff striped with brown; bill rather short, stout, and of yellow color; legs yellowish green. Length 25 to 30 inches.

Nest. In a swamp or reedy marsh, placed on the ground; a thick mat of coarse grass loosely laid.

Eggs. 3-5; brownish drab, sometimes with an olive tint; 1.90×1.45 .

The Bittern of America, though apparently nowhere numerous, from its retiring habits, is found in almost every part of the continent where there exist extensive marshes either maritime or inland, up to the 58th parallel, and is found in the morasses and willow-thickets of the interior throughout the fur countries. From the inclement regions it retires in the winter, while in other parts it is permanently resident. It is said to revisit Severn River, at Hudson Bay, about the beginning of June, nesting in the swamps among the sedges. It breeds also in several parts of Massachusetts, young birds being met with in the Fresh Pond marshes and other places in the vicinity of Boston about the middle of summer.

During the day the Night Hen, as it is here called, remains hidden in the reeds and sedge, and rarely comes out till the approach of night. When disturbed in its retreat, it flies off with a hollow *'kwa*, or *kowk, kowk*, and sometimes gives a loud squeak of alarm; at this time, as it flies heavily and at no great height, it is easily shot down. These birds are also sometimes obtained by lying in wait for them as they sally out in the evening towards the salt-marshes, in a particular direction, in quest of food.

In the breeding-season and throughout a great part of the summer we often hear the loud booming note of this bird from the marshes of Fresh Pond, morning and evening, and some-

times even during the day. Instead of the *bump*, or *böomp*, however of the true Bittern, the call is something like the uncouth syllables of *'pump-ai-gah*, but uttered in the same low, bellowing tone.

The cry of the European Bittern, so similar to that of our own species, is thus elegantly described by Goldsmith in his "Animated Nature." "Those who have walked in a summer's evening by the sedgy sides of unfrequented rivers must remember a variety of notes from different water-fowl,—the loud scream of the Wild Goose, the croaking of the Mallard, the whining of the Lapwing, and the tremulous neighing of the Jack-snipe; but of all these sounds there is none so dismally hollow as the booming of the Bittern. It is impossible for words to give those who have not heard this evening call an adequate idea of its solemnity. It is like the interrupted bellowing of a bull, but hollower and louder, and is heard at a mile's distance, as if issuing from some formidable being that resided at the bottom of the waters. This is the Bittern, whose wind-pipe is fitted to produce the sound for which it is remarkable; the lower part of it, dividing into the lungs, being supplied with a thin loose membrane that can be filled with a large body of air and exploded at pleasure. These bellowings are chiefly heard from the beginning of spring to the end of autumn, and are the usual calls during the pairing season."

The American bird, no less than the true Bittern, is considered by many as excellent food.

The Bittern is still a familiar bird throughout temperate North America, breeding from the Middle States northward; but, like many another bird whose form is familiar, the Bittern's habits are known only to the few, and many erroneous opinions of its characteristics have been current.

The "booming of the Bittern" has been a favorite topic of controversy; but probably that matter has been finally settled by an account of the performance contributed to "The Auk" for January, 1889, by Mr. Bradford Torrey.

Mr. Torrey described the performer as first filling its crop with air, opening the bill and shutting it with a click, repeating this several times. Then, while the bill is kept tightly closed, the air

from the crop is forced through the throat, producing a deep hollow sound in three distinct syllables. The quality of the notes suggests their being emitted under water; and this has given rise to the theory, so strongly urged by many writers, that the performer held its bill under water. The emission of the sound is accompanied by convulsive movements, as if the bird was vomiting.

The Bittern's fondness for retirement has been exaggerated, for though it does dwell in the wilderness, — on the marshy margins of streams and lakes, and in the depths of swamps, — I have frequently found the nest close to a bustling village; one within sound of children's voices playing around a school-house.

LEAST BITTERN.

ARDETTA EXILIS.

CHAR. Adult male: crown, back, and tail black, glossed with green; narrow stripe of buff on each side of back; back of neck chestnut; wings buff and rufous; under parts pale buff. Female: similar to male, but black of head and back mostly replaced by brown. Length about 13 inches.

Nest. Usually amid the rank grass and rushes on the marshy margin of a pond; placed on the ground and made of coarse grass or dead rushes.

Eggs. 3-5; dull white with a pale tinge of blue or green; 1.20 × 0.95.

The Least Bittern has not so extended a distribution as its larger congener, but it is found regularly as far north as Massachusetts, and stragglers have been captured in Maine and New Brunswick. It is common in southern Ontario, and occurs in Illinois and north to Manitoba, and breeds south to the Gulf States.

Though a shy bird, courting retirement and rarely appearing outside the shelter of its reedy haunts, it seems to be indifferent to adjacent noises. For years some pairs have spent the summer in a marshy tract close to the busiest district of the town of Brookline, within a stone's throw of a street-car track and a playground; and Fresh Pond marsh, near Cambridge, has long been a favorite resort.

The food of this Bittern consists chiefly of small fish, lizards, and young frogs; but it will not refuse a chance to vary this diet with a mouse or shrew. It utters several notes; but that most commonly heard is a hoarse croak, though during the nesting-season a cooing note is heard that is low and soft and sweet. When

startled it gives a cry resembling the *qua* of the Night Heron, and displays a Rail-like disposition to hide amid the grass rather than fly from danger. Some observers say its flight is feeble and cannot be sustained, while others say that the bird is capable of prolonged flight.

CORY'S LEAST BITTERN.

ARDETTA NEOXENA.

CHAR. Similar to *B. exilis*, but smaller, and lacking the stripes of buff on the sides of the back; lower tail-coverts black; wing-coverts chestnut. Length about 11 inches.

Nest. In a swamp on border of lake; on a low bush two and a half feet above the surface of the water; built of twigs and lined with leaves.

Eggs. — ?

This species was described by Mr. Charles B. Cory in 1886 from the type which was taken in Florida by Mr. R. T. Stuart. Since then some thirteen examples have been reported, five from Florida, one from Michigan, and seven from Toronto.

The habits of the bird are supposed to be similar to those of *exilis*. Mr. Scott's example was discovered while walking on the leaves of pond-lilies, and when startled it retreated to the tall grass on the margin of the pond.

Mr. Menge, who collected several of the Florida specimens, discovered a nest with four young birds. He writes: —

"I had one of the old birds in my hand, which I think was the female. She was not inclined to fight and would not leave the nest. The other old bird was two or three feet from me, and seemed a much larger bird. I did not disturb them, and when I let the old bird go she hopped back on her nest as though she was accustomed to being handled." (R. A. Chapman, "The Auk," January, 1896, p. 14.)

LIMPKIN.

COURLAN.

ARAMUS GIGANTEUS.

CHAR. Prevailing color dark brown glossed with purple; head, neck, and back striped with white; throat white. General appearance rather Heron-like. Length about 26 inches.

Nest. Amid rushes or upon a low bush, on the margin of a pond or stream; made of vine-leaves and grass.

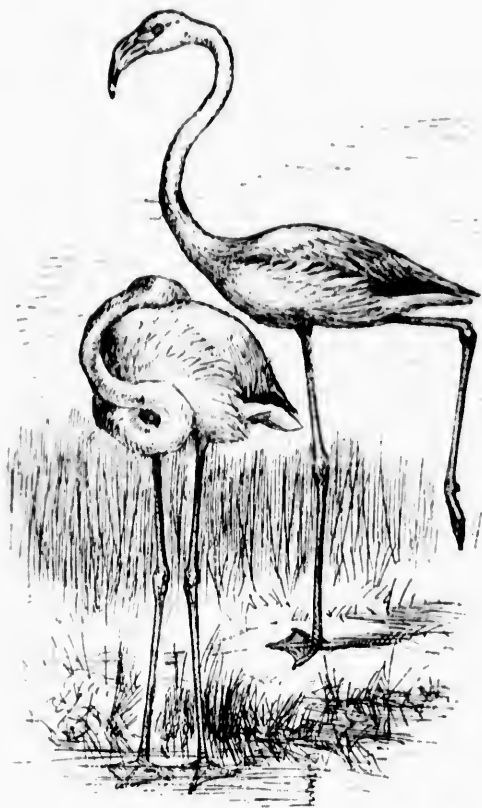
Eggs. 4-8; buffy white or grayish white spotted with brown and gray; variable in size, average about 2.40×1.70 .

This singular bird principally inhabits 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 only associates by pairs. By night as well as day it is heard crying out in a loud and sonorous voice *cavau!* and is well entitled to the name of the supposed "crying-bird" of Bartram. Mollusca, frogs, and other aquatic animals are its ordinary food. It is very shy, carefully hiding itself; but when aware of being discovered, it starts rapidly to a great elevation, and its flight is long continued. It also walks with great agility, but never willingly wades into the water. It alights on the summits of trees, and builds in the grass, near stagnant water, concealing the nest with much art. The young are covered with blackish down when hatched, and soon follow their parent. Like the Rail, this bird runs swiftly through the grass, compressing its narrow body so as to pass through a small hole, and is very difficult to catch when wounded.

This species has been named Limpkin by naturalists, because that is the name by which it is known in Florida, — the only State of the Union in which the bird is found. The name is said to have been suggested by the walk of the bird, its movements resembling the motions of a lame person.

In Jamaica it is called the "Clucking Hen," from its habits of sauntering along and deliberately clucking like a fowl.

Dr. Bryant reported finding a nest containing fifteen eggs; but five or six has been the usual number of the sets taken during recent years.



FLAMINGO.

PHENICOPTERUS RUBER.

CHAR. General color bright pink, deepest on breast and wings; primary and secondary feathers of wings black; base of bill yellow, terminal half black. Legs red. The young are paler, the pink tints deepening with age. Length about 4 feet. Stature nearly 5 feet.

HAIT. Usually in a colony, situated on the shore of a shallow lagoon or pond, or on a mud island, — a saucer-like depression in the mud, with a rim or bulwark 3 to 6 inches in height. Sometimes a cone-shaped mound of mud is built up from the bottom of the lagoon and raised 8 to 10 inches or higher above the water level.

Eggs. 2; white, much elongated, and with a rough plaster-like surface; 3.60×2.20 .

The Flamingo of America is found chiefly in the tropical regions, whence it appears to emigrate in summer on either side the equator, in the southern hemisphere visiting Brazil, Peru, Chili, and Buenos Ayres, on the shores of La Plata. It is also seen in Cayenne (where it is known by the name of Tococo, from the usual sound of its call) and in various islands of the West Indies. It breeds in Cuba and the Bahamas, is not infrequent at certain seasons on the coast of Florida, and sometimes solitary individuals are observed even in the Middle States; but in the Union generally the species may be considered as rare. When seen at a distance, such is the brilliancy of their dress and the elevation at which the birds stand that they appear like a troop of soldiers being arranged alongside of each other in lines, while on the borders of rivers and estuaries near the sea they assemble in search of their food, which consists chiefly of small fish, spawn, and aquatic insects. They collect their prey by plunging in the bill and part of the head, and from time to time trample with their feet to disturb the water and raise it from the bottom. While the rest are thus employed in seeking their subsistence, one of them stands sentinel, and on the first note of alarm, a kind of trumpet-call, he takes to wing, and the whole flock immediately follow.

The flesh of the American Flamingo is accounted pretty good food, and that of the young is thought by some equal to the Partridge. Davies, in his "History of Barbadoes," says it is commonly fat and accounted delicate; while of the transatlantic species Dillon remarks that the inhabitants of Provence always throw away the flesh, as it tastes fishy, and make use only of the feathers as ornaments. But of this kind, celebrated in history, the ancients esteemed the tongue as an exquisite dainty, and Philostratus reckoned it among the delicacies of entertainments.

The claim of the Flamingo to recognition here rests upon its occurrence on the southwestern coast of Florida, where it is said to reside throughout the year. It also occurs casually at other points

on the Gulf coast. Audubon credits it with occurring along the Atlantic coast to Charleston, S. C., as late as 1830.

The old notion that when sitting on the eggs the bird's legs dangle awkwardly on each side of a high cone-shaped nest has been discarded, recent observers affirming that the feet are drawn up under the sides of the body, the nest being close to the ground, or no higher than is necessary to protect the eggs from the water with which they may be surrounded.

When on the nest the neck is gracefully curved and the head neatly tucked away among the feathers of the back, like a Swan's; but when flying, the Flamingo does not curve its neck, as a Heron will, but carries both neck and legs outstretched and rigid.

AMERICAN AVOCET.

RECURVIROSTRA AMERICANA.

CHAR. Back and most of wings black, remainder of plumage white, excepting head and neck, which are pale brown in summer and pale gray in winter; feet webbed; legs blue; bill black, long, and recurved. Length about 17 inches.

Nest. A bulky affair of dry grass or seaweed lined with fine grass; placed amid tall herbage on the marshy margin of a pond.

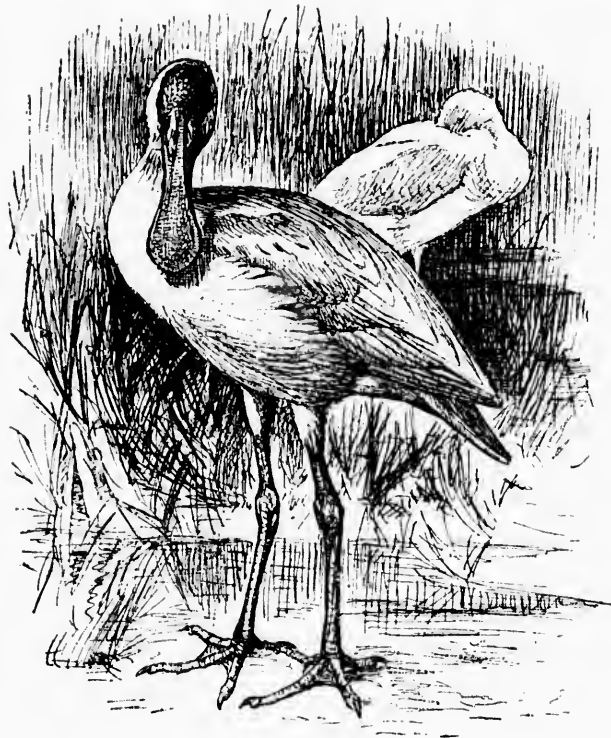
Eggs. 3-4; buff or reddish drab, sometimes with an olive tint, covered with spots of brown of several shades; size variable, average about 2.00×1.35 .

The American Avocet, supposed to winter in tropical America, arrives on the coast of Cape May, in New Jersey, late in April, where it rears its young, and retires to the South early in the month of October. In the spring it was observed by Mr. Say in the lower part of Missouri. It is also known to visit Nova Scotia, though scarcely ever seen in the State of Massachusetts. Dr. Richardson also found it abundant in the Saskatchewan plains as far as the 53d parallel, where it frequents shallow lakes, feeding on insects and fresh-water crustacea. In New Jersey it seems to have a predilection for the shallow pools of the salt-marshes, wading about often in search of prey, which consists of marine worms, small paludinas, turbos, etc., to which, like the European species, it sometimes adds small *Fuci* or marine vegetables.

The Avocets near their breeding-places are very noisy, quailing, and clamorous, flying around in circles near their invaders, and in a sharp but plaintive tone uttering 'klik, 'klik, 'klik, in the manner of the Stilts or Long Legs (*Himantopus*), with which at times they familiarly associate in small numbers to pass the important period of reproduction. Like them also they alight on the marsh or in the water indifferently, fluttering their loose wings and shaking their tottering and bending legs as if ready to fall, keeping up at the same time a continual yelping. The nest, in the same marsh with the Stilts, was hidden in a thick tuft of grass or sedge at a small distance from one of their favorite pools. It was composed of small twigs of some marine shrub, withered grass, sea-weeds, and other similar materials, the whole raised to the height of several inches.

Buffon, theorizing on the singular structure of the bill of the Avocet, supposes it to be "one of those errors or essays of Nature which, if carried a little further, would destroy itself; for *if* the curvature of the bill were a degree increased, the bird could not procure any sort of food, and the organ destined for the support of life would infallibly occasion its destruction." As it happens, however, and not as *might be imagined*, the Avocet, no less than the Crossbill, continues not only to live, but to vary its fare and obtain it with facility. Even the sloth, that triumph on the occasional imbecility of Nature, so wretched and lost upon the plain ground, for which the motions of its peculiar and unequal limbs are not calculated, climbs up a tree with facility, and, like the tribe of monkeys, is perfectly at ease in its accustomed arboreal retreat. Let us then more wisely content ourselves to observe Nature in all her ingenious paths, without daring, in our ignorance, to imagine the possible failure of her conservative laws.

The Avocet is a rather uncommon bird near the Atlantic coast, and north of New Jersey is merely a straggler, a few examples having been taken in Connecticut, Massachusetts, Maine, and New Brunswick. On the alkali plains of the West it is quite abundant, and ranges as far north as Great Slave Lake.



ROSEATE SPOONBILL.

AJAJA AJAJA.

CHAR. Head bare, skin green, orange, and black; bill long, broad, flat, and widened towards the end; neck, breast, and back white; short plumes of breast, wings, and tail rich carmine; tail and patch on neck buff; under parts deep rose color. Length about 30 inches.

Nest. In a colony, placed amid the tall grass of a salt marsh near the mouth of a river or on a marshy sea island; made of twigs loosely arranged, — a mere platform, raised several inches from the ground.

Eggs. 5-7; dull white or pale buff, spotted with brown; 2.60×1.75 .

The Red or American Spoonbill chiefly dwells within the tropical regions of the continent, being common in Jamaica and other of the West India islands, as well as in Mexico,

Guiana, and Brazil. In the southern hemisphere it is said to exist in Peru and as far down the coast of South America as Patagonia. North of the equator it migrates in summer into Florida, and is met with to the confines of the Altamaha, in Georgia. Wilson's specimen was obtained up the Mississippi, at the town of Natchez (about the latitude of 32°). Some are also occasionally met with on the river shores of the Alabama, and in other parts of that State. A straggler has been known to wander as far as the banks of the Delaware.

According to the relation of Captain Henderson, in his account of Honduras, this species is more maritime in its habits than that of Europe, as it wades about in quest of shellfish, marine insects, fry, and small crabs; and in pursuit of these, according to him, it occasionally swims and dives.

The European, or white, species appears to reside in much cooler climes than the American, being abundant in Holland, and even at times visiting the shores of the South and West of England in whole flocks. It is there, however, a bird of passage, and in migrations accompanies the flocks of Swans.

At the present day Spoonbills are found regularly no farther north than the maritime districts of the Gulf States, though an occasional bird wanders up the valley of the Mississippi, ranging at times as far as southern Illinois.

They were abundant in Florida not many years ago, but the plume-hunters have almost exterminated them there. At present they are more numerous on the shores of Texas than elsewhere.

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WOOD IBIS.

WOOD STORK.

TANTALUS LOCULATOR.

CHAR. General color white; tail and part of wings black, with metallic reflections; head and upper half of neck bare, the skin hard, rough, and of a dusky color. Length about 40 inches.

Nest. In a colony situated amid a dense cypress-swamp, placed on an upper branch of a tall tree; a loosely arranged structure of twigs, lined with moss, — the size increasing by yearly additions.

Eggs. 2-3; white, spotted with brown; the surface rough; 2.75×1.75 .

This is another tribe of singular wading birds, which emigrate in the summer to a certain distance on either side of the equator; being found occasionally as far north as Virginia, and as far south, in the other hemisphere, as the savannahs of

Cayenne and Brazil, and in other parts of South America. In the compass of the United States their principal residence is in the inundated wilds of the peninsula of East Florida, and they are not uncommon in Mississippi, Alabama, Carolina, and Georgia, withdrawing from the north, however, at the commencement of cold weather or about the month of November.

According to Bartram, who had many opportunities of observing them in Florida, they are solitary and indolent birds, seldom associating in flocks, and usually frequent the banks of the principal rivers, marshes, and savannahs, especially such as are inundated, as well as the larger deserted rice-plantations contiguous to the sea-coast. Here, alone, the feathered hermit stands listless, on the topmost limb of some tall and decayed cypress, with his neck drawn in upon his shoulders, and his enormous bill resting like a scythe upon his breast. Thus pensive and lonely, he has a grave and melancholy aspect, as if ruminating in the deepest thought; and in this sad posture of gluttonous inactivity these birds probably, like Herons, pass the greatest part of their time, till, awakene'd by the calls of hunger, they become active in quest of their prey of snakes, young alligators, fish, frogs, and other reptiles. They are easily approached and shot, when abandoned to repose, and are by many of the inhabitants accounted as excellent food.

This Ibis is found in all the Southern States, though at present it is not a common bird anywhere within our borders, excepting in portions of Florida. Stragglers have been met with north to New York, Ohio, Indiana, and Wisconsin.

Bartram's account of the hermit-like habits of the bird, quoted by Nuttall, was criticised by Audubon, who rarely met with a solitary example, — the birds were always in flocks: but Dr. Henry Bryant states that he never saw a *flock* of Wood Ibises excepting at their breeding-place. The principal food of this species is small fish, which are caught in the shallow waters, the Ibis scratching or "raking" the bottom to startle its prey; but a meal of frog, turtle, bird, or snake is never neglected, and a young alligator is not safe within reach of the bird's long and powerful bill.

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SCARLET IBIS.

GUARA RUBRA.

CHAR. Entire plumage deep scarlet, excepting the tips of the longest wing-feathers, which are black. Length about 30 inches.

Nest. In a colony, amid a thicket of small trees and vines; placed on a low tree or bush, — a mere platform of loosely arranged twigs and leaves.

Eggs. 2-3; dull white or pale gray, spotted with brown; 2.10×1.45 .

Nuttall followed Wilson in crediting the Scarlet Ibis to the Southern States; but its appearance within our borders during recent years has been merely casual, and it has not been seen elsewhere than in Florida and Louisiana.

 WHITE IBIS.

GUARA ALBA.

CHAR. Entire plumage pure white, excepting the tips of the longest wing-feathers, which are black. In freshly killed specimens the white is tinged with a delicate shade of pink. Length about 24 inches.

Nest. In a colony, amid tall marsh-grass by the sea-shore or near a pond in the woods; a compactly woven structure, sometimes deeply hollowed, but often quite shallow, made of reeds or twigs and lined with green leaves; fastened to upright reeds or placed on a bush or low tree.

Eggs. 3-5; dull white tinted with green or blue, and marked with brown spots; 2.25×1.50 .

This species, so extremely like the preceding, except in its permanent white color, is likewise common in the tropical parts of the American continent, particularly the Caribbee Islands, and extends its residence at least as far south beyond the equator as the coast of Brazil. Wilson observes that the species appeared to be pretty numerous on the borders of Lake Pontchartrain, near New Orleans, in the month of June; he also saw it on the low keys or islands off the coast of Florida. These birds rarely proceed to the north of Carolina, which they visit only for a few weeks towards the close of summer, — collected probably from their dispersed breeding-places, a little

previous to the period of their migration back again to the South, which takes place on the return of cool weather. Their food and haunts are altogether similar with those of the preceding species, and, like them, they seldom remove to any great distance from the sea. Mr. Bartram remarks that "they fly in large flocks or squadrons, evening and morning, to and from their feeding-places or roosts, and are usually called Spanish Curlews. They subsist principally on cray-fish, whose cells they probe, and with their strong pinching bills drag them out." They also feed on fry and aquatic insects, and their flesh is sometimes eaten, but not much esteemed.

Birds of this species may frequently be seen standing on the dead branches of trees and on the shore, resting on one leg, with the body in an almost perpendicular position, and the head and bill resting on the breast,—which, indeed, appears to be their common mode of reposing, in consequence of which, and as a proof of the habitual indolence of the species, the plumage, as in the Wood Ibis, on the ridge of the neck and upper part of the back, is evidently worn by the constancy of this habit.

Sometimes, according to Bartram, during the prevalence of high winds and in thunder-storms, they may be seen collected into numerous flocks, driving to and fro, or turning and tacking about high in the air, during which evolutions with the contending currents of the wind their silvery plumage gleams and sparkles with unusual brilliance as it reflects the flashing light from amidst the dark and hovering clouds.

The White Ibis has been until quite recently a common bird in some localities in the Southern States. It occurs regularly on the Atlantic shore to North Carolina (occasional stragglers have been seen in New Jersey), and along the valley of the Mississippi ranges farther north,—to Indiana and southern Illinois.



GLOSSY IBIS.

PLEGADIS AUTUMNALIS.

CHAR. Back, wings, and tail dark purple with metallic reflections of green and bronze; head, neck, wing-coverts, and under parts rich chestnut, tinged with purple; bill brown; legs greenish brown. Length about 24 inches.

Nest. In a colony, situated in a marsh or swamp on the bank of a river, lake, or shallow lagoon; a compact structure more neatly built than the nest of any of the Herons, composed of dead reeds or twigs and grass; fastened to upright reeds or placed on a platform of bent reeds, sometimes in a bush or tree growing in the water, and occasionally the platform bearing the nest floats upon the water.

Eggs. 3-4; light blue, or dark blue with a green tinge; 2.00×1.45 .

The Glossy Ibis appears to be within the temperate and warmer regions almost a general inhabitant of the world. On the borders of rivers and lakes it is seen, for example, abundant as a bird of passage in Poland, Hungary, Turkey, and the Grecian Archipelago; it visits the borders of the

Danube, and is seen sometimes in Switzerland and Italy, though rarely in England and Holland; and is for seven months a periodical visitor in Egypt, where, in common with the Sacred Ibis, it was revered and embalmed in the vast catacombs of Saccara and Memphis. It arrives in that country in October, and leaves it in the month of March. It is known to breed up the rivers of the Caspian and Black Seas, and to spread into Russia, Siberia, Tartary, Denmark, occasionally into Sweden, and perhaps Lapland, for the same purpose; remaining in those countries till driven to migrate by the inclemency of approaching winter, at which period it appears to arrive in Africa and Asia. It is a still more rare and accidental visitor in the United States than in England. A specimen has occasionally been exposed for sale in the markets of Boston, and individuals are, at distant intervals, shot off Long Island and on the shores of New Jersey. At very irregular periods in the spring season, small flocks are thus seen on the coasts of the Middle States and as far south as Maryland and Virginia. Vieillot also asserts their occasional appearance even in Cayenne, Iceland, and Greenland; and they are found common along the rivers in the island of Java and in the Celebes.

The Ibises ordinarily dwell together in flocks in marshy and inundated grounds, exploring for their food with great regularity, side by side advancing, like disciplined troops in an extended line, perambulating the meadows they visit in preference to making a desultory flight, and for hours they are observed boring the same spot with their long and sensitive bills, when their prey is abundant. Sedate in their movements, elevating their feet high in walking, and as it were measuring their steps, they seem by the delicacy of their actions as if conscious of the veneration and high regard symbolically bestowed upon them by the nations of antiquity. When, however, alarmed, they rise high in the air, in a wide spiral range, uttering loud cries, like Geese, and having attained a safe elevation, they file off in a horizontal direction, uttering at intervals a low and hoarse sound, and their flight being vigorous, they soon disappear from sight. They are said to nest in

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trees; but of their manners during the period of reproduction we are still wholly ignorant, and Temminck believes that they retire to breed in the wilds of Asia, though Montague thinks their vernal migrations are directed to the less-inhabited parts of the North, where they find security about the rivers and interior lakes to propagate, and whence they retire as the winter approaches and as their food begins to fail, spreading themselves at this season over the southern parts of Europe and the adjoining continents. According to Oedman, they have been known to breed, for several years in succession, in the isle of Oland, in the Baltic.

The food of the Ibis is merely insects, worms, river shell-fish, and vegetables, which is likewise the real fare of the nearly allied, Sacred Ibis, of the Egyptians (*Ibis religiosa*, CUVIER), neither of whom show any predilection for devouring serpents or large reptiles, — for which purpose, in fact, the structure of their long and falciform bills is wholly unfitted.

From the supposed utility of the Ibis in destroying noxious reptiles, it was held in the greatest veneration by the Egyptians; to kill it was forbidden under pain of death; large flocks were kept in temples, and when they died, were embalmed, inurned, and deposited with the mummies in the sacred receptacles of the dead. These *bird-pits*, as they are still called, are scattered over the plains of Saccara, and are filled with the numerous remains of this and the Egyptian species. So highly was it honored that the Ibis became the characteristic hieroglyph of the country, repeated upon all the monuments, obelisks, and national statues. The abundance of their remains in the catacombs proves, indeed, the familiarity which the species had contracted with the indulgent inhabitants of its favorite country; and, like the Stork of Europe, venerated for its supposed piety, it gained credit, in the prejudices of the ignorant, for benefits which it never conferred. Diodorus Siculus, however, only adds, what appears by no means improbable, that, impelled by hunger on their first arrival, night and day the Ibis, walking by the verge of the water, watches reptiles, *searching for their eggs*, and

destroying all the beetles and grasshoppers which it finds. Thus accustomed to favor and immunity (like our own Vulture scavengers), in Egypt these birds advanced without fear into the midst of the cities. Strabo relates that they filled the streets and lanes of Alexandria to such a degree as to become troublesome and importunate; and Hasselquist remarks that in Lower Egypt as soon as the Nile becomes freed from its inundations, they arrive in such numbers as to be seen morning and evening frequenting the gardens and covering whole palm-trees with their flocks. The Egyptian Ibis is likewise said to construct its nest familiarly in the clustering fronds of the date-palm, where it lays four eggs, and sits, according to the fanciful calculation of *Ælian*, as many days as the star *Isis* takes to perform the revolution of its phases.

To enumerate the various fictions and falsehoods with which the ancients have chosen to embellish the history of the Ibis would be as vain and useless to the naturalist as to the sober historian. Even *Josephus* has the credulity to relate that when *Moses* made war on the Ethiopians, he carried, in cages of papyrus, a great number of the Ibis, to oppose them to the serpents! Fables of this kind are now no longer capable of being substituted for facts, and the naturalist contents himself with the humbler, but more useful, employment of simply describing and delineating nature as it issued from the hands of its omnipotent Creator. This superstition has also had its day, and the Ibises, no longer venerated even in Egypt, are in the autumn commonly shot and ensnared by the Arabs for food; and the markets of the sea-coast are now abundantly supplied with them as game, together with the white species, both of which are ignominiously exposed for sale deprived of their heads,—a spectacle from which the ancient Egyptians would have recoiled with horror. So fickle and capricious, because unreasonable, is the dominion of superstition!

The Glossy Ibis is a rare bird in this faunal province, but it occurs as an occasional visitor north to Massachusetts and Ontario, and in 1878 was seen on Prince Edward's Island. The nest has not been found north of Florida.

LONG-BILLED CURLEW.

SICKLE-BILL.

NUMENIUS LONGIROSTRIS.

CHAR. Upper parts mottled gray, black, and pale rufous, — rufous being the prevailing tint; under parts pale cinnamon, the neck and breast with dusky streaks; secondary quills rufous, primaries brownish black; bill black; legs brownish black. Length about 25 inches.

Nest. On the ground, sometimes in wet meadows; a slight depression, lined, sparingly, with grass.

Eggs. 3-4 (very variable in size, color, and markings); olive drab to pale buff, thickly speckled and blotched with brown, sometimes spotted with lilac also; average size about 2.60×1.80 .

The Long-billed Curlew is seen in the marshes of New Jersey about the middle of May on its way farther north, and in September or the latter end of August on its return from its breeding-places. How far south it retires in the course of the winter, has not been ascertained; but a few, no doubt, winter in the marshes of South Carolina, as I have observed specimens on the muddy shores of the Santee, near Charleston, in the month of January. Its southern migration in all probability is bounded by the shores of the Mexican Gulf. Like most species of the genus, it retires into the desolate regions of the North to breed. Dr. Richardson believes that it frequents the plains of the Saskatchewan and the Columbia at this season, and it is known to visit the neighborhood of Hudson Bay. In Major Long's expedition it appears that some of these birds were observed as far inland as the Illinois, latitude 42° , on the 15th of June, — which might be supposed about the time of breeding. According to Wilson, a few instances have been known of one or two pairs remaining in the salt-marshes of Cape May the whole summer; and they were believed to nest there on the ground, laying four eggs in size and color much resembling those of the Clapper Rail. Indeed, it will probably be found that many birds now supposed to pass the period of reproduction in the remote regions of

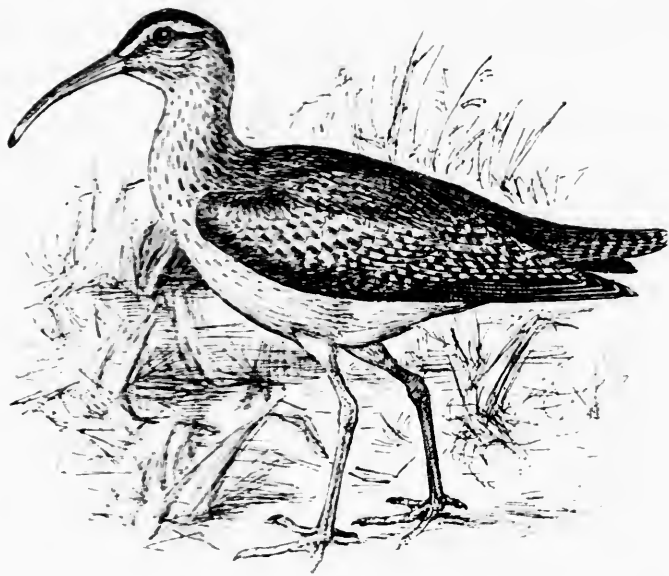
the North only separate into solitary pairs, and disperse themselves through the vast wilds of the interior of North America.

The Long-billed Curlews fly high and rapidly, generally throwing themselves, when in company, into an angular wedge, after the manner of Wild Geese, uttering, as they fly, and when at all alarmed, a loud, short, whistling, and almost barking note, sometimes, as in other species of the family, strongly resembling the sibilation of the word *kurlew*, and whence they derive their characteristic name, which has been adopted into so many of the European languages. By a dexterous imitation of this note a whole flock may sometimes be enticed within gunshot; and the cries of the wounded continue the sympathetic enticement, while the fowler, repeating his shots, carries havoc among the quailing throng. Their food consists principally of insects, worms, and small crabs. The young and old also, on their arrival from the North, where they feed on various kinds of berries, still continue their fondness for this kind of food, and now frequent the uplands and pastures in quest of the fruit of the bramble, particularly dewberries, on which they get so remarkably fat at times as to burst the skin in falling to the ground, and are then superior in flavor to almost any other game-bird of the season. In the market of Boston they are seen as early as the 8th of August, having already raised their brood and proceeded thus far towards their winter-quarters.

The Sickle-bill is an abundant bird from the Pacific to the Mississippi; but eastward of that river it is common only in the Southern States and around the Great Lakes: while in New England it is quite rare, and occurs chiefly during the autumn migration. In the West it ranges to the Saskatchewan valley, about latitude 55°; but on the Atlantic it has not been taken north of Baie de Chaleur, on the Gulf of St. Lawrence.

Our Eastern birds probably raise their broods in the region lying immediately south of Hudson Bay, and then journey eastward through the valleys of the St. Lawrence and its tributaries until reaching the sea, along which the birds proceed to their winter quarters in the West Indies.

Mr. George A. Boardman heard a report several years ago that this species had been discovered breeding on Prince Edward's Island; but this has not been confirmed by recent observations.



HUDSONIAN CURLEW.

JACK CURLEW.

NUMENIUS HUDSONICUS.

CHAR. Upper parts blackish brown mottled with buff, the latter prevailing on the wing-coverts; wings dusky; crown dusky brown, with median stripe of buff; stripe of brown on side of head; rest of head, neck, and under parts light buff; breast spotted with brown. Length about 17 inches.

Nest. Usually near the margin of a lake or stream; a slight depression, lined with grass or leaves.

Eggs. 3-4; drab with a tint of green or buff, marked with several shades of brown, 2.25 X 1.60.

The Short-Billed Curlew, after passing the winter south of the United States, arrives in large flocks on the coast of New Jersey early in May, frequenting the salt-marshes, muddy ponds, shoals, and inlets, feeding at this time on small worms, land and marine insects, fry, minute shell-fish, and sometimes the seeds of aquatic vegetables, which it usually collects at the recess of the tide in company with various other

waders, and at high water retires into the marshes, and sometimes to the dry ridges and pastures, particularly at a later period, in June, where, accompanied by the Long-Billed species, it feeds much on dewberries, becoming very fat and well flavored. In the northern regions and the fir countries, to which these birds retire to breed, they also collect crowberries (*Empetrum nigrum*) for food. In June they take their departure to the North; collecting together from the marshes in one general flock, they rise to a considerable elevation about an hour before sunset, and forming a long angular phalanx, keep up a constant whistling on their march, as if conversing with each other, in order to forget or lessen the toil and hazard of their adventurous journey. Their flight is steady, like that of the Woodcock, and in consequence of their sympathy for each other, they readily come within gunshot of those who can imitate their call. While thus beating the air in company, the transient glittering of their speckled wings, as they glide along in ease and elegance, presents an interesting spectacle no less beautiful than amusing. Arriving, at length, in their natal regions in the wilds of the North, they soon obey the instinct of their species, and making a nest on the ground, lay about four eggs, which, according to Mr. Hutchins, are of a light bluish-gray color, marked with black (or dark-brown) spots. From the middle of August to the beginning of September they arrive in the vicinity of Massachusetts Bay and other parts of New England, frequenting the pastures as well as marshes, and fatten upon grasshoppers and berries till the time of their departure, about the close of September; and they wholly disappear from New Jersey on their way to the South, early in the month of November. Previous to their departure they again assemble in large flocks near the seabeach, being constantly gregarious in all their journeys. In an island of the Piscataqua, near Plymouth (New Hampshire), a friend informs me that they had, in the autumn, been seen together in a dense flock of many thousands, thickly covering several acres of ground with their numbers.

When much hunted, they become extremely shy and diffi-

cult to approach; yet the same bird, shot at three or four different times, and recovering when about to be picked up, still, notwithstanding this persecution, continued to feed again in the same spot. These birds, though so exquisite in flavor, in the autumn, when as abundant as usual, are sold in Boston market for about twenty to twenty-five cents each. As early as the 18th of July I have met with individuals of this species, one of which on dissection proved to be an old and barren male who in all probability had remained behind the flock in the same vicinity where he had arrived in the spring, having no incentive to migration. Whether other specimens, killed at this season before the return of the general flock, are influenced by the same cause to linger behind or wander from the rest, I am unable to say.

The Jack Curlew is well known to gunners along the Atlantic coast, where it occurs during both migrations. The flocks do not cross the Gulf of St. Lawrence, but follow the southern shore till well inland, when they fly north to Hudson Bay and the Barren Lands, near the Arctic Ocean, where they breed.

A few stragglers from the main flocks have been taken in Labrador and Greenland, and a few wander inland through Ohio and the Eastern States.

ESKIMO CURLEW.

SHORT-BILLED CURLEW. DOUGH-BIRD.

NUMENIUS BOREALIS.

CHAR. Upper parts blackish brown, spotted with buff; crown streaked, but without distinct median line; under parts light buff; neck, breast, and sides streaked or spotted with dusky. Length about 14 inches.

Much like *hudsonicus*, but easily distinguished, *borealis* being of smaller size, with a shorter bill, and lacking the light-colored streak across the crown.

Nest. Amid the rocks of dry ridges, adjacent to lakes and ponds; a slight depression, lined with grass and leaves.

Eggs. 3-4; olive, with a tinge of green or brown predominating, marked with several shades of brown; 2.05×1.45 .

The Small Curlew in the course of its vast migrations occasionally visits almost every part of the American continent,

penetrating even into the remote territories of the west, coursing along the great valley of the Mississippi, and extending its wanderings into the southern hemisphere as far as Brazil and Paraguay. These birds arrive at Hudson Bay in April or early in May, but breed to the north of Albany Fort, returning to the marshes with their young in August, and retire from that country early in September. Indeed, accompanied probably by the preceding, they frequent in summer the wide extent of Barren Lands within the Arctic circle, feeding usually on aquatic insects, their larvæ, and when ripe, the fruit of the crow-berry (*Empetrum nigrum*). On the 13th of June, 1822, Dr. Richardson discovered one of these Curlews sitting on three eggs on the shore of Point Lake. When approached, she ran a short distance from the nest, crouching near to the ground, and then stopped to watch the motions of her encroaching visitor.

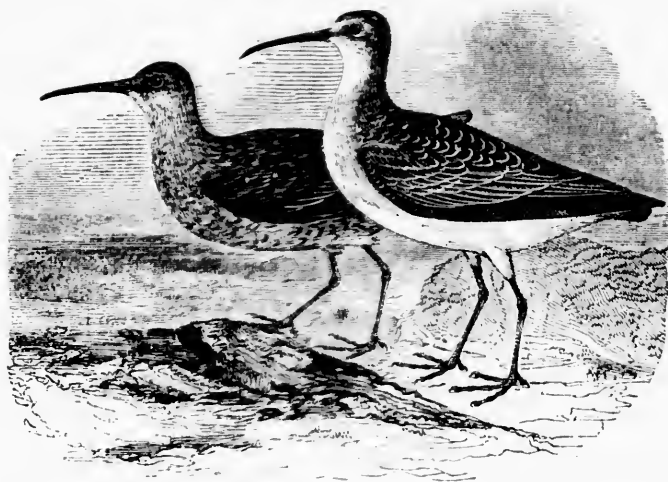
About the close of August or beginning of September these Curlews, accompanied by birds of the preceding species, arrive on the shores of Massachusetts Bay; and frequenting the marshes and adjoining pastures, feed at this time much upon grasshoppers, coleoptera, and earth-worms, which they collect principally towards evening or early in the morning. On their way to the South they also visit Nova Scotia and Newfoundland, where they remain till the approach of winter; and in New Jersey these birds linger on till the month of November, when they apparently, without further delay, pass on to the south of the United States, for in other parts of the Union they appear to be wholly unknown. Like the other species, they are remarkably gregarious, each company seeming to follow some temporary leader; and on starting to wing, a sort of watch-cry is heard, resembling the whistling pronunciation of the word *bee-bee*. On their arrival from the North they are very fat, plump, and well flavored, and included, like both the preceding species and the Marbled Godwit, under the general name of *Doebirds*, they are sought out by epicures and enhance the value of a table entertainment. Pennant remarks, on the authority of Hutchins, that one year, from the 9th of

August to the 6th of September, they were seen in flocks innumerable on the hills about Chateaux Bay, on the coast of Labrador, soon after which they all departed for the South; at this time they kept chiefly on the open grounds, and feeding on crowberries, were very fat and well flavored.

A few of these birds migrate northward along the Atlantic coast, and some wander by the way of the Great Lakes; but the route taken by the majority is up the valley of the Mississippi and across the plains, where they have been met with in "immense flocks" during May. They spend the summer on the Barren Lands within the Arctic circle, and after raising their broods, start on the migration southward, crossing to Labrador, where several naturalists have found them in great abundance. But though so abundant in that region, comparatively few pass southward through the Maritime Provinces, and they are reported as uncommon all along the Atlantic shore of the United States; so it is supposed that the larger number fly direct from Labrador to South America, over which country they roam during the winter, ranging to its southernmost point.

Dr. Coues, who met with large numbers of these birds in Labrador, states that their principal food was crowberry, or "curlewberry," as the natives call it; but they also fed extensively on a small snail which adhered to the rocks on the sea-shore and were left uncovered at low tide.

Mr. G. H. Mackay, in his interesting biography of the species, says the birds are met with on the uplands, as well as on the sea-shore, feeding on insects and seeds, much after the habit of some of the Plovers.



CURLEW SANDPIPER.

TRINGA FERRUGINEA.

CHAR. Bill long, slender, and decurved. Adult in summer: upper parts mottled black, gray, and rufous; wings and tail ashy gray; tail-coverts pale buff barred with black; under parts rich chestnut. Adult in winter: upper parts grayish brown; tail-coverts white; under parts white; chest with a few indistinct streaks of gray. Young: like adult in winter, but feathers of upper parts margined with buff; neck streaked with brown. Length about $8\frac{1}{2}$ inches.

Nest. On the margin of a lake or stream; a slight depression, lined with dry grass.

Eggs. —?, "pale grayish or greenish buffy, spotted with deep brown, etc.; 1.50×1.04 " (*Ridgway*)

Of this species very little is known. It is found on the sea-coast and by the borders of lakes, and is sometimes seen in the interior of the countries it frequents. Like most species of the genus, it is migratory in the spring and autumn, and at such times proceeds in flocks along the coast or on the borders of large rivers. The food of this bird is usually small insects and worms, as well as the herbage of some of the sea-weeds (*Fuci*). So wide are the devious wanderings of this cosmopolite pigmy that Temminck obtained a specimen from

Senegal, another from the Cape of Good Hope (as is also indicated by Latham's name of the Cape Curlew), and a third from North America.

The Curlew Sandpiper is not an uncommon bird in Europe, but, excepting in Greenland and Alaska, few examples have been met with in America, and those were seen along the New England coast and in Ontario. It is supposed to breed throughout the entire Arctic regions, but of its nesting habits very little is known.

Though an exceedingly active bird, when feeding, it proceeds quite leisurely with its migrations, and while on these journeys frequents the salt-marshes and the tide-washed sandbars near the mouths of rivers.

In many habits and in flight it resembles the Dunlin, for which it is often mistaken. This mistake is liable to be made in winter, when the plumage of the two are very similar. In summer dress our bird appears somewhat like a small edition of the Knot.

RED-BACKED SANDPIPER.

DUNLIN. BLACK-BREAST. BLACK-BELLIED SANDPIPER.
BLACK-HEART. WINTER SNIPE.

TRINGA ALPINA PACIFICA.

CHAR. Adult in summer: upper parts chestnut, streaked with black; wings and tail ashy gray; throat and breast grayish white with dark streaks; lower breast black; belly white. Adult in winter: upper parts brownish gray or ashy gray; under parts white, neck and chest streaked sparingly with gray. In young birds the feathers on the upper parts are bordered with rufous or buff, the top of the head is light chestnut and black, and the under parts are white, spotted with black. Length 8 to 8½ inches.

Nest. Amid long grass on a salt-marsh or beneath a bunch of heather on a moor or hillside,—a slight depression, lined with grass, leaves, or moss.

Eggs. 4; dull buff tinged with brown or olive, marked with chestnut; 1.45 × 1.00.

The Dunlin, or Red-backed Sandpiper, of the United States, according to the season of the year, is met with throughout the northern hemisphere, penetrating, in America, during the summer season, to the utmost habitable verge of the Arctic

Circle, and even breeding in that remotest of lands, the ever-wintery shores of Melville Peninsula. It likewise inhabits Greenland, Iceland, Scandinavia, the Alps of Siberia, and the coasts of the Caspian. In the southern hemisphere it sometimes even wanders as far as the Cape of Good Hope, and is found in Jamaica, other of the West India islands, and Cayenne. In the autumn it is seen around Vera Cruz, and, with other Sandpipers probably, is exposed for sale in the markets of Mexico. At the same time many, as the Purres, in their winter dress, remain through the greatest part of the winter within the milder limits of the Union, frequenting at times in great numbers the coasts of both Carolinas during the month of February, flitting probably to and fro with every vacillating change of temperature, being naturally vagabond and nowhere fixed for any considerable time until their arrival at the Ultima Thule of the continent, where they barely stay long enough to rear a single brood, destined, as soon as they are able, to wander with the rest and swell the aerial host, whose sole delight, like the untiring Petrels of the storm or the ambitious Albatross, is to be in perpetual action, and are thus, by their associated numbers, obliged perpetually to rove in quest of their transient, periodical, and varying prey.

In the Middle States the Dunlins arrive on their way to the North in April and May, and in September and October they are again seen pursuing the route to their hibernal retreat in the South. At these times they often mingle with the flocks of other strand birds, from which they are distinguishable by the rufous color of their upper plumage. They frequent the muddy flats and shores of the salt-marshes at the recess of the tide, feeding on the worms, insects, and minute shell-fish which such places generally afford. They are also very nimble on the strand, frequenting the sandy beaches which bound the ocean, running, and gleaning up their prey with great activity on the reflux of the waves.

These birds when in their hibernal dress are seen, in conjunction with several species, sometimes collecting together in such flocks as to seem at a distance like a moving cloud, vary-

ing in form and appearance every instant while they perform their circuitous, waving, and whirling evolutions along the shores with great rapidity; alternately bringing their dark and white plumage into view, they form a very grand and imposing spectacle of the sublime instinct and power of Nature. At such times, however, the keen gunner, without losing much time in empty contemplation, makes prodigious slaughter in the timid ranks of the Purres; while as the showers of their companions fall, the whole body often alight or descend to the surface with them, until the greedy sportsman becomes satiated with destruction.

The Dunlins breed plentifully on the Arctic coasts of America, nesting on the ground in the herbage, laying three or four very large eggs of an oil-green, marked with irregular spots of liver-brown of different sizes and shades, confluent at the larger end. Mr. Pennant also received the eggs of this kind from Denmark, so that the range in which they breed, no less than that in which they migrate, is very extensive.

This species, still abundant throughout the continent, and breeding in the Far North, is called "Winter Snipe" by the gunners of New Jersey and southward; but that name is given by the New Englanders to the Purple Sandpiper, which is not seen farther south. The names Ox-bird and Purre, given to the present species by Nuttall, were the names by which the summer and winter phases of the Dunlin were designated formerly by English writers.

Mr. D. G. Elliot tells us that in the far north, when the pairing time arrives, "the males pursue the females, uttering a musical trilling note which falls upon the ear like the mellow tinkle of large water drops falling rapidly into a partly filled vessel. It is not loud, but has a rich full tone difficult to describe, but pleasant to hear among the discordant notes of the various water fowl, whose hoarse cries arise on all sides."

NOTE.—The European DUNLIN (*Tringa alpina*) is smaller than the American race, and of a duller tint. It occurs in Greenland and breeds there, and an occasional example wanders to the shores of Hudson Bay. One has been taken on Long Island.

WHITE-RUMPED SANDPIPER.

BONAPARTE'S SANDPIPER.

TRINGA FUSCICOLLIS.

CHAR. Upper parts brownish gray, striped with black and tinged with rufous; wings ashy brown; rump brownish ash; upper tail-coverts white; tail grayish brown, the two middle feathers darker; under parts white, the breast washed with gray. In winter the upper parts are entirely brownish gray. Bill short and blackish brown, paler at the base; legs brownish olive. Length about $7\frac{1}{2}$ inches.

Nest. On a low lying sea-shore or near the muddy margin of a lake or stream close by the sea, — a slight depression, lined with dead leaves.

Eggs. 4; olive or olive brown or grayish buff, marked with chestnut and dark brown; sometimes marked also with pale brown and purplish gray; 1.35×0.95 .

This species, so nearly related to the preceding, is also common to both continents, penetrating inland in America to the western plains of the Mississippi, and inhabiting the shores of the small lakes which skirt the plains of the Saskatchewan, and probably the remoter wilds of the Arctic circle. According to Bonaparte these birds are rather common on the coast of New Jersey in autumn, and Mr. Oakes met with several in the vicinity of Ipswich, in Massachusetts. They are either seen in flocks by themselves or accompanying other Sandpipers, which they entirely resemble in their habits and food, frequenting marshy shores and the borders of lakes and brackish waters. They associate in the breeding-season, and are then by no means shy; but during autumn, accompanying different birds, they become wild and restless. Their voice resembles that of the Dunlin, but is more feeble; and they nest near their usual haunts, by lakes and marshes.

This is the Schinz's Sandpiper of Nuttall and Bonaparte. It is a common bird in eastern North America, migrating northward along the Mississippi valley as well as by the Atlantic coast, and breeding in the Arctic regions, — from Labrador to the Polar Sea.

During the migrations numbers of these birds appear along the New England shores in company with several of their smaller allies, from which they are readily distinguished by their conspic-

uous white tail-coverts. Their note, also, is peculiar, — a low soft *weet*.

In habits they differ little from other Sandpipers, — a little more confiding and heedless perhaps, and more frequently found on the mud-flats and among the sea-weed than on the sand.

PECTORAL SANDPIPER.

JACK SNIPE. GRASS SNIPE. KRIEKER.

TRINGA MACULATA.

CHAR. Upper parts dusky brown, the feathers margined with buff and rufous; rump and tail-coverts dusky; cheeks and throat dull white streaked with brown; breast buffy gray streaked with dusky; chin and belly white. In winter the plumage is plain gray and white, sometimes tinged with pale rufous and buff. Length about $8\frac{3}{4}$ inches.

Nest. Amid a tuft of grass on a dry mound or hill side.

Eggs. 4; pale buff, greenish drab, or olive brown, thickly blotched with rich red brown; 1.50×1.05 .

This conspicuous species of Sandpiper, first detected by Mr. Say, is by no means uncommon in various parts of the United States, migrating north, and perhaps west, to breed, as it is common in the remote plains of the Mississippi. These birds have been killed in abundance on the shores of Cohasset and in other parts of Massachusetts Bay, and brought to the markets of Boston, being very fat and well flavored. They arrive in flocks about the close of August, and continue here, as well as in New Jersey, till the month of September, and perhaps into October. In some instances solitary individuals have been killed in the marshes of Charles River, in Cambridge, about the 22d of July. These were in company with the flocks of small Sandpipers; but whether pairs may perhaps breed in the neighboring marshes or not, we have not had the means of ascertaining.

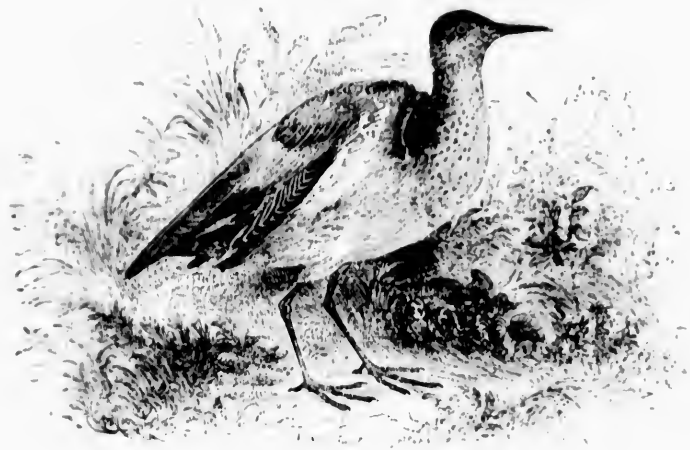
While here, they feed on small coleoptera, larvæ, and the common green *Ulva lattissima*, as well as some species of *Fucus*, or sea-weed, on which they become very fat. They utter a low, plaintive whistle when started, very similar to that

of some other species. Like the Snipe, they seem fond of damp meadows and marshes, and solitary individuals are often surprised by the sportsman in the manner of that bird.

The Pectoral Sandpiper breeds in the Arctic and subarctic regions of North America, — from Greenland to Alaska, — and in winter retires to the West Indies and southward. Large flocks of these birds migrate north and south across the prairies and through the valley of the great rivers of the West, but along the Atlantic seaboard only a scattered few are seen in the spring, though during the early autumn they appear in numbers. While on our coasts they mingle sociably with other small Sandpipers, but some of their manners and habits suggest the Snipe rather than the Sandpiper. They frequent the salt-marshes and seaside meadows more than the sandy beaches, and the erratic flight of a flock when suddenly flushed is peculiarly Snipe-like.

Nothing definite was known of the breeding-habits of these birds until recently, when our naturalists discovered them nesting in Alaska. Murdock found numbers at Point Barrow; then Nelson made a study of them at St. Michael's in 1879; and in 1883 the members of Lieutenant Ray's party at Point Barrow were fortunate enough to secure several nests with eggs.

In the mating season, which occurs after they have reached the vicinity of their nesting ground, the males become intensely excited in their efforts to gain the attention of the females and to keep near to one chosen for a mate. They run along the sand with wings extended, or take short flights close to the ground, passing to and fro in front of the *amorita*, or whirling in graceful curves in the air above her, all the while uttering a deep and hollow booming, which resembles *hoo, hoo, hoo, hoo*, or *too-u, too-u, too-u*, rapidly repeated in liquid musical tones. "When ever he pursues his love-making," says Mr. Nelson, "his rather low but pervading note swells and dies in musical cadences, which form a striking part of the great bird chorus heard at this season in the North." During these performances the throat and breast are filled with air and puffed out to twice their natural extent, — whence the name Pectoral. When not thus inflated, the air-sac hangs an inch or more below the general contour of the neck. While with us these birds do not display this inflated breast, and the only note we hear from them is a low soft *tweet*.



BUFF-BREASTED SANDPIPER.

TRYNGITES SUBRUFICOLLIS.

CHAR. Upper parts yellowish brown mottled with black; central tail-feathers greenish black, others paler and barred towards the tips; under parts buffish with a rufous tinge, the linings of the wings paler and beautifully marbled with black; breast with a few dark spots. Length about 8 inches.

NOTE. On a knoll in a grassy plain or near a river bank, — a slight depression lined with a little moss or grass, or a few leaves.

EGGS. 4; pale reddish buff sometimes tinged with olive, profusely marked with lavender and rich reddish brown of several shades; 1.45 X 1.00.

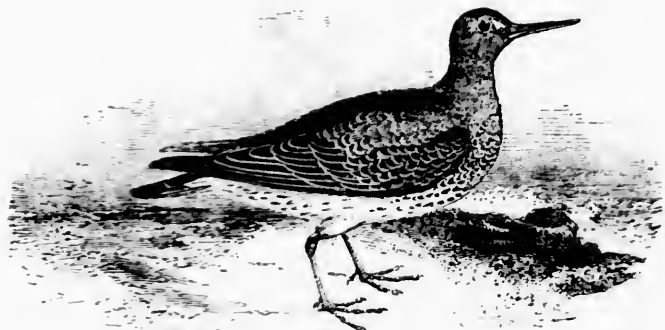
This elegant species, some seasons, is not uncommon in the market of Boston in the month of August and September, being met with near the capes of Massachusetts Bay. My friend Mr. Cooper has also obtained specimens from the vicinity of New York; and it was first discovered by Veillot in the then Territory of Louisiana, so that, coursing along the shores of the Mississippi, and thus penetrating inland, it probably proceeds, as well as in the vicinity of the sea-coast, to its northern destination to breed, and is often here associated with the Pectoral Sandpiper, which it resembles very much in size and bill, though perfectly distinct in plumage. As

a proof how wide it wanders, this species has also been rarely obtained even in France and England, and a specimen figured in the Linnæan Transactions of London is there given as a new addition to the fauna of Great Britain. It was shot in September, 1826, in the parish of Melbourne, Cambridgeshire, in company with the Siberian Plover, or Guignard (*Charadrius morinellus*).

Its food while here consists principally of land and marine insects, particularly grasshoppers, which, abounding in the autumn, become the favorite prey of a variety of birds; even the Turnstone at this season, laying aside his arduous employment, is now content to feed upon these swarming and easily acquired insects.

This Sandpiper is distributed throughout North America, breeding in Arctic and Sub-arctic regions. It is a rather rare visitor to this northeastern section, though more frequently seen in the autumn than during the spring migrations, the bulk of the flocks going north by the western inland routes, and nesting on the dry plains in the Barren Ground region, adjacent to the Mackenzie and Anderson Rivers. These birds must migrate very rapidly and make but few halts; for while they are quite abundant on their nesting-ground, they are rarely seen while migrating. They range in winter through the West Indies and southward as far as Brazil and Peru.

The Buff-breasted Sandpiper is a bird of the dry upland rather than of the marsh or the sandy beach. Its principal food consists of insects, — beetles, grasshoppers, and such; but it varies its diet with small marine forms, and does not object to an occasional meal of small fruit and berries. The birds are very tame, and are usually met with in small flocks of ten or fifteen. The note, which is generally heard as the bird rises from the ground, is a low *tweet*, repeated several times.



PURPLE SANDPIPER.

WINTER SNIPE. ROCK SNIPE.

TRINGA MARITIMA.

CHAR. Distinguished from other Sandpipers by its short legs, short thick body, and dark color. Adult in summer: upper parts brownish gray, darker on the back, which is spotted with rufous and buffish white; rump and central tail-feathers dull brown, outer tail-feathers ashy gray; wings grayish brown; under parts gray, paler on the belly; throat and breast thickly spotted with dark brown. In winter the upper parts are purplish ash, and the breast ashy brown or mouse gray; the belly white. Length variable, averaging about $8\frac{1}{2}$ inches.

Nest. Usually amid a tuft of grass near a rocky sea-shore, but often on high hills; generally a little hollow scraped in the soil and lined with some moss or leaves; but nests have been found composed of dried grass and sunk quite deep in the ground.

Eggs. 4; pale olive, green or dull buff, marked with lilac and brown; 1.45×1.00 .

The Purple Sandpiper is another of those wandering species common to the cold regions of both continents, confining its visits principally to the rocky and shelving sea-coasts, where it obtains in more abundance the minute crustacea, mollusca, and the fry of shell-fish which adhere commonly to the seaweeds or *Fuci* in such situations; and so peculiar is this habit that in Holland, where it is now common, it has only appeared with the existence and advancement of the artificial moles which have been built. In Norway along the rocky

shores of the Baltic, and on similar coasts of the Mediterranean, in the West of England, and around Hudson Bay, these birds are common. In Russia, Siberia, and Iceland they are also found, but less frequently. In the warmer parts of America they are rare. Leaving the inclement coasts of their nativity, they proceed probably by Greenland, and migrate directly to the rocky coasts of Norway, and in the course of the winter visit for a while the colder parts of Europe. According to Dr. Richardson, they breed abundantly on the shores of Hudson Bay, as well as in that coldest and most desolate of boreal climates, Melville Peninsula, laying the usual number of eggs, which are of a pyriform figure sixteen and a half lines long, and an inch across at the larger end. They are yellowish gray, interspersed with small irregular spots of pale hair-brown, more abundant at the larger end, and rare at the other. This bird is seldom seen inland or on the borders of rivers, where its appearance is accidental; its piping note is very similar to that of other species; is not shy, often caught in snares, and the flesh accounted palatable.

The Purple Sandpiper is an abundant bird along the shores of New Brunswick and Nova Scotia during the winter months, appearing in large flocks, and feeding on the rocks and the stony beaches. So large are the flocks, and so compactly do the birds rise when flushed, that I have known sixty-five to be killed at one shot.

In Massachusetts this bird is rather uncommon, and is seen only in small groups of three or four, and similar groups are occasionally seen on Long Island. It occurs on the shores of the Great Lakes, and Mr. D. G. Elliot says "it is not uncommon on the shores of Lake Michigan, and has been noted as occurring in Missouri."

Mr. Hagerup reports that a few individuals remain in Greenland during the winter months.

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LEAST SANDPIPER.

PEEP.

TRINGA MINUTILLA.

CHAR. Upper parts mottled black, rufous, and dull white, darker on the rump; a light stripe over the eyes; under parts white, spotted with dusky; breast and sides washed with ashy brown; toes without web. The smallest of the Sandpipers. Length $5\frac{1}{2}$ to 6 inches.

Nest. Usually on a dry hill bordering a lake or pond, but sometimes amid moss close by the sea-shore, — a slight depression, scantily lined with grass and leaves.

Eggs. 4; buff or drab thickly marked with brown and lilac; 1.15×0.85 .

This small and nearly resident species may be considered as the most common and abundant in America, inhabiting the shores and marshes of the whole continent both to the north and south of the equator, retiring probably with the inclemency of the season, indifferently, from either frigid circle towards the warmer and more hospitable regions within the tropics. These birds are consequently seen, spring and autumn, in all the markets of the Union as well as in those of the West Indies, Vera Cruz, and in the interior as far as Mexico. Captain Cook also found them on the opposite side of the continent, frequenting the shores of Nootka Sound. The great mass of their pigmy host retire to breed within the desolate lands of the Arctic circle, where, about the 20th of May, or as soon as the snow begins to melt and the rigors of the long and nocturnal winter relax, they are again seen to return to the shores and the swampy borders of their native lakes in the inclement parallel of 66 degrees. Though shy and quailing on their first arrival, with many other aerial passengers of like habits, they contribute to give an air of life and activity to these most dreary, otherwise desolate and inhospitable regions of the earth. Endowed with different wants and predilections from the preceding hosts, whose general livery they wear, they never seemingly diverge in their passage so far to the eastward as to visit Greenland and the contiguous

extremity of northern Europe, being unknown in the other continent; and migrating always towards the south, they have thickly peopled almost every part of the country that gave them birth.

The Peeps, as they are here called, are seen in the salt-marshes around Boston as early as the 8th of July,—indeed, so seldom are they absent from us in the summer season that they might be taken for denizens of the State or the neighboring countries, did we not know that they repair at an early period of the spring to their breeding-resorts in the distant north, and that as yet, numerous and familiar as they are, the nest and history of their incubation are wholly unknown.

When they arrive, now and then accompanied by the Semipalmated species, the air is sometimes, as it were, clouded with their flocks. Companies led from place to place in quest of food are seen whirling suddenly in circles with a desultory flight, at a distance resembling a swarm of hiving bees seeking out some object on which to settle. At this time, deceiving them by an imitation of their sharp and querulous whistle, the fowler approaches, and adds destruction to the confusion of their timorous and restless flight. Flocking together for common security, the fall of their companions and their plaintive cry excites so much sympathy among the harmless Peeps that, forgetting their own safety, or not well perceiving the cause of the fatality which the gun spreads among them, they fall sometimes into such a state of confusion as to be routed with but little effort, until the greedy sportsman is glutted with his timorous and infatuated game. When much disturbed they, however, separate into small and wandering parties, where they are now seen gleaning their fare of larvæ, worms, minute shellfish, and insects in the salt-marshes or on the muddy and sedgy shores of tide-rivers and ponds. At such times they may be very nearly approached, betraying rather a heedless familiarity than a timorous mistrust of their most wily enemy; and even when rudely startled they will often return to the same place in the next instant to pursue their lowly occupation of scooping in the mud,—and hence probably originated the

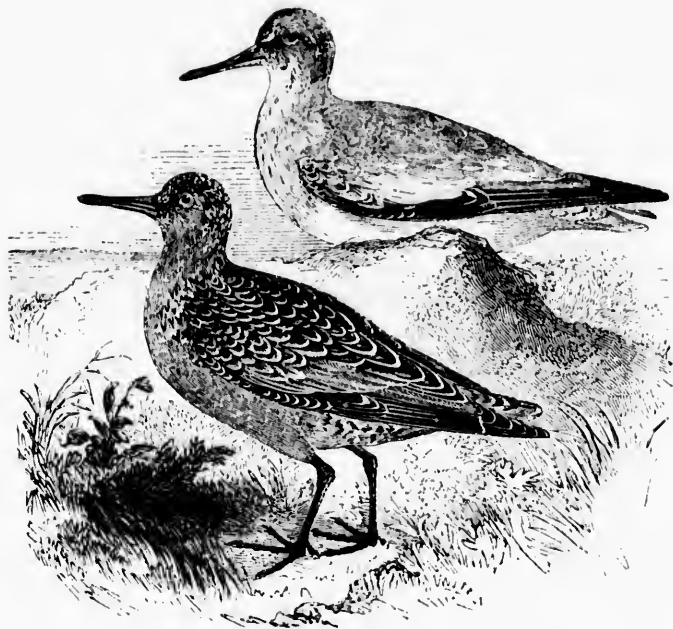
contemptible appellation of *humility*, by which they and some other small birds of similar habits have been distinguished. For the discovery of their food their flexible and sensitive awl-like bills are probed into the mire, marshy soil, or wet sand, in the manner of the Snipe and Woodcock, and in this way they discover and root from their hidden retreats the larvæ and soft worms which form a principal part of their fare. At other times they also give chase to insects, and pursue their calling with amusing alacrity. When at length startled or about to join the company they have left, a sharp, short, and monotonous whistle like the word *peet* or *peep* is uttered, and they instantly take to wing and course along with their comrades. On seeing the larger marsh-birds feeding, as the Yellow-Shanks and others, a whirling flock of the Peeps will descend amongst them, being generally allowed to feed in quiet; and on the approach of the sportsman these little timorous rovers are ready to give the alarm. At first a slender *peep* is heard, which is then followed by two or three others, and presently *peet* 'pip' 'pip' 'p'p murmurs in a lisping whistle through the quailing ranks as they rise swarming on the wing, and inevitably entice with them their larger but less watchful associates. Towards evening, in fine weather, the marshes almost re-echo with the shrill but rather murmuring or lisping, subdued, and querulous call of *peet*, and then a repetition of *pé-dée*, *pé-dée*, *dée-dée*, which seems to be the collecting cry of the old birds calling together their brood; for when assembled, the note changes into a confused murmur of *peet*, *peet*, attended by a short and suppressed whistle.

