

THE DISTRIBUTION OF THE WESTERN SOLITARY SANDPIPER

WITH TWO ILLUSTRATIONS

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The status of the Western Solitary Sandpiper (*Tringa solitaria cinnamomea* Brewster) has long been uncertain. Swarth (Condor, vol. 37, 1935, pp. 199-201) has expressed doubt as to its validity and others have been unable to ascribe a distinct distribution to it.

The National Museum of Canada has amassed a considerable series of the species from the more northern sections of the continent that throws some light upon the subject. The series consists of 142 specimens taken in Canada, from Nova Scotia to British Columbia and Alaska, and from the southern international boundary to the Mackenzie delta. In addition, thanks to the courtesy of Dr. I. McT. Cowan, we have been able to borrow 22 specimens from British Columbia from the Provincial Museum, Victoria.

The postulated characters of *cinnamomea*, as distinguished from *solitaria*, are:

1. Larger size.
2. Cinnamon instead of white spotting on back.
3. Marbling on inner web of outer primaries.
4. White bars on tail averaging narrower.
5. Middle pair of rectrices often (usually?) wholly deep grayish brown.
6. More extensive white spotting on back of adult.

(Other characters suggested by original describer have been abandoned by more recent investigators.)

A cursory examination of the material reveals that these characters are independently variable and only partly linked. Further investigation shows that there is little or no sexual difference in size or coloration.

1. Larger size as exhibited by wing length is characteristic of *cinnamomea* as regards average and extremes, but there is considerable overlap with *T. s. solitaria*. No individual specimens, except perhaps the extremes (wing over 5.25 inches, 133.5 mm.; or under 5 inches, 127 mm.) can be identified by this character with more than approximate certainty.

2. Cinnamon spotting on the back is restricted to the juvenile (first fall plumage), the adult of *cinnamomea* being inseparable from *solitaria* by this character. However, it seems constant in juvenility and any specimen showing heavily colored back spotting can confidently be referred to *cinnamomea*.

3. Marbling of the outer primary is variable in extent. It may constitute a conspicuous pattern, may be reduced to traces, or even be absent altogether. It is common to all plumages and ages. Specimens carrying it can definitely be ascribed to *cinnamomea*, though many individuals of that race are without it.

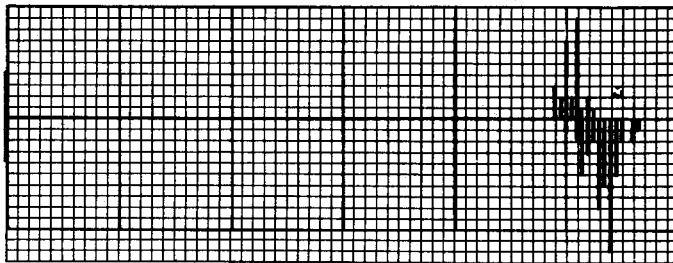


Fig. 59. Graph of wing lengths of 27 *Tringa s. solitaria* from Ontario and eastern Canada (upper group) and of 48 *T. s. cinnamomea* identified by other characters than size (lower group). Measurements laid off from line at left; small squares represent tenths of inches.

4, 5, 6. These characters as listed above are unrecognizable or are too slight to be useful in making determinations.

In estimating the racial value of the characters, it was noted that marbled primaries and buffy back-spotting occur more or less commonly in regions from Manitoba westward but not at all in central Ontario and eastward. From this it is assumed that they are good racial criteria, and that all specimens from east of the Great Lakes can confidently be referred to *solitaria*. On this basis a wing length graph was drawn (fig. 59) using 27 eastern specimens as typical of *solitaria* and 48 from Manitoba and more westerly localities identified as *cinnamomea* by primary marbling and buffy back spotting. The wing lengths are laid off individually from a common base line at the left, the height of each line showing the number of specimens of similar wing length.

It can be seen that *cinnamomea* averages considerably larger in this measurement; 35 are larger than the largest *solitaria*, but 13 overlap that race. However only 5 *solitaria* are smaller than the smallest *cinnamomea*. Thirty-five out of 75 specimens are not certainly recognizable as to race by means of wing length and this criterion therefore becomes of secondary importance in the separation of the races.

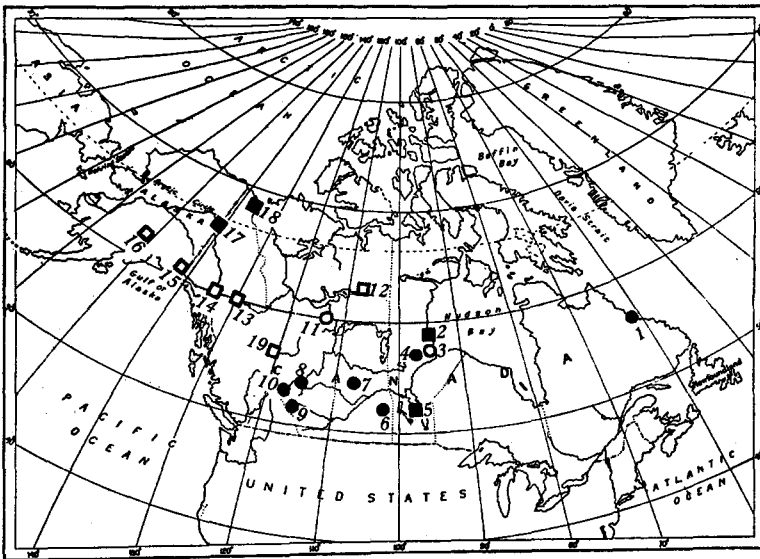


Fig. 60. Breeding localities of Solitary Sandpipers. Circles represent *T. s. solitaria*; squares, *cinnamomea*. Definitely established nesting places distinguished by solid symbols.

