breast faintly barred with grey. The upper part of the head, and the hind part and sides of the neck are greyish-white, with longitudinal central greyish-brown markings. The scapulars and inner secondaries are greyish-brown, the feathers edged with greyish-white, and lined or mottled with dark brown towards the margins; the smaller wing-coverts plain, the larger darker near the edge and margined with whitish, as are the outer secondaries; the primary quills and their coverts dark brown, the shaft of the outer white. The tail is greyish-white, undulated with light brown, the four outer feathers on each side with only a series of spots on the outer edge, which on the outermost feathers is almost obliterated.

Length to end of tail 11 inches, to end of wings 12; wing from flexure 7; tail 3; bill along the back $2\frac{2}{12}$, along the edge of lower mandible $2\frac{2}{12}$; bare part of tibia $1\frac{5}{12}$; tarsus $2\frac{5}{12}$; middle toe $1\frac{2}{12}$, its claw $\frac{3}{12}$.

THE SEMIPALMATED SNIPE, OR WILLET.

†TOTANUS SEMIPALMATUS, *Lath.*

PLATE CCCXLVII.—MALE AND FEMALE.

Many individuals of this fine species spend the winter in our Southern States, and the extent of its migration northwards is comparatively limited. Some are occasionally seen as far eastward as the neighbourhood of Boston, and a few have been known to breed not far from New Bedford in Massachusetts; but beyond that state the species may be said to be unknown. Their propensity to remain at all seasons in the immediate vicinity of the coast is such, that they are very seldom met with far inland, even along large rivers, on the margins of which they might find the food they usually prefer. I once shot one in autumn on the lower part of the Ohio, but it was much emaciated, and I concluded that its appearance there was merely accidental. From the mouth of the Mississippi to New York it is pretty generally found during the breeding season; but all the individuals betake themselves in winter to the shores of Carolina, Georgia, Florida, and the countries bordering the Mexican Gulf. I have very little doubt that those seen by Mr. SAY on the banks of the Missouri had accidentally visited that

Semipalmated Plover Males or Stone Plovers

i. Male, Spring Plumage & Female in Winter

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

Tab. 4. Printed & Col. by J. T. Bowen Phila.

country, as the favourite haunts of this species at all seasons are the salt-marshes and sea-shores. It is well ascertained that it occurs on the western coast, and I have seen many skins of it recently brought from the mouth of the Columbia river. It is probably from thence that it migrates to the shores of the Saskatchewan, where it was observed by Dr. RICHARDSON along the small saline lakes.

In the Middle States, the Semipalmated Snipe is known to every fisherman gunner by the name of "Willet;" and from the Carolinas southward by that of "Stone Curlew." In the latter districts, during autumn and winter, it resorts to the stony shores of estuaries, the banks of racoon oysters, and the extensive salt marshes so common there along the coast. On the 1st of May, 1832, while rambling over some large and partially submersed islets of the Floridas called Duck Keys, scantily covered with bushes and some mangroves, I saw a good number of these birds in company with the Great Marbled Godwit. The Willets were all paired and very clamorous, although we found none of their nests. To my great surprise, I saw them alight on the bushes and trees with as much ease as if they had been land birds, stand erect, open their wings to the sun, and await our approach, exhibiting, when thus perched, much less shyness than when on the ground. Until then I had never observed such a habit in this bird, and indeed had felt surprised at seeing the Bartramian Sandpiper, *Tringa Bartramia*, alight on fences and trees. Nothing of this kind is mentioned by WILSON, who, however, speaks of both species as if he were well acquainted with their habits. A few days after my visit to the Duck Keys, some nests containing eggs were found on other islets not far distant.

