

THE RED-NECKED GREBE.

† *PODICEPS RUBRICOLLIS*, *Lath.*

PLATE CCCCLXXX.—MALE AND YOUNG.

I have found this species along the coast from New York to Maine, in the winter season, when old and young were generally in about equal number. At Boston I procured several specimens. On the Bay of Fundy, and among the islands at its entrance, I saw these Grebes already in their spring plumage, it being then the beginning of May. On one occasion our boat was rowed over an eddy in which a pair had dived in search of food. On emerging they were only a few yards distant; but, although several guns were fired at them, they escaped unhurt, for they instantly dived again, passed under the boat at the depth of about a yard, and did not rise until at a safe distance. None of us could conceive how they had managed to elude us, for as they were so near, the shot threw up the water in its course, and I had expected to find them completely mangled.

Although I have seen this species far up our salt-water bays, I never observed it on any of the southern fresh-water ponds or rivers. Dr. RICHARDSON states, in the *Fauna Boreali-Americana*, that it "is very common in the Fur Countries, frequenting every lake with grassy borders." M. TEMMINCK says "that they inhabit rivers, lakes, and the borders of the sea, but in greater number on fresh-waters; are tolerably common in different parts of Europe; feed on small fish, fry, amphibious reptiles, insects, and vegetables; form their nests of the same materials, and place it in the same situations as the Crested Grebe, and lay three or four eggs." An egg lent me by my esteemed friend Mr. YARRELL, measured two inches in length by one inch and a quarter in breadth, and was of a uniform pale greenish-white.

PODICEPS RUBRICOLLIS, Bonap. Syn., p. 417.

PODICEPS RUBRICOLLIS, *Red-necked Grebe*, Swains. and Rich. F. Bor. Amer., vol. ii. p. 411.

RED-NECKED GREBE, Nutt. Man., vol. ii. p. 253.

RED-NECKED GREBE, *Podiceps rubricollis*, Aud. Orn. Biog., vol. iii. p. 617; vol. v. p. 620.

Male, $18\frac{3}{4}$, 32.



Red-necked Grebe.

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

1. Adult Male Spring Plumage. 2. Young Winter Plumage.

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During winter, not uncommon from New York to Maine. Breeds in the Fur Countries. Accidental in the interior.

Adult Male.

Bill about the length of the head, straight, rather slender, compressed, acute. Upper mandible with the dorsal line straight and slightly sloping to the middle, then slightly convex, the ridge convex, the sides sloping, towards the end erect and convex, the edges acute and inflected. Nasal groove extending to the middle of the mandible; nostrils sub-basal, linear-elliptical, pervious. Lower mandible with the angle long and extremely narrow, the dorsal line ascending and straight, the sides erect, slightly convex, the edges sharp, inflected, the tip narrow, very acute.

Head of moderate size, oblong, compressed. Neck long and slender. Body depressed. Feet large, placed very far behind; tibia feathered almost to the joint; tarsus short, extremely compressed, anteriorly with a narrow scutellate ridge, laterally with very broad scutella, posteriorly with a narrow ridge having a double row of small prominent scales. Hind toe very small, with an inferior small membrane; fore toes long, the outer longest, scutellate above, united at the base by short webs, externally margined with narrowish, internally with broad, lobe-shaped expansions, which are marked with parallel oblique lines, and crenate on the edges. Claws flattened, that of the middle toe broadest, with an extremely thin, broad terminal edge.

Plumage of the head and neck very soft and downy, of the breast and sides silky and highly glossed, of the abdomen and rump downy, of the upper parts imbricated, but with loose edges. Wings small; primaries much curved, the first longest, the second almost equal, the inner secondaries extending beyond the first primary when the wing is closed. Tail a small tuft of loose feathers. On the head is a tuft of elongated feathers on each side behind the eye, and those of the posterior part of the cheek are also elongated.

Bill brownish-black, bright yellow at the base. Iris carmine. Tarsi and toes greenish-black externally, yellow on the inner side, the edges of the lobes dusky. Upper part of the head greyish-black, lower part ash-grey, with a white line from the base of the lower mandible to beyond the eye. Hind part of the neck, and upper parts generally, greyish-black; the feathers edged with pale brown; the edge of the wing and the outer secondaries white. The fore part and sides of the neck rich brownish-red; the breast and sides are of a silvery white, faintly marked with grey.

