

moderate length, measuring $9\frac{1}{2}$ inches, its average diameter $1\frac{1}{2}$ twelfths. The cœca $1\frac{1}{2}$ inches long, their greatest diameter $\frac{3}{4}$ of a twelfth.

The trachea is $1\frac{8}{12}$ inches long, flattened, unossified, $1\frac{1}{2}$ twelfths in diameter at the top, diminishing to 1 twelfth; the number of rings about 105. Bronchial half-rings 15.

SANDERLING SANDPIPER.

+ TRINGA ARENARIA, *Bonap.*

PLATE CCCXXXVIII.—MALE AND FEMALE.

Although the Sanderling extends its rambles along our Atlantic shores, from the eastern extremities of Maine to the southernmost Keys of the Floridas, it is only an autumnal and winter visiter. It arrives in the more Eastern Districts about the 1st of August, on the sea-shores of New York and New Jersey rarely before the 10th of August, and seldom reaches the extensive sand-banks of East Florida previous to the month of November. Along the whole of this extended coast, it is more or less abundant, sometimes appearing in bands composed of a few individuals, and at times in large flocks, but generally mingling with other species of small shore-birds. Thus I have seen Turnstones and Knots mixed with the Sanderlings, but in such cases they are perhaps wanderers, which have not succeeded in meeting with companions of their own species, that associate with the birds of which I here speak.

The Sanderling obtains its food principally by probing the moist sands of the sea-shores with its bill held in an oblique position. At every step it inserts this instrument with surprising quickness, to a greater or less depth, according to the softness of the sand, sometimes introducing it a quarter of an inch, sometimes to the base. The holes thus made may be seen on the borders of beaches, when the tide is fast receding, in rows of twenty, thirty, or more; in certain spots less numerous; for it appears that when a place proves unproductive of the food for which they are searching, they very soon take to their wings and remove to another, now and then in so hurried a manner that one might suppose they had been suddenly frightened. The contents of the stomach of those which I shot while thus occupied, were

slender sea-worms, about an inch in length, together with minute shell-fish and gravel. At other times, when they were seen following the receding waves, and wading up to the belly in the returning waters, I found in them small shrimps and other crustacea.

In their flight the Sanderlings do not perform so many evolutions as Sandpipers usually display. They generally alight about a hundred yards off the place from which they started, and run for a yard or so, keeping their wings partially extended. They move on the sand with great activity, running so as to keep pace with a man walking at a moderate rate. Their flight is rapid and straighter than that of other small species, and when on wing they seldom exhibit each surface of the body alternately, as many others are wont to do.

I have thought that the migrations of this bird are carried on under night; but of this I am by no means certain, although I observed some small flocks, composed of a few dozen individuals, crossing the Gulf of St. Lawrence, at a little height over the water, in the month of June. The lateness of the season induced me to hope that I might find some nests of the Sanderling on the coast of Labrador; but in this I was disappointed, although some young birds were seen at Bras d'Or, in little parties of four or five individuals. This was early in August, and they were already on their way southward.

The Sanderling affords good eating, especially the young, and the sportsman may occasionally kill six or seven at a shot, provided he fires the moment the flock has alighted, for immediately after the birds spread abroad in search of food.

The female may easily be distinguished from the male, by her superior size; but in the colouring of birds of both sexes, I have observed as much difference as in the Turnstone. Even during winter, some are more or less marked with black and brownish-red, while others, which, however, I easily ascertained to be younger birds, were of an almost uniform light grey above, each feather edged with dull white; but in all those which I have examined, whether old birds in the full spring or summer dress, in which I have shot some in May, in the Middle Districts, or young birds in autumn and during winter, I have seen no difference in the colours of the bill, legs and toes.

RUDDY PLOVER, *Charadrius rubidus*, Wils. Amer. Orn., vol. vii. p. 129. Summer.

SANDERLING PLOVER, *Charadrius Calidris*, Wils. Amer. Orn., vol. vii. p. 68. Winter.

CALIDRIS ARENARIA, *Sanderling*, Swains. and Rich. F. Bor. Amer., vol. ii. p. 366.

SANDERLING PLOVER, *Calidris arenaria*, Nutt. Man., vol. ii. p. 4.

SANDERLING, *Tringa arenaria*, Aud. Orn. Biog., vol. iii. p. 231; vol. v. p. 582.

Male, $7\frac{10}{12}$, $12\frac{1}{2}$.

From Texas along the coast to Maine in autumn and spring, extremely abundant. Breeds from lat. 55° northward.

Adult Male in winter.

Bill rather longer than the head, slender, subcylindrical, straight, flexible, compressed at the base, the point rather depressed and obtuse. Upper mandible with the dorsal line nearly straight, slightly sloping to beyond the middle, the ridge convex, towards the end flattened, at the point convex; sides sloping, edges rather blunt and soft. Nasal groove long; nostrils basal, linear, pervious. Lower mandible with the angle long and very narrow, the dorsal line slightly convex, the sides sloping outwards, towards the end convex.

