

SOME OBSERVATIONS ON THE SEMIPALMATED  
PLOVER (*CHARADRIUS SEMIPALMATUS*)  
AT ST. MARY'S ISLANDS, PROVINCE  
OF QUEBEC, CANADA.

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*Plate IV.*

THIS paper is based upon studies of the Semipalmated Plover made while at St. Mary's Islands from June 24 to July 10, 1931.

These Islands are in the Gulf of the St. Lawrence, about fourteen miles from Harrington Harbour, Saguenay County, P. Q., and somewhat less from the nearest mainland. The longitude of the center of the group is 59.38 W. and the latitude 50.17 N. The St. Mary's Archipelago consists of five small islands: East, Middle and West St. Mary's Islands, Cliff and Yankee Islands. Each of the first three islands is about a mile in length, forming a chain about three miles long, for the channels separating them are exceedingly narrow. The other two islands are more remote.

The islands, although extremely rocky, are by no means void of vegetation. The terrain which is soft and mossy is covered in many places by dwarfed willows, hemlocks, and other trees and shrubs. The trees have been stunted by the terrific winds so that they grow little higher than the surface of the ground. In hollows and protected places, however, they may attain a height of several feet.

It is a pleasure to acknowledge my indebtedness to Dr. Harrison F. Lewis, during my studies of Semipalmated Plovers' nests on these islands, for his coöperation and many courtesies. My thanks are also due to Charles, Harold and Hiram Osborne, of St. Mary's Islands, who assisted me in finding nests, and to Dr. Alfred O. Gross, of Bowdoin College, under whose supervision the work was carried on, for his help and suggestions.

The Semipalmated Plover (*Charadrius semipalmatus*) differs from the European Ringed Plover (*Charadrius hiaticula*) in that its front toes are partly webbed. Otherwise the two species are barely distinguishable from one another.



*Photos by T. W. Burgess.*

UPPER: SEMIPALMATED PLOVER PERFORMING WOUNDED BIRD ACT.  
LOWER: RETURNING TO NEST "B".

The range of the species *semipalmatus* includes North and South America. It has been found breeding from Melville Island, Wellington Channel, Cumberland Sound, Davis Inlet and western Greenland south to the mouth of the Yukon, the valley of the upper Yukon, southern Yukon territory, east-central Manitoba, the southern end of James Bay, the Gulf of St. Lawrence, New Brunswick and Nova Scotia. It winters from central California, Louisiana, South Carolina and Bermuda to the Galapagos Islands, Chile and Patagonia. It is casual in eastern Siberia and accidental in England.

Non-breeding Semipalmated Plovers remain throughout the summer in southern latitudes, having been taken or observed south to Venezuela, Galapagos Islands, Costa Rica, the West Indies and Jalisco, Mexico, while they are often fairly common on the coasts of the United States as well as in the interior (Ohio and Michigan).<sup>1</sup>

According to Mr. Charles Osborne, a keen and trustworthy observer, the Semipalmated Plover is a rather common transient in the St. Mary's Islands during the seasons of migration. Although it usually arrives from the south about June 1, he saw it for the first time in 1931 on May 16. In the autumn he has seen it as late as the second week in October. At these periods of the year it is not infrequent that one sees flocks ranging from twenty to sixty individuals, although on the New Jersey coast Mr. Charles A. Urner (Auk, vol. 47, 1930, p. 426) has seen as many as 2000 in a day.

In contrast to the by no means insignificant numbers which pass through as transients, comparatively few Semipalmated Plovers remain in the islands during the summer months. In 1930 Dr. Harrison Lewis found but four pairs nesting: two pairs on Middle St. Mary's Island and two pairs on West St. Mary's Island. In 1931 two pairs were found once more on West St. Mary's Island.

