THE SNOWY HERON.

*Ardea candidissima, Gmel.*

PLATE CCCLXXIV.—Male.

This beautiful species is a constant resident in Florida and Louisiana, where thousands are seen during winter, and where many remain during the breeding season. It is perhaps of a still more delicate constitution than the Blue Heron, *Ardea caerulea*, as no individuals remain in the neighbourhood of Charleston when the winter happens to be rather colder than usual. In its migrations eastward it rarely proceeds farther than Long Island in the State of New York; few are seen in Massachusetts, and none farther to the east. My friend Professor MacCulloch never heard of it in Nova Scotia, and I cannot imagine on what authority Wilson stated that it inhabits the sea-coast of North America to the Gulf of St. Lawrence. My friend Nuttall also asserts, without mentioning on what evidence, that, by pursuing an inland course, it reaches its final destination in the wilds of Canada. It has not been observed in any part of the western country; nay, it rarely ascends the Mississippi as high as Memphis, or about two hundred miles from the mouth of the Ohio, and cannot be said to be at all abundant much farther up the great river than Natchez. In fact, the maritime districts furnish its favourite places of resort, and it rarely proceeds farther inland than fifty or sixty miles, even in the flat portions of the Carolinas, or in the Middle States, where it prefers the islands along the Atlantic coast.

While I was at Charleston, in March 1831, few had arrived from the Floridas by the 18th of that month, but on the 25th thousands were seen in the marshes and rice-fields, all in full plumage. They reach the shores of New Jersey about the first week of May, when they may be seen on all parts of the coast between that district and the Gulf of Mexico. On the Mississippi, they seldom reach the low grounds about Natchez, where they also breed, earlier than the period at which they appear in the Middle States.

While migrating, they fly both by night and by day, in loose flocks of from twenty to a hundred individuals, sometimes arranging themselves in a broad front, then forming lines, and again proceeding in a straggling manner. They keep perfectly silent, and move at a height seldom exceeding a hundred yards. Their flight is light, undetermined as it were, yet well sustain-
ed, and performed by regular flappings, as in other birds of the tribe. When they have arrived at their destination, they often go to considerable distances to feed during the day, regularly returning at the approach of night to their roosts on the low trees and bushes bordering the marshes, swamps, and ponds. They are very gentle at this season, and at all periods keep in flocks when not disturbed. At the approach of the breeding season, many spend a great part of the day at their roosting places, perched on the low trees principally growing in the water, when every now and then they utter a rough guttural sort of sigh, raising at the same moment their beautiful crest and loose recurved plumes, curving the neck, and rising on their legs to their full height, as if about to strut on the branches. They act in the same manner while on the ground mating. Then the male, with great ardour, and with the most graceful motions, passes and repasses for several minutes at a time before and around the female, whose actions are similar, although she displays less ardour. When disturbed on such occasions, they rise high in the air, sail about and over the spot in perfect silence, awaiting the departure of the intruder; then sweep along, exhibiting the most singular movements, now and then tumbling over and over like the Tumbler Pigeon, and at length alight on a tree. On the contrary, when you intrude upon them while breeding, they rise silently on wing, alight on the trees near, and remain there until you depart.

The Snowy Herons breed in large communities; and so very social are they, that they do not appear even to attempt to disturb such other birds as are wont to breed among them, the Night Herons, for instance, the Green Herons, or the Boat-tailed Grakles. I have visited some of their breeding grounds, where several hundred pairs were to be seen, and several nests were placed on the branches of the same bush, as low at times that I could easily see into them, although others were situated at a height of ten or fifteen feet. In places where these birds are often disturbed, they breed in taller trees, though rarely on very high ones. In the Floridas I found their nests on low mangroves; but wherever they are placed you find them fronting the water, over which, indeed, these Herons seem fond of placing them. The nest, which is formed of dry sticks, is rather small, and has a shallow cavity. The eggs are three, one inch and five-eighths and a half in length, one and a quarter across, of a broadly elliptical form, and having a plain pale bluish-green colour. In the Middle Districts, the usual time of laying is about the middle of May; in the Carolinas a month sooner; and in the Floridas still earlier, as there, on the 19th of May, I found the young in great numbers walking off their nests on the mangrove branches, and, like those of the Louisiana Heron, which also breeds in the same places, trying to escape by falling into the water below, and swimming in search of hiding-
places among the roots and hanging branches. Both sexes incubate. Many of the eggs are destroyed by Crows and Turkey Buzzards, which also devour the young, and many are carried off by men.

