In a female, the intestine is 57 inches long; its width in the duodenal part 3 twelfths; the cœca 4 inches long, 3 twelfths in breadth at the widest part, at the base 1 twelfth, and toward the end 2 twelfths; their distance from the extremity 3 inches.

LONG-TAILED DUCK.

†*FULIGULA GLACIALIS*, *Linn.*

PLATE CCCCX.—MALES, FEMALE, AND UNFLEDGED YOUNG.

In the course of one of my rambles along the borders of a large fresh-water lake, near Bras-d'or, in Labrador, on the 28th of July, 1833, I was delighted by the sight of several young broods of this species of Duck, all carefully attended to by their anxious and watchful mothers. Not a male bird was on the lake, which was fully two miles distant from the sea, and I concluded that in this species, as in many others, the males abandon the females after incubation has commenced. I watched their motions a good while, searching at the same time for the nests, one of which I was not long in discovering. Although it was quite destitute of anything bearing the appearance of life, it still contained the down which the mother had plucked from herself for the purpose of keeping her eggs warm. It was placed under an alder bush, among rank weeds, not more than eight or nine feet from the edge of the water, and was formed of rather coarse grass, with an upper layer of finer weeds, which were neatly arranged, while the down filled the bottom of the cavity, now apparently flattened by the long sitting of the bird. The number of young broods in sight induced me to search for more nests, and in about an hour I discovered six more, in one of which I was delighted to find two rotten eggs. They measured 2 inches and $\frac{1}{8}$ long, by $1\frac{1}{8}$ broad, were of a uniform pale yellowish-green, and quite smooth.

My young companions had, unfortunately for me, walked that morning to Blanc Sablon, about thirty miles distant, down the Straits of Belle Isle; and having no dog to assist me in procuring some of the young Ducks, I was obliged to enact the part of one myself, although the thermometer that day was $45^{\circ} 50'$, and the atmosphere felt chilly. I gave chase to the younglings, which made for different parts of the shore, as I followed them up to my

middle in the water, while they dived before me like so many Water-witches, the mothers keeping aloof, and sounding their notes of alarm and admonition. I was fortunate enough to procure several of the young birds, and afterwards shot one of the old, which having young much smaller than the rest, was more anxious for their safety, and kept with them within shot. She and the young were afterwards put in rum, to be subsequently examined. I counted eleven broods on the same pond, and Mr. JONES assured me that these birds always breed in numbers together, but rarely on the same lake two successive years. Their plumage was ragged, in so far as I could judge, and the individual which I shot was similar. They never dived while in my sight, but seemed constantly to urge their young to do so, and the little things so profited by the advice of their parents, that had they remained in the water, instead of making, after awhile, for the land, I believe I should not have succeeded, after all my exertions, in capturing a single one of them.

The gentleman above mentioned informed me that the old birds keep the young in the ponds until they are quite able to fly, or until the end of August, when the flocks remove on wing to the sea, and soon after leave the coast, seldom reappearing before the first days of May, or about two weeks before most other kinds of Ducks. The little ones which I procured, were as you see them represented in my plate. Those that were larger were of the same colour, and none shewed any feathers on their bodies. Now and then, like all other young Ducks, they would skim over the surface of the water with astonishing rapidity, emitting a sharp note somewhat resembling the syllables *pee, pee, pee*, and would then dive with the quickness of thought. When squatted among the moss, they allowed me to take them without making any attempt to escape. The young were put in a tub, and had some soaked biscuit placed near them; but they were all found dead the next morning.

The range of this noisy, lively, and beautiful Duck, extends along our coast as far south as Texas, and it is also found at the mouth of the Columbia river; but the species is never found on any of our fresh-water courses, and I am quite confident that Mr. SAY mistook for it the Pintail Duck, *Anas acuta*, when he says that he found it on the waters of the Missouri. During all my residence in the neighbourhood of the Mississippi, and in the course of all my journeys on and along its waters, I never saw one of these birds, or heard of any having occurred on that stream above its confluence with the Gulf of Mexico; whereas the Pintails are extremely abundant there, as well as on the Missouri, the Ohio, and all our western streams, in spring and autumn. Few Long-tailed Ducks are to be seen in the market of New

Orleans, and in fact they are altogether what our gunners usually call "sea ducks."

