Male. Width of mouth 5 twelfths; upper mandible very deeply concave, with a median prominent line, which is papillate for half its length; the lamellæ of the upper mandible 55, projecting a little beyond the margin, of the lower about 180, and extremely inconspicuous. Tongue 11 inches long, fleshy, deeply grooved above, with thin lamellate margins, the tip semicircular, thin, and horny. Œsophagus 61/2 twelfths long, its width 4 twelfths, at the lower part of the neck enlarged to 7 twelfths, then contracting to 3 twelfths; the proventriculus oblong, 5 twelfths in breadth. Stomach a transversely elliptical, oblique gizzard, 1 inch 1 twelfth long, 1 inch 3 twelfths broad, its lateral muscles extremely developed, the right 6 twelfths, the left 5 twelfths in thickness, the inferior muscle narrow and prominent, as in all birds of this family; epithelium very dense, with two opposite concave grinding surfaces. Intestine 3 feet 7½ inches, with 16 folds, its general width only 1½ twelfths, enlarging here and there to 2 twelfths; cœca 4½ inches long, for 11 inches 1 twelfth in breadth, enlarging to 3 twelfths, and toward the extremity 2 twelfths. Rectum 21/4 twelfths long, its width 21/5 twelfths. Right lobe of the liver 1 inch 5 twelfths, the other 1 inch 2 twelfths.

Trachea 5 inches long, from $2\frac{1}{2}$ twelfths to 2 twelfths in width, moderately flattened, ending in a transversely elongated tympanum, projecting to the left side, with a roundish thin bony prominence; its greatest breadth 8 twelfths, its length 3 twelfths; the rings rather broad, firm, 115, besides a few blended with the tympanum. The muscles as usual. Bronchial half rings 28 and 34.

BLUE-WINGED TEAL.

+ANAS DISCORS, Linn.

PLATE CCCXCIII.—MALE AND FEMALE.

Is it not strange, reader, that birds which are known to be abundant on the Saskatchewan river during the breeding season, and which have been observed as far north as the 57th parallel, should also be found breeding at nearly the same period in Texas? Stranger still it is that species should proceed from certain points, or winter quarters, to both of the above-mentioned regions, without paying any regard to the intermediate districts, which yet seem to be as well adapted for breeding in, as they afford thousands of convenient and secluded localities for that purpose. Yet these facts, and many others connected with Nature's wonderful arrangements, we may look upon as intended to increase the innate desire which every true lover of Nature has to study her beautiful and marvellous works.

Having for some years observed such habits exhibited by the Blue-winged Teal and other birds, I have been induced to believe in the existence of what I would term a double sense of migration in many species, acted upon both in spring and in autumn, and giving to them at the latter period, the power as well as the desire of removing from the higher latitudes to opposite or meridional parts, thus to enter into the formation of the Fauna of different countries, from which again they are instigated to return to the place of their nativity, and thence diverge toward new sections of the globe equally adapted to their wants. If these observations should prove not unfounded, we need no longer be surprised to meet in different portions of the world with species which hitherto were supposed to be inhabitants only of far distant shores.

The mouths of the Mississippi, surrounded by extensive flat marshes, which are muddy, and in some degree periodically inundated by the overflowings of that great stream, or by the tides of the Mexican Gulf, and having in the winter months a mildness of temperature favourable to almost all our species of Waders and Swimmers, may be looked upon as the great rendezvous of the Blue-winged Teals, which are seen arriving there coastways, in autumn and the greater part of winter, to meet the multitudes that have travelled across the interior from the north and west. At New Orleans, and during spring, when this bird is in full plumage, it is called by the Creoles of Louisiana "Sarcelle Printanniere;" and in autumn, when scarcely an individual can be seen retaining the beauty of its spring plumage, it is known as the "Sarcelle Automniere;" in consequence of which double appellation, many persons imagine that there are two Blue-winged Teals.