There have been many interpretations of the common call note of the Semipalmated Plover. Mr. Ralph Hoffman (Guide to Birds New England and E. New York, 1904) describes it as "a simple, sweet, plaintive call, *chee-wee*." Mr. J. T. Nichols (Auk, vol. 37, 1920, p. 537) writes: "The flight note . . . is a short,

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<sup>1</sup> Life Histories of North American Shore Birds (Part II), p. 225; Bulletin 146, U. S. Nat. Museum; 1929.

whistled *tyoo-eeep*. The birds have a variety of lesser notes which are not so often heard, and most frequently in Spring. A little company of probably wintering birds (in Florida toward the end of March) called *keup-keup* as they were flushed and flew a few yards to alight again. The flight note is sometimes replaced by rougher cackling notes in small flocks on the wing." Messrs. J. T. Nichols and Francis Harper (*Auk*, vol. 33, 1916, pp. 252-4) make the following observation: "The Ringneck's ordinary flight note or call note . . . *tyoo-eeep* . . . is given repeatedly by birds on the wing, but those on the ground are generally silent when not disturbed. . . . Another and rougher note seems to signify excitement or suspicion; it is usually uttered singly, but sometimes a bird standing on the ground will give a rapid descendo series of these questioning notes, *keup-keup-keup-keup*, etc., the last few almost running together."

One of the most familiar and characteristic calls of the Semipalmated Plovers on West St. Mary's Island is a plaintive, piteous *che-wit*. It is frequently uttered when the bird is alarmed or suspicious, sometimes being repeated as often as every four or five seconds, until the danger has subsided. I have also heard them, when frightened off their nest, utter a shrill strident, *chip*, *cheep*, or *peep*. Although I have heard both calls given on the wing, they are apparently uttered far more often by birds on the ground. Perhaps the most interesting note, however, is a nervous *chup* occasionally uttered singly, but more frequently forming a rapid, staccato series of sounds: *chup-chup-chup-chup-e-rurr!* Since all these various calls seem to play an important part in the relationship between the adult birds during the period of incubation, I shall discuss them more fully in that connection.

There is considerable variation in both nesting site and the nest of the Semipalmated Plover, as described in Bent's 'Life Histories of North American Shore Birds' (Part 2) p. 218; 1929, but as there stated "a mere depression in the sand without lining or with only a few bits of shells or grass, generally constitutes the nest of this species."

The two nests found on West St. Mary's Island in June 1931 differed from one another in many respects.

In the first place, nest "A" was a slight depression in an open

tundra at the foot of a small hill, 140 yards from the shore of the Gulf. Surrounded by mosses, bunchberry, and young birch trees, it was lined with dried leaves and bits of old moss.

On the other hand, nest "B" was a depression in a small island of moss growing in the center of, and on top of, a smooth slab of rock on the shore of the Gulf, 25 yards from the water. It was lined with dried grasses, dried leaves and very small twigs.

The measurements in centimeters of the two nests are as follows:

	Nest "A"	Nest "B"
Long diameter of inside of nest . . . . .	6 cm.	7.2 cm.
Short diameter of inside of nest . . . . .	6	7
Long diameter (including lining of nest) . . . . .	9	10.4
Depth from top of vegetation . . . . .	3	3
Depth from top of nest . . . . .	2.2	2
Depth from top of nest (including lining) . . . . .	4.5	4.8

Both nests "A" and "B" contained four eggs, ovate in shape, and having only the barest trace of gloss. With Ridgway's 'Standards of Color Nomenclature' the following notes were made: ground color, deep olive-buff; deep shell marks of small spots, grayish-lavender heavily streaked and spotted with black; dark markings of very irregular size and shape more concentrated in a broad band near the larger end. On account of this nondescript appearance they were admirably suited to blend with their surroundings.

