rounded feathers. Tongue short in proportion to the length of the bill, slender, tapering to a point; œsophagus wide, considerably dilated at the lower part of the neck; stomach an oblong gizzard of moderate strength, its epithelium hard, longitudinally rugous; intestine long and of moderate width; cœca rather long.

AMERICAN AVOSET.

† *RECURVIROSTRA AMERICANA*, Linn.

PLATE CCCLIII.—ADULT MALE, AND YOUNG IN WINTER.

The fact of this curious bird's breeding in the interior of our country accidentally became known to me in June 1814. I was at the time travelling on horseback from Henderson to Vincennes in the State of Indiana. As I approached a large shallow pond in the neighbourhood of the latter town, I was struck by the sight of several Avosets hovering over the margins and islets of the pond, and although it was late, and I was both fatigued and hungry, I could not resist the temptation of endeavouring to find the cause of their being so far from the sea. Leaving my horse at liberty, I walked toward the pond, when, on being at once assailed by four of the birds, I felt confident that they had nests, and that their mates were either sitting or tending their young. The pond, which was about two hundred yards in length, and half as wide, was surrounded by tall bulrushes extending to some distance from the margin. Near its centre were several islets, eight or ten yards in length, and disposed in a line. Having made my way through the rushes, I found the water only a few inches deep; but the mud reached above my knees, as I carefully advanced towards the nearest island. The four birds kept up a constant noise, remained on wing, and at times dived through the air until close to me, evincing their displeasure at my intrusion. My desire to shoot them however was restrained by my anxiety to study their habits as closely as possible; and as soon as I had searched the different inlets, and found three nests with eggs, and a female with her brood, I returned to my horse, and proceeded to Vincennes, about two miles distant. Next morning at sunrise I was snugly concealed amongst the rushes, with a fair view of the whole pond. In about an hour the male ceased to fly over

American Flamingo

Young in their Winter Plumage. Adult in the Distance.

Drawn from Nature by J. T. Audubon F.R.S.E.L.S.

Engr'd, Printed & Col'd by J. T. Bowen Phila.

me, and betook themselves to their ordinary occupations, when I noted the following particulars.

On alighting, whether on the water or on the ground, the American Avoset keeps its wings raised until it has fairly settled. If in the water, it stands a few minutes balancing its head and neck, somewhat in the manner of the Tell-tale Godwit. After this it stalks about searching for food, or runs after it, sometimes swimming for a yard or so while passing from one shallow to another, or wading up to its body, with the wings partially raised. Sometimes they would enter among the rushes, and disappear for several minutes. They kept apart, but crossed each other's path in hundreds of ways, all perfectly silent, and without shewing the least symptom of enmity towards each other, although whenever a Sandpiper came near, they would instantly give chase to it. On several occasions, when I purposely sent forth a loud shrill whistle without stirring, they would suddenly cease from their rambling, raise up their body and neck, emit each two or three notes, and remain several minutes on the alert, after which they would fly to their nests, and then return. They search for food precisely in the manner of the Roseate Spoonbill, moving their heads to and fro sideways, while their bill is passing through the soft mud; and in many instances, when the water was deeper, they would immerse their whole head and a portion of the neck, as the Spoonbill and Red-breasted Snipe are wont to do. When, on the contrary, they pursued aquatic insects, such as swim on the surface, they ran after them, and on getting up to them, suddenly seized them by thrusting the lower mandible beneath them, while the other was raised a good way above the surface, much in the manner of the Black Shear-water, which, however, performs this act on wing. They were also expert at catching flying insects, after which they ran with partially expanded wings.

I watched them as they were thus engaged about an hour, when they all flew to the islets where the females were, emitting louder notes than usual. The different pairs seemed to congratulate each other, using various curious gestures; and presently those which had been sitting left the task to their mates and betook themselves to the water, when they washed, shook their wings and tail, as if either heated or tormented by insects, and then proceeded to search for food in the manner above described. Now, reader, wait a few moments until I eat my humble breakfast.

About eleven o'clock the heat had become intense, and the Avosets gave up their search, each retiring to a different part of the pond, where, after pluming themselves, they drew their heads close to their shoulders, and remained perfectly still, as if asleep, for about an hour, when they shook themselves simultaneously, took to wing, and rising to the height of thirty or forty yards, flew off towards the waters of the Wabash river.

