

ish-yellow, with small lines of brownish-black. The feathers of the back are brownish-black towards the end, with yellowish-grey edges, the scapulars brownish-red on the margins. The quills and tail-feathers are deep greyish-brown; the recurved secondaries broadly edged externally with yellowish-grey. The fore part of the lower neck and breast, the sides, and lower tail-coverts, have a central mark and sub-marginal band of brownish-black, the middle of the breast scarcely spotted, being of the general colour of the lower parts, which is pale yellowish-brown.

Length to end of tail 20 inches, to end of wings 17; wing from flexure  $10\frac{1}{2}$ ; tail  $3\frac{3}{4}$ ; bill from the separation of the lobes  $1\frac{1}{4}$ ; tarsus  $1\frac{8}{12}$ ; middle toe  $2\frac{1}{2}$ , its claw  $\frac{4}{8}$ .

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## THE EIDER DUCK.

+FULIGULA MOLLISSIMA, *Linn.*

PLATE CCCC.V.—MALES AND FEMALE.

The history of this remarkable Duck must ever be looked upon with great interest by the student of nature. The depressed form of its body, the singular shape of its bill, the beautiful colouring of its plumage, the value of its down as an article of commerce, and the nature of its haunts, render it a very remarkable species. Considering it as such, I shall endeavour to lay before you as full an account of it as I have been able to obtain from my own observation.

The fact that the Eider Duck breeds on our eastern coasts, must be interesting to the American ornithologist, whose fauna possesses but few birds of this family that do so. The Fuligulæ are distinguished from all other Ducks that feed in fresh or salt water, by the comparative shortness of the neck, the greater expansion of their feet, the more depressed form of their body, and their power of diving to a considerable depth, in order to reach the beds on which their favourite shelly food abounds. Their flight, too, differs from that of the true Ducks, inasmuch as it is performed nearer the surface of the water. Rarely, indeed, do the Fuligulæ fly at any considerable height over that element, and with the exception of three species, they are rarely



met with inland, unless when driven thither by storms. They differ, moreover, in their propensity to breed in communities, and often at a very small distance from each other. Lastly, they are in general more ready to abandon their females, the moment incubation has commenced. Thus the female is left in a state of double responsibility, which she meets, however, with a courage equal to the occasion, although alone and unprotected.

The Eider is now seldom seen farther south along our eastern coast than the vicinity of New York. WILSON says they are occasionally observed as far as the Capes of Delaware; but at the present day this must be an extremely rare occurrence, for the fishermen of the Jerseys informed me that they knew nothing of this Duck. In WILSON's time, however, it bred in considerable numbers, from Boston to the Bay of Fundy, and it is still to be met with on the rocky shores and islands between these points. Farther to the eastward they become more and more plentiful, until you reach Labrador, to which thousands of pairs annually resort, to breed and spend the short summer. Many, however, proceed much farther north; but, as usual, I will here confine myself to my own observations.

In the latter part of October 1832, the Eiders were seen in considerable numbers in the Bay of Boston. A large bagful of them was brought to me by a fisherman-gunner in my employ, a person advanced in years, formerly a brave tar, and one whom I feel some pride in telling you I assisted in obtaining a small pension from our government, being supported in my application by two of my Boston friends, the one the generous GEORGE PARKMAN, M. D., the other that great statesman JOHN QUINCY ADAMS. The old man had once served under my father, and to receive a bagful of Eider Ducks from him was a gratification which you may more easily conceive than I can describe. Well, there were the Ducks, all turned out on the floor; young males still resembling their mother, others of more advanced age, and several males and females complete in all their parts, only that the bills of the former had lost the orange tint, which that part exhibits during a few weeks of the breeding season. Twenty-one there were in all, and they had been killed in a single day by the veteran and his son. Those masterly gunners told me, that to procure this species, they were in the habit of anchoring their small vessel about fifty yards off the rocky isles round which these birds harbour and feed at this season. There, while the birds were passing on wing, although usually in long lines, they could now and then kill two of them at a shot. Sometimes the King Eider was also procured under similar circumstances, as the two species are wont to associate together during winter. At Boston the Eiders sold that winter at from fifty to seventy-five cents the pair, and they are much sought after by epicures.



