small lanceolate central brownish-black spots; the rest of the lower parts white.

Length to end of tail $7\frac{1}{2}$ inches, to end of wings $7\frac{7}{12}$, to end of claws $7\frac{9}{12}$; extent of wings $14\frac{3}{4}$, bill along the back $\frac{10\frac{1}{2}}{12}$, along the edge of lower mandible $\frac{11}{12}$; wing from flexure $4\frac{10\frac{1}{2}}{12}$; tail $2\frac{2}{12}$; tarsus $\frac{11}{12}$; middle toe $\frac{9\frac{1}{2}}{12}$, its claw $\frac{2}{12}$.

Adult Female in winter.

The female is similar to the male, but a little smaller.

In some individuals, about six of the middle tail-coverts are black, the lateral barred with white and dusky.

SEMIPALMATED SANDPIPER.

+*TRINGA SEMIPALMATA*, *Wils.*

PLATE CCCXXXVI.—ADULT.

This species enters the Texas early in April, in great numbers, although in small parties, some composed of young, others of old birds, and not unfrequently accompanied by other species. At this season it moves northward with celerity, both along the shores of the sea and those of some of our larger streams, by routes which they also follow in their retrograde migration at the approach of winter. Many, however, remain in the southern parts of the United States all summer, and I have seen numbers of them on the coasts, as well as on the Keys of Florida. There being a very remarkable difference of size in individuals of the same sex, and still more between males and females, the latter being the larger, I was induced to compare a great number of them, and in consequence have concluded that the difference depends on age, for the young of either sex are generally pretty similar as to the length of the bill and legs, during their first autumn and winter. In Labrador I shot a whole brood when just able to fly, together with several old birds, which kept apart. Among the latter I found differences as to size and proportions enough to induce persons having nothing better than skins, to imagine that several species might be made out of them.

About the period when these birds prepare to return southward, they congregate in large flocks, the young separate from the old. In Labrador this

takes place from the beginning to the middle of August. There I found this species dispersed in pairs, and having nests, early in June; but all our endeavours to procure any were fruitless, so cunningly had they disposed of them, and so effectually did they mislead us by squatting on the moss for several minutes at a time, as if sitting on their eggs. On our approaching them on such occasions, they would run or fly off to a short distance, in various directions, and renew their wiles.

I have often seen considerable flocks of this species along the shores of the Ohio and Mississippi during autumn, and have reason to believe that some are also to be found then on the Missouri. At this season, when they feed on fresh-water insects, worms, and small coleoptera, they are very fat, and afford excellent eating; which is rarely the case when they are along the seashores, as their food then consists of small shell-fish and marine insects, for which they are often seen probing the sands in the manner of Curlews. They are active, quarrelsome, and impatient, moving from one spot to another unexpectedly, and perhaps returning to the same place a few minutes after. On taking wing, they utter their *tweet tweet* simultaneously, and whilst on the ground emit murmuring sounds peculiar to themselves. Their flight is swift and well-sustained, and when alarmed, or previous to alighting, their evolutions through the air are very pleasing to the beholder.

SEMIPALMATED SANDPIPER, *Tringa semipalmata*, Wils. Amer. Orn., vol. vii. p. 131.

TRINGA SEMIPALMATA, Bonap. Syn., p. 316.

SEMIPALMATED SANDPIPER, Nutt. Man., vol. ii. p. 136.

SEMIPALMATED SANDPIPER, *Tringa semipalmata*, Aud. Orn. Biog., vol. v. p. 110.

Adult, $6\frac{3}{4}$, $12\frac{1}{2}$.

Exceedingly abundant from Texas to Maine, in winter, spring, and autumn. Breeds from Labrador northward. Columbia river. Migratory.

Bill as long as the head, slender, straight, compressed, tapering from the base to near the point, which is slightly swelled, but with the tip rather acute. Upper mandible with the dorsal line straight, the ridge narrow and convex, a little broader and flattened towards the end, the sides sloping, with the nasal groove extending to near its tip; lower mandible with the angle very long and narrow, the outline straight, towards the end slightly declinate, the sides sloping a little outwards, with a groove extending to near the tip, which is a little widened and rather obtuse.

Head of moderate size, oblong, compressed. Neck rather short. Body compact, ovate. Feet of moderate length and slender; tibia bare a fourth of its length; tarsus of moderate length, compressed, scutellate before and behind, so as to leave scarcely any intermediate space; hind toe very short and extremely slender; anterior toes rather long, slender, connected by webs, of

which the outer is larger, and extends to opposite the second joint of the third toe, both however margining the toes to their extremity; the outer toe a little longer than the inner, and not much exceeded by the third. Claws small, much compressed, tapering, slightly arched, that of the third toe larger, with the inner edge a little dilated.