At most times, except in the spring, they are fat and well flavored, though less esteemed than many of the other species from their smallness and an occasional sedgy taste which deteriorates them. From the oily and deliquescent nature of the fat which loads the cellular membrane in this hyperboreal natal family of birds, we may, perhaps, perceive a constitutional reason why most of them thrive better and have such a predilection for those cool and temperate climates in which they renew their exhausted vigor and acquire the requisite

strength and energy necessary for the period of reproduction. It is indeed certain that those stragglers which, from age or disability, remain, as it were hermits, secluded from the rest of the wandering host, do neither propagate nor fatten while thus detained through summer in the warmer climates. Of this fact we have already mentioned instances, in the case of straggling Curlews killed in this vicinity by the 18th of July, — a period when the main mass of the species are engaged in feeding or just hatching their tender young.

This little Sandpiper, which we have named in honor of Wilson (certainly not being the species first intended as *Tringa pusilla*), leaves us by the close of September, and departs from the Middle States towards its remote hibernal retreats in the course of the month of October. The present species and some others appear occasionally to feed partially on vegetable substances as well as on animals, as I have found in their stomachs pieces apparently of *zostera* roots and flowers of the marsh plantain.

The Peeps still throng our shores each spring and autumn, and are the same active and cunning creatures that Nuttall found them. Their general breeding-area is from Labrador to the Arctic Ocean, but a few nests have been discovered south of the St. Lawrence: for the nesting habits of these birds are no longer unknown.



KNOT.

RED-BREASTED SNIPE. ROBIN SNIPE.

TRINGA CANUTUS.

CHAR. Adult in summer : above, mottled black and gray, tinged with dull rufous ; rump ashy white, with dark bars ; tail gray, edged with dull white ; under parts and line over the eyes rich chestnut ; paler on the belly. Adult in winter : above, ashy gray ; below, white, the neck streaked with dusky. Young : much like the adult in winter plumage, but the feathers of the upper parts are bordered with lines of pale buff and brown, and the breast is tinged with buff. Length about $10\frac{1}{2}$ inches.

Nest. Usually on the margin of a lake or stream, — a slight depression, lined with leaves and grass.

Eggs. 4-9 ; "light pea green, closely spotted with brown in small specks about the size of a pin-head" (*Greely*), or "dun-color, fully marked with reddish" (*Hutchins*) ; 1.10×1.00 .

This large and variable species, described under such a variety of names, is again a denizen of both continents, passing the summer, or reproductive season, in the utmost habitable

limits of the Arctic Circle. Captain Parry's adventurous party found it breeding on Melville Peninsula and in other parts of those hyperboreal regions, as on Seal Islands, probably, near Chatteux Bay, as well as in the vicinity of Hudson Bay down to the 55th parallel. It is also supposed to breed in Denmark and in the Orkney Islands. It is likewise met with in Iceland, on the shores of the Caspian, and on the banks of the Don and Choper in Russia; and continuing eastward towards the American continent, in that direction, is again found in Siberia, and on the other side of the boreal circle at Nootka Sound.

About the middle of August, flocks of the Knot, still clad in their nuptial and summer plumage, appear on the shores and in the marshes at the eastern extremity of Massachusetts Bay, particularly around Chatham and the Vineyard. In many, however, the moult of autumn has already commenced; but in the nearer vicinity of Boston, flocks of the young only are seen disguised in the elegantly marked and sober gray of winter. When not harassed, they are by no means shy, allowing of a pretty near approach while busily and sedately employed in gleaning their food along the strand, chiefly at the recess of the tide, where, in friendly company with the small Peep and other kindred species, the busy flocks are seen gleaning up the rejectamenta of the ocean, or quickly and intently probing the moist sand for worms and minute shell-fish, running nimbly before the invading surge, and profiting by what it leaves behind. They seem like a diminutive army, marshalled in rank, and spreading their animated lines, while perpetually engaged in an advance or retreat before the break of the resounding and ceaseless waves. Bred in solitudes remote from the haunts of men, the young, in particular, seem unconscious of danger from the fowler, and a flock may sometimes be successively thinned by the gun, till the whole are nearly destroyed; when wounded, however, they take to the water and swim with ease.

On the coast of New Jersey and other parts of the Middle States they arrive in October, and are seen along the strand

in flocks, but disappear early in December, on their way south to their winter quarters within the tropics. On their return they appear on the coast of the Middle States early in May, on their way to their congenial retreats in the North; but at this time few are to be seen, compared with the accumulating flocks of autumn; while at the same season in Holland they are most abundant. Some of these birds in their rufous plumage have been observed to linger on the neighboring coast till the 20th of July, so that they must either have bred in the vicinity, or have passed the season in celibacy, lingering behind the migrating flocks, — a habit which appears to be more or less common with many other of the aquatic and wading birds.

The Knot is found throughout North America, breeding in the Arctic regions, wintering in Florida (sparingly) and southward, and migrating by inland routes as well as along the sea-coast. It is a common bird on the New England shores in spring and autumn, but rare in the Mississippi valley.

BAIRD'S SANDPIPER.

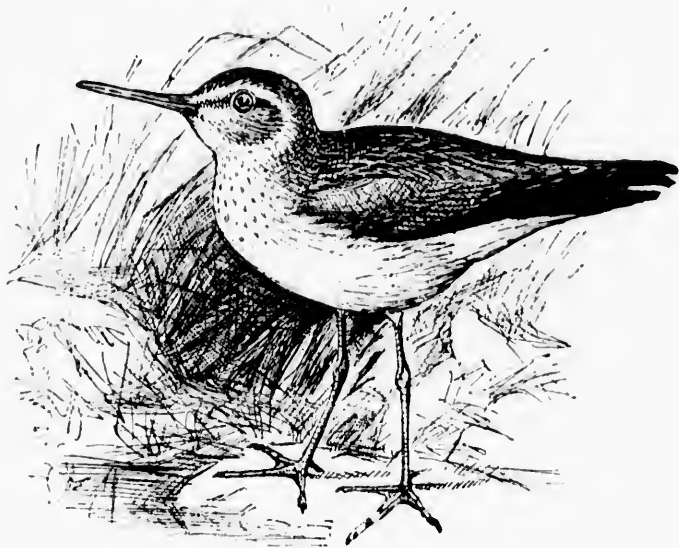
TRINGA BAIRDII.

CHAR. Upper parts grayish buff, varied with dusky; stripe over eyes white; middle tail-feathers dusky, others gray; chest tinged with buff and streaked with dusky, other under parts white; bill and feet black. Length about $7\frac{1}{2}$ inches.

Nest. On the margin of a lake or pond; a slight depression, hidden by tall grass and lined with leaves and grass.

Eggs. 4; butfish or creamy, spotted with rich reddish brown; 1.30×0.90 .

Baird's Sandpiper was described by Coues in 1861 from specimens taken in the West, and it was not until 1870 that the bird was known to occur on the Atlantic. Up to the present a few examples only have been captured to the eastward of the Mississippi valley, and very little is known of the bird's distribution. Reports from different sections of the country lend probability to the conclusion that the bulk of these Sandpipers migrate across the Great Plains and nest along the Mackenzie River valley north of latitude 60° and in Alaska. They are abundant on the plains and amid the foot hills of the Rockies. In winter they range to Chili and the Argentine Republic.



SEMI-PALMATED SANDPIPER.

EREUNETES PUSILLUS.

CHAR. Feet with two webs extending about half-way up the toes. Upper parts mottled brownish gray, tinged with rufous or buff, each feather with a central stripe of blackish; rump darker; under parts white, the breast washed with rufous and marked with dusky. In winter plumage there is no trace of the rufous or buff tints. Length about 6 inches.

Nest. Usually on the margin of a pool by the sea or an inland pond, — a slight depression scantily lined with leaves and grass; sometimes hidden in a tussock of grass.

Eggs. 3-4; pale gray or with buff, drab, or olive tint, variously marked with brown; 1.20×0.85 .

Commonly associated with other species of the same size, plumage, and habits, it is not easy to offer any remark concerning it which can be considered as exclusive. It is spread equally over the North American continent, from the confines of the Arctic circle probably to the West Indies. According to Wilson, it arrives and departs with the Sanderling, and associates with the Dunlin when in its autumnal dress, in this case forming flocks apart from each other; but with the Peep it is sometimes so blended as to be unknown till brought to the

ground. In the salt-marshes near Boston they are not uncommon in small numbers, but some seasons are seen whirling about wildly in large and separate flocks, and so timorous and roving as to give the alarm to the other larger birds associated around them. Along the shores of New Jersey they are numerous, and Mr. Hutchins, who described this species, without publishing his description, as early as the year 1770, says that they arrive at Severn River, in the fur countries, in great numbers about the middle of May. Towards autumn these birds utter a chirping call, and in September they retire to the southward, soon after which they are seen in Massachusetts on most of the muddy shores, which they frequent at the recess of the tide, dwelling more exclusively in the immediate vicinity of the ocean than the Peep. When dispersed or alarmed, they give a quailing call, like 'to-weet, 'to-weet. At other times, when startled, they utter a shrill clattering whistle, and are always noisy and querulous. Like the small land-birds, they may sometimes be seen washing themselves with great satisfaction in the salt pools and plashes, and when wounded swim with considerable vigor. While here they feed upon diminutive coleoptera, very small shrimps, minute shell-fish, which they probe out of the sand, some mollusca, and occasionally the roots of the *Zostera marina*; they also swallow considerable quantities of small gravel, and becoming very fat, are nearly as well flavored as the Snipe, being very superior to the other small species.

This species breeds in the Far North, and winters on the shores of the Gulf of Mexico and southward, journeying to and fro along the inland rivers as well as by the sea-coast. It is still abundant in New England, but flocks are not so numerous as formerly.

NOTE. — A few examples of the WESTERN SANDPIPER (*E. occidentalis*) have been taken in New England. It is very similar to *pusillus*, but has a longer bill and tarsus, and the plumage of the upper parts is more distinctly rufous.

STILT SANDPIPER.

MICROPALAMA HIMANTOPUS.

CHAR. Bill nearly as long as a Snipe's; legs much longer. Upper parts mottled gray, black, and bay, or buff; wings darker; upper tail-coverts white, barred with dusky; tail ashy gray; under parts dull white, streaked and barred with dusky. In winter the prevailing color of the upper parts is ashy gray. Length about 9 inches.

Nest. Near the sea-shore or on border of a lake, — a slight depression scantily lined with leaves and grass. It is sometimes hid in a tussock of grass.

Eggs. 3-4; light drab or buffy white, marked with rich brown and purplish gray; 1.45×1.00 .

Nuttall wrote of this as of three species. — Stilt Sandpiper, Long-legged Sandpiper, and Douglas' Stilt Sandpiper. These names apply to but one bird.

The present species was first described by Bonaparte in 1826, but until within recent years it was thought to be exceedingly rare. As late as 1868 there was no record of its occurrence in New England, and even in 1881 the announcement that my friend Fred Daniel had secured one of three examples he had discovered on the flats near St. John, N. B., was hailed as "important."

We now know that the bird is not at all rare, and that its former apparent scarcity was due to its rapid migrations.

The Stilt Sandpiper breeds in the Arctic regions, and winters on the shores of the Gulf of Mexico, and southward to Brazil and Peru. On the passage north and south it makes long flights and a few short halts; but small flocks have been seen at numerous localities on the Atlantic coast and along the Mississippi valley route. Several have been taken on the shores of the Great Lakes.

As far as its habits and manners are known, it appears to resemble somewhat the Dowitcher and the Yellow-legs, with which it frequently associates. It walks sedately like a Curlew, and has little of the vivacity so conspicuous in the Sandpiper. Our bird generally feeds along the margin of the beach, wading into the water and following the edge of the wave as the water flows out and in. It often probes into the sand, and acts as though securing something by suction. On dissection, evidence has been found that the bird's food was at least partially composed of small shellfish and worms. When disturbed, it utters a sharp *tweet tweet* before flying.



WILLET.

SYMPHEMIA SEMIPALMATA.

CHAR. Upper parts brownish olive, spotted and streaked with dusky; wings with large patch of white; tail-coverts white; tail ashy, with dark bars; under parts white, the breast spotted with dusky, the sides washed with buff and barred with dusky. In winter the upper parts are plain ashy gray, and the lower parts dull white, unspotted. Bill dusky; legs bluish gray. Length about 16 inches.

Nest. Hid amid grass or rushes on a salt meadow or inland marsh, — a slight depression, scantily lined with grass.

Eggs. 4; olive with varying tints from brown to gray, marked with rich brown and lilac; 2.15×1.50 .

The Willet, as this well-known and large species is called, inhabits almost every part of the United States, from the coast of Florida to the distant shores and saline lakes in the vicinity of the Saskatchewan, up to the 56th parallel of latitude, where, as they pass the summer, they no doubt propagate there, as well

as in the Middle States of the Union. Their appearance in the north of Europe is merely accidental, like the visit of the Ruff in America, which has, indeed, no better claim in our Fauna than that of the Willet in Europe, both being stragglers from their native abodes and ordinary migrating circuits. From the scarcity of this species on the shores of Massachusetts Bay, it is more than probable that their northern migrations are made chiefly up the great valley of the Mississippi; and they have been seen in the spring by Mr. Say, near Engineer Cantonment, on the bank of the Missouri. A few straggling families or flocks of the young are occasionally seen about the middle of August on the muddy flats of Cohasset beach; but they never breed in this part of New England, though nests are found in the vicinity of New Bedford.

The Willet probably passes the winter within the tropics, or along the extensive shores of the Mexican Gulf. About the middle of March, however, its lively vociferations of *pill-will-willet*, *pill-will-willet* begin commonly to be heard in all the marshes of the sea-islands of Georgia and South Carolina. In the Middle States these birds arrive about the 15th of April, or sometimes later, according to the season; and from that period to the close of July their loud and shrill cries, audible for half a mile, are heard incessantly throughout the marshes where they now reside. Towards the close of May the Willets begin to lay. Their nests, at some distance from the strand, are made in the sedge of the salt-meadows, composed of wet rushes and coarse grass placed in a slight excavation in the tump; and during the period of incubation, as with some other marsh-birds, the sides of the nest are gradually raised to the height of five or six inches. The eggs, about four, very thick at the larger end, and tapering at the opposite, are two thirds the size of a common hen's egg (measuring over two inches in length, by one and a half in the greatest breadth); they are of a pale bright greenish olive (sometimes darker), largely blotched and touched with irregular spots of a bright blackish-brown of two shades, mixed with a few other smaller touches of a paler tint, the whole most numerous at the great

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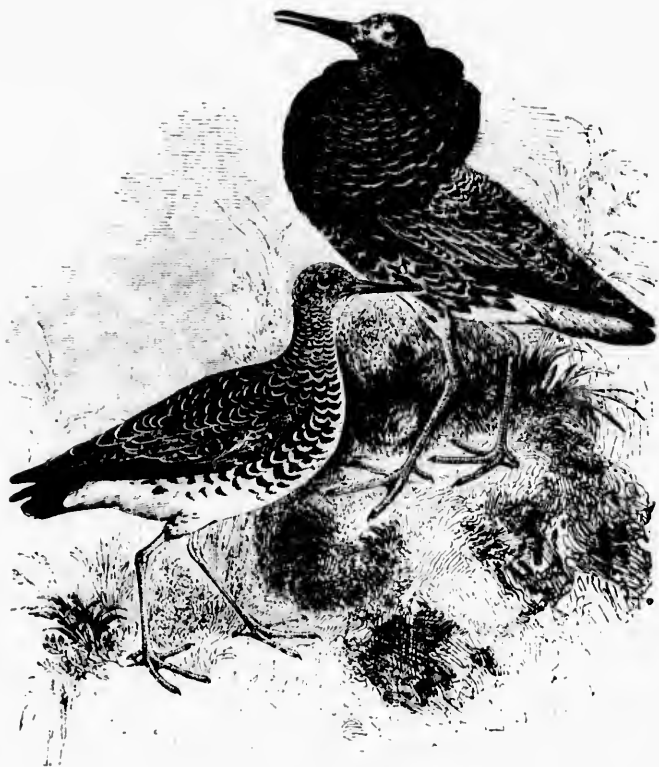
end. According to Wilson, the eggs are very palatable as food. The young, covered with a gray-colored down, run off as soon as freed from the shell, and are led about by the mother in quest of their proper food, while the vociferous male keeps careful watch for their safety. On entering these breeding-places the spectator is beset by the Willets flying wildly around and skimming over his head with the clamorous cry of *pill-will-willet*, accompanied at times, when much excited and alarmed by an approach to the nest, with a loud clicking note, in the manner of the Avocet. Exhausted with their vigilant and defensive exertions, at times they utter a sad and plaintive note, and occasionally alighting, slowly close their long, silvery, and party-colored wings, as if acting a part to solicit compassion. Among their most common and piratical enemies are the Crows, who roam over the marshes in quest of eggs, and as soon as they appear are attacked by the Willets in united numbers, who with loud vociferations pursue them off the ground. During the term of incubation the female, fatigued with her task, and occasionally leaving her eggs to the influence of the ardent sun, resorts to the shore, and deeply wading, washes and dresses her plumage, frequently emerging, and performing her ablutions with an air of peculiar satisfaction. Indeed, the Willets generally wade more than most of their tribe; and when disabled from flying by a wound, they take to the water without hesitation, and swim with apparent ease. The peculiar note which characterizes and gives name to this remarkable species of Chevalier is only uttered by the adults; and the call of the young when associated by themselves appears to be a kind of shrill and plaintive whistle almost like that of the Curlew. The Willet subsists chiefly on small shell-fish, aquatic insects, their larvæ and mollusca, in quest of which it constantly resorts to the muddy shores and estuaries at low water. In the fall, when the flocks of young birds associate, which may be easily known by the grayness of their plumage, they are selected by the gunners in preference to the older and darker birds, being tender, fat, and fine-flavored game. In the months of October and November they gradually pass on to

their winter quarters in the warmer parts of the continent. Transient flocks of the young, bred in high latitudes, visit the shores of Cohasset by the middle of August; but timorous, wild, and wandering, they soon hasten to rejoin the host they had accidentally forsaken.

The Willet is found throughout temperate North America; but the birds breeding on the Great Plains have lately been separated from typical *semipalmata*. The general breeding area of the present race is given by Mr. D. G. Elliot as "from latitude 56° to Texas." The bird is rarely seen in New England and the Maritime Provinces in summer, though quite common in both regions during the fall migration, and breeding in numbers to the southward of Long Island. Only a few examples have been seen in the region of the Great Lakes, though farther south it is not uncommon in the interior.

NOTE. — In 1887 Mr. William Brewster discovered that the Willets breeding west of the Mississippi differed from Eastern birds in size, color, and markings, the Western race being "larger, with a longer, slenderer bill; the dark markings above fewer, finer, and fainter on a much paler (grayish drab) ground; those beneath duller, more confused, or broken, and bordered by pinkish salmon, which often spreads over or suffuses the entire under parts excepting the abdomen. Middle tail-feathers either quite immaculate or very faintly barred. . . . In the plain gray and white winter dress the two forms appear to be distinguished only by size" (*Brewster*).

Mr. Brewster named the new form the WESTERN WILLET (*S. semipalmata inornata*). This race breeds on the plains west to the Rocky Mountains "from the source of the Saskatchewan to California," and in winter is found on the coasts of the South Atlantic and Gulf States.



RUFF.

PAVONCELLA PUGNAX.

CHAR. Upper parts variable, but usually mottled black, chestnut, buff, and gray; lower back dark brown, with margin of chestnut or buff, wings and tail dusky brown; neck and breast buff; belly dull white. During the mating season — May and June — the male drops the feathers from the sides of the face, and reddish warts appear there; at this time, also, he wears a shield-like erectile ruff, — whence the name. Length about 12 inches.

Nest. On a dry knoll in a swamp in the midst of a clump of coarse grass or sedges; a slight depression lined with dead grass.

Eggs. 4; pale olive or olive gray, spotted with reddish brown; 1.60 × 1.15.

The Ruff is a distinctly European species, — it is rare on the British Isles, — but so many examples have been taken on this

side of the Atlantic that the bird's claim to consideration in the present connection cannot be ignored. Yet it must be considered as a straggler only, — an accidental wanderer. Its breeding area lies amid the desolate tundras of northern Siberia, and southward to the fountains of the Danube and the upper valley of the Amoor. From there it migrates in the autumn into Africa and southern Asia.

The examples that have been obtained in America were taken chiefly along the Atlantic shore between Long Island and the Bay of Fundy. There is only one specimen recorded from the Great Lake region, — taken near Toronto.

The Ruff differs from all others of the Waders in appearance and in habits. The long feathers of the male render him easily distinguished, and his polygamous habits quite as thoroughly separate him. Instead of wooing a mate after the manner of their congeners these wild libertines fight for a bevy of mistresses, the pluckiest fighter winning the largest harem.

These contests are not rough-and-tumble *mêlée*, but orderly conducted duels. They occur on a common battle-ground, where generation after generation of the birds assemble to do combat for the possession of the females, — called Reeves, — and these gather within sight and urge on their favorites. The battle-grounds are in the midst of a swamp, and usually on an elevated knoll in an open space.

During the encounter the combatants appear intensely excited and act as if in desperation, and the excitement of the occasion is increased by the wild screams of the Reeves. The duels are not to the death, however, nor are they in the least degree bloody affairs. These birds have sense enough to spar for points; slugging is barred. The attack is made wholly with the bill, — they never strike with the foot, like a game-cock, as some writers have stated, — and a few rounds end the affray, with no more harm to the participants than an encounter with foils to human rivals. The weaker bird retires, and the victor awaits another adversary. Occasionally two or three duels are in progress at one time.

As might be expected, such habits are not conducive to domestic felicity. The Reeve is soon abandoned by her temporary lover, and when nesting-time arrives she is forced to build her nest alone, and alone she rears her barbaric brood.

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GREATER YELLOW-LEGS.

TELL-TALE. TATTLER. STONE SNIPE. WINTER YELLOW-
LEG.

TOTANUS MELANOLEUCUS.

CHAR. Upper parts dark ash varied with gray and white; upper tail-coverts white; under parts white, breast and sides with dark streaks. In winter the plumage is paler, the breast almost immaculate. Bill long and slender; legs long. Length about 14 inches.

Nest. On the edge of marsh or open swamp; a slight depression lined with grass and weed stems.

Eggs. 4; dull gray or dark buff marked with brown and lilac; 1.45 × 1.20.

The Greater Yellow-Shanks, or Tell-Tale, so remarkable for its noise and vigilance, arrives on the coast of the Middle States early in April, and proceeding principally by an inland route, is seen in abundance as far north as the plains of the Saskatchewan, where, no doubt, in those desolate and secluded marshes, far from the prying eye and persecuting hand of man, the principal part of the species pass the period of reproduction, reappearing in the cooler parts of the Union towards the close of August; yet so extensive is the breeding-range of the Tell-Tale that many continue to occupy the marshes of the Middle States until the approach of cold weather in the month of November, breeding in their favorite resorts on the borders of bogs, securing the nest in a tuft of rank grass or sedge, and laying four eggs of a dingy white irregularly marked with spots of dark brown or black, and which, according to Mr. Hutchins, are large for the size of the bird, and of similar markings in their Northern breeding-places. In Massachusetts, as with many other birds, the present is so uncommon a species that it may be considered almost as a straggler, arriving in autumn with the few flocks which touch at the coast of Labrador and Newfoundland, confining their visits, with Curlews, Godwits, and many other wading birds, chiefly to the eastern extremity of Cape Cod and Cape Ann, where multitudes of these birds transiently assemble in spring and autumn (partic-

ularly in the vicinity of Chatham and Ipswich), and of which but few penetrate inland, their next visit being usually to the shores of Long Island in their further progress to the South. In the spring, however, avoiding the long-continued eastwardly storms of this climate, they are led to go inland by a more favorable route, and have been seen at this season by Mr. Say on the banks of the Missouri on their way to the interior of the continent.

The vociferous vigilance of the Tell-Tale has justly stigmatized him with the present name; for no sooner does the gunner appear than his loud and shrill whistle of about four rapidly repeated notes is instantly heard as he mounts on wing, and proves generally so good a warning to all the rest of his feathered neighbors, and particularly the vigilant Ducks, that the whole, to the frequent disappointment of the fowler, at once accompany their faithful and officious sentinel. At times, indeed, without any particular motive to excitement, except perhaps that of hilarity and vigor, they are seen to rise high in the air, chattering so loudly as still to be heard when beyond the reach of the eye. From their note they are called by the Cree Indians of Hudson Bay *Sasashew*, and in this part of New England they are usually known by the name of the Winter Yellow-Leg.

The Tell-Tales, after taking up a summer residence in the marshes, are no longer gregarious until the return of winter, when, with the addition of the young, they rove about in small parties until their final departure for the South. Like most of the species, they frequent watery bogs and the muddy margins of creeks and inlets, where they are often seen in quest of food or standing in a watchful posture, alternately balancing themselves, raising or lowering the head and tail, and on the least appearance of danger or surprise, which they readily perceive from the elevation of their legs and the open places in which they feed, their loud whistle is instantly heard and the timorous and less watchful flocks are again in motion. They sometimes penetrate, singly or in small numbers, some way inland along the muddy shores of estuaries and rivers to the

extent of tide-water. Although they live principally upon the insects and larvæ they find in the marshes, at a later period they also pay occasional visits to the strand in quest of mollusca, small shrimps, and minute shell-fish, the ordinary fare of the true Sandpipers. In the fall, when fat, their flesh is highly esteemed, and they are frequently brought to market.

The Tell-Tale occurs throughout this Eastern Province, breeding from about latitude 50 degrees northward, and wintering in Brazil and Chili. In the West it breeds as far south as Iowa and Northern Illinois. On the Atlantic coast the birds are known as migrants chiefly, though Mr. Brewster reports finding numbers on Anticosti in summer, and a few have been seen in New England at that season.

YELLOW-LEGS.

SUMMER YELLOW-LEGS. LESSER YELLOW-LEGS.

TOTANUS FLAVIPES.

CHAR. Upper parts dark ash varied with black, white, and gray; upper tail-coverts white, streaked with dusky; tail ashy, barred with white; wings dusky; under parts white, the breast and sides streaked with dusky. In winter the plumage is paler; the upper parts are plain ash, with few and less distinct markings. Length about 11 inches.

Nest. Amid the bushes on the margin of a marsh or lake; a slight depression scantily lined with grass or leaves.

Eggs. 4; dull buff or pale drab, marked with brown and dull lilac; 1.70 × 1.15.

The Yellow-Shanks, in certain situations, may be considered as the most common bird of the family in America. Its summer residence, or breeding-station, even extends from the Middle States to the Northern extremity of the continent, where it is seen, solitary or in pairs, on the banks of rivers, lakes, or in marshes, in every situation contiguous to the ocean. And though the young and old are found throughout the warm season of the year in so many places, the nest and eggs are yet entirely unknown. Calculating from the first appearance of the brood abroad, the females commence laying by the middle of June, and are seen in this neighborhood at

that season. These birds reside chiefly in the salt-marshes, and frequent low flats and estuaries at the ebb of the tide, wading in the mud in quest of worms, insects, and other small marine and fluviatile animals. They seldom leave these maritime situations, except driven from the coast by storms, when they may occasionally be seen in low and wet meadows as far inland as the extent of tide-water. The Yellow-Shanks have a sharp whistle of three or four short notes, which they repeat when alarmed and when flying, and sometimes utter a simple, low, and rather hoarse call, which passes from one to the other at the moment of rising on the wing. They are very impatient of any intrusion on their haunts, and thus often betray, like the preceding, the approach of the sportsman to the less vigilant of the feathered tribes, by flying around his head, with hanging legs and drooping wings, uttering incessant and querulous cries.

How far they proceed to the South in the course of the winter is yet unknown; they however, I believe, leave the boundaries of the Union. At the approach of winter, previous to their departure for the South, they are observed to collect in small flocks and halt for a time on the shores of Hudson Bay. Accumulated numbers are now also seen to visit New England, though many probably pass on to their hibernal retreats by an inland route like the preceding, having indeed been seen in the spring on the shores of the Missouri in particular situations by Mr. Say. They also seem to reside no less in the interior than on the coast, as they were observed on the shores of Red River, of Lake Winnipeg (latitude 49 degrees), on the 11th of August by the same gentleman; thus subsisting indifferently on the productions of fresh as well as salt water. At the approach of autumn small flocks here also accompany the Upland Plover (*Totanus bartramius*), flying high and whistling as they proceed inland to feed, but returning again towards the marshes of the sea-coast to roost. Sometimes, and perhaps more commonly at the approach of stormy weather, they are seen in small restless bands roving over the salt-marshes and tacking and turning along the meanders of

the river, now crossing, then returning ; a moment alighting, the next on the wing. They then spread out and reconnoitre ; again closing in a loose phalanx, the glittering of their wings and snow-white tails are seen conspicuous as they mount into the higher regions of the air ; and now intent on some more distant excursion, they rise, whistling on their way, high over the village spire and beyond the reach of danger, pursue their way to some other clime or to explore new marshes and visit other coasts more productive of their favorite fare. While skimming along the surface of the neighboring river, I have been amused by the sociability of these wandering waders. As they course steadily along, the party, never very numerous, would be joined by some straggling Peeps, who all in unison pursue their route together like common wanderers or travellers, pleased and defended by the access of any company.

Being a plentiful species, particularly in the latter end of summer, when the young begin to flock, it is frequent in the markets of Boston, New York, Philadelphia, and Baltimore, — with us more particularly abundant about the middle of August ; and being then fat and well flavored, is esteemed for the table. From the sympathy of these birds for each other, they may be shot with facility if the sportsman, on the first discharge, permits the wounded birds to flutter about, as in that case the flock will usually make a circuit, and alighting repeatedly at the cries of their wounded companions, the greater part of them may be shot down before they perceive the real nature of their danger. Like Plovers, they can also be called around the sportsman by an imitation of their whistle.

This species is more abundant in the Mississippi Valley than the Greater Yellow-Legs ; but on the Atlantic shores the smaller bird is seldom seen in the spring, and is not always common during the autumn. It breeds from Minnesota, Northern Illinois, Ohio, and Northern New York northward to the Arctic, and winters in South America.



SOLITARY SANDPIPER.

GREEN SANDPIPER.

TOTANUS SOLITARIUS.

CHAR. Upper parts brownish olive, spotted and streaked with white; wings and tail dusky, outer tail-feathers white with dark bars; under parts white, breast and sides with dark markings. In winter the plumage of the upper parts is dark ash, and the markings are less distinct.

Nest. On a dry knoll in a wet meadow or on the margin of a pond, — a slight depression scantily lined with grass.

Eggs. —? pale buff thickly marked with brown and lilac; 1.30 × 0.90.

The Solitary Tattler of Wilson is probably, with the change of seasons, a general inhabitant of the whole North American continent. Early in May it arrives in Pennsylvania from the South, and a few individuals remain to breed, according to the above author, in the marshy solitudes of the mountains of Virginia, Kentucky, and Pennsylvania; the greater part of the

species proceed, however, to the boreal regions as far as the extremity of the continent. According to Richardson, it makes no nest, but merely deposits its eggs on the bare beach or the gravelly banks of rivers; in such situations or near mountain springs, brooks, or pools, these birds are seen solitary or by pairs, running swiftly when alarmed or in pursuit of their prey, and seldom taking wing until hard pressed, on which occasion they make a short circular flight, and soon alight near the same place to renew their search for subsistence. Occasionally the Tattler stops and watches the observer, often nodding or balancing its head and tail almost in the manner of the European Wagtail (*Motacilla*). It is extremely unsuspecting of danger, proceeding in its usual occupation almost unconcerned when nearly approached; in fact, the safety of these birds is in no small measure due to their solitary and retiring habits, as they are never seen on the strand of the sea, nor collected into flocks, so as either to fall in the principal path of the fowler, or to present themselves in sufficient numbers for a successful shot. Their flesh, however, is well flavored, and they are usually fat.

In Massachusetts Solitary Tattlers are only seen at the commencement of cool weather. About the beginning of September they arrive in single pairs apparently from the North, at which time also they are supposed to descend from their breeding-resorts in the mountains, and now frequent the miry borders of tide-water streams and estuaries, as well as small ponds, and, in short, any situation which affords the means of subsistence with little labor. They feed principally upon insects such as small coleoptera and caterpillars.

A pair, but oftener a single individual, have usually frequented very familiarly the small fish-pond in the Botanic Garden in Cambridge. Attracted by the numerous *Donatias* and their larvæ, which feed upon the water-lily (*Nymphaea odorata*), I observed one of them tripping along upon the sirking leaves with great agility, expanding its wings and gently flitting over the treacherous element in the manner of the Rail. At another time probably the same individual (who at first

was accompanied by a mate) was seen day after day collecting insects, and contentedly resting in the interval on the border of the pond. The water having been recently let off, the lily leaves and insects were covered with mud; as soon then as our little familiar and cleanly visitor had swallowed a few of these insects, he washed them down with a drink of the water, and at the same time took the precaution to cleanse his bill and throat. Indeed, it is remarkable that however dirty the employment of these shore-birds may be, so neat are they in all their habits that not a stain or a soil is allowed for a moment to remain upon their limbs or plumage. This species is usually silent except when suddenly flushed, at which times it utters a sharp whistle like most of the other kinds to which it is related.

This bird is said to swim and dive with great facility when disabled from flying, and proceed under water like the Divers.

The Solitary Sandpiper is a rather common bird, breeding from about latitude 45° to the lower fur countries. A few pairs remain in New England during the summer months.

Until quite recently the nest and eggs of this bird were unknown, and even now so few have been discovered, and these few so imperfectly identified, that fresh discoveries will be welcomed.

My friend Banks thinks he found an egg on the shore of Lily Lake, near St. John, in 1880, and very probably he is correct; but he could not prove it absolutely, for he could not get sight of the parent on the nest or moving away from it. The nest was in an open meadow, and within sight for a considerable distance; but though the egg was always warm when visited, the parent managed to elude discovery. The only bird of the family seen in that vicinity during the time the nest was under observation being of the present species, and the nest and egg being somewhat different from those other shore-birds known to breed there, led Banks to suppose that the Solitary must be the parent. The egg found by Banks was pale buff marked with brown, but a set of eggs taken in Vermont by Mr. Richardson, the only authentic set recorded, were described by Dr. Brewer as "light drab."

NOTE. — One example each of the GREEN SHANK (*Totanus nebularius*) and the GREEN SANDPIPER (*T. ochropus*), both birds of the Old World, have been taken on the Atlantic coast, the first named in Florida, the other in Nova Scotia.



SPOTTED SANDPIPER.

TIP-UP. TEETER-TAIL. PEET-WEET.

ACTITIS MACULARIA.

CHAR. Above, bright ash, tinged with green of a metallic lustre and marked with black spots; white line over the eyes; wings dusky; under parts white, profusely spotted with dull brown. In winter the upper parts are grayish olive, and the under parts white without spots. Length about $7\frac{1}{2}$ inches.

Nest. Near the shore of river or lake or on the margin of a pasture, under a bush, or amid tussock of grass or weeds,—a slight depression lined with grass, moss, or leaves.

Eggs. 4; dull buff or creamy, spotted with dark brown; 1.25×0.90 .

The Peet-Weet is one of the most familiar and common of all the New England marsh-birds, arriving along our river shores and low meadows about the beginning of May from their mild or tropical winter-quarters in Mexico, and probably the adjoining islands of the West Indies. By the 20th of April, Wilson observed the arrival of these birds on the shores of the large rivers in the State of Pennsylvania. They migrate and breed from the Middle States in all probability to the confines of the St. Lawrence or farther, but were not seen by Dr. Richardson or any of the Arctic voyagers in the remote

boreal regions or around Hudson Bay, as had been asserted by Hutchinson.

As soon as the Peet-Weet arrives on the coasts, small roving flocks are seen at various times of the day coursing rapidly along the borders of our tide-water streams, flying swift and rather low, in circuitous sweeps along the meanders of the creek or river, and occasionally crossing from side to side in a more sportive and cheerful mien than they assume at the close of autumn, when foraging becomes less certain. While flying out in these wide circuits, agitated by superior feelings to those of hunger and necessity, we hear the shores re-echo the shrill and rapid whistle of 'weet, 'weet, 'weet, 'weet, usually closing the note with something like a warble as they approach their companions on the strand. The cry then again varies to 'peet, weet weet weet, beginning high and gradually declining into a somewhat plaintive tone. As the season advances, our little lively marine wanderers often trace the streams some distance into the interior, nesting usually in the fresh meadows among the grass, sometimes even near the house; and I have seen their eggs laid in a strawberry bed, whence the young and old, pleased with their allowed protection, familiarly probed the margin of an adjoining duck-pond for their usual fare of worms and insects.

Like the preceding species, but more frequently, they have the habit of balancing or wagging the tail, in which even the young join as soon as they are fledged. From the middle to the close of May, as they happen to arrive in the different climates chosen for their summer residence, the pairs seceding from their companions seek out a site for their nest, which is always in a dry, open field of grass or grain, sometimes in the seclusion and shade of a field of maize, but most commonly in a dry pasture contiguous to the sea-shore; and in some of the solitary and small sea-islands, several pairs sometimes nest near to each other, in the immediate vicinity of the noisy nurseries of the quailing Terus. The nest, sunk into the bosom of a grassy tuft, is slightly made of its withered tops, and with a thin lining of hay or bent. The eggs, four in number, are of a

grayish yellow or dull cream color marked with a great number of specks and spots of dark brown, with a very few of a somewhat lighter shade, the whole most numerous at the larger end; they are about one and one fourth inches in length, and very wide at the greater end. On being flushed from her eggs, the female goes off without uttering any complaint; but when surprised with her young, she practises all the arts of dissimulation common to many other birds, fluttering in the path as if badly wounded, and generally succeeds in this way so far to deceive a dog, or perhaps squirrel, as to cause them to overlook the brood for whose protection these instinctive arts are practised. Nor are the young without their artful instinct, for on hearing the reiterated cries of their parents, they scatter about, and squatting still in the withered grass, almost exactly their color, it is with careful search very difficult to discover them, so that nine times out of ten they would be overlooked, and only be endangered by the tread, which they would endure sooner than betray their conscious retreat.

At a later period the shores and marshes resound with the quick, clear, and oft-repeated note of *peet wheet, peet wheet*, followed up by a plaintive call on the young of *peet, peet peet? peet!* If this is not answered by the scattered brood, a reiterated *'wheet, 'wheet, 'wheet, 'wait 'wait* is heard, the voice dropping on the final syllables. The whole marsh and the shores at times echo to this loud, lively, and solicitous call of the affectionate parents for their brood. The cry, of course, is most frequent towards evening, when the little family, separated by the necessity of scattering themselves over the ground in quest of food, are again desirous of reassembling to roost. The young as soon as hatched run about in the grass, and utter from the first a weak, plaintive *peep*, at length more frequent and audible: and an imitation of the whistle of *'peet wheet* is almost sure to meet with an answer from the sympathizing broods which now throng our marshes. When the note appears to be answered, the parents hurry and repeat their call with great quickness. The late Mr. William Bartram, so long and happily devoted to the study of Nature, with which

he delighted to associate, informed Wilson of the spirited defence which one of these Peet-Weets made of her young against the attacks of a Ground Squirrel. The place was on the river shore; the female had thrown herself, with her two young behind her, between them and the land; and at every attempt of the enemy to seize them by a circuitous sweep, she raised both her wings almost perpendicularly, and assuming this formidable appearance, rushed towards the squirrel, who, intimidated by this show of resistance, instantly retreated; but soon returning, was met, as before, in front and flank by the resolute bird, who, with her wings and plumage bristled up, seemed swelled to twice her usual size. The young crowded together behind her, sensible of their peril, moving backwards and forwards as she advanced or retreated. In this way the contest endured for about ten minutes, when, as the strength of our little heroine began to fail, the friendly presence of the humane relater put an end to the unequal and doubtful contest.

Young and old, previous to their departure, frequent the seashores like most of the species, but never associate with other kinds nor become gregarious, living always in families till the time of their departure, which usually occurs about the middle of October. While near the shore they feed on small shrimps, coleoptera, and probably also mollusca.

The Spotted Sandpiper is abundant throughout North America. It breeds in New England (though sparingly to the southward of latitude 43°), westward to the Pacific and northward to Alaska. Mr. D. G. Elliot says: "In the Rocky Mountains this species is found at high elevations, even up to the limit of timber, and is as much at home at such lofty heights as at the level of the sea."

BARTRAMIAN SANDPIPER.

UPLAND PLOVER. FIELD PLOVER.

BARTRAMIA LONGICAUDA.

CHAR. Upper parts brown, varied with buff and black; crown dusky and divided by line of buff; wings and rump dusky; outer tail-feathers rich buff and with a subterminal band of black and tips of white; under parts light buff, paler on chin; breast streaked with dusky. Bill about as long as the head; legs rather long. Length about 12 inches.

Nest. In an open pasture or old meadow, — a mere depression in the turf.

Eggs. 4; pale buff or creamy, marked with brown and lavender; 1.80 × 1.25.

Bartram's Tattler, known here by the name of the Upland Plover, so very distinct from the rest of the tribe with which it is associated in the systems, is one of the most common birds along the sea-coast of Massachusetts, making its appearance, with its fat and well fed-brood, as early as the 20th of July, becoming more abundant towards the middle of August, when the market of Boston is amply supplied with this delicate and justly esteemed game.

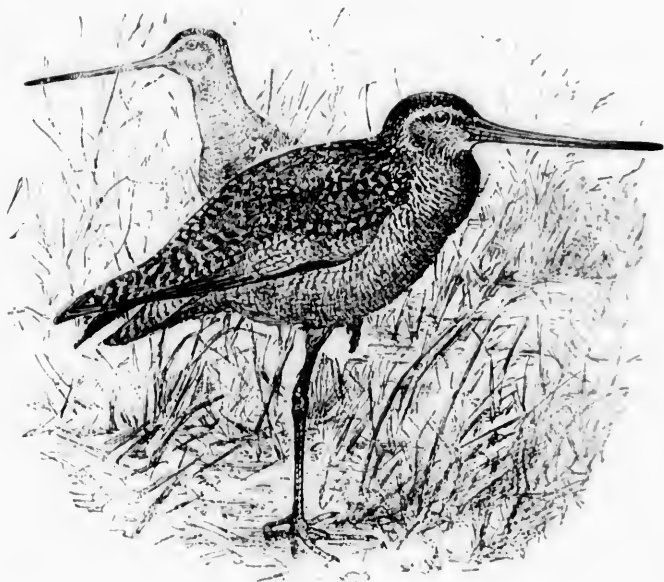
According to the season of the year, these birds are found throughout the continent, many retiring south of the equator to pass the winter. They are observed in May already busily gleaning coleopterous insects on the remote boreal plains of the Saskatchewan, and abound in the extensive prairies west of the Mississippi. At this time and in June they are seen common also in Worcester County (Mass.), and are believed to breed there. They are equally frequent on the plains of Long Island and New Jersey, and in similar bare and dry pastures in various parts of Massachusetts, particularly about Sekonk, and in Rhode Island near to the sea-coast, where they pass the greater part of the summer. Wilson, who first described the species, met with it in the meadows of the Schuylkill, pursuing insects among the grass with great activity.

The breeding-range of this species extends, in all probability, from Pennsylvania to the fur countries of Upper Canada, as

well as westward on either side of the Mississippi. Scattering broods and nests made in dry meadows are not uncommon a few miles from Salem, where Mr. N. West informs me he saw the young just fledged during the present season (1833) in the month of July.

While here they feed much upon grasshoppers, which now abound in every field, and become so plump as to weigh upwards of three quarters of a pound. They keep together usually in broods or small companies, not in gregarious swarms like the Sandpipers, and when approached are like Plovers, silent, shy, and watchful, so that it requires some address to approach them within gunshot. They run fast, the older birds sometimes dropping their wings and spreading the tail, as if attempting to decoy the spectator from paying attention to their brood. On alighting they stand erect, remain still, and on any alarm utter three or four sharp, querulous whistling notes as they mount to fly. In the pastures they familiarly follow or feed around the cattle, and can generally be best approached from a cart or wagon; for though very wary of man, they have but little apprehension of danger in the company of domestic animals. In August the roving families now approach the vicinity of the sea, resorting to feed and roost in the contiguous dry fields. In the morning as they fly high in the air in straggling lines, their short warbling whistle is sometimes heard high overhead, while proceeding inland to feed, and the same note is renewed in the evening as they pass to their roosts. It is also very probable that this is usually the time they employ in their migrations to the South, which commence here early in September and by the middle of that month a few stragglers only are found.

The Upland Plover is still abundant in New England during the migrations, and some breed here; but in the Maritime Provinces the bird is uncommon, and it has not been taken on the north side of the Gulf of St. Lawrence. It is rarely met with in the region of the Great Lakes, but is very abundant on the western plains, where the birds congregate in immense flocks. — "sometimes in thousands." Their winter home is on the pampas of the Argentine Republic.



MARbled GODWIT.

MARLIN.

LIMOSA FEDOA.

CHAR. Prevailing color dull rufous varied with black; rump and tail barred; bill pinkish; legs and feet black. Length 17 to 20 inches.

Nest. Near a stream or lake, — a slight depression sparingly lined with grass.

Eggs. 3-4; pale buff or olive, marked with brown and lavender; 2.25×1.60 .

The Marbled Godwit is only a transient visitor along the sea-coasts of the United States in the spring and fall on its way to and from its breeding-place in the North. According to Richardson, it abounds in the summer season in the interior of the fur countries, being particularly plentiful on the Saskatchewan plains, where it frequents marshes and bogs, walking on the surface of the swamp-moss (*Sphagna*), and thrusting down its bill to the nostrils in quest of worms and leeches, which it discovers by the sensitive point of its bill, thus finding means to

obtain a kind of food which would otherwise be imperceptible to any other sense. It is doubt likewise varies this fare and feeds also upon insects and larvæ. These birds arrive on the coasts of the Middle States in the month of May, and linger on till some time in June. Many, however, at this time have already arrived at their ultimate destination in the North, so that it is not improbable but some of these Godwits may breed in more temperate regions to the west as well as north, selecting the high plains of the Rocky Mountains in situations sufficiently moist. At all events, they are seen in the lower part of Missouri in the course of the spring, but migrate like most other waders along the sea-coast in the way to their tropical winter quarters.

The Marbled Godwit in large flocks appears in the salt-marshes of Massachusetts about the middle of August, particularly towards the eastern extremity of the bay, round Chatham and the Vineyard; their stay is, however, very short, and they at the same time, no doubt, visit the eastern coast of Long Island. On these occasions they assemble by many hundreds together, and usually associate with the Short-Billed Curlews, they themselves being called Red Curlews, — though here they are distinguished also by the name of Doe-birds, and, being at this season fat, are highly esteemed for the table. They are very shy and cautious; but when once confused by the fall and cries of any of their companions, great destruction may be made among them before they recover from the delusion: they then make repeated circuits round the wounded and complaining, and may be enticed within gunshot by imitating their wailing call, after the manner of the Curlew. Indeed, without some contrivance of this kind they can seldom be approached.

These birds are abundant in the West, but on the Atlantic coast they appear only in small flocks during the spring and autumn migrations. They breed from Iowa to the Saskatchewan, and winter in Central America and southward.

HUDSONIAN GODWIT.

RING-TAILED MARLIN.

LIMOSA HEMASTICA.

CHAR. Upper parts dusky, mottled with buff; head and neck rufous, streaked with dusky; rump dusky; tail-coverts mostly white; tail dusky, tipped with white; under parts rich chestnut, barred with dusky. Length 14 to 16 inches.

Nest. Near a stream or lake, — a slight depression, lined with a few leaves or bits of grass.

Eggs. 3-4; grayish olive or hair brown, spotted with darker brown; 2.20×1.40 .

The Hudsonian, or American Black-tailed Godwit, though abundant in the Barren Grounds near the Arctic Sea, where it breeds, is an uncommon visitor in the Eastern and Middle States of the Union, although, from all analogy and the impossibility of the species subsisting through the winters of its natal regions, we are certain that the whole retire into mild climates to pass the winter. They probably, like some other birds of the same countries, retire southward by an inland route, or even pass the autumn on the shores of the northwestern coast of the continent. Be this as it may, the present bird is among our greatest rarities, as I have seldom seen more than two or three pair in the course of the season: these are found on the neighboring coast of the Bay, and called by the market people of Boston, Goose Birds. I obtained a solitary pair of these stragglers about the 8th of September; they were very fat and well flavored, scarcely distinguishable in this respect from the Curlew, and appeared to have been feeding on some *Uva* or other vegetable substance. Several pair of young and old birds were brought to market this year (1833), from the 6th to the 30th of the same month. An individual now in the Philadelphia Museum was shot also near the coast of Cape May, in New Jersey. They sometimes associate with the Plovers, and descending to the marshes and the strand, feed upon minute shell-fish, shrimps, and the roots of the *Zostera*. According to Richardson, they frequent boggy lakes, like the

preceding probing the *Sphagnum* and mud in quest of insects and minute shell-fish. The manners of this bird are similar to those of the *L. fedoa*, and in most respects it makes an approach to the Black-tailed species of Europe; it is, however, somewhat larger, and readily contradistinguished.

The Hudsonian Godwit is more frequently seen on the Atlantic coast than is its larger relative, but it is not at all common, and is seen only or generally in the autumn. It breeds in the higher Arctic regions, — on the Barren Grounds, — and winters in South America.

NOTE. — The BLACK-TAILED GODWIT (*Limosa limosa*) occurs occasionally in Greenland.

DOWITCHER.

BROWN-BACK. ROBIN-SNIPE. RED-BREASTED SNIPE.
GRAY SNIPE.

MACRORHAMPUS GRISEUS.

CHAR. Summer: above, dusky, varied with bay; rump white, barred with dusky; tail with black and buff bars; below, bay, varied with dusky. In winter the upper parts are dark gray, the rump pure white, and the lower parts white, shaded on the breast with gray. Length about 10½ inches. Similar to Wilson's Snipe, but distinguished by its longer legs.

HAZ. On marshy border of pond or stream, — a depression in the turf lined with leaves and grass.

Eggs. 4; pale olive brown, spotted with dark brown; 1.70 × 1.15.

The Red-breasted Snipe begins to visit the sea-coast of New Jersey early in April, arriving from its winter quarters, probably in tropical America. After spending about a month on the muddy marshes and sand-flats left bare by the recess of the tides, a more powerful impulse than that of hunger impels the wandering flocks towards their natal regions in the North, where, secluded from the prying eye of man, and relieved from molestation, they pass the period of reproduction, the wide range of which continues, without interruption, from the borders of Lake Superior to the shores of the Arctic Sea. On the

plains of the Saskatchewan, according to Richardson, they feed much upon leeches and coleoptera, for which, no doubt, they probe the mud and *sphagnum* of the bogs and marshes, — a habit which they also pursue while here, on their way to the South, particularly collecting the larvæ of aquatic insects, such as *Libellule* and others. The nest and eggs of this species are yet unknown. The ovaries in females killed in May were already swelled to the size of peas. By the 20th of July or beginning of August they revisit the shores of New England and the Middle States in large flocks recruited by their young. These are already full grown, in good condition for the table, and are at all times greatly esteemed for their excellent flavor.

The Red-breasted Snipes are always seen associated in flocks, and though many are bred in the interior around the Great Northern Lakes, they now all assemble towards the sea-coast, as a region that affords them an inexhaustible supply of their favorite food of insects, mollusca, and small shellfish; and here they continue, or a succession of wandering and needy bands, until the commencement of cold weather advertises them of the approach of famine, when, by degrees, they recede beyond the southern limits of the Union. While here they appear very lively, performing their aerial evolutions over the marshes at a great height sometimes in the air, uttering at the same time a loud, shrill, and quivering whistle, scarcely distinguishable from that of the Yellow-Legged Tattler (something like 'tē-tē-te, 'tē-tē-te). The same loud and querulous whistling is also made as they rise from the ground, when they usually make a number of circuitous turns in the air before they descend. At all times gregarious, in the autumn and spring they sometimes settle so close together that several dozens have been killed at a single shot. While feeding on the shores or sandbars, they may be sometimes advantageously approached by a boat. of which, very naturally, they have but little fear or suspicion: nor are they at any time so shy as the Common Snipe, alighting often within a few rods of the place where their companions have been shot, without exhibiting alarm until harassed by successive firing. Besides mollusca, they occasionally vary

their fare with vegetable diet, such as the roots of the *Zostera marina*; and I have also found in their stomachs the whitish oval seeds of some marsh or aquatic plant. They likewise, in common with the Sandpipers and many other wading birds, swallow gravel to assist the trituration of their food.

We know to-day something more than Nuttall could tell us of the nesting habits of the Dowitcher, or "Deutscher's Snipe," as the bird was originally called, to distinguish it from the "English Snipe," now known as Wilson's. Our bird is still called "German Snipe" at some localities on the coast.

A number of nests have been taken in the Far North, where the birds find suitable feeding-grounds in the bogs and marshes amid the barren lands bordering the Arctic Ocean. Stragglers from the main flocks are met with in summer throughout the fur countries and down to the forty-fourth parallel; but it does not follow that they breed so far to the southward. Large flocks appear on the Atlantic coast during both the spring and autumn migrations, though they seem to pass over New Brunswick and Nova Scotia without alighting, in the spring. But they move northward rapidly and with few stoppages, while they return quite leisurely and are therefore considered more abundant in the autumn in all localities.

In the vicinity of the Great Lakes the birds are rarely seen, though it is known that large flocks journey north and south by way of the Mississippi Valley and across the Great Plains. In winter the birds are found in the West Indies and Brazil.

NOTE. — The LONG-BILLED DOWITCHER (*M. scolopaceus*) has lately been separated from *griseus*. It is a larger bird, with a longer bill; and though chiefly confined to the Western Province, examples are seen regularly on the Atlantic coast.



WILSON'S SNIPE.

ENGLISH SNIPE. COMMON SNIPE. JACK SNIPE. SHAD BIRD.

GALLINAGO DELICATA.

CHAR. Above, mottled brown, black, and buff; tail with subterminal bars of rufous and black; crown dusky, with medial stripe of buff; neck and breast pale brown, spotted with dusky; belly white, sides with dark bars. Length about 11 inches.

Nest. Amid a tussock of grass or bunch of moss in a wet meadow or margin of a marsh, — a slight depression in the turf sparingly lined with grass, leaves, or feathers.

Eggs. 3-4; olive of various shades, spotted with brown and lavender; 1.55 × 1.10.

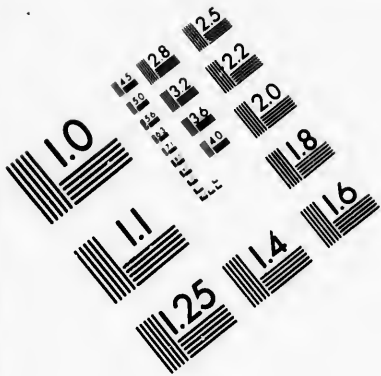
The Snipe of North America, so nearly related to that of Europe, is found, according to the season, in every part of the continent, from Hudson Bay to Cayenne, and does not appear, indeed, sufficiently distinct from the Brazilian Snipe of Swainson, which inhabits abundantly the whole of South America as far as Chili. Many winter in the marshes and inundated river grounds of the Southern States of the Union, where they are

seen in the month of February, frequenting springs and boggy thickets; others proceed along the coast of the Gulf of Mexico, and even penetrate into the equatorial regions.

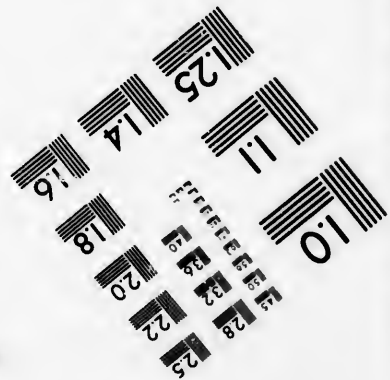
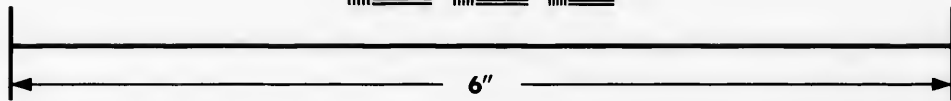
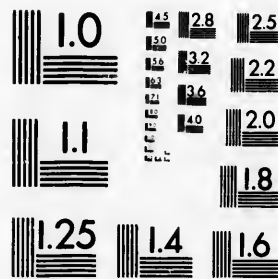
By the second week in March, flocks of Wilson's Snipe begin to revisit the marshes, meadows, and low grounds of the Middle States, and soon after they arrive in New England. In mild and cloudy weather, towards evening, and until the last rays of the setting sun have disappeared from the horizon, we hear, as in the North of Europe, the singular tremulous murmurings of the Snipes, making their gyratory rounds so high in the air as scarcely to be visible to the sight. This humming, or rather flickering and somewhat wailing, sound has a great similarity to the booming of the Night Hawk (*Caprimulgus*), but more resembles the sound produced by quickly and interruptedly blowing into the neck of a large bottle than the whirling of a spinning-wheel. But however difficult and awkward may be our attempts to convey any adequate idea of this quailing murmur, it seems to be, to its agent, an expression of tender feeling or amatory revery, as it is only uttered at the commencement and during the early part of the pairing season, while hovering over those marshes or river meadows which are to be the cradle and domicile of their expected progeny, as they have already been of themselves and their mates. This note is probably produced by an undulatory motion of air in the throat while in the act of whirling flight, and appears most distinct as the Snipe descends towards the ground. However produced, the sound and its originators are commonly so concealed by the fast-closing shades of night, and the elevation from whence it issues in cloudy weather, that the whole seems shrouded in mystery. My aged maternal parent remembered, and could imitate with exactness, this low, wailing murmur, which she had for so many years heard over the marshes of my native Ribble, in the fine evenings of spring, when all Nature seemed ready to do homage for the bounties of the season; and yet at the age of seventy, the riddle had not been expounded with satisfaction.

Over the wide marshes of Fresh Pond, about the middle of





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April, my attention was called to the same invisible voice, which issued from the floating clouds of a dark evening; the author was here called the Alewife Bird, from its arrival with the shoals of that fish in the neighboring lake. From the elevation at which the sound issued, probably, it appeared less loud and distinct than that which I have since heard from the English Snipe. I imagined then that the noise was made by the quick and undulatory fanning of the wings; but this would not produce the shrillness of tone by which it is characterized, as any one may satisfy himself by hearkening to the very different low buzz made by the wings of the Humming Bird. In this instance, as well as in the former, all my sporting acquaintance were familiar with this quivering call, but had never decided upon its author. At the same time I observed, flying high and rapid, a pair of these Snipes, probably instigated by anger and jealousy, who then uttered a discordant quacking sound, — something like the bleat they make when they have descended to the ground, and which they accompany with an attitude of peculiar stupidity, balancing the head forwards, and the tail upwards and downwards, like the action of some automaton toy, jerked and set in motion by a tight-drawn string.

After incubation, which takes place rather early in the spring, the humming is no longer heard, and the sprightly aerial evolutions which appeared so indefatigable have now given way to sedate attitudes and feebler tones. A few pairs no doubt breed in the extensive and almost inaccessible morasses of Cambridge ponds or lagoons; and I have been informed that they select a tuft of sedge for the foundation of the nest, which is constructed with considerable art. The eggs, like those of the European species, about four, are perhaps alike olivaceous and spotted with brown. These birds probably scatter themselves over the interior of the continent to breed, nowhere associating in great numbers; nor are they at all common in the hyperboreal retreats chosen by so many of the other wading birds. My friend Mr. Ives, of Salem, also informs me that a few pairs of this species breed in that vicinity.

The Snipe, almost nocturnal in its habits, conceals itself with

assiduity in the long grass, sedge, and rushes of its enswamped and boggy retreat. Aware of danger from the approach of the sportsman, it springs at a distance with great rapidity, uttering usually a feeble squeak; and making several inflections before it takes a direct course, it becomes very difficult to shoot, and is more easily caught with a snare or springe similar to that which is set for Woodcocks. Being deservedly in high repute as an exquisite flavored game, great pains are taken to obtain Snipes. In the spring season on their first arrival they are lean; but in the autumn, assembled towards the coast from all parts of the interior, breeding even to the banks of the Mississippi, they are now fat and abundant, and, accompanied by their young, are at this time met with in all the low grounds and enswamped marshes along the whole range of the Atlantic; but ever shy and dexterous, they are only game for the most active and eager sportsmen. When on the wing they may, like many other birds of this family, be decoyed and attracted by the imitation of their voice. They are, like the European Snipe, which migrates to winter in England, by no means averse to cold weather, so long as the ground is not severely frozen in such a manner as to exclude their feeding; so that even in Massachusetts they are found occasionally down to the middle of December. They are nowhere properly gregarious, but only accidentally associate where their food happens to be abundant. For this purpose they are perpetually nibbling and boring the black, marshy soil, from which they sometimes seem to collect merely the root-fibres which it happens to contain, though their usual and more substantial fare consists of worms, leeches, and some long-legged aquatic insects; the Snipe of Europe also seizes upon the smaller species of *Scarabeus*. Their food, no doubt, is mixed with the black and slimy earth they raise while boring for roots and worms, and which in place of gravel, or other hard substances, appears to be the usual succedaneum they employ to assist their digestion and distend the stomach.

The habits of this bird are well known to every sportsman in North America, for it ranges throughout the continent, and is

common at times in almost every suitable locality. Its general breeding area extends from Hudson Bay and Alaska southward to about latitude 45°, and a few nests have been taken south of that line. In winter the birds are found in the Gulf States and southward.

NOTE. — The EUROPEAN SNIPE (*Gallinago gallinago*), which is somewhat similar in appearance to the American bird, occurs regularly in Greenland, and has been taken in Bermuda.

AMERICAN WOODCOCK.

BOG-SUCKER.

PHILOHELA MINOR.

CHAR. Above, mottled tawny, black, and gray; beneath, pale rufous or tawny buff, tinged with gray. Head peculiar; neck short; body stout; bill long and straight; legs and tail short. Length about 11 inches.

Nest. Sometimes in a wet meadow or on the margin of a swamp, but often in a dry woodland or on a shaded hillside. — placed amid a tuft of grass or at the root of a tree or stump; a slight depression sparingly lined with leaves or grass.

Eggs. 4; creamy or pale buff spotted with brown and lavender; 1.55 × 1.15.

The American Woodcock, like the Snipe, appears again to be a near representative of that of Europe, whose manners and habits it almost entirely possesses, differing, however, materially in the temperature of the climates selected for its residence, confining itself in the summer to the south side of the St. Lawrence, breeding in all the intermediate space as far as the limits of the Middle States, and retiring in winter for the most part either to or beyond the boundary of the Union. The European species, on the contrary, courting cooler climates, winters in Great Britain and the North of Europe, and retires as early as March to breed in the Alps or in the frigid wilds of Sweden, Norway, Russia, and penetrates even to the icy shores of Greenland and the heaths of Iceland. About the same period, early in March, the American Woodcock revisits Pennsylvania, and soon after the New England or Eastern

States. Indeed, so sedentary are these birds at times that a few are known to winter in the sheltered forests and open watery glades of Pennsylvania; at the same season also many are seen in the vicinity of Natchez in Mississippi. According to their usual habits, they keep secluded in the woods and thickets till the approach of evening, when they sally forth to seek out springs, paths, and broken soil, in quest of worms and other insects on which they feed. They now disperse themselves over the country to breed, and indicate their presence in all directions by the marks of their boring bills, which are seen in such soft and boggy places as are usually sheltered by thickets and woods. They also turn over the fallen leaves from side to side with their bills in quest of lurking insects, but never scratch with their feet, though so robust in their appearance. The sensibility possessed by the extremity of the bill, as in the Snipe, is of such an exquisite nature that they are enabled to collect their food by the mere touch without using their eyes, which are set at such a distance and elevation in the back part of the head as to give the bird a remarkable aspect of stupidity. When flushed or surprised in their hiding-places, they only rise in a hurried manner to the tops of the bushes or glide through the undergrowth to a short distance, when they instantly drop down again, and run out for some space on touching the ground, lurking as soon as they imagine themselves in a safe retreat. At times in open woods they fly out straight with considerable vigor and swiftness; but the effort, from the shortness of the wing, is always attended with much muscular exertion.