On the 31st of May, 1833, my son and party killed six Eiders on the island of Grand Manan, off the Bay of Fundy, where the birds were seen in considerable numbers, and were just beginning to breed. A nest containing two eggs, but not a particle of down, was found at a distance of more than fifty yards from the water.

Immediately after landing on the coast of Labrador, on the 18th of June in the same year, we saw a great number of "Sea Ducks," as the gunners and fishermen on that coast, as well as on our own, call the Eiders and some other species. On visiting an island in "Partridge Bay," we procured several females. The birds there paid little attention to us, and some allowed us to approach within a few feet before they left their nests, which were so numerous that a small boat-load might have been collected, had the party been inclined. They were all placed amid the short grass growing in the fissures of the rock, and therefore in rows, as it were. The eggs were generally five or six, in several instances eight, and in one ten. Not a male bird was to be seen. At the first discharge of the guns, all the sitting birds flew off and alighted in the sea, at a distance of about a hundred yards. They then collected, splashed up the water, and washed themselves, until the boat left the place. Many of the nests were unprovided with down; some had more or less than others, and some, from which the female was absent when the party landed, were quite covered with it, and the eggs felt warm to the hand. The musquitoes and flies were there as abundant and as tormenting as in any of the Florida swamps.

On the 24th of the same month, two male Eiders, much advanced in the moult, were shot out of a flock all composed of individuals of the same sex. While rambling over the moss-covered shores of a small pond, on the 7th of July, we saw two females with their young on the water. As we approached the edges, the old birds lowered their heads and swam off with those parts lying flat on the surface, while the young followed so close as almost to touch them. On firing at them without shot, they all dived at once, but rose again in a moment, the mothers quacking and murmuring. The young dived again, and we saw no more of them; the old birds took to wing, and, flying over the hills, made for the sea, from which we were fully a mile distant. How their young were to reach it was at that time to me a riddle; but was afterwards rendered intelligible, as you will see in the sequel. On the 9th of July, while taking an evening walk, I saw flocks of female Eiders without broods. They were in deep moult, kept close to the shore in a bay, and were probably sterile birds. On my way back to the vessel, the captain and I started a female from a broad flat rock, more than a hundred yards from the water, and, on reaching the spot, we found her nest, which was placed on the bare surface, without a blade of grass within five yards of it.



It was of the usual bulky construction, and contained five eggs, deeply buried in down. She flew round us until we retired, when we had the pleasure to see her alight, walk to her nest, and compose herself upon it.

Large flocks of males kept apart, and frequented the distant sea islands at this period, when scarcely any were able to fly to any distance, although they swam about from one island to another with great ease. Before their moulting had commenced, or fully a month earlier, these male birds, we observed, flew in long-lines from place to place around the outermost islands every morning and evening, thus securing themselves from their enemies, and roosted in numbers close together on some particular rock difficult to be approached by boats, where they remained during the short night. By the 1st of August scarcely an Eider Duck was to be seen on the coast of Labrador. The young were then able to fly, the old birds had nearly completed their moult, and all were moving southward.

Having now afforded you some idea of the migrations and general habits of this interesting bird from spring to the close of the short summer of the desolate regions of Labrador, I proceed, with my journals before me, and my memory refreshed by reading my notes, to furnish you with such details as may perhaps induce you to study its habits in other parts of the world.

The Eider Duck generally arrives on the coasts of Newfoundland and Labrador about the 1st of May, nearly a fortnight before the waters of the Gulf of St. Lawrence are freed from ice. None are seen there during winter, and their first appearance is looked upon with pleasure by the few residents as an assurance of the commencement of the summer season. At this period they are seen passing in long files not many feet above the ice or the surface of the water, along the main shores, and around the inner bays or islands, as if in search of the places where they had formerly nestled, or where they had been hatched. All the birds appear to be paired, and in perfect plumage. After a few days, during which they rest themselves on the shores fronting the south, most of them remove to the islands that border the coast, at distances varying from half a mile to five or six miles. The rest seek for places in which to form their nests, along the craggy shores, or by the borders of the stunted fir woods not far from the water, a few proceeding as far as about a mile into the interior. They are now seen only in pairs, and they soon form their nests. I have never had an opportunity of observing their courtships, nor have I received any account of them worthy of particular notice.