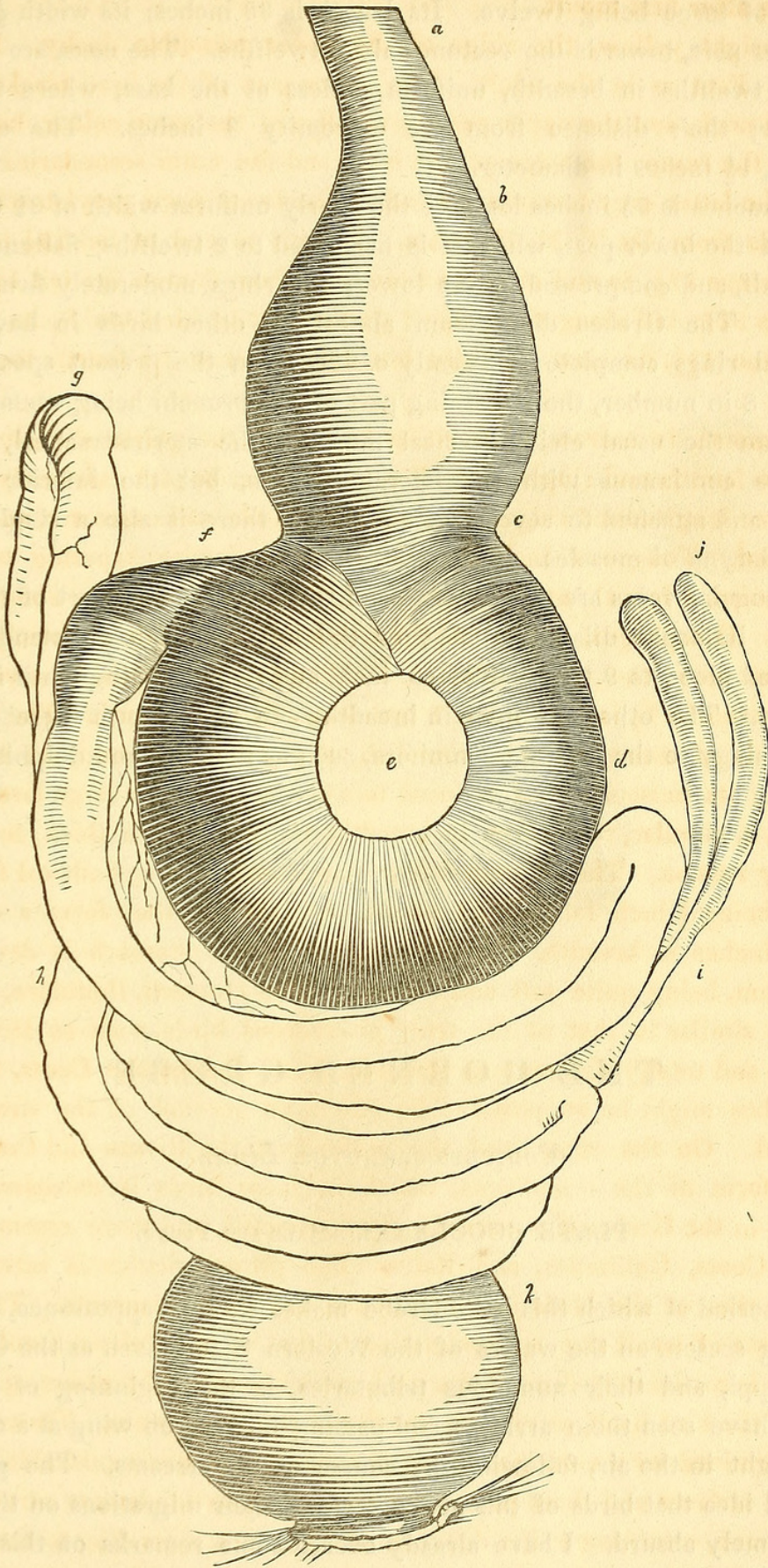
Length to end of rump-feathers $18\frac{3}{4}$ inches, to end of wings $16\frac{1}{2}$, to end of claws 24; extent of wings 32; wing from flexure $7\frac{1}{4}$; bill along the back $1\frac{8}{12}$, along the edge of lower mandible $2\frac{3}{8}$; tarsus 2; outer toe $2\frac{1}{2}$, its claw $\frac{1}{4}$. Weight 23 oz.

Young after first moult.

Bill bright yellow, the ridge of the upper mandible dusky. Iris pale yellow. Feet as in the adult. The upper part of the head blackish-grey, the hind neck, and the upper parts generally, of the same colour, but darker towards the rump; the edge of the wing and the outer secondaries greyish-white, the latter grey towards the end. The lower parts greyish-white.