The young acquire the full beauty of their plumage in the course of the first spring, when they can no longer be distinguished from the old birds. The legs and feet are at first of a darkish olive, as is the bill, except at the base, where it is lighter, and inclining to yellow. At the approach of autumn, the crest assumes a form, and the feathers of the lower parts of the neck in front become considerably lengthened, the feet acquire a yellow tint, and the legs are marked with black on a yellowish ground; but the flowing feathers of the back do not appear until the approach of spring, when they grow rapidly, become recurved, and remain until the young are hatched, when they fall off.

The Snowy Heron, while in the Carolinas, in the month of April, resorts to the borders of the salt-water marshes, and feeds principally on shrimps. Many individuals which I opened there contained nothing else in their stomach. On the Mississippi, at the time when the shrimps are ascending the stream, these birds are frequently seen standing on floating logs, busily engaged in picking them up; and on such occasions their pure white colour renders them conspicuous and highly pleasing to the eye. At a later period, they feed on small fry, fiddlers, snails, aquatic insects, occasionally small lizards and young frogs. Their motions are generally quick and elegant, and, while pursuing small fishes, they run swiftly through the shallows, throwing up their wings. Twenty or thirty seen at once along the margins of a marsh or a river, while engaged in procuring their food, form a most agreeable sight. In autumn and early spring, they are fond of resorting to the ditches of the rice-fields, not unfrequently in company with the Blue Herons. When, on being wounded in the wing one falls into the water, it swims off towards the nearest shore, and runs to hide itself by the side of some log, or towards a tree which if possible it climbs, ascending to its very top. When seized, they peck at you with great spirit, and are capable of inflicting a severe wound.

There is no difference between the sexes as to plumage, but the male is somewhat larger. When in good condition, its flesh is excellent eating, especially in early autumn, when it is generally very fat. Some may be seen for sale in the markets of New Orleans and other southern cities. They return southward from the Middle Districts early in October, but in the Carolinas they remain until the first frosts, when they all depart for the Floridas, where I found them during the whole winter in considerable numbers, associating with the Blue Herons.
Gexus II.—Anser, Briss. Goose.

Bill shorter than the head, rather higher than broad at the base, somewhat conical, depressed toward the end, rounded at the tip; upper mandible with the dorsal line sloping, the ridge broad and flattened, the sides sloping, the edges soft and obtuse, internally with numerous oblique marginal lamellae, the unguis obovate, convex; nasal groove oblong, filled by the soft membrane of the bill; nostrils medial, lateral, longitudinal, narrow-elliptical, open, per- 

THE CANADA GOOSE.

Anser caxade>sis, Linn.

PLATE CCCLXXVI.—Male and Female.

Although the Canada Goose is considered as a northern species, the number of individuals that remain at all seasons in the milder latitudes, and in different portions of the United States, fully entitles this bird to be looked upon as a permanent resident there. It is found to breed sparingly at the

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Gexus II.—Anser, Briss. Goose.

Bill longer than the head, straight, compressed, tapering to a point, the mandibles nearly equal. Upper mandible with the dorsal line nearly straight, the ridge broad and slightly convex at the base, narrowed towards the end, a groove from the base to two-thirds of its length, beneath which the sides are convex, the edges thin and sharp, with a slight notch close to the very acute tip. Nostrils basal, linear, longitudinal, with a membrane above and behind. Lower mandible with the angle extremely narrow and elongated, the dorsal line beyond it ascending and almost straight, the edges sharp and slightly inflected, the tip acuminate.