In Labrador, the Eider Ducks begin to form their nests about the last week of May. Some resort to islands scantily furnished with grass, near the tufts of which they construct their nests; others form them beneath the spreading boughs of the stunted firs, and in such places, five, six, or even



eight are sometimes found beneath a single bush. Many are placed on the sheltered shelvings of rocks a few feet above high-water mark, but none at any considerable elevation, at least none of my party, including the sailors, found any in such a position. The nest, which is sunk as much as possible into the ground, is formed of sea-weeds, mosses, and dried twigs, so matted and interlaced as to give an appearance of neatness to the central cavity, which rarely exceeds seven inches in diameter. In the beginning of June the eggs are deposited, the male attending upon the female the whole time. The eggs, which are regularly placed on the moss and weeds of the nest, without any down, are generally from five to seven, three inches in length, two inches and one-eighth in breadth, being thus much larger than those of the domestic Duck, of a regular oval form, smooth-shelled, and of a uniform pale olive-green. I may here mention, by the way, that they afford delicious eating. I have not been able to ascertain the precise period of incubation. If the female is not disturbed, or her eggs removed or destroyed, she lays only one set in the season, and as soon as she begins to sit the male leaves her. When the full complement of eggs has been laid, she begins to pluck some down from the lower parts of her body; this operation is daily continued for some time, until the roots of the feathers, as far forward as she can reach, are quite bare, and as clean as a wood from which the undergrowth has been cleared away. This down she disposes beneath and around the eggs. When she leaves the nest to go in search of food, she places it over the eggs, and in this manner, it may be presumed to keep up their warmth, although it does not always ensure their safety, for the Black-backed Gull is apt to remove the covering, and suck or otherwise destroy the eggs.

No sooner are the young hatched than they are led to the water, even when it is a mile distant, and the travelling difficult, both for the parent bird and her brood; but when it happens that the nest has been placed among rocks over the water, the Eider, like the Wood Duck, carries the young in her bill to their favourite element. I felt very anxious to find a nest placed over a soft bed of moss or other plants, to see, whether, like the Wood Duck on such occasions, the Eider would suffer her young ones to fall from the nest; but unfortunately I had no opportunity of observing a case of this kind. The care which the mother takes of her young for two or three weeks, cannot be exceeded. She leads them gently in a close flock in shallow waters, where, by diving, they procure food, and at times, when the young are fatigued, and at some distance from the shore, she sinks her body in the water, and receives them on her back, where they remain several minutes. At the approach of their merciless enemy, the Black-backed Gull, the mother beats the water with her wings, as if intending to



raise the spray around her, and on her uttering a peculiar sound, the young dive in all directions, while she endeavours to entice the marauder to follow her, by feigning lameness, or she leaps out of the water and attacks her enemy, often so vigorously, that, exhausted and disappointed, he is glad to fly off, on which she alights near the rocks, among which she expects to find her brood, and calls them to her side. Now and then I saw two females which had formed an attachment to each other, as if for the purpose of more effectually contributing to the safety of their young, and it was very seldom that I saw these prudent mothers assailed by the Gull.

The young, at the age of one week, are of a dark mouse-colour, thickly covered with soft warm down. Their feet at this period are proportionally very large and strong. By the 20th of July they seemed to be all hatched. They grew rapidly, and when about a fortnight old were, with great difficulty, obtained, unless during stormy weather, when they at times retired from the sea to shelter themselves under the shelvings of the rocks at the head of shallow bays. It is by no means difficult to rear them, provided proper care be taken of them, and they soon become quite gentle and attached to the place set apart for them. A fisherman of Eastport, who carried eight or ten of them from Labrador, kept them several years in a yard close to the water of the bay, to which, after they were grown, they daily betook themselves, along with some common Ducks, regularly returning on shore towards evening. Several persons who had seen them, assured me that they were as gentle as their associates, and although not so active on land, were better swimmers, and moved more gracefully on the water. They were kept until the male birds acquired their perfect plumage and mated; but some gunners shot the greater number of them one winter day, having taken them for wild birds, although none of them could fly, they having been pinioned. I have no doubt that if this valuable bird were domesticated, it would prove a great acquisition, both on account of its feathers and down, and its flesh as an article of food. I am persuaded that very little attention would be necessary to effect this object. When in captivity, it feeds on different kinds of grain and moistened corn-meal, and its flesh becomes excellent. Indeed, the sterile females which we procured at Labrador in considerable number, tasted as well as the Mallard. The males were tougher and more fishy, so that we rarely ate of them, although the fishermen and settlers paid no regard to sex in this matter.