During the mating season, in the morning as well as evening, but more particularly the latter, the male in the vicinity of his mate and nest rises successively in a spiral course like a Lark. While ascending he utters a hurried and feeble warble; but in descending, the tones increase as he approaches towards the ground, and then, becoming loud and sweet, pass into an agreeable, quick, and tumultuous song. As soon as the performer descends, the sound ceases for a moment, when with a sort of stifled utterance, accompanied by a stiff and balancing

motion of the body, the word *blaik*, and sometimes *paif paif*, is uttered. This uncouth and guttural bleating seems a singular contrast to the delightful serenade of which this is uniformly the close. I heard this piping and bleating in the marshes of West Cambridge on the 15th of April, and the birds had arrived about the first week in that month. This nocturnal music continued at regular intervals, and in succession until near nine o'clock in the evening, and is prolonged for a number of days during the period of incubation, probably ceasing with the new cares attendant on the hatching of the brood. The female, as in the European species, is greatly attached to her nest, and an instance is related to me of a hen being taken up from it and put on again without attempting to fly. Mr. Latham mentions a female of the Common Woodcock sitting on her eggs so tamely that she suffered herself to be stroked on the back without offering to rise, and the male, no less interested in the common object of their cares, sat also close at hand. The European species has had the credit of exercising so much ingenuity and affection as to seize upon one of its weakly young and carry it along to a place of security from its enemies. Mr. Ives, of Salem, once on flushing an American Woodcock from its nest, was astonished to see that it carried off in its foot one of its brood, the only one which happened to be newly hatched; and as the young run immediately on leaving the shell, it is obvious that the little nursling could be well reared, or all of them as they might appear, without the aid of the nest, now no longer secured from intrusion. In New England this highly esteemed game is common in the markets of Boston to the close of October, but they all disappear in the latter part of December. In this quarter of the Union they are scarcely in order for shooting before the latter end of July or beginning of August; but from this time to their departure they continue in good condition for the table.

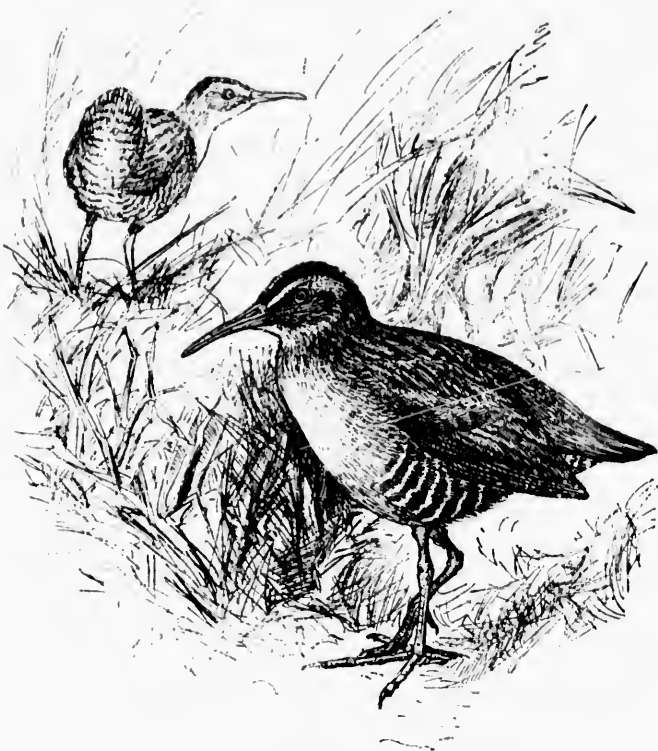
The springes, or springers, set for Woodcocks in Europe in places they are found to frequent by the evidence of their borings, etc., are commonly formed of an elastic stick, to

which is fastened a horse-hair noose put through a hole in a peg fastened into the ground, to which a trigger is annexed; and in order to compel the Woodcock to walk into the trap, an extended fence is made on each side by small sticks set up close enough to prevent the bird passing between them. These concentrate at the trap, so that in this funnel-shaped fence the bird in feeding is made to pass through the narrow passage, and is almost to a certainty caught by the legs.

As the season advances and food begins to fail, by reason of inclement and cold weather, the Woodcocks leave the interior; and approaching the shelter of the sea-coast and the neighboring marshes, they now become abundant, and are at such times late in autumn killed in great numbers. These are also their assembling points previous to their southern migrations, which are performed in a desultory and irregular manner, their motions, as usual, being mostly nocturnal or in the twilight; and though many are now met with in the same low meadows and marshes, they are brought together by common necessity, and never move in concerted flocks. At this season their movements are not betrayed by any note or call; the vocal powers of the species are only called into existence at the period of propagation; at other times they move and start to wing in silence. The young run or wander off as soon as they are hatched, are at this period covered with a brownish-white down, and on being taken utter a slender bleat or clear and long-drawn *péep*.

This famous game-bird is common in the Maritime Provinces, but is rarely found on the northern side of the Gulf of St. Lawrence. It is common also in Southern Ontario, but in the Muskoka district is rather rare. It is known to breed throughout its Canadian range, and southward through the Middle States and westward to the Plains. It winters in the Southern States.

NOTE. — The EUROPEAN WOODCOCK (*Scolopax rusticola*), a much larger bird, occurs occasionally on this side of the Atlantic.



VIRGINIA RAIL.

RED-BREASTED RAIL. LESSER CLAPPER RAIL.

RALLUS VIRGINIANUS.

CHAR. General coloration rufous. Above, tawny olive striped with dusky; wing-coverts rich bay; crown dusky; below, light reddish brown, paler on the belly. Length about $9\frac{1}{2}$ inches.

Nest. On the ground amid a tuft of grass on the marshy margin of a lake or stream, sometimes in a salt-marsh, usually placed close to the water's edge, — a deep, saucer-shaped affair of reed-stalks and grass, and rather compactly built.

Eggs. 6-12 (usually 8); pale cream or reddish buff, spotted with brown and lavender; 1.25×0.90 .

The Virginian or Lesser Clapper Rail, scarcely distinguishable from the preceding but by its inferior size, is likewise a

near representative of the Water Rail of Europe, with whose habits in all respects it nearly agrees. But in every part of America it appears, to be a rare species compared with the Mud Hen or common Clapper Rail. It is also wholly confined to the fresh-water marshes, and never visits the borders of the sea. In New Jersey it is indeed ordinarily distinguished as the Fresh-Water Mud Hen; so constant is this predilection, connected probably with its choice of food, that when met with in salt-marshes it is always in the vicinity of fresh-water springs, which ooze through them or occupy their borders. From this peculiarity in its choice of wet grounds, it is consequently seen in the interior, in the vicinity of bogs and swampy thickets, as far west as the States of Ohio, Kentucky, and probably Illinois and Michigan. Its migrations, however, along the neighborhood of the coast do not extend probably farther than the shores of the St. Lawrence, as it is unknown in the remote fur countries of the North, and retires from the Middle States in November at the commencement of frost. It revisits Pennsylvania early in May, and is soon after seen in the fresh marshes of this part of Massachusetts. How far it retires, in the course of the winter, towards the South, is yet unknown, though from its absence, apparently, from the warmer parts of the continent, it probably migrates little farther than the southern extremity of the Union. Its habit of closely hiding in almost inaccessible swamps and marshes renders it a difficult task even to ascertain its presence at any time; and, like the preceding, it skulks throughout most part of the day in the long sedge and rushes, only venturing out to feed in the shade and obscurity of the twilight. Its food is most commonly marsh insects and their larvæ, as well as small worms and univalve shell-fish, it rarely, if ever, partaking of vegetable diet.

The Virginian Rail commences laying soon after its arrival in the early part of May. The nest, situated in the wettest part of the marsh, is fixed in the bottom of a sedge tussock and composed of withered grass and rushes. The eggs are similar to those of the European Water Rail, being of a dirty white or pale cream color, sprinkled with specks of brownish

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red and pale purple, most numerous at the great end. In the Middle States this bird is believed to raise two broods in the season. The female is so much attached to her eggs, after sitting, as sometimes to allow of being taken up by the hand rather than desert the premises, — which affection appears the more necessary as the male seems to deserts his mate and leave her in the sole charge of her little family.

About the 18th of June, in this vicinity, in a wet part of the salt-marsh making into a fresh meadow near Charles River, one moonlight evening as late as nine o'clock I heard a busy male of this species calling out at short intervals in a guttural, creaking tone, almost like the sound of a watchman's rattle, 'kut-ă-căt tee-ăh, — the call sometimes a little varied. At this time, no doubt, his mate was somewhere sitting on her eggs in some tuft of the tall marine grass (*Spartina glabra*) which overhung the muddy inlet near which he took his station. The young, for some time after being hatched, are covered wholly with a jet-black down, and running with agility, are now sometimes seen near the deep marshes, straying into the uplands and drier places, following the careful mother much in the manner of a hen with her brood of chickens. When separated from the parent at a more advanced age, their slender *peep, peep, peep*, is heard and soon answered by the attentive parent. The female when startled in her watery retreat often utters a sharp, squeaking scream apparently close at hand, which sounds like 'keek, 'keek, 'kek; on once approaching, as I thought, the author of this discordant and timorous cry, it still slowly receded, but always appeared within a few feet of me, and at length pressing the pursuit pretty closely, she rose for a little distance with hanging legs, and settled down into a ditch among some pond-lily leaves, over which she darted and again disappeared in her paths through the tall sedge, screaming at intervals, as I now found, to give warning to a brood of young which had at first probably accompanied her and impeded her progress.

When seen, which is but rarely, the Virginian Rail, like the other species, stands, or runs with the neck outstretched and

with the short tail erect and frequently jerked. It is never seen to perch on trees or shrubs, and is most of the time on its feet. Its flesh is scarcely inferior to that of the Common Rail, but its scarcity and diminutive size relieve it from much attention as game. Late in autumn, a little time previous to their departure, these birds occasionally wander out into the neighboring salt-marshes, situated at a distance from the sea, — a route by which in all probability they proceed in a solitary and desultory manner towards the milder regions of the South. At this time also they often roost among the reeds, by ponds, in company with the different kinds of Blackbirds, clinging, no doubt, to the fallen stalks on which they pass the night over the water. They swim and dive also with ease and elegance; but like their whole tribe of Long-Footed Birds, they are swiftest on land, and when pushed depend upon their celerity over the covered marsh as a final resort.

This Rail is a common summer visitor to the Maritime Provinces and westward to Manitoba, but rarely ranges north of the fiftieth parallel. Its breeding area extends southward to Long Island and Pennsylvania.

CLAPPER RAIL.

SALT-WATER MEADOW HEN. MUD HEN. BIG RAIL.

RALLUS CREPITANS.

CHAR. Above, ashy gray striped with brown and tinged with olive; wings and tail brown; below, pale buff, flanks darker and barred with white; breast shaded with ash; throat white. General coloration gray without rufous tint. Bill long, slender, and decurved. Length $13\frac{1}{2}$ to $15\frac{1}{2}$ inches.

Nest. Artfully concealed amid the rank grass of a salt-marsh, — a loosely arranged cushion of dry rushes and grass.

Eggs. 6-13 (usually about 9); pale buff, marked with reddish brown and lavender; size extremely variable, average about 1.70×1.20 .

The Clapper Rail is a numerous and well-known species in all the Middle and Southern States, but is unknown in this part of New England, or in any direction farther to the north, being unnoticed by Richardson in his "Northern Zoology."

According to Wilson, these Rails arrive on the coast of New Jersey about the 20th of April, and probably winter within the southern boundaries of the Union, or in the marshes along the extensive coast of the Mexican Gulf, as they are seen by February on the shores of Georgia in great numbers. In the course of their migrations, in the hours of twilight, they are often heard on their way, in the spring, by fishermen and coasters. Their general residence is in salt-marshes, occasionally penetrating a short distance up the large rivers as far as the bounds of tide-water. In the vast flat and grassy marshes of New Jersey, intersected by innumerable tide-water ditches, their favorite breeding-resorts, they are far more numerous than all the other marsh-fowl collectively.

The arrival of the Mud Hen (another of their common appellations) is soon announced through all the marshes by its loud, harsh, and incessant cackle, heard principally in the night, and is most frequent at the approach of a storm. About the middle of May the females commence laying, dropping the first egg into a slight cavity scratched for its reception, and lined with a small portion of dry grass, as may be convenient. During the progress of laying the complement of about ten eggs, the nest is gradually increased until it attains about the height of a foot, — a precaution or instinct which seems either to contemplate the possibility of an access of the tide-water, or to be a precaution to conceal the eggs or young, as the interest in their charge increases. And indeed to conceal the whole with more success, the long sedge grass is artfully brought together in an arch or canopy; but however this art and ingenuity may succeed in ordinary cases, it only serves to expose the nest to the search of the fowler, who can thus distinguish their labors at a considerable distance. The eggs, more than an inch in breadth, and about one and three fourths in length, are of the usual oval figure, of a yellowish white or dull cream color sparingly spotted with brown red and a few other interspersed minute touches of a subdued tint bordering on lilac purple; as usual, there are very few spots but towards the obtuse end. The eggs are much

esteemed for food, being frequently collected by the neighboring inhabitants; and so abundant are the nests in the marshes of New Jersey that a single person, accustomed to the search, has been known to collect a hundred dozen in the course of a day. Like other gregarious and inoffensive birds, they have numerous enemies besides man; and the crow, fox, and minx come in for their share, not only of the eggs and young, but also devour the old birds besides. From the pounce of the Hawk they can more readily defend themselves by dodging and threading their invisible paths through the sedge. The nature of the ground they select for their nurseries and its proximity to the sea, renders their thronging community liable also to accidents of a more extensively fatal kind; and sometimes after the prevalence of an eastwardly storm, not uncommon in the early part of June, the marshes become inundated by the access of the sea, and great numbers of the Rails perish, — at least, the females, now sitting, are so devoted to their eggs as to remain on the nest and drown rather than desert it. At such times the males, escaping from the deluge, and such of their mates as have not yet begun to sit, are seen by hundreds walking about, exposed and bewildered, while the shores for a great extent are strewn with the dead bodies of the luckless females. The survivors, however, wasting no time in fruitless regret, soon commence to nest anew; and sometimes when their nurseries have been a second time destroyed by the sea, in a short time after, so strong is the instinct and vigor of the species that the nests seem as numerous in the marshes as though nothing destructive had ever happened.

The young of the Clapper Rail are clad, at first, in the same black down as those of the Virginian species, and are only distinguishable by their superior size, by having a spot of white on their auriculars, and a line of the same color along the side of the breast, belly, and fore part of the thigh. They run very nimbly through the grass and reeds, so as to be taken with considerable difficulty, and are thus, at this early period, like their parents, without the aid of their wings, capable of elud-

ing almost every natural enemy they may encounter. Indeed, the principal defence of the species seems to be in the vigor of their limbs and the compressed form of their bodies, which enables them to pass through the grass and herbage with the utmost rapidity and silence. They have also their covered paths throughout the marshes, hidden by the matted grass, through which they run like rats, without ever being seen; when close pressed, they can even escape the scent of a dog by diving over ponds or inlets, rising and then again vanishing with the silence and celerity of something supernatural. In still pools this bird swims pretty well, but not fast, sitting high on the water with the neck erect, and striking with a hurried rapidity indicative of the distrust of its progress in that element, which it immediately abandons on approaching the leaves of any floating plants, particularly the pond-lilies, over whose slightly buoyant foliage it darts with a nimbleness and dexterity that defies its pursuers, and proves that however well it may be fitted for an aquatic life, its principal progress, and that on which it most depends when closely followed, is by land rather than in the air or the water. When thus employed, it runs with an outstretched neck and erected tail, and, like the wily Corn Crane, is the very picture of haste and timidity. On fair ground these birds run nearly as fast as a man. When hard pushed they will betake themselves sometimes to the water, remaining under for several minutes, and holding on closely to the roots of grass or herbage with the head downwards, so as to render themselves generally wholly invisible. When roused at length to flight, they proceed almost with the velocity and in the manner of a duck, flying low and with the neck stretched; but such is their aversion to take wing, and their fondness for skulking, that the marshes in which hundreds of these birds dwell may be crossed without one of them ever being seen; nor will they rise to a dog till they have led him into a labyrinth and he is on the very point of seizing them.

The food of the Clapper Rail consists of various insects, small univalve shell-fish, and crustacea (minute crabs, etc.). Its flesh is dry, tastes sedgy, and is far inferior in flavor to

that of the Common Rail or Sora. Early in October these birds retire to the South, and probably migrate in the twilight or by the dawn of morning.

The Clapper Rail is abundant along the Atlantic coast north to Long Island. It occurs occasionally on the Connecticut shores, but is merely an accidental wanderer within the Massachusetts boundaries, and but one example has been reported north of Boston Harbor, — captured near Portland, Maine, some years ago. Its breeding range extends from Connecticut to the Gulf States, and it is found in winter throughout the Southern States.

NOTE. — The LOUISIANA CLAPPER RAIL (*R. crepitans saturatus*) was discovered by Mr. H. W. Henshaw and described in 1880. It is a smaller bird than the type, — length about thirteen inches, — and is of brighter-colored plumage. The brown of the upper parts is of a richer tint and is more deeply tinged with olive while the breast wears a richer shade of brown. The bird has been found on the coast of Louisiana only.

SCOTT'S RAIL, as it was named by Mr. Sennett, the describer, or FLORIDA CLAPPER RAIL, as it will be booked probably (*R. scottii*), was discovered in 1886. It is the darkest of the group. — very dark brown or nearly black above, and lower parts brown. The bird appears to be sedentary on the west coast of Florida, and has been taken nowhere else.



KING RAIL.

RED-BREASTED RAIL. FRESHWATER MARSH HEN.

RALLUS ELEGANS.

CHAR. Upper parts rich olive brown of varying shades. — sometimes with a yellow tinge, — striped with black; crown dark brown; a line of cinnamon over the eyes, and a line of dusky through the eyes; wings brown, of varying shades; under parts deep cinnamon, darkest on the breast, fading to dull white on throat and belly; sides and flanks brown or dusky, with broad stripes of white. Length 17 to 19 inches.

Nest. Hid amid a tuft of rank grass in a fresh-water marsh; placed on the ground, though sometimes fastened to the grass and weeds that surround it; made of grass and weed stems.

Eggs. 6-12; ground color varies from pale buff to creamy white, marked, sparingly, with reddish brown or purplish brown and lilac; size variable, average about 1.70 × 1.20.

Nuttall must have confounded the present species with the Clapper Rail, for he makes no mention of the King Rail. Wilson figured the bird, but gave no description of its plumage or habits. and the first account of the species was given by Audubon in 1835.

The King Rail is not so widely dispersed, nor is it so abundant, as most of its congeners; but some writers have been in error in representing its distribution as exceedingly limited. It occurs regularly throughout the Southern and Middle States, and is plentiful in Ohio, Illinois, Wisconsin, and Ontario. In New England the bird has been seen but rarely, though examples have been taken in Connecticut, Massachusetts, and Maine. I have examined in the flesh one that was shot near St. John, N. B.

In habits our bird is very similar to the Clapper Rail, differing chiefly in its preference for a marsh that is drained by a sluggish stream of fresh water.

SORA.

CAROLINA RAIL. CAROLINA CRAKE. COMMON RAIL.

POUZANA CAROLINA.

CHAR. Above, olive brown varied black and gray; front of head, stripe on crown, and line on throat, black; side of head and breast ashy gray or slate; sides of breast spotted with white; flanks barred slate and white; belly white. Bill short and stout. Length 8 to 9½ inches.

Nest. In a wet meadow or reedy swamp, sometimes in a salt-water marsh; a rude structure of loosely arranged grass weed stems and rushes hid in a tussock of rank grass or coarse sedges.

Eggs. 6-14 (usually 8); dark buff or yellowish drab, often tinged with olive, spotted with reddish brown and lilac; 1.20 × 0.90.

The Sora, or Common Rail, of America, which assemble in such numbers on the reedy shores of the larger rivers in the Middle and adjoining warmer States at the approach of autumn, and which afford such abundant employ to the sportsman at that season, like most of the tribe to which it belongs is a bird of passage, wintering generally south of the limits of the Union. These Rails begin to make their appearance in the marshes of Georgia by the close of February; and on the 2d of May Wilson observed them in the low watery meadows below Philadelphia. In the remote fur countries of the North

up to the 62d parallel they are common through the summer, and were observed by Dr. Richardson to be particularly abundant on the banks of the small lakes that skirt the Saskatchewan plains. In the vast reedy marshes, swamps, and lagoons of these desolate regions the greater part of the species are no doubt reared, as but few of them are ever known to breed in the warmer parts of the continent; and the history of their manners at the period of incubation is therefore still a blank. The observations of persons not conversant with the nice distinctions necessary in natural history ought to be received with caution, as they might easily confound the mere young of the present and the preceding species as one and the same. The alleged nest, eggs, and young birds covered with a black down mentioned by Wilson agree perfectly with the Virginian Rail; but the length of the bill and any other discriminating particulars are wholly omitted. We may conclude, therefore, up to the present time that the actual young and nest of the Soree are yet unknown, and that all which has been said on this subject is but conjecture or a misapplication of facts belonging to the preceding species.

Like the other migrating waders, the Rails, accompanied by their swarming broods, bred in the North and West, begin to show themselves on the reedy borders of the Delaware and other large waters of the Middle States, whose still and sluggish streams, spreading out over muddy flats, give birth to an abundant crop of the seeds of the Wild Rice, now the favorite food of the Rails and the Rice Birds. On first arriving from the labor and privation incident to their migrations, they are lean, and little valued as food; but as their favorite natural harvest begins to swell out and approach maturity, they rapidly fatten, and from the middle of September to the same time in October they are in excellent order for the table, and eagerly sought after wherever a gun can be obtained and brought into operation.

Walking by the borders of these reedy rivers in ordinary seasons, you hear in all directions the crowding Rails squeaking like young puppies. If a stone be thrown in amongst them, there is a general outcry through the reeds; a confused and

reiterated 'kuk 'kuk 'kuk 'k'k 'k'k, resounds from the covered marsh, and is again renewed by the timid throng on the discharge of a gun or any other sudden noise within their hearing. The Rails, however numerous, are scarcely visible, unless it be at or near to high water; for when the tide is down they have the art so well to conceal themselves among the reeds that you may walk past and even over them, where there are hundreds, without seeing probably a single individual.

The flight of the Rails while confined among the Rice Reeds is low, feeble, and fluttering, with the legs hanging down as if the effort were unnatural and constrained, — which may, no doubt, at times be produced by the extreme corpulency which they attain in a favorable season for food: yet occasionally they will rise to a considerable height, and cross considerable streams without any reluctance or difficulty; so that however short may be their wings, the muscles by which they are set in motion are abundantly sufficient to provide them the means of pursuing the deliberate stages of their migratory course. Wherever the *Zizania* and its nutritious grain abounds, there the Rails are generally seen. In the reedy lakes of Michigan as well as the tide-water streams of the Atlantic these birds are found congregated in quest of their favorite food. In Virginia they are particularly abundant along the grassy banks of James River within the bounds of tide-water, where they are often taken in the night while perched among the reeds; being stupefied by the glare of a fire carried in among them, they are then easily approached by a boat, and rudely knocked on the head with a paddle, — sometimes in such quantities that three negroes in as many hours have been known to kill from twenty to eighty dozen.

Fear seems to be a ruling passion among the whole tribe of Rails and their kindred allies. With faculties for acting in the day, timidity alone seems to have rendered them almost nocturnal in their actions; their sole address and cunning seems entirely employed in finding out means of concealment. This is particularly the case when wounded; they then swim out and dive with so much caution as seldom to be seen again

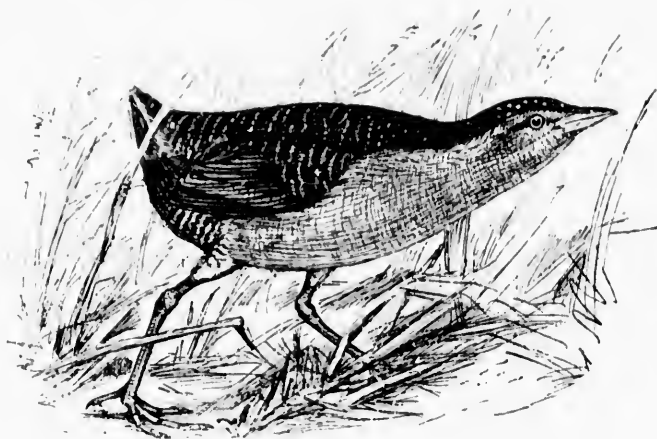
above water. They even cling with their feet to the reeds beneath that element, where they would sooner endure suffocation than expose themselves with any chance of being seen; they often also skulk on ordinary occasions under the floating reeds, with nothing more than the bill above water. At other times when wounded they will dive, and rise under the gunwale of the sportsman's boat, and secreting themselves there, have the cunning to go round as the vessel moves until, given up as lost, they find an opportunity of completing their escape.

According to the observations of Mr. Ord, the females more particularly are sometimes so affected by fear or some other passion as to fall into sudden fits and appear stretched out as lifeless, recovering after a while the use of their faculties, and falling again into syncope on merely presenting the finger in a threatening attitude. At such times and during their obstinate divings they often fall victims, no doubt, to their enemies in the watery element, as they are sometimes seized by eels and other voracious fish, who lie in wait for them; so that the very excess of their fear and caution hurries them into additional dangers, and frustrates the intention of this instinct for preservation. The swooning to which they appear subject is not uncommon with some small and delicate irritable birds, and Canaries are often liable to these death-like spasms, into which they also fall at the instigation of some immaterial or trifling excitement of a particular kind.

During the greater part of the months of September and October, the market of Philadelphia is abundantly supplied with this highly esteemed game, and they are usually sold at from fifty cents to a dollar the dozen. But soon after the first frosts of October or towards the close of that month, they all move off to the South. In Virginia they usually remain until the first week in November. In the vicinity of Cambridge (Mass.), a few, as a rarity, only are now and then seen in the course of the autumn in the *Zizania* patches which border the outlet of Fresh Pond; but none are either known or suspected to breed in any part of this State, where they are, as far as I can learn, everywhere uncommon.

The usual method of shooting Rail on the Delaware, according to Wilson, is as follows. The sportsman proceeds to the scene of action in a batteau with an experienced boatman, who propels the boat with a pole. About two hours before high water they enter the reeds, the sportsman taking his place in the bow ready for action, while the boatman on the stern seat pushes the craft steadily through the reeds. The Rails generally spring singly as the boat advances, and at a short distance ahead are instantly shot down, while the boatman, keeping his eye on the spot where the bird fell, directs the vessel forward, and picks up the game as the gunner is loading. In this manner the boat continues through and over the wild-rice marsh, the birds flushing and falling, the gunner loading and firing, while the helmsman is pushing and picking up the game. — which sport continues till an hour or two after high water, when its shallowness and the strength and weight of the floating reeds, as also the unwillingness of the game to spring as the tide decreases, oblige them to return. Several boats are sometimes within a short distance of each other, and a perpetual cracking of musketry prevails along the whole reedy shores of the river. In these excursions it is not uncommon for an active and expert marksman to kill ten or twelve dozen in the serving of a single tide.

We now know that the Sora breeds abundantly in Wisconsin and the northern portions of Illinois, Indiana, and Ohio, as well as in the more Eastern States. It is probable that the southern limit of its breeding area is in the vicinity of latitude 42°, while its northern range does not extend beyond the 62d parallel. The birds winter in the West Indies and northern South America.



YELLOW RAIL.

CRAKE.

PORZANA NOVEBORACENSIS.

CHAR. Above, brownish buff, varied with black and white; tail black; below, buff, pale on the belly, deepest on the breast; flanks dusky, barred with dull white; under tail-coverts rufous. Length 6 to 7½ inches.

Nest. In a marsh or reedy margin of a stream or pond; a loosely constructed affair of grass and weed stems, hid in a bunch of sedges or reeds.

Eggs. 5-9 (usually about 6); deep buff or creamy, spotted at the larger end with reddish brown; 1.10 × 0.85.

The Yellow-breasted Rail, though found sparingly in many parts of the Union and in Canada, is everywhere rare. It has been met with, apparently, as a mere straggler in the vicinity of New York and Philadelphia in the depth of winter, and has likewise been seen in Missouri, probably on its spring passage towards the North. Where it winters, whether in the Southern States or in still milder climes, is yet unknown.

Mr. Hutchins says, "This elegant bird is an inhabitant of the marshes" on the coast of Hudson Bay, near the mouth of Severn River, "from the middle of May to the end of September. It never flies above sixty yards at a time, but runs with great rapidity among the long grass near the shores. In the morning and evening it utters a note which resembles the

striking of a flint and steel; at other times it makes a shrieking noise." It is evident, therefore, that the Yellow-breasted Rail is principally a Northern species, which migrates mostly through the western interior of the continent, and is therefore very rare in the Atlantic States.

Like all the other species, the present inhabits swamps, marshes, and the reedy margins of ditches and lakes. In the vicinity of West Cambridge, and throughout the vast extent of wet marsh-land which stretches over the face of the country, and is but rarely visited by man, among the Virginia Rails and a few stragglers of the Sora we occasionally meet with this small and remarkable species. The first individual ever brought to me, late in autumn, was surprised, while feeding on insects or seeds, by the margin of a small pool overgrown with the leaves of the water-lily (*Nymphaea odorata*). Without attempting either to fly or swim, it darted nimbly over the floating leaves, and would have readily escaped, but for the arrest of the fatal gun, which baffled its cunning and precaution. When wounded, this bird also swims and dives with great address.

On the 6th of October, 1831, having spent the night in a lodge on the borders of Fresh Pond, employed for decoying and shooting ducks, I heard about sunrise the Yellow-breasted Rails begin to stir among the reeds (*Arundo phragmitis*) that thickly skirt this retired border of the lake, and in which, among a host of various kinds of Blackbirds, they had for some time roosted every night. As soon as awake, they called out in an abrupt and cackling cry, 'krèk, 'krèk, 'krèk, 'krèk, kùk 'k'kh, which note, apparently from the young, was answered by the parent (probably the hen), in a lower soothing tone. The whole of these uncouth and guttural notes have no bad resemblance to the croaking of the tree-frog, as to sound. This call and answer, uttered every morning, is thus kept up for several minutes in various tones, till the whole family, separated for the night, have met and satisfactorily recognized each other. These are, no doubt, migrating broods who have arrived from the North about the time stated for their departure by Mr.

Hutchins. By the first week in November their cackling ceases; and as they seem to migrate hither without delay, and with great expedition for a bird with such short wings, it is probable they proceed at once to the swamps of the Southern States.

This species is not as abundant as either the Virginia Rail or the Sora, but it is not so rare as many writers have supposed. It is such a skulker and hides so quickly that it generally escapes observation even when close at hand. The bird is a summer resident of New England and the Maritime Provinces, and has been taken in the Hudson Bay district. It is quite common in Ohio, and has been found nesting in Illinois. It winters in the Southern States.

BLACK RAIL.

PORZANA JAMAICENSIS.

CHAR. Head, neck, and lower parts dark slate or dusky; back rich brown; wings and tail brownish black, marked with white; belly and flanks barred with white. Length about 5 inches.

Nest. In a wet meadow or reedy marsh, hid amid the rank grass; a compactly made, deep cup of grass and weed stems.

Eggs. 8-10; dull white or creamy, marked all over with fine spots of reddish brown; 1.00 × 0.80.

This, the smallest of our Rails, was not mentioned by Nuttall, though it had been discovered long before his time, and was given by Audubon. It has always been considered a rare bird, being seldom found on the Atlantic coast, and only a few examples being seen north of New Jersey — in Connecticut and Massachusetts. In the western division of this Eastern Province it is more common, and goes somewhat farther north; a number of nests having been taken in northern Illinois. In habits this species does not differ materially from its congeners.

NOTE.—The SPOTTED CRAKE (*Porzana porzana*), an Old World species, occasionally visits Greenland.

The CORN CRAKE, or LAND RAIL (*Crex crex*), also an Old World species, occurs regularly in Greenland, and has been taken on Long Island and Bermuda.



AMERICAN COOT.

COOT. MUD HEN. MARSH HEN. MEADOW HEN. MOOR HEN.
CROW DUCK.

FULICA AMERICANA.

CHAR. General plumage dark slate, shading to dull black on the head, and to gray on the belly; edge of the wings and tips of the secondaries white; frontal shield and spots on the bill dark brown; feet greenish, toes with conspicuous lobes or "flaps." Length from 13 to 16 inches. The "frontal shield" is a horny plate which extends from the bill over the forehead. It is one distinguishing character of the Coots and Gallinules.

Nest. Amid the reeds or rank grass on the margin of a secluded pond or sluggish stream, sometimes on a knoll near the water, attached to the reeds, often floating on the water; a bulky affair of loosely arranged reeds or sedge-stems, scantily lined with grass, and placed on a high platform. This platform sometimes rests on the tops of the surrounding reeds, which are bent down to receive it.

Eggs. 6-1 (usually about 10); pale buff, profusely spotted with dark brown and lilac; size very variable, average about 1.90 × 1.40.

The Coot of America, so very similar to that of Europe, according to the season is found in almost every part of the continent, from the grassy lakes that skirt the Saskatchewan plains, in the 55th parallel, to the reedy lagoons of East Florida and the marshes of Jamaica. To the west, the species seems to inhabit the waters of the Columbia, in the remote Territory of Oregon. Mr. Say observed it also in the lower part of Missouri, and in Long's Expedition it was seen in Lake Winnipeg on the 7th of June. Mr. Swainson has also received specimens from the distant tableland of Mexico. We may therefore conclude almost with certainty that the Coot of America, indifferent to climate, dwells and breeds in every part of the North American continent, over a range of probably more than fifty degrees of latitude! Nocturnal in their habits, and dispersing themselves far and wide over every watery solitude, these birds seem in many places to have disappeared for the season, until they in large numbers, swelled by their prolific broods, and impelled at the approach of winter to migrate for food, now begin to show themselves in the lakes, pools, and estuaries in the vicinity of the sea, from which they gradually recede towards the South as the severity of the season compels them, being unable to subsist amidst the ice. In this way they proceed, accumulating in numbers as they advance, so that in the inundated and marshy tracts of Florida, particularly along the banks of the St. Juan, they are seen in winter, congregated in vast and noisy flocks. In the milder latitudes, their whole migrations will be limited to a traverse from the interior to the vicinity of the sea, while those which visit the wilderness of Upper Canada, where they are abundant in the summer, will probably migrate from twenty-five to thirty degrees every spring and autumn.

The Coots arrive in Pennsylvania about the beginning of October. They appear in Fresh Pond, Cambridge, about the first week in September. A pair took up their residence in this small lake about the 15th of April; and in June they are occasionally seen accompanied by their young. The nest, eggs, and manners during the period of reproduction are yet

unknown. Timorous and defenceless, they seek out the remotest solitudes to breed, where, amidst impassable bogs and pools, the few individuals which dwell in the same vicinity are readily overlooked and with difficulty discovered, from the pertinacity of the older birds in hiding themselves wholly by day. It is therefore only when the affections and necessities of the species increase that they are urged to make more visible exertions, and throw aside, for a time, the characteristic indolence of their furtive nature. We now see them abroad, accompanied by their more active and incautious offspring, night and morning, without exhibiting much timidity, the young sporting and feeding with careless confidence in their fickle element. They are at this time easily approached and shot, as they do not appear to dive with the same promptness as the European species.

The old birds, ever watchful and solicitous for their brood, with which they still appear to associate, when alarmed utter at times a sort of hoarse '*kruk*', which serves as a signal either to dive or swim away. At this season of the year Mr. N. Wyeth informs me that he has heard the Coot repeatedly utter a whizzing sound, which he can only compare to the plunge of large shot when fired into water. It might possibly be the small and bouncing leaps with which the associated young of the common species amuse themselves at almost all hours of the day. In East Florida, where they appear, according to Bartram, to assemble and breed in great numbers, they are very chattering and noisy, and may be heard calling on each other almost night and day. With us they are, however, very taciturn, though tame, and with many other birds appear to have no voice but for the exciting period of the nuptial season.

The Coots of Europe have many enemies in the predacious birds which surround them, particularly the Moor Buzzard, which not only destroys the young, but sucks the eggs to such an extent that notwithstanding their great prolificacy, they laying from twelve to eighteen eggs, the numbers are so thinned by depredation that not above one tenth escape the talons of

rapacious species. Indeed, it is only the second hatch, of about eight eggs, more securely concealed among the flags on the margins of pools, that ever survive to renew the species. The nest, secreted in this manner among the rank herbage, is placed on the surface of the water, but raised above it by piling together a quantity of coarse materials, in order to keep the eggs dry. In this buoyant state a sudden gale of wind has been known to draw them from their slender moorings, and nests have thus been seen floating on the water, with the birds still sitting upon them, as in the act of navigating over the pool on which they had resided. The female is said to sit twenty-two or twenty-three days; the young, now covered with a black down, quit the nest as soon as they are hatched, and are then cherished under the wings of the mother, and sleep around her beneath the reeds; she also leads them to the water, in which they swim and dive from the moment of their liberation from the shell.

When closely pursued in the water, the Coot sometimes makes for the shore, and from the compressed form of its body, though so awkward in its gait, can make considerable progress through the grass and reeds. When driven to take wing on the water, it rises low and with reluctance, fluttering along the surface with both the wings and feet pattering over it, for which reason, according to Lawson, in his "History of Carolina," they had in that country received the name of *Flusterers*.

The food of the American Coot, like that of the other species, is chiefly vegetable; it lives also upon small fluviatile shells and aquatic insects, to all which it adds gravel and sand, in the manner of common fowls. A specimen which I examined on the 19th of September had the stomach, very capacious and muscular, filled with tops of the water milfoil (*Myriophyllum verticillatum*), and a few seeds or nuts of a small species of bur-reed (*Sparganium*). From the contents of the intestines, which were enormous, aquatic vegetables appeared now to be their principal food.

In the month of November the Coot leaves the Northern and Middle States, and retires by night, according to its usual

habits, to pass the winter in the warmer parts of the Union, and probably extends its journeys along all the shores of the Mexican Gulf.

The Coot is still a common bird throughout the temperate portions of North America, and examples have been taken in Greenland and Alaska. It winters in the Southern States and southward through the West Indies and Central America.

NOTE. — The European COOT (*Fulica atra*) has been taken in Greenland.

PURPLE GALLINULE.

IXONORNIS MARTINICA.

CHAR. Back bright olive; wings of deeper green and shaded with blue; head, neck, and breast rich bluish purple; belly darker: frontal shield blue; bill red, tipped with yellow; legs yellow. Length about $13\frac{1}{2}$ inches.

Nest. In a marsh; fastened to rank grass or reeds, and hidden by the stems to which it is attached, — made of dried and fresh grass and reeds loosely arranged.

Eggs. 7-12 (usually about 9); pale buff or creamy, spotted chiefly around the larger end with reddish brown and lavender; 1.70 x 1.15.

This very splendid but incongruous species of Gallinule is in the United States a bird of passage, wintering in tropical America, and passing the summer, or breeding-season, in the marshes of Florida and the contiguous parts of the State of Georgia, where it arrives in the latter part of April, retiring south with its brood in the course of the autumn, and probably wintering, according to its habits, in the swampy maritime districts along the coast of the Mexican Gulf. An instance is given by Mr. Ord of one of these birds being driven out to sea and taking shelter on board of a vessel bound from New Orleans to Philadelphia, while in the Gulf. This happened on the 24th of May, and therefore could only have been a bewildered straggler accidentally carried out to sea without any intention of migrating; nor is it probable that a bird of such

short wings as those which characterize the genus would make the attempt to travel any considerable distance over sea while a route by land equally favorable for the purpose offered. Little reliance, therefore, is to be placed upon these accidents as proving the maritime migratory habits of birds. Several hundred miles from land, towards the close of last June (1833), in the latitude of the Capes of Virginia, the vessel in which I was sailing for the port of New York was visited by two or three unfortunate Swallows, who, overcome by hunger and fatigue, alighted for a while on the rigging of our ship, whence they, in all probability, proceeded farther out to sea and perished. At this season of the year they could not be migrating, but had wandered out upon the barren bosom of the deceiving ocean, and would, in consequence of exhaustion and famine, soon after fall a prey to the remorseless deep.

The Martinico Gallinule while in the Southern States frequents the rice-fields, rivulets, and fresh-water pools in company with the more common Florida species. It is a vigorous and active bird, bites hard when irritated, runs with agility, and has the faculty, like the Sultanas, of holding on objects very firmly with its toes, which are extremely long, and spread to a great extent. When walking, it jerks its tail like a common Gallinule. In its native marshes it is very shy and vigilant; and continually eluding pursuit, can be flushed only with the aid of a dog.

This richly appalled and beautiful bird is found regularly and is quite common in all the Southern and Gulf States, and stragglers are frequently seen northward to New England and westward to Wisconsin. The only examples reported from Canada have been taken in Nova Scotia and New Brunswick. These birds do not leave the United States in winter, as Nuttall supposed; they are found in the South throughout the year.

They are called "Sultanas" in Jamaica, where Mr. Gosse found them quite common: and this writer states that those he saw were extremely indifferent to his approach, allowing him to walk to within a few feet of where they were feeding, without manifesting any fear.

Audubon states that after the brood is hatched the family retires

from the vicinity of the pools and streams to the interior of the savannas; but towards autumn they return again to the margins, and at this later season they became shy and more vigilant.

These birds partake of a variety of food, their favorite diet being a mixture of water-snails and plantains.

FLORIDA GALLINULE.

COMMON GALLINULE. RED-BILLED MUD HEN. WATER HEN.

GALLINULA GALEATA.

CHAR. Uniform grayish black, the back tinged with olive brown, the belly paler than the breast; flanks striped with white; bill and frontal shield bright red, the bill tipped with yellow; legs greenish. Length about 13½ inches.

Nest. In a swamp or marsh, — a bulky and clumsily arranged affair of reeds or flags scantily lined with coarse grass. The nest is sometimes placed on a platform made by bending down the tops of the surrounding flags or rushes, or it is fastened to the stems of the flags or to the branches of a bush. Occasionally a nest is found suspended over the water upon which it floats as the tide rises, but usually the chosen situation is on a dry knoll.

Eggs. 7-13; ground color varies from brownish buff to creamy, spotted with dark brown; size variable, average about 1.85 × 1.25.

This species of Gallinule, so closely related to that of Europe, is common in Florida, in the Antilles, in Jamaica, Guadaloupe, and the isle of Aves, where it has to dispense with the use of fresh water. It is seen frequenting pools, lagoons, and streams, and extends over a great portion of the continent of South America. In the Middle and Northern States of the Union it appears to be quite accidental, though as a straggler it has been seen and shot as far north as Albany, in the State of New York. Its range to the north is therefore much more limited than its European analogue. Its voice is uncouth, but sonorous, and its cry or call resembles 'ka, 'ka, 'ka! Mr. Audubon met with this species in great numbers in Florida towards the source of the St. John's in the month of March.

This species is unknown in Canada or the northern parts of America.

Either this bird has increased the limit of its range since Nuttall stalked our marshes, or the modern bird-hunter is provided with increased power of observation, keener vision, and more accurate perception, for recent reports concerning the distribution of the Gallinule differ considerably from Nuttall's account.

It is true the Florida Gallinule is at home in the tropical portions of the continent, but it occurs regularly and in numbers throughout the warm temperate area north to New England and Canada, and west to the Mississippi valley. It is quite common on Cape Cod, and nests have been found near Fresh Pond, Cambridge, and in Vermont.

A few stragglers only have visited the Maritime Provinces; but the bird breeds in numbers in Ontario, and is not uncommon around Ottawa and Montreal. In Illinois and Wisconsin it is quite common. But it is a shy and retiring bird, leaving its haunts amid the rank marsh-grass and the rushes only when impelled by the migratory instinct, and then the bird steals off under cover of the darkness.

In an interesting contribution to "The Auk," Mr. Brewster tells us that the movements of this Gallinule when walking or swimming is peculiarly graceful, but when on the wing its appearance is ludicrously awkward.

The notes of the bird are numerous and of great variety of tone and compass, varying from a harsh scream to a low hen-like *cluck*. "Speaking generally," writes Mr. Brewster, "the notes were all loud, harsh, and discordant, and nearly all curiously hen-like." He adds, "I certainly know of no other bird which utters so many different sounds." Some of the notes are like a drawling *kré-ar-r*, *kré-ar-r*; or more rapidly uttered they produce a sound like *kr-r-r-r-r*, and are varied with *kruc-kruc*, or a low *kloc-kloc*. At times a note like *ticket-ticket-ticket* is heard, and again a single abrupt explosive *kup* like the cry of a startled frog.



RED PHALAROPE.

GRAY PHALAROPE. SEA GOOSE. WHALE BIRD.

CRYMOPHILUS FULICARIUS.

CHAR. Female in summer: above, black, the feathers of the neck and back with a rufous or buff margin; wings gray, tipped with white; cheeks white; bill orange; under parts reddish chestnut; legs and feet yellow; toes lobed. Male: duller, white on cheek less defined, and head streaked with rufous or buff. In winter the rufous tints disappear and the plumage of the upper parts becomes gray and the under parts white, while the bill turns black. Length about $8\frac{1}{4}$ inches.

Nest. On a knoll in the spongy margin of a pond or saline pool, — a slight depression in the peat or moss, scantily lined with grass, moss, or leaves.

Eggs. 3-4; olive buff or sea green, spotted with dark brown and purplish brown; 1.25×0.90 .

The Flat-Billed or Red Phalarope inhabits the whole Arctic Circle during summer, where, in the security of solitude, it passes the important period of reproduction. It is observed

In the north and east of Europe, in abundance in Siberia, upon the banks of lakes and rivers, and it extends its vernal migrations to the borders of the Caspian. These birds abound in the hyperboreal regions of America, breeding on the North Georgian Islands and on the remote and wintry coasts of Melville Peninsula. The late enterprising and scientific northern navigators, on the 10th of June, in the latitude of 68 degrees, saw a company of these daring little voyagers out at sea, four miles from land, swimming at their ease amidst mountains of ice. They are seen also by mariners between Asia and America. According to Mr. Bullock, Red Phalaropes are found common in the marshes of Sunda and Westra, the most northerly of the Orkney Isles, where they pass the breeding-season, and are there so tame, and so little alarmed by the destructive arts of man, as to suffer the report of a gun without fear, so that Mr. Bullock killed as many as nine of them without moving from the spot where he made the first discharge. When swimming in pools, this bird is seen continually dipping its bill into the water, as if feeding on some minute insects, and while thus engaged it will often allow of a very near approach. When disturbed these birds fly out a short distance only, like the Dunlins. Sometimes, though rarely, they are seen to approach the shore or the land in quest of food; but their proper element is the water, and more particularly that of the sea or saline pools.

The Flat-Billed Phalarope breeds around Hudson Bay in the month of June, soon after its arrival from its tropical winter quarters; for this purpose, it selects some dry and grassy spot, wherein it lays about four eggs of an oil-green color, crowded with irregular spots of dark umber-brown, which become confluent towards the obtuse end. The young take to wing in July or early in August, and they leave the inclement shores of their nativity in the month of September. At this period, as well as in the spring, a few stragglers visit the United States, where individuals have been occasionally shot in the vicinity of Philadelphia and Boston. These and other species are also seen in the autumn about Vera Cruz, where they are

sold with other game in the market. Their visits in England and Germany are equally rare as in the United States, and individuals have been known sometimes to stray into Switzerland, having been shot on the Lake of Geneva.

These interesting birds breed in the high Arctic regions and winter south to the shores of the Middle States. They are usually found on the sea or along the coast; but a number have been seen on the Great Lakes, and occasional examples have wandered to the Ohio valley.

Explorers have met with large numbers of these birds on the borders of the Arctic Ocean, and it is probable that few of them breed south of latitude 65°. They are exceedingly abundant in the Bay of Fundy during the migrations, and Mr. Boardman thinks a few pairs have nested in that vicinity. The nests were not discovered, but young birds were seen.

Among some peculiarities of the habits of this bird is the female's preference for conducting the courtship, which she carries on in a vigorous fashion of her own. After capturing her lord,—or, to be more exact, subduing her slave,—the female takes her ease, while the male attends to the domestic affairs and hatches the eggs. The female is much the handsomer of the two, and is also larger.

NORTHERN PHALAROPE.

RED-NECKED PHALAROPE. SEA GOOSE.

PHALAROPUS LOBATUS.

CHAR. Above, dark ash, paler on the head and rump, the back striped with rufous or buff; wings dusky with a white bar; tail brownish gray; chin white; breast and sides of neck chestnut; beneath, white; bill black, slender, and tapering; legs greenish. Length about 7½ inches.

In winter the prevailing color is grayish, the forehead and crown mostly white, and a line of dusky through the eyes.

The male is smaller than the female and of duller plumage, the rufous tint less conspicuous, and the colors less defined.

Nest. In a swamp or bog on the margin of a pool,—a slight depression in the peat scantily lined, and concealed amid a tuft of grass.

Eggs. 3-4; pale olive buff or sea-green, thickly covered by spots of dark brown; average size about 1.20 × 0.80.

The geographical range of the Hyperborean Phalarope, as its name implies, is nearly, if not quite, similar with that of the

preceding species. In summer it dwells and breeds generally within the Arctic Circle in both continents. It penetrates into Greenland, Iceland, and Spitzbergen, is abundant in the north of Scotland, in the Orkneys and Hebrides, is equally prevalent in Lapland, on the northern coasts of Siberia, and between Asia and America, a transient visitor on the shores of the Baltic, and seen only accidentally in Germany and Holland. It sometimes, though very rarely, penetrates inland as far as the lakes of Switzerland, and in its natal regions visits lakes of fresh as well as salt water. At the period of their migrations, in May and August, these birds betake themselves to the open sea, particularly in autumn, and are then gregarious, assembling in flocks; at other times they are seen in pairs, and, like the preceding, have a constant habit of dipping the bill into the water, as if in the act of collecting the minute mollusca which may be floating in it. They are also often seen on the wing, and are said by Willoughby to utter a shrill, clamorous cry, or twitter, resembling that of the Greater Tern.

In Arctic America, where this Phalarope resides in the mild season, it is seen to seek out shady pools, in which it swims with peculiar ease and elegance, its attitudes much resembling those of the Common Teal.

These birds arrive to breed around Hudson Bay about the beginning of June, and old and young are seen to frequent the sea-coast previous to their departure, which takes place often soon after the middle of August, on the 16th or 17th of which they are occasionally killed in different parts of Massachusetts Bay and near Newport in Rhode Island. They likewise probably pay a transient visit to the coast of New Jersey, as they do also, at times, to Long Island, and finally repair to the mild shores of the Mexican Gulf, being seen in the markets of Mexico and Vera Cruz. Migrating probably by sea and outside of the land, they but rarely visit the coast in any part of the United States. Straggling families of the old and young are met with in the vicinity of Boston nearly every year about the beginning of May and the middle of August, commonly in salt-water pools near the sea, and, as usual, they

are seen perpetually dipping their bills into the water, or with a reclined neck swimming and turning about in their favorite element, with all the ease and grace of a diminutive swan. In Iceland Hyperborean Phalaropes arrive about the middle of May; and waiting the complete thawing of the ice, they are seen, for a time, assembled in flocks out at sea several miles from the shore. This gregarious association breaks up early in June, when seceding pairs retire to breed by the mountain ponds. They are very faithful to their mates and jealous of intrusion from strangers of the same species, on which occasions the males fight with obstinacy, running to and fro upon the water at the time even when the females are engaged in incubation. When the young are exposed to any danger, the parents are heard to express their alarm by a repeated '*prip*, '*prip*. At the commencement of August, as in the glacial regions of America, the whole retire to the open sea previous to their migration to the South, and by the end of that month they are no longer to be found in that island.

The food of this species is said to be chiefly worms, winged insects, particularly diptera, and such other kinds as frequent the surface of the water. In specimens which I have examined, the stomachs contained some small gravel and the remains of aquatic coleopterous insects, as the different kinds of small water-beetles. These individuals, which were young birds beginning to moult, had therefore varied their fare by a visit to some fresh-water pool or lake, and like their kindred Sandpipers, had landed on the shore in quest of gravel. They were likewise fat and very finely flavored. The old birds, hunted as food by the Greenlanders, are said, however, to be oily and unpalatable, which may arise probably from the nature of the fare on which they subsist in high latitudes, — if the birds alluded to are not, in fact, the small Petrels instead of Phalaropes; though the inhabitants using the skins medicinally, to wipe their rheumy and diseased eyes, seems to decide pretty nearly in favor of the present bird.

In the spring of 1832, about the beginning of May, so dense a flock was seen on the margin of Chelsea Beach, in this

vicinity, that nine or ten individuals were killed out of it at a single shot; these were nearly all old birds, and on being eaten proved quite palatable. Mr. Audubon informs me that in the month of May last (1833), he met with flocks of these Phalaropes about four miles out at sea off the Magdalen Islands, where they are known to the fishermen by the name of "Sea Geese," appearing more or less every year. At this time they were in very dense flocks of about one hundred together, so close as nearly or wholly to touch each other. On being approached they were very shy and wild, and as they rose to fly, in the manner of the Sandpipers, uttered a faint, clear cry of 'twee 'twee'. Like 'Tringas, too, they alight on the shore or the ground, and run with agility. They also at times settle on the driftweed and *Fuci* in order to glean up any insects which may occur. They squat on the ground like Snipes.

It is remarkable enough that all these flocks consisted of birds of both sexes assembling to breed and in imperfect plumage. In none were the sides and front of the neck wholly red. They had a broad patch of red below the ears, not extending in front, and the blackish gray feathers of the back and scapulars were edged, in the latter, nearly round with pale dull rufous. The females were *paler* in all parts, the scapulars merely edged with whitish rufous. The *brightest* of these birds answers to Temminck's description of the female of the species, while Bonaparte asserts that the females are always much *brighter* or *redder* than the males in their most complete plumage. We have, therefore, the following distinct stages of appearance in this species: The *young of the year*; the *young of the second year*, differing in the appearance of the sexes; the *adults of both sexes* (probably not then wholly alike); and finally the *gray livery of winter*, distributed *according to the variations in the preceding plumage*. We shall then have, at this rate, six or seven different states of plumage to this single species of Phalarope.

This species breeds in the Far North, and is met with off our coasts as the flocks journey to and from their winter quarters in the tropics.

I have seen the birds only as they have loitered awhile in the Bay of Fundy; but they gave me no grounds for thinking them the wild and shy things Audubon tells about. I thought them exceptionally heedless of my presence, — confiding, in fact, — for I frequently ran into a flock that barely made way for my boat. Mr. William Jefferies makes a similar report of the flocks he saw off Swampscott in August, 1890.

The females of this species are rather more decorous than are some of their cousins, though they do not believe in living alone if a bit of management will secure a partner. but they are help-mates, — they share in the wearisome task of incubation and in caring for the youngsters: and their consideration and their constancy, which is unimpeachable, is rewarded by a chivalrous devotion.

WILSON'S PHALAROPE.

SEA GOOSE.

PHALAROPUS TRICOLOR.

CHAR. Summer: above, dark ashy gray, paler on the crown and rump; throat, cheeks, and line over the eyes white, sides of the neck rich chestnut; wings brownish gray, outer feathers (primaries) dusky; beneath, white, the breast tinged with pale chestnut; bill long, slender, and acute, and of black color. Length $9\frac{1}{2}$ inches.

In winter the plumage is ashy gray and lacks the rufous tints.

The female is larger and more highly colored and much more beautiful than the male.

Nest. In a marsh or wet meadow adjacent to a lake or pond, — a slight depression scattered in the soil amid a tuft of grass, and sparsely lined with grass.

Eggs. 3-4; grayish buff or dark buff, thickly spotted with brown of several shades; 1.30×0.90 .

This elegant Phalarope, first noticed by Wilson in a museum at Albany, was afterwards dedicated to his name and memory when he was no longer conscious of the honor. Hurried to the tomb from amidst his unfinished and ill-requited labors, his favorite Orpheus and Wood Thrush pour out their melody in vain. The Blue Bird, which hastens to inform us of the return of spring and of the approach of flowers, delights no longer the favorite of their song. Like his own beautiful and strange

bird, now before us, his transient visit, which delighted us, has ended; but his migration, no longer to be postponed, has exceeded the bounds of the earth, and spring and autumn, with their wandering hosts of flitting birds, may still return, while he, translated to the Elysian groves, will only be remembered in the thrill of the plaintive nightingale.

Wilson's Phalarope, unlike the preceding, has no predilection for the ultimate range of the Arctic Circle, confining its residence, consequently, to the shores of America; it is unknown in summer beyond the 55th parallel, passing the period of reproduction on the plains of the Saskatchewan, being also a stranger to the coasts of Hudson Bay. Taking the interior of the continent for its abode, it is not uncommon on the borders of lakes in the vicinity of the city of Mexico.

From the structure of its legs and feet this remarkable species, so distinct from the others, appears more suited for a wading or walking than an eminent swimming bird. In the United States it can only be considered as a straggler, of which a specimen has been obtained near Philadelphia in May, and another in the State of New York. As yet we have never met with it in this vicinity.

The "Swimming Sandpiper," as this bird has been called, — a name that describes it precisely, — is restricted chiefly to the interior, though stragglers have been taken on the shores of New England and the Provinces. It is now known to breed abundantly in Illinois, Wisconsin, Iowa, and Dakota, and northward to the Saskatchewan valley. In winter the flocks range to Brazil and Patagonia.

In habits the bird more closely resembles the Sandpipers than does its congeners, seldom swimming except when wounded, and wading knee-deep to glean its food. The female, however, with true Phalaropian scorn for the proprieties, manages her courtship, — and manages too her reluctant lover, — and after a brief — very brief — honeymoon, she resigns charge of domestic arrangements to her henpecked partner, who meekly sits on the eggs until they are hatched.



COMMON TERN.

WILSON'S TERN. SEA SWALLOW. SUMMER GULL. MACKEREL GULL.

STERNA HIRUNDO.

CHAR. Mantle deep pearl gray; crown and nape black; rump and tail white; beneath, pale gray, shading to white on the throat; bill and legs orange red. Tail deeply forked. Length 13 to 16 inches.

In winter the under parts are pure white, and the crown is mottled with white.

The young birds have bars of brown on the mantle, and the crown is of a brownish tinge; also, the bill and legs bear a yellow tinge in summer, and turn to nearly black in winter.

Nest. On the sand or amid shingle or short herbage near water, — a slight depression, sometimes sparsely lined with grass or weeds; occasionally a rather bulky nest is made of straw or sea-weed.

Eggs. 2-5 (usually 3); the ground color varies, olive and buff tints prevailing; the marking also varies, but is always profuse and of several shades of brown; the size averages about 1.60×1.15

The Common Tern is an inhabitant of both continents, being met with on the coasts of most parts of Europe as far

north as the ever-inclement shores of Greenland and Spitzbergen; it is also found on the Arctic coasts of Siberia and Kamtschatka. In the winter it migrates to the Mediterranean, Madeira, and the Canary Islands. In America it breeds along all the coasts of the Northern and Middle States, and penetrates north into the fur countries up to the 57th parallel of latitude. It also breeds on the sand-bars of the Great Western Lakes, being frequent in those of Erie, Huron, and Superior. In short, no bird is more common along the sea-coasts and lakes of the whole northern hemisphere, within the limits of cool or moderate temperature.

These Terns arrive on the coast of New Jersey about the middle of April, and soon after they are seen on the shores of New England, where they are known by the name of the Mackerel Gull, appearing, with the approach of that fish, towards the places of their summer residence. In New York they are dignified, for the same reason, with the appellation of the Sheep's-Head Gull, prognosticating also the arrival of that dainty fish in the waters of the State. About the middle of May, still gregarious as they arrive, they commence with the cares of reproduction. Artless in contrivance, the Terns remedy the defect of a nest by selecting for their eyries insulated sand-bars, wide beaches, but most commonly desolate, bare, and small rocky islets, difficult of access, and rarely visited by anything but themselves and birds of similar habits. A small hollow scratch on the surface of the shelving rock, with the aid of a little sand or gravel merely sufficient to prevent the eggs from rolling off, are all the preparations employed by these social and slovenly birds. The eggs are left exposed purposely to the warming influence of the sun, the parent sitting on them only in the night or during the existence of wet and stormy weather. They are about $1\frac{3}{4}$ inches long by $1\frac{1}{4}$ in width, of a dull yellowish or pale whitish olive, with dark-brown blotches and spots, and others of a pale hue beneath the surface, the whole often disposed in a sort of irregular ring towards the obtuse end. Other eggs, again (as if of a different species of bird), are spotted almost equally all over.

From the variety in the appearance of the eggs, it is pretty obvious that the females indifferently and frequently lay in each other's nests, in the manner of our common fowls in a state of domestication. Though to all appearance thus abandoned to accident, the nests are constantly under the surveillance of the Terns, and the appearance of an intruding visitor on the solitary spot chosen for their breeding retreat fills the whole neighboring troop with dismay and alarm; and in defence of their young they are very bold, clamorous, and resentful, sweeping round and darting down so close to the visitor as sometimes to touch his hat, making at the same time a hoarse and creaking sound, and occasionally uttering a plaintive, long-drawn *'pee-woy*; and when much irritated and distressed by the fall of their companions or their brood by the gun, we hear a jarring *k'k, k'k, k'k*, as well as a piping plaint; and at times they utter a bark almost like so many puppies. On a rocky islet near Nahant, in the vicinity of Boston, known by the name of the Egg Rock, thirty or forty pairs annually breed, and among these, others are also distinguished by the name of *'pee-boos*, from the sound of their usual note.

The young are often hatched at intervals of a day or two from each other, and are carefully fed and watched for several weeks before they are in a condition to fly. At first they are fed on small fish and insects, such as grasshoppers and beetles, the hard and indigestible parts of which food appearing to be rejected by the bill in the manner of rapacious birds. The young are afterwards fed without alighting, as they skim over the spot; and then they merely drop the fish among the brood, when the strongest and most active are consequently the best served. The young at length launch out into the marshes for themselves in quest of insects; while thus engaged, at the warning voice of their parents, or the approach of an enemy, they instantly squat down, and remain motionless until the danger be over. As soon as the young are able to fly, they are led by the old to the sand shoals and ripples where fish are abundant, and occasionally feeding them, they learn by example to provide for themselves.

While flying, the Tern exhibits uncommon watchfulness; beating the air with a steady wing, and following the track of the vessel with an easy flight, this bird may be observed, with quick eye and moving head, minutely scanning the haunts and motions of its finny prey. At the approach of winter it retires south of the limits of the Union.

In America this Tern is chiefly confined to the Eastern Province, and is a common bird throughout its range.

FORSTER'S TERN.

STERNA FORSTERI.

CHAR. Above, pearl gray, paler on the wings and tail; crown and nape black; beneath, white; bill orange, the terminal third blackish; legs and feet orange; claws black. Length 12 to 15 inches.

In winter the head and neck are white, the nape is tinged with gray, and on the side of the head is a broad black band.

Nest. On a marshy margin of lake or stream, or on a grassy island; loosely made of reeds and sedges, and lined with grass.

Eggs. 2-3; varying from pale buff or olive to olive brown, marked brown and pale lilac; average size about 1.80 × 1.25.

Nuttall wrote in a note to the Common Tern that the bird described by Richardson as *Sterna hirundo* appeared to be a distinct species, distinguished by the pearl-gray tail and other characters, and he proposed for this probable new species the name of *Sterna forsteri*, in honor of the eminent naturalist and voyager who first suggested these distinctions. Having been recognized by naturalists as a valid species, the name thus proposed has been adopted for it.

In appearance, as in manners, the bird is very similar to the Common Tern, though the present species displays a decided preference for a grass-covered nesting site, and is inclined to remain near fresh water.

It is a rare bird along the Atlantic coast, excepting at Cobb's Island, off Virginia, but is abundant on the inland waters of the west, north to Manitoba. A number nest every year on the St. Clair Flats, Ontario; but the only examples that have been taken in Canada to the eastward of that point were obtained at Lake Mistassini, Quebec, and on Prince Edward's Island.

In winter the flocks range southward as far as Brazil.

ROYAL TERN.

CAYENNE TERN. GANNET STRIKER.

STERNA MAXIMA.

CHAR. Mantle pearl gray; tail with less of the bluish tint; rump nearly white; crown and nape black; primaries silvery gray, the inner webs with a dark stripe next the shaft, and inner edge white; under parts white; bill orange; legs and feet black. Length 18 to 21 inches.

After the mating season, — the spring months, — the crown becomes more or less white, and in winter the nape also has white feathers mixed with the black.

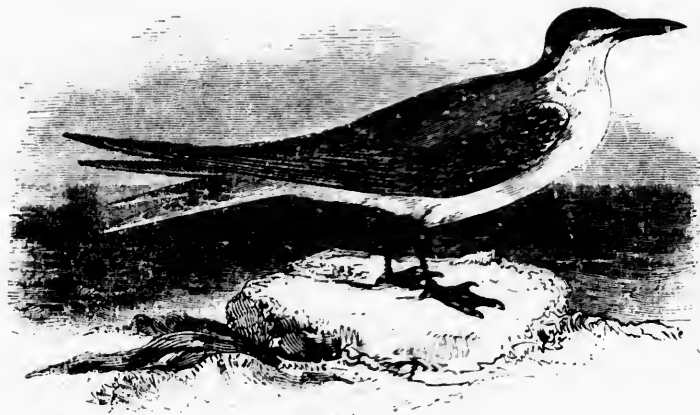
Nest. No attempt is made to construct a receptacle for the eggs, which are laid on the sand of a sea-beach or on the edge of a marshy lagoon.

Eggs. 1-4; buffy or yellowish drab, marked with brown or pale lilac; average size about 2.65×1.75 .

Nuttall makes bare mention of this handsome bird, — *la grande Hirondelle-de-mer de Cayenne* of Buffon, — knowing nothing of its habits or distribution, and in error gives *S. caspia* as a synonym; but the Caspian Tern is a larger bird and quite distinct. Our bird is not exclusively American, as Nuttall supposed, for Dalgleish found it on the west coast of Africa. In the United States it is confined chiefly to the tropical and warm temperate regions, seldom ranging north of latitude 40° , though a few examples have wandered to the Great Lakes and as far up the coast-line as Massachusetts.

The centre of its abundance is along the Gulf shore, the birds being especially numerous in Florida and Texas, though they are also rather common at Cobb's Island, Virginia. Mr. Chapman says that "during the winter it is about the only Tern one sees in Florida waters. It is a strong active bird on the wing, and a reckless dashing diver."

The name of "Gannet-striker" — often shortened to "Gannet" — has been given to the Royal Tern from its Gannet-like performance of descending upon its prey from the wing, darting down perpendicularly and swiftly, plunging under the surface of the water, but soon reappearing, and mounting into the air again with considerable difficulty.



GULL-BILLED TERN.

MARSH TERN.

GELOCHELIDON NILOTICA.

CHAR. Upper parts pale pearl gray; crown and nape black; under parts white; bill short, stout, gull-shaped, and of black color; legs and feet dusky. Length about 13 to 15 inches.

In winter the crown and nape are pale gray, and a bar of darker gray runs through the eyes.

Nest. A slight depression in the sand of a sea-beach or river-bank, sometimes amid the low grass on the margin of a marsh; occasionally lined with grass or sea-weed.

Eggs. 3-4; light buff or pale olive, marked with brown and lavender; average size about 1.80 \times 1.30.

