

THE PURPLE SANDPIPER IN SOUTHERN BAFFIN ISLAND

By GEORGE M. SUTTON and DAVID F. PARMELEE

The Purple Sandpiper (*Erolia maritima*) breeds locally, in small numbers, in southern Baffin Island in the American arctic. Soper (1928:98) informs us that "specimens and eggs were taken by the MacMillan expedition to southwest Baffin Island, 1921-1922." Bent (1927:146) mentions two sets of eggs "collected with the parent bird at Cape Dorset" that were given to him by MacMillan. Whether or not these were the "specimens and eggs" referred to by Soper, we hasten to say that they probably came not from Cape Dorset proper, but from somewhere in the interior of Foxe Peninsula, perhaps many miles from the coast. Kumlien (1879:87) saw "hundreds" of Purple Sandpipers in Cumberland Sound in spring. Soper (1946:228) believed that "a few scattered individuals" bred along Blue Goose River and about Bowman Bay. He reported nests and eggs found by an Eskimo assistant "in moist, grassy depressions about lakes far inland, northwest of Crooks Inlet" in the Lake Harbour area.

Taverner's statement (1934:122) that the species is "more at home on rugged, rock-bound seacoasts than on low, tidal flats" applies to migrating flocks, wintering populations, and scattered individuals or groups undergoing the postnuptial molt. As a breeding bird, *Erolia maritima* forsakes the rocks entirely and lives on the tundra instead, placing its nest "in peat" or "among moss-grown shingle" (Witherby *et al.*, 1948:274).

During the earlier part of our summer sojourn on Baffin Island in 1953 we looked in vain for the Purple Sandpiper. Our headquarters were at latitude 63° 45' N, longitude 68° 33' W, at a Royal Canadian Air Force Base near the head of Frobisher Bay. The lowlands near the base were snow-free when we started our work on June 14, and we expected to find many shorebirds courting or breeding there, as well as on Davidson Point, a rock-rimmed expanse of marshy land near the mouth of the Sylvia Grinnell River situated a mile or so west of the base. The only shorebird we saw regularly was the Semipalmated Plover (*Charadrius semipalmatus*). The bay was ice-bound until early in July. Whenever the tide went out a vast area of mud and several rocky islets were exposed, but even here we failed to find Purple Sandpipers.

From July 17 to 20, on extensive grassy flats near the mouth of the Jordan River, 16 miles west of the base, we found a few Semipalmated Plovers and Semipalmated Sandpipers (*Ereunetes pusillus*) and a very few White-rumped Sandpipers (*Erolia fuscollis*) nesting, but we failed to find either the Purple or the Baird Sandpiper (*Erolia bairdii*) there. Nor did we find these two last-named species at latitude 68° 31' N, longitude 71° 22' W, near a large lake 50 miles east-northeast of Wordie Bay, on August 8, or at latitude 65° 20' N, longitude 77° 10' W, near Cape Dorchester, on August 11.

We first recorded *Erolia maritima* on July 29, on a low rocky islet near Coffin Island, about 15 miles south of the base. Here, at low tide, in a wide, dark, seaweed-lined cavern, sheltered from the wind by huge slabs of rotten, deeply pitted ice, we came upon two Purple Sandpipers feeding. Their short, grating calls startled us as the birds flitted up and over the ice. They alighted not far from our boat and an Eskimo shot one. We visited several islands in the vicinity looking for more Purple Sandpipers, but we failed to find any. Nor did we find Purple Sandpiper remains below a Peregrine (*Falco peregrinus*) eyrie on the largest island of the group. The specimen collected (G.M.S. 11794) proved to be a female in breeding plumage. There were distinct brood patches. The largest ova were considerably less than a millimeter in diameter. The stomach contained small bits of gravel and snail shell. The bill was orange-brown at the base and dark

grayish olive otherwise; the legs and toes were dull brownish yellow and the eyes were dark brown. Examination of the plumage and inside surface of the skin revealed no pin feathers. The wing and tail molt had not yet started; but a large patch of gray and comparatively unmarked feathers on the chest appeared to belong to the winter plumage. Where this bird had nested, whether it had left the tundra early as a result of nest-failure, whether it had completed its molt into the breeding plumage or whether, indeed, it had nested at all that summer, we could not say. All we knew was that its general appearance was that of a breeding bird, and that two brood patches were distinct. These lay along each side of the belly and were not part of the ventral apterium. Each patch was enlarged fore and aft, as if to accommodate an egg at each end.