I was now desirous of seeing one of the sitting birds on its nest, and leaving my hiding place, slowly, and as silently as possible, proceeded toward the nearest islet on which I knew a nest to be, having the evening before, to mark the precise spot, broken some of the weeds, which were now withered by the heat of the sun. You, good reader, will not, I am sure, think me prolix; but as some less considerate persons may allege that I am tediously so, I must tell them here that no student of Nature ever was, or ever can be, too particular while thus marking the precise situation of a bird's nest. Indeed, I myself have lost many nests by being less attentive. After this short but valuable lecture, you and I will do our best to approach the sitting bird unseen by it. Although a person can advance but slowly when wading through mud and water knee-deep, it does not take much time to get over forty or fifty yards, and thus I was soon on the small island where the Avoset was comfortably seated on her nest. Softly and on all four I crawled toward the spot, panting with heat and anxiety. Now, reader, I am actually within three feet of the unheeding creature, peeping at her through the tall grasses. Lovely bird! how innocent, how unsuspecting, and yet how near to thine enemy, albeit he be an admirer of thy race! There she sits on her eggs, her head almost mournfully sunk among the plumage, and her eyes, unanimated by the sight of her mate, half closed, as if she dreamed of future scenes. Her legs are bent beneath her in the usual manner. I have seen this, and I am content. Now she observes me, poor thing, and off she scrambles,—running, tumbling, and at last rising on wing, emitting her clicking notes of grief and anxiety, which none but an inconsiderate or callous-hearted person could hear without sympathizing with her.

The alarm is sounded, the disturbed bird is floundering hither and thither over the pool, now lying on the surface as if ready to die, now limping to induce me to pursue her and abandon her eggs. Alas, poor bird! Until that day I was not aware that gregarious birds, on emitting cries of alarm, after having been scared from their nest, could induce other incubating individuals to leave their eggs also, and join in attempting to save the colony. But so it was with the Avosets, and the other two sitters immediately rose on wing and flew directly at me, while the one with the four younglings betook herself to the water, and waded quickly off, followed by her brood, which paddled along swimming, to my astonishment, as well as ducklings of the same size.

How far such cries as those of the Avoset may be heard by birds of the same species I cannot tell; but this I know, that the individuals which had gone toward the Wabash reappeared in a few minutes after I had disturbed the first bird, and hovered over me. But now, having, as I thought, obtain-

ed all desirable knowledge of these birds, I shot down five of them, among which I unfortunately found three females.

The nests were placed among the tallest grasses, and were entirely composed of the same materials, but dried, and apparently of a former year's growth. There was not a twig of any kind about them. The inner nest was about five inches in diameter, and lined with fine prairie grass, different from that found on the islets of the pond, and about two inches in depth, over a bed having a thickness of an inch and a half. The islets did not seem to be liable to inundation, and none of the nests exhibited any appearance of having been increased in elevation since the commencement of incubation, as was the case with those described by WILSON. Like those of most waders, the eggs were four in number, and placed with the small ends together. They measured two inches in length, one inch and three-eighths in their greatest breadth, and were, exactly as WILSON tells us, "of a dull olive-colour, marked with large irregular blotches of black, and with others of a fainter tint." To this I have to add, that they are pear-shaped and smooth. As to the time of hatching, I know nothing.

Having made my notes, and picked up the dead birds, I carefully waded through the rushes three times around the whole pond, but, being without my dog, failed in discovering the young brood or their mother. I visited the place twice the following day, again waded round the pond, and searched all the islets, but without success: not a single Avoset was to be seen; and I am persuaded that the mother of the four younglings had removed them elsewhere.

Since that time my opportunities of meeting with the American Avoset have been few. On the 7th of November, 1819, while searching for rare birds a few miles from New Orleans, I shot one which I found by itself on the margin of Bayou St. John. It was a young male, of which I merely took the measurements and description. It was very thin, and had probably been unable to proceed farther south. Its stomach contained only two small fresh-water snails and a bit of stone. In May 1829, I saw three of these birds at Great Egg Harbour, but found no nests, although those of the Long-legged Avoset of WILSON were not uncommon. My friend JOHN BACHMAN considers them as rare in South Carolina, where, however, he has occasionally seen some on the gravelly shores of the sea islands.