Female from Dr. T. M. BREWER. Length to end of tail $19\frac{1}{2}$ inches, to end of wings $17\frac{1}{2}$, to end of claws $24\frac{1}{4}$; wing from flexure $7\frac{3}{4}$; tail $1\frac{3}{4}$; extent of wings $32\frac{1}{4}$; bill along the ridge $1\frac{10}{12}$; tarsus $2\frac{2}{12}$; hind toe $\frac{7}{12}$, its claw $\frac{1\frac{1}{2}}{12}$; second toe $1\frac{11}{12}$, its claw $\frac{3\frac{1}{2}}{12}$; third toe $2\frac{4\frac{1}{2}}{12}$, its claw $\frac{5}{12}$; fourth toe $2\frac{9}{12}$, its claw $\frac{3}{12}$.

The mouth is narrow, $9\frac{1}{2}$ twelfths in width; the palate slightly convex, with two faint lateral ridges on each side; its anterior part extremely narrow, with three longitudinal ridges, the lower mandible still narrower, and deeply channelled. Tongue 1 inch 7 twelfths long, slender, tapering to a thin horny point, trigonal, as deep as broad, fleshy and concave above, horny beneath. Œsophagus, *a b c*, $10\frac{3}{4}$ inches long; its width uniformly $\frac{1}{2}$ inch along the neck; the proventriculus, *b c*, however, is dilated to a very large ovate sac nearly $1\frac{1}{2}$ inches broad, 1 inch 9 twelfths in breadth. The stomach, *c d e f*, is of enormous size, roundish, slightly compressed, $2\frac{1}{4}$ inches in diameter; its muscular coat reduced to a single series of large fasciculi; its tendons, *e*, circular, 9 twelfths in breadth; the epithelium thick, soft, longitudinally rugous. The proventricular glands are of a cylindrical form, the largest being $\frac{1}{2}$ inch long, and 1 twelfth in breadth; they form a complete belt $1\frac{1}{3}$ inches in breadth. The inner coat of the stomach is destitute of epithelium, being quite soft and smooth. The stomach, therefore, is in all respects similar to that of the truly piscivorous birds, such as Divers and Herons, and totally different in structure from that of the Coots, to which the Grebes might be supposed to be allied, on account of the structure of their feet. On the other hand, they differ from the Divers and Cormorants in the form of the œsophagus, which in these birds is extremely wide, whereas in the Grebes it is exceedingly contracted, and more resembles that of the Coots, Gallinules, and Rails. The proventriculus is intermediate between that of the birds just mentioned and the Cormorants. There is a pyloric sac of small size, approximating to that of the Pelican family. The stomach is moderately distended with a great quantity of feathers, apparently those of the bird itself, or of some species of the same genus. These feathers are intermixed with vertebræ of small fishes, easily distinguishable by their concave surfaces and three prominent spines. The duodenum curves round the stomach, returning at the distance of $5\frac{1}{2}$ inches, ascending to the liver as usual, passing down the right side, and forming several convolutions, the



number of turns being twelve. Its length is 33 inches; its width $\frac{1}{2}$ inch at the upper part, towards the rectum only 3 twelfths. The cœca are 2 inches long, 2 twelfths in breadth, uniform, unless at the base, where they are narrower; their distance from the extremity 3 inches. The cloaca is globular, $1\frac{1}{2}$ inches in diameter.

The trachea is $9\frac{1}{4}$ inches long, of the nearly uniform width of $3\frac{1}{4}$ twelfths, unless at the lower part, when it is narrowed to 2 twelfths; flattened in its upper half, and compressed in the lower; the rings moderately firm, 180 in number. The Grebes differ from almost all other birds in having the bronchial rings complete and firmly ossified. In the present species, they are only 8 in number, the remaining part of the bronchi being membranous. There are the usual cleido-tracheal muscles; the sterno-tracheal, part of which is continuous with the lateral muscles, but the inferior portion distinct, and attached to several of the rings; there is also a single pair of inferior laryngeal muscles.