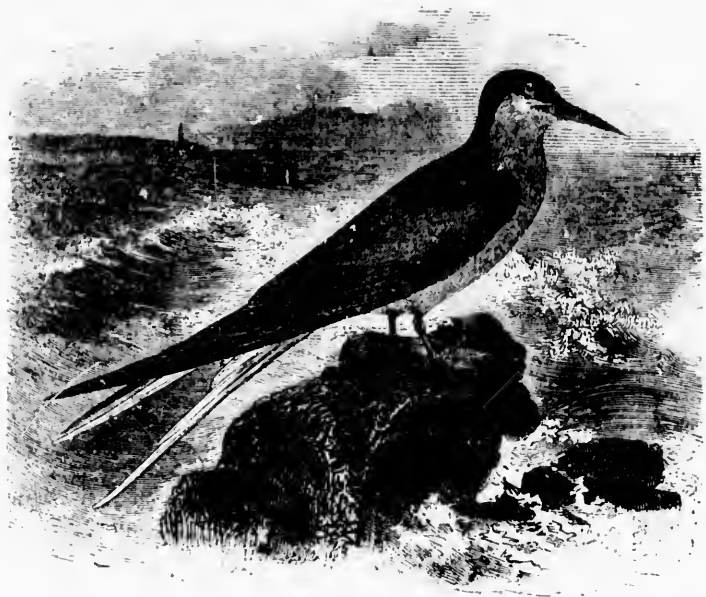
This bird, though rare in England, is very common in eastern Europe, particularly in Hungary and on the confines of Turkey. In the new continent it inhabits the whole coast of the Atlantic from New England to Brazil. In Europe it affects the covert of rushy marshes in the vicinity of the Great Lakes, and rarely ever visits the sea-coast or the ocean. It has also been seen inland, in Missouri, by Mr. Say, and probably penetrates still farther into the interior to the coasts of the Great Lakes of the North American continent. Wilson first observed these birds on the shores of Cape May, in New Jersey, where parties were engaged darting down like Swal-

flies over the salt-marshes, in quest of some aquatic insects or spiders which occur upon the surface of the water. Their food while here appears wholly composed of insects; in Europe also their fare is similar, and they feed upon lepidopterous insects or moths as well as other kinds, showing indeed by this peculiarity of appetite their independence on the produce of the ocean, and their indifference to salt water as preferred to fresh.

The Marsh Terns keep apart by themselves, and breed in company on the borders of the salt-marshes among the drift-grass, preparing no artificial nest, laying three or four eggs of a greenish olive spotted with brown. The voice of this species is sharper and stronger than that of the Common Tern.

This Tern is common along the Atlantic and Gulf coasts of the Southern States, breeding as far north as Southern New Jersey, and occasionally examples wander to Long Island and the Great Lakes. One has been taken in Massachusetts, and one in the Bay of Fundy.

Though not a fish-eating Tern, this bird is rarely found away from the sea-shore in America. It utters a variety of notes, the most common being fairly represented by the syllables *kay-wek*, *kay-wek*. One note is described as a laugh, and is said to sound like *hay-hay-hay*.



ARCTIC TERN.

STERNA PARADISEA.

CHAR. Mantle pearl gray; darker on the wings; rump and tail white; tail deeply forked; lower parts gray tinged with pearl gray almost as dark as the mantle; paler on the throat; bill and feet deep carmine. Length 14 to 17 inches.

In winter the lower parts are whiter, and the crown has more white than black feathers; also the bill and feet are dusky.

Nest. On the sand of a sea-beach, often amid shingle or drifted seaweed; sometimes a slight hollow sparsely lined with grass or weed-stems.

Eggs. 2-4; not easily distinguished from those of *S. hirundo*, but usually of a darker ground color and more heavily marked; ground color varies from buff to buffish brown, and olive to olive brown, the markings of several shades of brown; average size about 1.55×1.15 .

The name of this bird — like the names of too many other species — is misleading; for while the bird ranges through the Arctic region and nests have been discovered as far north as latitude 82° , yet numbers breed on the islands of the Bay of Fundy and the coasts of Maine and Massachusetts. It is said to have been abundant in the last-named State some years ago.

The peculiar distribution of this species, and the supposition that the flocks never migrate down the shores of the Pacific, have led some naturalists to suggest that the birds were originally confined to the Atlantic Ocean, though ranging on both its eastern and western shores. The breeding area, they say, was gradually extended east and west, one division of the birds going off along the northern shore of America, the other across the end of Europe and Asia, advanced flocks of each division finally meeting at Bering Sea. But at the approach of winter these flocks separated at that point, and ignoring the Pacific route to a milder climate, they followed "hereditary instincts" and returned to the Atlantic, each division migrating along its own path and wintering on its own chosen shore,—the flocks of one wing ranging to the Middle States, the others to the Canary Islands.

The hypothesis is interesting and the facts are in the main correct: but it has been strongly hinted that the hypothesis has been cruelly disturbed by the birds themselves,—they have turned up in California. The hypothesis should not, however, be abandoned because a few individuals have forsaken the traditions of their race,—that is a common weakness of those who "go west." Enough Arctic Terns still follow the ways of their fathers when migrating, to prove the strength of this inherited tendency.

In habits as well as in general appearance and manners this species differs but slightly from the Common Tern. Our bird is perhaps more graceful on the wing, though both fly with wonderful grace and ease, and the Arctic Tern displays more boldness in defence of its young or of a wounded companion. It seems utterly fearless, and will advance so close as to strike with its pinions a hand that menaces its young; and when a colony is invaded by any marauder, the Arctic Tern is the first to lead an attack upon the intruder, and the attack is so fierce that the colony is usually saved.

The Arctic Terns frequent rocky islands and secluded portions of the mainland, and in these localities the birds gather in large communities. They may be seen sitting on a rock or stump, watching for their prey, in Kingfisher fashion. They float buoyantly on the water, but rarely dive beneath the surface.

Mr. Brewster considers their notes vary little from those of the Common Tern though they can be distinguished. The usual cry of the Arctic Tern resembles that of its congener, "but is shriller, ending in a rising inflection, and sounding very like the squeal of a pig."

CABOT'S TERN.

SANDWICH TERN.

STERNA SANDVICENSIS ACUFLAVIDA.

CHAR. Upper parts pale pearl gray, much paler on rump and tail; tail deeply forked; crown and nape black; under parts white tinged with pink; bill black tipped with pale buff; legs and feet black. Length 14 to 16 inches.

Nest. A slight hollow scratched in the sand of a sea-beach or on a grassy island; sometimes lined with grass or dry sea-weed.

Eggs. 2-4 (usually 3); ground color varies from white through cream color to brownish buff; sometimes tinged with olive; the markings are varied, but always profuse, and of several shades of brown and pale gray; size variable, average about 2.00×1.40 .

Few species have a wider geographic range than the Sandwich Tern. It was first observed in England by Mr. Boys, of Sandwich, where it is not uncommon, and was afterwards published by Latham. It is readily confounded with the Common Tern (*Sterna hirundo*), but is superior in size, besides possessing other differences; it is rather rare on other parts of the English coast. It is believed to breed on the shores of Sandwich, and retires south in autumn, where it is probably afterwards seen migrating to the coast of Africa to pass the winter, and the young birds have been brought from the distant shores of New Zealand. According to Temminck it is very abundant in the isles of North Holland, and chiefly frequents the sea-coast, though sometimes it has been known to wander into the interior and visit fresh waters. In the Leverian Museum there existed, some years ago, a specimen of the young bird from South America; but it was left for our indefatigable friend Audubon to discover this interesting cosmopolite within the boundary of the United States. In 1832 he with his party obtained a considerable number of specimens in summer plumage during the month of May in East Florida, and they were particularly abundant in the vicinity of Indian Key, about thirty miles from Cape Sable. In this place in the usual manner of the genus they breed together in large communities.

Cabot's Tern differs but slightly in coloration of plumage from the Sandwich Tern of England; but our bird is confined to the tropical and warm temperate regions, occurring in numbers no farther north than Florida, though occasionally represented by a wanderer along the coast even to Massachusetts. It is pre-eminently a sea-bird, and is rarely found inland.

To write of the bird's habits would necessitate a repetition of what has been said of others of this group; for Cabot's Tern displays little originality or individuality in its methods, though it may be credited with great power of sustained flight, and more than many of the Terns deserves the name "Sea Swallow," so generally applied to the entire group; but instead of pursuing flies it preys solely upon fish. Its strength of wing and skill enable it to outride the severest storms, and flocks of these birds may be seen dipping into crested waves or skimming over angry breakers to seize the prey that may be brought to the surface by the gale.

ROSEATE TERN.

STERNA DOUGALLI.

CHAR. Upper parts delicate pearl gray, paler on the tail; crown and nape deep black; lower parts delicate rose pink, which fades to white after death; bill black; legs and feet red; wings short, primaries dusky; tail long and deeply forked. Length about $15\frac{1}{2}$ inches.

Nest. A slight hollow in the sand of a sea-beach or barren sea-island, often amid the coarser shingle, sometimes sparsely lined with beach-grass or sea-weed.

Eggs. 2-4 (usually 3); ground color varied from light to dark buff and pale to deep olive; profusely and irregularly marked with several shades of brown; average size about 1.55×1.15 .

Eggs of the Common, Arctic, and Roseate Terns are too much alike to be distinguished. Those of the present species are said to be slightly lighter in color as a rule.

The Roseate Tern, so frequently associated with and confounded in the character of the Common Tern, is another species common to the colder and temperate parts of both continents, being frequent upon the coasts of Scotland and England, particularly the former. It is also found in Norway, and probably also upon the borders of the Baltic, visiting the northern coasts of the ocean in small numbers,

associated with flocks of the Great Tern. The particular places of resort for the present species, according to Dr. McDougal, are two small, flat, and rocky islands in the Firth of Clyde called Cumbrae Islands, chiefly about Milford Bay. On these islands the Common Tern swarms to such a degree that it was scarcely possible to step without treading upon the young birds or eggs. The new species here described was shot by accident, without its being distinguished until it lay dead upon the ground, when the Doctor's attention was attracted by the beautiful pale roseate hue of the breast. There did not here appear to be more than about one in two hundred of the present with the Common Tern; but they were at length easily singled out by the comparative shortness of their wings, whiteness of their plumage, and by the elegance and slowness of their aerial motion, often sweeping along or resting in the air almost immovable, like the soaring of a Hawk; and they were also distinguishable by the comparative inferiority of their size.

In the United States these birds are sparingly seen with the Common Tern, as I have obtained an individual on the coast at Chelsea Beach; and they may breed on the neighboring isle of Egg Rock or in similar places in the temperate parts of the Union.

This beautifully tinted and graceful bird is of rather southern *habitat*. only a small number breeding northward of southern Massachusetts on this side of the Atlantic, though a few examples have wandered along the coast as far as the Bay of Fundy. It is almost exclusively a bird of the open ocean, seldom even frequenting the salt-lagoons; but several have been captured on the Great Lakes. Large numbers once gathered at Muskegat Island, one of the Nantucket group; but of late years they have shared the fate of all their kindred and been slaughtered by milliners' assistants that their wings might adorn my lady's hat, until now very few remain. Says William Brewster, writing of Muskegat: "Were it not for man, — who, alas! must be ranked as the greatest of all destroyers, — the Terns would here find an asylum sufficiently secure from all foes." He graphically tells of the shooting of hundreds of the birds by yachting parties, "either in wanton sport or for their wings, which are presented to fair companions;" and adds: "Then the

graceful vessel spreads her snowy sails and glides blithely away through the summer seas; all is gayety and merriment on board. But among the barren sand-hills, fast fading in the distance, many a poor bird is seeking its mate, many a downy orphan is crying for the food its dead mother can no longer supply, many a pretty speckled egg lies cold and deserted. Buzzing flies settle upon the bloody bodies, and the tender young pine away and die. A graceful, pearl-tinted wing surmounts a jaunty hat for a brief season, and then is cast aside, and Muskegat lies forgotten, with the bones of the mother and her offspring bleaching on the white sand. This is no fancy sketch; all the world over the sad destruction goes on. It is indeed the price of blood that is paid for nodding plumes. Science may be, nay, certainly is, cruel at times: but not one tithe of the suffering is caused by her disciples that the votaries of the goddess Fashion yearly sanction."

LEAST TERN.

SILVERY TERN. LITTLE STRIKER.

STERNA ANTILLARUM.

CHAR. Upper parts pale pearl gray of a silvery tint; crown and nape black, the forehead with a patch of white; outer wing-feathers dusky; under parts white; bill yellow, tipped with black; legs and feet orange. Length about 9 inches.

Nest. A slight hollow in the sand of a sea-beach.

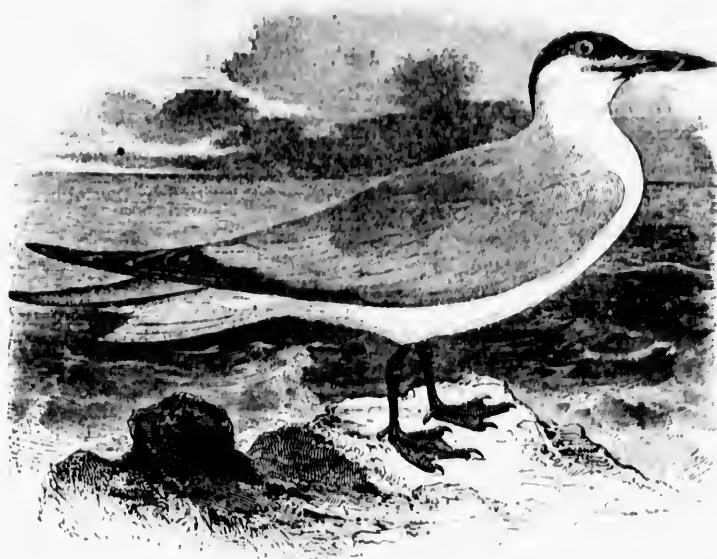
Eggs. 2-4 (usually 3); pale to deep buff, sometimes tinged with olive, profusely blotched with brown and lavender; average size about 1.25 X 0.95.

The Silvery Tern, apparently of Temminck, and the Lesser Tern of Wilson, is an inhabitant of the American continent, and was first detected as distinct from the European species by Prince de Neuwied, in Brazil. In the United States it arrives from its hybernal retreat later than the Common Tern, and is not met with so far to the north, being unknown in the Canadian fur countries. These birds are, however, common in the Middle and New England States, being frequently seen coasting along the shores or over pools and salt-marshes in quest of the insects and small shrimps which constitute their favorite fare; they also occasionally dart down upon small fish

and fry, hovering, suspended in the air, for a moment over their prey, like so many small Hawks, and with equal promptness dash headlong into the water after it, seizing it with the bill, as the feet are incapable of prehension. The Silvery Tern sometimes makes extensive incursions along the river courses, and has been shot several hundred miles from the sea, its principal place of residence.

In the latter end of May or beginning of June the female commences laying. The eggs are merely deposited in a slight scratch in the sand, and left to hatch in the heat of the sun; the bird, as usual, sitting on them only during the night and in wet and stormy weather. On approaching their breeding-places the old birds assemble in crowds around the intruder, and after a good deal of vociferation, flying round in wide circuits, they often approach within a few yards of one's head, squeaking almost like so many young pigs, and appear to be very irritable and resentful. At other times, when not excited or alarmed, they are tame and unsuspecting, particularly the young birds, often heedlessly passing the spectator within a few yards while tracing the windings of the shore in quest of their prey.

This is a bird of the tropical and warm-temperate regions, breeding chiefly from the Middle States southward, and wintering in Central America. The Nantucket Islands were a favorite resort some years ago, but few examples are found there now. Occasionally stragglers wander along the coast as far as Labrador, and a few have been seen on the Great Lakes and in Minnesota. Its voice is described as "a sharp squeak, much like the cry of a very young pig following its mother."



CASPIAN TERN.

GANNET STRIKER.

STERNA TSCHEGRAVA.

CHAR. Mantle pale pearl gray; tail and wings silvery; crown and nape black; under parts white; bill red, tipped with black; legs and feet black. In winter the black cap is streaked with white. In immature birds the upper parts are light gray mottled with brownish gray; bill yellowish brown; legs and feet brown. The largest of the Terns. Length 21 inches or more.

Nest. A slight hollow in the sand, sometimes lined with a little grass or sea-weed.

Eggs. 2-3; buff of various shades, sometimes tinged with olive, marked with brown and lavender; average size 2.60×1.75 .

This Tern received its name from Pallas, who discovered it on the shores of the Caspian Sea. It was first described in 1770, but was not known to the earlier American naturalists, Baird's work of 1858 being the first in which its name appears.

It is not abundant in this country, or indeed in any country excepting in a few localities, though cosmopolitan in its distribution

and ranging over inland waters as well as on the sea. It has been found breeding on Cobb's Island, Virginia, but along the New England shores it is seen in the spring and autumn chiefly, indicating a Northern nesting ground, though few specimens have been taken in the Arctic regions. It is said that nests have been taken on the shores of Texas and in Great Slave Lake, — which would give the bird an extensive breeding area, though the nesting sites are in widely separated localities. It might almost be said of this bird that it ranges over the entire globe, and breeds throughout its range.

The cry of the bird is loud and harsh, resembling the syllables *kay-owk*, or *key-rak*; though when a nesting site is menaced, or a pair meets in contention for a coveted mouthful, the cry is reduced to a sharp *kok*, or *kak*, or *kowk*.

The Caspian Tern preys chiefly on fish; but several naturalists have reported finding the remains of eggs and young birds in its stomach.

NOTE. — A few examples of TRUDEAU'S TERN (*Sterna trudeaui*), a South American species, have wandered north as far as Long Island; and the BRIDLED TERN (*S. anæthetus*), also a tropical bird, has been taken off the coast of Florida.

SOOTY TERN.

STERNA FULIGINOSA.

CHAR. Upper parts sooty black; forehead, outer tail-feathers, and under parts white; bill, legs, and feet, deep black. Length about 16 inches.

Nest. A slight hollow in the sand of an open sea-beach; sometimes amid the thicket of herbage bordering the beach.

Eggs. 1-3 (usually 1); white to pale buff, spotted with reddish brown and lilac; average size 2.00 × 1.40.

These Terns generally inhabit the tropical seas, being widely dispersed into either hemisphere. On the Isle of Ascension they breed in swarms. The flocks which possess the various parts of the island, perpetually breeding, in this mild latitude were found laying at different times. In some places the young were hatched and grown, in others newly laid eggs were seen. They uttered a sharp and shrill cry, and were so fearless of the men who visited the island as to fly almost

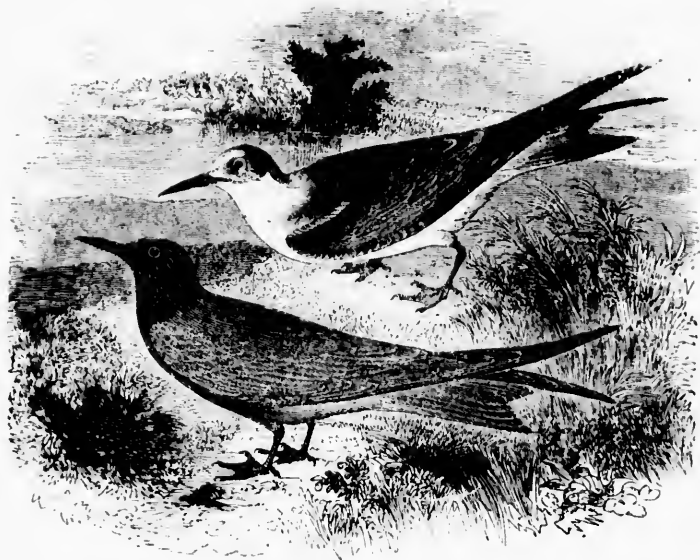
among them. The species is migratory, however, even in these mild climates.

Along the coasts of Georgia and Florida Wilson observed these Terns in numerous flocks in the month of July. They were very noisy, and darted down headlong after small fish. Birds of this species frequently settle on the rigging of ships at sea, and, in common with their relatives, are called Noddies by the sailors.

The Sooty Tern occurs regularly north to the Carolinas, and occasionally wanders to the shores of Massachusetts. It is almost exclusively a sea-bird, feeding chiefly upon fish, which it catches by swooping to the surface, not by dropping into the water. It rarely floats upon the water, but its flight is powerful and rapid.

"It breeds in colonies in little-frequented islands in the West Indies, and may be seen fishing in flocks which hover low over the water" (Chapman).

NOTE. — A few examples of the WHITE-WINGED BLACK TERN (*H. leucoptera*) have wandered to America. One was taken by Professor Kumlien in Wisconsin, and six were seen by Professor Macoun on a lake near Winnipeg.



BLACK TERN.

SHORT-TAILED TERN.

HYDROCHELIDON NIGRA SURINAMENSIS.

CHAR. Upper parts, deep slate gray; head, neck, and under parts black; lower tail-coverts white; bill black; legs and feet dusky or reddish brown. In winter the black is mostly replaced by white, the crown gray. Length about $9\frac{1}{2}$ inches.

Nest. A slight hollow in the muddy soil of a reedy marsh, sometimes sparsely lined with grass; often placed on a platform of floating herbage, and then is made of reeds or coarse sedges firmly constructed.

Eggs. 3; ground color varies from grayish buff to yellowish brown, sometimes tinged with olive; profusely marked with several shades of brown and purplish gray; average size about 1.40×1.00 .

This is another aquatic bird common to the northern regions of both continents, extending its residence to the limits of the Arctic Circle, and breeding in the fur countries of the interior upon the borders of lakes and in swamps. It is also very common in Holland and in the great marshes of Hungary, and has been observed round the salt lakes of Siberia and Tartary.

In Europe it is met with as far as Iceland. In all situations it appears to prefer the borders of rivers, lakes, or marshes to the vicinity of the sea, except when engaged in its migrations.

This Tern is a common summer inhabitant of England, appearing, according to Montagu, in Romney Marsh, in Kent, about the latter end of April, breeding on the sedgy borders of pools, and though very near to the sea, it is rarely seen on the shores till after the breeding-season, and is then uncommon. These birds breed likewise in the fens of Lincolnshire, making a nest of flags or broad grass upon a tuft just elevated above the surface of the water.

The young of this species are rather common on the coasts of New Jersey during autumn, on their way still farther south to pass the winter. Wilson observed a flock of these driven inland as far as the meadows of the Schuylkill, by a violent storm from the northeast. Hundreds of them were to be seen at the same time, accompanied by flocks of the Yellow-Legs and a few Purres (*Tringa alpina*). Famished by the accident which had impelled them from their usual abodes, they were now busy, silent, and unsuspecting, darting down after their prey of beetles, grasshoppers, and other insects, now afloat by the inundation, without hesitating, though perpetually harassed by gunners, who had assembled to view the extraordinary spectacle of these rare flocks of wandering birds. In ordinary, as in Europe, they frequent mill-ponds and freshwater marshes, in preference to the bays and the sea-coast.

The Black Tern is a common bird on the lakes of the interior north to Alaska, and is seen on the sea-coast chiefly during the fall migration. It breeds southward to the Middle States, west of the Alleghanies. Occasional examples occur along the Massachusetts shore, and some have been taken at Grand Menan.

In "Birds of Manitoba" Thompson writes:—"It seems not to subsist on fish at all, but chiefly on dragon flies and various aquatic insects. It finds both its home and its food in the marshes usually, but its powers of flight are so great that it may also be seen far out on the dry open plains, scouring the country for food at a distance of miles from its nesting ground."

NODDY.

ANOUS STOLIDUS.

CHAR. Plumage deep sooty brown, darker on wings and tail, paler on neck; crown hoary gray, shading to white on the forehead. Length about 15 inches.

Nest. Usually in a tree or low bush, sometimes on a cliff of a rocky island, made of twigs lined with leaves and grass.

Eggs. 1; pale buff, sometimes tinged with slate, spotted with brown and lavender; 2.00 × 1.35.

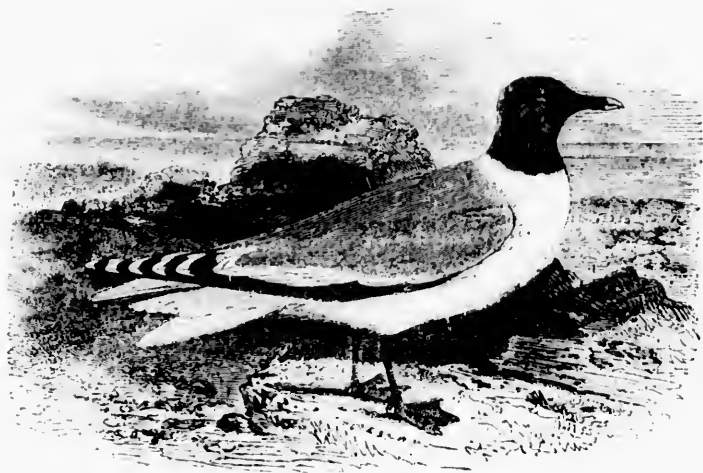
These common and well-known birds inhabit all parts of the tropical seas, and migrate occasionally as far as the coasts of the United States, at which times they are generally seen in flocks, and are by no means rare. Familiar to mariners who navigate in the equatorial regions, the Noddy, like the voyager, frequents the open seas to the distance of some hundreds of leagues from the land, and with many other birds of similar appetites and propensities, it is seen in great flights assiduously following the shoals of its finny prey. It pursues them by flying near the surface of the water, and may now be seen continually dropping on the small fish, which approach the surface to shun the persecution of the greater kinds by which they are also harassed. A rippling and silvery whiteness in the water marks the course of the timid and tumultuous shoals, and the whole air resounds with the clangor of these gluttonous and greedy birds, who, exulting or contending for success, fill the air with their varied but discordant cries. Where the strongest rippling appears, there the thickest swarms of Noddies and sea-fowl are uniformly assembled. They frequently fly on board of ships at sea, and are so stupid or indolent on such occasions as to suffer themselves to be taken by the hand from the yards on which they settle; they sometimes, however, when seized, bite and scratch with great resolution, leading one to imagine that they are disabled often from flight by excessive fatigue or hunger.

The Noddies breed in great numbers in the Bahama Islands, laying their eggs on the bare shelvings of the rocks: they also

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breed on the Roca Islands and various parts of the coast of Brazil and Cayenne. According to the accounts of voyagers, they lay vast numbers of eggs on certain rocky isles contiguous to St. Helena, and the eggs are there accounted a delicate food. Some have imagined that the appearance of the Noddy at sea indicates the proximity of land ; but, in the manner of the Common Tern, these birds adventure out to sea, and like the mariner himself, the shelter of whose friendly vessel they seek, they often voyage at random for several days at a time, committing themselves to the mercy of the boundless ocean ; and having at certain seasons no predilection for a peculiar climate, the roving flocks or stragglers find a home on every coast.

This Tern never comes up the Atlantic coast beyond the Southern States, but is common around Florida and on the Gulf shores.



SABINE'S GULL.
FORKED-TAIL GULL.

NEMA SABINII.

CHAR. Mantle deep bluish gray, — French gray; head and neck dark slaty gray, bordered by a collar of black; quills black tipped with white; tail and under parts white; bill black tipped with red, which in dried skins becomes yellowish. In winter the head is white, and the nape slaty gray. The young birds are similar to the winter plumage of the adults, but the mantle is more or less varied with brown and buff, and the tail has a terminal band of black. Length about 14 inches.

Nest. On an island, usually in a lake, sometimes near the coast, — generally a depression in the mossy turf, sparsely lined with grass, occasionally on the bare ground or in sand.

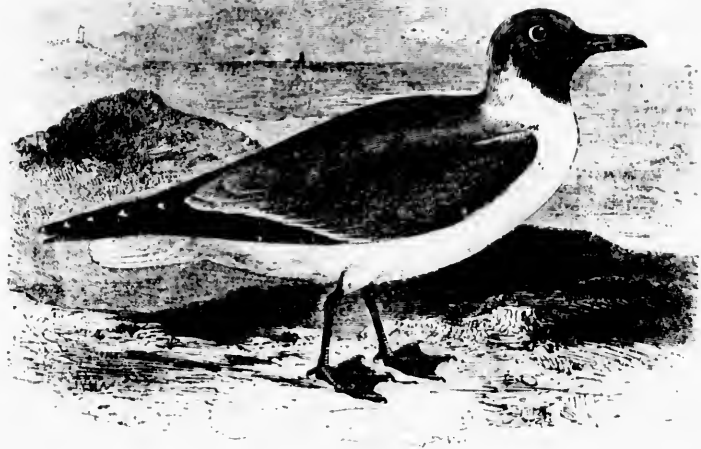
Eggs. 2-3 (usually 2); ground color of various shades of brown tinted with olive, marked with fine spots of dark brown and gray; average size about 1.75×1.25 .

This interesting species was discovered by Captain Sabine at its breeding-station on some low rocky islands lying off the west coast of Greenland, associated in considerable numbers with the Arctic Tern, the nests of the two birds intermingled. It is analogous to the Tern, not only in its forked tail and in its choice of a breeding-place, but also in the boldness which it displays in the protection of its young. The parent birds flew

with impetuosity towards those who approached their nests, and when one was killed, its mate, though frequently fired at, continued on the wing close to the spot. The birds were observed to collect their food from the sea-beach, standing near the edge of the water, and gleaning the marine insects which were cast on the shore. When newly killed, the plumage of the under parts had a delicate pink blush.

Like most of the black-headed members of this group, Sabine's Gull displays a preference for inland waters, especially in the nesting season, though it never builds far away from the sea. Its breeding area lies in the Far North, near the shores of the Arctic Ocean; but in winter it ranges to New England and to the Great Lakes. It is not common, however, so far south: probably more examples have been seen about the mouth of the Bay of Fundy than elsewhere along our shores.

NOTE. — Nuttall gave a place in his work to the LITTLE GULL (*Larus minutus*); but while the bird was mentioned in the "History of N. A. Birds," and in Ridgway's "Manual," it was omitted from the first edition of "The A. O. U. Check List," though it has been recognized in the edition recently issued. Examples have been reported from Bermuda and Long Island, but the bird cannot be considered more than an accidental straggler from the eastern hemisphere.



LAUGHING GULL.

BLACK-HEADED GULL.

LARUS ATRICILLA.

CHAR. Mantle deep slaty gray; head and neck dark brownish slate; outer wing-feathers black; tail and under parts white, slightly tinged with pale pink; bill and feet dull red.

In winter the under parts lose the pink tint, and the head is white. Length about 16 inches.

Nest. On a grassy island, hid amid a tussock of sedges or in the sand of a sea-beach; a slight depression in the turf lined with fine grass.

Eggs. 3-5; dull white or pale slate tinged with green or blue, marked profusely with brown and lilac; average size about 2.20×1.55 .

This species, very common in most parts of America, is also frequent in Europe, particularly in the warmer parts, as the coasts of Sicily, Spain, and the islands of the Mediterranean; elsewhere in that continent it is rare and accidental. In America it is found as far south as Cayenne and Mexico, but does not appear to inhabit far north of the limits of the Union. On the coast of New Jersey it makes its appearance in the latter part of April, and is soon discovered by its familiar-

ity and noise) companies are even seen at times around the farm-house, or coursing along the river shores, attending upon the track of the fishermen for garbage, gleaning among the refuse of the tide; or, scattering over the marshes and ploughing fields, they collect, at this season, an abundant repast of worms, insects, and their larvæ. Great numbers are also seen collected together to feed upon the prolific spawn of the king-crab. While thus engaged, if approached they rise, as it were, in clouds, at the same time squalling so loudly that the din may be heard for two or three miles.

The Black-Headed Gulls breed in the marshes of New Jersey, but are not seen during the breeding-period in New England, and are indeed at all times rare in this quarter. Being apparently a somewhat tender species, they retire to the South early in autumn, and on commencing their migrations, if the weather be calm, they are seen to rise up in the air spirally, all loudly chattering as it were in concert, like a flock of cackling hens, the note changing at short intervals into a 'haw, 'ha 'ha 'ha 'haw, the final syllable lengthened out into an excessive and broad laugh. After ascending to a considerable height, they all move off, by common consent, in the line of their intended destination.

On the 4th of March (1830), while at Beaufort, North Carolina, in company with several other species I saw a small flock of these Risible Gulls, which every now and then, while amusing themselves by fishing and plunging after their prey of fry, burst out very oddly into an *oh oh agh agh*, or a coarse, laughing scream.

The Laughing Gulls used to breed in numbers on the Nantucket islands, but they have been nearly exterminated, though during the last few years, thanks to the efforts of Mr. George H. Mackay, of Boston, the colony there has been protected and is increasing. To the southward these birds are still common, being particularly abundant on the Florida coast and among the West India islands.

FRANKLIN'S GULL

LARUS FRANKLINI.

CHAR. Mantle deep bluish gray; head dark sooty slate color, a patch of white over the eyes; outer wing-feathers barred with black and tipped with white; tail pale pearl gray; under parts white, tinted with rose pink; bill bright red, barred near the end with black; legs dull red. In winter the head is white. Length about 14 inches.

Nest. In a reedy marsh or woody swamp; made of flags or other coarse herbage.

Eggs. 3; pale to dark buff or drab, sometimes tinged with olive, profusely marked with several shades of brown; 2.10×1.40 .

Franklin's Gull is chiefly confined to the western division of this continent, nesting in suitable localities amid the plains from about latitude 43° to the Saskatchewan valley, where it is abundant. Small numbers have been found nesting in Iowa and Wisconsin. In autumn the flocks migrate southward and range through Central America, some going as far as Peru.

These birds build in communities and are very noisy. While on the wing they utter constantly a shrill and plaintive cry.

BONAPARTE'S GULL.

LARUS PHILADELPHIA.

CHAR. Mantle pearl gray; head and neck or hood grayish black or deep slate color; white patches over the eyes; outer wing-feathers with a subterminal bar of black tipped with white, excepting outer web of first primary, which is entirely black; tail white; under parts white, tinged with rose pink; bill black and slender; legs and feet bright red. In winter the head is white, with a dusky spot on the cheeks and a tinge of gray on the nape. In young birds the head and back are more or less tinged with brown, and the tail has a terminal band of black. Length about 14 inches.

Nest. Usually in a tree, sometimes on a high branch, often in a low bush amid a woody swamp; made of twigs and lined with grass or moss.

Eggs. 3-4 (usually 3); pale to dark brown, often tinged with olive, marked with brown and lavender; 2.00×1.40 .

This elegant Gull is common in all parts of the fur countries, where it associates with the Terns, and is distinguished by its

peculiar shrill and plaintive cry. Small flocks, early in autumn, are occasionally seen on the coast of Massachusetts, and sometimes high in the air their almost melodious whistling is heard as they proceed on their way to the South, or inland to feed. Their prey appears to be chiefly insects; and two which I had an opportunity of examining were gorged with ants and their eggs, and some larvæ of moths in their pupa state. These birds both old and young are good food.

Bonaparte's Gull ranges throughout North America, breeding in Manitoba and northward, and migrating by inland and coast routes to and from its winter resorts in the southern portions of the United States.

Small numbers of these Gulls are seen on the New England coast during the summer, but no evidence has been produced of their having nested in this vicinity. It has been suggested that the examples that loiter through the summer without reaching the breeding-grounds are immature or unfertile birds. In the autumn — from early August on — large flocks of these birds swarm along the coast

ROSS'S GULL.

WEDGE-TAILED GULL.

RHODOSTETHIA ROSEA.

CHAR. Mantle pearl gray; head and tail white; a narrow collar of black around the neck, and a few black feathers near the eyes; outer feather of the wings black; tail long, pointed, and wedge-shaped; bill slender and black; legs and feet dull red, — "terra cotta," — claws black. Length $13\frac{1}{2}$ inches.

In winter the black collar is absent, and the crown is tinged with gray. Young birds are distinguished by a band of brownish black on wings and tail.

Nest and Eggs. Unknown.

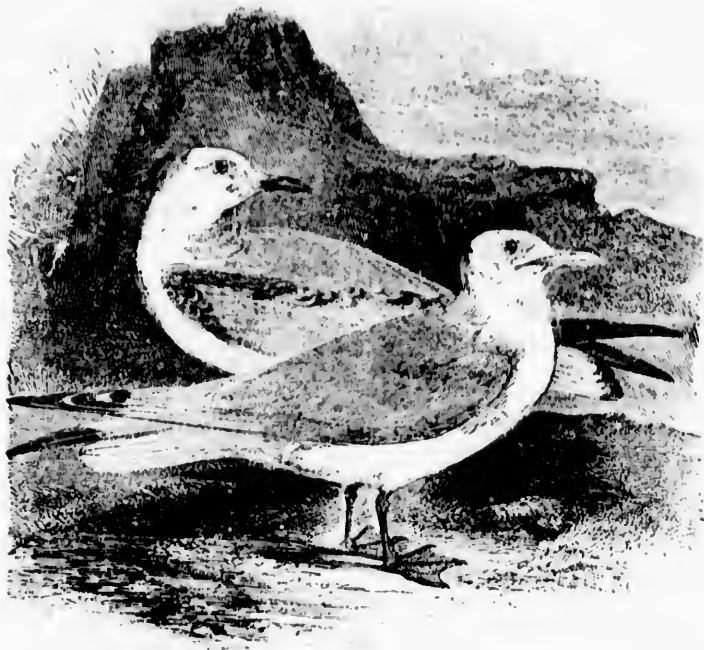
Although discovered so long ago as 1823, very little is yet known of the habits or distribution of this Gull. So late as 1881, only twenty-three specimens were to be found in the museums of the world, and the species was supposed to be exceedingly rare, until the American expedition to Point Barrow saw large loose flocks

during September and October coming in from the sea to the westward, and rapidly passing along the coast towards the northeast.

They were migrating evidently; but whither? and where had they come from, — where had they been nesting? These questions are still unanswered. It has been suggested that the birds may turn southward, and winter in the interior of this continent, — possibly in the Barren Ground region. But a more probable supposition is that offered, I think by Lieutenant Ray, that the flocks move eastward until they meet the floating ice, and then wheel seaward and remain amid the "fields" during the winter months, drifting southward, — too far from land to be observed, and feeding at the edge of the "pack."

But these are speculations only. It has been determined, however, that the species is abundant in the vicinity of Bering Sea and breeds somewhere along the Siberian shore of the Arctic Ocean, that it occurs as an occasional visitor only in other portions of the Arctic region, and as an accidental straggler elsewhere.

Upon what land the nest is placed is still unknown. It must lie somewhere in the frozen region to the westward or northward of Wrangel Island, and may be amid the Liakoff isles, or on some undiscovered island still closer to the Pole.



KITTIWAKE.

RISSA TRIDACTYLA.

CHAR. Mantle deep pearl gray; head, neck, tail, and under parts white; ends of outer wing-feathers — the primaries — black, tipped with white; bill greenish yellow; legs and feet black. Length $15\frac{1}{2}$ inches.

In winter the back of the neck is more or less suffused with gray. Young birds have a black bill; patch on back of neck, shoulders, and terminal band on the tail brownish black.

Nest. In a colony on the ledges of a cliff or on the mossy turf of an island, occasionally amid the sand or shingle of a sea-beach; usually made of sea-weed or other coarse herbage from "the drift," lined with grass or moss; sometimes a few feathers are added. Each year the bulk is increased by the addition of material. Nests have been found which were mere depressions in the sand, sparsely lined with grass.

Eggs. 2-4; buff of various shades of brown tinted with olive, marked with brown and lavender; average size 2.20×1.60 .

The Kittiwake, or Tarrock, is found in the north of both continents. It inhabits Newfoundland, Labrador, the islands in the Gulf of the St. Lawrence, the coasts of the Pacific,

Spitzbergen, Greenland, Iceland, and the north of Europe, as well as the Arctic coast of Asia and Kamtschatka. It likewise breeds in some of the Scottish islands, and is generally found about saline lakes and the interior seas and gulfs, but is less frequent on the borders of the ocean. In autumn these birds spread themselves over the banks of rivers and lakes. They feed upon fish, fry, and insects, and nest upon the rocks near the sea-coast, laying three eggs of an olivaceous white, marked with a great number of small dark spots and other grayish ones less distinct. In Iceland they inhabit the cliffs of the coast in vast numbers, and utter loud and discordant cries, particularly on the approach of rapacious birds, as the Sea Eagle, which probably prey upon their young. Both their flesh and eggs are esteemed as good food.

The Kittiwake is more strictly a bird of the ocean than Nuttall's remarks imply. In the Far North — in Greenland and along the shores of the Arctic Ocean — the nesting site of a colony is usually at the head or inland end of a fjord or bay; but in milder latitudes the chosen site is a craggy cliff against which the angered waves dash with unbroken force. Small colonies are found along our coast as far south as the mouth of the Bay of Fundy; but farther north the number of birds nesting in a community is very large. At one famous range of cliffs in Norway the number of breeding birds has been estimated by a careful naturalist at half a million. In the winter these birds visit the New England shores and extend their range as far south as Virginia, and at that season a few examples visit the Great Lakes.

Our bird differs but little in its habits from other oceanic Gulls. Feeding chiefly on fish, but accepting any diet that drifts within range of its keen sight; drinking salt water in preference to fresh; breasting a gale with ease and grace — soaring in mid-air, skimming close above the crested waves, or swooping into the trough for a coveted morsel; resting upon the rolling billows and sleeping serenely as they roll, with head tucked snugly under a wing; wandering in loose flocks and making comrades of other wanderers; devoted to mate and young and attached to all its kin, — wherever seen or however employed, the Kittiwake is revealed as a typical gleaner of the sea.

The name is derived from the bird's singular cry, which resembles the syllables *kitti-aa kitti-aa*.

NOTE. — Nuttall stated that the European COMMON GULL (*L. canus*) — also called SEAMEW, from its feline cry — occurs regularly in winter on our shores; but in this statement he was merely following Richardson, who confounded this species with the Ring-billed Gull. The only known instance of the occurrence of the Seamew on this side of the Atlantic is the taking of one example in Labrador by Dr. Coues.

RING-BILLED GULL.

LARUS DELAWARENSIS.

CHAR. Mantle deep pearl gray; head, neck, tail, and under parts white; outer wing feathers black, tipped with white, the other primaries more or less barred with black and tipped with white; bill greenish yellow, with a band of black near the end and tipped with orange; legs and feet yellow, sometimes tinged with green.

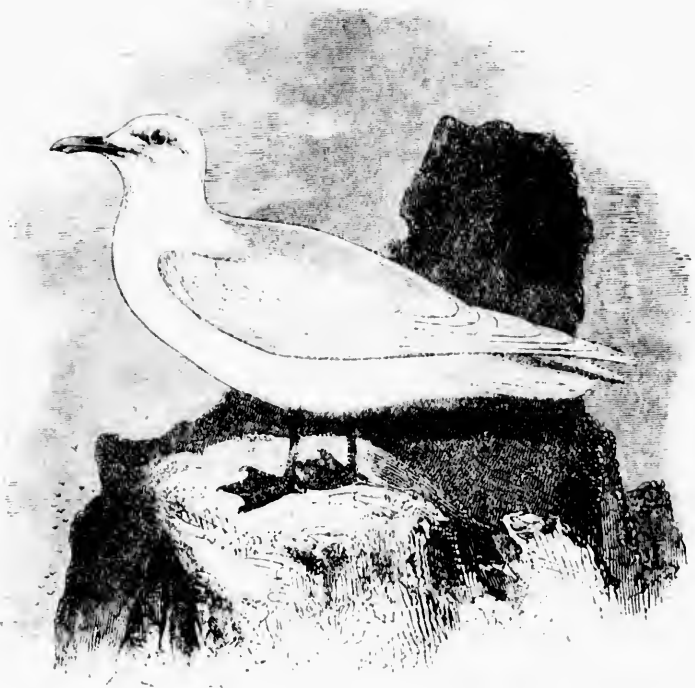
In winter the head and nape are spotted with pale dusky. Young birds are mottled white and dusky; on the upper parts the dark tint prevails, varied on the back with pale buff, and the lower parts are mostly white; tail dusky, tipped with white and pale gray at the base; shoulders gray; bill dusky, fading toward the base. Length $19\frac{1}{2}$ inches.

Nest. On a grassy island in a lake or on an ocean cliff. — made of coarse grass or sea-weed.

Eggs. 2-3; ground color varied from pale to dark buff, sometimes tinged with green or slate; profusely marked with several shades of brown and lilac; average size about 2.40×1.70 .

The Ring-billed Gull is distributed throughout this continent, but is more abundant on the saline lakes of the plains than along the sea-coast. In the West the breeding area extends from Southern Minnesota to Great Salt Lake, but on the coast this Gull does not nest farther south than Newfoundland. It is rather common during spring and fall on the New England coast, and in winter ranges from Long Island to the West Indies. Only a few examples have been taken on the Great Lakes.

The chief summer diet of this species, in the interior, is grasshoppers, which the birds catch in the air as well as on the ground.



IVORY GULL.
GAVIA ALBA.

CHAR. Entire plumage white; bill yellow, shading to greenish gray at the base; legs and feet black. Length 18 inches.

In immature birds the upper parts are more or less spotted with brownish gray; wings and tail tipped with dusky brown; bill black.

Nest. On a sea-beach or high cliff, — a slight depression in the soil, sparsely lined with grass or moss, sometimes made of moss and sea-weed, with a thin lining of down and feathers.

Eggs. 1-2; pale to dark buff, more or less tinted with olive, sometimes olive drab, marked with several shades of brown and lilac; average size about 2.40 × 1.70.

† This beautiful species, called sometimes the Snow Bird, from the pure whiteness of its plumage, is found in great numbers on the coasts of Spitzbergen, Greenland, Davis's Straits, on Baffin's Bay, and on various parts of the northern shores of the

American continent. It seldom migrates far from its natal regions, is a pretty constant attendant on the whale-fishers, and preys on blubber, dead whales, and other carrion. (Dr. Richardson observed it breeding in great numbers on the high broken cliffs which form the extremity of Cape Parry, in latitude 70° .) It is also found on the Pacific coast as far as Nootka Sound, and commonly wanders far out to sea, seldom approaching the land but during the period of incubation. Its only note consists of a loud and disagreeable scream.

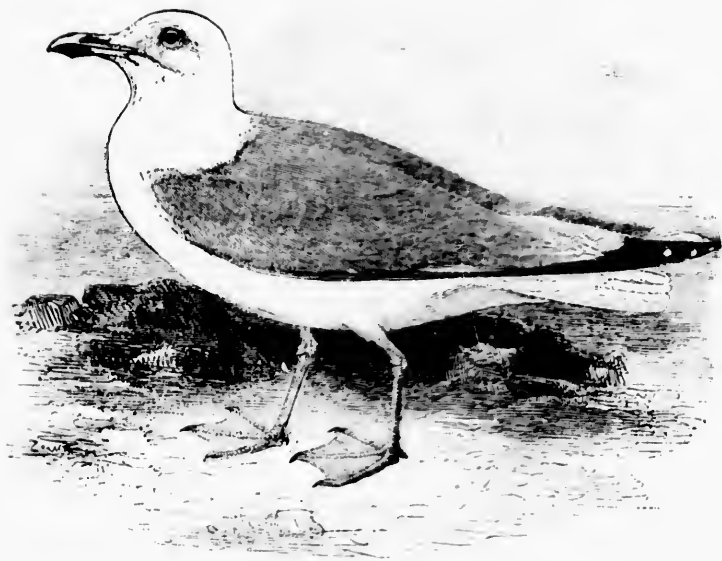
This Gull has been seen but seldom on the American shore of the Atlantic south of Greenland, and Mr. Hagerup considers it a rare bird in the southern portion of that country, though it is said to occur regularly at Labrador and Newfoundland. Mr. Boardman reports that two examples have been sent to him from Grand Menan, and in the winter of 1880 I examined a freshly killed Gull that a "boatman" told me he had shot the day before off the harbor of St. John. The skin was identified at the Smithsonian Institution as an immature Ivory Gull. On the English coast this species is more frequently seen, and examples have been taken in France and Switzerland; but it is only a straggler outside the Arctic Circle. The species is circumpolar in its range, but breeds in greatest abundance on the islands which lie to the northward of Europe.

The Ivory Gulls appear to spend most of the time amid the pack-ice, often at a long distance from the land. They are ravenous feeders, and omnivorous in their diet, refusing nothing. Small rodents and shell-fish are alike fair game to these gluttons, and they feast with apparent relish on putrid blubber, or even seals' excrement. The cry is said to be a loud and disagreeable scream.

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HERRING GULL.

LARUS ARGENTATUS SMITHSONIANUS.

CHAR. Mantle deep pearl gray; head, tail, and under parts white; outer wing-feathers mostly black, tipped with white; bill yellow, with a bar of red at the angle; legs and feet flesh color. Length about 24 inches.

In winter the head and neck are streaked with gray. Immature birds are mottled brownish gray and dull white; wings dusky; tail dusky or gray, with a subterminal bar of dusky; bill blackish. In younger specimens the dark tints prevail, some being almost uniformly dusky brown. They do not acquire full plumage for four or five years.

Nest. Usually on a cliff, often on a beach or grassy island, sometimes in a tree or under shelter of a bush, — generally a slight affair, a thin mat of loosely arranged grass or moss; though nests placed in trees are bulky and compact.

Eggs. 2-3 (usually 3); pale to dark buff, more or less tinged with green, sometimes nearly olive drab; marked with several shades of brown and lavender; average size about 2.5×1.05 .

The Herring Gull is common to the milder as well as cold countries of both continents. It is seen sometimes on the

borders of lakes and rivers, though these visitors are chiefly the young.

(Mr. Audubon found these birds breeding abundantly on Grand Menan Island, in the Bay of Fundy, on low fir-trees as well as on the ground) the nest being large and loose, composed of sea-weeds, roots, sticks, and feathers. They are very resentful and clamorous when approached, screaming or barking with a sound like *akuk kakak*. (This Gull also inhabits other islands, and he found it again in Labrador.) It is ravenous, and tyrannical to other small birds. The young and the eggs are considered as palatable food, though the principal food of the bird is fish or floating matter.

(This is the Common Gull of our harbors and inland lakes, occurring in abundance throughout this continent, and breeding from latitude 45° northward. Turner found it abundant on Hudson Straits, but Hagerup saw very few examples in Southern Greenland. In winter these birds are seen in numbers on the Great Lakes and the larger rivers and lakes of the interior, as well as along the sea-coast from the Gulf of St. Lawrence to Cuba.)

Mr. Chapman considers "this species is by far the most abundant winter Gull along the coast of the Middle and Southern States."

Although Herring Gulls appear at times both shy and fierce, they are easily domesticated if taken young, and make pleasant pets. They thrive on a mixed diet, and feast on cold porridge or dead rat with equal relish.

Their formula for disposing of a rat is unique. First break the rat's bones by crunching them with the bill: then dip the carcass in water, and when thoroughly soaked, swallow it whole, — head first.

NOTE. — The European form of the HERRING GULL (*L. argentatus*) is said to occur occasionally on this side of the Atlantic.



GLAUCOUS GULL.

BURGOMASTER.

LARUS GLAUCUS.

CHAR. Mantle pale pearl gray, rest of plumage white; bill yellow, with a patch of orange at the angle; legs and feet bright pink. Length about 32 inches, female somewhat smaller.

In winter the head and neck are streaked with pale brownish gray. Immature birds are mottled grayish brown and pale gray; the first plumage is the darkest. In the spring, before the young assume the pearl mantle, their entire plumage becomes white.

Nest. Usually on a cliff, sometimes on a low, grassy island or sandy beach; a slight affair of sea-weed or moss or grass.

Eggs. 2-3; stone drab or olive buff, sometimes pale buff, marked with brown and ashy gray; average size about 3.00×2.00 .

(This large species is almost wholly confined to the hyperboreal regions, where it inhabits both continents indifferently. It is common in Russia, Greenland, and in all the Arctic and polar seas.) In Baffin's Bay and the adjoining straits and coasts it is seen in considerable numbers during the summer. Its winter resorts are yet unknown. From its great rarity in the United States it is probable that this Gull may not migrate far from its summer residence, as there can be no reason why it should proceed south along the Pacific in preference to the Atlantic coast.

These birds are almost continually on the wing, uttering often a hoarse cry, like the Raven. They are extremely tyrannical, greedy, and voracious, preying not only on fish and small birds, but also on carrion, and are said to attend on the walrus to feed on its excrement. They wrest prey from weaker birds, and are often seen hovering in the air or seated on some lofty pinnacle of ice, whence, having fixed their eye upon some favorite morsel, they dart down on the possessor, which, whether Fulmar, Guillemot, or Kittiwake, must instantly resign the prize. The Auk, as well as the young Penguin, they not only rob, but often wholly devour. Pressed by hunger, they sometimes even condescend to share the crow-berry with the Ptarmigan. When not impelled by hunger, they are rather shy and inactive birds, and much less clamorous than others of the genus.

(This species is rather boreal in its range, breeding chiefly in the Arctic Ocean, though Mr. Chapman gives its breeding area as "from southern Labrador northward." Farther south it is a straggler merely, though in the Bay of Fundy it is sometimes quite common in mid-winter.) and examples have been seen along the New England shores and southward to Long Island and on the Great Lakes.

Nuttall has put into the few lines given above all the peculiar habits of the bird, which combine with some Gull-like traits many of the coarse characteristics of both the Falcon and Vulture.

Some observers have reported that the flocks are at times very noisy, particularly when settling for the night; but those I have met with in winter have been rather silent. Their cry is harsh, and at times very loud; it sounds something like the syllables *kuk-lak*, — I have seen it written *cut-leek*.

(ICELAND GULL.
 WHITE-WINGED GULL.
 LARUS LEUCOPTERUS.)

CHAR. Mantle pale pearl gray, rest of plumage white; bill yellow, with a patch of orange at the angle; legs and feet bright pink. Length about 25 inches, the female smaller. In winter the head and neck are streaked with pale brownish gray. Young birds are mottled grayish brown and pale gray, and become whiter with each moult.

Nest. On a cliff or sandy beach; when in the sand, it is a mere depression slightly lined with grass, but when a rock is chosen for the site a compact structure composed of sea-weed and grass lined with moss.

Eggs. 2-3; pale black buff more or less tinged with green, sometimes almost olive drab; average size about 2.75×1.80 .

Iceland Gull is a misnomer for this bird, as it appears in Iceland in winter only, and then in very small numbers. The true home of this Gull is in that portion of the Arctic Ocean which lies north of America, and its breeding area extends from Greenland to Alaska; elsewhere it is but a visitor.

During the winter these birds range along the Atlantic shores from Labrador to Long Island) though they are not numerous south of the Bay of Fundy. A few examples have been taken on the Great Lakes.

In appearance this species is a small edition of the Glaucous Gull, there being no perceptible difference in the coloration; but their habits are quite different.

The flight of the Iceland Gull, its feeding habits, and its manners generally, suggest a close affinity to the Herring Gull rather than to the Burgomaster.

KUMLIEN'S GULL.

LARUS KUMLIENI.

CHAR. Mantle and wings pearl gray; wings tipped with white, the outer primaries having a sub-terminal space of ashy gray; bill yellow, with a spot of red at the angle; legs and feet bright pink. Length about 24 inches.

Immature birds are more or less mottled with dusky or brownish gray, very young specimens being very dark.

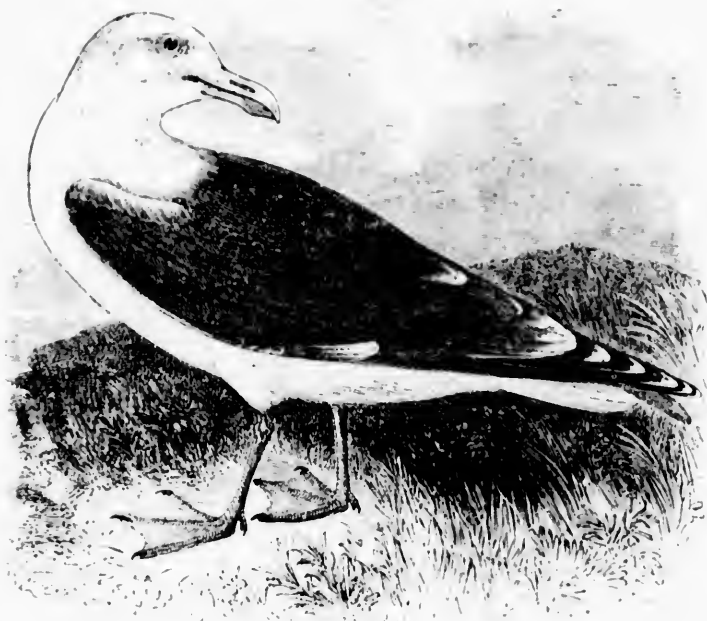
Nest. On a cliff.

Eggs. Not known.

This species was described in 1883 by Mr. William Brewster from specimens that had been taken in winter in the Bay of Fundy. Kumlien found the bird breeding in numbers on the shores of Cumberland Gulf; but it is not known to breed in Greenland, nor have nests been discovered elsewhere. In the second edition of the A. O. U. "Check-List" the distribution of this species is given thus: "North Atlantic coast of North America, breeding in Cumberland Gulf; south in winter to the coasts of the Middle States." Of the bird's distribution and of its distinctive habits nothing farther is known.

In coloration this species is a connecting link between *leucopterus* and *argentatus*.

NOTE. — The SIBERIAN GULL (*Larus affinis*) occasionally visits Greenland.



GREAT BLACK-BACKED GULL.

SADDLE-BACK. COBB.

LARUS MARINUS.

CHAR. Mantle slaty brown; outer wing-feathers more or less black, tipped with white; rest of plumage white; bill yellow, red at the angle, legs and feet pink. Length about 30 inches.

The full plumage is not assumed until the fourth year. Immature birds are mottled brown and white, very young specimens having the upper parts almost entirely brown, and the bill dusky.

Nest. On an inaccessible cliff by the sea, or upon a rocky island in a lake,—a mere depression in the turf, lined with grass or sea-weed; sometimes a bulky affair made of coarse herbage and lined with grass and a few feathers.

Eggs. 2-3 (usually 3); buffish gray to deep buff, sometimes slightly tinged with olive, boldly blotched with brown and gray; average size about 3.00×2.10 .

{ The Saddle-back, or Black-backed Gull, is a general denizen of the whole northern hemisphere, and extends its residence in

America as far as Paraguay. At the approach of winter it migrates not uncommonly as far as the sea-coasts of the Middle and extreme Southern States. If Mr. Audubon be correct in considering *L. argentatoides* as a state of imperfect plumage of the present species, it breeds as far north as the dreary coasts of Melville Peninsula. It is also found in Greenland, Iceland, Lapmark, and the White Sea. It is also abundant in the Orkneys and Hebrides in Scotland, but is a winter bird of passage on the coasts of Holland, France, and England. It rarely visits the interior or fresh waters, and is but seldom seen as far south as the Mediterranean.]

The Black-backed Gull feeds ordinarily upon fish, both dead and living, as well as on fry and carrion, — sometimes also on shell-fish, and, like most of the tribe of larger Gulls, it is extremely ravenous and indiscriminate in its appetites when pressed by hunger. It watches the bait of the fisherman, and often robs the hook of its game. As Mr. Audubon justly and strongly remarks, it is as much the tyrant of the sea-fowl as the Eagle is of the land-birds. It is always on the watch to gratify its insatiable appetite; powerfully muscular in body and wing, it commands without control over the inhabitants of the ocean and its borders. Its flight is majestic, and, like the Raven, it soars in wide circles to a great elevation, at which times its loud and raucous cry or laughing bark of 'cak, 'cak, 'cak' is often heard. Like the keen-eyed Eagle, it is extremely shy and wary, most difficult of access, and rarely obtained but by accident or stratagem. It is the particular enemy of the graceful Eider, pouncing upon and devouring its young on every occasion, and often kills considerable-sized Ducks. In pursuit of crabs or lobsters it plunges beneath the water; has the ingenuity to pick up a shell-fish, and carrying it high in the air, drops it upon a rock to obtain its contents; it catches moles, rats, young hares; gives chase to the Willow Grouse, and sucks her eggs or devours her callow brood; it is even so indiscriminate in its ravenous and cannibal cravings as to devour the eggs of its own species. In short, it has no mercy on any object that can contribute in any way to allay the cravings of

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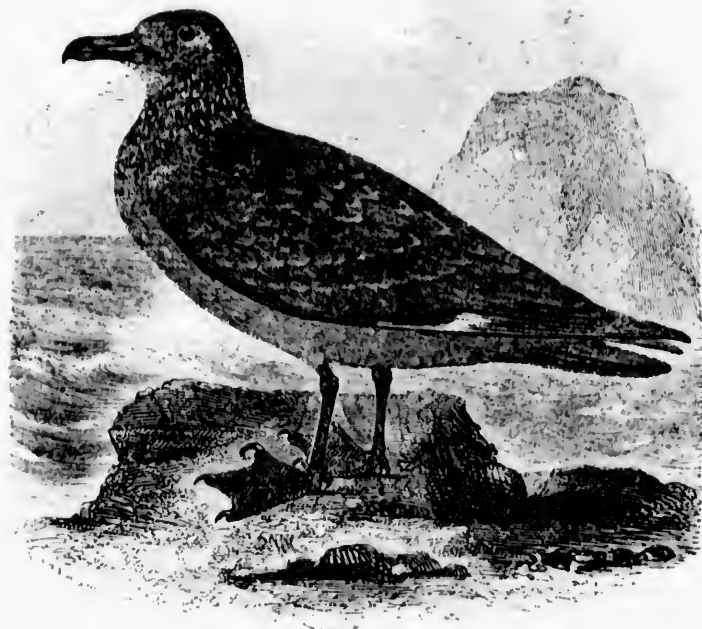
its insatiable hunger and delight in carnage. Though cowardly towards man, before whom it abandons its young, its sway among the feathered tribes is so fierce that even the different species of *Lestris*, themselves daring pirates, give way at its approach.

In Europe the Saddle-backed Gulls breed as far south as the Lundy Islands in the Bristol Channel, in England. Mr. Audubon, who lately visited the dreary coast of Labrador, found them breeding there on rocks, laying about three eggs, large, and of a dirty dull brown, spotted and splashed all over with dark brown. The young as soon as hatched walk about among the rocks, patiently waiting the return of their parents, who supply them amply with food until they become able to fly, after which, as among the true rapacious birds, they are driven off and abandoned to their own resources.

This species, like others, does not attain its complete plumage until the third year. The full-plumaged are dark-colored birds, breeding together. The eggs and young are eatable; the latter, taken before they are able to fly, are pickled in large quantities, and used in Newfoundland for winter provision.

The Saddle-back breeds from the Bay of Fundy to high latitudes, and in winter is found along the coast from Greenland to Long Island, and occasionally to Virginia and South Carolina. A few examples visit the Great Lakes. It is not frequently seen in the harbors of New England, but on the open sea-shore is quite common.

Mr. Brewster reports that these birds have "four distinct cries: a braying *ha-ha-ha*, a deep *keow. keow.* a short barking note, and a long-drawn groan, very loud and decidedly impressive."



SKUA.

PARASITIC GULL.

MEGALESTRIS SKUA.

CHAR. Upper parts sooty brown, varied with reddish brown and dull white, the nape spotted with buff, wings and tail brown, shading to white at the base, which on the wing forms a conspicuous patch when in flight; under parts paler brown, the breast varied with rufous. bill, legs, and feet, black. Length about 22 inches.

Nest. On an inaccessible ocean island; a hollow pressed in the moss and sparsely lined with grass and a few feathers.

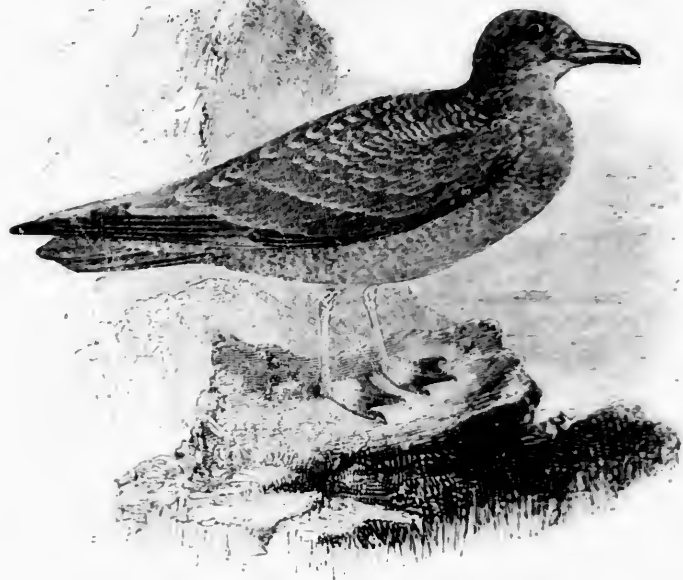
Eggs. 1-3 (usually 2); pale to dark buff or buffish brown, sometimes with a slight tinge of olive, marked with darker brown and gray; average size about 2.80×2.00 .

This Sea-Falcon, with raptorial beak and claws, and Hawk-like quality of character, — preying upon the weak and the small of its own race, robbing those it cannot kill, and by way of individuality adding to its relish for flesh and fish a partiality for eggs. — this

pirate of the main, daring and strong, and wary as bold, has too slight claim for recognition here to demand an extended notice.

These birds live as solitary as Eagles, but defend their nests as few Eagles dare, attacking fiercely man or dog venturing to approach, and displaying a front that few dogs care to close upon. The nests are built chiefly within the Arctic Circle and in northern Europe, and the birds visit our waters only in winter, and but rarely then: and the few examples that do wander this way are never seen near the shore, but are met with by the fishermen, whose boats they follow for the refuse.

In the A. O. U. Check-List the statement is made that the bird is "apparently rare on the coast of North America," and North Carolina is given as the southern limit of its range. Mr. Chapman reports that there is "one record" of the bird having been captured on the shore of Long Island.



POMARINE JAEGER.

STERCORARIUS POMARINUS.

CHAR. Light phase: Top of head and upper parts sooty brown or dusky; neck and under parts white, the neck tinged with yellow. Dark phase: Entirely dark sooty brown or slaty black; the two middle tail-feathers project beyond the other and are twisted. Bill dark gray, tipped with black; legs and feet black. Length about 21 inches.

Some naturalists think the dark phase assumed by this genus is merely melanistic; but numerous examples are met with that combine variations of the two, these "pied" forms being in the majority rather than exceptional. Young birds are more or less mottled with buff.

Nest. On a dry knoll of a moorland marsh or tundra, sometimes on a rock,—a mere hollow stamped in the moss.

Eggs. 2; pale to dark olive, tinged with russet and boldly marked with brown; average size 2.35×1.65 .

This species chiefly inhabits the Arctic seas of both continents, whence it migrates short distances in winter, and is then seen in Sweden and Norway, and perhaps also in the Orkneys and the west of Scotland; the old very rarely visit the banks of the Rhine and the coasts of the ocean; the young are more given to wandering, and are sometimes even seen upon the lakes of Switzerland and Germany. According to Richardson, the Pomarine Jaeger is seen in the Arctic seas of America and about the northern outlets of Hudson Bay. Mr. Audubon obtained specimens on the coast of Labrador. It subsists on putrid and other animal substances thrown up by the sea, and also on fish and other matters which the Gulls disgorge when pursued by it; it also devours the eggs of sea-birds. It goes more to sea in winter, and also towards the south, arriving at Hudson Bay in May, coming in from seaward. It is rare and accidental on the coast of the United States.