On the 16th of April, 1837, my good friend Captain NAPOLEON COSTE, of the United States Revenue Cutter the Campbell, on board of which I then was, shot three individuals of this species on an immense sand-bar, intersected by pools, about twelve miles from Derniere Island on the Gulf of Mexico, and brought them to me in perfect order. They were larger, and perhaps handsomer, than any that I have seen; and had been killed out of a

flock of five while feeding. He saw several large flocks on the same grounds, and assured me that the only note they emitted was a single whistle. He also observed their manner of feeding, which he represented as similar to that described above.

My friend THOMAS NUTTALL says in a note, that he "found this species breeding on the islands of shallow ponds throughout the Rocky Mountains about midsummer. They exhibited great fear and clamour at the approach of the party, but no nests were found, they being then under march." Dr. RICHARDSON states, that it is abundant on the Saskatchewan Plains, where it frequents shallow lakes, and feeds on insects and small fresh-water crustacea.

The flight of the American Avoset resembles that of the *Himantopus nigricollis*. Both these birds pass through the air as if bent on removing to a great distance, much in the manner of the Tell-tale Godwit, or with an easy, rather swift and continued flight, the legs and neck fully extended. When plunging towards an intruder, it at times comes downwards, and passes by you, with the speed of an arrow from a bow, but usually in moving off again, it suffers its legs to hang considerably. I have never seen one of them exhibit the bending and tremulous motions of the legs spoken of by writers, even when raised suddenly from the nest; and I think that I am equally safe in saying, that the bill has never been drawn from a fresh specimen, or before it has undergone a curvature, which it does not shew when the bird is alive. The notes of this bird resemble the syllable *click*, sometimes repeated in a very hurried manner, especially under alarm.

AMERICAN AVOSET, *Recurvirostra Americana*, Wils. Amer. Orn., vol. vii. p. 126.

RECURVIROSTRA AMERICANA, Bonap. Syn., p. 394.

RECURVIROSTRA AMERICANA, *American Avocet*, Swains. and Rich. F. Bor. Amer., vol. ii. p. 375.

AMERICAN AVOSET, Nutt. Man., vol. ii. p. 74.

AMERICAN AVOSET, *Recurvirostra Americana*, Aud. Orn. Biog., vol. iv. p. 168.

Male, 18, 30½.

Passes along the coast from Texas northward, in small numbers, a few breeding in New Jersey. Indiana, Illinois, and Missouri. Abundant in the Rocky Mountains and the Fur Countries. Migratory.

Adult Male.

Bill more than twice the length of the head, very slender, much depressed, tapering to a point, and *slightly* recurved. Upper mandible with the dorsal line straight for half its length, then a little curved upwards, and at the tip slightly decurved, the ridge broad and flattened, the edges rather thick, the nasal groove rather long and very narrow. Nostrils linear, basal, pervious. Lower mandible with the angle long and very narrow, the dorsal line

slightly curved upwards, the point very slender, extremely thin and a little curved upwards.

Head small, rounded above, rather compressed. Neck long. Body compact, ovate. Legs very long, slender; tibia elongated, bare for half its length, and reticulated; tarsus very long, compressed, reticulated with hexagonal scales; toes rather short, the first extremely small; outer toe a little longer than inner; the anterior toes connected by webs of which the anterior margin is deeply concave, the lateral toes thickly margined. Claws very small, compressed, rather blunt.

Plumage soft and blended. Wings long, of moderate breadth, pointed; primaries straightish, tapering, the first longest, the rest rapidly graduated; secondaries broad, incurved, the outer rounded, the rest becoming pointed, the inner elongated and tapering. Tail short, even, of twelve rather narrow, rounded feathers.

Bill black. Iris bright carmine. Feet light blue, webs flesh-coloured towards their edges, claws black. Head, neck, and fore part of breast, reddish-buff, the parts around the base of the bill and the eye nearly white. The back is white; but on its fore part is a longitudinal band of brownish-black elongated feathers on each side, and the inner scapulars are of the same colour, the outer and the anterior edge of the wing being white. The wing brownish-black, with a broad band of white formed by the tips of the secondary coverts, four of the inner secondaries, and the basal part, with the inner webs and outer edges of the rest. The under parts white, excepting some of the primary quills and some of their coverts, which are greyish-brown.