Plumage soft, blended on the neck and lower parts, somewhat compact on the upper. Wings long, pointed; primaries tapering, obtuse, the first longest, the second a twelfth and a half shorter, the rest rapidly graduated; outer secondaries incurved, obliquely pointed, inner straight, tapering, one of them reaching to nine-twelfths of an inch from the tip of the longest primary. Tail rather short, doubly emarginate, that is, with the middle feathers a quarter of an inch longer than the lateral, which are a little longer than some of the intermediate.

Bill greenish-dusky; iris hazel; feet dull yellowish-green, claws black. The upper part of the head, the cheeks, the hind part and sides of the neck are ash-grey, streaked with dusky; on the rest of the upper parts the feathers are dusky-brown, margined with pale grey, those on the rump and the upper tail-coverts blackish-brown; secondary coverts tipped with white; alula and primary coverts brownish-black, the latter tipped with white; primary quills greyish-black, with white shafts; secondary quills gradually more grey; the primaries externally edged with white toward the base, as are the outer secondaries in a fainter degree, as well as terminally, some of them also having the greater part of the inner web greyish-white. The two middle tail-feathers greyish-black on the inner web, their outer web and all the other feathers ash-grey. The anterior part of the forehead and a band over the eye greyish-white; the lower parts of the neck and body white.

Length to end of tail $6\frac{3}{4}$ inches; to end of wings $6\frac{3}{4}$, to end of claws $7\frac{1}{8}$; extent of wings $12\frac{1}{2}$; bill along the ridge $1\frac{1}{12}$; wing from flexure 4; tail $1\frac{8}{12}$; bare part of tibia $\frac{5}{12}$; tarsus $\frac{1}{12}$; hind toe $\frac{2\frac{1}{2}}{12}$, its claw $\frac{1}{12}$; middle toe $\frac{8}{12}$, its claw $\frac{1\frac{1}{2}}{12}$. Weight 1 oz.

The female is considerably larger than the male, but otherwise similar.

In winter the upper parts are ash-grey, tinged with brown, each feather with a central dusky line.

In a female preserved in spirits, the roof of the mouth is flat, with the edges a little prominent, and two medial series of reflected papillæ. The tongue is $10\frac{1}{4}$ twelfths long, slender, papillate at the base, concave above, rather obtuse and somewhat jagged at the extremity, horny in nearly its whole length. The extremity of the upper mandible is somewhat scrobiculate; the lower mandible deeply concave. The œsophagus, which is $2\frac{1}{2}$ inches in length, is very slender, being scarcely so wide as the trachea, its diameter nearly uniform, and about $1\frac{1}{4}$ twelfths. The stomach is elliptical,

a little compressed, $\frac{1}{2}$ inch long, $4\frac{1}{2}$ twelfths broad, its lateral muscles moderately developed, its tendons large, the epithelium tough, longitudinally rugous, and of a reddish-brown colour. It contains particles of quartz and small seeds. The intestine, of which the diameter is generally 1 twelfth, measures 10 inches in length; and the cœca, which come off at the distance of $\frac{3}{4}$ of an inch from the extremity, are 1 inch long, and three-fourths of a twelfth in their greatest diameter.

The trachea, which is 1 inch 10 twelfths long, passes to the right side of the neck, along with the œsophagus, as in all birds destitute of crop, is considerably flattened, and varies in diameter from $1\frac{1}{4}$ twelfths to $\frac{3}{4}$ twelfth. The rings are about 98; the bronchial half rings about 15. The lateral muscles are strong, and terminate in the sterno-tracheal, at the distance of a twelfth and a half from the inferior larynx, which is destitute of any other muscle than a slender continuation of the contractor, which goes to the first bronchial ring.

LITTLE SANDPIPER.

+TRINGA PUSILLA, *Wils.*

PLATE CCCXXXVII.—MALE AND FEMALE.

Before proceeding to detail my observations on the habits of this humble but extremely interesting bird, I deem it necessary to inform you that I disclaim as species belonging to the United States, or even to any part of North America, the following, which however are given in the Synopsis of the Prince of MUSIGNANO, and in the work of my generous friend THOMAS NUTTALL, viz., *Tringa platyrhincha* of TEMMINCK, *T. Temminckii* of LEISLER, *T. minuta* of LEISLER, *T. minuta* of TEMMINCK, and *T. pusilla* of BECHSTEIN. This opinion of mine I divulged to the Prince of MUSIGNANO in London, and he has on this account omitted these species in his recently published list. The extreme confusion that exists with respect to these species, and many others of the same tribe, is in my opinion caused solely by the anxiety of authors to discover or invent new species, often founding distinctions on slight differences in the length of bills, tarsi, or

WILL.

Semipalmated Sandpiper.
1, Summer Plumage 2, Winter.

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

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