This ocean prowler and parasite breeds in the Arctic regions, and in winter roams on the open sea, wandering from the latitude of New York southward. It occurs occasionally in the Bay of Fundy, and a few examples have been taken on the Great Lakes.

PARASITIC JAEGER.

ARCTIC JAEGER. RICHARDSON'S JAEGER. MAN-OF-WAR.

STERCORARIUS PARASTICUS.

CHAR. Light phase: Upper parts slaty brown; top of head grayish brown; rest of head and neck white, varied with yellow; under parts white. Dark phase: Entire plumage sooty slate. Shafts of primaries white; middle tail-feathers long, narrow, and pointed; bill slaty gray tipped with black; legs and feet black. Length about 20 inches.

Young birds of both phases are mottled and more or less varied with buff. Adults also are met with in a mixed plumage, and these mottled specimens are much more numerous than birds in full plumage.

Nest. On an open moorland near the sea or the margin of a lake, or upon an ocean island,—a mere hollow in the mossy turf, slightly lined with grass and leaves.

Eggs. 1-3 (usually 2); olive green, sometimes deeply tinged with yellow or reddish brown, marked with brown of several shades and lilac; average size about 2.30×1.60 .

This species has been incorrectly named the Arctic Jaeger, — or Skua, as the birds of this group are called by British Ornithologists, — for it is less Arctic in its distribution than either of its relatives. All this group breed in high latitudes; but while the other species build within the Arctic Circle, the Parasitic Jaeger nests in numbers in Southern Greenland and throughout the higher portions of the fur countries, and nests have been found in Scotland. In winter this bird is common along the coast, ranging from Long Island to Brazil.

The Jaegers are very similar in their habits. All are strong birds, of swift and skilful flight, and all obtain their chief food supply by robbing the Gulls of their prey.

The Kittiwake is the victim most frequently selected by the Parasitic Jaeger, and the little Gull has small chance for escape from its more powerful antagonist, who pursues and attacks until the coveted fish is dropped. But our bird does not limit its diet to fish, — young Gulls and eggs are quite as acceptable to the Jaeger's palate, — nor does it refuse any carrion the drift may offer, and in extremity will feast on crow-berries.

LONG-TAILED JAEGER.

BUFFON'S SKUA.

STERCORARIUS LONGICAUDUS.

CHAR. Upper parts dark brownish slate, shading to darker on wings and tail; top of head sooty black; rest of head and neck buffish yellow, paler on the throat; breast white, shading into the grayish brown of the belly; shafts of two outer primaries white; middle tail-feathers narrow and pointed, and extending four to eight inches beyond the lateral feathers; bill grayish black; legs olive gray, feet black. Length about 23 inches.

Young birds are grayish brown, more or less barred with white and buff. Distinguished from *arcticus* by its rather smaller and slimmer form and the greater length, *usually*, of the central tail-feathers, also by the grayer tints of the back and the absence of white on all the primaries excepting the outer two.

Nest. In a colony on a barren moorland or tundra near the sea, or by an inland lake or upon an island, — a slight hollow stamped in the turf or soil and lined with a few bits of grass or leaves.

Eggs. 1-3 (usually 2); pale to dark olive, sometimes reddish buff, marked with brown and gray; average size about 2.10 × 1.50.

This is the most northerly in its range of the Jaegers, and has the widest distribution. Its breeding area lies exclusively within the Arctic Circle, and follows that line throughout its circuit. These birds appear off the New England coasts during the spring and fall, and at those seasons are common in the Bay of Fundy. They winter southward as far as the Gulf of Mexico.

In its habits the Long-tailed Jaeger does not differ materially from the other species.

BLACK SKIMMER.

SCISSOR-BILL.

RYNCHOPS NIGRA.

CHAR. Upper parts black, deeper on the wings; outer tail-feathers white; forehead, patch on the wings, and under parts white; bill long and compressed, the lower mandible much longer than the upper; basal half of bill bright red, the rest black; legs and feet red. Length 17 to 19 inches.

Nest. A slight hollow scratched in the sand of a sea-beach or barren island.

Eggs. 2-5; creamy white or pale buff boldly marked with rich brown and lilac; average size about 1.75 x 1.35.

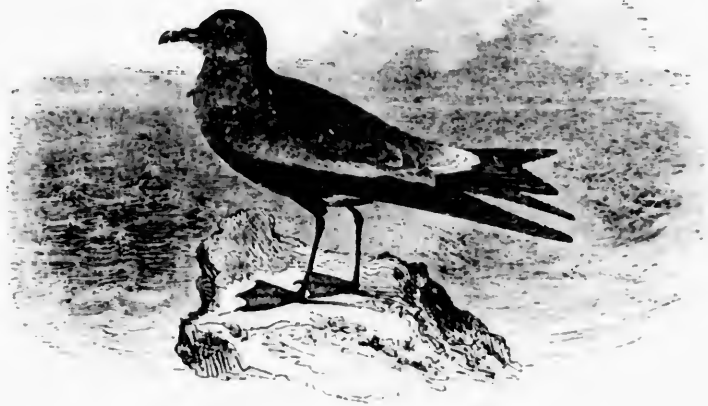
The Cut-water, or Black Skimmer, is a bird of passage in the United States, appearing in New Jersey from its tropical winter quarters early in May. Here it resides, and breeds in its favorite haunts along the low sand-bars and dry flats of the strand, in the immediate vicinity of the ocean. The nests of these birds have been found along the shores of Cape May about the beginning of June, and consist of a mere hollow scratched out in the sand, without the addition of any extraneous materials. As the birds, like the Terns and Gulls, to which they are allied, remain gregarious through the breeding-season, it is possible to collect a half bushel or more of the eggs from a single sand-bar within the compass of half an acre; and though not very palatable, they are still eaten by the inhabitants of the coast. The female only sits on her nest during the night or in wet and stormy weather; but the young

remain for several weeks before they acquire the full use of their wings, and are during that period assiduously fed by both parents. At first they are scarcely distinguishable from the sand by the similarity of their color, and during this period may often be seen basking in the sun and spreading out their wings upon the warm beach. The pair, retiring to the South in September or as soon as their young are prepared for their voyage, raise but a single brood in the season.

The Skimmer is, I believe, unknown to the north of the sea-coast of New Jersey, and probably passes the period of reproduction along the whole of the southern coast of the United States. The species is also met with in the equatorial regions, where it is alike resident as far as Surinam, but never penetrates into the interior, being, properly speaking, an oceanic genus. Its voice, like that of the Tern, is loud, harsh, and stridulous. In quest of its usual prey of small fish and mollusca, it is frequently observed skimming close along shore about the first of the flood tide, proceeding leisurely with a slowly flapping flight, and balancing itself on its long and outstretched wings; it is seen every now and then to dip, with bended neck, its lower mandible into the sea, and with open mouth receives its food, thus gleaning and ploughing along the yielding surface of the prolific deep. The birds keep also among the sheltered inlets which intervene between the mainland and the sea, where they roam about in companies of eight or ten together, passing and repassing at the flood tide, like so many grotesque and gigantic Swallows, the estuaries of the creeks and inlets which penetrate into the salt-marshes, exhibiting the necessary alertness in the capture of their approaching prey, which often consists of small crabs and the more minute crustaceous animals which abound in such situations, and around the masses of floating sea-weed and wrecks. But though so exclusively maritime, the range of the Cutwaters is entirely limited to the peaceful and calm borders of the strand; notwithstanding the vast expansion of their long wings, they have no inducement to follow the adventurous flight of the Petrel, as the ever-agitated and wave-tossed sur-

face of the restless deep would be to them, with the peculiar mechanism of their bill, a barren void over which they consequently never roam, and on whose bosom they rarely ever rest, preferring, with the Terns, when satisfied with food, the calm, indolent, and surer repose of the isolated shoal left bare by the recess of the tide, where, associated in flocks, they are often seen to rest from their toilsome and precarious employ.

The Skimmer continues to this day to make its nest on the sands of the New Jersey shore, and thence southward, and is rather common on the coast of Virginia and Florida. Fishermen have reported that Skimmers nested on Muskegat many years; but they have ceased coming so far north regularly, though occasionally, after the breeding season is over, an individual makes an excursion along the New England shore, and several have been seen in the Bay of Fundy.



LEACH'S PETREL.

FORK-TAILED PETREL.

OCEANODROMA LEUCORHOA.

CHAR. Upper parts dull black; upper tail-coverts white; tail forked; under parts sooty black; bill, legs, and feet black. Length about 8 inches.

Nest. A thin cushion of grass or moss at the end of a burrow in the soil at the top of an ocean cliff.

Eggs. 1, white, marked chiefly around the larger end with fine spots of reddish brown and lilac; average size about 1.30 x 1.00.

This is a bird of the northern hemisphere, being as common on the Pacific Ocean as on the Atlantic. Its chief breeding-station on our shores is among the islands at the mouth of the Bay of Fundy; but the open ocean is the bird's true home.

Leach's Petrels are seldom seen about their nesting site during the day, though in the evening they assemble there, and when fluttering through the twilight or under the moon's guidance, they have the appearance of a foraging squad of bats, though the bird's wild, plaintive notes betray their race. The Petrels are not strictly nocturnal, however, for while one of a pair sits close on the nest all day, — and this one has been generally the male, in my experience, — the mate is out at sea.

When handled, these birds emit from mouth and nostrils a small quantity of oil-like fluid of a reddish color and pungent, musk-like

odor. The air at the nesting site is strongly impregnated with this odor, and it guides a searcher to the nest.

Petrels appear very helpless on the land, walking or rising on the wing with difficulty; but in the air they are as graceful as swallows, and fly with equal skill. A storm is their delight, and the trough between white-capped waves a favorite feeding place. The birds skim close to the water, and continually dip their feet into it as they fly.

WILSON'S PETREL.

OCEANITES OCEANICUS.

CHAR. General plumage sooty black, darker on wings and tail; tail-coverts white; tail square; bill and legs black; webs of the feet yellow at their bases. Length about $7\frac{1}{2}$ inches.

Nest. In crevices of rocks or amid loose fragments.

Eggs. 1; white, marked chiefly around the larger end with fine spots of purplish red; average size about 1.30×0.90 .

This ominous harbinger of the deep is seen nearly throughout the whole expanse of the Atlantic, from Newfoundland to the tropical parts of America, whence it wanders even to Africa and the coasts of Spain. From the ignorance and superstition of mariners, an unfavorable prejudice has long been entertained against these adventurous and harmless wanderers; and as sinister messengers of the storm, in which they are often involved with the vessel they follow, they have been very unjustly stigmatized by the name of Stormy Petrels, Devil's Birds, and Mother Carey's Chickens. At nearly all seasons of the year these Swallow-Petrels in small flocks are seen wandering almost alone over the wide waste of the ocean.

On the edge of soundings, as the vessel loses sight of the distant headland and launches into the depths of the unbounded and fearful abyss of waters, flocks of these dark, swift-flying, and ominous birds begin to shoot around the vessel, and finally take their station in her foaming wake. In this situation, as humble dependants, they follow for their pittance of fare, constantly and keenly watching the agitated surge for

floating mollusca, and are extremely gratified with any kind of fat animal matter thrown overboard, which they invariably discover, however small the morsel, or mountainous and foaming the raging wave on which it may happen to float. On making such discovery they suddenly stop in their airy and swallow-like flight, and whirl instantly down to the water. Sometimes nine or ten thus crowd together like a flock of chickens scrambling for the same morsel; at the same time, pattering on the water with their feet, as if walking on the surface, they balance themselves with gently fluttering and outspread wings, and often dip down their heads to collect the sinking object in pursuit. On other occasions, as if seeking relief from their almost perpetual exercise of flight, they jerk and hop widely over the water, rebounding, as their feet touch the surface, with great agility and alertness.

There is something cheerful and amusing in the sight of these little voyaging flocks steadily following after the vessel, so light and unconcerned, across the dreary ocean. During a gale it is truly interesting to witness their intrepidity and address. Unappalled by the storm that strikes terror into the breast of the mariner, they are seen coursing wildly and rapidly over the waves; descending their sides, then mounting with the breaking surge which threatens to burst over their heads, sweeping through the hollow waves as in a sheltered valley, and again mounting with the rising billow, they trip and jerk sportively and securely on the surface of the roughest sea, defying the horrors of the storm, and, like some magic being, seem to take delight in braving overwhelming dangers. At other times we see these aerial mariners playfully coursing from side to side in the wake of the ship, making excursions far and wide on every side, now in advance, then far behind, returning again to the vessel as if she were stationary, though moving at the most rapid rate. A little after dark they generally cease their arduous course and take their interrupted rest upon the water, arriving in the wake of the vessel they had left, as I have observed, by about nine or ten o'clock of the following morning. In this way we were followed by the same

flock of birds to the soundings of the Azores, and until we came in sight of the Isle of Flores.

According to Buffon, the Petrel acquires its name from the Apostle Peter, who, as well as his Master, is said to have walked upon the water. At times we hear from these otherwise silent birds by day, a low *wcet, wcet*, and in their craving anxiety apparently to obtain something from us, they utter a low, twittering '*pe-up*, or chirp. In the night, when disturbed by the passage of the vessel, they rise in a low, vague, and hurried flight from the water, and utter a singular guttural chattering like *kak kuk k'k, k'k*, or something similar, ending usually in a sort of low twitter like that of a Swallow.

These Petrels are said to breed in great numbers on the rocky shores of the Bahama and the Bermuda Islands and along some parts of the coast of East Florida and Cuba. Mr. Audubon informs me that they also breed in large flocks on the mud and sand islands off Cape Sable in Nova Scotia, burrowing downwards from the surface to the depth of a foot or more. They also commonly employ the holes and cavities of rocks near the sea for this purpose. The eggs, according to Mr. Audubon, are three, white and translucent. After the period of incubation they return to feed their young, only during the night, with the oily food which they raise from their stomachs. At these times they are heard through most part of the night making a continued clattering sound, like frogs. In June and July, or about the time that they breed, they are still seen out at sea for scores of leagues from the land, the swiftness of their flight allowing them daily to make these vast excursions in quest of their ordinary prey: and hence, besides their suspicious appearance in braving storms, as if aided by the dark Ruler of the Air, they breed, according to the vulgar opinion of sailors, like no other honest bird; for taking no time for the purpose on land, they merely hatch their egg under their wings as they sit on the water.

The food of this species, according to Wilson, appears to consist of the gelatinous spora of the gulf-weed (*Fucus natans*), as well as small fish, barnacles, and probably many

small mollusca. Their flesh is rank, oily, and unpleasant to the taste. Their food is even converted into oil by the digestive process, and they abound with it to such a degree that, according to Brunnich, the inhabitants of the Faro Isles make their carcasses serve the purpose of a candle by drawing a wick through the mouth and rump, which being lighted, the flame is for a considerable time supported by the fat and oil of the body.

Audubon led Nuttall astray regarding the breeding of Wilson's Petrel, confounding it with Leach's Petrel. The nesting-place of the present species and the appearance of the egg were unknown until a few years ago, when the members of the Transit of Venus Expedition discovered a colony of the birds on Kerguelen Island, in the Southern Ocean, and brought back some of the eggs, which were taken during January and February.

Wilson's Petrel, therefore, would have little reason upon which to rest a claim to be ranked as an "American" bird, were it not for the "three mile-limit" clause in international law. These birds come towards the shore and into the harbors and creeks in search of food. During the summer they are met with all along our coast, from northern Labrador to the tropics.

STORMY PETREL.

MOTHER CAREY'S CHICKEN.

PROCELLARIA PELAGICA.

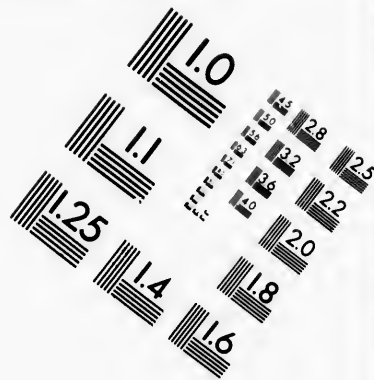
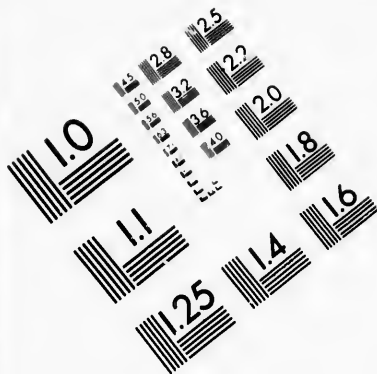
CHAR. General plumage sooty black or blackish brown; upper tail feathers white, tipped with black; tail square or slightly rounded; bill, legs, and feet black. Length about $5\frac{1}{4}$ inches.

Nest. Usually in a burrow, sometimes in a crevice of a rock or amid loose stones; generally a thin cushion of weed-stems or grass, but often the egg is laid on the bare soil.

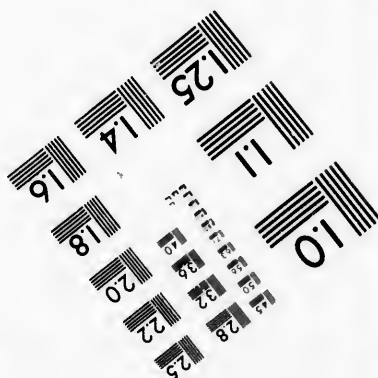
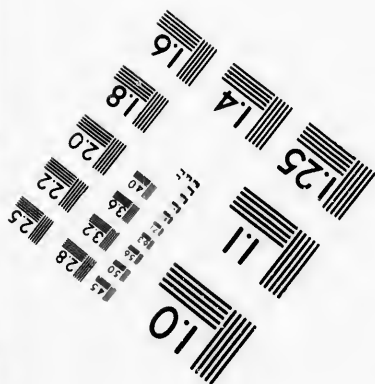
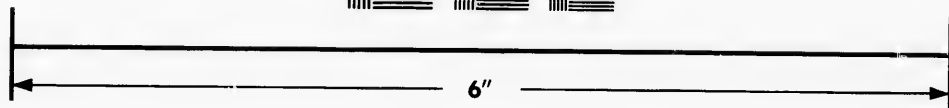
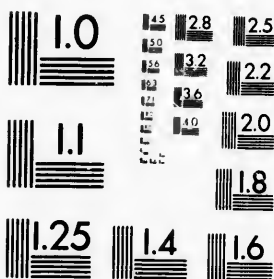
Eggs. 1; white, faintly marked with fine spots of reddish brown; average size 1.15×0.85 .

Of the three species of Swallow-like Petrels that are seen regularly on the North Atlantic, the present is the rarest; and this is seldom seen near the shore, and never south of New England. It breeds abundantly on the British Islands and along the coast of Norway, and is said to breed in the Mediterranean Sea, on the





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African coast. In winter it wanders south to the Azores and Canaries.

The Stormy Petrel, or Least Petrel, as it was formerly called, is the smallest of the web-footed birds, and on the wing has something of the appearance of a Barn Swallow. It has completely webbed feet, and can swim with ease, but is very seldom seen upon the surface of the water, though it has a curious habit of skimming close to the surface and paddling the water with its feet, whence is said to have originated the name of Petrel, or "Little Peter." The bird is rarely seen walking on the land, though it can walk with ease and is rather graceful; but the head and body are carried so far in advance of the feet as to make the Petrel appear unsteady.

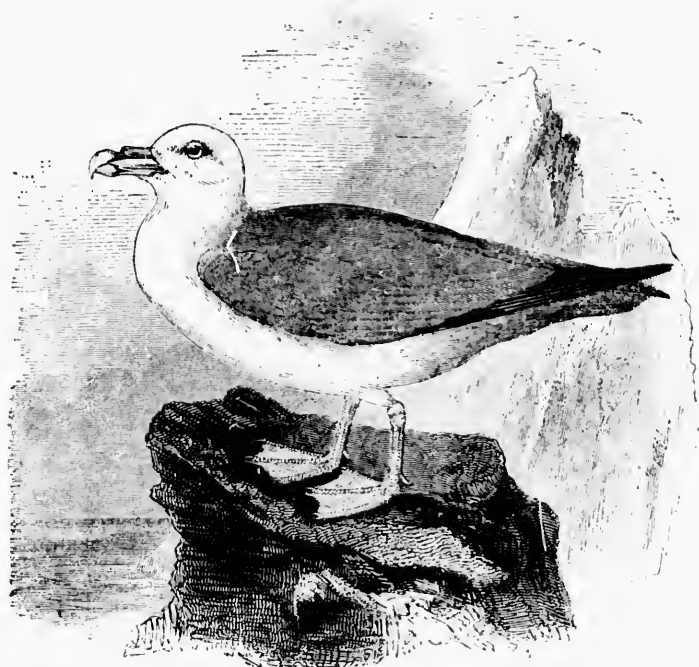
Like others of this group, the Stormy Petrel does not often appear about its nesting site during the day, and those examples that have been captured alive have shown so little inclination to display any activity before the approach of sunset that the species has been considered nocturnal; but those that are met with on the open ocean are busily engaged gleaning food through all hours of the day.

This is a rather silent bird, and its notes are heard only when the bird is on or near the nest. Hewitson tells of being guided to the nests by the "singing" of the parents, which he describes as resembling the chatter of Swallows.

The name of Mother Carey's Chicken, though by some philologists to be a corruption of *Mater cara*, was originally applied to this species by seamen, but it is now applied to all the small Petrels.

Sailors fancy that the appearance of these birds is an evil omen and foretells a storm, — which is partly true, for they revel in a storm and seek it. The Petrels have no dread of winds or waves, and find their harvest amid the tumult, fearlessly gleaning their food from the curling seas.

NOTE. — Examples of several species of Petrel occasionally wander into our waters from their customary cruising area. These are the BLACK-CAPPED PETREL (*Æstrelata hasitata*), from the tropics; PEALE'S PETREL (*Æstrelata gularis*), from the Antarctic; BULWER'S PETREL (*Bulweria bulweri*), from the eastern side of the Atlantic; WHITE-BELLIED PETREL (*Cymodroma grallaria*), from the tropics; WHITE-FACED PETREL (*Pelagodroma marina*), from the Southern Ocean.



FULMAR.

WHITE HAGDON. NODDY.

FULMARIS GLACIALIS.

CHAR. Mantle and tail bluish gray; wings dusky; head, neck, and under parts white; bill greenish yellow; legs and feet pale flesh-color. Length about 19 inches. Numerous examples, supposed to be immature birds, have the white portions clouded with gray, and the mantle tinged with brown.

Nest. A deep hollow scratched in the soil on a grassy shelf of a cliff; sometimes on a bare rock, — usually a thin cushion of grass or moss; often the egg is laid on the soil.

Egg. 1; white, with a rough, chalk-like surface, sometimes with a few spots of reddish brown; average size 2.90 × 2.00.

Surrounded by an eternal winter, the Fulmars dwell nearly at all seasons of the year upon the Arctic seas. Harbingers of storm and danger, they choose the wildest and most desolate of regions, where, congregating amidst the floating ice, they

seek out the resorts of the whale, on whose carcase and those of other cetaceous animals they often make a gratifying feast, and are well known to the whale-fishers who frequent these hyperboreal seas. They attend the ships in all their progress. Emphatically birds of the tempest, these Petrels ride securely amidst its horrors, profiting by the agitation and destruction which it spreads around. Aware of the object which the whaler has in quest, they follow the vessel and watch the result. As soon as a whale is moored to the side of the ship and begins to be cut up, an immense muster takes place, sometimes exceeding a thousand, of these greedy birds, all stationed in the rear, watching for the morsels which are wafted to leeward. The peculiar chuckling note by which they express their eager expectation, their voracity when seizing on the fat, and the large pieces which they swallow, the envy shown towards those who have obtained the largest of these morsels, and often the violent measures taken to wrest it from them, afford to the sailors curious and amusing spectacles. The surface of the sea is sometimes so covered with them that a stone cannot be thrown without one being struck. When an alarm is given, innumerable wings are instantly in motion, and the birds, striking their feet against the water to aid their flight, cause a loud and thundering plash.

The Petrel is not uncommon in some of the islands off the north of Scotland. At St. Kilda, one of the Hebrides, it breeds, and supplies the inhabitants with a vast quantity of oil, which is used for culinary as well as medicinal purposes. According to Pennant, "no bird is of such use to the islanders as this; it supplies oil for their lamps, down for their beds, a delicacy for their tables, a balm for their wounds, and a medicine for their distempers." He adds "that it is a certain prognostication of the change of winds. If it come to land, no west wind is expected for some time, and the contrary when it returns and keeps to sea."

Its food is chiefly fish, particularly those that are the most fat; its stomach is indeed generally charged with oil, which it has the power of ejecting forcibly from the bill and nostrils as

a mode of defence. It attends the fishing vessels on the banks of Newfoundland, feeding on the liver and offal of the cod-fish which is thrown overboard, and is known to the sailors by the quaint name of John Down. It is also taken by means of a hook baited in this manner with the offal, and the inhabitants of Baffin's and Hudson's Bay are said to salt them for winter provision; though Pennant, in the "Arctic Zoology," adds that their flesh is rank and fetid in consequence of their unpleasant food, yet they are still considered as no indifferent dish by the hungry Greenlanders, and they breed usually about Disco. Like the birds of the preceding and nearly allied genus, they nest in holes in the rocks in great companies at St. Kilda about the middle of June, laying but one large, white, and brittle egg. The Fulmar is now and then, though very rarely, seen on the temperate coasts of Europe and the United States. The feathers are very close and full, clothed below with a thick and fine down.

Fulmars are common from the Newfoundland banks northward, and in winter a few stragglers are met with off the New England coast. This form is not known to breed on the eastern side of the Atlantic.

LESSER FULMAR.

WHITE HAGDON. NODDY.

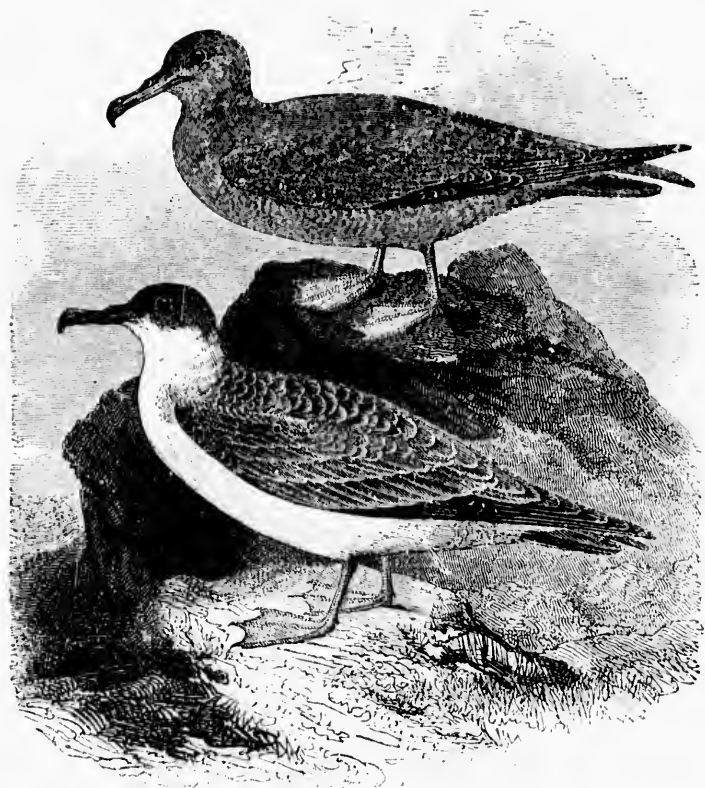
FULMARS GLACIALIS MINOR.

CHAR. Similar in coloration to *glacialis*, but smaller. Length averages about 18 inches.

Nest and Eggs. Similar to *glacialis*, the eggs averaging somewhat smaller.

Mr. Hagerup thinks it probable that this is the form that breeds in numbers on the western coast of Greenland north of latitude 69°. In winter a few of these birds are met with off the New England coast.

The habits of this variety do not differ from those of the type, and the two forms can be separated only by their size.



GREATER SHEARWATER.

HAGDON.

PUFFINUS MAJOR.

CHAR. Mantle grayish brown, the feathers edged with pale brown; top of head and nape grayish brown, paler on the neck; wings and tail blackish brown; tail-coverts broadly tipped with white; under parts white, the belly shaded with brownish gray; the white feathers of the neck separated abruptly from the dark feathers of the crown and nape; bill brownish black; legs and feet dull yellowish pink, turning to yellow in dried skins. Length about 19 inches.

Nest and Eggs. Unknown.

The Cinereous Puffin, or Wandering Shearwater, visits every part of the great Atlantic Ocean, from the banks of Newfoundland to Senegal and the Cape of Good Hope. It is also com-

mon in the Mediterranean and on the southern coasts of Spain and Provence, but never proceeds to the Adriatic.

On approaching the banks of Newfoundland, but far west of soundings, we see the soaring and wandering Lestris, and every day the wild Shearwaters, but more particularly in blowing and squally weather; sometimes also in fine weather we see them throughout the day. Their course in the air is exceedingly swift and powerful. With their long wings outstretched and almost motionless, they sweep over the wild waves, fearless of every danger, flying out in vast curves, watching at the same time intently for their finny prey. Like the Petrels, these Shearwaters are often seen to trip upon the water with extended feet and open wings; they likewise dive for small fish, and find an advantage in the storm, whose pellucid mountain waves bring to view the shiny prey to more advantage,—the birds are therefore often seen most active at such times, watching the sweeping billow as it rises and foams along, harassing and pursuing their quarry with singular address, snatching it from the surface, or diving after it through the waves, on which they are often seen to sit, mounting to the sky or sinking into the yawning abyss of the raging deep.

The Greater Shearwater probably breeds on the islands of the North Atlantic, though no authentic account of the nest and eggs has been published. Some eggs received from Greenland, and supposed by good authorities to be of this species, are described as white, and averaging about 2.80×1.90 .

The name Cinereous, applied to this bird by Nuttall, is now restricted to an allied species, *Puffinus kulldii*, which breeds on various islands in the Mediterranean and on the Azores.

Our bird is numerous on the shores of Greenland up to about latitude 65° , and is quite common off the New England coasts during the winter, though usually far away from the shore.

The fishermen call it the "Hagdon," in common with others of the genus and the Fulmar.

In the illustration the Greater Shearwater is represented by the lower figure; the upper one represents the Sooty Shearwater.

CORY'S SHEARWATER.

PUFFINUS BOREALIS.

CHAR. Mantle brownish gray, the feathers shading to paler at the tips; crown and nape brownish gray, the feathers on the nape tipped with white; sides of head and neck mottled white and gray; wings and tail brownish gray, darker than mantle; under parts white; bill yellowish at base, shading to black towards the tip; legs and feet dull orange. Length about 21 inches.

Nest and Eggs. Unknown.

Cory's Shearwater was described in 1881 by Mr. Charles B. Cory from specimens taken off Cape Cod during October, 1880. Since that date a number of examples have been taken along the New England coast in September and October, and in the autumn of 1886 an immense number were seen off the Nantucket islands.

Writing of this flight, Prof. S. F. Baird said: "The Shearwaters occurred in flocks of perhaps from fifty to two or three hundred, the bunches being generally found quietly resting on the waters and feeding, while swimming, upon the herrings that were so abundant in the vicinity. The birds were very tame, but approach to them could be best made by a steam-launch, which would almost run over them before they would start to fly. A dozen birds were killed by the discharge of two guns from a launch. About a hundred specimens were secured, and thousands could easily have been killed if necessary."

This species is not known to differ in its habits from other members of the genus, and in appearance is similar to *P. major*, though *borealis* is readily distinguished by its yellow bill, the paler tint of the brown in the upper parts, and by the absence of a distinct line of demarcation between the white and dark feathers on the neck.

Mr. Howard Saunders, a noted English authority on this family of birds, considers that *P. borealis* is identical with *P. kuhlii*.

SOOTY SHEARWATER.

BLACK HAGDON.

PUFFINUS STRICKLANDI.

CHAR. Upper parts dark sooty brown; under parts paler and varied with grayish; wings and tail dusky or blackish; bill and legs dusky. Length about 17 inches.

Nest and Eggs. Unknown.

The Black Hagdon of the fishermen — represented by the upper figure of the illustration on page 272 — is a common bird on the North Atlantic between Newfoundland and the Carolinas during the autumn and winter months, though it appears to have escaped the notice of Nuttall and his contemporaries.

This bird is not known to breed on our shores nor has any breeding-place of the species been discovered, though it is very probable that its nesting habits are similar to those of the Pacific form, *P. griseus*, which our bird very closely resembles in appearance, and with which it may be identical, as it is considered by some British authorities.

Nests of *griseus* discovered in the South Pacific were placed at the end of a burrow, which ran horizontally three or four feet, and then turned to the right or left. The single egg, which was placed on a rude cushion made of twigs and leaves, was of white color, and measured on the average about 2.60×1.70 .

AUDUBON'S SHEARWATER.

PUFFINUS AUDUBONI.

CHAR. Upper parts sooty black or dusky, darker on wings and tail; under parts white; bill lead blue; outside of legs black, inside and webs yellowish. Length about 11 inches.

Nest. In a crevice of a rock or amid loose fragments of stone, — a slight affair of loosely arranged twigs.

Egg. 1; white (similar in appearance to oval eggs of the domestic fowl, but with thinner shell and more highly polished surface); average size about 2.05×1.40 .

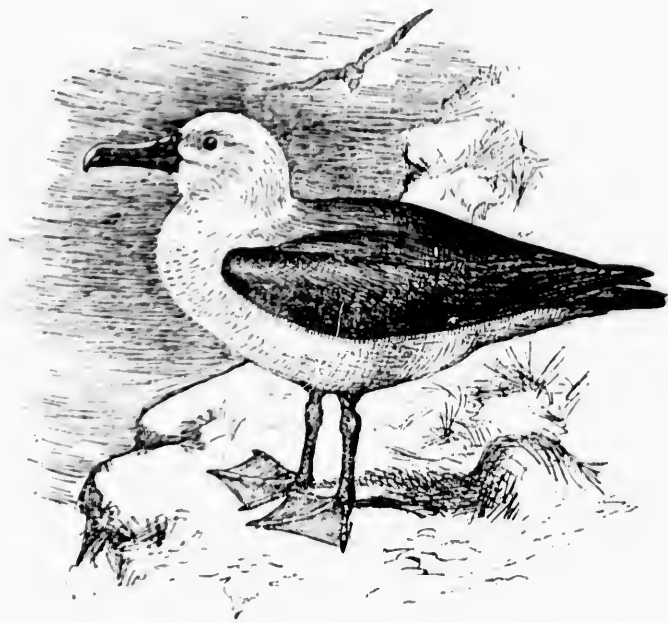
This species breeds in large numbers on the Bermuda and Bahama Islands and southward, and is seen off the shores of the mainland, occasionally wandering as far north as Long Island. It

is abundant along the eastern side of the Atlantic, and is said to breed on some of the islands lying off the west coast of Africa.

It is described as a stupid bird, offering no resistance when taken from the nest, and as appearing dazed and almost helpless when placed on the land. The flight of the bird is strong and graceful, and Audubon says it can dive and swim with the ease of a Duck.

There are conflicting statements regarding the nocturnal habits of the species, some observers representing them as feeding through the day, while others think that during the day these birds are inactive and silent, resting upon the water, usually far out from the land, and very rarely feeding; but at night they are actively occupied in catching and devouring fish, and at that time their mournful cry is continually in the air. There is good reason for believing that both statements are correct. — that these birds feed in the daytime when food is abundant, but that they are generally more active after sunset.

NOTE. — The MANX SHEARWATER (*P. puffinus*), which breeds on the coast of England, is credited with appearing occasionally near to our coast.



YELLOW-NOSED ALBATROSS.

THALASSOGERON CULMINATUS.

CHAR. Mantle dark bluish slate, shading to brownish on wings and head; rump white; tail grayish; under parts white. Length about 36 inches.

Nest. In an exposed situation on an ocean island; a bulky structure of coarse herbage and mud lined with fine grass and feathers. As new material is added each succeeding year, the height is increased.

Egg. 1; dull white, sparsely marked with purplish brown and lavender; average size 4.25 X 2.65.

The claim of this species to recognition here is based upon the capture of an immature bird near the mouth of the river St. Lawrence in 1885. I examined the skin, which is preserved in the Museum of Laval University, at Quebec, and was told by the curator, Mr. C. E. Dionne, that he purchased it from the fisherman who shot the bird. The claim is slight, but there is no reason why it should be ignored.

This bird had wandered far away from the usual habitat of the species, for the Yellow-nosed Albatross is seldom seen anywhere

but in the Southern Pacific, a few examples only having been observed as far north as the coast of California.

It should be remembered, however, that this entire family of birds are noted wanderers, — *the* most extensive wanderers of all this wandering race, — and their strength of wing and power of endurance render them capable of any journey.

There is something truly sublime, as Hammerton has suggested, in the travelling of these sea-birds. "Think of one of these birds," he writes, "leaving some barren rock in the ocean, and without further preparation than the unfolding of his mighty wings, setting forth on a voyage of two or three hundred leagues! . . . Nothing but the natural forces aid him; he propels himself by his own unwearied pinions, and seeks his food in the waves below. Self-reliance of that genuine kind is quite beyond us. . . . The great lonely birds *are* self-reliant; and what a noble absence of fear is needed for the daily habit of their lives!"

WANDERING ALBATROSS.

DIOMEDEA EXULANS.

CHAR. Prevailing color yellowish white; tail sooty black; wing-coverts more or less varied with dusky. Average length about 50 inches. Young birds are uniform sooty brown, and become white, gradually the white feathers increasing at each moult.

Nest. In an open situation on an ocean island, — a bulky structure of coarse herbage and mud, lined with fine grass and feathers. By the yearly addition of fresh material the nest rises to mound-like proportions, some having been seen as high as eight feet.

Egg. 1; white, the surface rough, sometimes marked on the larger end with dull brown; average size 4.95×3.15 .

The Albatross inhabits the Atlantic as well as the Pacific, and sometimes wanders accidentally to the coasts of the central parts of the Union. Vagabond, except in the short season of reproduction, these birds are seen to launch out into the widest part of the ocean; and it is probable that according to the seasons, they pass from one extremity of the globe to the other. Like the Fulmar, the constant attendant upon the whale, the Albatross, no less adventurous and wandering, pursues the tracks of his finny prey from one hemisphere into another. When the flying-fish fails, these birds have recourse to

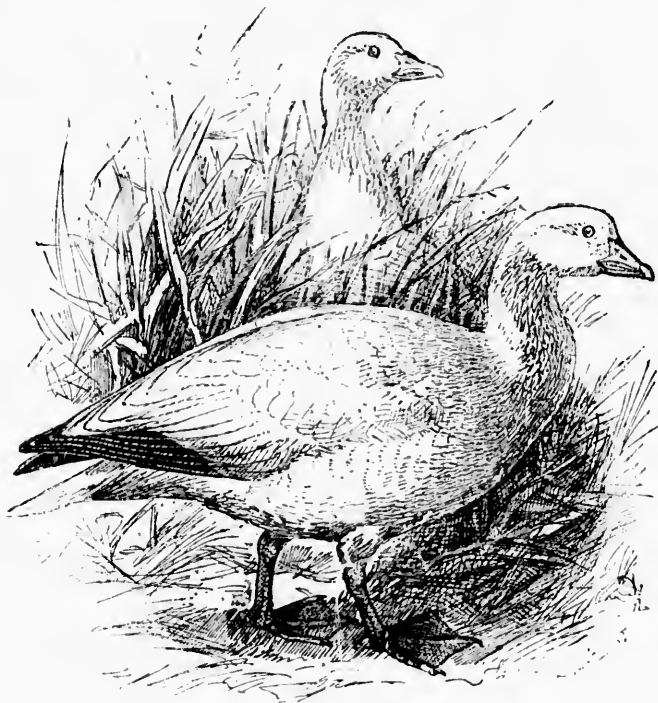
the inexhaustible supply of molluscous animals with which the milder seas abound. They are nowhere more abundant than off the Cape of Good Hope, where they have been seen in April and May, sometimes soaring in the air with the gentle motion of a kite, at a stupendous height; at others nearer the water, watching the motions of the flying-fish, which they seize as they spring out of the water, to shun the jaws of the larger fish which pursue them. Vast flocks are also seen round Kamtschatka and the adjacent islands, particularly the Kuriles and Bering's Island, about the end of June. Their arrival is considered by the natives of these places as a sure presage of the presence of the shoals of fish which they have thus followed into these remotest of seas. That want of food impels them to undertake these great migrations appears from the lean condition in which they arrive from the South; they soon, however, become exceedingly fat. Their voracity and gluttony is almost unparalleled, — it is not uncommon to see one swallow a salmon of four or five pounds weight; but as the gullet cannot contain the whole at once, part of the tail end will often remain out of the mouth; and they become so stupefied by their enormous meals as to allow the natives to knock them on the head without offering any resistance. They are often taken by means of a hook baited with a fish, though not for the sake of their flesh, which is hard and unsavory, but on account of their intestines, which the Kamtschadales use as a bladder to float the buoys of their fishing-nets. Of the bones they also make tobacco-pipes, needle-cases, and other small implements. When caught, however, these birds defend themselves stoutly with the bill, and utter a harsh and disgusting cry. Early in August they quit these inhospitable climes for the more genial regions of the South, into which they penetrate sometimes as low as the latitude of 67° .

In Patagonia and the Falkland Islands they are known to breed, but not in the northern hemisphere, to which they probably migrate only in quest of food. They repair to this southern extremity of the American continent about the time they leave the northern regions, being seen at the close of Sep-

tember and beginning of October (the spring of this hemisphere) associated to breed with other birds of similar habits. The nests are made on the ground with earth and sedge, of a round, conic form, elevated to the height of three feet, leaving a hollow in the summit for the egg, — for the Albatross lays but one, which is larger than that of a Goose, white, with dull spots at the larger end; this is good food, the white never growing hard with boiling. While the female is sitting, the male is constantly on the wing, and supplies her with food. During this time the female is so tame as to allow herself to be pushed off the nest while her eggs are taken. But the most destructive enemy of this bird is the Hawk, which steals the egg whenever the female removes from it. As soon as the young are able to leave the nest, the Penguins take possession of it, and without further preparation hatch their young in turn.

The Albatross, though so large a bird, suffers itself to be teased and harassed while on the wing by the Skua Gull, or Lestris, from which it often alone finds means to escape by settling down into the water, but never attempts resistance.

A few examples of this species have been met with off the coasts of Florida: but it has not been seen elsewhere near our shores during recent years.



GREATER SNOW GOOSE.

WAVEY. WHITE BRANT.

CHEN HYPERBOREA NIVALIS.

CHAR. Plumage white; head washed with rufous; wing-coverts and wings ashy gray, the latter shading to black at the ends; bill and feet purplish red. Length about 33 inches.

In young birds the upper parts are pale gray, the feathers of the back edged with white; rump and under parts white.

Nest. Usually on the marshy margin of a lake or stream, — a loosely made structure of coarse herbage and twigs lined with grass and feathers.

Eggs. Unknown.

The Snow Goose, common to the north of both continents, breeds, according to Richardson, in the Barren Grounds of Arctic America in great numbers, frequenting the sandy shores of rivers and lakes. These birds are very watchful, employing

one of their number usually as a sentinel to warn them of any approaching danger. The young fly about the close of August, and the whole depart southward about the middle of September. Early in November they arrive in the river Delaware, and probably visit Newfoundland and the coasts of the Eastern States in the interval, being occasionally seen in Massachusetts Bay. They congregate in considerable flocks, are extremely noisy and gabbling, their notes being shriller than those of the Canada or Common Wild Goose. They make but a short stay in the winter, proceeding farther south as the severity of the weather increases. The Snow Geese already begin to return towards the North by the middle of February, and until the breaking up of the ice in March, are frequently seen in flocks on the shores of the Delaware and around the head of the bay. At this time they are observed to feed on the roots of the reeds, tearing them up like hogs. In their breeding-resorts in the fur countries they crop rushes and collect insects, and in autumn principally berries for food, particularly those of the crow-berry. At this time they are seldom seen on the water, except in the night or when moulting. When well fed the flesh is excellent, being far superior to the Canada Goose in juiciness and flavor. It is said the young do not attain the full plumage of the old birds before their fourth year, and until that period they appear to keep in separate flocks. They are numerous at Albany Fort, in the southern part of Hudson Bay, where the old birds are rarely seen; and, on the other hand, the adult birds in their migrations visit York Factory in great abundance, but are seldom accompanied by the young. They make their appearance in these remote countries in spring, a few days later than the Canada Goose, and pass in large flocks both through the interior and along the coast. At this season they were also seen by Mr. Say in the Territory of Missouri; many migrating north, probably up the great valley of the Mississippi.

The Snow Goose is also met with commonly on the western side of America, as at Aoonalashka and Kamtschatka, as well as in the estuary of the Oregon, where they were seen by Lewis

and Clarke. They are very abundant in Siberia, and the natives often take them in nets by means of rude decoys. In that frozen climate they afford a great article of subsistence; each family killing thousands in a season, which are laid up in bulk, in holes in the earth, and made use of as occasion requires.

The breeding area of this variety is not known with certainty, but it probably lies in the Barren Ground region between Greenland and the Mackenzie River, the larger number of the birds nesting towards the western limit of their range.

The birds winter on the Atlantic shores of the Southern States and in the West Indies, and go north chiefly by way of the Mississippi valley. Only a few individuals are seen on the New England and Canadian shores. Immense flocks are met with on the Great Plains.

NOTE. — The Lesser Snow Goose (*Chen hyperborea*), the Western form of this species, which breeds in Alaska, is found in winter occasionally in southern Illinois, and casually in New England.

BLUE GOOSE.

BLUE WAVEY.

CHEN CÆRULESCENS.

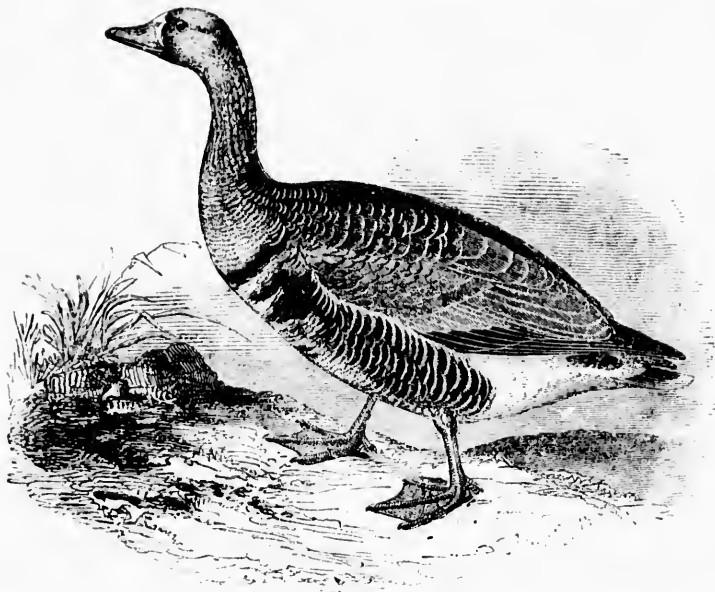
CHAR. Back grayish brown; head, neck, and rump white; wings bluish gray, shading to black on ends; tail dusky; under parts white; bill and feet purplish red. Length about 25 inches.

Nest and Eggs. Unknown.

After much contention and relegation for a time to the "Hypothetical List," under the supposition that it was the young of the Snow Goose, this has been admitted as a valid species.

Its breeding area lies along the shores of Hudson Bay, and its winter home is on the Gulf coast, whence it migrates chiefly along the valley of the Mississippi. Mr. William Dutcher reports that the bird is "an accidental visitor" to Long Island.

In habits the Blue Goose does not differ materially from its allies.



AMERICAN WHITE-FRONTED GOOSE.

LAUGHING GOOSE.

ANSER ALBIFRONS GAMBELLI.

CHAR. Upper parts brownish ash, the feathers paler on the edges; forehead and rump white; wings and tail dusky; under parts brownish gray, blotched with black; bill yellow, with white nail; legs and feet orange. Length about 30 inches.

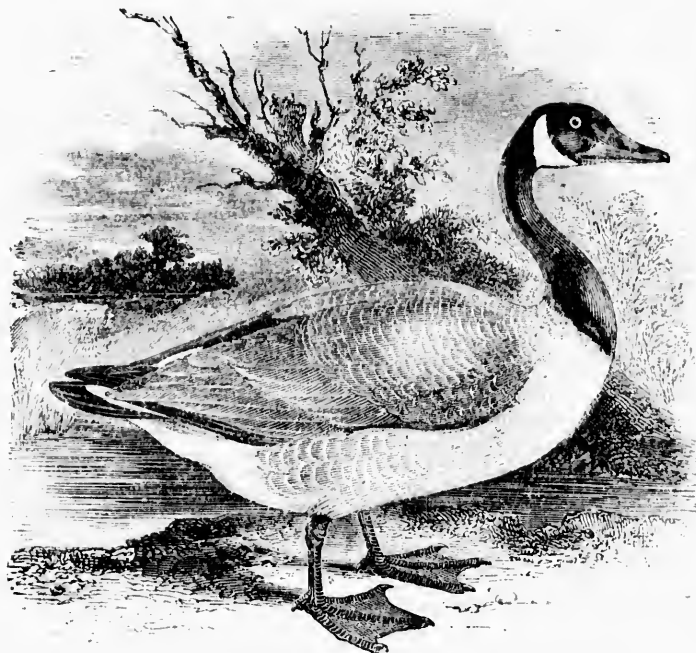
Nest. Amid rank grass and made of coarse herbage and lined with grass and feathers, — sometimes a mere depression at the summit of a grassy mound or in the sand on the bank of a river, lined with feathers and down.

Eggs. 5-7; "dull greenish yellow" (?); 3.15×2.05 .

The White-fronted Goose breeds chiefly in the interior of the continent on the skirts of the forest portions of sub-arctic regions, and winters in Mexico and the West Indies. During the migrations this Goose is rare along the Atlantic coast, but plentiful on the plains, and quite common about the Great Lakes.

Numbers of this species nest in Greenland, but they are said to be of the European race, — true *albifrons*, — and they probably migrate southward by the way of Iceland and the British Isles.

The name of Laughing Goose is derived from the call, which is loud and trumpet-like. It sounds something like *wah, wah, wah, wah*, repeated rapidly.



CANADA GOOSE.

WILD GOOSE.

BRANTA CANADENSIS.

CHAR. Mantle grayish brown, the feathers with paler edges; head and neck black, a broad white patch on the throat; tail black, tail-coverts white; under parts gray, shading to white on the under tail-coverts; bill and legs black. Length about 36 inches.

Nest. In a variety of situations, but usually on the ground and made of twigs and grass loosely laid and lined with feathers and down.

Eggs. 5-7; pale dull green; 3.50 × 2.50.

The Common Wild Goose of America is known familiarly in every part of the Union as a bird of passage to and from its breeding-places in the interior and north of the continent. The arrival of these birds in the desolate fur countries of Hudson Bay is anxiously looked for and hailed with joy by the aborigines of the woody and swampy districts which they frequent, who depend principally upon them for subsistence during the

summer. They make their appearance at first in flocks of twenty or thirty, which are readily decoyed within gunshot by the hunters, who set up stales, or stuffed birds, and imitate their call. Two or three are so frequently killed at a shot, in this way, that the usual price of a Wild Goose is a single charge of ammunition. This vernal flight of the Geese continues from about the middle of April to the same time in May; their appearance of course coinciding with the thawing of the swamps and marshes, though their usual food of grass and berries is accessible at most times when not buried up in the snow. These fruits are often, indeed, only mellowed by the frost, and when stripped of their wintry wreath are again ready for food, as they were in the autumn before their disappearance beneath the snow. At such times, according to Dr. Richardson, the Wild Goose makes an abundant repast of the farinaceous berries of the silvery buckthorn as well as of other kinds which have escaped destruction. After feeding in a desultory manner for about three weeks, these birds retire from the shores of Hudson Bay, their great rendezvous, and disperse in pairs through the country between the 50th and 67th parallels, to breed, but are seldom or never seen on the coasts of the Arctic Sea; yet Mr. Audubon found them breeding on the shores of Labrador. They lay six or seven greenish-white eggs in a coarse nest usually made on the ground, but some pairs occasionally breed on the banks of the Saskatchewan, in trees, making use, on these occasions, of the deserted eyries of the Ravens or Fishing Hawks. The call, or *honk*, is imitated by a prolonged nasal pronunciation of the syllable *wook* frequently repeated.

Solitude and suitable food seem principally to influence the Canada Goose in the selection of its breeding-place; it is therefore not improbable but that many pairs pass the period of reproduction in the swampy and retired marshes of the Great Northwestern Lakes. At any rate, in the month of March (1810) many Wild Geese were nesting in the shave-rush bottoms of the Missouri no farther up than Fire Prairie, considerably below the junction of the river Platte; so that the breeding range of the Canada Goose probably extends through not

less than 30 degrees of latitude. In July it appears, after the young birds are hatched, in the fur countries; the parents moult; and advantage being then taken of their helplessness, vast numbers are killed in the rivers and small lakes when thus disabled from flight. At such times, when chased by a canoe, and frequently obliged to dive, they soon become fatigued, and making for the shore in order to hide, are quickly overtaken, and fall an easy prey to their pursuers.

Attached to particular places of resort at the period of migration, the Geese in autumn, instinctively advertised of the approaching winter, and of the famine which to them necessarily attends in its train, are again seen to assemble on the sea-coast, courting the mildness of its temperature and its open waters, which seem to defy the access of frost. They thus continue to glean the marshes along the shores, till the increasing severity of the weather urges them to a bolder and more determined flight from the threatening dangers of their situation. They now in vast array begin to leave the freezing shores of Hudson Bay. Like the rest of their gabbling and sagacious tribe, at the call of their momentarily elected leader they ascend the skies, wheeling round, as if to take a final leave of their natal shores, and sensible to the breeze, arranged in long converging lines ($>$), they survey their azure route, and instinctively follow the cheering path of the mid-day sun, whose feeble gleams alone offer them the hope of arriving in some more genial clime. The leader, ambitious of his temporary station, utters the cheering and reiterated cry; his loud but simple clarion, answered by the yielding ranks, dispels the gloom of solitude through which they laboriously wander to uncertain and perhaps hostile lands. At length they come in sight of the habitations of men. Suspicious of these appearances, they urge their flight higher and more silently in the air. Bewildered by fogs, however, they often descend so low and *honk* so loud as to give sufficient notice of their approach to the ambitious gunner, who thus pours destruction among the alarmed and confused flock. They also hear, or think they hear, a wandering companion lost from

their cherished ranks ; they approach the object, and it is but a domestic traitor of their species, or the well-imitated call of the wily fowler. Towards evening, desirous of relieving the toil and hunger of his adventurous band, the intelligent leader reconnoitres from his lofty station the resting-place of his charge ; he espies the reedy river or silent lake, whose grassy margins offer the necessary supply and cover to their lodgment. His loud call now redoubles at the pleasing prospect, and they all alight, and silently repose in darkness upon the still water. Early in the morning they renew their wandering course, and according to the time and season, visit every part of the Union, to the shores of the Mexican Gulf.

The autumnal flight of the Canada Geese to the coast of Hudson Bay, and their residence there, continues for three weeks or a month previous to their departure for the South, which usually takes place in September. Early in October they arrive on the coasts of the Eastern and Middle States.

The residents of Hudson Bay depend greatly on Geese for their supply of winter provision ; and according to Hutchins, in favorable years they kill three or four thousand, and barrel them up for use. These are obtained chiefly by means of ambuscade and decoy, bough-huts being made by the Indians in lines over the marshes they frequent to feed. Mimicking their call, they are brought within gunshot, and the deception is also enhanced by stales and setting up the dead birds on sticks, in living attitudes. Thus in a good day a single native will kill as many as two hundred. When the frosts begin, the Geese are readily preserved, with the feathers on, in a frozen state, and thus afford a durable supply of fresh provision. The feathers also constitute an article of commerce.

In the shallow bays and marshy islands some Geese continue the whole winter in New Jersey and the Southern States, through which they spread themselves to the very extremity of Florida. Their principal food is the sedge roots and other herbage ; they also crop *Uvas* and tender marine plants, and swallow quantities of gravel. They swim with ease and elegance, and when

disabled in the wings, dive well and become difficult to capture. When the shallow bays and ponds are frozen, they seek the mouths of inlets near the sea, in quest of their fare.

The Canada Goose is now completely domesticated, and is as familiar, breeds as freely, and is in every respect as valuable as the common Gray Goose. Even in Buffon's time, "many hundreds inhabited the great canal at Versailles, where they bred familiarly with the Swans;" and he also adds, "There is at present a great number on the magnificent pools that decorate the charming gardens of Chantilly." The female, in a state of domesticity, still with instinctive caution seeks out the most solitary place for her nest, not far from the water. These birds are also extremely watchful, and the gander often very resentful and clamorous against any stranger who happens to approach the place where his consort is breeding. He often engenders with the Goose of the common species, and the hybrids are greatly esteemed for the superiority of their flavor.

The natural desire of periodical migration is strongly exhibited by Canada Geese while in a state of domestication; and though at all other times reconciled to accustomed and voluntary captivity, they are often heard instinctively to hail the passing flocks as they pursue their yielding way high in the air. Individuals have been known to leave the premises where they appeared entirely domestic, after the healing of the wounds which brought them into captivity, and they have thus successfully mounted into the air and joined some passing party pursuing their way to the North.

A Mr. Platt, of Long Island, having wounded a female Wild Goose, succeeded in taming it, and left it at large with his other Common Geese. Its wound healed, and it soon became familiar and reconciled to its domestic condition; but in the following spring it joined a party of Canada Geese and disappeared until autumn; when at length, out of a passing flock, Mr. Platt observed three Geese detach themselves from their companions, and after wheeling round several times, alight in the barn-yard, when, to his astonishment, he recognized in one

of the three his long-lost fugitive, who had now returned, accompanied by her offspring, to share the hospitality of her former acquaintance. However incredible this story may appear, I have heard two or three relations of the same kind, as well authenticated as any other facts in natural history. One of these happened to a plucker near Okrocock inlet, in North Carolina, in which, as in the present instance, the female, after being absent the summer, returned recruited with her brood in autumn; but the greedy farmer, less humane than Mr. Platt, having probably heard of the old adage that "a bird in the hand is worth two in the bush," made sure of his prizes by killing them without delay. It appears from the relations of travellers, and particularly a Dr. Sanchez, that in the Cossack villages on the Don (in the autumn of 1736), he remarked, as he travelled along, a great number of Geese in the air, which alighted and dispersed through the hamlets. On inquiry he learned that these birds came from the remote northern lakes, and that every year, on the breaking up of the ice, six or seven pairs of Geese leave each hut of the village and return not until the beginning of winter; that then these flocks arrive, increased by their progeny, and each little party, separating from the rest, seek out the houses where they lived the preceding winter.

The Canada Goose breeds sparingly in the northern portions of the New England States and in New Brunswick. It is still a common bird, and in some localities is found in great numbers while migrating.

HUTCHINS GOOSE.

SOUTHERN GOOSE.

BRANTA CANADENSIS HUTCHINSII.

CHAR. Similar to Canada Goose in plumage, but of smaller size. Length about 30 inches.

Nest. Usually on a sandy beach, — a mere depression in the sand lined with grass and feathers. Like the Canada Goose, this variety sometimes builds in a tree, generally in the deserted nest of a Hawk or Crow, and often builds on the ground a large nest of twigs and grass.

Eggs. 5-8; pale creamy or whitish; 3.20 × 2.10.

On Captain Parry's second voyage several flocks of Geese were seen on Melville Peninsula which were thought to be the Barnacle, but which the Esquimaux said were the males of the Brant that during the breeding-season separated themselves from the females. A number of specimens were obtained, all of which proved to be males, and Dr. Richardson described the species as a variety of the Brant; but from information afterwards obtained, he considered these specimens as belonging to a different species, hitherto confounded with the *A. canadensis*. In Hudson Bay these birds are well known by the Cree name of *Apistiskeesh*, and are generally thought by the residents to be merely a small kind of the Canada Goose, as they have the white, kidney-shaped patch on the throat, which is deemed peculiar to that species. Their habits, however, are dissimilar, the Canada Geese frequenting the fresh-water lakes and rivers of the interior, and feeding chiefly on herbage; while the present species are always found on the sea-coast, feeding on marine plants, and the mollusca which adhere to them, whence their flesh acquires a strong fishy taste.

In form, size, and general colors of the plumage, the new species more nearly resembles the Brant than the Canada Goose. It differs, however, from the former in being the white, reniform patch on the throat and cheeks, in wanting the spotted white mark on the side of the neck, in the black color terminating four inches higher, instead of including the swell of the upper parts of the back and breast, and in the white of the vent being more extended. It is totally unlike *A. leucopsis* in plumage, and has a larger bill.

This species of Barnacle, named in honor of Mr. Hutchins, — from whom Pennant and Latham derived most of their information respecting the birds of Hudson Bay, — breeds in considerable numbers on the shores and islands of the Arctic Sea, being seldom seen in the interior, and keep near the sea-coast in their migrations. They feed on marine plants and mollusca, as well as on grass and berries, in common with the *A. bernicli*.

Hutchins Goose is now considered a variety of *canadensis*, though in habits it is quite distinct.

The present race breeds in the Arctic region and winters in the Southern States; but on the Atlantic coast is now rather rare north of Cape Hatteras, though formerly it was quite common. On the prairies and west of the Rockies these birds are still abundant.

NOTE. — The CACKLING GOOSE (*B. canadensis minima*), a smaller race, — length about 24 inches, — which breeds in Alaska and winters in California, is occasionally represented in the Mississippi valley by a few individuals.

Another occasional visitor from the West to this faunal province is the BLACK BRANT (*B. nigricans*). A few examples of this species have been taken on the Atlantic coast.

Still another visitor of this group is the BARNACLE GOOSE (*B. leucopsis*), a European bird. This species is said to be a regular visitor to South Greenland, and Reinhardt thought it nested in the interior of that country. It has been seen also on Hudson Bay.

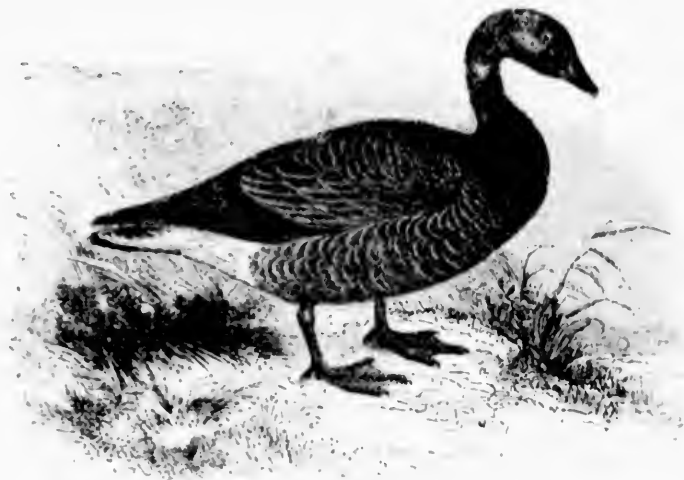
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BRANT.

BLACK BRANT. BRANT GOOSE.

BRANTA BERNICLA.

CHAR. Mantle blackish brown, the feathers paler on the edges; head and neck black, with patch of white on sides of the throat; quills and tail black; tail-coverts white; under parts grayish brown, the feathers tipped with white, lower belly white; bill and legs black. In the winter the mantle has a rufous tinge. Length about 25 inches.

Nest. On a cliff or sandy beach; made of grass, moss, and weed-stems thickly lined with down.

Eggs. 4-6 (usually 4); dull white or creamy; average size about 2.85 × 1.90.

The Brant is another of the hardy aquatic birds common to the hyperboreal regions of both continents. It breeds in great numbers on the coasts and islands of Hudson Bay and the Arctic Sea, and is rarely seen in the interior. In Europe these birds proceed to the most northern isles of Greenland and to the dreary shores of Spitzbergen. In winter they are very abundant in Holland and in Ireland, as well as in Shetland, where they remain until spring. In America, though they visit in the course of their migrations most of the Northern and Middle States, they proceed still farther south to spend

the winter, being seen on the Mississippi nearly to New Orleans. They retire from their natal regions in the North in September, and early in October are seen to arrive in great numbers about Ipswich, Cape Ann, and Cape Cod, in Massachusetts, continuing to come till the month of November, and generally appearing in greater numbers after the occurrence of an eastwardly storm. In hazy weather they also fly low, and diverge into the bays and inlets. Many of these wandering flocks pass on to the South almost without any delay, usually in marshalled and angular lines, but sometimes in a confused gang, loudly gabbling as they proceed. Their stay here is commonly so short that it is necessary to ambuscade in huts on their route in order to obtain them. The course of their passage is remarkably uniform, and instead of winding round the bays, they cross over the narrow necks and peninsulas of land which lie in their southern route, as if in haste to arrive at some particular destination, or dissatisfied with the prospect of fare. They continue almost without interruption their inflexible course until, seduced by the mildness of the climate or the abundance of their food, they seem inclined to take up their permanent winter residence in the inlets of Long Island and the sheltered bays of New Jersey, arriving, according to Wilson, in Egg Harbor sometimes as early as the 20th of September, or almost without the intermission of any interval, but for necessary food and repose, from the time of their leaving the shores of Hudson Bay. The first flights, still adventurous and roving, generally remain here only a few days, and then pass on still farther to the South. Flocks continue, however, to arrive from the North, and many individuals remain in the waters of New Jersey until the severe weather of December urges them to seek out milder regions. On recommencing their journey they assemble in one great flight, making an extensive spiral sweep some miles in circuit, to reconnoitre their route; when, rising at length high in the air, they steer to the ocean, and continue their course along the bays, or even out at sea for several leagues, till they arrive again at some new destination.

The Brant feeds usually on the bars at low water, and now and then also in the marshes; its common fare is the laver and other tender marine plants, and it now and then also eats small shell-fish. In the spring the old birds are generally lean and ill-flavored; but in winter they are justly esteemed as a delicacy, and sell at a high price. Brant never dive, but wade about in quest of their food at the recess of the tide. At the time of high water they swim out at their ease in the bay, ranged in long lines, particularly during the continuance of calm weather.

The voice of the Brant is hoarse and honking, and when gabbling in company, almost equals the yell of a pack of hounds. When pursued, or nearly approached in a state of confinement, these birds hiss like Common Geese. They are often quarrelsome amongst each other and with the Ducks in their vicinity, driving the latter off their feeding-ground. They never dive in quest of food, yet, when its wing is broken, the Brant will go a hundred yards or more at a stretch under the water; and it is then very difficult to obtain. About the middle of May it reappears on its way to the North, but at this time rarely stops long, unless driven in by stormy weather.