When the female Eider is suddenly discovered on her nest, she takes to wing at a single spring; but if she sees her enemy at some distance, she walks off a few steps, and then flies away. If unseen by a person coming near, as may often happen, when the nest is placed under the boughs of the dwarf fir, she will remain on it, although she may hear people talking. On



such occasions my party frequently discovered the nests by raising the pine branches, and were often as much startled as the Ducks themselves could be, as the latter instantly sprung past them on wing, uttering a harsh cry. Now and then some were seen to alight on the ground within fifteen or twenty yards, and walk as if lame and broken-winged, crawling slowly away, to entice their enemies to go in pursuit. Generally, however, they would fly to the sea, and remain there in a large flock until their unwelcome visitors departed. When pursued by a boat, with their brood around them, they allowed us to come up to shooting distance, when, feigning decrepitude, they would fly off, beating the water with partially extended wings, while the young either dived or ran on the surface with wonderful speed, for forty or fifty yards, then suddenly plunged, and seldom appeared at the surface unless for a moment. The mothers always flew away as soon as their brood dispersed, and then ended the chase. The cry or note of the female is a hoarse rolling croak; that of the male I never heard.

Should the females be robbed of their eggs, they immediately go off in search of mates, whether their previous ones or not I cannot tell, although I am inclined to think so. However this may be, the duck in such a case soon meets with a drake, and may be seen returning the same day with him to her nest. They swim, fly, and walk side by side, and by the end of ten or twelve days the male takes his leave, and rejoins his companions out at sea, while the female is found sitting on a new set of eggs, seldom, however, exceeding four. But this happens only at an early period of the season, for I observed that as soon as the males had begun to moult, the females, whose nests had been plundered, abandoned the place. One of the most remarkable circumstances connected with these birds is, that the females with broods are fully three weeks later in moulting than the males, whereas those which do not breed begin to moult as early as they. This may probably seem strange, but I became quite satisfied of the fact while at Labrador, where, from the number which we procured in a state of change, and the vast quantities every now and then in sight, our opportunities of observing these birds in a perfectly natural state were ample.

Some authors have said that the males keep watch near the females; but, although this may be the case in countries such as Greenland and Iceland, where the Eiders have been trained into a state of semi-domestication, it certainly was not so in Labrador. Not a single male did we there see near the females after incubation had commenced, unless in the case mentioned above, when the latter had been deprived of their eggs. The males invariably kept aloof and in large flocks, sometimes of a hundred or more individuals, remaining out at sea over large banks with from seven to ten fathoms of water, and retiring at night to insular rocks. It seemed very



wonderful that in the long lines in which we saw them travelling, we did not on any occasion discover among them a young bird, or one not in its mature plumage. The young males, if they breed before they acquire their full colouring, must either be by themselves at this period, or with the barren females, which, as I have already said, separate from those that are breeding. I am inclined to believe that the old males commence their southward migration before the females or the young, as none were to be seen for about a fortnight before the latter started. In winter, when these Ducks are found on the Atlantic shores of the United States, the males and females are intermingled; and at the approach of spring the mated pairs travel in great flocks, though disposed in lines, when you can distinctly see individuals of both sexes alternating.

The flight of the Eider is firm, strong, and generally steady. They propel themselves by constant beats of the wings, undulating their lines according to the inequality of surface produced by the waves, over which they pass at the height of a few yards, and rarely more than a mile from the shores. Few fly across the Gulf of St. Lawrence, as they prefer following the coasts of Nova Scotia and Newfoundland, to the eastern entrance of the straits of Belle Isle, beyond which many proceed farther north, while others ascend that channel and settle for the season along the shores of Labrador, as far up as Partridge Bay, and still farther up the St. Lawrence. Whilst on our waters, or at their breeding grounds, the Eiders are not unfrequently seen flying much higher than when travelling, but in that case they seem to be acting with the intention of guarding against their enemy man. The velocity of their flight has been ascertained to be about eighty miles in the hour.