Along the shores of the Carolinas, this species begins to lay about the beginning of April; but in the Middle States, in New Jersey, for example, it seldom makes its appearance before the 15th of April, and does not begin to breed until a month later. At the approach of the love season, the Willets shew a great degree of vivacity, ramble much on wing, and fill the air with their sharp cries. Once mated, they attend to the security of their eggs and brood with affectionate care, and are silent until disturbed by the approach of some of their numerous enemies. The sight of a Crow, a Turkey Buzzard, a quadruped of any kind, and more especially of a gunner, at once excites the greatest alarm; and, rising on wing, they fly above and around you at a considerable distance, vociferating their anger with great vehemence, and continually endeavouring to allure you away from the spot where their treasure is concealed. Should they have young broods, they not unfrequently alight within sight, emit clicking and querulous notes, raise their wings upright, and run over the ground as if wounded, moving in so pitiable a manner as frequently to excite a good feeling towards them in the gunner,

who, should he be a parent himself, is almost sure to leave them unmolested. When much pursued, the birds join and form a flock, the individuals of which continue to wheel through the air, at some distance from their nests, until their enemy has departed.

The Semipalmated Snipe is at all times a shy and wary bird, so that in approaching it the sportsman requires to use the greatest caution. The method which I found most effectual was to employ a well-trained dog, and conceal myself among the rankest herbage of the marshes. The Willets rarely failed to fly close over the dog, and as he now and then, playfully, as it were, approached me, the birds came within shooting distance. On such occasions, if one is brought down, another may follow, provided the sportsman is quick; but, after being thus shot at, the Willets generally take a long circuit, and remove towards some clear spot near the water, where they alight and watch your motions. The cries of one suffice to alarm all within hearing, and you see all of them with outstretched legs and necks running away as you approach. Often at the very instant when you are preparing to shoot, they all rise on wing, fly across some bay or creek, and betake themselves to the marsh, where they are safe from your pursuit.

During winter you frequently see these birds in the Southern States along the naked shores. The moment they see you the cry of alarm is sounded, and the flock, which now consists of one, two, or perhaps three families, suffer you to come almost within shot, as if purposely to tantalize you, but at this moment fly off circuitously over the water, and alight at the distance of some hundred yards. At such times you may procure them by floating your boat quietly along the shores; but the experiment rarely succeeds on the same flock more than once. When they are on large racoon-oyster beds, it is almost impossible to approach them; and if there should be a few Curlews or Oyster-catchers among them, it were better for you to go in search of some other game.

The flight of this species is strong, rapid, and greatly protracted. Its movements on wing greatly resemble those of the Oyster-catcher, and, unless during the breeding season, are performed low over the waters. They seldom rise without emitting their usual notes, which resemble the syllables *will-willet*, or *will, will, willet*, and are different from the softer and more prolonged whistling notes which they emit during the love season. They generally travel in flocks, even in spring, and congregate for the purpose of breeding, being attracted when passing by the notes of those which have already arrived at a chosen spot. The males and females remain together until autumn, when several families join and live peaceably together. When wounded and brought to the water, they swim tolerably well, but do not dive, although they now and then, on being approached, try to submerge themselves.

The Willets retire to the interior of the larger salt-marshes for the purpose of forming their nests and raising their broods in security. There, in the vicinity of the shallow pools, which frequently occur in such places, the bird prepares a nest on the ground, among the rank grass, of which the tene-ment itself is composed. It is usually raised to the height of from three to five inches, and is, I believe, annually augmented or repaired. WILSON says that this augmentation or raising of the nest is carried on whilst the Willet is laying and sitting; but this I have never observed. The eggs, usually four in number, are placed with the broad end outwards, as is the case with those of most birds of this tribe. They measure two inches and one-eighth in length, by one inch and a half in breadth, are much flattened at the larger end, and more or less pointed at the other. The shell is smooth, of a dull yellowish-olive tint, irregularly spotted and blotched with dark umber. The eggs afford excellent eating. Both birds incubate, sitting alternately day and night. The young run about on leaving the shell, and are carefully fed by their parents. They are of a greyish hue, and covered with down, but soon shew feathers, grow rapidly, become fat and juicy, and by the time they are able to fly, afford excellent food. At the first moult they acquire their full plumage.

The food of the Willet consists of aquatic insects, small crabs, and fiddlers, which they procure either by pursuing them on foot or by probing for them in their burrows, along the mud-bars, and in the crevices of the creeks and salt-water ditches. I have also observed it turning over stones and shells to seek for worms beneath them.