Length to end of tail 18 inches, to end of wings $18\frac{1}{2}$, to end of claws $23\frac{1}{2}$; extent of wings $30\frac{5}{8}$; wing from flexure $9\frac{1}{2}$; tail $3\frac{1}{2}$; bill along the ridge $3\frac{3}{4}$; bare part of the tibia $2\frac{3}{12}$; tarsus $3\frac{5}{8}$; hind toe and claw $\frac{3}{12}$; middle toe and claw $1\frac{10}{12}$; breadth of foot extended $2\frac{5}{8}$. Weight $16\frac{3}{4}$ oz.

The Female is similar to the male, but somewhat smaller.

Young in winter.

The young in winter is similar to the adult, but with the head and neck white, the dark colours of a browner tint.

Length to end of tail 18 inches, to end of wings $18\frac{1}{2}$; extent of wings $30\frac{1}{2}$. Weight 13 oz.

In structure the Avosets are similar to the Numenii and Totani. In an adult female the tongue is very short in proportion to the length of the bill, being only $1\frac{3}{4}$ inches long, slightly emarginate at the base with a few conical papillæ, slender, tapering to a point, horny on the back, and flattened above. On the palate are two longitudinal series of blunt papillæ. The posterior aperture of the nares is linear, 10 twelfths long, papillate on the edges. The œsophagus is 7 inches and 9 twelfths long, inclines to the right side, and

when the neck is bent becomes posterior at the middle, as in the Herons and other long-necked birds; its diameter 5 twelfths at the upper part, dilated to 8 twelfths previous to its entrance into the thorax. The proventriculus is 1 inch long and 7 twelfths in diameter; its glandules cylindrical, 1 twelfth long. The stomach is a gizzard of moderate strength, oblong, $1\frac{1}{2}$ inches in length, 10 twelfths in breadth, its right lateral muscle 4 twelfths thick. Its contents were remains of small shells. Its inner membrane of moderate thickness, hard, longitudinally rugous, and deeply tinged with red. The intestine is 3 feet long, and 4 twelfths in diameter; the rectum 2 inches long; of the cœca one is $2\frac{3}{4}$ inches long, the other $2\frac{1}{4}$, their diameter 2 twelfths.

In another individual the intestine is 3 feet 9 inches long; one of the cœca $2\frac{3}{4}$ inches, the other 3; the stomach $1\frac{1}{2}$ by $1\frac{1}{12}$. Its contents small shell-fish and fragments of quartz.

The trachea is $6\frac{1}{2}$ inches long; its rings extremely thin and unossified, 140 in number, its diameter $3\frac{1}{4}$ twelfths, nearly uniform throughout, but rather narrower in the middle. The lateral muscles are very thin. The bronchi are short, of about 10 rings.

GENUS IX.—HIMANTOPUS, *Briss.* STILT.

Bill about twice as long as the head, very slender, roundish, tapering, slightly recurved; upper mandible with its outline slightly curved upwards, the ridge rather flattened, the sides convex, the edges inflected, the tip narrow and rather acute; nasal groove nearly half the length of the bill; lower mandible with the angle very long and narrow, the sides grooved as far as the angle. Nostrils linear, direct, sub-basal. Head small, ovate, rounded above; neck very long and slender; body rather compact. Legs extremely elongated, slender; tibia bare for more than half its length, covered anteriorly with large curved scutella; tarsus very long, moderately compressed, scutellate before, reticulate on the sides; toes of moderate length, slender; first toe wanting; outer a little longer than inner, anterior toes webbed at the base. Claws small, nearly straight, moderately compressed. Plumage ordinary. Wings very long, of moderate breadth, acute, the first quill longest. Tail short, even, of twelve feathers.

American Flamingo

Young in their Winter Plumage. Adult in the Distance.

Drawn from Nature by J. T. Audubon F.R.S.E.L.S.

Engr'd, Printed & Col'd by J. T. Bowen Phila.

Audubon, John James. 1843. "American Avoset, *Recurvirostra americana*, Linn. [Pl. 353]." *The birds of America : from drawings made in the United States and their territories* 6, 24–30. <https://doi.org/10.5962/p.319467>.

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