This species dives with great agility, and can remain a considerable time under water, often going down in search of food to the depth of eight or ten fathoms, or even more. When wounded, however, they soon become fatigued in consequence of the exertion used in diving, and may be overtaken by a well-manned boat in the course of half an hour or so, as when fatigued they swim just below the surface, and may be struck dead with an oar or a boat-hook.

Their food consists principally of shell-fish, the shells of which they seem to have the power of breaking into pieces. In many individuals which I opened, I found the entrails almost filled with small fragments of shells mixed with other matter. Crustaceous animals and their roe, as well as that of various fishes, I also found in their stomach, along with pebbles sometimes as large as a hazel nut. The œsophagus, which is in form like a bag, and is of a leathery firm consistence, was often found distended with food, and usually emitted a very disagreeable fishy odour. The gizzard is ex-



tremely large and muscular. The trachea of the young male, so long as it remains in its imperfect plumage, or for the first twelve months, does not resemble that of the old male. The males do not obtain their full plumage until the fourth winter. They at first resemble the mother, then gradually become pie-bald, but not in less time than between two and three years.

The Eider Duck takes a heavy shot, and is more easily killed on wing than while swimming. When on shore they mark your approach while you are yet at a good distance, and fly off before you come within shot. Sometimes you may surprise them while swimming below high rocks, and, if you are expert, then shoot them; but when they have first seen you, it is seldom that you can procure them, as they dive with extreme agility. While at Great Macatina Harbour, we discovered a large basin of water, communicating with the sea by a very narrow passage about thirty yards across, and observed that at particular stages of the tides the Eider Ducks entered and returned by it. By hiding ourselves on both sides of this channel, we succeeded in killing a good number, but rarely more than one at a shot, although sometimes we obtained from a single file as many as we had of gun-barrels.

Excepting in a single nest, I found no down clean, it having been in every other instance more or less mixed with small dry fir twigs and bits of grass. When cleaned, the down of a nest rarely exceeds an ounce in weight, although, from its great elasticity, it is so bulky as to fill a hat, or if properly prepared even a larger space. The egggers of Labrador usually collect it in considerable quantity, but at the same time make such havoc among the birds, that at no very distant period the traffic must cease.

EIDER DUCK, *Anas mollissima*, Wils. Amer. Orn., vol. viii. p. 122.

FULIGULA MOLLISSIMA, Bonap. Syn., p. 389.

SOMATERIA MOLLISSIMA, *Eider*, Swains. and Rich. F. Bor. Amer., vol. ii. p. 448.

EIDER DUCK, Nutt. Man., vol. ii. p. 406.

EIDER DUCK, *Fuligula mollissima*, Aud. Orn. Biog., vol. iii. p. 344; vol. v. p. 611.

Male, 25, 42. Female, 24, 39.

Breeds in Maine, on the Bay of Fundy, in Labrador, Newfoundland, as far northward as travellers have proceeded. Common in winter from Nova Scotia to Massachusetts; rarely seen in New York.

Adult Male.

Bill about the length of the head, deeper than broad at the base, somewhat depressed towards the end, which is broad and rounded. Upper mandible with a soft tumid substance at the base, extending upon the forehead, and deeply divided into two narrow rounded lobes, its whole surface marked with divergent oblique lines, the dorsal outline nearly straight and sloping



to beyond the nostrils, then curved, the ridge broad at the base, broadly convex towards the end, the edges perpendicular, obtuse, with about fifty small lamellæ on the inner side, the unguis very large, elliptical. Nostrils sub-medial, oblong, large, pervious, nearer the ridge than the edge. Lower mandible flattened, with the angle very long, rather narrow and rounded, the dorsal line short and slightly convex, the edges with about sixty lamellæ, the unguis very broad, elliptical.

Head very large. Eyes of moderate size. Neck of moderate length, rather slender at its upper part. Body bulky and much depressed. Wings rather small. Feet very short, strong, placed rather far behind; tarsus very short, compressed, anteriorly having a series of scutella in its whole length, and a partial series above the fourth toe, the rest reticulated with angular scales. Hind toe small, with a free membrane beneath; anterior toes double the length of the tarsus, connected by reticulated membranes, having a sinus at their free margins, the inner with a broad lobed marginal membrane, the outer with a thickened edge; all obliquely scutellate above, the third and fourth about equal and longest. Claws small, that of first toe very small and curved, of middle toe largest, all rather depressed and blunt.