Brant have been found breeding very far north,—beyond latitude 82° ,—and Hagerup reports them as migrants only along the southern shores of Greenland: but numbers also breed probably on the lakes near Cumberland Bay, and some doubtless go no farther than the interior of Labrador. Large numbers linger on the northern shore of Nova Scotia until about the 1st of June, and then sail away northward, gathering in one immense flock and rising in the air to a great height.

Brant are generally written down "marine birds:" but Thompson says they occur regularly in Manitoba, though not common, and Coues saw them in vast numbers on the banks and mud-bars of the Missouri River.

WHISTLING SWAN.

OLOR COLUMBIANUS.

CHAR. Plumage white; bill black, with a yellow spot between the eyes and nostrils; legs black. Length about 55 inches.

Nest. On the margin of a lake or on an ocean island, sometimes in a marsh on a river bank,—a large structure of coarse herbage lined with fine grass or moss.

Eggs. 2-7; dull white, sometimes washed with a greenish or buffish tint; the surface is rough; average size about 4.25×2.70 .

The Whistling Swan retires into the Arctic regions to pass in more security the period of reproduction during the short but brilliant summers which there prevail. In autumn it migrates over both continents, and in winter is sometimes numerous in the Bay of Chesapeake. Flocks are seen and heard to pass also through various parts of the interior of America, and they are nowhere more abundant at that season than in Missouri, Arkansas, and Louisiana, to which countries, by the great valley of the Mississippi, they are seen to repair in lofty and numerous flights to the very close of winter, protracting their stay sometimes until driven to move by the severest frosts. In the winter of 1810 I saw two of these graceful birds in a state of domestication near St. Louis (Missouri), which were obtained with several others at the same time, in consequence of the extreme cold. The thermometer falling to 15° below zero, they were unable to bear the cutting severity of the weather, and fell disabled, accompanied by several Wild Ducks, into an adjoining field, where a few survived and became tame.

Whistling Swans arrive in Hudson Bay about the end of May in small flocks, accompanied by Geese, and propagate in great numbers along the shores, islands, and inland lakes. These birds, distinguished by their note and inferior size from the following species, are called *Hoopers*, and mostly frequent the sea-coast. The Cygnets are esteemed a delicate dish, and the full-grown young are also excellent food. The aborigines

of the interior make much use of the down of the Swan as a matter of decoration, in which taste they have also been very successfully followed by civilized nations. Among the Icelanders, Swans are an object of chase in the moulting season, which takes place in August, after rearing their young; they are pursued by dogs and on horseback, the animals being purposely trained to pass nimbly over bogs and marshes. The eggs in the spring, as well as the flesh in autumn, are in Iceland much used as food, and the feathers form an article of trade. In Kamtschatka, where Swans likewise abound and breed, they are taken and used in the same manner; their food consists of aquatic plants and insects.

The Whistling Swan, though commonly tamed and domesticated in Russia, has not the grace and elegance of the Mute species, as instead of the beautiful curve of the neck it swims with it erect. Its vocal organs are also remarkably assisted by the elaborate structure of the trachea, which, instead of passing on direct to the lungs, as in the Mute Swan, forms two circumvolutions within the chest, like a trumpet, before terminating in the respiratory organ; and it is thus enabled to utter a powerful and sonorous note. The common Tame Swan, on the contrary, is the most silent of birds, being unable to utter any louder noise than a hiss. This deficiency of voice is, however, amply made up by beauty of form and insinuating grace. Its pure, spotless, and splendid attire; its stately attitude; the ease and elegance with which, like a bark, it sits and moves majestically on the water, as if proud and conscious of its beauty; aiding its pompous progress by gently raising its snow-white wings to catch the sportive breeze, wherein it wantons with luxuriant ease, queen of its native element, — in short, all conspires to shroud the Swan, however mute, with its long acknowledged and classic perfection. And as if aware of its high and ancient pretensions, it still, as in former ages, frequents the now neglected streams of the Meander and the Strymon; with an air of affected languor it is yet seen silently sailing by the groves of Paphos, though no longer cherished by its beauteous queen.

The Hooper emits its notes only when flying, or calling on its mate or companions; the sound is something like *'whoogh*, *'whoogh*, very loud and shrill, but by no means disagreeable when heard high in the air and modulated by the winds. The natives of Iceland indeed compare it, very flatteringly, to the notes of a violin. Allowance must be made, however, for this predilection when it is remembered that they hear this cheerful clarion at the close of a long and gloomy winter, and when, in the return of the Swan, they listen to the harbinger of approaching summer; every note must be, therefore, melodious which presages the speedy thaw and the return of life and verdure to their gelid coast.

It is to this species alone that the ancients could attribute the power of melody, — the singular faculty of tuning its dying dirge from among the reedy marshes of its final retreat. In a low, plaintive, and stridulous voice, in the moment of death, it murmured forth its last prophetic sigh. These doleful strains were heard at the dawn of day or when the winds and waves were still, and, like the syrinx of Pan, were in all probability nothing more than the murmurs and sighs of the wind through the marshes and forests graced and frequented by these elegant aquatic birds.

Nuttall confounded the American bird with the Hooper, or Whooper, of Europe, also sometimes called the Whistling Swan, though they are quite distinct.

Our bird winters on the Atlantic shore of the Southern States and breeds in the fur countries, but does not migrate either way along the Atlantic coast, where it is rarely seen north of Chesapeake Bay. Within the last few years a few examples have been seen in New England, and I examined in the flesh one that was shot in New Brunswick. I think that in former years it must have occurred more frequently in this vicinity, for the Indians of Maine and the Provinces know the bird well, and have a distinctive name for it. The Indians say the Swan is always found in the wake of a flock of Geese; though a small flock that were seen on the Charles River in 1891 were apparently travelling without a guide.

Mr. McIlwraith reports that in March, 1890, a flock of twenty Swans appeared on Lake Ontario, near Hamilton.

TRUMPETER SWAN.

OLOR BUCCINATOR.

CHAR. Plumage white; bill and legs black. Length 60 to 65 inches.

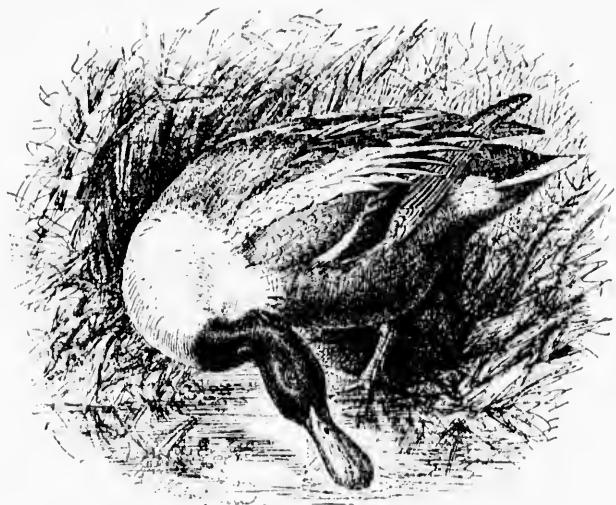
Nest. Usually on dry upland, hid amid scrubby bushes; made of grass and twigs lined with feathers and down.

Eggs. 2-6; white with a rough chalk-like surface; average size 4.40 X 2.60.

According to Richardson, this is the most common Swan in the interior of the fur countries, which it frequents to breed as far south as the 61st parallel, but principally within the Arctic Circle. In its migrations it is generally seen to precede the Geese by a few days. It is to the Trumpeter that the bulk of the Swan-skins imported by the Hudson Bay Company belong. Lawson remarks that these birds arrive in great flocks in Carolina in autumn, and frequent the rivers and fresh waters, retiring thence to breed in the North as early as February. This species, remarkable for its loud clarion, descends the valley of the Mississippi in great flights at the approach of winter. Hearne, who also observed this Trumpeter, remarks: "I have heard them, in serene evenings, after sunset, make a noise not very unlike that of a French horn, but entirely divested of every note that constituted melody, and have often been sorry that it did not forebode their death." The trachea is well supplied with the means of producing this hollow clang, a fold of it entering a protuberance on the dorsal or interior aspect of the sternum at its upper part, which is wanting both in *Cygnus ferus* and *C. bewickii*; in other respects the wind-pipe is distributed through the sternum nearly as in the latter of these species.

The Trumpeter is a bird of the interior, and is seen but occasionally to the eastward of the Mississippi, and is rare on the Atlantic coast. A few examples have been seen on Lake Ontario. It breeds from Iowa and Dakota northward.

NOTE.—The WHOOPING SWAN (*Olor cygnus*), a European bird, occurs occasionally in Greenland.



SHOVELLER.

SPOONBILL. BROADBILL.

SPATULA CYPEATA.

CHAR. Back brown, the feathers paler on the edges; shoulders blue; wing-coverts white; secondaries brown with a green patch; primaries black; rump and tail black; head and neck green; lower neck and breast white; belly rich chestnut; vent white; under tail-coverts black; bill widened at the end and of dark leaden blue; legs reddish. Female darker and duller; head and neck mottled with two shades of brown; under parts pale brown or buff. Length 20 inches.

Nest. On marshy margins of a lake or stream; made of grass lined with down, which the female plucks from her body after she begins to sit.

Eggs. 6-14; pale greenish buff, sometimes tinged with blue; 2.05×1.45 .

The Shoveller, remarkable by the broadness of its bill, is an inhabitant of the northern parts of both continents; according to Richardson it frequents chiefly the clear lakes of the hyperboreal districts, selecting for a breeding-place the Barren Grounds, where it remains to pass the summer, appearing in numbers in the more southern and woody country only in the spring and autumn when migrating. Early in October these

birds visit the small fresh-water lakes and marshes near the sea in Massachusetts, and in the course of the winter continue south to the extremity of the Union, penetrating into Mexico and along the coast of the Gulf to Vera Cruz, and perhaps still farther, in quest of subsistence and shelter from the cold. Soon after March, according to Baillon, they disperse through the fens in France to breed, and select the same places with the Summer Teal, choosing, with them, large tufts of rushes, making a nest of withered grass in the most boggy and difficult places of access, near waters. The young, in consequence of the great disproportion of the bill, at that period, have a most uncouth and awkward appearance, seeming to be oppressed by its weight, and perpetually inclined to rest it upon the breast. They run about and swim, however, as soon as hatched, and are carefully attended by the parent, who incessantly guards them from the surprise of ravenous birds. On these occasions, when the danger becomes unavoidable, the young are seen to squat silently among the grass, while the old birds run off and dive. The cry of this species has been compared to that of a rattle turned by small jerks in the hand.

The Shoveller is considered one of the most tender and delicate-flavored Ducks, growing very fat in winter. Its usual food is said to be small fish and insects, — rarely vegetables and seeds. In a pair of the young which I examined, that were killed in Fresh Pond, in this vicinity, the stomach contained many fragments of a very delicate divaricated small green *Fucus*, minute *Scirpi* plucked up by the roots, also fragments of some *Chara*, with minute *Natica* and *Anomia* shells quite comminuted, and a portion of gravel. We see, therefore, that the remarkable structure of the bill in this species is no way generally indicative of any peculiar habit of feeding. The labyrinth in the trachea of the male is small, and its voice probably proportionately feeble.

This beautiful bird, with its strangely shaped bill, is but rarely seen along the Atlantic coast north of Connecticut, though, like others of our water-fowl, it is well-known to gunners and sportsmen in more southern shooting resorts.

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These birds migrate *across* the country to the Western plains, where they nest, from North Dakota and Manitoba northward, ranging as far as Alaska.

LABRADOR DUCK.

PIED DUCK.

CAMPTOLAIMUS LABRADORIUS.

CHAR. Male: head, neck, breast, and most of wings white; crown, collar or neck, back, primary wing-feathers, tail, and under parts black; bill orange at the base, the terminal half black; legs and feet lead blue. Female: brownish gray, the wings darker, — primaries dusky. Length 18 to 20 inches.

Nest and Eggs. Unknown.

Nuttall made but slight mention of this species, supposing it to be a straggler from the Pacific. He reported it as visiting the Middle States in winter, and stated that the gunners of New Jersey and Pennsylvania called it the Sand-shoal Duck. The flesh, he adds, is dry and unsavory.

The majority of the ornithologists of the present day believe that the species has become extinct, though some forty years ago it occurred regularly all along the coast from Labrador to Delaware, and nested in the lower fur countries.

The last example known to have been taken was shot on Long Island in 1875. Previous to that date one had been taken at Grand Menan in 1871.

As the bird was shy and difficult to approach, a strong swimmer and of rapid flight, its extinction is a curious phenomenon, and unaccountable. There are only thirty-three specimens known to be preserved in the museums of America.

MALLARD.

WILD DUCK.

ANAS BOSCHAS.

CHAR. Male: head and neck glossy green, with some purple reflections, and followed by a narrow ring of white; back brown, shading to gray on the wings and to black on the rump; wing-bar purple, bordered by black and white; upper tail-coverts black; the longest feathers curling upwards at the tips, rest of tail gray; lower neck and breast rich chestnut; belly dull white, and marked with fine waved lines of gray; bill greenish yellow; feet orange. Female: general plumage dark brown, varied with buff; wings similar to the male. Length about 24 inches.

Nest. Usually on the ground, amid tall grass or under a bush, upon a dry knoll near a pond or stream, sometimes in a tree, — a loose, bulky structure of grass and leaves, lined with down.

Eggs. 6-12, sometimes 16; greenish buff of various shades; average size 2.30 × 1.60.

The Mallard, or original of our Domestic Duck, like so many other species is common to most parts of the northern hemisphere. As a bird of passage, in spring and autumn it is seen in every part of the United States, and indeed inhabits more or less the whole continent, from the Gulf of Mexico to the 68th parallel, in the fur countries of the Canadian wilderness. In Europe it is met with everywhere, and many pass the greater part of the winter in the dreary climate of Greenland. Avoiding the sea-coast, it is but rarely that the Mallard visits this vicinity, retiring south by an interior route.

These birds breed in the inland woody districts of the fur countries, and more or less through all the intermediate space as far south as Pennsylvania. They nest commonly on the borders of rivers and lakes, sometimes at a considerable distance from water, amongst reeds, grass, or in fields and copses, according to the convenience of the locality, and occasionally even upon trees impending over waters. For its nest it scrapes together a small quantity of such dry weeds as happen to be contiguous. At the time of incubation the female plucks the down from her breast to line the nest, and frequently covers the eggs when she leaves them.

Although it is most natural for all those birds whose young run as soon as they are hatched, to deposit their eggs on the ground, in the Mallard we have some curious exceptions. It is asserted by a person of veracity in England that a half-domesticated Duck was known to nest in a tower, where she hatched her young, and brought them down in safety to a piece of water at a considerable distance. Mr. Tunstall mentions one at Etchingham, in Sussex, which was found sitting upon nine eggs, on an oak twenty-five feet from the ground; and in another instance one was known to take possession of the nest of a Hawk in a large oak. Though believed to be monogamous, the fact is doubtful, as during the season of incubation the Mallards are seen to congregate apart from the Ducks as among other polygamous birds. Indeed, so little is the male interested in the fate of the brood he has procreated that the female, as incubation advances, is assiduous to hide herself from the company of her indifferent mate; she steals to her nest with caution, and sits on her eggs with the greatest pertinacy and instinctive affection. When the young are hatched in situations remote from water, the parent is seen to transport them to it by carrying them gently in her bill. In the evening the mother retires into the reeds, and broods her young under her wings for the night. Almost from the moment of hatching, the Ducklings swim and dive with the greatest address, employing themselves often in catching gnats and other insects on which they at first principally feed; but though so alert and well provided for their aquatic life, their aerial progress is slow, as the growth of their wings is very tardy, these continuing short and misshapen for near six weeks, and the bird can scarcely attempt to fly in less than three months. This protracted infancy necessarily indicates the necessity of pairing early in the season; and in the milder parts of Europe the males, jealous and quarrelsome with each other, begin towards the close of February already to address their mates.

Wild Ducks at all times show more activity in the night than in the day. They feed, migrate, arrive, and depart chiefly in the evening and in the night. In the dusk the

rustling of their wings often alone marks their progress. Their flight is generally in the form of a wedge, or two converging lines (>); and being very cautious, they never alight until they have wheeled several times round the spot, as if to survey any lurking danger that may possibly threaten. They often also swim out at a distance from the shore, and one or more of the party, experienced as leaders, usually watch for the common safety, and give instant alarm whenever there is occasion. During the day they thus roam at large on the lakes, secluded pools, or broad rivers remote from the shores, resting or sleeping till the approach of twilight. In a domestic state, though their habits are so much changed, they are very noisy and watchful in the evening and at dawn, responding their quack and cackle to the early crowing of the cock. It is at this time that the fowler, secreted in his hut or in any other way, lies in wait for their approach to the lure of his female decoys, and pours among them his destructive fire.

It would far exceed our limits to detail the various arts employed in order to obtain this wily and highly esteemed game. Decoys of wood, carefully painted to imitate these and other species, are sometimes very successful lures in the morning twilight. The imitation of floating objects, as a boat painted white amongst moving ice, has also sometimes been attended with complete success. In India and China the natives, wading into the water and concealing the head in a calabash, steal upon the Ducks imperceptibly, and drawing them down severally by the legs, fasten them to a girdle, till it becomes loaded with its unsuspecting game.

In the fens of Lincolnshire extensive and ingenious decoys are made for this purpose in the form of a winding canal passing out of the lake where the Ducks resort, and which is screened on one side by a high reed-fence. At the bottom of this artificial and converging sluice, inarched with willows, a tunnel net is laid, into which the birds are driven by a dog trained for the purpose and sent out to the Ducks at the entrance of the inlet; they are thus, with suitable precaution,

at length urged into the net, sometimes in such quantities that five or six dozen have been taken out at one drift.

The food of the Wild Duck is small fish, fry, snails, aquatic insects and plants, as well as seeds and most sorts of grain. In the severity of winter, if the standing waters become frozen, these birds remove to running rivers and resort to the edge of woods in quest of acorns or other suitable food; but if the frost continues for eight or ten days they disappear, and do not return till the early thaws of the spring.

The Mallard is a rare bird in New England and the Provinces, but it is quite common in western Ontario and Manitoba, and elsewhere throughout North America, breeding from Indiana and Iowa northward. On the Atlantic coast it is not known to breed south of Labrador.

Nuttall's statement that many of these birds pass the greater part of the winter in Greenland has been questioned, though European naturalists have been aware that the Mallards were influenced to migrate more by the absence of open water than by change of temperature. Mr. Hagerup has confirmed Nuttall's statement lately by reporting that in south Greenland the Mallards "are common the whole year round, but most numerous in winter, when they keep in small flocks along the shore."



GADWALL.

GRAY DUCK.

ANAS STREPERA.

CHAR. Upper parts brown, barred and vermiculated with white, giving a general appearance of brownish gray; head and neck light brown, mottled with darker; wings brown and black, wing-patch white; rump black; tail-feathers brown, edged with paler; lower neck and breast dark gray; belly white, with fine wavy lines of gray; bill lead blue; legs dull orange. The female is darker in color, the dark-brown tints prevailing above, the white below. Length about 21 inches.

Nest. Usually near the water, though often some distance away, placed under a bush or amid a tussock of rank herbage; made of grass and lined with feathers,—sometimes a mere depression in the soil, lined with feathers.

Eggs. 8-13; pale buff, tinged with green when fresh; 2.10 × 1.50.

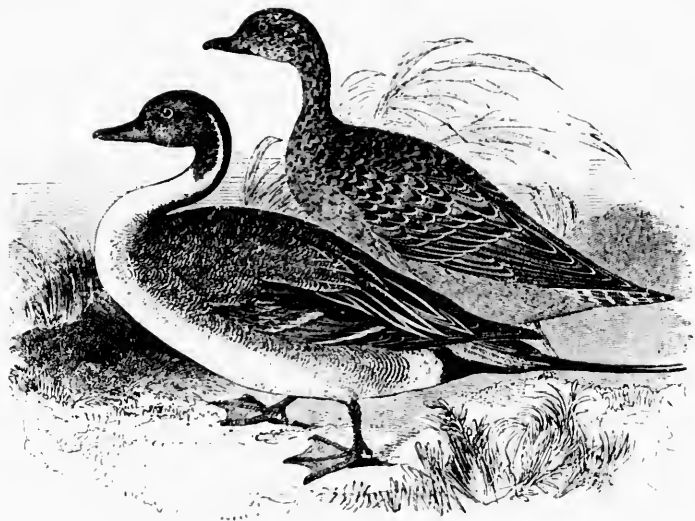
The Gadwall inhabits the northern regions of both continents, but does not in America, according to Richardson, proceed farther than the 68th parallel, and in Europe it seems not to advance higher than Sweden. In the Russian Empire it extends over most of the latitudes of the European and Siberian part, except the east of the latter and Kamtschatka. In migrations it passes chiefly into the warmer parts of Europe, being very rare in England, but common on the coasts of

France, Italy, and Sardinia. In the United States it appears to be generally rare. A few of the young birds are seen in this vicinity, and Wilson met with it in the interior on Seneca Lake in October, and in February at Louisville on the Ohio, and near the Big Bone Lick, in Kentucky.

The Gadwall breeds in the woody districts of the remote northern fur countries of Canada. In the North of Europe it inhabits the vast rushy marshes, and in Holland, where it is common, associates in the same places with the Wild Duck, or Mallard. These birds are very much esteemed as game, are very alert at diving and swimming, and plunging at the flash of the gun, are obtained with difficulty. They are very timorous, lurking in the marshes by day, feeding only in the twilight of the morning and evening, and often till some time after nightfall; they are then heard flying in company with the Whistlers, and, like these, obey the call of the Decoy Ducks. Their cry much resembles that of the common Wild Duck; nor is it more raucous or louder, though Gesner seems to have meant to characterize its note by applying the epithet *strepera*, which has been adopted by succeeding ornithologists. The food of this bird consists of small fish, shelly mollusca, insects, and aquatic plants.

The Gadwall breeds from the Middle States to the lower fur countries. It is rather rare to the eastward of the Mississippi valley, but in that region it is abundant north to the Saskatchewan.

This is a freshwater Duck, and its favorite resort is the marshy margin of a retired lake or stream, where it dozes through the hours of the day, and at night feeds among the tangled rushes. It is a shy bird and wary, but sociable with its kind, and may be found in company with other wild fowl. It swims light and buoyantly, but never dives unless wounded, and its flight is strong and swift.



PINTAIL.

GRAY DUCK. SPRIGTAIL.

DAFILA ACUTA.

CHAR. Male: back and flanks mottled gray; head and neck brown, shading to black on the nape; wing-coverts buff; wing-patch, or "speculum," green, margined with black and white; tail black, the two central feathers much elongated; under parts white, — a line from the breast extending up the sides of the neck; bill and legs slate gray. Length 26 to 30 inches. Female: upper parts mottled gray and brown, and lower parts gray and white; wing as in male, but of duller tints; tail with oblique bars. Length 21 to 23 inches.

Nest. Usually at considerable distance from the water, but often very near; always amid a tuft of tall grass, in a dry spot, — a deep, bowl-like structure of sedges, and lined with grass and down.

Eggs. 7-10; pale buffish green; average size about 2.10×1.50 .

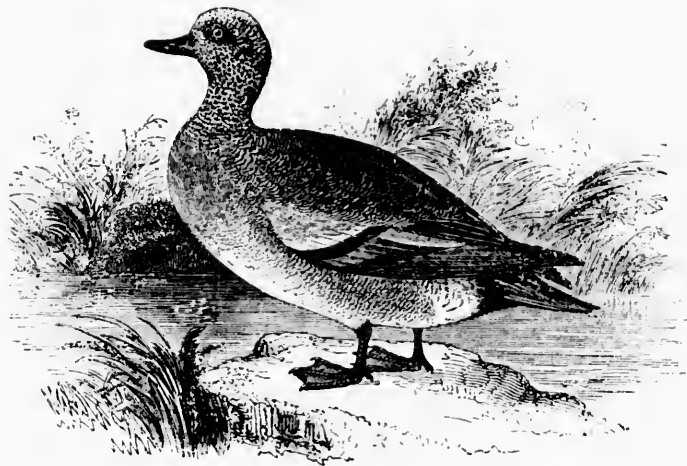
This elegant species is an inhabitant of the northern parts of both continents, leaving its remote natal regions as the winter advances, when it is seen pretty frequently in the markets of the United States, and is a game much esteemed for the excellence of its flavor. According to Richardson, these birds frequent chiefly the clear lakes, and breed in the Barren Grounds,

appearing in the more southern and wooded districts when about to migrate, at which period they proceed even beyond the limits of the United States, being noticed by Hernandez in Mexico. In Europe they are said to retire to the marshes of the White Sea to breed. In Missouri and some of the other Western States they are abundant early in March, and frequent the small pools and ponds in the prairies; at the same time they are likewise seen on their way north on the shores of the Delaware.

The Pintail is shy and cautious, feeding on the mud-flats and shallow freshwater marshes, but rarely taking to the sea-coast. It seldom dives, is very noisy and chattering, uttering a quack like the Common Duck, and plunges and hides with great dexterity when wounded. It is also troublesomely vigilant in giving alarm on the approach of the gunner.

The food and nest of this species are very similar to those of the preceding. I have found the stomach in one instance nearly filled with the seeds of the *Zostera*. A female Pintail bred in confinement, when paired with a Widgeon in Lord Stanley's menagerie in Knowsley, sat so closely upon her eggs towards the close of the period of incubation as to allow herself to be taken off the nest by hand without forsaking her hatching, and a brood of these hybrids was successfully reared.

The Pintail is abundant in the interior, breeding along the northern border of the United States and in Manitoba, and thence to the Arctic Circle. It is rather rare on the Atlantic coast, where it appears in autumn and winter north of Chesapeake Bay.



BALDPATE.

WIDGEON.

ANAS AMERICANA.

CHAR. Mantle brownish gray, varied with fine waved lines of black; head and neck grayish white, with dark spots, — the crown with few or no spots; a green patch on the sides of the head behind the eyes; wing-patch green, bordered with black; tail grayish brown; breast mottled reddish brown; belly white; bill and legs grayish blue. Length 19 inches. The female has a dark-brown back; head and neck yellowish white, spotted with black.

Nest. Under a bush on upland, or on a dry knoll in a marsh; made of weed-stems, grass, and leaves, — sometimes a mere depression amid dead leaves, — lined with down.

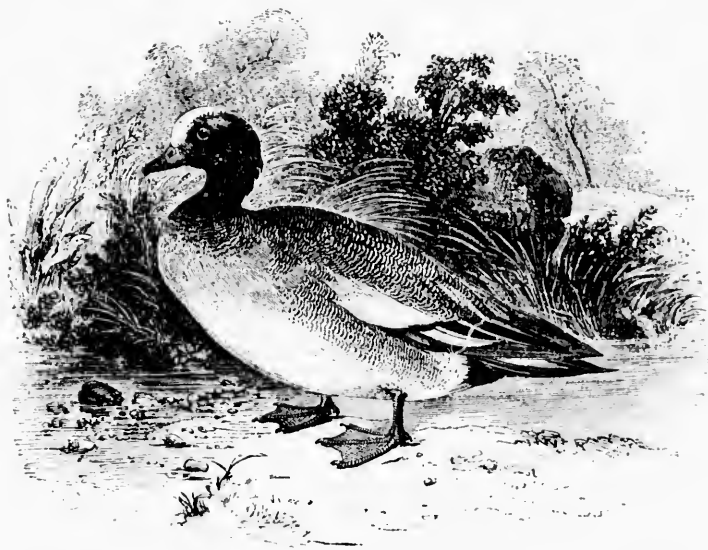
Eggs. 7-12; ivory white; average size 2.20 × 1.50.

This species, so nearly allied to the European Widgeon, has not been found in the old continent; yet it retires north to breed, inhabiting in summer the woody districts of the remote fur countries near the Saskatchewan and the coasts of Hudson Bay as far as the 68th degree of northern latitude. In autumn and winter these birds are common in nearly all parts of the Union, many wintering in North and South Carolina in the

open rivers and bays, sometimes considerably inland. Indeed, I have never seen them anywhere so numerous as in the Neuse River, round Newbern, forty miles from the ocean, where, in company with the Canvas-back and Buffle-head, they are seen constantly in February and March. They are also numerous in Chesapeake Bay, and in the course of the winter extend their migrations as far as St. Domingo and other of the West India Islands, as well as into Cayenne in the tropical parts of the continent.

The Widgeon, or Baldpate, is a frequent attendant on the Canvas-back, and often profits by this association. The former, not being commonly in the habit of diving for subsistence, or merely from caprice, watches the motions of its industrious neighbor, and as soon as the Canvas-back rises with the favorite root on which they both greedily feed, the Baldpate snatches the morsel and makes off with his booty. These birds are always very alert and lively, feeding and swimming out into the ponds and rivers at all hours of the day, but are extremely watchful, sheltering in coves and behind the land, and on the slightest attempt to steal upon them, immediately row out into the stream beyond gunshot, and then only take to wing when much disturbed. In Carolina and the West Indies they frequent the rice-fields in flocks, and in Martinico are said to do considerable damage to the crops. When thus feeding in company they have a sort of sentinel on the watch. At times they keep in covert until twilight, and are then traced by their low, guttural, and peculiar whistle, or *'whew*, *'whew*, as well as other calls; and their whistle is frequently imitated with success to entice them within gunshot. They feed much in the winter upon aquatic vegetables, cropping the pond-weed as well as other kinds of freshwater plants and seeds, and sometimes dive and collect the roots and leaves of the sea-wrack.

Although generally distributed throughout North America, the Baldpate rarely appears on the Atlantic coast excepting in winter, when it is found on the shores of the Southern States. It is a "tolerably common summer resident" of Manitoaba, writes Ernest Thompson, and the bird is well known in Ontario.



WIDGEON.

ANAS PENELOPE.

CHAR. Adult male: mantle white, marked with fine lines of dark gray; shoulders white, followed by bar of black; wing-patch green; longer wing-feathers and tail dark brown; head and neck chestnut, shading to buff on the forehead and to black on the throat; breast gray, tinged with rufous and shading to white below, which extends across the belly; sides marked with fine lines of dark gray; under tail-coverts black; bill slate blue, tipped with black; legs and feet dusky lead color. Soon after the mating season the male assumes plumage similar to the female. Female: upper parts grayish brown,—the feathers with paler margins; under parts white, the breast buffish brown; under tail-coverts barred with brown; wing-patch grayish brown. Length 18 inches.

Nest. Concealed amid rank herbage or under a bush, on the margin of a lake; a deep bowl made of sedges and lined with grass and down.

Eggs. 7-12 (usually about 10); rich cream color or buff; average size 2.20 X 1.50.

Though generally set down in the books as a bird of the Old World, the Widgeon has been known to occur on this western shore of the Atlantic much too often to be omitted from the present connection. The bird breeds on Iceland, and probably occurs regularly in Greenland, though in small numbers; and every year

more or less examples are seen along our coast from Nova Scotia to Virginia.

The nest has not been found within our borders, and it is not probable that any nests have been built here. The breeding area lies north of the Arctic Circle.

The Widgeon is one of the most abundant and best-known of the Ducks that migrate through the British Islands, where it appears in flocks of enormous size, covering like a cloud the mud-flats of the sea-shore when the tide is out, or settling upon any large sheet of inland water adjacent to the sea; for these birds feed on the buds and seeds of aquatic plants as well as on marine insects and mollusks.

The call of the male Widgeon is a shrill-whistled *whee-you*, or *mee-yu*, — the first note loud and prolonged. The female utters a low, purring note, like *kir-r-r*. When flushed, both male and female rise in silence.

The Widgeon is not easily shot. It is extremely shy and difficult to approach, and its flight is rapid.

BLACK DUCK.

DUSKY DUCK. DUSKY MALLARD.

ANAS OBSCURA.

CHAR. General plumage blackish brown, paler on under parts; head and neck lighter; wing-patch greenish purple, bordered with black; lining of wings white; bill greenish yellow; legs red. Length about 23 inches.

Nest. On the ground in a wet meadow or marshy border of lake or stream, — sometimes under a bush or amid rushes; a large but well-made structure of grass and weed-stems lined with feathers.

Eggs. 6-12 (usually about 8); pale buff or buffish green; 2.40×1.70 .

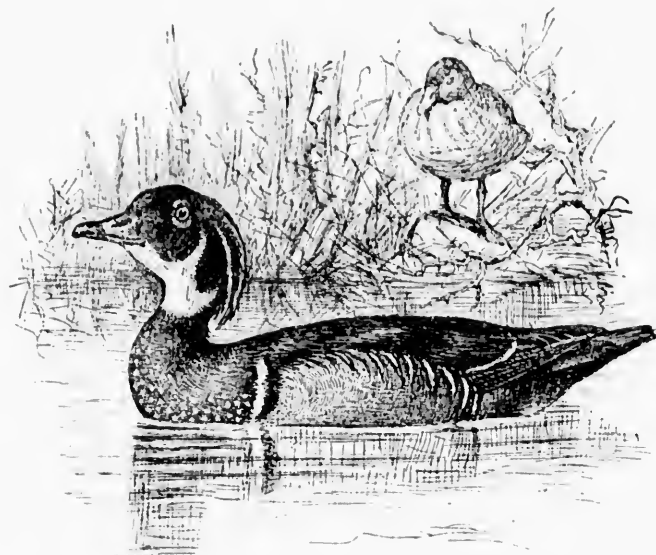
This species seems to be an exclusive inhabitant of America, being met with from Labrador to Florida, but is not found in the higher boreal regions of the continent. It is generally known by the improper name of the "Black Duck," though it is merely dusky, and both sexes, nearly alike in plumage, have a great resemblance to the female of the Common Mallard. It is a numerous and common species in the salt-marshes, as well as freshwater rivers and lakes. It is only partially migratory, many birds often wintering in the Middle and Southern States, where they also pass the summer and breed from the Carolinas to Labrador in retired places in the freshwater marshes, or in the sea islands, making a nest of rank weeds.

Many of these birds migrate north as well as into the interior at the approach of spring. Their principal food in autumn and winter appears to consist of minute shell-fish, particularly those univalves which are so abundant in the salt-marshes. They also at times in great numbers visit the sandy beach in quest of small bivalves and other shelly mollusca, and occasionally feed on seeds of aquatic and bog plants, such as those of the *Scheuchzeria*; and, as usual, swallow gravel with the rest of their fare. They roost in the shallow ponds and islands, where many are caught by the minx and fox, and are extremely shy during the day, being at that time very seldom seen, except when surprised in their retreats or alarmed by the report of the gun, when they often rise from the marsh in great numbers and

disperse confusedly in every direction. In calm weather they fly high; but when the wind blows hard they proceed within gunshot over the salt meadows, and may then be brought down in great numbers by the concealed gunner as they proceed over their usual track. Their voice or quack resembles that of the common Wild Duck, and their flesh when well fed, notwithstanding the nature of their food, is scarcely inferior to that of any other species.

The Black Duck is found throughout this Eastern Province, north to Labrador and the Hudson Bay region, breeding south to "Illinois and New Jersey" (Chapman).

NOTE.— The FLORIDA DUCK (*Anas fulvigula*) is a Southern race of the Black Duck, though it has been given specific rank within recent years. The plumage is similar to that of *obscura*, though *fulvigula* is varied somewhat with buff; the cheeks and throat plain buff; wing-patch greenish purple. It ranges through the Gulf States and west to Kansas.



WOOD DUCK.

SUMMER DUCK.

AIX SPONSA.

CHAR. Upper parts dark brown, varied with black; head and crest metallic green and purple; lines of white above and behind the eyes; throat white; breast chestnut, with spots of white; under parts white, flanks with fine waved lines of black; black and white crescents in front of shoulder; wings glossed with purple and green, and tipped with white; bill red, black, and white; legs yellow. Female mostly grayish brown, and duller than the male; throat and patch around the eye white. Length 17 to 19 inches.

Nest. In a hollow tree; made of twigs and grass lined with down.

Eggs. 8-14; pale buff or creamy; average size 2.10 × 1.60.

This most beautiful of Ducks seems to be dressed in a studied attire, to which the addition of a flowing crest adds a finish of peculiar elegance; and hence Linnæus has dignified the species with the title of *sponsa*, or the bride. This splendid bird is peculiar to America, but extends its residence from the cold regions of Hudson Bay, in the 54th parallel, to Mexico

and the Antilles. Throughout a great part of this vast space, or at least as far south as Florida and the Mississippi Territory, the Summer Duck is known to breed. In the interior it is also found in the State of Missouri and along the woody borders and still streams which flow into most of the Great Northwestern Lakes of the St. Lawrence. The Summer Duck—so called from its constant residence in the United States—has indeed but little predilection for the sea-coast, its favorite haunts being the solitary, deep, and still waters, ponds, woody lakes, and the mill-dams in the interior, making its nest often in decayed and hollow trees impending over the water.

Though many migrate probably to the shores of the Mexican Gulf, numbers pass the winter in the States south of Virginia. Early in February they are seen associated by pairs on the inundated banks of the Alabama, and are frequent at the same season in the waters of West Florida. In Pennsylvania they usually nest late in April or early in May, choosing the hollow of some broken or decayed tree, and sometimes even constructing a rude nest of sticks in the forks of branches. The eggs are yellowish white, rather less than those of the Domestic Hen, and they are usually covered with down, probably plucked from the breast of the parent. The same tree is sometimes occupied by the same pair for several successive years in the breeding-season. The young, when hatched, are carried down in the bill of the female, and afterwards conducted by her to the nearest water. To these places, when once selected, if not disturbed, they sometimes show a strong predilection, and are not easily induced to forsake the premises, however invaded by noise and bustle. While the female is sitting, the male is usually perched on some adjoining limb of the same tree, keeping watch for their common safety. The species is scarcely ever gregarious; the birds are only seen in pairs or by families. The common note of the Drake is *peet, peet*; but when at his post as sentinel, on espying danger, he makes a sort of crowing noise, like '*hoo eek, 'hoo eek*.'

The food of the Wood Duck consists principally of acorns, the seeds of aquatic plants, such as those of the wild oat, etc.,

and insects which dwell in or near waters; and I have seen a fine male whose stomach was wholly filled with a mass of the small coleoptera, called *Donatias*, which are seen so nimbly flying over or resting on the leaves of the pond-lily. These birds are therefore very alert in quest of their prey, or they never could capture these wary insects. They are not uncommon in the markets of the Eastern and Middle States, and are justly esteemed as food.

Wood Ducks have sometimes been tamed, and soon become familiar. They have even been so far domesticated as to run about at large in the barn-yard like ordinary fowls. In France they have also been acclimated and tamed, and have bred in this condition.

The Wood Duck breeds from Florida to the lower fur countries, — latitude 60° being the probable limit of its northern range. — and winters in the Southern States and southward. It is common in New England, and rare in Manitoba.

BLUE-WINGED TEAL.

ANAS DISCORS.

CHAR. Back mottled reddish brown, black, and buff; forehead, crown, and throat dark lead color; cheeks with tinge of lavender and a white, crescentic patch between the eyes and bill; shoulders sky blue: wing-patch green, bordered with white; under parts pale reddish buff, more or less spotted with dusky; bill black; legs yellowish. The female is mottled dull brown and buff, and has an indistinct patch on the cheeks. Length about $15\frac{1}{2}$ inches.

Nest. Amid a tuft of rank grass, usually in a wet meadow on the marshy margin of a pond; made of grass and weed-stems and lined with feathers.

Eggs. 6-12; pale buff or ivory white, sometimes with a tinge of green when fresh; average size 1.85×1.30 .

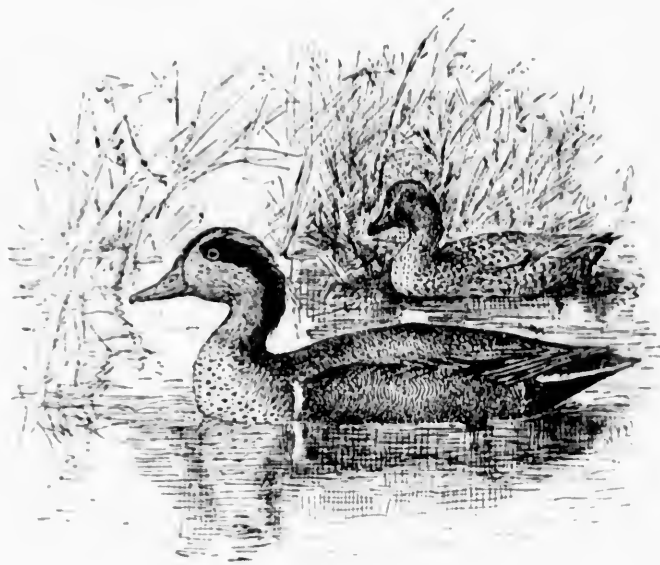
The Blue-winged Teal, according to the season, inhabits every part of the American continent, from the plains of the Saskatchewan and the 58th parallel to Guiana and the West Indies. The breeding-place of these birds is, however, to the

north and west; they are particularly abundant as early as August in the Territory of Michigan, and Mr. Say observed them there on the 7th of June, so that they probably breed in the vicinity of the Great Lakes of the St. Lawrence as well as in the remote interior of the Canadian fur countries.

These Teal arrive in this vicinity and other parts of Massachusetts near to the sea-coast early in September, and according to Wilson are seen soon after on the muddy shores of the Delaware, where they are often observed basking or hiding in crowded companies close to the edge of the water, where they can only be approached under cover. They fly out with rapidity, and when they alight, drop down suddenly among the reeds in the manner of the Snipe or Woodcock. As the first frosts come on, they proceed to the south, and then abound in the inundated rice-fields of the Southern States, where great numbers are taken in traps placed on the small dry eminences that here and there rise above the water, to which they are decoyed with rice; and by the common contrivance called a Figure 4, they are taken alive in box-traps. In the month of April they pass through Pennsylvania on their way to the North, but make little stay at that season; they are seen also in the spring in the State of Missouri, and spread themselves widely to breed throughout a great extent of the western and northern wilderness.

Though often contiguous to the sea, these birds have no predilection for visiting the shores, feeding chiefly on vegetables and insects, and particularly on the wild rice which abounds in the Northwestern lakes and sluggish streams. They are much esteemed as game, and commonly become very fat. Their note, which is somewhat like a diminutive quack, is uttered low and rather rapidly.

The Blue-winged Teal is uncommon in New England and the Provinces, and we must go to the region bordering the Mississippi valley to find it in abundance. It breeds from the northern tier of States northward, and winters in the Southern States, the West Indies, and Central America.



GREEN-WINGED TEAL.

ANAS CAROLINENSIS.

CHAR. Upper parts and flanks dark gray and white in fine wavy lines; head and neck chestnut, with a broad green band on the sides; wing-patch rich green and black, bordered with buff and white; a white crescentic patch in front of the shoulder; under parts white, the breast spotted; bill black; legs leaden gray. The female is duller in general color, and has fewer and less conspicuous markings. Length about 14 inches.

Nest. Amid a tuft of grass, — made of grass and weed-stems and lined with feathers.

Eggs. 6-12; pale buff or ivory white, tinged with green when fresh; 1.50 × 1.30.

The Green-winged Teal, as a species, is common to the northern and temperate parts of both continents. The American bird appears to be a permanent and distinct variety. There is, according to Dr. Richardson, however, in the Hudson Bay Museum a specimen from the fur countries agreeing

in all respects with the European species. Our variety is abundant to the extremity of the continent, both in the woody and barren districts of the remote fur countries of Hudson Bay. It is also plentiful about Severn River, in the woods and plains near fresh waters, where it breeds, the young being about six or seven at a hatch. It feeds much upon fresh-water insects, seeds, and aquatic plants, and when fat is delicate food. In the autumn and winter it is very common throughout the waters of the United States, both in the interior and contiguous to the sea-coast. In the course of the winter it retires as far south as Jamaica, and is probably common also along the coasts of the Mexican Gulf. It frequents ponds, marshes, the reedy shores of creeks and rivers, and in winter is very abundant in the rice-plantations of the South. The birds usually fly in small parties, feeding mostly by night, associating with the Mallard, and are commonly decoyed by its call.

The Teal is found in the North of Europe as far as Greenland and Iceland, and it also inhabits the borders of the Caspian to the south. In France and England it is said to breed. It is commonly seen on the pools, in close companies of ten or twelve together, frequenting the rivers and unfrozen springs in winter, where it subsists on aquatic plants. It flies very swiftly, and utters a sort of whistling cry. It breeds in the fens, continuing in the temperate parts of Europe the whole year. It conceals its nest among the bulrushes, constructing it of their stalks and lining it with feathers; it rests also sometimes on the surface of the water, so as to rise and fall with the flood. The female takes the whole management of incubation; the males at this time seeming to leave them and associate by themselves in companies. The American Teals in the autumn, which visit this quarter, are also for the most part young birds and females, the males pursuing a different route apart from the rest, and are rarely seen here until their return in the spring.

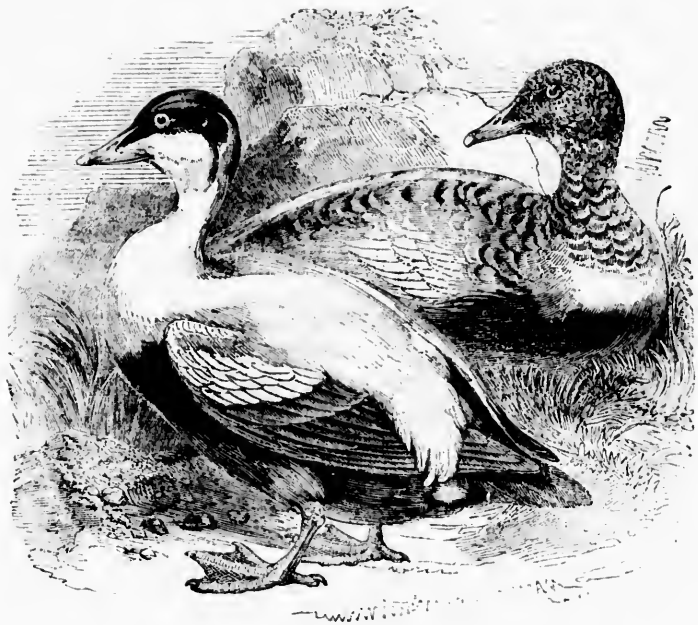
The Green-winged Teal is abundant in Manitoba and the surrounding region during the migrations, and numbers nest as far

south as Lake Winnipeg. It is numerous also westward to the Pacific slope, breeding in the mountain region of Oregon, and northward to Alaska. In the East it is quite common during the migrations, though perhaps more numerous in the interior than on the lakes and streams adjacent to the coast, and breeding chiefly in the Hudson Bay region north of latitude 50 degrees. Being a strictly freshwater bird, it is rarely found along the sea-shore, though I have met with stragglers occasionally near the mouths of streams which empty into the Bay of Fundy.

I cannot indorse Nuttall's statement that the males are rarely seen in the autumn in this region, though they do usually appear in small flocks, and separated from the females.

This species ranges in winter from "Kansas and Virginia southward to the West Indies and Central America" (Chapman).

NOTE. — A few examples of the CINNAMON TEAL (*Anas cyanoptera*) have wandered from the Pacific slope to the valley of the Mississippi and to Manitoba. Another straggler of this group — the EUROPEAN TEAL (*Anas crecca*) — has been taken on the Atlantic coast.



AMERICAN EIDER.

COMMON EIDER. SEA DUCK.

SOMATERIA DRESSERI.

CHAR. Back, cheeks, and wing-coverts white; top of head, wings, tail, and belly black; patch of sea-green on sides of neck; breast rosy buff; bill of greenish color, and with long wedges of feathers extending from the forehead and cheeks towards the nostrils; legs dull green. The female is nearly uniform dull brown, mottled with paler on the breast; belly dull white. Length about 25 inches.

Nest. Generally on a flat and grassy ocean island, often on a bluff on the coast,—sometimes on a heath-covered moorland; a substantial structure of coarse marine herbage thickly lined with down.

Eggs. 4-10; color varies from pale olive buff to bluish gray; 2.95×2.00 .

The Eider Duck, remarkable for the softness of its valuable down, seems thus purposely provided by Nature with a clothing suited to the inclement regions in which it generally dwells. Living mostly out at sea, it is thus enabled to endure the sever-

ity of the glacial regions, for which it has such a predilection. The older birds are indeed only partially migratory, moving no farther southward in winter than to permanent open water. The presence of these birds, with a few others of like habits and hardihood, contributes to give an air of animation to the bleak and dreary coasts of Greenland and Spitzbergen. They are found throughout Arctic America, and in severe winters sometimes wander as far south to sea as the capes of the Delaware. In the depth of winter, or from November to the middle of February, the old birds are also usually seen in small numbers towards the extremities of Massachusetts Bay and along the coast of Maine. A few pairs even have been known to breed on some rocky islands beyond Portland. Mr. Audubon found several nesting on the isle of Grand Menan, in the Bay of Fundy; but on the bleak and wintry coast of Labrador they were seen by him in abundance, nesting and laying from April to the last of May. The nest was usually placed under the shelter of a low prostrate branched and dwarf fir (probably *Pinus Banksiana*), and sometimes several are made under the same bush within a foot or two of each other. The groundwork of the nest, as usual, was sea-weeds and moss, but the down of the female parent is only added when all the eggs are laid. The Duck, now acquiring an attachment for her eggs, was at this time easily approached, her flight being even and rather slow. As soon as the task of incubation has commenced, the males leave the land, and associate together in large flocks out at sea, in July begin to moult, and in August become so bare as to be scarcely able to rise out of the water.

As soon as the young are hatched they are led to the water by their attentive parent, and there remain, excepting in the night and in tempestuous weather. Their greatest enemy, besides man, is the Saddle-back Gull (*Larus marinus*); they, however, elude his pursuit by diving, at which both old and young are very expert. The down, though so valuable, is neglected in Labrador. It is so light and elastic that two or three pounds of it, pressed into a ball that may be held in the hand, will swell out to such an extent as to fill and distend the



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The female
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foot-covering of a large bed. The best kind, termed live down, is that which the Eider plucks to line the nest; the down taken from the dead bird is greatly inferior, and it is rare that so valuable a bird is now killed for the purpose. To augment the quantity of down from the same bird, the eggs, which are very palatable, are taken, and the female again strips herself to cover the second and smaller hatch. If the nest be a second time plundered, as the female can furnish no additional lining, the male now lends his aid and strips the coveted down from his breast, which is well known by its paler color. The last laying, of only two or three eggs, is always left, to kindle the parents' hopes of progeny; for if this be taken they will abandon the place, but thus indulged, they continue to return the following year, accompanied by their young. The most southern breeding-place of this species in Europe is the Ferne Isles, on the coast of Northumberland; and voyagers who have ventured to the dreary extremity of Arctic Europe, hear, in summer, from the caverns and rocks of the final cape, the deep moan of the complaining Eider. In Norway and Iceland the Eider districts are considered as valuable property, carefully preserved, and transmitted by inheritance. There are spots that contain many hundreds of these nests; and the Icelanders are at the utmost pains to invite the Eiders each into his own estate; and when they perceive that they begin to frequent some of the islets which maintain herds, they soon remove the cattle and dogs to the mainland, to procure the Eiders an undisturbed retreat; and to accommodate them, sometimes cut out holes in rows on the smooth, sloping banks, of which, to save themselves trouble, they willingly take possession and form their nests. These people have even made many small islands for this purpose by disjoining promontories from the continent. It is in these retreats of peace and solitude that the Eiders love to settle; though they are not averse to nestle near habitations if they experience no molestation. "A person," says Horrebow, "as I myself have witnessed, may walk among these birds while they are sitting, and not scare them; he may even take the eggs, and yet they will

renew their laying as often as three times." According to the relation of Sir George Mackenzie, on the 8th of June, at Vidöe, the Eider Ducks, at all other times of the year perfectly wild, had now assembled in great numbers to nestle. The boat by which the party approached the shore passed through multitudes of these beautiful fowls, which scarcely gave themselves the trouble to go out of the way. "Between the landing-place and the governor's house the ground was strewed with them, and it required some caution to avoid treading on the nests. The drakes were walking about uttering a sound very like the cooing of Doves, and were even more familiar than the common Domestic Ducks. All round the house, on the garden wall, on the roofs, and even in the inside of the houses and in the chapel were numbers of Ducks sitting on their nests. Such as had not been long on the nest generally left it on being approached; but those that had more than one or two eggs sat perfectly quiet, suffering us to touch them, and sometimes making a gentle use of their bills to remove our hands. When a drake happens to be near his mate, he is extremely agitated when any one approaches her. He passes and repasses between her and the object of his suspicion, raising his head and cooing."

One female, during the whole time of laying, generally gives half a pound of neat down, and double that quantity before cleansing. According to Troil, in the year 1750 the Iceland Company sold as much of this article as amounted to £850 sterling, besides deducting what was sent directly to Gluckstad.

At the time of pairing, according to Brunnich and Skioldebrand, the male is heard continually calling out with a raucous and moaning voice 'ha ho, 'ha ho: but the cry of the female resembles that of the Common Duck. At this exciting period the males, more numerous than their mates, have sharp contests with each other, and the vanquished and superannuated are afterwards seen wandering about at sea in much milder climates than the rest of their fraternity. Both birds labor in concert while forming the nest, and though the male gives no assistance in hatching, during the period of laying he keeps

strict watch in the vicinity, giving notice of any danger as soon as it appears. The Ravens, it seems, no less than the Gulls, are the enemies of this valuable bird, often sucking the eggs and killing the young; the female therefore hastens to convey her brood to the sea, sometimes even carrying them on her back to the element in which they are thenceforth destined to live. The male now also leaves her, and neither of them returns more that season permanently to the land. Several hatches associate together at sea and form flocks of twenty or thirty, attended by the females, who lead them, and are seen continually splashing the water, to raise with the mud and sediment, the insects and small shell-fish for such of the young as are too weak to dive for themselves.

The Eider dives deep after fry, and feeds upon small shell-fish, mussels, and univalves, and sometimes on the sea-urchin (*Echinus*) and various kinds of marine insects and seaweeds, and in summer mostly on the soft mollusca so abundant in the Arctic and hyperboreal seas. Its flesh is dark and fishy, though sufficiently tender, and that of the young and the female may be considered good. It is commonly eaten by the Greenlanders, and its skin is esteemed as an excellent inner garment. Prepared with the feathers left on, it also forms an article of commerce with the North, and particularly with the Chinese. Fitted purposely for inhabiting the coldest climates and the sea, the Eider does not long survive in temperate regions, and all attempts to domesticate it have consequently failed.

In the breeding-season, in Norway, some of the male Eiders are seen roaming about unpaired, either superannuated or unable to keep possession of the females. Mr. Audubon remarks that the Sea Ducks (Eiders, Surf Duck, Velvet, and Scoter) moult in July, and by the 10th of August are so naked of feathers, and even destitute of quills, as to be unable to rise either from the water or the ground. At this juncture, in the Bay of Fundy, the Indians in large companies assemble in their canoes at the entrances of the bays frequented by these birds, and dividing themselves on either side of the headland,

fire blank charges and hooting and yelling as loud as possible, drive the terrified birds into the cove at high-tide, where the natives remain until the ebb. The Ducks are then left grounded on the naked coast, and are thus easily despatched with clubs.

This Eider formerly nested on the islands in the Bay of Fundy, but in recent years has not been known to breed to the southward of the St. Lawrence, though it does not range north of Labrador. During the winter months it is found in the Gulf of St. Lawrence and along the Atlantic coast as far as Delaware. Examples are seen occasionally on the Great Lakes.

Mr. Thomas A. Jagger, who visited Labrador in 1890, told me that he found a number of the nests of this species, and that they invariably contained four eggs.

NORTHERN EIDER.

SOMATERIA MOLLISSIMA BOREALIS.

CHAR. — Almost similar in coloration to *S. dresseri*, but differing in the shape of the wedge-like characters of the bill.

Nest and Eggs. Similar to *dresseri*.

The birds found breeding in Greenland were formerly supposed to be of the European race, — typical *mollissima*; but within a few years it has been discovered that there was sufficient difference to warrant a separation, there being a slight distinction in the coloration and in the shape of the bill.

In habits these Greenland birds do not differ from their more southern allies. Mr. Hagerup states that large numbers winter near the open water in South Greenland, arriving there chiefly from the northward. They winter south to Massachusetts.

KING EIDER.

SOMATERIA SPECTABILIS.

CHAR. Top of head pearl gray, shading to deeper on the nape; a black line bordering the base of the bill, which is formed like a shield; cheeks white, with patches of green; neck, upper back, and shoulders white; lower back black; wings and tail dark brown; two lines of black from the chin form a chevron on the throat; breast white, tinged with

buff; bill and legs orange. The female has the entire plumage of two shades of brown, the centre of the feathers dark brown, and the edges rufous. Length 24 inches.

Nest. On an ocean island or sea-side cliff, sometimes on a dry hillside, — usually a depression in the soil thickly lined with down; often a high structure of twigs and moss.

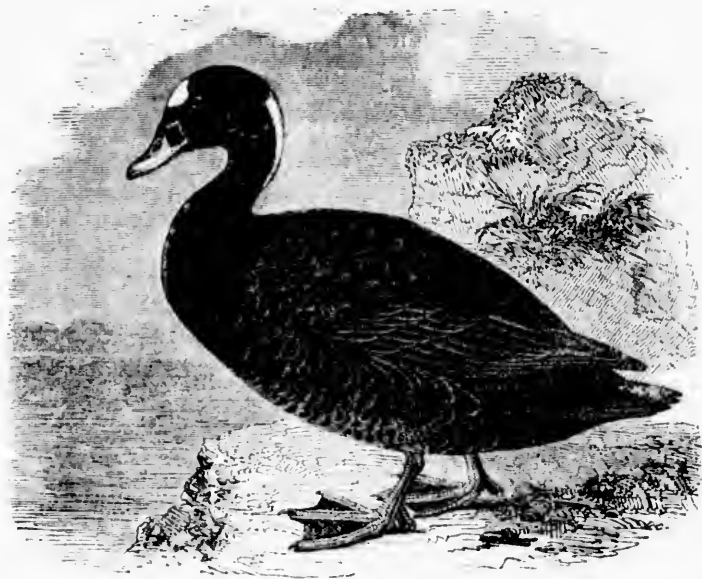
Eggs. 6-10 (usually 6); green of various shades, with more or less tinge of buff; 2.60×1.90 .

This species is an inhabitant of the glacial regions, living generally out at sea, and feeding, independently of the land, chiefly upon the mollusca which abound in the Arctic Sea. It is never seen in fresh waters, and only resorts to land for the indispensable purposes of reproduction. Being well provided with a thick and downy robe, it is little inclined to change its situation, however rigorous the climate; and as the frost invades its resorts, it continually recedes farther out to sea, and dwells securely amidst eternal barriers of ice and all the horrors of an Arctic winter. The King Duck, still more sedentary than the Eider, is seldom seen beyond the 59th parallel, except in the depth of winter, when, according to Audubon, it is observed off the coast of Halifax in Nova Scotia, Newfoundland, etc., and a few have been obtained off Boston, and at Eastport in Maine. These birds abound in Greenland and Spitzbergen, and visit and sometimes breed in the Orkneys and other of the remote Scottish isles. A few are also occasionally seen on the coasts of the Baltic and in Denmark. They breed sometimes in the crevices of rocks impending over the sea, making a nest of sticks and moss, lined with down from the breast.

The flesh is said to be palatable, the gibbous part of the bill being accounted a delicacy; and the down collected by the Greenlanders is esteemed of equal value with that of the Common Eiders.

The King Eider breeds in high latitudes, — north of latitude 73° . — but a few pairs nest on the Labrador coast, and Mr. Boardman says that nests have been found in the Bay of Fundy.

In winter these birds are found in South Greenland and along the coast of New Jersey (sparingly), and occasionally on the Great Lakes.



SURF SCOTER.

SURF DUCK. PATCH-HEAD. HORSE-HEAD COOT.
SKUNK-HEAD.

OIDEMLA PERSPICILLATA.

CHAR. Male: general color deep black above, paler below; a white patch on the forehead and on the nape; bill mostly orange red, with a patch of black near the base of the upper mandible, bordered by orange and pale blue; lower mandible pinkish; legs and toes orange, webs dull green, claws black. Female: upper parts dusky or sooty brown; under parts grayish; bill dusky; legs and feet dull buff. Length about 19 inches.

Nest. On the margin of a lake or sluggish stream, concealed amid a tussock of rank herbage or beneath a low branch, — made of coarse weed-stems and lined with down.

Eggs. 5-8; pale buff or ivory white; 2.40×1.65 .

This species of Sea Duck, with other dark kinds here commonly called Coots, may be properly considered as an American species, its visits in the Orkneys and European seas being merely accidental. It breeds on the Arctic coasts, and

extends its residence to the opposite side of the continent, having been seen at Nootka Sound by Captain Cook.

During summer these Ducks feed principally in the sea; they also commonly frequent shallow bars and surf-lashed shores and bays in quest of various kinds of small shell-fish, for which while on our coast they are almost perpetually diving. They begin to migrate southward from their northern resorts in company with the Long-Tailed Ducks, at which period the flocks halt both on the shores of Hudson Bay and on the lakes of the interior as long as they remain open, feeding on tender shelly mollusca.

The Surf Duck, or Sea Coot, breeds also along the shores of Hudson Bay and in Labrador, and is said to make a nest of grass, lining it with down or feathers, and lays from four to six white eggs, which are hatched in the month of July. It selects the borders of freshwater ponds for its eyries, on which the young are fed, and protected until they are nearly ready to fly. Although these birds extend their migrations to the coast of Florida, they often continue along all the shores and open bays of the Union throughout the winter; or at least parties go and come during the greater part of the period. Early in May, or the close of April, they are again seen bending their course towards the North. They are shy birds to approach, but can be decoyed by imitative wooden ducks of the same general appearance. Their flesh, however, remarkably red and dark when cooked, is very fishy, and has but little to recommend it; the young birds are somewhat superior in flavor, but the whole are of little consequence as game, though often eaten by the inhabitants of the neighboring coasts.

The Surf Scoter breeds regularly throughout Labrador and in the Hudson Bay and Great Slave Lake regions. It is common on the Atlantic coast and in Manitoba while migrating, and winters from Massachusetts to the Carolinas and the lower valley of the Ohio.

AMERICAN SCOTER.

BLACK SCOTER. BUTTER-BILLED COOT. BLACK COOT.
SEA COOT.

OIDEZIA AMERICANA.

CHAR. Male: general plumage black, the under parts somewhat brownish; bill black, with large patch of orange or yellow on upper mandible; legs and feet black. Length about 20 inches. Female: smaller than the male; plumage dusky brown, more or less mixed with white on under parts.

Nest. On a sea-side cliff or moorland bluff near a lake, — made of coarse herbage and lined with down.

Eggs. 6-10; buff of various shades; 2.55×1.80 .

This species, probably confounded with the Common Scoter, is said to inhabit the shores of Hudson Bay, breeding between the 50th and 60th parallels, but does not appear to frequent the interior. It lives and feeds principally at sea, and its flesh is rank and oily. The American Scoters visit the coasts and bays of Massachusetts and New York in considerable numbers, associating with the Surf, Velvet, Eider, and other Sea Ducks, and are brought occasionally to Boston market about the first week in November. While here they appear to feed principally on shell-fish, particularly mussels, and the flesh of the young is tolerably palatable.

The American Scoter is not so strictly a sea-bird as Nuttall supposed, for though common on the coast it is found also on all the larger inland waters. In the A. O. U. "Check List" this bird's distribution is given as follows: "Coasts and larger inland waters of northern North America: breeds in Labrador and the northern interior: south in winter to New Jersey, the Great Lakes, Colorado, and California."

In October, 1878, I shot a male near the head waters of the Restigouche river, in the center of New Brunswick.

In habits this species does not differ materially from its allies.

WHITE-WINGED SCOTER.

WHITE-WINGED COOT. SEA COOT. VELVET SCOTER.

OIDEMIA DEGLANDI.

CHAR. Male: black, with a broad band of white on the wings, and a small patch of white under the eyes; knob on bill black, rest of bill and legs orange. Female: sooty brown, paler below; head more or less varied with white; wing-patch white; bill and legs blackish. Length 20 to 23 inches.

Nest. On the bank of a lake or sluggish stream, concealed at the foot of a low tree or bush,—made of coarse herbage and moss, lined with feathers; sometimes lined with down.

Eggs. 6-9 (usually 6); pale dull buff, varying to delicate cream color; 2.70×1.85 .

The White-winged Scoter might be characterized as a Sea Duck that retires inland to breed. It occurs in summer, and builds from about latitude 50° to the fur countries, and winters on the Massachusetts coast and south to Chesapeake Bay. Some few individuals are found in winter on the Great Lakes.

The habits of these birds do not differ from others of the group. Their principal food is mollusks, which they obtain by diving, generally in deep water: and they are most active at night, floating on the water asleep during a great part of the day. Their note is a harsh *ker-ker*.

NOTE.—The European VELVET DUCK (*Oidemia fusca*) wanders occasionally to the coasts of Greenland.

RUDDY DUCK.

SPINE-TAILED DUCK. BROAD-BILL DUCK. DIPPER DUCK.

ERISMATURA RUBIDA.

CHAR. Bill long and very wide at the end and deep at the base; tail-feathers stiff and pointed. Male in summer: upper parts rich chestnut; crown and nape black; cheeks and chin white; rump and wing-coverts grayish brown; wings and tail dusky; under parts silvery white, shaded with dusky; bill and feet bluish. Male in winter, young male, and female: upper parts dull grayish brown, varied with dull buff, top of head darker; cheeks and chin dull white; neck brownish gray; lower parts grayish white; bill and feet dusky. Length about 15 inches.

Nest. In the marshy margin of a pond or sluggish stream, amid the rank herbage close by the water's edge, — a loosely made, bulky structure of reeds and coarse grass, lined with grass.

Eggs. ? sometimes 20; pale buff or dirty white, with a rough surface; 2.40×1.50 .

This species, an exclusive inhabitant of America, retires to the North to breed, frequenting the small lakes in the interior of the fur countries up to the 58th parallel. On the 5th of August it was also observed by Mr. Say at Pembino, in the latitude of 49° , where, no doubt, it also passes the period of reproduction. These birds are very unwilling to take wing, though they fly pretty well when once started. They dive with the greatest facility, and particularly at the flash of the gun, or even the report of the percussion-cap. When swimming they have a habit of carrying the tail so erect that it appears of the same height with the head and neck. Small flocks, consisting of the female and young, are often seen in Fresh Pond, in this vicinity; but scarcely ever the adult males, who seem to migrate usually apart at this season. They visit us early in October, and in the course of the winter proceed south to the extremity of the Union. On their first arrival they are tame and unsuspecting; but the old males are extremely shy and difficult of approach. Their food appears to be principally marine and fluviatile vegetables, and seeds, for which they dive. Besides gravel, I have found in the stomach seeds and husks of the *Ruppia maritima*. They rarely, if ever, visit the sea, but are found towards the head of tide-waters in estuaries and small ponds at no great distance from the ocean. They are common in the markets of Boston, where they are sold under the name of Dun-birds, and their flesh is good and much esteemed.