They are the first Ducks that arrive in that part of the country, frequently making their appearance in the beginning of September, in large flocks, when they are exceedingly fat. They depart, however, when the cold becomes so intense as to form ice; and in this respect they differ from the Green-winged Teals, which brave the coldest weather of that country. Toward the end of February, however, they are as abundant as ever, but they are then poor, although their plumage is perfected, and the males are very beautiful. During their stay, they are seen on bayous and ponds, along the banks of the Mississippi, and on the large and muddy sand-bars around, feeding on grasses and their seeds, particularly in autumn, when they are

very fond of the wild pimento. Many remain as late as the 15th of May, in company with the Shoveller and Gadwall Ducks, with which they are usually fond of associating.

On my reaching the south-western pass of the Mississippi, on the 1st of April, 1837, I found these birds very abundant there, in full plumage, and in flocks of various sizes. On the 11th of the same month, when about a hundred miles to the westward, we saw large and dense flocks flying in the same direction. On the 15th, at Derniere Isle, the Blue-wings were very plentiful and gentle. Two days after, they were quite as numerous round Rabbit Island, in the bay called Cote Blanche; and on the 26th they were found on all the ponds and salt bayous or inlets of Galveston Island in Texas, as well as on the water-courses of the interior, where I was assured that they bred in great numbers. Though on account of the nature of the localities in which these Teals breed, and which cannot be explored otherwise than in extremely light canoes, or by risking being engulfed in oozy morasses covered with tall grass, we were not so fortunate as to find any of their nests, we could easily judge by their manœuvres both while on wing and on the water, that we were not far from their well-concealed treasures, and the females which we procured unequivocally exhibited the state of exhaustion common in the course of incubation.

During the months of September and October, this species is plentiful on the Ohio, and in the whole of the Western Country, through which they pass again in April, but without tarrying. On the other hand, they seem to prolong their stay at this season in our Eastern Districts more than in autumn; and this is also the case in South Carolina, as I learn from the observations of my friend John Bachman, who has seen them mated there as early as February. I have found them in the Boston markets on the 8th of September, but it is very rare to see any of them there in full spring dress. I saw or heard of none when I was in Labrador and Newfoundland; from which it may be inferred that those found in the Fur Countries reach them through the interior. They also occur on the Columbia river. On the 21st of March, 1821, I saw many Blue-winged Teals copulating on the Mississippi, a little below Natchez; yet none of these birds have been known to breed in that section of the country. They were at the time mentioned on a sand-bar in company with some American Widgeons, which also were similarly employed.

The flight of the Blue-winged Teal is extremely rapid and well sustained. Indeed, I have thought that, when travelling, it passes through the air with a speed equal to that of the Passenger Pigeon. When flying in flocks in clear sunny weather, the blue of their wings glistens like polished steel, so as to give them the most lively appearance; and while they are wheeling

over the places in which they intend to alight, their wings being alternately thrown in the shade and exposed to the bright light, the glowing and varied lustre thus produced, at whatever distance they may be, draws your eyes involuntarily towards them. When advancing against a stiff breeze, they alternately shew their upper and lower surfaces, and you are struck by the vivid steel-blue of their mantle, which resembles the dancing light of a piece of glass suddenly reflected on a distant object. During their flight, they almost constantly emit their soft lisping note, which they also utter when alighted and under apprehension of danger. I have never observed them travelling in company with other Ducks, but have seen them at times passing over the sea at a considerable distance from land. Before alighting, and almost under any circumstances, and in any locality, these Teals pass and repass several times over the place, as if to assure themselves of the absence of danger, or, should there be cause of apprehension, to watch until it is over. They swim buoyantly, and generally in a close body, at times nearly touching each other. Indeed, during their first appearance in autumn, when you are apt to meet with a flock entirely composed of young birds, you may, by using a little care, kill a considerable number at one shot. I was assured by a gunner residing at New Orleans, that as many as one hundred and twenty had been killed by himself at a single discharge; and I myself saw a friend of mine kill eighty-four by pulling together the triggers of his doublebarrelled gun!

The Blue-winged Teal is easily kept in captivity, and soon becomes very docile. In this state it feeds freely on coarse corn meal, and I have no doubt that it could readily be domesticated, in which case, so tender and savoury is its flesh that it would quickly put the merits of the widely celebrated Canvass-backed Duck in the shade.