The measurements in millimeters of the eight eggs are as follows:

	Longest Diameter	Shortest Diameter
Nest "A," 1 . . . . .	34.5 mm.	23.5 mm.
2 . . . . .	34	23.5
3 . . . . .	32	23
4 . . . . .	33	23
Nest "B," 5 . . . . .	33	23.5
6 . . . . .	33	23.5
7 . . . . .	34	23.5
8 . . . . .	34.5	23.5

Since the incubated egg weighs less than the fresh egg, it was considered advisable to take weights at frequent intervals. The following results are in grams:—

	Jun. 27	Jun. 30	July 3	July 7	July 10
Nest "A," 1.....	9.65 gr.	9.10	9.10	9.00	hatched
2.....	9.70	9.40	9.40	9.25	hatched
3.....	9.55	8.70	8.70	8.60	8.60
4.....	9.60	9.10	9.10	9.05	8.80
Nest "B," 5.....	9.40	8.40	7.60	6.90	
6.....	8.90	8.40	8.40	8.10	
7.....	8.95	7.20	6.70	6.35	
8.....	9.05	8.50	8.50	8.30	

Since the eggs in Nest "B" hatched one day later than those in the other nest, I can think of no reason to explain their being lighter in weight. However, the fact that the shells of eggs 5 and 7 were slightly cracked on June 27 through an accident would no doubt account for their very marked loss of weight.

I know of no evidence to prove that the American species has ever reared two broods in a single season. In regard to the length of the period of incubation, its duration is still unknown. On West St. Mary's Island nest "A" found June 24, 1931, containing four eggs; these hatched July 10, sixteen days later. Nest "B" found June 26, 1931, likewise containing four eggs which hatched July 11, fifteen days later. These figures prove nothing except that the period is fifteen days or longer.

Incubation is carried on by both sexes of the Semipalmated Plover. This conclusion was arrived at as a result of observations made at nest "A" where the adult birds would relieve one another *both day and night* at intervals ranging from thirty-one minutes to two hours and nineteen minutes. Although it is impossible to determine definitely which sex does most of the incubating, it is, nevertheless, my general impression that the male<sup>1</sup> is the more active. I base my opinion on three factors: (1) the male was on the nest for longer shifts than its mate; (2) if undisturbed while incubating the eggs, the male was less suspicious; (3) but whenever the nest was in any way threatened, the male was invariably not only more fearless, but also more active in efforts to protect it.

<sup>1</sup> For the sake of convenience, one of the birds at nest "A" was faintly marked with brown stain which had been spattered about the edge of the nest. It is assumed that this was the male, on account of the fact that its collar was brighter and of a purer shade of black than that of its mate which showed traces of grayish-brown on each side. For brevity I shall refer to the bird, which I believe to be the male, as "P"; its mate I shall call "Q." Nevertheless, because of the difficulty in differentiating the sexes of the Semipalmated Plover by means of observation alone, the following conclusions must be considered as being merely hypothetical.

On June 25 a blind was pitched three feet from Nest "A." By the evening of the following day it was possible for one to enter and watch through a peep-hole the incubating bird which, although frightened off a short distance by the noise of the newcomer, would return to the nest after four or five minutes. Nevertheless it is only fair to say that, even as late as the day on which the eggs hatched, it would have been quite easy to scare either bird off the nest merely by talking in a loud whisper while in the blind. For that reason it was usually found necessary to observe silence.

The incubating bird presents an exceedingly charming study as it sits quietly with both wings contracted, the primaries of each just overlapping a little to one side or the other of the tail which is folded. When satisfied that the coast was clear, "P" would occasionally twist its head around and rest its bill behind either the right or the left wing-covert—a position which its mate, so far as I know, never assumed.