Head of moderate size, oblong, compressed. Eyes rather large. Neck of moderate length. Body rather slender. Feet slender, of moderate length; tibia bare a considerably way up; tarsus compressed, anteriorly and posteriorly with numerous small scutella; hind toe wanting; toes of moderate length, slender; inner toe shorter than outer, middle toe considerably longer, all scutellate above and marginate, with prominent papillæ, and free; claws small, slightly curved, extremely compressed, blunt.

Plumage very soft, blended beneath, slightly distinct above. Wings long and pointed; primaries tapering, obtuse, the first longest, the second a little shorter, the rest rapidly graduated; secondaries rather short, obliquely rounded, curved inwards, the inner elongated and tapering. Tail rather short, rounded, of twelve feathers, the two middle ones considerably longer.

Bill and feet black. Iris brown. The general colour of the plumage above is ash-grey, the edges paler; the lower parts pure white. Alula and primaries brownish-black, the latter with more or less white on their outer webs or along the shaft; secondaries white, the outer with a patch of brownish-black towards the end, the inner ash-grey; primary coverts brownish-black, tipped with white; secondary coverts greyish-brown, broadly tipped with white. Middle tail feathers greyish-brown, their shafts white, the rest of a paler tint on the outer webs, white on the inner, the lateral almost pure white.

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

Adult Female in winter.

The female is precisely similar to the male.

In its summer plumage, this species differs in the following particulars. The bill, feet, and iris, are as described above, and the lower parts are also pure white, excepting the fore part and sides of the neck, which, as well as the upper parts of the head, and the hind neck, are pale yellowish-red, spotted with brownish-black. The back is similarly marked, the spots

larger, and on the scapulars disposed in bars; the tips of most of the feathers greyish-white, the wings and tail are as in winter.

Mouth extremely narrow, its width only 2 twelfths. Palate moderately concave, as in the Snipes, with two series of reversed papillæ. Tongue 11 twelfths long, slender, tapering, concave above, horny toward the end. Œsophagus 3 inches 2 twelfths long, 2 twelfths wide; proventriculus 3 twelfths in breadth. Stomach large, roundish, oblique, 10 twelfths long, 9 twelfths in breadth; its lateral muscles large; the epithelium dense, longitudinally rugous, and of a reddish colour. Contents of stomach remains of insects and sand. Intestine $9\frac{3}{4}$ inches long, its width $2\frac{1}{2}$ twelfths; cæca 1 inch 1 twelfth long, $1\frac{1}{2}$ twelfths in width, their distance from the extremity $1\frac{1}{4}$ inches; rectum slightly dilated at the end. Trachea $2\frac{1}{2}$ inches long, its breadth 2 twelfths, much flattened; the rings very narrow, unossified, 130 in number. Bronchial half rings about 15. Muscles as in other genera of this family.

GENUS II.—PHALAROPUS, *Briss.* PHALAROPE.

Bill scarcely longer than the head, straight, slender, at the base somewhat cylindrical, toward the end broader and flattened, the tips narrowed; upper mandible with the dorsal line straight, excepting at the end, where it is a little decurved, the ridge convex, flattened at the broad part, the sides slightly sloping, the edges rounded, and near the tip inflected; nasal groove linear, extending to near the tip; lower mandible with the angle very long and narrow, the sides convex and sloping outwards, the tip narrowed. Nostrils basal, linear-elliptical. Head small, with the fore part high and rounded; neck of moderate length; body rather full. Feet rather short, slender; tibia bare a short way above the joint; tarsus much compressed, narrowed before and behind, covered anteriorly with numerous scutella; toes very slender, first extremely small, free, with a slight membrane beneath; second shorter than the fourth; third toe much longer, all scutellate above, the anterior margined on both sides with lobed and pectinated membranes, which are united at the base, so as to render the foot nearly half-webbed, the outer web much longer than the inner. Claws very small, compressed,

arched, obtuse. Plumage soft and blended; wings long and pointed, first quill longest, secondary quills rather short, the inner much elongated. Tail of moderate length, much rounded, of twelve feathers, the lower tail-coverts as long.