In the course of my stay in East Florida, at General Hernandez's, and Mr. Bulow's, I have observed this Teal in company with the Red-breasted Snipe, the Tell-tale Godwit, and the Yellow-shank Snipe. I observed the same circumstance in Texas.

During the time of their residence on the Delaware river, they feed principally on the seeds of the wild oats, which I also found them to do whilst at Green Bay. I have been assured by persons residing on the island of Cuba, that the Blue-winged Teal is abundant, and breeds there.

The old males lose the spring plumage of the head almost entirely during a great portion of the autumn and winter, but it is reassumed sometimes as early as the beginning of January. The young of both sexes in their first plumage resemble the females, but the males acquire their full beauty before they are a year old.

Blue-winged Teal, Anas discors, Wils. Amer. Orn., vol. viii. p. 74.

Anas discors, Bonap. Syn., p. 385.

Anas discors, Blue-winged Teal, Swains. and Rich. F. Bor. Amer., vol. ii. p. 444.

Blue-winged Teal, Nutt. Man., vol. ii. p. 397.

Blue-winged Teal, Anas discors, Aud. Orn. Biog., vol. iv. p. 111.

Male, 16, 31¹/₄. Female, 15, 24.

Breeds in Texas and westward. Great Lakes. Fur Countries. Columbia river. Very abundant in autumn and spring in the Middle Atlantic Districts, as well as in the interior. Abundant also in all the Southern States.

Adult Male.

Bill almost as long as the head, deeper than broad at the base, depressed towards the end, its breadth nearly equal in its whole length, being however a little enlarged towards the rounded tip. Upper mandible with the dorsal line at first sloping, then nearly straight, on the unguis decurved, the ridge broad and flat at the base, suddenly narrowed over the nostrils, broader and convex towards the end; the sides erect at the base, afterwards sloping and convex; the narrow membranous margins a little broader towards the end. Nostrils sub-basal, near the ridge, rather small, elliptical, pervious. Lower mandible flattened, straight, with the angle very long and rather narrow, the dorsal line very short, and slightly convex, the sides internally erect, with about a hundred and twenty lamellæ.

Head of moderate size, oblong, compressed. Neck of moderate length, rather slender. Body full, depressed. Feet short, placed rather far back; tarsus short, compressed, at its lower part anteriorly with two series of scutella, the rest covered with reticulated angular scales. Toes with numerous scutella above; first toe very small and with a narrow membrane beneath; third longest, fourth about a quarter of an inch shorter; the anterior toes united by reticulated webs, of which the outer is deeply sinuate; claws small, curved, compressed, acute, the hind one smaller and more curved, that of the third toe largest, and with the inner margin sharp.

Plumage dense, soft, and blended. Feathers of the head and neck very small and slender, of the back and lower parts in general broad and rounded. Wings of moderate length, rather narrow and acute; primaries strong, slightly curved, tapering, the first scarcely longer than the second, the rest rapidly decreasing; secondaries broad, the outer obliquely rounded, the inner elongated and acuminate, as are the scapulars. Tail short, rounded and acuminate, of fourteen rather narrow, acuminate feathers.

Bill bluish-black. Iris dark hazel. Feet dull yellow, webs dusky, claws brownish-black, with the tips greyish-yellow. Upper part of the head black; a semilunar patch of pure white on the side of the head before the eye, margined before and behind with black. The rest of the head, and the anterior

parts of the neck, of a deep purplish-blue, with purplish-red reflections; the lower hind neck and fore part of back, brownish-black, glossed with green, each feather with a curved band of pale reddish-buff, and a line or band of the same in the centre; the hind part of the back greenish-brown, the feathers edged with paler. The smaller wing-coverts of a rich ultramarine blue, silky, with almost metallic lustre. Alula, primary coverts, and primary quills, greyish-brown, edged with pale bluish; outer secondaries of the same colour, those of the speculum duck-green, changing to blue and bronze, with a narrow line of white along their terminal margin; the inner greenish-black on the outer web, greenish-brown on the inner, with a central line and narrow external margin of pale reddish-buff, the more elongated scapulars similar, but some of them margined with greenish-blue. Secondary coverts brown, with their terminal portion white. Tail-feathers chocolate-brown, slightly glossed with green, their margins buffy. The lower parts are pale reddishorange, shaded on the breast with purplish-red, and thickly spotted with black, the number of roundish or elliptical spots on each feather varying from ten to twenty-five, those on the upper and hind parts of the sides running into transverse bars. Axillar feathers, some of the lower wing-coverts, and a patch on the side of the rump pure white; lower tail-coverts brownishblack.