The Ruddy Duck is said to be generally distributed over North America and to breed throughout its range; but in the New England States it occurs principally as a fall and spring migrant, and a few individuals have been seen during the winter months. I think they breed on the Grand Lake Meadows in New Brunswick for I have seen very young birds there.

The males are rarely seen in full plumage, in which they make a

strikingly beautiful appearance, and the bird is familiar only in the duller colors, worn at all seasons by the young male and female; and in this inconspicuous dress these birds are enabled to avoid observation by hiding in the rank herbage so common at their resorts, and thus have gained a reputation for being rare, while they are fairly common. They are known to be common by the gunners of Chesapeake Bay, who take them to market, — their food being chiefly marine plants, which they obtain by diving; their flesh is tender, and of pleasant flavor.

CANVAS-BACK

ATHYA VALLISNERIA.

CHAR. Mantle and sides silvery white, daintily marked with wavy lines of dusky; head and neck brownish red; lower neck and breast and rump brownish black; wings and tail gray; under parts white; bill black; legs leaden gray. In the female the head, neck, and breast are dull brown; upper parts grayish brown; belly white. Length about 22 inches.

Nest. In marshy margin of stream or lake, concealed amid rank herbage, — made usually of grass and weed stems and lined with feathers.

Eggs. 6-10; grayish olive, — sometimes tinged with drab; 2.40×1.75 .

The Canvas-back, so well known as a delicacy of the table, is a species peculiar to the continent of America. It breeds, according to Richardson, in all parts of the remote fur countries, from the 50th parallel to their most northern limits, and at this period associates much on the water with the ordinary tribe of Ducks. After the close of the period of reproduction, accumulating in flocks, and driven to the open waters of the South for their favorite means of subsistence, these birds arrive about the middle of October seawards on the coast of the United States. A few at this time visit the Hudson and the Delaware, but the great body of emigrants take up their quarters in the Bay of Chesapeake and in the numerous estuaries and principal rivers which empty into it, particularly the Susquehanna, the Patapsco, Potomac, and James rivers. They also frequent the sounds and bays of North Carolina, and are abundant in the river Neuse, in the vicinity of Newbern, and probably in most of the other Southern waters to the coast of

the Gulf of Mexico, being seen in winter in the mild climate of New Orleans. In these different sections of the Union they are known by the various names of Canvas-backs, White-backs, and Sheldrakes. In the depth of winter a few pairs, probably driven from the interior by cold, arrive in Massachusetts Bay, in the vicinity of Cohasset and near Martha's Vineyard; these, as in the waters of New York, are commonly associated with the Red-head, or Pochard, to which they have so near an affinity. Their principal food, instead of the fresh-water plant *Valisneria*, which is confined to so small a space, is in fact the different kinds of sea-wrack, known here by the name of eel-grass, from its prodigious length. These vegetables are found in nearly every part of the Atlantic, growing like submerged fields over all the muddy flats, shallow bays, estuaries, and inlets, subject to the access of salt or brackish waters. They are the marine pastures in which most of the Sea Ducks, no less than the present, find at all times, except in severe frosts, an ample supply of food.

The Canvas-backs on their first arrival are generally lean; but by the beginning of November they become in good order for the table. They are excellent divers, and swim with speed and agility. They sometimes assemble by thousands in a flock, and rising suddenly on wing, produce a noise like thunder. During the day they are commonly dispersed about in quest of food, but towards evening collect together, and coming into the creeks and river inlets, ride as it were at anchor, with their heads under their wings asleep: sentinels, however, appear awake and ready to raise an alarm on the least appearance of danger. At other times they are seen swimming about the shoals and diving after the sea-wrack, which they commonly pluck up, and select only the tenderest portion towards the root. Though thus laboriously engaged, they are still extremely shy, and can rarely be approached but by stratagem; for even while feeding, several remain unemployed, and vigilant against any surprise. When wounded in the wing, they dive to prodigious distances, and with such rapidity and perseverance as almost to render the pursuit hopeless. The great demand

and high estimation in which these Ducks are held, spurs the ingenuity of the gunner to practise every expedient which may promise success in their capture. They are sometimes decoyed to shore or within gunshot by means of a dog trained for the purpose, which, playing backwards and forwards along the shore, attracts the vacant curiosity of the birds, and as they approach within a suitable distance, the concealed fowler rakes them first on the water, and afterwards as they rise. Sometimes by moonlight the sportsman directs his skiff towards a flock, whose position he has previously ascertained, and keeping within the projecting shadow of some wood, bank, or headland, he paddles silently along to within fifteen or twenty yards of a flock of many thousands, among whom he consequently makes great destruction.

As the severity of the winter augments, and the rivers become extensively frozen, the Canvas-backs retreat towards the ocean, and are then seen in the shallow bays which still remain open, occasionally also frequenting the air-holes in the ice, and openings which are sometimes made for the purpose, immediately over the beds of sea-grass, to entice them within gunshot of the hut or bush fixed at a convenient distance for commanding the hungry flocks. So urgent sometimes are the Ducks for food in winter that at one of these artificial openings in the ice, in James River, a Mr. Hill, according to Wilson, accompanied by a second person, picked up from one of these decoys, at three rounds each, no less than eighty-eight Canvas-backs. The Ducks crowded to the place so that the whole open space was not only covered with them, but vast numbers, waiting their turn, stood inactive on the ice around it.

The Canvas-back will also eat seeds and grain as well as marine grass, and seems especially fond of wheat, by which it may be decoyed to particular places, after continuing the bait for several days in succession. The loss of a vessel loaded with this grain, near the entrance of Great Egg Harbor, in New Jersey, attracted vast flocks of these Ducks to the spot, so that not less than two hundred and forty were killed in one day by the neighboring gunners, who assembled to the spot in quest

of these strange birds, which were afterwards sold among the neighbors at the low rate of twelve and a half cents apiece, without the feathers. These Sea Ducks, as the gunners then called them, — from the direction, probably, in which they arrived, — were no other than the famous Canvas-backs, which commonly sold in the Philadelphia market at from a dollar to a dollar and a half per pair, — and indeed sometimes much higher prices are given, when they are scarce, and considered indispensable.

The Canvas-back is rare in New England and the Maritime Provinces, and occurs in that portion of the country as a migrant only; but it is abundant in winter on Chesapeake Bay, and breeds in the fur countries, appearing in numbers, while migrating, in the region of the Great Lakes. A few pairs breed in Manitoba, but the bulk of the flocks go farther north. — as far even as Alaska and the lower valley of the Mackenzie River. The breeding area may extend farther to the southward than Manitoba, for Dr. Newberry reported finding very young broods on the lakes and streams amid the Cascade Mountains in Upper California, in which region Canvas-backs are said to be very numerous, — more numerous than any other water-fowl.



REDHEAD.

POCHARD.

AYTHYA AMERICANA.

CHAR. Mantle and sides silvery white, varied with fine waved lines of dusky; belly white; head and neck rich chestnut; lower neck, breast, and rump black; wings and tail slate gray; bill dull bluish black, tipped with gray; legs and feet leaden gray. In the female the head, neck, and breast are grayish brown, and the markings on the back less distinct and of a browner tint. Length 17 to 21 inches.

Nest. Amid the rank herbage in marshy margin of stream or lake, — sometimes resting upon the water; made of grass and sedges and lined with feathers.

Eggs. 7-14 (usually about 10); pale buff or creamy, tinged more or less with olive; 2.40×1.75 .

The Pochard, so nearly related to the Canvas-back, with which it generally associates, is common to the north of both continents. It is abundant in Russia in rivers and lakes in all latitudes, as well as in Denmark, the north of Germany, and as a bird of passage is seen in England, Holland, France, Italy, and in the course of the winter proceeds as far south as Egypt. In the present continent these birds are found to

breed in all parts of the fur countries, from the 50th parallel to their utmost boreal limits, and, dwelling in fresh waters, are seen to associate generally with the ANATINÆ, or proper Ducks, taking to the sea in autumn with their broods, and appearing within the limits of the United States towards the close of October; they afterwards spread themselves over the bays, rivers, and freshwater lakes at no great distance from the sea. In the Bay of Chesapeake and its tributary streams they are now seen in flocks with the Canvas-backs, and feed much on the same kind of submarine grass, or wrack-weed, on which they become very fat, and are in flavor and size but little inferior to their companions, — being often, in fact, both sold and eaten for the same, without the aid of any very sensible imposition. In the months of February and March they are common in the fresh waters of North and South Carolina, where many pass the greater part of the winter; they are also seen at this season in the lower part of the Mississippi, around Natchez, and probably accompany the flocks of the preceding species near New Orleans. Brisson's Mexican Pochar'd, described by Fernandez, is also in all probability the same bird.

The Pochar'ds dive and swim with great agility. They are in England sometimes taken in the decoy pools in the usual manner of driving, but are by no means welcome visitors: for by their continual diving they disturb the rest of the fowls on the water, and thus prevent their being enticed into the tunnel nets; nor are they willingly decoyed with the other Ducks. They are said to walk awkwardly and with difficulty. It is also added that their cry more resembles the hollow hiss of a serpent than the voice of a bird. Their flight is more rapid than that of the common Wild Duck, and the noise of their wings very different. The troop forms a close body in the air; but they do not proceed in angular lines or obey any particular leader, nor have they any call sufficient for the purpose. On their first arrival they are restless and watchful, alighting on the water, and then again wheeling and reconnoitring in the air for some time, uncertain in the choice of their move-

ments. The only time when they can be approached within gunshot, like so many other of the species, is about daybreak, from an ambush or the shelter of some concealment.

In the London markets these Ducks are sold under the name of Dun Birds, and are very deservedly esteemed as a delicate and well-flavored game.

Although it has been said that this species will not live in confinement, Mr. Rennie states that no bird appears sooner reconciled to the menagerie; and one in his possession which had been badly wounded in the wing took immediately to feeding on oats, and after three years confinement appeared very tame, and remained in good health.

The Redhead is generally distributed throughout North America, but is uncommon or rare in New England and the adjacent Provinces, while common to abundant on the Great Lakes and westward. It breeds from Maine northward, and winters in Chesapeake Bay, and south to the shores of the Gulf of Mexico.

While in general appearance this bird is so like the Canvas-back that purchasers are readily deceived as to the species the marketman is offering them, yet the difference is so pronounced that but little care is required to select the more delicately flavored of these cousins. In the Canvas-back the head is dark brown, — almost blackish brown, — in contrast to the rich chestnut of the Redhead, and the bill of the former displays more black color. The shape of the head is different also, that of the Canvas-back being longer and narrower.

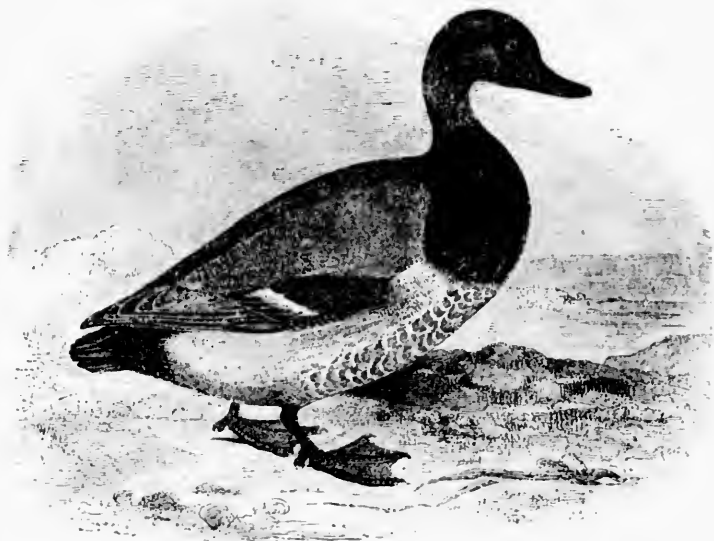
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AMERICAN SCAUP DUCK.

BIG BLACKHEAD. BLUEBILL.

AYTHYA MARILA NEARCTICA.

CHAR. Male: head, neck, and breast black, with green reflections; back and sides white, marked with fine wavy lines of black; rump, wings, and tail brownish black; wing-patch white; belly white, pencilled with black; vent and under tail-coverts black; bill leaden blue, with a black "nail" at the tip; legs gray, feet blackish. Female: general plumage of upper parts dull brown; band of white at base of bill; wing-patch and belly white. Length about 18 inches.

Nest. Amid rank herbage near a lake or stream; a rude structure of loosely laid grass and sedges, lined with feathers.

Eggs. 6-10; pale buff tinged with olive, — sometimes tinged with drab; 2.55×1.70 .

This species, better known in America by the name of the Bluebill, is another general inhabitant of the whole northern hemisphere, passing the period of reproduction in the remote and desolate hyperboreal regions, whence at the approach of winter it issues over the temperate parts of Europe as far as

France and Switzerland, and in the United States is observed to winter in the Delaware, and probably proceeds as far as the waters of the Southern States, having been seen in the lower part of Missouri by Mr. Say in the spring. It is abundant also in winter in the Mississippi around and below St. Louis. The breeding-places of this bird, according to the intelligent and indefatigable Richardson, are in the remote fur countries, from the most southern point of Hudson Bay to their utmost northern limits.

The Scaup Duck is said to derive its name from feeding on scaup, or *focken* shell-fish, for which and other articles of subsistence, such as marine insects, fry, and marine vegetables, it is often seen diving with great alertness. It is a common species here both in fresh waters and bays, particularly frequenting such places as abound in its usual fare, and like most of its tribe it takes advantage of the accommodation of moonlight. These birds leave the Middle States in April or early in May.

Both male and female of the Scaup make a similar grunting noise, and have the same singular toss of the head, with an opening of the bill when sporting on the water in the spring. While here they are heard occasionally to utter a guttural *quanck*, very different from that of Common Ducks. In a state of domestication during the summer months, when the larvæ of various insects are to be found in the mud at the bottom of the pond these birds frequent, they are observed to be almost continually diving. They feed, however, contentedly on barley, and become so tame as to come to the edge of the water for a morsel of bread. Mr. Rennie adds, of all the aquatic birds we have had, taken from their native wilds, none have appeared so familiar as the Scaup. The flesh of this species is but little esteemed, though the young are more tender and palatable.

The Bluebill is well known to the gunners on the Atlantic, though more common to the southward than on the New England shores, and abundant in the Western interior. It breeds from about latitude 50° northward, and winters south to Central America.

LESSER SCAUP DUCK.

LITTLE BLACKHEAD. LITTLE BLUEBILL.

AYTHYA AFFINIS.

CHAR. Similar in coloration to *marila nearectica*, but in the present species the gloss of the head is purple instead of green, and the flanks are pencilled with dusky instead of being unmarked. Size smaller, length about 16 inches.

Nest. Sometimes on an island, but usually in the marshy margin of a stream or pond, hid amid the ranker herbage close to the water; made of grass and weed-stems and lined with down.

Eggs. 6-9; pale dull buff tinged with olive; 2.25×1.60 .

The slight difference between this bird and its larger ally has caused such confusion of the two that the distinctive distribution and habits of the present species has not been determined. Both are classed with the Sea Ducks, yet both build their nests by inland waters usually, and not on the sea-coast. The nests are generally by an inland stream, but Dr. Bell reports finding several on Nottingham Island, in Hudson Bay.

Of the two birds the present is less frequently found on salt water even in winter. During the migrations it is uncommon along the shores of northern New England and the Provinces, though Mr. Brewster considers it common on the Massachusetts coast in the fall, while rare in the spring. It winters farther south than does the larger bird, and is more plentiful on the streams and creeks running into Chesapeake Bay than at any locality to the northward. It is very abundant along the lower valley of the Mississippi, and Dr. Coues reported finding it abundant on the upper Missouri. Thompson reports it "an abundant summer resident" of Manitoba.

Audubon considered this species could be approached easily, while feeding; but the examples I have met with have been rather wary, and though they rose from the water with difficulty, and therefore rarely took wing, they generally managed to swim out of the range of my gun.

Authors differ as to the origin of the name given to these birds, some referring it to their fondness for mollusks, while others think the cry is responsible for the name, which sounds like the word *scaup*, delivered by a harsh voice in a screaming tone. The cry is exceedingly discordant.

RING-NECKED DUCK.

RING-BILLED BLACKHEAD. RING-NECKED BLACKHEAD.

MARSH BLUEBILL.

ATHYA COLLARIS.

CHAR. Upper parts and breast black, deepest on the head; an orange-brown collar on the neck; wings slate gray, wing-patch bluish; under parts white, flanks marked with fine wavy lines; bill leaden blue, tipped with black, and with subterminal and basal bands of pale blue.

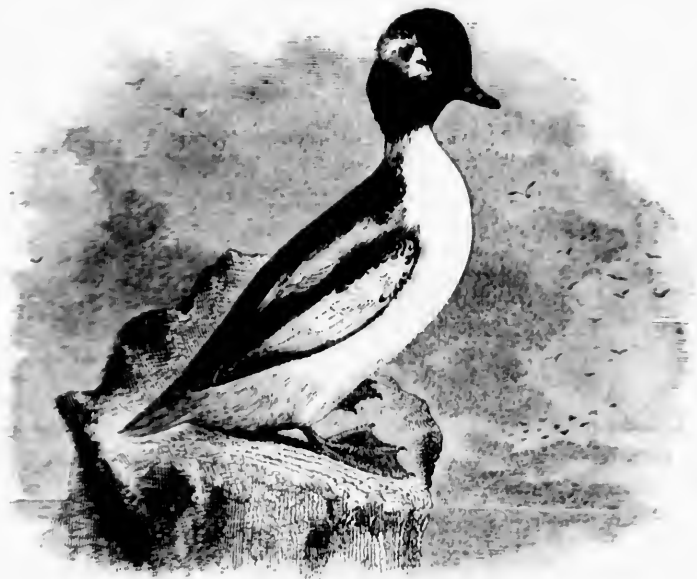
The female lacks the collar and the wavy lines on flanks; band of grayish white around base of bill shading to pure white on the chin; general tints brownish. Length 16 to 18 inches.

Nest. Concealed amid rank herbage in reedy margins of a stream or pond; made of grass and lined with feathers.

Eggs. 6-12; grayish buff tinged with olive; 2.25×1.60 .

The Ring-necked Duck is found throughout North America, breeding from about latitude 45° northward, and wintering from Chesapeake Bay and the lower Ohio to the West Indies. It does not appear to be an abundant bird anywhere, but is more common along the valley of the Mississippi than near the Atlantic, where it is so uncommon as to be considered rare by many local ornithologists. Mr. Boardman writes to me that the bird breeds regularly on the St. Croix River, and is not uncommon about the mouth of the Bay of Fundy. I had met with it elsewhere in New Brunswick, but considered it rather rare.

The habits of this species are similar to those of others of the group. Its food consists chiefly of aquatic insects and seeds, varied with such small marine animals as come within reach of its bill. It swims and dives with ease, and its flight is strong and rapid; and as it rises from the water with more ease, it more frequently attempts to escape from a pursuer by flight than does either of its congeners.



BUFFLE-HEAD.

DIPPER. BUTTER-BALL. SPIRIT DUCK.

CHARITONETTA ALBEFOLIA.

CHAR. Back, rump, and part of wings black, remainder of wing white, varied somewhat with black; head black, with green and purple reflections; a triangular patch of white from the eyes to the nape; lower neck and under parts white; tail slate gray; bill leaden blue; legs yellowish pink. Length 15 inches. The female is smaller, with a general color of grayish brown and a white patch on the cheeks and wings. Young birds resemble the female.

Nest. In a hollow of a tree or stump near a pond or stream. — a thick cushion of down on a platform of decayed wood.

Eggs. 6-14 (usually about 10); ivory white or pale buff, sometimes with a tinge of olive; average size 2.00 × 1.45.

This very elegant little Duck, so remarkable for its expertness in diving and disappearing from the sight, is another of those species, like the Golden-eye, to which the aborigines have given the name of Spirit, or Conjuror, from the impunity with which it usually escapes at the flash of the gun or the

twang of the bow. In the summer season it is seen abundantly on rivers and freshwater lakes throughout the fur countries, where it breeds in June, and about Hudson Bay it is said to make its nest in hollow trees in the woods contiguous to water, — a provision of some importance, probably, from the impotent manner in which the birds of this group proceed on the ground. In autumn and winter these birds are seen almost in every part of the Union, sometimes frequenting the sea-shores, but more particularly rivers and lakes. They are observed in Missouri, and on the Mississippi round Natchez. In February they were very abundant on the river Neuse in North Carolina, in the vicinity of Newbern, and used to dive very dexterously and perseveringly in quest of their food, which at that time is principally fluviatile and submerged vegetables, particularly the sea-wrack; they also sometimes visit the bays and salt-marshes in quest of the laver, or *Ulva lactuca*, as well as crustacea and small shell-fish. They are often exceedingly fat, and in Pennsylvania and New Jersey are commonly known by the ridiculous name of Butter-Box, or Butter-Ball. Their flesh, however, like that of the preceding species, is not in very high request for the table: but the females and young, which are almost the only kinds that visit this part of Massachusetts in winter, are very tender and well flavored.

In February, the males are already engaged in jealous contests for the selection of their mates, and the birds are then seen assembled in small flocks of both sexes. The drake is now heard to *quak*, and seen repeatedly to move his head backward and forward in the frolicsome humor of our domestic Ducks; and by about the middle of April or early in May every single individual will have disappeared on its way to the natal regions of the species in the North.

From their great propensity to diving, these birds are commonly known in the Carolinas by the name of Dippers; when wounded or hit with a shot, they will often dive or conceal themselves with such art that they seem to have buried themselves in the water, and probably often remain wholly submerged to the bill, or disappear in the jaws of a pike.

The Buff-head ranges over this entire continent, breeding from about latitude 45° northward, and wintering from Massachusetts and the Great Lakes southward; it is more abundant in the West than near the Atlantic. Thompson reports it a common summer resident of Manitoba.

AMERICAN GOLDEN-EYE.

WHISTLER.

GLAUCONETTA CLANGULA AMERICANA.

CHAR. Male: upper parts black, the head with green reflections; a round patch between the bill and eyes; wings varied with white; lower neck and under parts white; bill black; legs and feet orange, with dusky webs. Length 19 to 23 inches. Female: upper parts brown, back, breast, and sides varied with gray; belly dull white; wing-patch white; bill, legs, and feet dull orange, webs dusky. Smaller than the male, — length about 17 inches. Young birds resemble the female.

Nest. In a hollow tree or stump, made of leaves and moss, and lined with down.

Eggs. 6-12; bright green when fresh, but fading to a dull ashy green; 2.40 × 1.70.

The Golden-eye is a common inhabitant of the boreal regions of both continents, from whence it migrates in small flocks at the approach of winter, accompanying the Velvet, Surf Duck, and Scoter in their desultory route in quest of subsistence. On their way, soon after the commencement of their adventurous voyage, these birds visit the shores of Hudson Bay and congenial lakes in the interior, on which they linger, feeding on tender and small shell-fish until debarred by the invasion of frost. They breed in all parts of the desolate and remote fur countries in great numbers, frequenting the rivers and freshwater lakes, on whose borders they pass the period of reproduction, making a rude nest of grass, and protecting the necessary warmth of their eggs by a layer of feathers or down plucked from the breast.

Although furnished with a remarkably complicated trachea in the male, whence the name of *Clangula*, we cannot learn that they ever possess any audible voice. When flushed they rise

in silence, and we then only hear, instead of a cry or a quack, the very perceptible and noisy whistling of their short and laboring wings, for which reason they are here sometimes called by our gunners the Brass-eyed Whistlers. In their native haunts they are by no means shy, allowing the sportsman to make a near approach, as if conscious at the same time of their impunity from ordinary peril, for no sooner do they perceive the flash of the gun or hear the twang of the bow, than they dive with a dexterity which sets the sportsman at defiance, and they continue it so long and with such remarkable success that the aboriginal natives have nicknamed them as conjuring or "Spirit Ducks."

The food of the Golden-eye, for which it is often seen diving, consists of shell-fish, fry, small reptiles, insects, small crustacea, and tender marine plants. In and near fresh waters it feeds on fluvial vegetables, such as the roots of *Equisetum* and the seeds of some species of *Polygonum*. Its flesh, particularly that of the young, is generally well flavored, though inferior to that of several other kinds of Ducks.

In Europe these birds descend in their migrations to the South along the coasts of the ocean as far as Italy, where they are known by the name of *Quatt' Occhi*, or "Four Eyes," from the two round and white spots placed near the corners of the bill, which at a distance give almost the appearance of two additional eyes. They likewise pass into the central parts of the Continent, and visit the great lakes of Switzerland. They are equally common, at the same season, in most parts of the United States, as far probably as the extremity of the Union, and early in spring they are again seen in Missouri and on the wide bosom of the Mississippi, preparing to depart for their natal regions in the North. Though they fly with vigor, from the shortness of their legs and the amplexness of the webs of their feet, the Clangulas walk badly and with pain; they advance only by jerks, and strike the ground so strongly with their broad feet that each step produces a noise like the slapping of the hands; the wings are also extended to retain an equilibrium, and if hurried, the awkward bird falls on its breast

and stretches its feet out behind. Born only for the water, the Golden-eye, except in the season of propagation, seldom quits it but to dry itself awhile in the air, and immediately after returns to its natural element.

The Whistlers are common throughout the country, breeding from Maine and Manitoba to the lower fur countries, and wintering from the Bay of Fundy to Cuba.

BARROW'S GOLDEN-EYE.

ROCKY MOUNTAIN GOLDEN-EYE. WHISTLER.

GLAUCIONETTA ISLANDICA.

CHAR. Similar to the Common Golden-eye, but the white patch on the cheek oblong or pear-shaped, instead of round.

Nest. In a hollow tree, made of twigs and moss lined with down.

Eggs. 6-10; bright green when fresh, but fading to a dull grayish tint; 2.45 × 1.75.

Barrow's Golden-eye Duck is so much like the more common Whistler that few but experts can separate them, the shape of the white patch on the cheeks of the male being the only distinguishing characteristic.

In habits the two species do not differ, but the present one is found farther north, breeding from the Gulf of St. Lawrence to northern Greenland, and wintering to the Bay of Fundy, northern New York, Illinois, and Utah. On the Atlantic coast it is rarely seen so far south as Massachusetts.

I am inclined to question the statement made in "The Water Birds of North America," that these birds "undoubtedly breed" along the St. Croix River. An occasional infertile or unhealthy example may linger in the Bay of Fundy and adjacent waters during the summer months, but no evidence has been obtained of an evidently mated pair having been seen there. Neither Wilson nor Audubon knew this bird, and Nuttall writes: "It has hitherto been found only in the valleys of the Rocky Mountains."



HARLEQUIN DUCK.

LORD AND LADY.

HISTRIONICUS HISTRIONICUS.

CHAR. Male: upper parts chiefly bluish black, the wings varied with white; wing-patch purple; stripes of white on head, neck, and breast; stripes of chestnut on sides of crown; breast and belly grayish brown, sides chestnut; bill bluish black; legs and feet leaden blue. Length about 17 inches. The female smaller and of a general grayish brown color above; band of white around base of bill; belly dull white.

Nest. Usually on the ground close to a stream, — sometimes in a hollow tree; made of grass and sedges and lined with feathers.

Eggs. 6-10; warm cream color, often tinged with olive; 2.30×1.70 .

This singularly marked and beautiful species is almost a constant resident of the hyperboreal regions of the northern hemisphere, from which it migrates but short distances towards more temperate latitudes, and is, as in Europe, a rare

and almost accidental visitor as far as the Middle States of the Union. It is, however, more frequent in Eastern Europe up to Greenland, and common from Lake Baikal to Kamtschatka. Now and then it is killed in Scotland and the Orkneys. Dr. Richardson found it to be a rare bird in the fur countries, haunting eddies under cascades and rapid streams, where it dwells and breeds apart from all other Ducks. In Kamtschatka it affects the same retired and remarkable romantic situations. Like the Alpine Cinclus, it prefers the most rocky and agitated torrents; in such situations it has been seen in the rivulets of Hudson Bay at as great a distance as ninety miles inland from the sea. Here it seeks out its appropriate fare of spawn, shell-fish, and the larvæ of aquatic or fluviatile insects. On the low bushy and shady banks of these streams it constructs its nest, and on the margins of freshwater ponds in Labrador Mr. Audubon also observed this species; and he remarks that, instead of rearing its young in the same situations chosen for breeding, as with the Velvet and Surf Duck, it conducts its brood to the sea as soon as they are hatched. Its flight is high and swift, and it swims and dives with the utmost dexterity. So great is its confidence in the security of its most natural element that on the report of a gun over the water it instantly quits its flight and dives at once with the celerity of thought. It is said to be clamorous, and that its voice is a sort of whistle; the anatomy of the trachea is, however, unknown, and we cannot tell whether this sibilation be really produced from the throat or the wings, as in the case of the Common Clangula, or Golden-eye.

Driven from their solitary resorts in the interior by the invasion of frost, these birds are now seen out at sea engaged in obtaining a different mode of subsistence. Amidst these icy barriers they still continue to endure the rigors of winter, continually receding farther out to sea, or making limited and almost accidental visits to milder regions. When discovered, they display the utmost vigilance, and instantly take to wing.

This bird is considered to be game superior in flavor to the Common Wild Duck. From the singular and beautiful crescent-

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shaped lines and marks which ornament its neck and breast, it has probably come by the dignified appellation of *Lord* among the fishers of Newfoundland. It is here too rare to have acquired any particular name.

The Harlequin breeds from Newfoundland to high Arctic regions, and winters south to the Middle Atlantic States and the Ohio valley. It is common during the winter months in the Bay of Fundy, and rare in Massachusetts and the Great Lake region. In the Rocky Mountains it has been known to breed in latitude 49°.

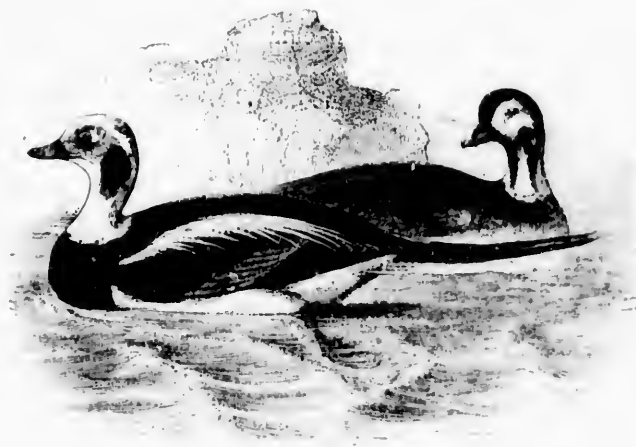
The favorite resort in summer of these birds is on the swift currents of a rapid and secluded stream, or the surging pool at the base of a fall. In winter they are found in the bays and estuaries on the sea-coast. They swim buoyantly, and dive with ease. Their flight is swift and powerful, and being shy and vigilant, they are not easily shot.

I have met with these handsome waterfowl in winter only, and in but one locality. — Mace's Bay, on the western shore of the Bay of Fundy. The Harlequins gathered there did not appear to be the solitary and unsociable birds that many writers have represented them. I frequently saw flocks of ten or more, and usually found these in company with Old Squaws, — their rivals in wariness and rapid flight. When approaching the bar at Mace's Bay, on which during the gunning season there is generally a dangerous array of firearms, these mixed flocks slacken their pace for two or three hundred yards, and when within range increase their speed, and go over the bar so swiftly that but few shot hit them.

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OLD SQUAW.

LONG-TAILED DUCK. SOU-SOUTHERLY. COCKAWEE.

CLANGULA HYEMALIS.

CHAR. Male: back, rump, and tail black, the central tail-feathers very long; crown and neck white; cheeks brownish gray, and below the gray a patch of brown; breast and wings black, the wings varied with white; belly white; bill pale pink, nail and base black; legs and feet leaden blue, the webs darker. Length 20 to 23 inches; middle tail feathers 8 to 9 inches. The female has the crown and upper parts dark brown; a dark stripe behind the eyes; under parts white; tail without long feathers.

Nest. Concealed under a bush, sometimes amid a tussock of rank herbage, — made of a few weed-stems and some grass, and thickly lined with down.

Eggs. 5-7; pale grayish green, sometimes greenish buff; 2.10 × 1.50.

This elegant and noisy Duck, known so generally in the Southern States by the nickname of "South-Southerly," from its note, and in most other parts by the appellation of "Old Squaws," or "Old Wives," is an Arctic inhabitant of both continents, and abounds in the glacial seas of America, where it is seen commonly associated with the Eider, Surf, Black, and other Ducks of congenial habits, who invariably prefer the frail but, to them, productive dominion of the sea to the land or its more peaceful waters. So strong is the predilection of

this species for its frigid natal climes and their icy barriers that it is seen to linger in the north as long as the existence of any open water can be ascertained. When the critical moment of departure at length approaches, common wants and general feeling begin so far to prevail as to unite the scattered families into numerous flocks. They now proceed towards the South, and making a halt on the shores and inland lakes round Hudson Bay, remain until again reluctantly driven towards milder climes. They are the last birds of passage that take leave of the fur countries. Familiar with cold, and only driven to migrate for food in the latter end of August, when already a thin crust of ice is seen forming in the night over the still surface of the Arctic Sea, the female Harelda is observed ingeniously breaking a way with her wings for the egress of her young brood.

According to the state of the weather we consequently observe the variable arrival of these birds. In October they generally pay us a visit, the old already clad in the more dazzling garb of winter. The young sometimes seek out the shelter of the freshwater ponds, but the old keep out at sea. No place in the Union so abounds with these gabblers as the Bay of Chesapeake. They are lively, restless, and gregarious in all their movements, and fly, dive, and swim with unrivalled dexterity, and subsist chiefly upon small shell-fish and marine plants, particularly the *Zostera*, or grass-wrack. Late in the evening or early in the morning, towards spring more particularly, vast flocks are seen in the bays and sheltered inlets, and in calm and foggy weather we hear the loud and blended nasal call reiterated for hours from the motley multitude. There is something in the sound like the honk of the Goose, and as far as words can express a subject so uncouth, it resembles the guttural syllables 'ogh ough egh, and then 'ogh ogh o/h ough egh, given in a ludicrous drawling tone; but still, with all the accompaniments of scene and season, this humble harbinger of spring, obeying the feelings of nature and pouring forth his final ditty before his departure to the distant North, conspires, together with the novelty of his call, to please rather

than disgust those happy few who may be willing "to find good in everything." His peculiar cry is well known to the aboriginal sons of the forest, and among the Crees the species is called *'Hah-ha-way*, — so much like the syllables I have given above that many might imagine my additions no more than a version of the same. But I may perhaps be allowed to say that the notes I had taken on the subject were made two years previous to the publication of Dr. Richardson's "Zoology," whence I learn this coincidence of the name and sound as given by the aborigines of the North. This Duck is no less known to the Canadian voyagers, who have celebrated it in their simple effusions by the name of the "Cackáwee."

In the course of the winter the Long-tailed Ducks wander out into the bays and inlets nearly if not quite to the extremity of the United States coasts; and in the spring, voyaging along the unruffled bosom of the great Mississippi with the many thousands of other water-fowl which penetrate by this route into the interior, we find among the crowding throng some small flocks of the present species, who proceed as far as the banks of the Missouri. In Spitzbergen, Iceland, and along the grassy shores of Hudson Bay, they make their nests about the middle of June, lining the interior with the down from their breasts, which is equally soft and elastic with that produced by the Eider.

These birds abound in Greenland, Lapland, Russia, and Kamtschatka, are seen about St. Petersburg, and from October to April many flocks pass the winter in the Orkneys. They are only accidental visitors on the Great Lakes in Germany and along the borders of the Baltic, and are often seen, but never in flocks, upon the maritime coasts of Holland. The flesh of the old birds is but little esteemed, yet that of the young is pretty good food.

The Old Squaw breeds at extremely high latitudes, being more Arctic in its distribution than any other species of Duck. It winters in numbers along the coast of south Greenland, and is common all along the Atlantic to the Southern States.

AMERICAN MERGANSER.

GOOSANDER. BUFF-BREASTED SHELLDRAKE. SAW-BILL.

MERGANSER AMERICANUS.

CHAR. Head and neck black, with green reflections; back and scapulars black; rump slate gray; wings brown, varied with white; a black bar across the white wing-coverts; under parts white, tinged with delicate salmon pink, which soon fades after death; bill bright red; legs and feet orange. Length about 26 inches. The female is smaller, the head and neck are chestnut, and the feathers of the neck are elongated to a conspicuous crest.

Nest. Usually in a hollow tree, — often in a wooden box set for its use by egg-hunters; sometimes in a hole in a cliff or under a rock, or even in an abandoned nest in a tree; made of grass, leaves, and moss, and thickly lined with down.

Eggs. 6-12 (usually about 8); creamy white; size very variable, average about 2.65×1.80 .

The Goosander inhabits the remote northern regions of both continents, being seen during summer on the borders of grassy lakes and streams throughout the whole of the fur countries, and is among the latest of its tribe in autumn to seek an asylum in milder climates. It is said to breed in every latitude in the Russian empire, but mostly in the north. It is common also in Kantschatka, and extends through northern Europe to the wintry shores of Iceland and Greenland. Many of these birds, however, pass the breeding-season in the Orkneys, and these scarcely ever find any necessity to migrate. They are seen in small families or companies of six or eight in the United States in winter, and frequent the sea-shores, lakes, and rivers, continually diving in quest of their food, which consists principally of fish and shelly mollusca. They are also very gluttonous and voracious, like the Albatross, sometimes swallowing a fish too large to enter whole into the stomach, which therefore lodges in the oesophagus till the lower part is digested, before the remainder can follow. The roughness of the tongue, covered with incurved projections, and the form of the bent serratures which edge the bill, appear all purposely contrived with reference to its piscatory habits. In the course

of the season these birds migrate probably to the extremity of the Union, being seen in winter on the Mississippi and Missouri, from whence at the approach of spring they migrate north or into the interior to breed.

The Goosander is seen to frequent the coast only in the depth of winter; and in its remote resorts in the North it fears the cold much less than the ice, as when that appears, its supply of food is necessarily cut off. The extent of the breeding-range of this species, as of that of many other retiring birds, is yet far from being sufficiently ascertained. Early in the month of May (1832), while descending the Susquehanna near to Dunmstown, a few miles below the gorge of the Alleghanies, through which that river meanders, near the foot of the Bald Eagle Mountain, G. Lyman, Esq., and myself observed near the head of a little bushy island a wild Duck, as we thought, with her brood making off round a point which closed the view. On rowing to the spot the wily parent had still continued her retreat, and we gave chase to the party, which with all the exertions that could be made in rowing still kept at a respectable distance before us. We now perceived that these diminutive possessors of their natal island were a female Goosander, or Dun-Diver, with a small but active little brood of eight young ones. On pushing the chase for near half an hour, the young, becoming somewhat fatigued, drew around their natural protector, who now and then bore them along crowding on her back. At length, stealing nearly from our sight as the chase relaxed, the mother landed at a distance on the gravelly shore, which, being nearly of her own gray color and that of her family, served for some time as a complete concealment. When we approached again, however, mother and brood took to the water, and after a second attempt, in which the young strove to escape by repeated divings, we succeeded in cutting off the retreat of one of the family, which was at length taken from behind a flat boat under which it had finally retreated to hide. We now examined the little stranger, and found it to be a young Merganser of this species not bigger than the egg of a Goose, and yet already a most elegant

epitome of its female parent, generally gray, with the rufous head and neck and the rudiments of a growing crest. After suffering itself to be examined with great calmness and without any apparent fear, we restored it to its more natural element, and at the first effort this little diminutive of its species flew under the water like an arrow, and coming out to the surface only at considerable distances, we soon lost sight of it, making good its aquatic retreat in quest of the parent. On inquiry we learned from the tavern-keeper that for several years past a nest or brood of these birds had annually been seen near this solitary and secluded island. In such situations, probably, escaping the observation of man, many of these birds spread through the country and breed from Pennsylvania to the remotest parts of the Canadian fur countries.

This bird is not found in abundance in any part of our temperate regions, but it breeds (sparingly) about latitude 45°, and thence to the fur countries. — probably to the limit of forests. It winters from New Brunswick and Illinois to the Southern States.

RED-BREASTED MERGANSER.

SHELLDRAKE.

MERGANSER SERRATOR.

CHAR. Head black, with green reflections, the feathers of the nape elongated to a conspicuous crest; white collar on the neck; back black; wings mostly white, the outer feathers black; in front of the wings a tuft of white feathers broadly edged with black; breast pale chestnut, streaked with black; belly white; bill red; legs and toes reddish orange. Length 20 to 25 inches.

The female is smaller, and has the head and neck reddish brown, — almost similar in coloration to the female *americanus*.

Nest. Generally on an inland island or the bank of a secluded stream, placed under cover of a bush or rock, or concealed amid rank herbage; usually made of grass, heather, or leaves, and lined with down. Sometimes the first eggs are laid on the bare ground, and down gradually tucked about them.

Eggs. 6-12 (usually about 9); olive gray or pale drab, tinged with green; 2.60 × 1.70.

This Merganser is again another general inhabitant of the whole northern hemisphere, spreading itself in the summer season throughout the remote fur countries and western interior, from whence, at the approach and during the continuance of winter, it migrates towards the sea-coast in quest of open water and the necessary means of subsistence. The Red-breasted Mergansers, equally common in Europe as in North America, are seen as far as Iceland, breed in Greenland, and inhabit most parts of the Russian dominions, particularly the great rivers of Siberia and the waters of Lake Bakal. They arrive about Hudson Bay in June as soon as the ice breaks up, and make their nests immediately after, of withered grass, and a lining of down or feathers from their breasts. The young are at first of a dirty brown, like young goslings.

The breeding-range of these birds is no less extensive than the preceding. According to Audubon they nest in rank weeds on the borders of lakes in Maine and other parts of the Union, and Mr. Say observed them on Lake Michigan in 42°, on the 7th of June, assembled there, no doubt, to pass the summer.

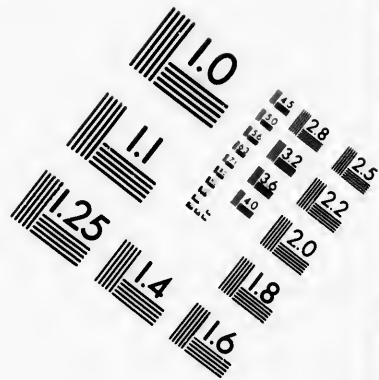
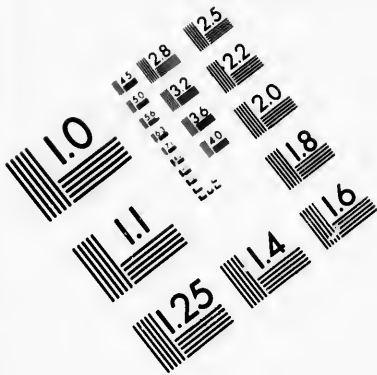
This species, like the rest of the family, dives well, and dexterously eludes the sportsman when wounded, moving about often in the greatest silence, with its bill only elevated above the water for respiration. In the winter, while here, these birds frequent the bays and estuaries as well as fresh waters, and feed as usual on fry and shell-fish.

The Shelldrake breeds from about latitude 42° in the West, and from about latitude 45° in the East, to the Arctic Circle, and sparingly north of that line. It winters on the coast from south Greenland to the Southern States.

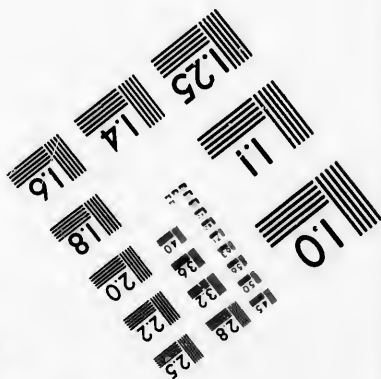
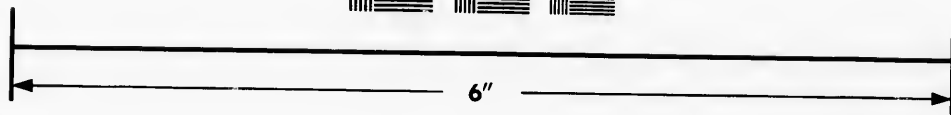
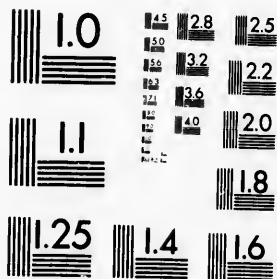
It breeds in abundance on the Miramichi River in New Brunswick.

The female bears all the burden of hatching the eggs and rearing the young, for she is deserted by her mate soon after she begins to sit. She is, however, equal to the task, and makes a most dutiful mother. She sits patiently and very closely on the nest, never rising from it until an intruder is almost within arm's reach, and then strives to decoy him from the spot. Soon after they are hatched, the young are led to the water, and at an early age they





**IMAGE EVALUATION
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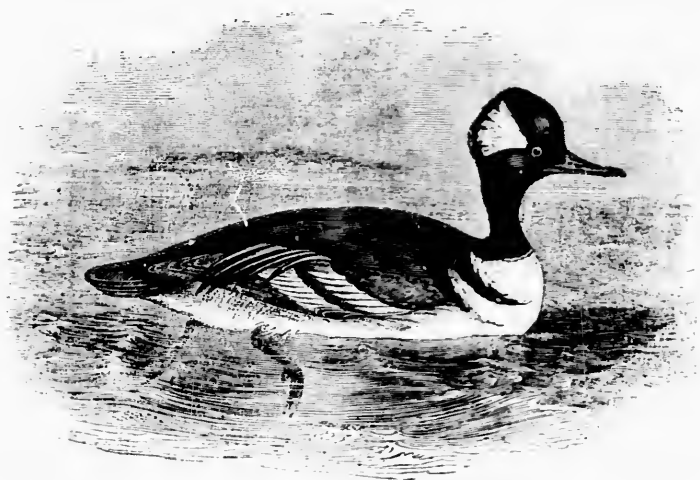
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swim rapidly and dive with great expertness, as I have learned by experience. I paddled after a brood one hot summer's day, and though several times they were almost within reach of my landing-net, they eluded every effort to capture them. Throughout the chase the mother kept close to the young birds, and several times swam across the bow of the canoe in her efforts to draw my attention from the brood and to offer herself as a sacrifice for their escape.

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HOODED MERGANSER.

HOODED SHELLDRAKE.

LOPHODYTES CUCULLATUS.

CHAR. Male: upper parts black; wings and tail with a brownish tinge; a triangular patch of white on the nape; under parts white, the breast with two crescentic stripes of black, and sides varied with lines of yellowish brown; bill leaden blue, with a white nail; legs dull red. Length about 19 inches. Female is rather smaller; upper parts dark brown; crest reddish brown; under parts white; breast pale brown.

Nest. In a hole in tree, or stump, or fallen log, lined with grass and leaves covered with down.

Eggs. 5-18 (usually about 8); ivory white: 2.10×1.75 .

This elegant species is peculiar to North America, and inhabits the interior and northern parts of the fur countries to their utmost limits. It is also among the latest of the ANATIDÆ to quit those cold and desolate regions. It makes a nest of withered grass and feathers in retired and unfrequented places, by the grassy borders of rivers and lakes. According to Audubon, it also breeds around the lagoons of the Ohio, and on the Great Northwestern Lakes of the interior. On the River St. Peters, in the 45th parallel, Mr. Say observed examples on the 18th of July, — no doubt in the same place where they had

passed the rest of the summer. At Hudson Bay, where these birds arrive about the end of May, they are said to nest close to the borders of lakes. The young are at first yellowish, and begin to fly in July. The Hairy Head, as this species is sometimes called, is rarely seen but in fresh waters and lakes, approaching the sea only in winter, when its favorite haunts are blocked up with ice. It delights in the woody interior, and traces its way up still creeks, and sometimes visits the mill-ponds, perpetually diving for small fish and insects in the manner of the Red-breasted Merganser. In the course of the winter it migrates as far south as Mexico, is very common throughout the whole winter in the Mississippi, and is rendered very conspicuous by the high circular and party-colored crest which so gracefully crowns the top of the head.

The Hooded Merganser ranges throughout North America, breeding from about latitude 45° to the vicinity of the Arctic Circle, and wintering from Massachusetts (sparingly) to the Southern States. It is rather common as a spring and fall migrant in New England and adjacent provinces, but breeds in numbers in the northern portions of Ontario and in Manitoba.

NOTE. — The RUFOUS-CRESTED DUCK (*Netta rufina*), from Europe, has been taken near New York. One example of STELLER'S DUCK (*Enicometta stelleri*), a North Pacific species, has also wandered from its usual habitat and been captured in Greenland.

The MASKED DUCK (*Nomonyx dominicus*), a tropical bird, occurs occasionally on the lakes of the interior, but cannot be regarded as more than a straggler.

AMERICAN WHITE PELICAN.

PLECANUS ERYTHORHYNCHOS.

CHAR. General color white, the breast and nape washed with pale yellow; wings mostly black; bill long, the lower mandible connected with a larger gular sac; bill and sac reddish in life, but fading to yellowish after death; legs and feet orange. Length about 5 feet.

Nest. Usually on the beach of an island in a large lake, — a loosely built structure of twigs on the top of a mound of gravel and sand.

Eggs. 1-4 (usually 2); white, with a rough chalk-like surface; 3.35 × 2.20.

The Pelican, the largest of web-footed water-fowl, known from the earliest times, has long held a fabulous celebrity for a maternal tenderness that went so far as to give nourishment to its brood at the expense of its own blood. Its industry and success as a fisher allows of a more natural and grateful aliment for its young; and pressing the well-stored pouch to its breast, it regurgitates the contents before them, without staining its immaculate robe with a wound.

If, indeed, authors do not include more than a single species in the *P. onocrotalus*, no bird wanders so widely or inhabits such a diversity of climates as the Common Pelican. In the cooler parts of Europe it is, however, seldom seen, being observed in France, England, and Switzerland only as a very rare straggler. It is likewise uncommon in the north of Germany, though great numbers occur on the banks of the Danube. This resort and that of the Strymon, also famous for its Swans, are noticed by Aristotle. The Pelican is found in Red Russia, Lithuania, Volhinia, Podolia, and Pokutia, but is unknown in the northern parts of the Muscovian empire, being seldom met with as far as the Siberian lakes, yet it is observed about Lake Baikal. The lakes of Judæa and of Egypt, the banks of the Nile in winter, and those of the Strymon in summer, seen from the heights, appear whitened by flocks of Pelicans. They are likewise common in Africa, on the Senegal and the Gambia, as well as at Loanga, and on the coasts of Angola, Sierra Leone, and Guinea. They occur at Madagascar, at Siam, in China, on the isle of Sunda, and at the Philippines, especially in the fisheries of the great lake of Manilla. They are sometimes met with at sea, and have been seen in the remote islands of the Indian Ocean. Captain Cook observed them likewise in New Holland.

In America Pelicans are found in the North Pacific, on the coast of California and New Albion, and from the Antilles and Terra Firma, the isthmus of Panama and the bay of Campeachy, as far as Louisiana and Missouri. They are very rarely seen along the coast of the Atlantic, but stragglers have been killed in the Delaware, and they are known to breed in Florida. In all the fur countries they are met with up to the

61st parallel of northern latitude. Indeed, in these remote and desolate regions they are numerous, but seem to have no predilection for the sea-coast, seldom coming within two hundred miles of Hudson Bay. They there, according to Richardson, deposit their eggs usually on small rocky islands, on the banks of cascades where they can scarcely be approached, but still are by no means shy. They live together generally in flocks of from six to fourteen, and fly low and heavily, sometimes abreast, at others in an oblique line; and they are often seen to pass close over a building, or within a few yards of a party of men, without exhibiting any signs of fear. For the purpose of surprising their prey they haunt eddies near water-falls, and devour great quantities of carp and other fish. They can only swallow, apparently, when opening the mouth sideways and somewhat upwards, like the shark. When gorged with food, they doze on the water or on some sand-shoal projecting into or surrounded by it, where they remain a great part of their time in gluttonous inactivity, digesting their over-gorged meal. At such times they may be easily captured, as they have then great difficulty in starting to flight, particularly when the pouch is loaded with fish. Though they can probably perch on trees, which I have never seen them attempt, they are generally on the wing, on the ground, or in their favorite element.

In the old continent the Pelican is said to nest on the ground in an excavation near to the water, laying two or three, and rarely four eggs, which are pure white, and of nearly equal thickness at both ends. The report that it nests in deserts remote from water, and the story of the parents bringing water for their young in the pouch in such quantities as to afford drink for camels and wild beasts, appears only one of those extravagant fictions or tales of travellers invented to gratify the love of the marvellous. Yet so general is the belief in the truth of this improbable relation that the Egyptians styled it the camel of the river, and the Persians, *Tacab*, or the water-carrier. The pouch of the Pelican is, however, very capacious, and besides drowning all attempts at distinct voice, it gives a most

uncouth, unwieldy, and grotesque figure to the bird with which it is associated. The French very justly nickname these birds *Grand-gosiers*, or Great-throats; and as this monstrous enlargement of the gullet is capable of holding a dozen quarts of water, an idea may be formed of the quantity of fish they can scoop when let loose among a shoal of pilchards or other fish, which they pursue in the course of their migrations.

The Pelican appears to attain to a great age. According to Culmann, in Gesner, a tame one in possession of the Emperor Maximilian, which is said to have followed him with the army, lived to the age of fourscore.

It is remarkable that while the Pelican of the Atlantic and the Pacific habitually frequents the ocean, that which so generally inhabits North America is rarely seen on the sea-coast, and then only as a straggler, seeking, even at such times, the protection of bays and rivers. Its habits are also essentially different. It never boldly soars aloft, nor seeks its prey at sea. The oceanic species is likewise seen in troops, sometimes following a retreating shoal of fish and circumventing their escape by enclosing them as in a ring; at other times soaring over their prey, these birds drop like a plummet, and plunging headlong, cause the water to fly up eight to ten feet. These and other actions foreign to our bird would seem to indicate an original difference of race. Yet again we find them on the old continent, principally upon large rivers and lakes.

The White Pelican does not occur regularly to the eastward of the Mississippi valley, though numbers have at sundry times wandered to the Atlantic, appearing all along the coast from Florida to the Bay of Fundy, and I have examined one specimen that was captured on the Gulf of St. Lawrence.

It occurs regularly in the Mississippi Valley, and is common in Manitoba. Small flocks are seen occasionally on the Great Lakes. It winters on the Gulf coast.

BROWN PELICAN.

PELECANUS FUSCUS.

CHAR. Upper parts ashy gray; head white; neck rich chestnut; wing-coverts and rump brown; under parts brownish gray; bill brownish; sac dusky; legs black. Length about 4 feet. In winter the head and neck are white.

Nest. On an island along the coast, usually on the ground, sometimes in a tree; made of twigs and sedges, and lined with grass.

Eggs. 2-5 (usually 3); white, with a chalk-like surface; 3.00×1.95 .

The Brown Pelican inhabits exclusively the sea-coast of the warmer parts of America, being abundant in the West Indies, particularly in Jamaica, Barbadoes, etc. These birds are likewise common in the Southern States, abounding in the bay of Charleston, where they are seen actively engaged in pursuit of their prey. They likewise breed and inhabit in the peninsula of East Florida, and occasionally wander up the Mississippi as far as the river Missouri. They are, like the preceding species, very gluttonous and voracious. After gorging themselves, they retire to the rocks or islets, and during the process of digesting their enormous meal remain dozing and inactive for hours together, with the bill resting on the breast, at which times, in South America, it is no uncommon thing for the natives to steal upon them unawares and seize them by the neck, without their making any defence or resistance. Yet, like some other gregarious birds, they are said to show a great affection for the wounded of their own species, to which they will carry a supply of food. Father Raymond relates that he had seen one of these Pelicans so well tamed and taught among the aborigines that it would go off in the morning, and return before night to its master with its pouch distended with fish, a great part of which the savages made it disgorge, leaving it in possession of the remainder as a reward for its service.

The Brown Pelican is common on the coast of the Gulf States, and on the Atlantic to North Carolina. A few examples have wandered as far north as Massachusetts and Illinois.

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CORMORANT.

SHAG.

PHALACROCORAX CARBO.

CHAR. Prevailing color black, with metallic reflections of green and purple, the mantle glossed with bronzy brown; the gular pouch bare, and yellow in color, and at its base is a white band extending from beneath the eyes across the throat. During the spring the feathers of the nape are elongated and form a mane-like crest, and white hair-like feathers appear on the head; also a patch of white is worn on the flanks. Bill black, shading to yellow at the base; legs black. Length about 36 inches.

Nest. In a crevice of a sea-washed cliff, or on the flat beach of a lake, or in trees by river, — made of large twigs, sometimes mixed with sea-

weed and lined with grass or leaves. Usually the nest is the accumulation of years, and becomes a heap of twigs, rotten at the base and surmounted by a layer of fresh herbage.

Eggs. 2-6 (usually 3); white, with a rough, chalk-like surface, the inside of the shell sea-green or pale blue; size variable, average about 2.60×1.60 .

The Cormorant, Phalacrocorax, or Bald Raven, of the Greeks, like the Pelican, to which it is nearly related, is also a general inhabitant of nearly every maritime part of the world, and even extends its residence into the inclement regions of Greenland, where, by following the openings of the great icy barriers of that dreary region, it finds means to subsist and to fish throughout the year. To the natives of this frigid climate it also proves of singular service: its tough skin is used by them as garments, the pouch is employed as a bladder to float their fishing-tackle, and the flesh, though coarse, is still acceptable to those who can regale upon seal's and whale's blubber.

These uncouth and gluttonous birds are plentiful on the rocky shores of Great Britain, Holland, France, and Germany. On the shores of the Caspian they are sometimes seen in vast flocks, and are frequent on Lake Baikal. They inhabit China and the coast of the Cape of Good Hope, and are common in the Philippine Islands, New Holland, New Zealand, and other neighboring regions. At Nootka Sound and in Kamtschatka they have been observed by various navigators, and are found in North America from Hudson Bay and Labrador to the coasts of Carolina and Georgia. They are not, however, common in the central parts of the United States, though they penetrate into the interior as far as the Missouri River. They breed and are seen in the vicinity of Boston on bare and rocky islands nearly throughout the year, and in all places appear shy, retiring, and sedentary, enduring the most severe weather with impunity, and only removing seaward or south in the depth of winter for the purpose of acquiring food. Mr. Audubon found them breeding on the ledges of almost inaccessible rocks at Grand Menan isle, in the Bay of Fundy. They appear very wary and shy, and feed their young with great assiduity, whose voice at this time resembles the hissing of snakes.

The Cormorant is a very dexterous and voracious fisher, committing great havoc when it visits pools and lakes ; but it almost constantly resides on the sea-shores, and is seldom seen inland. Swimming beneath the water with the velocity of a dart in the air, and remaining a long time submerged, its prey scarcely ever escapes, and it almost always rises with a fish in its bill, to swallow which it employs the expedient of tossing it into the air, and dexterously catches the head in its descent, so that the fins lie flat, and thus favor the passage down the throat ; the small pouch at the same time stretches so as to admit the whole body of the fish, which is often very large in proportion to the neck, and it there remains, undergoing a preparatory digestion previous to its passage into the lower part of the stomach.

In some countries, as in China, and formerly in England, the dexterity of the Cormorant in fishing was turned to profit ; for by buckling a ring about the lower part of the neck, to prevent deglutition, and accustoming it to return with its acquisitions in the bill to its master, it was made a useful and domestic fisher. On the rivers of China, Cormorants thus fixed are perched on the prows of boats, and at a signal made by striking the water with an oar, they instantly plunge, and soon emerge with a fish, which is taken from them. And this toil continues till its master is satisfied ; he looses the collar, and finishes the task by allowing it to fish for itself. But it is only hunger which gives activity to the Cormorant ; when glutted with its meal, which is soon acquired, it relaxes into its native indolence, and dozes away the greatest part of its time in gluttonous inebriety, perched in solitude on naked and insulated or inaccessible rocks, to which it prudently retires for greater safety from the intrusion of enemies.

In Europe, where these birds are alike sedentary and averse to migration, they are known to breed from the coasts of Holland to the shores of Greenland, and they are equally residents in America nearly to the extremity of the Union. The nest is usually made with sticks, sea-weeds, grass, and other coarse materials, commonly upon rocks, but sometimes upon trees on the banks of rivers, where they are occasionally seen perched.

According to Lawson, they are observed in great flocks in Carolina in March and April, when the herrings ascend the creeks, at which time they are seen on fallen logs in the water waiting and watching the approach of their prey.

This species of Cormorant was formerly considered a common winter visitor to New England, and nested sparingly along the coast from Nahant to the Bay of Fundy; but during recent years it has been rarely seen south of the Gulf of St. Lawrence, though in winter a few examples wander as far south as the New Jersey shore. Mr. Hagerup reports the bird a resident of Greenland, being most numerous in the northern section.

Nuttall was mistaken in giving this bird a more southern range; Mr. Lawson, whom he quotes, probably confused the present species with its Double-crested cousin, — a pardonable error in one to whom the southern bird was not familiar when in its winter plumage, for at that season the two species are somewhat similar in appearance.

DOUBLE-CRESTED CORMORANT.

SHAG.

PHALACROCORAX DILOPHUS.

CHAR. Prevailing color black, with green reflections, the back and wings varied with grayish brown; gular sac orange; bill bluish; legs and feet black. During the mating season the male wears crests of long, thin plumes on the sides of the crown, extending from above the eyes to the nape. In eastern or sea-coast birds these plumes are black, but birds taken in the interior have white mingled with the black, and in Pacific-coast specimens the plumes are entirely white. Length about 32 inches.

Nest. In a crevice of a sea-washed cliff, or on the beach of a lake or on a tree by a river bank; made of twigs and grass, — sometimes entirely of marine herbage.

Eggs. 2-5; chalky white and rough on the surface, with inner shell of blue or green tint; average size 2.40 × 1.40.

The range of this species extends from the Gulf States to Labrador and the Saskatchewan valley, and its breeding area from about latitude 45° northward. It winters north to the Bay of Fundy (sparingly).

The Double-crested Cormorant is the common Shag of our salt-water fishermen, and is numerous in Manitoba also, though rather rare on the Great Lakes.

In habits this species does not differ from others of the group. It feeds principally on fish, which it obtains by diving from the surface of the water. It is an expert diver, and strong, fast swimmer, and can remain under water for a very long period, coming to the surface out of gunshot of a pursuer.

NOTE.—The FLORIDA CORMORANT (*P. dilophus floridanus*) is a smaller variety of the Double-crested species, differing from the type in size only. Length about 25 inches. It is restricted chiefly to the Gulf States, though occurring occasionally on the Atlantic shores of the more southern States, and along the Mississippi valley to southern Illinois.

Another species, the MEXICAN CORMORANT (*P. mexicanus*), occurs occasionally on the shores of the Gulf States, and has been taken in southern Illinois.

MAN-OF-WAR BIRD.

FRIGATE BIRD. FRIGATE PELICAN.

FREGATA AQUILA.

CHAR. Prevailing color black, with reflections of green and purple. Length about 40 inches.

Nest. On mangrove-trees near the shore, loosely made of twigs.

Eggs. Usually 1; white; 2.70 × 1.85.

The Frigate Pelican, or Man-of-War Bird, is chiefly seen on the tropical seas, and generally on the wing. These birds are abundant in the island of Ascension, India, Ceylon, and China. In the South Sea they are seen about the Marquesas, Easter Isles, and New Caledonia; also at Otaheite. Dampier saw them in great plenty in the island of Aves, in the West Indies; and they are common off the coast of East Florida, particularly around the reefs or keys, often assembled in flocks of from fifty to a thousand. They are also not uncommon, during summer, along the coasts of the Union as far as South Carolina, and breed in various places, retiring to warmer latitudes on the approach, of cool weather.

The Frigate Bird is often seen smoothly gliding through the air, with the motions of a Kite, from one to two hundred

leagues from the land, sustaining these vast flights with the greatest apparent ease, sometimes soaring so high as to be scarcely visible, at others approaching the surface of the sea, where, hovering at some distance, it at length espies a fish, and darts upon it with the utmost rapidity, and generally with success, flying upwards again as quickly as it descended. In the same manner it also attacks the Boobies and other marine birds, which it obliges to relinquish their prey.

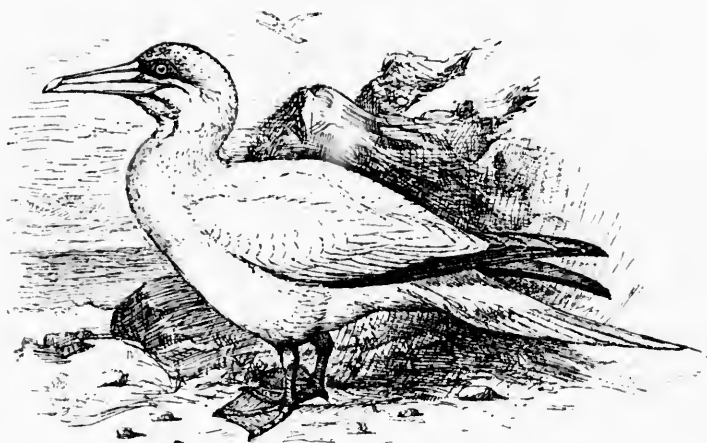
These birds breed abundantly in the Bahamas, and are said to make their nests on trees, if near; at other times they lay on the rocks. The eggs, one or two, are of a flesh color, marked with crimson spots. The young birds, covered with a grayish-white down, are assiduously attended by the parents, who are then tame and easily approached. When alarmed, like Gulls, they as readily cast up the contents of their pouch as those birds do of the stomach.

The Frigate Bird occurs regularly off the coast of Florida, and examples have been seen as far north as Nova Scotia, Ohio, and Wisconsin; but outside of subtropical regions it must be considered an accidental straggler.

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GANNET.

SOLAN GOOSE.

SULA BASSANA.

CHAR. Prevailing color white; head and neck washed with buff; outer wing-feathers (primaries) black. Length about 34 or 36 inches.

The young birds are dusky brown, spotted all over with white.

Nest. On a cliff of an ocean island, — made of sea-weed and grass.

Egg. 1; chalky white, inner shell pale blue; average size 3.10 × 1.90.

The Gannet is another of the many marine birds common to both sides of the Atlantic Ocean. In the summer season these birds are extremely abundant on some rocky isles in the Bay of the St. Lawrence, and not uncommon on the coasts of the United States, especially to the south of Cape Hatteras. On the south side of Long Island and the neighboring coast they are seen in numbers in the month of October associating with the Velvet and Scoter Ducks. In the summer they also penetrate into the Arctic regions of both continents, are seen on the coast of Newfoundland, and occasionally in Greenland. In Iceland they breed and are seen in great flocks. They are also equally common to the northwest coast of America.