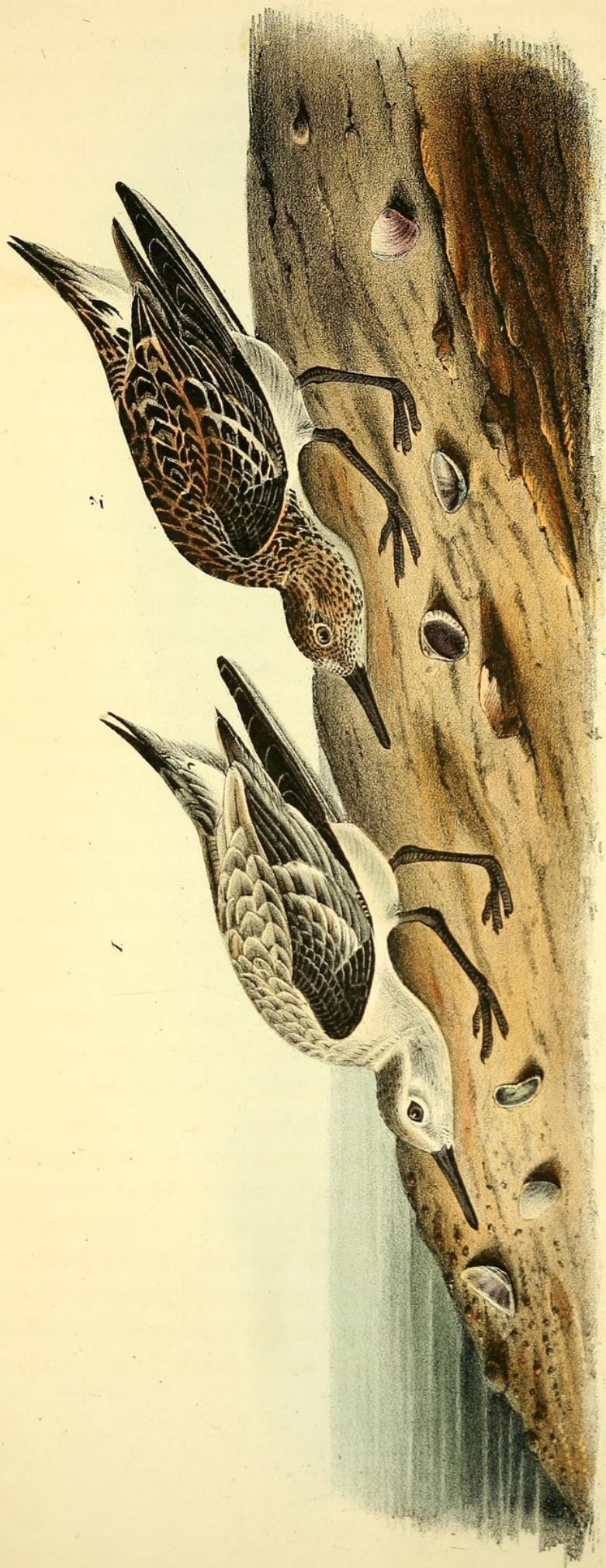
THE RED PHALAROPE.

+*PHALAROPUS FULICARIUS*, *Bonap.*

PLATE CCCXXXIX.—ADULT MALE AND FEMALE IN SUMMER, AND ADULT IN WINTER.

My first drawing of the Red Phalarope was made at Louisville in Kentucky, a few weeks after my removal to that place, in 1808. One afternoon, while returning from the house of my hospitable friend General CROGHAN, I observed a large flock of birds proceeding along the shores of the Ohio. They were quite unknown to me, and therefore extremely anxious I was to procure some of them. I therefore ran through the woods until I got ahead of them, went to the margin of the river, and concealed myself at some distance from them. They swam beautifully, played about, picked up substances floating on the water, now dispersed, and again came close together, until at length coming opposite to a small sand-bar stretching out from the shore to the distance of a few yards, they directed their course towards it, and waded out. When just landing, they were so close to each other that I could not withstand the temptation, and so levelled my gun, pulled both triggers, and saw that I had made considerable havoc among them. Those which had not been touched, flew off in a compact body, while the birds that had been but slightly wounded made for the water, and swam away so fast that they seemed to be running on the surface. I picked up seventeen, which I found so beautiful and withal so plump, that I felt quite delighted, and resolved to shoot as many more as I could. But I did not succeed in killing more than other five that day.

I had never until then seen a Phalarope of any kind, although I had inspected some shocking figures of these elegant birds, figures so unlike the originals that even with the aid of a name printed beneath, you could not recognise them. Such of my acquaintances at Louisville as had been accus-



Sanderling Sandpiper.

1. Winter plumage. 2. Summer.

Drawn from nature by J. L. Audubon. B.R.S. 1858.

Published & Sold by J. T. Bowen Phil.



Audubon, John James. 1842. "Sanderling Sandpiper, *Tringa arenaria*, Bonap. [Pl. 338]." *The birds of America : from drawings made in the United States and their territories* 5, 287–291. <https://doi.org/10.5962/p.319451>.

View This Item Online: <https://www.biodiversitylibrary.org/item/124982>

DOI: <https://doi.org/10.5962/p.319451>

Permalink: <https://www.biodiversitylibrary.org/partpdf/319451>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: NOT_IN_COPYRIGHT

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.