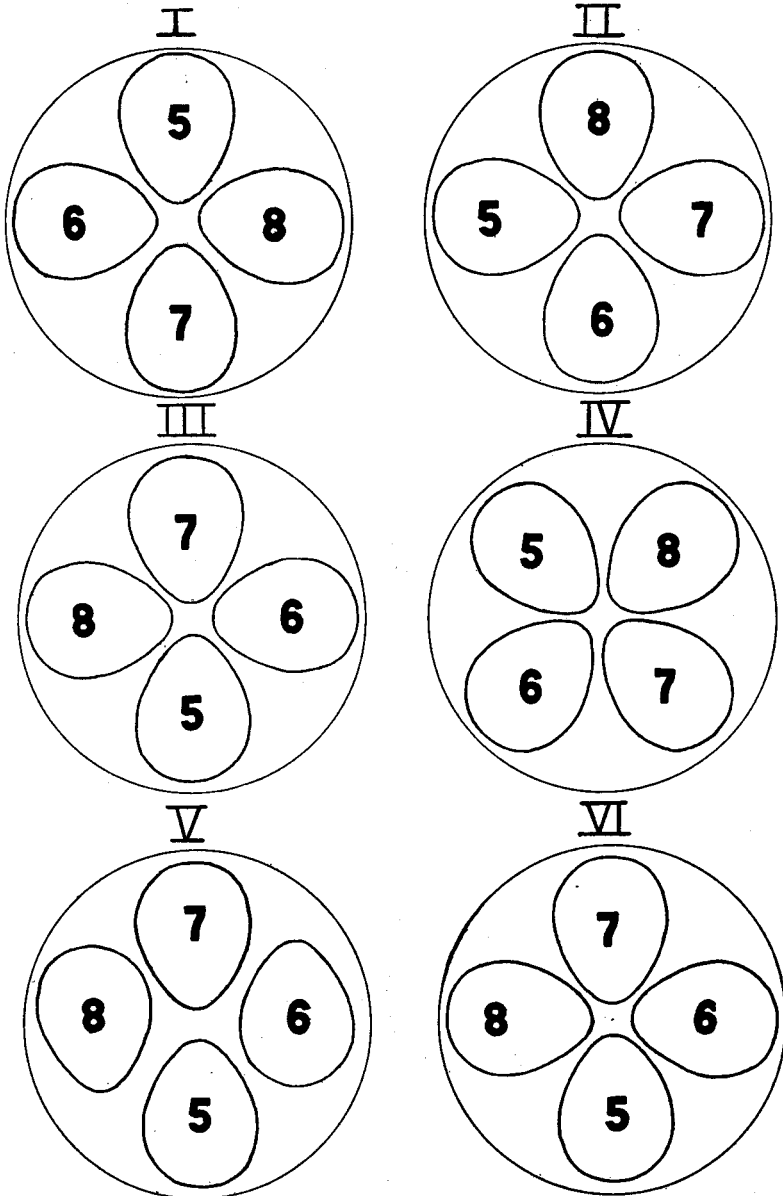
The position of the eggs in the nest varies considerably. Thus at nest "B" the following notes were compiled:

Since the nest itself is practically circular in shape the incubating bird sits facing in any direction. Occasionally it raises itself slightly, and with the under side of the lower mandible (the bill is closed) rolls over one or two eggs at a time. On settling down again the bird usually faces another slightly different direction, although it sometimes resumes its former position after having performed this task.

One of the most interesting characteristics of the Semipalmated Plover is the way in which the parents take turns on the nest. In order to describe the act more graphically I quote several lines hastily jotted down while in the blind observing nest "A."

"At 10.45 a. m. 'P' who is on the nest utters a loud, sudden *chup*. 'Q' is already seven or eight feet from the nest. 'P' gets up quickly, and the two birds start walking toward one another, passing close by without stopping, about three feet from the nest. 'P' utters two sharp *chups*, walks off about 15 feet and flies away. 'Q,' on the other hand, muttering three or four low *chups*, settles down on the nest, its body quivering noticeably especially the breast feathers. . . . At 11.42 'P' relieves 'Q'."

Sometimes the incubating bird is so absorbed by what it is doing,



Position of eggs in nest: I, July 2; II, July 4; III, July 5; IV, July 6; V, July 8; VI, July 9.



that its mate may approach within a foot of the nest before it quits its post. However, on one occasion the mate failed to return on time. What happened is described in the following excerpt from my notes:

"At 10.41 a. m. 'P' who has been sitting quietly on the nest suddenly utters four staccato *chups* followed by a *chup-e-rrr*, and then a countless number of repeated *chups*. At 10.44 'P' leaves the nest, runs off a yard or two, and flies away. For a moment I hear the same calls in the distance. At 10.47 'Q' walks up quietly and settles down on the nest."