Plumage short, dense, soft, blended. Feathers on the fore part of the head extremely small; on the upper part very narrow, on the occiput and upper and lateral parts of the neck hair-like, stiff and glossy. Wings rather short, narrow, pointed; primary quills curved, strong, tapering, the first longest, the second scarcely shorter, the rest rapidly graduated; secondaries short, broad, rounded, the inner elongated, tapering, and recurved. Tail very short, much rounded, of sixteen narrow feathers.

Bill pale greyish-yellow, the unguis lighter, the soft tumid part pale flesh-colour. Iris brown. Feet dingy light green, the webs dusky. Upper part of the head bluish-black; the central part from the occiput to the middle white. The hair-like feathers on the upper part and sides of the neck are of a delicate pale green tint. The sides of the head, the throat, and the neck, are white, the fore neck at its lower part of a fine colour intermediate between buff and cream-colour. The rest of the lower surface is brownish-black, as are the upper tail-coverts, and the central part of the rump. The rest of the back, the scapulars, smaller wing-coverts, and inner curved secondary quills, white, the scapulars tinged with yellow. Secondary coverts and outer secondaries brownish-black; primaries and tail-coverts greyish-brown.

Length to end of tail 25 inches, to end of wings  $21\frac{1}{2}$ , to end of claws 27; extent of wings 42; wing from flexure  $11\frac{1}{2}$ ; tail  $4\frac{1}{4}$ ; bill from extremity of tumid part  $2\frac{1}{12}$ , from its notch  $2\frac{2}{12}$ , along the edge of lower mandible  $2\frac{1}{12}$ ;



tarsus  $1\frac{3}{4}$ ; middle toe  $2\frac{10}{12}$ , its claw  $\frac{7}{12}$ . Weight in winter, 5 lbs.  $5\frac{1}{2}$  oz.; in breeding time 4 lbs.  $8\frac{1}{2}$  oz.

#### Adult Female.

The female differs greatly from the male. The bill is shorter, its tumid basal part much less and narrower. The feathers of the head and upper part of the neck are very small, soft, and uniform; the scapulars and inner secondaries are not elongated, as in the male. Bill pale greyish-green; iris and feet as in the male. The head and neck all round light brownish-red, with small lines of brownish-black. Lower part of neck all round, the whole upper surface, the sides, and the lower tail-coverts of the same colours, but there the brownish-black markings are broad. Secondary quills and larger coverts greyish-brown, tipped with white, primaries brownish-black; tail-feathers greyish-brown. Breast and abdomen greyish-brown, obscurely mottled.

Length to end of tail 24 inches, to end of wings  $20\frac{1}{2}$ , to end of claws 27; extent of wings 39; wing from flexure  $11\frac{1}{4}$ ; tail 4; bill  $3\frac{7}{12}$ ; tarsus  $1\frac{3}{4}$ ; middle toe  $2\frac{7}{12}$ , its claw  $\frac{5\frac{1}{2}}{12}$ . Weight in winter 4 lbs.  $4\frac{1}{2}$  oz.; in breeding time 3 lbs. 12 oz.

The down of the female is light grey; that of the male on the white parts is pure white, on the dark, greyish-white.