The males are smaller than the females. I have presented you with figures of the adult both in the winter and summer plumage.

SEMIPALMATED SNIPE, *Scolopax semipalmata*, Wils. Amer. Orn., vol. vii. p. 27.

TOTANUS SEMIPALMATUS, *Semipalmated Tatler*, Swains. and Rich. F. Bor. Amer., vol. ii. p. 388.

SEMIPALMATED SNIPE OR WILLET, Nutt. Man., vol. ii. p. 144.

SEMIPALMATED SNIPE OR WILLET, *Totanus semipalmatus*, Aud. Orn. Biog., vol. iii. p. 510; vol. v. p. 585.

Male, $15\frac{1}{2}$, $27\frac{3}{4}$. Female, $15\frac{1}{2}$, 31.

Breeds abundantly in Texas, and along the Atlantic shores to New York, sparingly as far as Massachusetts. Constant resident in the Southern States. Rare in the interior.

Adult Male in spring.

Bill long, slender, compressed, tapering, straight or recurved in an almost imperceptible degree. Upper mandible with the dorsal line straight, the ridge convex, flattened at the base, the sides grooved to the middle, after-

wards convex, the edges broad and flattened, the breadth of the mandible a little increased towards the point, which is narrowed, slightly deflected and obtuse. Nostrils sub-basal, linear, pervious, nearer the edge than the dorsal line. Lower mandible with the angle very narrow and medial, beyond it the outline slightly ascending and straight, sides grooved as far as the angle, and convex, the edges broad and flat, the point narrow and slightly incurved.

Head small, oblong, narrowed before. Neck rather long, slender. Body slender. Feet long and slender; tibia bare for nearly half its length, scutellate before and behind; tarsus long, slender, covered before and behind with numerous scutella, the narrow lateral spaces with extremely small oblong scales. Toes small, slender, scutellate above, flat beneath, marginate, the anterior toes connected by basal membranes which extend along their sides, the outer membrane larger than the inner; first toe extremely small, second and fourth about equal, third little longer. Claws small, compressed, slightly arched, obtuse, that of third toe with a dilated inner edge.

Plumage soft and blended, on the fore part of the head very short, on the neck short and very soft. Wings long, very acute, narrow; primaries tapering and rounded, the first longest, the second little shorter, the rest rapidly graduated; secondaries obliquely rounded, the inner elongated and tapering. Tail short, of twelve narrow, rounded feathers, the two middle ones a little longer than the rest.

Bill light blue, dusky towards the end. Iris brown. Feet light blue; claws black. Head and neck brownish-grey, streaked with blackish-brown; the throat, and a band from the bill over the eye, white. Fore part of back and scapulars brownish-grey, variegated with central markings and bars of blackish-brown; the hind part of the back brownish-grey, with a gloss of olive. Wing-coverts grey, with central lines of brownish-black; primary coverts and primary quills brownish-black, but the latter white in their basal half; outer secondaries white, inner like the scapulars. Lower wing-coverts dusky; breast and sides white, the latter undulatingly barred with brownish-black; abdomen and lower and upper tail-coverts white, some of them, however, with a few dusky bars. The four middle tail-feathers are barred with brownish-black and brownish-grey, the rest pale grey fading to white on the outer, and all more or less minutely mottled with pale brown.

Length to end of tail $15\frac{1}{4}$ inches, to end of wings 15, to end of claws $17\frac{1}{2}$; extent of wings $27\frac{3}{4}$; wing from flexure $8\frac{1}{4}$; tail $3\frac{2}{12}$; bill along the back $2\frac{1}{4}$; along the edge of lower mandible $2\frac{4}{12}$; tarsus $2\frac{1}{4}$; middle toe $1\frac{5}{12}$, its claw $\frac{1}{4}$. Weight 7 oz.

Adult Female in winter.

In winter the upper parts are light brownish-grey, the fore part of the neck and the sides of the same colour but paler; the throat, breast, abdomen,

and rump white; the lower and upper tail-coverts with a few undulated lines of brownish-grey; the wings as in summer, as is the tail, only that the middle feathers are grey.