Head rather small, oblong, compressed. Neck very long and slender. Body slender and compressed. Feet very long; tibia elongated, its lower half bare, very slender, covered all round with angular scales, of which the posterior are scutelliform; tarsus elongated, slender, compressed, anteriorly covered with numerous scutella, laterally and behind with angular scales. Toes of moderate length, rather slender, scutellate above, reticulately granulate beneath; third toe much longer than second, which is very little shorter than fourth, the hind toe much shorter but strong. Claws rather small, arched, compressed, acute, that of hind toe much larger, the inner edge of that of the third regularly pectinate.

Space between the bill and eye, and around the latter, bare, as is the lower half of the tibia. Plumage soft and blended. Feathers of the upper and hind part of the head, very long, loose, decurved; of the sides, and especially of the lower part of the neck, also much elongated; of the middle of the back very long, loose, and hanging over the sides and rump, but with their extremities recurved. Wings of moderate length; primaries tapering and rounded, the third longest, the second very little shorter, first and fourth about equal; secondaries broad and rounded, some of the inner as long as the longest primaries, when the wing is closed. Tail very short, small, slightly rounded, of twelve rather weak feathers.

Bill black, the bare space at its base yellow. Iris and edges of eyelids yellow. Tibia and tarsus black, the lower part of the latter behind and the toes bright yellow; claws bluish-black. The plumage is pure white.
Length to end of tail 22½ inches, to end of wings 23, to end of claws 30½; extent of wings 38; wing from flexure 10½; tail 3; loose feathers 1¼ beyond the tail; bill along the ridge 3¼; along the edge of lower mandible 3½; bare part of tibia 2¼; tarsus 3½; middle toe 2¼, its claw 1¼. Weight 12 oz.

The elongated feathers of the back are composed of two scapular series, and of those crossing the humerus. The mouth as in the other species. Tongue 1 inch 3 twelfths long, as in the last species. Oesophagus 14 inches long, at the commencement 1 inch 9 twelfths in width, contracting to 10 twelfths; its greatest diameter within the thorax 1 inch 4 twelfths; proventricular belt 8 twelfths in breadth. Stomach remarkably small, roundish, 10 twelfths in diameter, with a globular pyloric lobe, 4½ twelfths in diameter; its muscular coat thin, the tendons 4 twelfths in breadth; the inner surface smooth and soft. Lobes of the liver 1⅜ inches and 1⅜ inches in length; gall-bladder oblong, 9 twelfths long, 5 twelfths broad. Intestine 3 feet 10½ inches long, of 24 folds; its greatest width in the duodenal part 1¼ twelfths, its smallest near the rectum 1 twelfth. The rectum is 2 inches 10 twelfths long, 2⅔ twelfths in breadth; the cloaca globular, 1Ⅲ inches in diameter; the ceca a small knob 1 twelfth long, and of the same width.

Trachea 10 inches long, its average breadth 2¼ twelfths, considerably flattened; the rings 188, with 4 dimidiate. Bronchial half rings 18 and 16. Muscles as in the other species.

FAMILY XXXIX.—ANATINÆ. DUCKS.

Bill of moderate length, stout, straight, depressed toward the end, obtuse, covered with soft skin; upper mandible transversely convex, with the margins internally lamellate, the tip furnished with a decurved horny broad unguis; lower mandible with the angle long and narrow, the crura slender, flattened, the edges internally lamellate, the tip a flattened unguis. Nostrils elliptical, open, sub-basal. Head of moderate size; neck long or of moderate length, slender; body full; legs generally short, stout, with little of the tibia bare; tarsus scutellate; toes four, first small; anterior three palmate. Claws moderate, arched, compressed, obtuse. Plumage very full, dense,
soft. Wings of moderate length, curved, acute, outer two quills longest. Tail short, of twelve or more feathers. Tongue fleshy, with a median groove, lateral reversed papille, laminae, or bristles, and a semicircular thin horny tip; oesophagus narrow, slightly enlarged at the lower part of the neck; stomach a transversely elliptical gizzard, of which the lateral muscles are excessively developed, the epithelium dense, with two concave grinding surfaces; intestine long and wide; ceca long, cylindrical, contracted at the base. Trachea various, generally much enlarged at the bifurcation, without inferior laryngeal muscles, or only with the slips of the lateral muscles prolonged. Nest generally on the ground; eggs numerous. Young clothed with stiffish down, and able to walk and swim from birth.