The period of the first appearance of this species in autumn depends much on the state of the weather. I have known a difference of a whole month in the Sound, and quite as much in Chesapeake Bay, in both of which it is most abundant in winter, rarely proceeding farther south until driven away by extreme cold. Their advance from Labrador and Newfoundland along the coast, until they reach Long Island, is more hurried than afterwards. They arrive in small flocks, which are soon joined by others, and as they are prone to congregate, vast numbers are seen together in winter, when their cacklings, though different from those of our frogs in spring, are almost as incessant from sunset until dawn. For my part, I have never perceived any resemblance which their notes bear to the words "south-southerly," but think their noisy cries as duckish as those of the Mallard, although sharper and more musical. The best imitation is given by my friend NUTTALL, but if you attempt to reduce the syllables to sounds, there is some probability of your at least succeeding in exciting laughter in yourself or others. He says the notes are "ogh, ough, egh," and again "ogh, ogh, ogh, ough, egh," and adds that they are guttural, and have a ludicrous drawling tone. Dr. RICHARDSON informs us that "the peculiar cry of this Duck is celebrated in the songs of the Canadian voyagers." This to my mind would imply that the Long-tailed Ducks are seen by these adventurous travellers on the waters of the inland streams, which would appear to be at variance with their usual habits, for unless during the breeding season, they give a decided preference to the sea; and indeed generally keep in deep water. Owing to their reiterated cries these birds are named "Noisy Ducks;" but they have various appellations, among others those of "Old Wives," and "Old Squaws."

Although, like all sea-ducks, the "Old Wife" swims deeply, it moves with a grace and celerity, which if not superior to those of any of its tribe, are at least equal; and when the weather is rough, and the waters agitated, it raises its tail in the same manner as the Ruddy Duck and Pintail. When advancing in smooth water, its speed is such as to cause a considerable swell before it, such as sea-faring persons usually call a "bone." Like all others of its tribe, it also prefers swimming against both wind and tide, as then it can sooner take wing if necessary. In calm and pleasant weather, like its congeners, it is fond of throwing its body almost over, and of pluming itself in that position. When on wing, the long feathers of its tail do not seem to aid its progress, any more than in other species.

It seldom removes from the north on its way to our Middle Districts in large flocks; but at the approach of the breeding season, and after the birds

appear to be all paired, they fly northward in long lines, or broad fronts, moving high or low according to the state of the weather, passing at times at a considerable distance from the shores, but flying close to the points of every cape, although they never pass over an isthmus however narrow. Their flight is swift, well sustained, and accompanied with a well-marked whistling of their wings. Being expert divers, it is difficult to kill them on the water; and if you happen to wound one but slightly, I would advise you, reader, to give up the chase, unless you have hit it while on the ice, in which case you will find that it runs rather awkwardly. Their flesh is none of the best, being dark, generally tough, and to the taste fishy; for which reason they are now-a-days frequently brought to our markets plucked, with the head and feet cut off, and called by the venders by all names excepting old wives, squaws, noisy ducks, or south-southerlies. The food of this species consists chiefly of shell-fish; but in the stomachs of those killed on fresh water in Labrador, I found small fishes, and a quantity of grass and its roots.

From the great number of specimens which I have procured in our Middle Districts in winter, and those which I have seen killed during the love season in the north, I am induced to think that the elongated feathers of the tail of this species scarcely, if at all, differ in length at these different periods, although some writers have said that in spring they are much longer than in winter, in which latter season, however, I think the old males differ only in the colour of their plumage from their state in spring. I have obtained male specimens at New York and at Baltimore early in March, when they were already much changed from their appearance in winter; but my friend BACHMAN informs me that he has never seen one with any appearance of the summer plumage at Charleston in South Carolina, where however, he adds, this species is not common.

I have represented two male birds, one in its full spring dress, the other in that of winter. You will also find in the same plate the first figure ever given of an adult female, accompanied with as many younglings as I could conveniently introduce. WILSON gave the figure of a young male in the first winter as that of a female.

LONG-TAILED DUCK, *Anas glacialis*, Wils. Amer. Orn., vol. viii. p. 93.