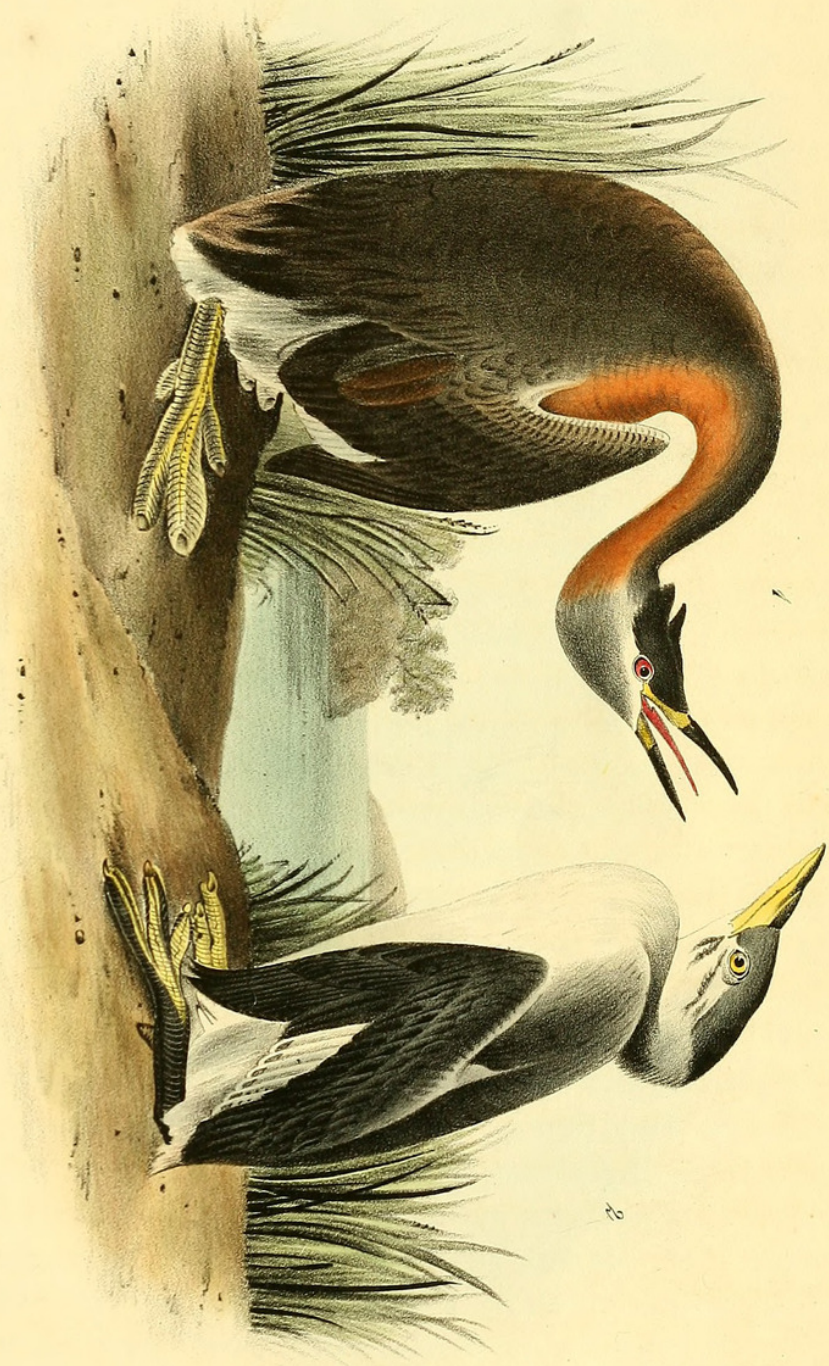
The jugular veins are of vast size, and toward the lower part of the neck form an immense dilatation; that of the left side being distended with coagulated blood to 9 twelfths of an inch, and so continuing until it enters the heart. The other is $\frac{1}{2}$ inch in breadth. In this respect there seems to be an analogy to the diving mammifera, such as the seals and dolphins.

THE HORNED GREBE.

**PODICEPS CORNUTUS*, *Linn.*

PLATE CCCCLXXXI.—MALE AND YOUNG.

The period at which this little Grebe makes its first appearance, after the breeding season, on the waters of the Western States, such as the Ohio, the Mississippi, and their numerous tributaries, is the beginning of October, when I have seen them arriving and passing onward on wing at a considerable height in the air, following the course of the streams. The generally received idea that birds of this genus perform their migrations on the water, is extremely absurd. I have already offered some remarks on this subject, but as too much cannot be said, when an erroneous notion extensively



W.E.H.

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1. Adult Male Spring Plumage. 2. Young Winter Plumage.

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Audubon, John James. 1844. "The Red-Necked Grebe, *Podiceps rubricollis*, Lath. [Pl. 480]." *The birds of America : from drawings made in the United States and their territories* 7, 312–316. <https://doi.org/10.5962/p.319597>.

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