Length to end of tail 16 inches, to end of claws $14\frac{1}{4}$, to end of wings also $14\frac{1}{4}$; extent of wings $31\frac{1}{4}$; wing from flexure $7\frac{4}{12}$; tail $3\frac{5}{12}$; bill along the back $1\frac{1}{4}$, from frontal process to tip $1\frac{1}{2}$; tarsus $1\frac{2}{12}$; first toe and claw $\frac{5}{12}$; middle toe and claw $1\frac{10}{12}$; outer toe and claw $1\frac{3}{12}$. Weight $12\frac{1}{2}$ oz.

Adult Female.

Bill greenish-dusky; iris hazel; feet of a duller yellow than those of the male; the head and neck are pale dull buff, longitudinally marked with brownish-black lines, which are broader and darker on the top of the head; the fore part of the cheeks and the throat whitish, without markings. The upper parts are dark brown, the feathers margined with brownish-white; the smaller wing-coverts coloured as in the male, but less brilliantly; no blue on the scapulars, which are also less elongated. On the lower parts, the feathers are dusky-brown, broadly margined with light brownish-grey, of which there is a streak or spot in the centre. The axillary feathers, and some of the lower wing-coverts are white, but the patch of that colour so conspicuous in the male is wanting.

Length to end of tail 15 inches, to end of wings $14\frac{1}{2}$, to end of claws $15\frac{1}{2}$; extent of wings 24; wing from flexure $7\frac{1}{4}$; tail $2\frac{7}{12}$; bill along the ridge $2\frac{2}{12}$. Weight $10\frac{1}{2}$ oz.

The young birds are similar to the female, but paler, and without the green speculum.

In a male, the roof of the mouth is deeply concave, with a prominent middle ridge, on which are a few blunt papillæ; on the upper mandible are 50 lamellæ, on the lower about 65 below, and 85 above. The tongue, 8 twelfths long, large and fleshy, has two rows of lateral bristles. The æsophagus is $8\frac{1}{2}$ inches long, 4 twelfths in diameter until the middle of the neck, when it enlarges gradually to half an inch. The proventriculus is $1\frac{1}{4}$ inches in length, with oblong glandules. The stomach is a strong roundish gizzard, 1 inch and 2 twelfths long, $1\frac{1}{2}$ inches broad; its left muscle 7 twelfths thick, the right $6\frac{1}{2}$ twelfths; its cuticular lining or epithelium of moderate thickness and longitudinally rugous. The intestine, 5 feet 1 inch long, varies in diameter from 3 to 2 twelfths; the cæca are 2 inches 10 twelfths long, cylindrical and rounded, their diameter 3 twelfths; the cloaca globular. The contents of the stomach were gravel and seeds of plants.

The trachea is 6 inches and 2 twelfths long; its diameter at the top 4 twelfths, at the middle 2 twelfths, at the lower part $3\frac{1}{2}$ twelfths. The inferior larynx is formed of three or four united rings, and has an irregular roundish bony expansion on the left side. The number of rings of the trachea is 98, of the bronchi about 25. The contractor muscles are large; cleido-tracheales and sterno-tracheales.

SHOVELLER DUCK .- MICOINE.

+ANAS CLYPEATA, Linn.

PLATE CCCXCIV .- MALE AND FEMALE.

The Creoles of Louisiana are well acquainted with this species, under the name of "Micoine," the etymology of which I am unable to trace. In that country it arrives, both from the westward and from the eastern inland districts, along with the Blue-winged Teal, or at the commencement of autumn. It associates with that species, to which, as well as to the Green-winged, the Mallard, the Dusky Duck, and the Gadwall, I should consider it very nearly allied, notwithstanding the peculiar expansion of its bill. The Shovellers remain in the lower parts of Louisiana during the whole of the winter, and depart along with the Blue-wings between the end of April and the middle



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