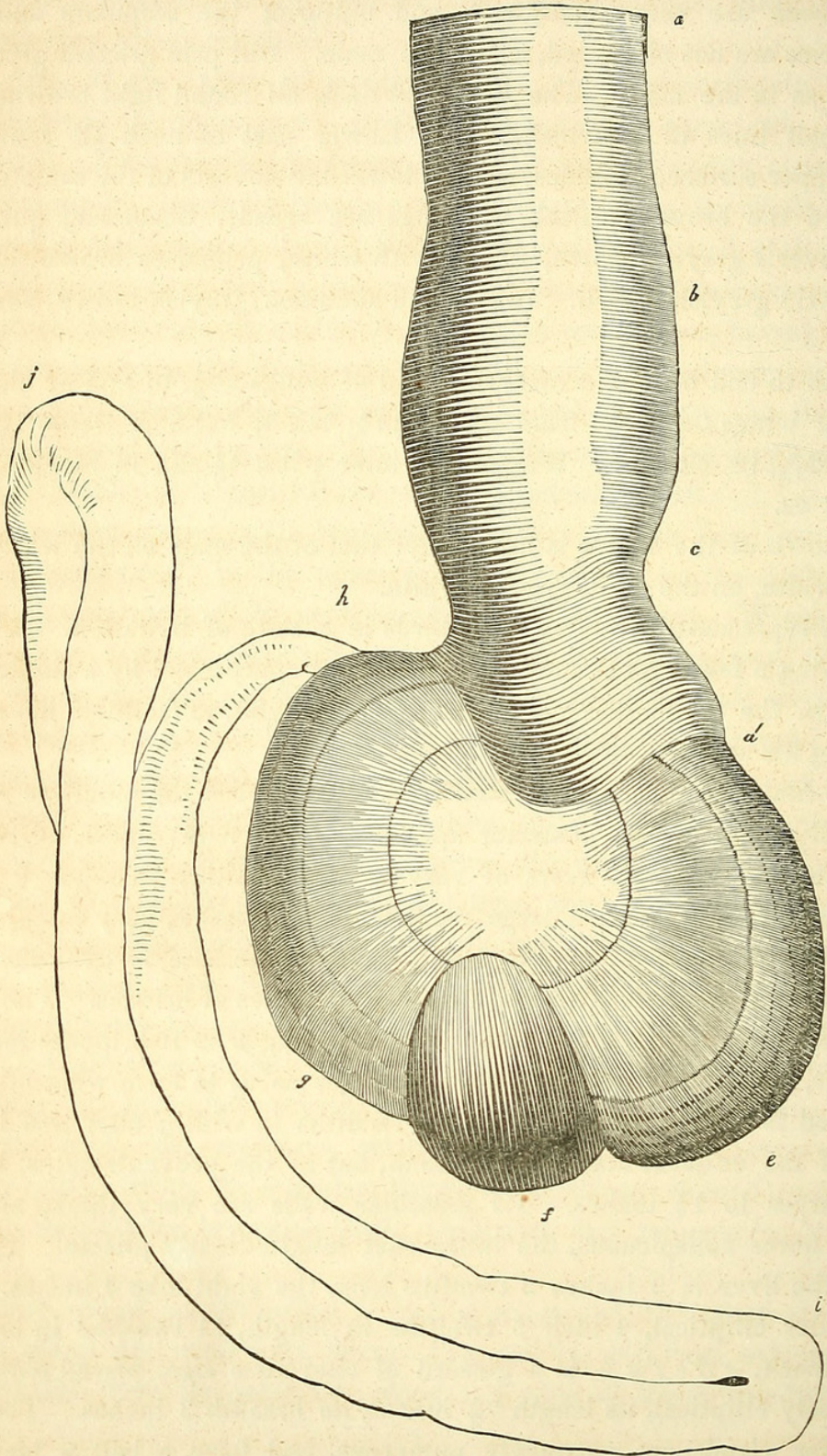
I have represented three of these birds in a state of irritation. A mated pair, having a few eggs already laid, have been approached by a single male, and are in the act of driving off the intruder, who, to facilitate his retreat, is lashing his antagonists with his wings.

Adult Male, from Dr. T. M. BREWER. The roof of the mouth is broadly and deeply concave; the posterior aperture of the nares linear, 10 twelfths long, margined with two rows of very pointed papillæ. Tongue 2 inches long, convex above, with a large median groove, fleshy, very thick, with a semicircular thin-edged horny tip; the breadth at the base  $4\frac{3}{4}$  twelfths, at the tip 4 twelfths; the sides with two longitudinal series of bristles. The width of the mouth is 1 inch 3 twelfths. The œsophagus is  $10\frac{1}{2}$  inches long, for  $4\frac{1}{2}$  inches, its width is 1 inch, it then enlarges so as to form what might be considered as a kind of crop, 1 inch 7 twelfths in width; after this it continues of the uniform diameter of 1 inch, but in the proventriculus, Fig. 1, *b c*, enlarges to  $1\frac{1}{4}$  inches. Its muscular walls are very thick, and the external fibres conspicuous, the inner coat longitudinally plicate. The left lobe of the liver is 2 inches 2 twelfths long, the right lobe 4 inches. The gall-bladder elliptical, 1 inch 5 twelfths in length, 11 twelfths in breadth. The stomach, *c d e f g h*, is a gizzard of enormous size, placed obliquely, transversely elliptical, its length  $2\frac{1}{2}$  inches, its breadth 3 inches. The proventricular glands are extremely numerous, and form a belt 2 inches in