The following data indicate the known breeding ranges of the races and form the basis for construction of the map showing distribution (fig. 60).

1. Labrador coast. ♂, ♀ in National Museum of Canada, accompanying eggs in collection of Major W. M. Congreve, Denbigh, Great Britain.

2. Churchill, Manitoba. specimens in National Museum of Canada. All referable to *cinnamomea*. The nest has since been found in this locality by A. L. Wilk, 1938.

3, 4. Bird and Ilford, Manitoba, 150 and 213 miles, respectively, south of Churchill. Specimens in National Museum of Canada. All *solitaria*, breeding commonly at the latter place and presumably at the former.

5. Lake St. Martin, Manitoba. (Shortt and Waller, Contr. Royal Ontario Mus. Zool., No. 10, pp. 21-22, 1937.) An ultra-typical *cinnamomea*, with egg in oviduct ready for shell. This is a rather disturbing specimen, suggestive of nesting far south of what other evidence indicates is the normal

breeding range. However, it can be suggested that this species, which has no nest building requirements (it lays in the deserted nests of other birds), may arrive on the breeding ground with eggs ready for deposition. This individual may still be regarded as a possible migrant with a considerable flight before it, or else as an erratic outlier.

6, 7. Saskatchewan. (Mitchell, Canadian Field-Naturalist, vol. 38, 1924, p. 107.) Breeding of *solitaria* reported from Big River, Beaver River and Hudson Bay Junction. Knowing the care with which the author made his subspecific identifications, this is accepted at face value.

8. Belvedere, Alberta. (Taverner, Nat. Mus. Canada, Bull 50, 1928, p. 91.) Birds breeding commonly and several nests found. A considerable series collected. Breeding birds all *solitaria*, *cinnamomea* appearing later in migration.

9, 10. Didsbury, Alberta. Breeding specimens ascertained by examination to be *solitaria*, and report of breeding near Camrose, Alberta, by F. Farley assumed to involve same race.

11. Wood Buffalo Park, Alberta. Specimens in National Museum of Canada, 4 juveniles all *solitaria*, and 4 adults all *cinnamomea*. One of the former has down still adherent to the tail and undoubtedly represents the race that breeds locally, the adults probably being migrants.

12. Finnie River, Thelon Sanctuary, N. W. T., between Great Slave and Baker lakes. Specimen in National Museum of Canada. Most waders begin their fall migration very early in the season. This is particularly true of this species and ordinarily no birds of early July date can confidently be regarded as resident. The date of this specimen, July 26, elsewhere might raise suspicions of its being a migrant, but it is here regarded as probably of local type.

13. Atlin, British Columbia. (Swarth, U. C. Publ. Zool., vol. 30, 1926, pp. 70-72; Proc. Calif. Acad. Sci., vol. 23, 1936, pp. 43-44.) The species was breeding freely in the neighborhood. The two specimens described by Swarth may be referable to different races, but since many *cinnamomea* are practically inseparable from *solitaria* by any known test, the breeding association is assumed to be the former. In addition, there are five specimens examined from the collection of the Provincial Museum of British Columbia. Four of these are plainly marked *cinnamomea*, whereas one is small and without primary marbling and would, if taken at eastern or southern localities, unhesitatingly be called *solitaria*.

14. Upper Yukon River. (Bishop, N. A. Fauna No. 19, 1900, pp. 68-69.) Specimens apparently from actively breeding communities at Log Cabin, British Columbia, and various points on the upper Yukon River stated to have "wavy markings on the inner webs of the outer primaries" (marblings?). Hence, these definitely are *cinnamomea*.

15. Mt. Logan, Alaska. (Laing, Anderson and Taverner, Nat. Mus. Canada, Bull. 56, 1929, pp. 73-74.) Summer specimens, that almost certainly represent the breeding stock, are *cinnamomea*.

16. Interior of Alaska. (Dice, Condor, vol. 22, 1920, p. 178.) Specimens taken on upper Kusko-kwim River, which are almost certainly of breeding stock, are referred to *cinnamomea*. On the supposition that the identification was made from the specimens and not on the grounds of general probability, as is so often done, the identification can be accepted.

17. Eastern Alaska. (Osgood, N. A. Fauna, No. 30, 1909, pp. 35-36.) Specimens from actively breeding community near Circle, Alaska, referred to *cinnamomea* and accepted on aforementioned grounds. (See 16.)

18. Mackenzie Delta, N. W. T. Specimens in National Museum of Canada. Note on one label states that specimen contained an egg ready to lay. Three, all *cinnamomea*.

19. Tupper Lake, Peace River District, British Columbia. A *cinnamomea* taken June 25, where the species was reported breeding, though this particular specimen was not connected with the fact.

Besides these breeding stations of birds of demonstrable race, there are a great number of presumptive migrants from all the provinces except Prince Edward Island. All from east of the Great Lakes are *solitaria*, that is, none have any recognizable characters of *cinnamomea*. Through the southern prairie provinces of Manitoba, Saskatchewan and Alberta, and throughout British Columbia both forms occur on migrational dates, with *solitaria* predominating east of the mountains and *cinnamomea* to the west.

It is evident from these data that the Western Solitary Sandpiper is a valid genetic strain, plainly recognizable in the majority of specimens but inseparable from the eastern race in a few. Also that the name "Western" is a misnomer and that its normal distribution is northwestern instead of western, breeding from Hudson Bay to and including Alaska, and southward from tree limits to northern British Columbia, Great Slave Lake and Churchill.

National Museum of Canada, Ottawa, January 12, 1940.