Length $15\frac{1}{2}$ inches; wing from flexure $8\frac{1}{2}$; extent of wings 31; tail $3\frac{1}{4}$; bill along the back $2\frac{7}{12}$, along the edge of lower mandible $2\frac{6\frac{1}{2}}{12}$; tarsus $1\frac{7}{12}$; middle toe $1\frac{5}{12}$, its claw $\frac{1}{4}$. Weight 10 oz.

FEMALE. Length to end of tail $15\frac{1}{2}$ inches, to end of wings 16, to end of claws $18\frac{1}{4}$; wing from flexure $9\frac{1}{2}$; tail $3\frac{1}{2}$; bill along the ridge $2\frac{7}{12}$, along the edge of lower mandible $2\frac{8}{12}$; bare part of tibia $1\frac{5}{12}$; tarsus $2\frac{7}{12}$; first toe $\frac{5}{12}$, its claw $\frac{1}{12}$; second toe $1\frac{2}{12}$, its claw $\frac{1\frac{1}{2}}{12}$; third toe $1\frac{4\frac{1}{2}}{12}$, its claw $\frac{3\frac{1}{2}}{12}$; fourth toe $1\frac{3}{12}$, its claw $\frac{2}{12}$; extent of wings $30\frac{1}{4}$.

Mouth very narrow, its width being only 5 twelfths; the two longitudinal ridges on the palate remarkably elevated and thin; two series of papillæ; posterior aperture of nares linear; anterior part of upper mandible flat, with a median prominent line, and thin projecting edges; lower mandible deeply grooved. Tongue 1 inch 8 twelfths long, trigonal, slender, tapering to a slender horny channelled point; its base emarginate and papillate. Œsophagus, *a b c*, $6\frac{3}{4}$ inches in length, 11 twelfths in width; proventriculus, *b c*, 10 twelfths broad. Stomach, *c d e*, a very strong gizzard, of a roundish form, $1\frac{1}{2}$ inches long, and of the same breadth; its lateral muscles very large and distinct, as are the tendons; epithelium very thick, dense, with two oblong grinding plates, each having

four broad longitudinal rugæ, and of a bright red colour. Intestine, *efghij*, 3 feet 3 inches long, only 3 twelfths in width at the upper part, toward the rectum 2 twelfths. Cæca, *ii*, $3\frac{1}{4}$ inches long; their distance from the extremity 3 inches; their width 2 twelfths, the extremity rounded.

Trachea $5\frac{1}{4}$ inches long, from $3\frac{1}{2}$ twelfths to 2 twelfths in breadth, much flattened; its rings unossified, 125, and 1 dimidiate. Proventricular half rings 15. Lateral muscles rather strong; a single pair of inferior or laryngeal muscles.

GENUS V.—LIMOSA, *Briss.* GODWIT.

Bill very long, slender, sub-cylindrical, tapering to an obtuse point, slightly recurved; upper mandible with the dorsal line slightly curved upwards, the ridge convex, the sides with a narrow groove extending almost to the point, the edges rather obtuse, the tip very slightly enlarged; lower mandible with the angle very long and extremely narrow, the sides with a narrow groove extending almost to the end, the edges blunt, the tip obtuse. Nostrils basal, linear, nearer the edge. Head small, oblong; neck rather long, slender; body slender. Feet long and slender; tibia bare for about a third, anteriorly scutellate; tarsus long, slender, scutellate before and behind; toes small, slender, scutellate above; anterior connected by webs at the base, first very small. Claws small, compressed, slightly arched, obtuse. Plumage soft and blended. Wings rather long, narrow, very acute; primaries tapering, the first longest, the inner secondaries elongated. Tail short, even, of twelve narrow rounded feathers.

2.

W.H.

Semipalmated Snipe Males or Stone Curlews

i. Male, Spring Plumage & Female in Winter

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

Tab. 4. Printed & Col. by J. T. Bowen Phila.

Audubon, John James. 1842. "The Semipalmated Snipe, or Willet, *Totanus semipalmatus*, Lath. [Pl. 347]." *The birds of America : from drawings made in the United States and their territories* 5, 324–330. <https://doi.org/10.5962/p.319460>.

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