The Semipalmated Plover is apparently a bird which relies very little on the protective qualities of its own plumage. For this reason it is not unusual for the incubating bird to be frightened off the nest by a human intruder fifty yards away. Even in such cases it will endeavor to attract his attention by quick decisive movements in the hope of luring him away. A characteristic trait is its way of bobbing its head up and down as it stands stationary in some particular spot on the tundra.

I found the "wounded bird act" to be not uncommon in the Semipalmated Plover on West St. Mary's Island, for, whenever a human intruder came alarmingly near either nest, the incubating bird (and its mate also if it were near by) would invariably feign injury by grovelling on the ground, flapping its wings or dragging them on the ground, and either raising its tail so as to render conspicuous the white under tail-coverts, or lowering it close to the ground and spreading it, making the white margin at the tip of the tail and the brown rump very noticeable. While thus engaged it would utter plaintive, piteous, *che-wits* as frequently as every four or five seconds. This act, however, serves as a last resort when all else has failed. When less desperate they attempt to accomplish the same results by merely running along in front of the intruder for some distance and then flying off.

In some cases the bird on the nest is warned of human intruders by its mate which had posted itself in some advantageous position. Thus it was almost impossible for one to approach nest "B" without finding the incubating bird some distance from the nest, warned well in advance by the repeated *che-wits* of its mate. This was not so, however, at nest "A," except at times when the feeding

bird was returning to relieve its mate of the duty of incubating the eggs and was consequently near by.

Unfortunately the discussion of the young is incomplete on account of my having to leave for Quebec on the morning of July 10, the day on which the four eggs in nest "A" hatched. The few notes that have been made, however, may be of some interest:

"At 9.00 a. m. 'P' is on the nest brooding not only two newly hatched chicks but also eggs 3 and 4 which, according to Charles Osborne, hatched that afternoon at 3.30 and 4.35. . . . At 10.06 there is an exchange and 'Q' comes on while 'P' goes off to feed, remaining, however, within a radius of twenty yards of the nest. At 10.11 'Q' is scared away by a noise inside the blind but 'P' appears almost directly. Immediately the two young birds waddle out of the nest and start walking slowly across the tundra. 'P' pays no attention to this and resumes incubation. At 10.14 'Q' settles down on the tundra where it starts brooding the two chicks."

The following measurements of the chicks are in millimeters,—

	1	2
Length.....	81 mm.	84 mm.
Extent.....	67	69
Wing.....	19	20
Manus.....	15.5	16
Down of tail.....	8	10
Tarsus plus 3rd toe.....	41	41
Web between 2nd and 3rd toes.....	3	3
Web between 3rd and 4th toes.....	6	6.5
2nd toe plus nail.....	14	14
2nd nail.....	2.5	2.5
3rd toe plus nail.....	18	18
3rd nail.....	3	3
4th toe plus nail.....	15	15
4th nail.....	2.5	2.5
Bill.....	7	7
Bill from nostril.....	5	5
Bill from gape.....	8	8
Weight (grams).....	7.5	7.8

With the aid of Ridgway's 'Color Standards and Nomenclature' the following description was made of one of the newly-hatched chicks: underparts, white with down of extreme posterior portions

tinged with buff; crown, pale buff heavily spotted and marked with black; posterior part of crown extending from auricular region of one side to that of the other through the region of the nape, black; an irregular black line extending from the side of the crown through the lores to a point near the base of the bill; a band of white extending from the throat, from one side to the other, posterior to black band of the nape; the remainder of the upper parts similar to the markings of the crown, being a variegated mixture of black, gray, and various shades of buff; down covering the manus, white; bill, olivaceous-black; upper parts of toes and anterior parts of tarsi and naked parts of thighs, deep mouse gray; underparts of toes and posterior parts of tarsi and thighs, pale cream-buff; toe-nails, black; down of lower eyelid, dusky-white.

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