FULIGULA GLACIALIS, Bonap. Syn., p. 395.

LONG-TAILED DUCK, *Harelda glacialis*, Swains. and Rich. F. Bor. Amer., vol. ii. p. 460.

LONG-TAILED DUCK, Nutt. Man., vol. ii. p. 453.

LONG-TAILED DUCK, *Fuligula glacialis*, Aud. Orn. Biog., vol. iv. p. 103.

Male, 23, 29½. Female, 15¾, 26.

Breeds from Labrador northward to the Arctic Seas. Abundant during

winter along the coasts of the Atlantic Districts to the mouth of the Mississippi. Never in the interior.

Adult Male in summer.

Bill shorter than the head, higher than broad at the base, gradually depressed toward the end, the sides nearly parallel, the tip rounded. Upper mandible with the basal angles inconspicuous, the dorsal line descending and straight to the unguis, then convex and decurved, the ridge broad and flattened at the base, convex toward the end, the sides sloping and convex, the unguis roundish, the edges membranous, very narrow at the base, enlarged towards the end, with about thirty lamellæ ending in a projecting point. Nostrils sub-basal, oblong, direct, large, pervious, near the ridge, in an oblong groove with a soft membrane. Lower mandible flat, a little curved upwards, the angle very long and narrow, the unguis broad and rounded, the erect edges with about forty direct lamellæ.

Head oblong, compressed, of moderate size. Eyes of moderate size. Neck rather short. Body compact, rather elongated, and somewhat depressed. Feet short, stout, placed rather far behind; tarsus very short, compressed, anteriorly with a series of small scutella, externally of which are five in a line with the outer toe, the rest reticulated with angular scales. Hind toe very small, with a free membrane beneath; outer toe, which is the longest, almost double the length of the tarsus, middle toe scarcely shorter than outer; anterior toes with numerous narrow scutella, webbed, the margin of the webs concave; inner toe with a two-lobed expanded margin. Claws small, slightly arched, blunt.

Plumage dense, blended, elastic, stiffish; but soft and glossy on the head; the feathers broad and slightly rounded at the end. Scapulars elongated, acuminate, the posterior decurved over the wing. Wings shortish, narrow, pointed; primary quills curved, strong, tapering, the second longest, exceeding the first by about one twelfth of an inch, the rest rapidly decreasing; secondaries broad and rounded, the inner elongated and pointed. Tail of fourteen pointed feathers, the outer very short, the middle extremely attenuated and slightly recurved, the intermediate proportional.

Bill black in its basal half, orange-yellow towards the end, the unguis bluish-grey. Iris bright carmine. Feet light bluish-grey, the webs dusky, claws black. A large oblong greyish-white patch on each side of the head from the bill to behind the ear; the upper part of the head and nape black, that colour being narrowed in front by the encroachment of the white patches. The neck all round, and anterior half of the breast, of a rich dark chocolate-brown; the back and wing-coverts brownish-black; the scapulars broadly margined with light reddish-brown; the quills are of the same chocolate tint as the breast, the secondaries margined externally with lighter,

the primaries internally. The middle four feathers of the tail brownish-black, the outer two of these slightly margined with white, all the rest white, but the inner with a longitudinal dusky patch on the outer web.

Length to end of tail 23 inches, to end of wings 15, to end of claws 17; extent of wings $29\frac{1}{2}$; wing from flexure $9\frac{1}{2}$; middle tail-feathers 10, lateral tail-feathers $2\frac{1}{2}$; bill along the ridge $1\frac{2}{12}$, along the edge of lower mandible $1\frac{8}{12}$; tarsus $1\frac{2}{12}$; outer toe and claw $2\frac{3}{12}$, middle toe and claw $1\frac{2}{12}$, hind toe and claw $\frac{7\frac{1}{2}}{12}$.

Female in summer.

The female is somewhat less than the male, and differs not only in colour, but in the scapulars, which are not elongated, and in the tail, which is short and rounded. The bill and feet are dusky-green, the iris yellow. The head is dark greyish-brown, with a patch of greyish-white surrounding the eye, but not extending to the bill; there is a larger patch of the same colour on the side of the neck, the hind part of which is similar to the head, the fore part greyish-brown, the feathers broadly margined with whitish. All the upper parts are of a dark greyish-brown, the two lateral tail-feathers edged with white; the lower parts white, the feathers under the wings slightly tinged with grey.