These birds abound in Norway and the Hebrides, particularly on some of the least accessible of the islands. According to Dr. Harvey, Bass Island, near Edinburgh, not more than a mile in circumference, has in the months of May and June its surface almost wholly covered with nests, eggs, and young birds, so that it is scarcely possible to walk without treading on them ; and the flocks of birds are so prodigious as, when in flight, to darken the air like clouds, and their noise is so stunning that it is scarcely possible to hear your next neighbor. Looking down towards the sea from the top of the precipice, you see it on all sides covered with multitudes of birds, swimming and chasing their prey ; and if in sailing round the island you survey the hanging cliffs, you may see on every crag or fissure of the rocks numberless birds of various sorts and sizes ; and seen in the distance, the crowding flocks passing continually to and from the island can only be compared to a vast swarm of bees.

The rocks of St. Kilda are no less frequented by the Gannets, and Martin assures us that the inhabitants of that small island consume annually no less than twenty-two thousand young birds of this species, besides a vast quantity of their eggs, these being, in fact, their principal support. This supply, though spontaneous from nature, is not obtained without imminent hazard of life to those who engage in procuring these birds and their eggs ; as besides climbing difficult and almost inaccessible paths among the rocks beetling over the sea, they sometimes lower each other down from above, by ropes in baskets, to collect their game from the shelvings and fissures of the rocks chosen by these sagacious birds. The young are a favorite dish with the North Britons in general, and during the season they are constantly brought from the Bass Isle to Edinburgh.

As might be supposed, the Gannets are in these islands birds of passage, making their first appearance in the month of March, continuing there till August or September, according as the inhabitants take or leave their first egg ; but in general, the time of breeding and departing appears to coincide with the arrival of the herring and its migration out of those

seas. It is probable that these birds attend the herring and the pilchard during their whole circuit round the British Islands, the appearance of the first being always esteemed by the fishermen as a sure pressage of the approach of the last. Gannets migrate in quest of food as far south as the mouth of the Tagus, being frequently seen off Lisbon in December, plunging for sardines.

In the month of August, Dr. Harvey observed in Caithness their northern migrations; they were passing the whole day in flocks, from five to fifteen in each. In calm weather they fly high; in storms they proceed lower and near the shore, but never cross over the land, even when a bay with its promontories intervenes, but follow at an equal distance the course of the bay, and regularly double every cape. Many of the moving parties would make a sort of halt for the sake of fishing; for this purpose they soar to a great height, then, darting headlong into the sea, make the water foam and swell with the violence of the concussion, after which they pursue their route. With the arrival of the shoals of pilchards in the latter end of summer, they are seen on the coast of Cornwall, and in November, when the pilchards retire, the Gannets mostly disappear; though a few linger on the coast throughout the winter. An individual killed near Mount's Bay made, as is common with this bird, a long struggle with a water-spaniel, assisted by a boatman, showing himself both strong and pugnacious, and sufficiently redeeming on his part the Gannet family from the ill-supported charge of cowardice and stupidity.

Many years ago a Gannet, flying over Penzance, and seeing some pilchards lying on a fir-plank in a cellar used for curing fish, darted down with such violence that it struck its bill through the board and broke its neck.

These birds appear to have a strong predilection for particular spots. On the Gannet Rock, in the Gulf of St. Lawrence, they are seen in amazing multitudes. This rock (according to Audubon, from whom we derive the interesting information) is four hundred feet in height, and several acres in extent on the summit. At that time, the 8th of June, it was covered with

innumerable birds upon their nests, so crowded or closely arranged as to give the appearance of a huge mass of snow, while the hovering crowds seen around this inaccessible marine mountain forcibly presented at a distance the actual appearance of a snow-storm. While thus engaged, the report of a musket did not seem in the least to alarm them; and defenceless while obeying this powerful instinct, they allow themselves to be approached and despatched without using any means for escape, appearing riveted to the spot, while engaged in the affections and cares of reproduction.

The nest of the Gannet is composed chiefly of sea-weed, and generally placed upon the most inaccessible parts of the highest rocks. The egg (only one being laid before hatching) is white, and very like that of the Cormorant, but not nearly so large as the egg of the Goose, weighing about three and a quarter ounces.

The Gannet seems incapable of diving, — at least, no alarm can force it to immerse. Upon the water it swims as buoyantly as a Gull. When offered fish it will accept, but will never go into a pond after food; and from every appearance of its actions on water, to which it will go only from compulsion, it cannot procure fish beyond the extent of its neck. At times these birds rise from the water with so much difficulty that they are easily run down by a boat; but when thus surprised they defend themselves with much vigor.

Within a few years this species has deserted Gannet Rock, near Grand Menan, though a large number still gather on the Magdalen Islands, in the Gulf of St. Lawrence. They continue to breed further northward, and in winter range south to the Gulf of Mexico.

Mr. William Brewster reports that in 1881 he found some fifty thousand birds nesting on one of those islands, and describes the number as astonishing and impressive, but insignificant when compared with the legions seen there by Dr. Bryant some twenty years before.

The food of this species consists entirely of fish, which it procures by diving from the wing, plunging into the water from a great height, — sometimes a hundred yards or more. When pursued or wounded, it rarely or never dives, trusting to its flight, which is strong and rapid.

BOOBY.

SULA SULA.

CHAR. Upper parts and breast sooty brown, more or less varied with gray; under parts white. Length 31 inches.

Nest. On an ocean island, sometimes on the ground, but usually placed on a bush or low tree; rudely made of twigs and sea-weed.

Eggs. 1-2; chalky white; size very variable, average about 2.35×1.55 .

The Booby is found to be an inhabitant of islands and desolate sea-coasts throughout all the warm and temperate parts of the globe, and has acquired its degrading name from its silly aspect and peculiar stupidity, suffering itself to be taken, not only at sea on the ship's yards, but also on land, where these birds may be despatched merely with clubs and sticks in great numbers one after the other, without seeming to take any general alarm, or using any efficient effort for escape. The only cause that can be assigned for this want of conservative instinct, so general and prompt among most of the feathered tribes, is probably the fact of the difficulty and almost impossibility of setting their long wings into motion when they happen to be surprised on level ground, or fatigued with undue exertion.

The Boobies, however, have a domestic enemy more steady, though less bloodthirsty, in his persecutions than man; this is the Frigate Pelican, or Man-of-War Bird, who with a keen eye descriing his humble vassal at a distance, pursues him without intermission, and obliges him by blows with the wings and bill to surrender his finny prey, which the pirate instantly seizes and swallows.

The Boobies, however, notwithstanding this tribute to their marine monarch, contrive to obtain an ample supply of provision. They commonly hover above the surface of the waves, at times scarcely moving their wings, and drop on a fish the instant it emerges or approaches in view. Their flight, though rapid and long-sustained, is greatly inferior to that of the Frigate Bird; accordingly, they do not roam so far, and their

appearance is generally hailed by mariners as an indication of the approach of land. Yet numbers are not wanting around the remotest and most sequestered islands in the midst of the wide ocean. There they live in companies, associated with Gulls, Tropic Birds, and their tyrannical persecutor, the Frigate, who, appreciating their assistance as providers, dwells and rests in the same retreats.

Among the Frigates, some (probably the males after incubation) live in societies apart from the rest, dispersed to situations most suitable for obtaining pillage.

Boobies utter a loud cry, something in sound betwixt that of the Raven and the Goose; and this quailing is heard more particularly when they are pursued by the Frigate, or when, assembled together, they happen to be seized by any sudden panic. As they can only begin the motion of their wings by starting from some lofty station, they usually perch like Cormorants, and in flying stretch out the neck and display the tail.

According to Dampier, in the Isle of Aves these birds breed on trees, though in other places they nestle on the ground, and always associate in numbers in the same place. They lay one or two eggs, and the young continue for a long time covered for the most part with a very soft and white down. The flesh is black and unsavory, yet sailors frequently make a meal of it. In summer they are not uncommon on the coasts of the Southern States.

The Booby is chiefly restricted to the tropical or sub-tropical seas, but an occasional example wanders as far north as off the coast of Georgia.

NOTE. — The BLUE-FACED BOOBY (*Sula cyanops*) and the RED-FOOTED BOOBY (*Sula piscator*) occasionally straggle north to the Florida waters; and the ANHINGA (*Anhinga anhinga*), also a tropical bird, has been taken off North Carolina and on the Mississippi River.

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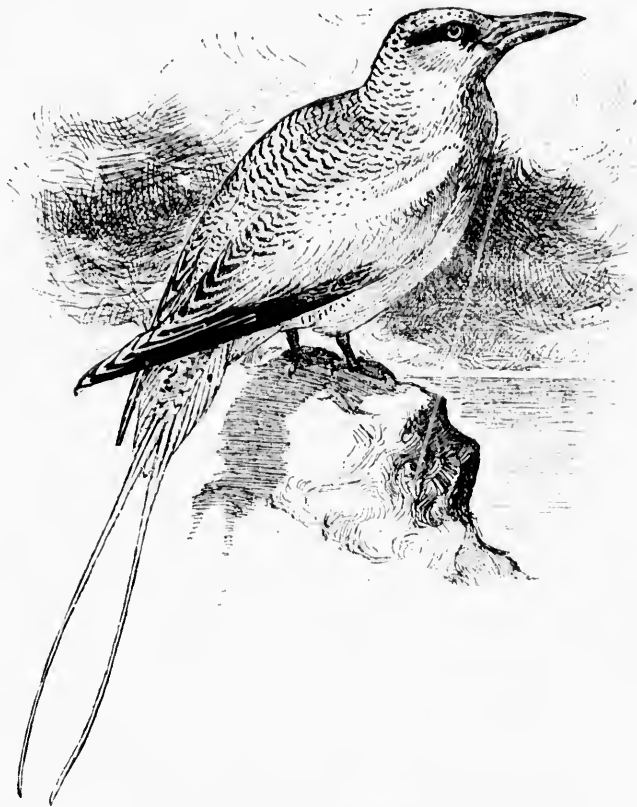
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RED-BILLED TROPIC BIRD.

PHAETHON AETHEREUS.

CHAR. Prevailing color white; the upper parts varied with blackish; a stripe on the sides of the head, and the outer wing-feathers deep black; bill deep red; legs yellow, toes black. Length, including elongated tail-feathers, about 33 inches; the tail-feathers measure about 20 inches.

Nest. In a hole or crevice of a sea-washed cliff, — sometimes slightly lined with twigs and coarse herbage.

Egg. 1; purplish white or creamy white, with a delicate purple tinge, and marked with fine spots of rich brown; 2.26×1.60 .

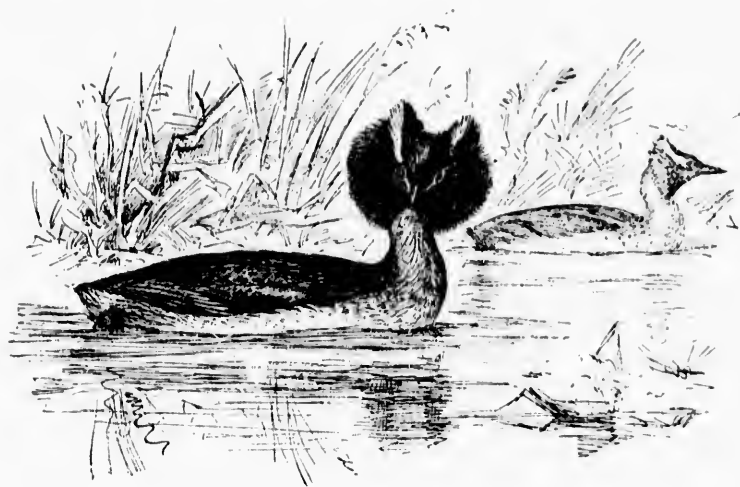
The Tropic Bird, soaring perpetually over the tepid seas, where it dwells without materially straying beyond the verge of the ecliptic, seems to attend the car of the sun under the

mild zone of the tropics, and advertises the mariner with unerring certainty of his entrance within the torrid climes. Yet though generally confined to these more favored solar realms, which it widely explores to their utmost bounds, it sometimes strays beyond the favorite limit, and hence we have given it a place among the oceanic birds which stray in summer to the coasts of the warmer States.

The flight of the Tropic Bird is often conducted to a prodigious height, at which in every season it can obtain a temperature of the most delightful kind. At other times, affected by the ordinary wants of nature, it descends from its lofty station, and accompanied by an ignoble throng of Frigates, Pelicans, and Boobies, it attends the appearance of the flying-fish as they emerge from the water, pursued by their enemies of the deep. These birds are sometimes observed to rest on the surface of the sea, and have been seen in calm weather upon the backs of the drowsy tortoises supinely floating, so that they have been easily taken by allowing the approach of a boat. On shore they will perch on trees, and are said to breed on the ground beneath the shade of the adjoining woods. They are met with on the islands of St. Helena, Ascension, Mauritius, New Holland, and in various parts of the South Seas, but in no place are they so numerous as at Palmerston Island, where, along with the Frigates, they have been seen in such plenty that the trees were absolutely loaded with them, and so tame or listless that they suffered themselves to be taken from the boughs by hand. In the Sandwich and Friendly Islands, where they also abound, the natives set a high value on the long tail-feathers, made use of by way of ornament, and in Otaheite they form a conspicuous part of the ostentatious garment worn by mourners. The flesh, though often eaten by mariners, cannot be accounted good.

This cannot be considered more than an accidental straggler to Northern waters, though examples have been taken as far north as the Gulf of St. Lawrence.

NOTE. — The YELLOW-BILLED TROPIC BIRD (*P. flavirostris*) has been taken in Western New York.



HORNED GREBE.

SPIRIT DUCK. HELL DIVER. DUSKY GREBE.

COLYMBUS AURITUS.

CHAR. Upper parts dull brown, the feathers paler on the edges; head darker; breast rufous; wings varied with white; lower parts silvery white. Length about 14 inches. In the mating season the sides of the head are adorned with crests (horns) of short feathers of black color.

Nest. Amid the rank herbage on reedy margin of a lake,—usually fastened to rushes and floating on the surface of shallow water; a mass of dried stems of rushes and coarse sedges.

Eggs. 2-7 (usually 4); bluish white, stained with brown; 1.80 × 1.20.

The Horned Grebe is an inhabitant of the northern regions of both continents, being very common in the summer season throughout the Hudson Bay fur countries, frequenting almost every lake with grassy borders, in which seclusion, about the month of June, it constructs its nest of coarse herbage, which, left afloat, is sometimes moored to the surrounding reeds and rushes. The eggs are white, spotted, and, as it were, soiled with brown; in order to hide them from its enemies, it has the habit of covering them while abroad. In the autumn these birds retire to the South, appearing in Massachusetts, some-

times, in the small freshwater lakes near the ocean. At a later period they retire still farther, being very common in the Middle and Southern States, where they are known, with other species, by the name of Dippers and Water Witches. The Indians of Hudson Bay give the Horned Grebe the name of *Seekoop*. While here, they keep generally in the salt water, swimming and diving with great agility and elegance, and these are almost universally young birds, the old ones keeping probably more inland in their migrations towards the South. In most of the individuals which have fallen under my notice, the stomach, like a pouch in form, has been generally swelled out with its own feathers, apparently bent and masticated before swallowing; the birds had been feeding on minute eels and coleopterous insects, and had, besides the matted feathers plucked from the breast, a quantity of sand and gravel. The appetite of this Grebe is, indeed, keen and little scrupulous, — for which, sometimes it pays a dear forfeit, as happened to an individual seen by Mr. N. Wyeth, which had its bill clasped in the shell of a clam in such a manner as to disable it both from flying and diving.

This expert diver is a common bird throughout this eastern country, breeding from about latitude 45° to the higher fur countries, and wintering from the Bay of Fundy to the Southern States.

HOLBELL'S GREBE.

RED-NECKED GREBE.

COLYMBUS HOLBELLII.

CHAR. Upper parts dusky; head and nape black; cheeks ashy; neck rich chestnut; wings varied with white; under parts silvery white, varied with gray. Length about 19 inches.

Nest. On the border of a reedy pond or sluggish stream, fastened to the rank herbage, — made of reeds and sedges.

Eggs. 2-7; dull white, sometimes tinged with green, washed with brown; average size 2.25 × 1.35.

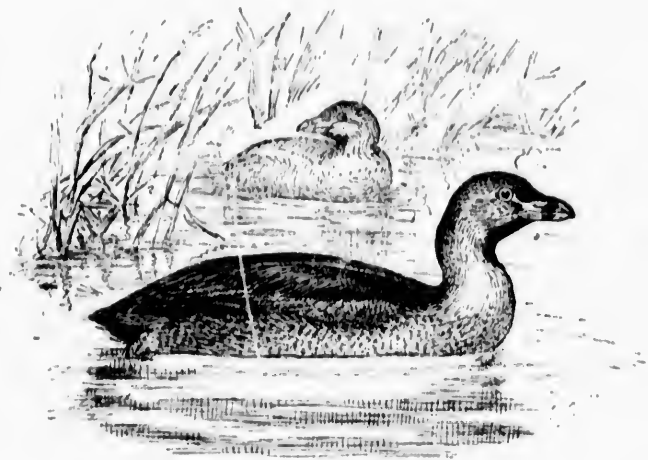
The Red-necked Grebe, like most of the other species, retires to the hyperboreal regions of both continents to pass

the breeding-season, delighting in the seclusion of the desolate wilderness, penetrating in the present continent as far as the remote inland shores of Great Slave Lake, where individuals were observed by Captain Franklin's adventurous party in the month of May. In the course of the winter these birds proceed to the South, probably as far as Florida, but are rarely seen in the United States. At this season they frequent lakes and the estuaries or rivers in the vicinity of the sea, but at other times are seen more abundantly on fresh waters. They are common in the eastern parts of Europe, and frequently visit Great Britain, Germany, and Switzerland. Their food, as usual, is small fish, fry, reptiles, coleopterous insects, and vegetables. The nest is similar to that of the preceding species; the eggs number three or four, of a whitish green, and appearing as if soiled with yellowish or brown.

The Red-necked Grebe breeds from about latitude 45° to the higher fur countries, but is rather uncommon in New England and the adjacent provinces, where it occurs chiefly as a winter visitor. It is quite abundant in Manitoba.

In common with others of the family, this Grebe is an expert diver. Often it will sink into the water without any apparent effort, though more generally it jumps forward, throwing the head into the water, and the body into the air. It is an expert and rapid swimmer also, and all its movements on the water are extremely graceful. When pursued, these birds invariably endeavor to escape by diving, though when on the wing they fly rapidly, their necks and feet stretched at full length.

It is said that the female takes the newly hatched young upon her back, and swims with them in that position, feeding them, while eating her own meal, on portions of the fish and vegetable matter which she gathers.



PIED-BILLED GREBE.

LITTLE GREBE. DABCHICK. CAROLINA GREBE.

PODILYMBUS PODICEPS.

CHAR. Upper parts dusky, wings varied with ashy and white; under parts silvery white, mottled with dusky; breast washed with rufous; chin and throat black; bill short and thick, of a bluish white color, with a black band across the centre. Length about 1.5 inches.

Nest. Amid the rushes at the edge of a pond or sluggish stream,—made of coarse herbage lined with grass; sometimes floating on the water, fastened to reeds.

Eggs. 4-10 (usually 5); white stained with pale brown; 2.00×1.70 .

The Pied-billed Dabchick is an exclusive inhabitant of the North American continent, proceeding north to breed as far as the remote fur countries of Upper Canada, a specimen having been killed on Great Slave Lake by the exploring party of Captain Franklin. It arrives in the Northern and Middle States about the close of August, and is then seen residing in our small freshwater lakes until the approach of winter, when it retires probably as far south as the lagoons of the Mississippi and the tidewater streams and bays of the Mexican Gulf. It is the most common species in the Union, and is met with in all the States as far as Florida, leaving those coun-

tries, however, for the North in the month of April. Most of the birds seen in this vicinity are young or unadult; they feed principally on fish and aquatic insects such as large *Notas* and other kinds. They often swim about without appearing to take any alarm from the peaceful spectator, but in the next moment dive and swim under water for such a length of time as to appear for several minutes entirely invisible; and at such times these Water Witches, as they are deservedly called, are often moving about entirely submerged to the bill, which is the only part elevated above the water; and in the covert of the surrounding aquatic herbage this small projecting point is not only easily overlooked, but with difficulty discovered. Like Ducks, they are also somewhat nocturnal in their habits, and may be perceived after sunset in the dusky twilight actively engaged, and swimming about the ponds with great activity. While here they are not heard to utter any note, and their breeding-places are wholly unknown. The young are often eaten, and are generally tender and well flavored.

The Dabchick is more abundant near the Atlantic than any other of this group. It breeds in the Hudson Bay district and southward. — its breeding area being laid down in the A. O. U. "Check List" as "nearly throughout its range," which extends to Chili and the Argentine Republic. It winters as far north as New Jersey.

Since Nuttall's day we have learned something more of the breeding habits of this species, and modern observers are apt to express surprise that the bird should have escaped the notice of earlier naturalists. In habits the Dabchick does not differ materially from other Grebes.

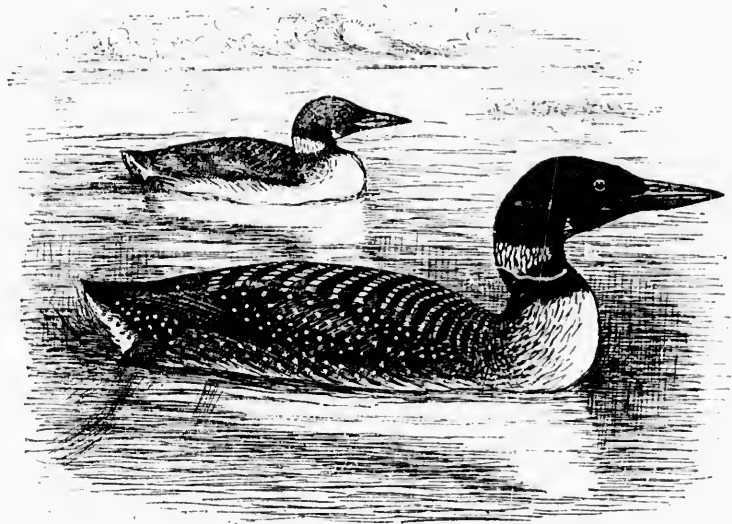
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LOON.

GREAT NORTHERN DIVER.

URINATOR IMBER.

CHAR. Mantle black, spotted with white; head and neck black, with green and purple reflections; throat with two bands of white stripes; under parts white. Length very variable, ranging from 28 to 33 inches, though specimens measuring about the extremes of this variation are more common than those of intermediate length.

Nest. Amid rank herbage near the water, on the margin of a lake or river, often on an island, sometimes on the sea-shore.

Eggs. 2-3 (usually 2); olive brown with a few darker spots; average size about 3.50×2.25 .

The Loon, the most common of its tribe in the United States, is a general inhabitant of cold and temperate climates throughout the whole northern hemisphere. It is found in the north of Europe, and spreads along the Arctic coasts as far as Kamtschatka, Nootka Sound, and the mouth of the Ob. It dwells on the dreary coast of Spitzbergen, Greenland, Iceland, and Hudson Bay. These birds abound in all the lakes of the fur countries, where, as well as in the interior of the most



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northern of the States, and probably in the inland seas of the St. Lawrence, along the whole Canadian line, they pass the period of reproduction. They have been known to breed as far south as the Farne Isles, on the coast of Northumberland, along with the Eider Ducks, with which they also associate on the shores of Labrador. In the Hebrides they are common in the summer season, as well as in Norway, Sweden, and Russia, from all which countries they seldom migrate to any considerable distance, being only accidental passengers on the coasts of the ocean; the young only are seen, and rarely, on the lakes of Germany, France, and Switzerland, but in those regions the old are unknown. In the United States, from the superior severity of the winters, the young, and even occasionally the old, are seen to migrate nearly, if not quite, to the estuary of the Mississippi.

The Loon, cautious, vigilant, and fond of the security attending upon solitude, generally selects, with his mate, some lonely islet, or the borders of a retired lake far from the haunts of men; here, on the ground, contiguous to the water, they construct their rude and grassy nest. About the 11th of June, through the kindness of Dr. T. W. Harris, I received three eggs which had been taken from the nest of a Loon, made in a hummock, or elevated grassy hillock, at Sebago Pond, in New Hampshire. These were about the size of the eggs of a Goose, of a dark, smoky olive, coarsely blotched nearly all over with umber-brown spots. The males, after the period of incubation, secede from their mates, and associate by themselves in the bays and estuaries near to the sea. They soon after moult, and become so bare of feathers as to be unable to rise from the water. The young, after being duly attended by the female parent, disperse with her towards the sea. Instinctively warned of the approach of frost, they avoid its consequences by slow but efficient migrations. As soon as the fish begin to fail, the young, unable or unwilling to fly, are sometimes seen waddling from one pond to another, and in this situation are easily captured, as they refuse, or are incapacitated, to rise from the ground. When approached, they

utter a long-drawn, melancholy scream, like *ó ððh*, with a shrill, loud, sighing, and rising note. Now and then, as if a call upon the parent, the tone is broken almost in the manner of running the finger across the mouth while uttering a sound. A young bird of this kind which I obtained in the salt-marsh at Chelsea Beach, and transferred to a fish-pond, made a good deal of plaint, and would sometimes wander out of its more natural element, and hide and bask in the grass. On these occasions it lay very still until nearly approached, and then slid into the pond and uttered its usual plaint. When out at any distance, it made the same cautious efforts to hide, and would commonly defend itself in great anger, by darting at the intruder and striking powerfully with its dagger-like bill. This bird, with a pink-colored iris, like albinos, appeared to suffer from the glare of broad daylight, and was inclined to hide from its effects, but became very active towards the dusk of evening. The pupil of the eye in this individual, like that of nocturnal animals, appeared indeed dilatible; and the one in question often put down its head and eyes into the water to observe the situation of its prey. This bird was a most expert and indefatigable diver, and would remain down sometimes for several minutes, often swimming under water, and as it were flying with the velocity of an arrow in the air. Though at length inclined to be docile, and showing no alarm when visited, it constantly betrayed its wandering habit, and every night was found to have waddled to some hiding-place, where it seemed to prefer hunger to the loss of liberty, and never could be restrained from exercising its instinct to move onwards to some secure or more suitable asylum.

Far out at sea in winter, and in the Great Western Lakes, particularly Huron and Michigan, in summer, I have often heard on a fine calm morning the sad and wolfish call of the solitary Loon, which like a dismal echo seems slowly to invade the ear, and rising as it proceeds, dies away in the air. This boding sound to mariners, supposed to be indicative of a storm, may be heard sometimes for two or three miles, when the bird itself is invisible, or reduced almost to a speck in the distance.

The aborigines, nearly as superstitious as sailors, dislike to hear the cry of the Loon, considering the bird, from its shy and extraordinary habits, as a sort of supernatural being. By the Norwegians its long-drawn howl is, with more appearance of reason, supposed to portend rain. Judging, however, from the young bird already mentioned, this expression, like that of other fowls, indicated nothing beyond the humble wants or social communication of the species.

The flesh of the Loon is dark, tough, and unpalatable; yet the young birds are frequently seen in the markets of New York and Boston, and are therefore no doubt sometimes eaten. Some of the Russian Tartars on the Ob and the Irtisch tan the breasts of this and other water-fowl, preserving the down upon them, and sewing them together, sell them for garments and caps. The Greenlanders, as well as the aborigines round Hudson Bay and on the banks of the Columbia River, employ their skins as articles of dress or of decoration; and the Indians of the Missouri and Mississippi also often ornament the sacred calumet with the brilliant neck-feathers of this and other species.

The Loon is found throughout this Eastern Province, breeding from the northern tier of States to the Arctic Ocean. It winters from the Middle States south to the Gulf of Mexico.

BLACK-THROATED LOON.

URINATOR ARCTICUS.

CHAR. Prevailing color above black, varied with white; head grayish brown; chin and throat black, with a patch of short white streaks; streaks of white on side of neck; under parts white. Length about 26 inches.

Nest. On the bank of an island lake, — a hollow stamped in the moss, sparingly lined with grass, or sometimes a floating mass of coarse herbage covered with moss and sedge.

Eggs. Usually 2; brown of an olive or russet tint, and marked with dark brown; average size 3.25 X 2.10.

This species, common to the hyperboreal parts of both continents, is much more rare in the United States than the

preceding, and though frequent near the shores of Hudson Bay, is seldom seen in the interior of the fur countries. It abounds in the northern parts of Europe, Norway, Sweden, and Denmark, and in the inland lakes of Siberia, especially those of the Arctic regions; it is also seen in Iceland, Greenland, and the Farøe Isles. It is held in superstitious regard by the Norwegians, who believe its cry to portend rain. The skins of this and other species, being tough and impervious to wet, are used by the Indians and Esquimaux, as well as by the Norwegians, for articles of dress.

The Arctic Diver is an autumnal and winter bird of passage in England, Germany, and Holland, more rare upon the interior lakes of France, but common upon those of Switzerland. It lives on fish, frogs, insects, and aquatic plants, and nests in the reeds and herbage upon the borders of lakes and in marshes, preferring those which are much intersected by waters: it is said to lay two eggs, which are brown, marked with scattered black spots.

The Black-throated Loon is somewhat uncommon everywhere within its range, but is especially rare on this eastern side of the Atlantic. It breeds in the Far North, and in winter has been found as far south as the Bay of Fundy, and casually to Ohio and Long Island.

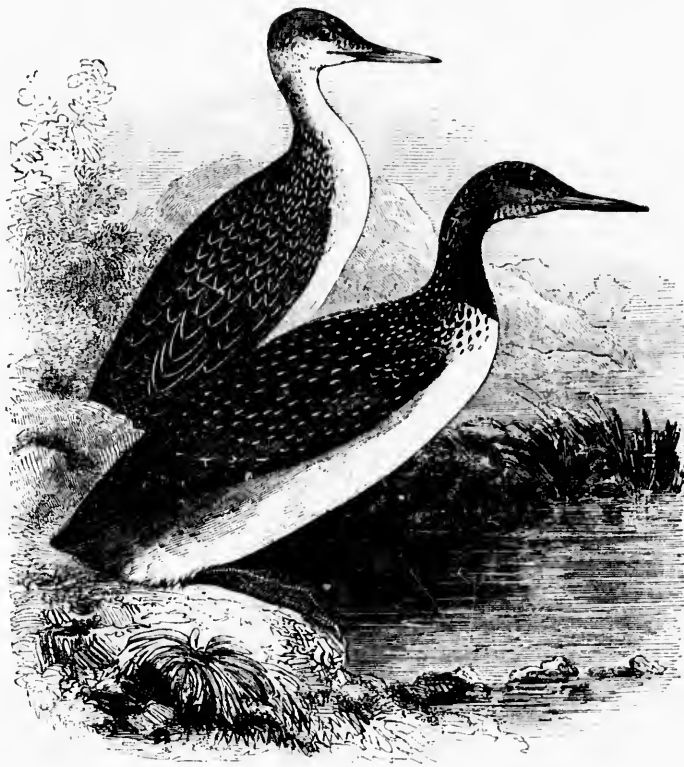
This is a rather solitary bird, though occasionally two or three pairs breed on the same lake, but rarely associate. In the migration small flocks are sometimes met with.

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RED-THROATED LOON.

URINATOR LUMME.

CHAR. Prevailing color brownish black, varied by paler and a few spots of white; head and neck light slate gray, the throat with a patch of bright chestnut; under parts silky white. Length about 25 inches.

Nest. On the margin of a retired pond, — a depression in the sand, close to the water's edge; sometimes lined with a few bits of grass.

Eggs. Usually 2; pale brown, often tinged with olive, and spotted with dark brown; average size about 2.75×1.50 .

This species is again a general inhabitant of the northern regions of both continents, from whence few migrate to any great distance, — except the young, and these are seen not uncommonly along the coasts of the United States in the course

of the winter. According to Richardson, these birds frequent the shores of Hudson Bay up to the extremity of Melville Peninsula, and are also abundant on the interior lakes, where they breed. Mr. Audubon found them nesting on the coast of Labrador near small freshwater lakes. Their food is similar to that of the preceding species. Fleming says that they breed in Zetland and the Orkneys. In Greenland and Iceland they also lay among the herbage on the shores contiguous to water, and make a nest of moss and grass, lining it with down. The young of this species, called the Cobble, is frequently seen in England in the winter in bays and inlets, and sometimes in freshwater rivers and lakes. In the river Thames this bird attends the arrival of the sprats, on which it feeds, and is hence known to the fishermen by the name of the Sprat Loon. From its diving habits it is frequently taken in the fishing-nets, to which it is attracted by their contents. It flies well, and dives and swims with remarkable dexterity, and while proceeding in the air is said to be sometimes very noisy. At Hudson Bay the young fly before the end of August, and the whole commence their migrations in the course of September. These birds are common also to the Baltic and the White Sea, and are found in the inclement regions of eastern Asia, as in Kamschatka and Siberia.

This species breeds from the lower fur countries to the Arctic, and in winter migrates south to the Middle States, and casually to North Carolina.

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BLACK GUILLEMOT.

SEA PIGEON.

CEPPHUS GRYLLE.

CHAR. Prevailing color black; large patch on the wing: white, with a black bar, sometimes wholly or partially concealed; bill black; legs and feet bright red. Length about 13 inches. In winter the upper parts are varied with white, and the lower parts mostly white; feet pinkish.

Nest. On a rock-bound coast, placed on the ledge of a cliff, or under loose boulders on the top of a bluff; sometimes amid the shingle of a beach; no attempt is made at nest-building; the eggs are deposited on the bare rocks.

Eggs. 2-3 (usually 2); ivory white, sometimes tinged with bluish green, marked with rich brown and gray; 2.30 × 1.60.

The Black Guillemot is a general inhabitant of the whole Arctic seas of both continents. It has even been called the Dove of Greenland, being common in that country, as well as

on the still more dreary coasts of Spitzbergen. In the hyperboreal seas and straits of America it also abounds, from the inclement shores of Melville Island down to Hudson Bay and Labrador. According to Mr. Audubon it also breeds on the isle of Grand Menan, in the Bay of Fundy. Like the other Guillemots, these birds are entirely marine, never going inland, and rarely seek the coast but for the indispensable purpose of reproduction. In the cold and desolate regions of the North, abandoned by nearly every other animal, the Guillemots, though in diminished numbers, find means to pass the winter; frequenting at such times the pools of open water, which occur even in these high latitudes amongst the floes of ice. Others, but in small numbers, and those probably bred in lower latitudes, venture in the winter along the coasts of the United States. In Europe they are also seen at this season along the borders of the Atlantic. They are alike indigenous to the western side of the American continent, and occur in Kamtschatka. At St. Kilda, on the Bass Isle, in the Firth of Forth, in the Farne Islands, off the coast of Northumberland, and on some parts of the coast of Wales, particularly near Tenby, they are known to breed.

They fly commonly in pairs with considerable rapidity, almost grazing the surface of the sea, but at other times they proceed in a more elevated course. Their note, according to Audubon, is a contracted whistle. They nestle sometimes under ground, but more commonly in the deep and rocky fissures of inaccessible cliffs and bold headlands projecting into the sea. To avoid the access of water to the eggs, they commonly pile together a nest of pebbles, beneath which the rain-water or melting snow passes off without any injury or inconvenience. To escape becoming the prey of the foxes which incessantly watch for them, the young, when pushed to the necessity, throw themselves without difficulty from their impending eyries into the sea. These birds dive with great facility, and feed upon small fish, but particularly on shrimps, small crabs, and other crustacea, and marine insects. They show considerable vigilance on being approached, and are

much more shy and wary than the other Guillemots. The eggs (called improperly those of the Noddy) are brought sometimes in small coasting-vessels to Boston market.

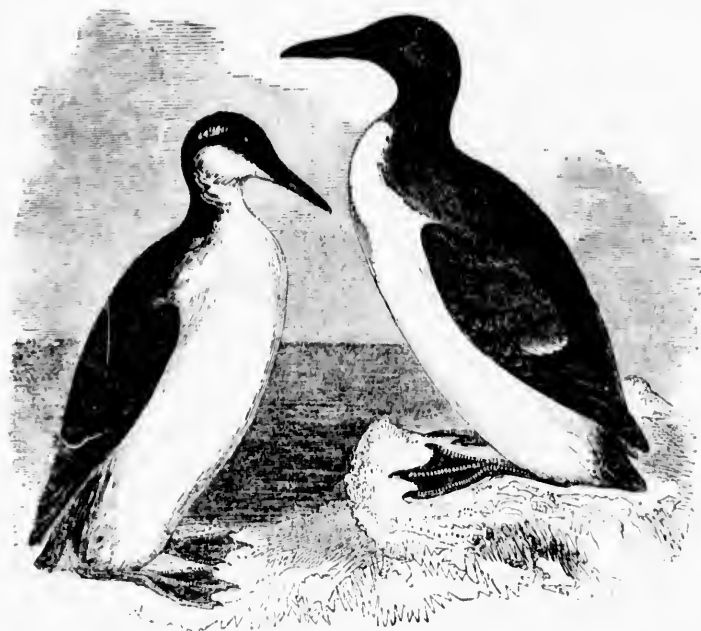
There are two races of the Sea Pigeon in our fauna,—for Mandt's Guillemot is only a Northern race or variety of the present species,—and of these the Black Guillemot is the more southern in distribution, breeding from the Bay of Fundy to southern Labrador. In winter it is rather common on the New England shores, and a few examples wander as far south as New Jersey.

I did not find these birds as shy as Nuttall's statement led me to anticipate. They were somewhat wary and alert, but allowed me to paddle within easy shooting distance without displaying much alarm. When they finally concluded that I was an unsafe neighbor, they lost no time in getting out of my sight, diving with surprising suddenness. They usually swam a long distance under water with great rapidity, using their wings as well as feet, and coming to the surface far beyond gunshot range.

The Sea Pigeons are met usually in small flocks of half a dozen or more, and generally feed in the open sea at the base of bold cliffs. When on the wing they proceed rapidly and in a straight line, and rarely more than a few feet from the surface of the water. On approaching their nesting-site they rise rather abruptly, and fly directly to their nests.

NOTE.—MANDT'S GUILLEMOT (*C. mandtii*) is a northern variety of the Sea Pigeon, differing from *grylle* in lacking the black bar on the wing-patch, and having a somewhat stouter bill. It breeds from high Arctic regions to the coast of Labrador and Hudson Bay, and in winter may be found off the Atlantic shores from south Greenland to New Jersey, though it is not at all common along the southern portion of its range.

The BLACK-WINGED GUILLEMOT (*C. motzfeldi*) is said to occur on the shores of Cumberland Bay and in Greenland, though it has been put in the Hypothetical List of "The A. O. U. Check List" with the note: "Its specific validity not satisfactorily established."



MURRE.

FOOLISH GUILLEMOT. COMMON GUILLEMOT. PENGUIN.

URIA TROILE.

CHAR. Upper parts rich velvet brown, variable in tint; under parts white; wings with a small white patch; bill long and slender and of black color; legs blackish, webs olive. Length about 18 inches (female rather smaller). In winter the chin, throat, and sides of neck become white, more or less mottled with black.

Nest. On a ledge of an ocean cliff; no attempt is made to construct a receptacle for the egg, — it is laid upon the bare rock.

Egg. 1; variable in color, the prevailing tints being ivory white, yellowish green, dark green, pale blue, and reddish brown, with numerous intermediate tints; markings irregular, and of browns and grays in various shades; size variable, average about 3.25×1.90 .

The Foolish Guillemot, so called for its fatuity in the breeding-season, in allowing itself sometimes to be seized by the hand or killed on the spot without flying from its

favorite cliffs, is another singular and common inhabitant of the high northern latitudes of both continents. In Europe these birds extend their swarming colonies as far as the ever wintry coast of Spitzbergen; they are also seen in Lapmarek, and along the White and Icy Sea as far as Kamtschatka. Along the whole coast of Hudson Bay, Labrador, and Newfoundland, they congregate in swarms. They also breed in the Orkneys and in more temperate climates, when the local situation happens to suit their particular habits and instinct; thus, they are extremely numerous in the desert Isle of Priestholm, contiguous to the Island of Anglesey, on the Godreve rocks, not far from St. Ives, in Cornwall, the Farne Isles, off the coast of Northumberland, and the cliffs of the Isle of Wight, and of Scarborough in Yorkshire. Occasionally the young are seen along the coasts of the United States; but the great body of the species in America, according to Audubon, winter in the Bay of Fundy, where they find an open sea, congenial rocks, and a cool temperature.

These birds begin to assemble on their customary cliffs in England early in May, and crowd together in such numbers that it is not uncommon to see hundreds sitting upon their eggs on the ledge of a rock, all in a line, and nearly touching each other. They lay but a single egg, on the flat and bare rock, without any precaution to protect it or the progeny arising from it by any shelter or convenience at all like a nest. It is of a palish green, blotched and marked with black and deep amber brown. They rarely quit their eggs unless disturbed, and are fed during the time, chiefly with small fish or other marine productions, by the male. In inaccessible places, or where seldom disturbed, it is with difficulty that they are roused to flight, and may then sometimes be taken by the hand; others flutter into the water below the cliffs on which they nestle, and seem, in fact, to try every expedient but that of flight. They are at all times extremely expert in diving, using their pinions as oars instead of the feet, thus flying as it were in the water, as well as in the air. After the young are hatched and capable of migrating, by the close of August, they all dis-



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appear from the shores of Britain, and are seen in winter on the coasts of the Baltic, Holland, France, along the borders of the Atlantic, and as far southward as Italy. Many of the young, as well as old birds of this species, also, bred in colder latitudes, migrate in winter along the coasts of Norway, Holland, and England, seeming as it were to fill up the place of those which have left their native shores for still milder climates.

The inhabitants of Kamtschatka kill the Murres in great numbers for the sake of their flesh, though it is said to be tough and ill tasting, but more especially for their skins, of which, as of other fowls, they make garments; but the eggs are everywhere accounted as a delicacy. This bird is called by the Welsh *Guillem*, and in the southern parts of England *Willock*.

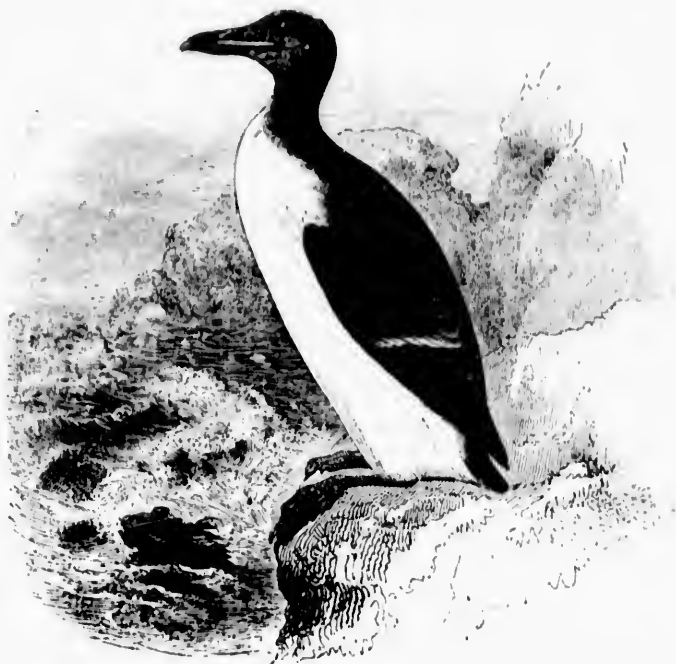
During very recent years it has been discovered that the "Common" Guillemot is a decidedly uncommon bird on our shores, if not quite rare; it has been confused with Brännich's, which it very closely resembles. The present species is credited with breeding from the Bay of Fundy to the Frozen Ocean; but Mr. Hagerup considers it rare in south Greenland, while Kumlien reported finding Guillemots "breeding by thousands" on the Greenland coast.

A few of these birds are found off the New England shores in winter.

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BRÜNNICH'S MURRE.

THICK-BILLED GUILLEMOT. FOOLISH GUILLEMOT.
PENGUIN.

URIA LOMVIA.

CHAR. Upper parts sooty black, deeper on head and nape; sides of head and neck, chin, and throat brown; wing with small patch of white; bill short and thick, and of black color. Length about 18 inches; female somewhat smaller. In winter the throat becomes white. Young birds are similar to the adult in winter plumage.

Nest. On the bare rocks of an ocean cliff.

Egg. 1; very variable in color, markings, and size; average about 3.15 × 2.05.

This is the Common Guillemot of our shores, and is rather abundant in some localities, breeding from the Gulf of St. Lawrence to the Frozen Ocean, and wintering from south Greenland to New Jersey. Some European naturalists consider this bird a variety of *U. troilé*, and not entitled to specific rank; but the "American

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School" of ornithologists are nothing if not "separatists," and by separating forms which appear to them to have gained the right to distinct and separate recognition, the A. O. U. are proving their right to the title of "pioneers of modern ornithological science," given them by an illustrious European *savant*.

Whether the path which these "pioneers" are blazing — with its unbending adherence to a fixed line, over whatever difficulty it may lead — will be followed strictly by future systematists, is a debatable question; but followed strictly or but partially, the present generation of American ornithologists have established themselves among the leaders of the science, and the influence of their determinations is acknowledged wherever birds are studied or described.

I will not pretend to be in full sympathy with all of the separating that has been attempted, nor of all that has been accepted. There will be, doubtless, a revision of the present system, — nay, many revisions: ornithology is in its infancy yet. I follow the American school because an amateur writer must follow somebody, — we have had too many unskilled hands tinkering with systematic work. I follow the Americans also because I am doing American work for American readers, and the use of the A. O. U. system of classification and nomenclature will avoid confusion. I follow this system for another reason: I consider it the best that has as yet been issued; and so I give to Brünnich's Murre specific instead of varietal rank.

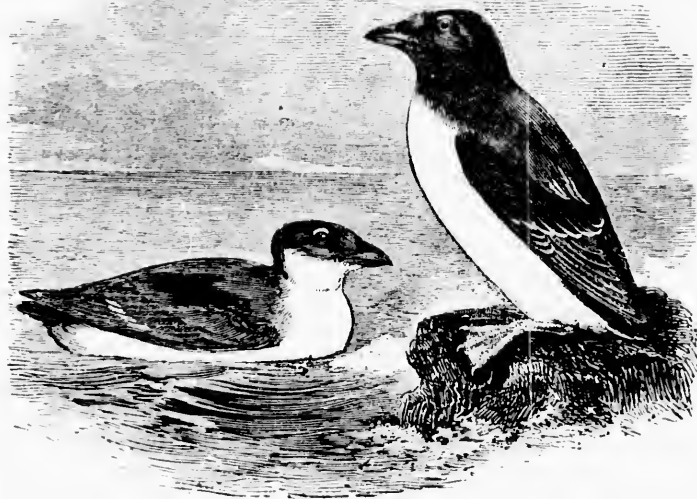
This bird does not differ in habits from its congeners. During the winter it lives on the open sea, and in the breeding-season assembles in large flocks on bold cliffs and rocky headlands. It is an expert diver, using wings and feet to get under water and to swim through it.

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DOVEKIE.

SEA DOVE. LITTLE AUK.

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CHAR. Head, neck, and upper parts black; wings with small patch of white, sometimes divided by a black bar; under parts white; bill black; legs red. Length about $8\frac{1}{2}$ inches.

In winter the chin and throat are white, and in spring and fall the white is more or less varied with black.

Nest. On a ledge of an ocean cliff, or any high elevation adjacent to the sea. There is no receptacle for the egg, which is laid on the bare rock or amid loose stones.

Egg. 1; pale greenish blue, sometimes streaked with buff; average size 1.85×1.30 .

This neat and singular little bird, with a quaint resemblance to the Columbine tribe, is known to mariners by the name of the Greenland Dove; and in this vicinity it is also called the Pigeon Diver. It inhabits, however, a region where the gentle cooing of the Dove is never heard. It dwells far within the Arctic Circle, approaching the very Pole, having been obtained

by Dr. Richardson from the dreary coast of Melville Island, in the latitude of 75° and 76° , in August, where these birds were seen by thousands. This is probably almost the last bird observed within the desolate and glacial boundaries of the earth. In Greenland and Spitzbergen Dovekies congregate in great flocks, and in the depth of winter, watching the motion of the ice in the offing when it is broken up by storms, they crowd by thousands into every opening fissure or flaw, in order to snatch up the marine productions on which they subsist. Mr. Audubon found a few individuals breeding on the coast of Labrador. In Newfoundland this species is called the Ice Bird, being the sure harbinger of severe weather, as it seldom proceeds far from its inclement natal regions, except when accidentally driven to shore by storms. In the United States its appearance is always solitary, being a mere wanderer, as it is also along the milder coasts of Europe. The uniform predilection of these birds is for the hyperboreal regions of their nativity, and they even fatten in storms when not overwhelmed by their fury, as at these times the small crustacea and marine insects on which they feed are cast up and brought to the surface in greater abundance. At times they appear to fly well, as appears by their extensive accidental migrations, they having sometimes been met with considerably inland. The water, however, is their more natural element; they dive with great facility, and are often observed dipping their bills into the water, as if drinking.

Those individuals which have been obtained in this vicinity, usually in the depth of winter, have sometimes been found in Fresh Pond, so lean and exhausted, by buffeting weather and fatigue, as to allow themselves to be quietly taken up by the hand.

Like other species of the genus, and the family generally, associated with the Razor-bills, they seek out for their breeding-places the most inaccessible impending cliffs which project into the ocean, and in their clefts, without any artificial nest, deposit their single egg, which is of a pale bluish-green, commonly without spots, but sometimes scattered with a few small

touches of blackish. At this time, probably, they are heard to utter their uncouth and monotonous call of *vottet*, by which as a name they are known to the Dutch navigators who have penetrated to their dreary and remote haunts.

Captain Ross's party met with these birds in great numbers on the west coast of Greenland, where they were shot daily, and supplied to the ship's company, who found them very palatable, and free from any fishy taste, though their food consists chiefly of a small species of crab (*Cancer*), with which the Arctic seas abound.

This interesting little wanderer, that comes to our shores only during the winter months, and gains our sympathy by its graceful form and apparent helplessness, is a much more sturdy and self-reliant bird than it gives any evidence of as we pick it up exhausted from battling with the strong north wind that has thrown it in our way, faint from hunger and wearied from the protracted struggle. Its wings are small, but they are moved almost as rapidly as a Humming Bird's, and propel the bird through the air with great rapidity. This bird is an expert diver too, and though awkward on the land, swims with easy grace: and when wearied, it tucks its head beneath its little wing, and rocked in the cradle of the deep, sleeps as calmly and serenely as do human children upon their mother's breast. When hungry, these little children of the sea draw their food from the ocean's bosom.

The Little Auk nests only north of the Arctic Circle, and there assembles in vast communities, and fills the air with its wild note, which bears some resemblance to the syllables *al-le*.

These birds are seen on our shores only in winter, and then straggle as far south as New Jersey. Occasionally an example is blown inland by a gale, one having been found as far away from the sea as the Detroit River.



PUFFIN.

SEA PARROT.

FRATERCULA ARCTICA.

CHAR. Upper parts black or dusky, a band of same across the neck; checks and under parts white. Length about 12 inches.

Nest. In a crevice of a cliff or in a burrow.

Eggs. 1; dull white, marked with pale brown and lilac; average size 2.40 × 1.70.

The Puffin is a general inhabitant of the cold and inclement regions of the whole northern hemisphere. On the coasts of northern Europe it is met with to the Icy Sea. It is found in Iceland, Greenland, Spitzbergen, and the Farøe Isles; on the coast of Kamtschatka and the Kuriles it is also common. In the temperate climates of Great Britain, as well as in the Shetland and Orkney Isles, it likewise breeds in large communities, as at the Farne Isles, off the coast of

Northumberland, Priestholm Isle, near Anglesea, the small islands off St. David's in Wales, the Isle of Wight, the cliffs of Beachy Head, Dover, Scarborough, and in the vicinity of Holyhead. These birds were also found by Audubon on the sterile and dreary coast of Labrador, but not beyond Brador; they also probably inhabit the coasts of Newfoundland, and in the winter are seen in great numbers in the Bay of Fundy. They are little more than stragglers on the coast of New England, but according to Catesby proceed in the course of the season as far south as Carolina. In Europe they are also seen on the coasts of Andalusia in Spain.

In England, at Priestholm Isle, they are seen in flocks innumerable. They assemble and begin to visit the island early in April, but do not commence their incubation until the first week in May. They make no proper nest, but burrow deep holes in the loose earth, in the labor of which both male and female unite, forming excavations three or four feet in depth. As this labor is very considerable, they sometimes content themselves with the deserted burrow of the rabbit, and probably at times dislodge the owners for this coveted convenience. They lay a single whitish-colored egg on the bare mould of their den. The young are hatched by the beginning of July, and are attentively fed by the assiduous parents, who are now seen busily engaged fishing for them, and bringing their prey in the bill, until they are so far grown as to feed and defend themselves. About the close of August they all go off in a body, to a single bird; and indeed so completely that they desert the young ones which are hatched late, leaving them a prey to the Falcon and other rapacious birds who watch for them at the mouths of their holes. Yet notwithstanding this apparent neglect of their young at this time, when every other instinct is merged in the desire and necessity of migration, probably after food, no bird is more attentive to them in general, since they will suffer themselves to be taken by the hand, and use every endeavor to save and screen their young, biting not only their antagonist, but, when laid hold of by the wings, inflicting bites on themselves, as if actuated by the agonies of despair;

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and when released, instead of flying away, they hurry again into the burrow to their cherished young.

The Puffin, essentially aquatic in its nature and habits, makes no great progress in the air, taking wing with difficulty; and it walks on the whole length of the leg and foot with a wriggling, awkward gait. In tempestuous weather these birds seek shelter in caverns, the holes of the nearest rocks, in their burrows, or in the rabbit-holes on the beach, in which they doze till the return of calmer weather. Though accustomed to the severest cold, they are unable to brave the storm, and when overtaken by it are often drowned and cast dead on the shore. Their food consists of various kinds of small fish, particularly sprats, the smaller kinds of crabs, shrimps, and sea-weeds; and it is not improbable but that their sudden migrations are regulated by the presence or absence of certain kinds of fish on which they delight to feed. They are exceedingly rank in flavor; yet the young, preserved with spices and pickled, are by some people much admired. They are even potted at St. Kilda and elsewhere, and sent to London as rarities.

Though pertinacious in attachment to their favorite breeding-places, they have sometimes been known to desert them in a very unaccountable manner. At the great Isle of Arran, Galway Bay, in Ireland, the stupendous cliffs to the southwest of the island, which from time immemorial had been the place of resort, or rather the natural habitation, of such numbers of Puffins as is almost incredible, was at once deserted on the 24th of June by the entire species, who thus abandoned their eggs and young and went off to sea. The like incident is said to have happened forty years previous, and no reason could be assigned for this extraordinary dereliction.

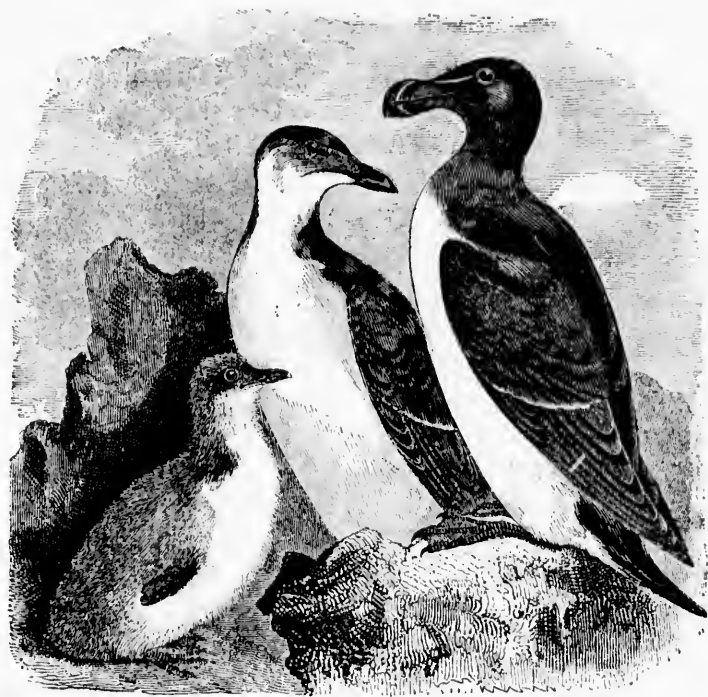
Among the enemies of the Coulternebs is sometimes the piratical Raven, who makes bold to offer battle; but as soon as he approaches, the defender of the premises catches him under the throat with her beak, and sticks her claws into his breast till he screams out with pain and tries to get away. But the Coulterneb retains her hold, and tumbles him about, till both frequently fall into the sea, where the aggressor is

drowned, and the Puffin returns in triumph to her nest. But should the Raven at the first onset get hold of the Coulterneb's neck, he generally comes off victorious, killing the mother and feasting on her eggs or young. The fishermen sometimes draw these birds out of their burrows by introducing the hand into the hole, which is seized by the bird, which suffers itself to be pulled out rather than lose its hold. Its bite is, however, very severe, and it can when irritated take out a piece of flesh from a man's hand without any extraordinary effort. When reared and domesticated, these birds become quite tame, and in the end familiar.

The Puffin breeds on the islands at the mouth of the Bay of Fundy, and north to Greenland, and in winter is more or less common, from Nova Scotia to New Jersey.

NOTE. — The LARGE-BILLED PUFFIN (*F. arctica glacialis*) is said to breed farther north than true *arctica*. It is similar to the common Puffin, but larger.

The TUFTED PUFFIN (*Lunda cirrhata*), a North Pacific bird, is entitled to notice here through Audubon's report that he captured an example at the mouth of the Kennebec River, Maine.



RAZOR-BILLED AUK.

TINKER.

ALCA TORDA.

CHAR. Upper parts black, with green reflections; throat deep brown; a line of white in front of the eyes; a narrow bar of white on the wings; under parts white; bill horn-brown with a bar of white. Length about 17 inches.

In winter the throat becomes white, the bill loses the horny shield at the tip and the white bar, and appears smaller and sharper, and the line from the eyes is indistinct.

Nest. On an ocean cliff, — usually near the summit; the egg is laid on the bare rock, generally in a crevice or amid loose stones.

Egg. 1; ground color shaded from ivory white or pale buff to dark buff or reddish brown; marked with dark brown and gray; size variable, average about 2.90×1.80 .

The Razor-bill is another of those gregarious marine birds which dwell amidst the wildest scenes of Nature, and penetrate

into the most dreary hyperboreal climates throughout the whole of the northern hemisphere. They abound in the north of Europe as far as Iceland and Greenland, and in America swarm on the bleak and barren coasts of Labrador. Small groups of from ten to twelve proceed along the coasts of the United States as far as New York, in severe winters remaining in deep water ; but they are by no means common, and scarcely ever seen in Massachusetts Bay.

Like most of the birds of this family, they have a steady predilection for their ancient eyry. From time immemorial they resort to the same rocks and coasts, and there are but few places sufficiently desert, rocky, and inaccessible suited to their furtive habits and marine food. One of their great resorts in England is on and about the Needle-rocks and other precipitous cliffs, so dangerous to the shipwrecked mariner, which flank the romantic Isle of Wight. As curious and striking works of Nature and instinct, these, and the birds which frequent them, afford an interesting spectacle in May and June. The Razor-bills are here in such numbers that a boatful might be killed in a day ; and the eggs being esteemed a delicacy, particularly for salads, the fishermen and other indigent and adventurous inhabitants traverse the precipices in search of the pickle samphire and the eggs of the Murre. Some of these stupendous cliffs are six hundred feet above the yawning deep, which lashes and frets them into gloomy caverns. Seaward they present rugged and deeply indented cliffs, on whose rude shelvings and ledges the birds arrange themselves by thousands, and without further preparation lay their eggs, which lie as it were strewed without precaution by hundreds in a row, in no way attached to or defended by the rocks, so that in a gale of wind whole ranks of them are swept into the sea. To these otherwise inaccessible deposits the dauntless fowlers ascend, and passing intrepidly from rock to rock, collect the eggs and descend with the same indifference. In most places, however, the attempt is made from above. The adventurer is let down from the slope contiguous to the brink of the cliff by a rope sustained by a single assistant, who, lowering his companion, depends on his per-

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sonal strength alone to support him ; which if failing, the fowler is dashed to pieces or drowned in the sea which roars and heaves below.

In order to study the habits of these marine birds, the celebrated Edwards spent several days among these terrific and romantic rocks. If a cannon was fired, the air was darkened with a black cloud of the cliff birds, which issued by thousands from every hole and cranny, as if summoned into sudden existence by the work of enchantment. They fly about in silence near to the surface of the sea, perform a few circuits, and on the removal of the cause of alarm return soon to their eyry, or, alighting on the waves, dive out of the way of harm until well assured that no enemy is near.

These Auks lay but one egg except when robbed of the first, and if this is taken they will sometimes give a third. Mr. Audubon found them breeding in great numbers on the coast of Labrador, generally taking possession of the most rugged and precipitous isles, in the deep indentations and fissures of which they crowded, and deposited their eggs as near together as distinct proprietorship would admit, — commonly upon a nest of pebbles, artificially collected together, under and between which the dripping waters and melting ice thus passed without ever coming in contact with the eggs. The Murre sits on her nest in an upright posture, and with her head facing the wind. The young are fed by regurgitated food until they attain a considerable size, after which the small fish, on which old and young principally feed, are merely laid before them. They leave their rock or nest when about half grown, and then immediately commence fishing for themselves. Thousands of these birds are here seen breeding on the same rock.

The flight of the Razor-bill is rapid, and according to Mr. Audubon sometimes even greatly protracted, but low above the surface of the water, and sustained by a constant stiff and short flapping of the wings. It dives to great depths and swims under the surface with considerable velocity, using its wings as flattened fins, and in this manner, like the Divers, it may be seen pursuing and seizing its prey.

Besides breeding in Labrador, Mr. Audubon found that the Razor-bill occasionally nested in the Island of Grand Menan, the Seal Islands, and others situated at the entrance of the Bay of Fundy.

Though it walks and runs awkwardly, this bird moves swiftly, and can easily escape from place to place. The bite of the old bird, like that of the Puffin, is very severe. The fishermen of this region call this species the Hawk-billed Murre. Its flesh is quite palatable, although very dark, and much eaten by the Greenlanders, according to Crantz, forming their chief subsistence during the months of February and March. These birds are killed with missiles, chased and driven ashore in canoes, or taken in nets made of split whalebone. Their skins are also used for clothing. The eggs are everywhere accounted a delicacy, and the feathers of the breast are extremely fine, warm, and elastic. For the sake of this handful of feathers, according to Audubon, thousands of these birds are killed in Labrador, and their bodies strewed on the shore.

The islands between the small port of Little Macatine and Brador abound with these and other allied marine birds, whose eggs are collected by the inhabitants of Nova Scotia. For this purpose they commence by trampling on all they find laid, and the following day begin to collect those which are newly dropped; and such is the abundance of the eggs that Mr. Audubon fell in with a party of three men who, in the course of six weeks, had collected thirty thousand dozen, of the estimated value of four hundred pounds sterling. Beyond Brador the Murres and Puffins were no longer found.

The Razor-bill breeds on the Atlantic coast from the Bay of Fundy to the northern part of Labrador, though very few examples are found in summer south of the Gulf of St. Lawrence. In winter these birds wander along the coast of New England and the adjacent Provinces and southward casually to North Carolina.



GREAT AUK.

GREAT PENGUIN. GARE FOWL.

PLAUTUS IMPENNIS.

CHAR. Upper parts black, a white patch in front of the eyes; under parts white; sides of the throat dark buff; wings little more than rudimentary. Length about 30 inches.

Nest. Among the shingle on a sea-washed beach, sometimes at a considerable distance from the water. The birds probably make no nest.

Eggs. Probably 1; creamy white or buff, sometimes tinged with green, marked with dark brown and gray; average size 4.80 × 2.90.

The Great Auk, or Northern Penguin, inhabits the highest latitudes of the globe, dwelling by choice and instinct amidst

the horrors of a region covered with eternal ice. Here it is commonly found upon the floating masses of the gelid ocean, far from land, to which alone it resorts in the season of procreation.

Deprived of the use of wings, degraded as it were from the feathered ranks, and almost numbered with the amphibious monsters of the deep, the Auk seems condemned to dwell alone in those desolate and forsaken regions of the earth; yet aided by all-bountiful Nature, it finds means to subsist, and triumphs over all the physical ills of its condition. As a diver it remains unrivalled, proceeding beneath the water, its most natural element, almost with the velocity of many birds in the air. It thus contrives to vary its situation with the season, migrating for short distances, like the finny prey on which it feeds. In the Farøe Isles, Iceland, Greenland, and Newfoundland these birds dwell and breed in great numbers. They nest among the steepest cliffs of islands, remote from the shore, in the vicinity of floating ice, taking possession of caverns, and the crannies and clefts of rocks; or they dig for themselves deep burrows in which they lay their only egg, about the size of that of the Swan, whitish yellow, marked with numerous lines and spots of black, which present to the imagination the idea of Chinese characters. They are so unprolific that if this egg be taken away they lay no other that season. Their time of breeding is June and July.

The Auk is known sometimes to breed in the Isle of St. Kilda, and in Papa Westra, according to Mr. Bullock, for several years past no more than a single pair had made their appearance. It feeds on large fish, and also on some marine plants, as well as on those which grow on the rocks contiguous to their holes or burrows. The young birds tear up the roots of the *Rhodiola rosea*. Many are said to breed on the desert coasts of Newfoundland, where they have been seen by navigators, though not recently. According to Pennant, the Esquimaux, who frequented this island, made clothing of the skins of these birds. The older ones are very shy, and but rarely venture to the shore, on which they walk badly, though

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the young are not unfrequently met with. When fed in confinement, the Auk expresses its anxiety by raising and shaking the head and neck and uttering a gurgling noise, but appears to be on the whole essentially dumb, as well as deprived of flight.

Since Nuttall wrote, the Great Penguin of the North Atlantic has become extinct. There is no mystery surrounding the extinction of these birds; they simply yielded to the inevitable law of the survival of the fittest. Through disuse the wings became unfit for service, and the parents could not reach a place of safety for their eggs; and though expert divers, and strong, swift swimmers, their legs were almost useless when upon land, and the birds were continually surprised by hunters and captured in large numbers, until the last one perished.

Not many years ago they were abundant in the vicinity of Newfoundland, and they no doubt occurred as far south as the shores of Massachusetts. The year 1842 is given as that in which the last of these Auks were seen. Now a few stuffed specimens is all that can be found of former legions.

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