Genus I.—Phoenicopterus, Linn. Flamingo.

Bill more than double the length of the head, straight and higher than broad for half its length, then deflected, and tapering to an obtuse point; upper mandible with its dorsal line at first straight, then convex, and again straight nearly to the end, when it becomes convex at the tip, the ridge broad and concave, on the deflected part expanded into a lanceolate plate, having a shallow groove in the middle, and separated from the edges by a narrow groove, its extremity narrow and thin edged, but obtuse, this part being analogous to the unguis of Ducks; lower mandible narrower than the upper at its base, but much broader in the rest of its extent; its angle rather long, wide, and filled with bare skin; its dorsal line concave, but at the tip convex, the ridge deeply depressed, there being a wide channel in its place, the sides nearly erect and a little convex, with six ridges on each side toward the tip. Both mandibles internally lamellate, the edge of the lower much incurved. Nostrils linear, direct, and sub-basal, operculate. Head small, ovate; neck extremely elongated, and very slender; body slender; legs extremely long; tibia bare for more than half its length, and with the long tarsus anteriorly scutellate; hind toe very small and elevated; anterior toes connected by emarginate webs, scutellate above, tesselate beneath. Claws oblong, obtuse, depressed. Space between the bill and the eye bare; plumage compact; wings long, very broad, pointed; second quill longest; some of the secondaries extremely elongated, so as to extend far beyond the primaries when the wing is closed. Tail very short. Tongue confined by the lower mandible, fleshy, compressed, decurved, with recurved conical papille; oesophagus extremely narrow, but at the lower part of the neck
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and is of course hollow at the top. There is no lining, nor anything but the bare earth. 4thly, The number of eggs is almost always two. When there is one, there has probably been some accident. The time of incubation is not known. The egg is white, and near the size of the Goose's egg. On scraping the shell, it has a bluish tinge. 5thly, The colour of the young is nearly white, and it does not attain the full scarlet colour until two years old. 6thly, When the young first leave the nest, they take to the water, and do not walk for about a fortnight, as their feet are almost as tender as jelly. I do not think it easy to procure an entire nest; but I am promised some of the eggs, this being the time to procure them.

"Very truly your obedient servant,
A. Mallory."

Another communication is as follows:

"The Flamingo is a kind of bird that lives in lagoons having a communication with the sea. This bird makes its nest on the shore of the same lagoon, with the mud which it heaps up to beyond the level of the water. Its eggs are about the size of those of a Goose; it only lays two or three at a time, which are hatched about the end of May. The young when they break the shell have no feathers, only a kind of cottony down which covers them. They immediately betake themselves to the water to harden their feet. They take from two to three months before their feathers are long enough to enable them to fly. The first year they are rose-coloured, and in the second they obtain their natural colour, being all scarlet; half their bill is black, and the points of the wings are all black; the eyes entirely blue. Its flesh is savoury, and its tongue is pure fat. It is easily tamed, and feeds on rice, maize-meal, &c. Its body is about a yard high, and the neck about half as much. The breadth of the nest, with little difference, is that of the crown of a hat. The way in which the female covers the eggs is by standing in the water on one foot and supporting its body on the nest. This bird always rests in a lagoon, supporting itself on one leg alternately; and it is to be observed that it always stands with its front to the wind."

An egg, presented to me by Dr. Bachman, and of which two were found in the nest, measures three inches and three-eighths in length, two inches and one-eighth in breadth, and is thus of an elongated form. The shell is thick, rather rough or granulated, and pure white externally, but of a bluish tint when the surface is scraped off.


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