Length to end of tail $15\frac{3}{4}$ inches, to end of wings $14\frac{1}{2}$, to end of claws $16\frac{3}{8}$; extent of wings $26\frac{1}{2}$; wing from flexure 8; middle tail-feathers $2\frac{9}{12}$, lateral $2\frac{1}{4}$; bill along the ridge $1\frac{2}{12}$, along the edge of lower mandible $1\frac{5}{12}$.

Adult Male in winter.

The outer half of the bill rich orange-yellow, that colour extending to the base along the ridge, the unguis and the basal half black, as well as the unguis and edges of the lower mandible. The head, neck, the fore part of back and scapulars, white; the space about the eye pale greyish-red, and a large oblong patch of chocolate-brown on the side of the neck. The upper parts, including the four middle tail-feathers, are brownish-black, but the secondary quills tinged with reddish-brown, and having paler margins. The anterior half of the breast chocolate-brown, the rest of the lower parts and the four lateral tail-feathers white.

Unfledged Young.

The young, when newly excluded, are covered with stiffish down. Bill and feet greenish-dusky; the upper parts chocolate-brown; a small spot of white under the eye; throat and lower parts whitish, as well as an oblong patch on the cheeks.

The young male in winter, that is, after its first moult, has the bill and legs dusky-green. The head and half of the neck are whitish; the upper part of the former and a patch on the side of the latter mottled with brownish-black and chocolate. The upper parts brownish-black, variegated with

brownish-red, the still unelongated scapulars chiefly of the latter colour. A broad undefined belt of reddish-brown over the lower fore part of the neck; the rest of the lower parts greyish-white.

Length to end of tail 22 inches; extent of wings 29.

The young female in winter is similar to the adult, but with the upper parts paler, the light-coloured patches on the head and neck more dusky, and the lower parts of a less pure white.

Adult males, assuming the summer plumage, about April, present a curious intermixture of the variously coloured feathers of the two seasons.

In a male bird, the tongue is 1 inch and 5 twelfths long, papillate at the base, fleshy, with two rows of bristles along the edges. There are 35 lamellæ on each side of the upper, and about 40 on the lower mandible. The œsophagus is $7\frac{1}{2}$ inches long, 7 twelfths in diameter at the upper part, towards the lower parts of the neck dilated to 1 inch, and continuing so to the end. The proventriculus is 1 inch 3 twelfths long, its glandules cylindrical and 2 twelfths long. The stomach is a very powerful gizzard, of a roundish form, $1\frac{3}{4}$ inches in length, 2 inches and 2 twelfths in breadth; its tendons large; the right muscle 10 twelfths, the left 11 twelfths in thickness. The cuticular lining is thick, and slightly rugous; the grinding plates thicker and denser. The contents of the stomach are small muscles and particles of quartz, some of which are 3 twelfths in diameter. The intestine is 5 feet 6 inches long, its diameter nearly uniform, about 4 twelfths; the rectum enlarged to 5 twelfths, its length $2\frac{1}{2}$ inches. Cæca $4\frac{3}{4}$ inches long, 3 twelfths in diameter, their extremity rounded; the cloaca globular, about 9 twelfths in diameter.

The trachea, moderately extended, measures 6 inches in length, its breadth at the top 5 twelfths, about the middle $3\frac{3}{4}$ twelfths. The number of ordinary rings is 72; at the lower part there are 6 expanded rings which are broad posteriorly and on the sides, but extremely narrow before; beyond this is a solid bony expansion of 7 united rings, forming anteriorly a transversely oblong case, having a membrane in front. The contractor muscles are very large, for two inches at the top expanded over the fore part, sending off two cleido-tracheals, then passing down along the edges of the six enlarged rings, and terminating on the drum, where the sterno-tracheals come off.

cr. 5.

Long-tailed Duck.

1. Male, Summer Plumage, 2. Male in Winter, 3. Female and Young.

Drawn from Nature by J. J. Audubon, F. R. S. F. L. S.

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