breadth. The left muscle of the stomach, *d e*, is  $1\frac{1}{4}$  inches thick, the right, *g h*, 1 inch 2 twelfths; the epithelium very thick, and of a horny texture, with two elliptical convex grinding plates, of which the right is 2 inches in length, the left 1 inch 7 twelfths. Intestine 74 inches long; the width of

Fig. 1.

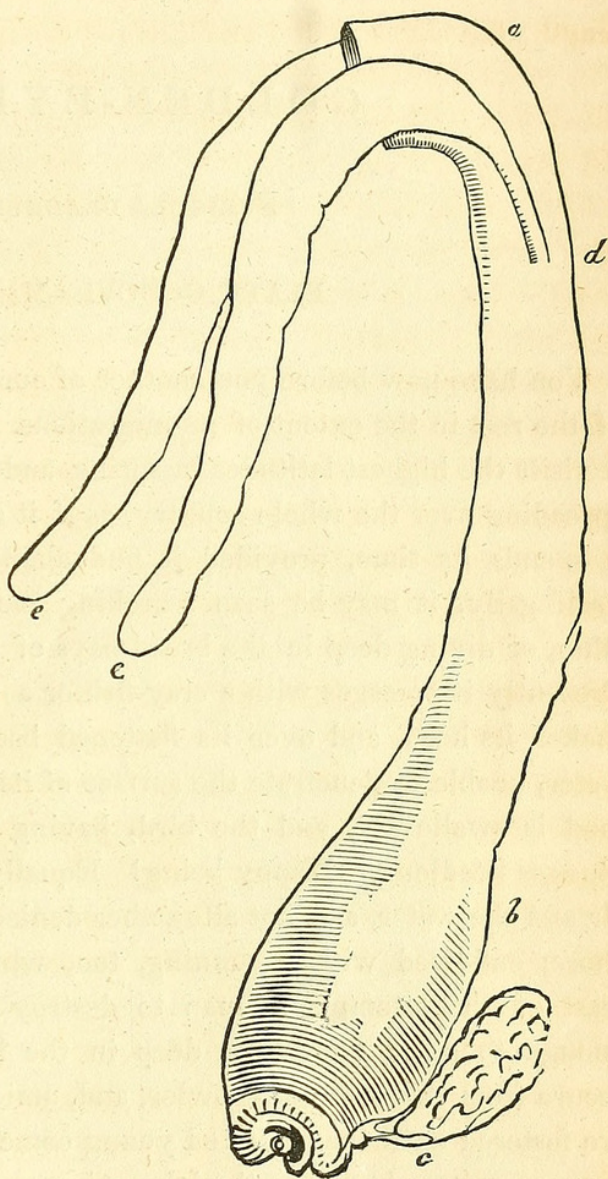




the duodenum, *h i j*,  $\frac{1}{2}$  inch, diminishing to 5 twelfths; the rectum, Fig. 2, *a b*, 7 twelfths in width; the cœca, *c c*,  $3\frac{1}{2}$  inches long, 4 inches distant from the extremity; their greatest width  $4\frac{1}{2}$  twelfths, for an inch at the base only 1 twelfth; the cloaca very slightly dilated, its breadth being only 8 twelfths.

The trachea is  $9\frac{1}{4}$  inches long, nearly of the uniform width of 5 twelfths, moderately flattened; the rings 130, well ossified, ending in a transversely oblong dilatation, projecting more toward the left side, 1 inch in breadth,  $\frac{1}{2}$  inch in length. Bronchial half rings 32, the bronchi very wide, rings very narrow and cartilaginous. The contractor muscles are very large, and expanded over the whole anterior surface. At the distance of  $1\frac{1}{2}$  inches from the tympanum they give off the cleido-tracheal muscles, and at the tympanum itself the sterno-tracheal.

Fig. 2.







<sup>CP</sup>  
*Eider Duck,*  
1. Male. 2. Female.





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