On August 2, Brendan Halloran and an Eskimo visited certain rocky islets not far from the Hudson's Bay Company post and saw several Purple Sandpipers.

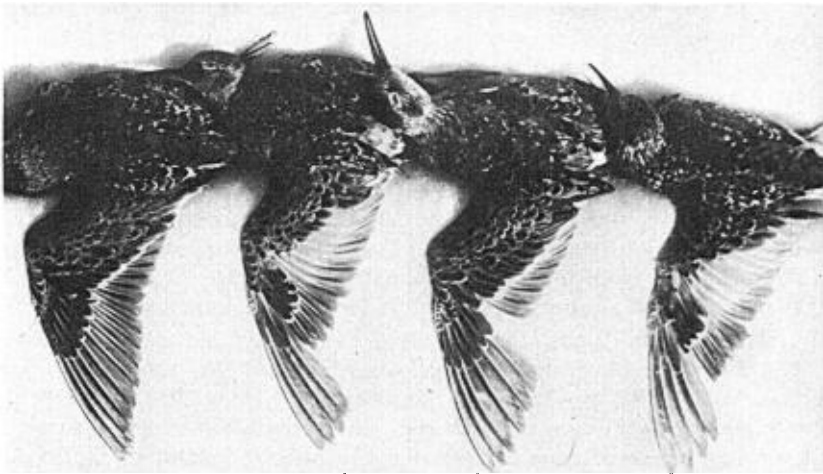


Fig. 1. Unskinned adult female Purple Sandpipers collected from the same flock near head of Frobisher Bay, Baffin Island, on August 6, 1953. The bird at the left has unmolted remiges; in two specimens white bases of the secondaries show plainly because many greater secondary coverts have dropped out. Left to right: GMS nos. 11814, 11815, 11817, 11816.

On August 6, we hunted Purple Sandpipers by boat. At several stops we failed to find the species; but on a rocky island five miles south of Tarr Inlet we came upon a flock of six from which we collected five specimens, all females, each with well defined ovary and two brood patches (G.M.S. 11813-7). In two specimens no wing-molt was apparent; but in three of them many primaries were being replaced. The molt was proceeding from the innermost primary outward (see fig. 1). Only one specimen was fat; in this individual the remiges and body plumage were molting heavily. The birds had been feeding on small snails.

Every specimen handled by us thus far was a female. Our collecting was not selective—we shot what birds we could, assuming that some would be males. The statement by Witherby *et al.* (*loc. cit.*) that incubation is performed “chiefly by male, but apparently female takes some part,” leads us to wonder whether the females leave the breeding ground in advance of the males, molting and possibly even migrating separately from them. Salomonsen (1951:235) states that “only the male broods the eggs, accord-

ing to the sex of a number of sitting birds shot in W. Greenland." Trevor-Battye (1897: 590), states that specimens from Spitsbergen "obtained off the eggs themselves were, with one exception, males; and there can be no doubt that the greater part of the hatching is done by the male." If the female does not brood the eggs, then why the well defined brood patches in all the Baffin Island specimens thus far mentioned? Our belief is that had females been collected in West Greenland and Spitsbergen, examination of them would have revealed brood patches, or that had incubating birds been shot on the nest at various times of day and night, some of them would have proved to be females. This matter should be investigated further, especially in the light of what we are able further to report.

When, on August 8, at latitude 64° 38' N, longitude 70° 28' W, along the southeast shore of Lake Amadjuak, we at last found the Purple Sandpiper on its nesting ground, we avidly sought adult male specimens. We saw two birds that day, both adults. One was flying above a long, narrow gravel bar and the other was on the tundra, several hundred yards from water, running about with head low and plumage puffed out, calling excitedly (see Nicholson, 1930:409). We tried to find young birds, but in vain. Finally we collected the adult. It proved to be a female (G.M.S. 11819). Its inner primaries were molting, the outermost of the molting group being very short. The two brood patches were distinct.

The area in which we found this bird was tundra of an unusual sort. Walking was difficult, for the ground was muddy, although there was some gravel and the surface appeared to be firm. The whole place had a grassy or mossy appearance at a distance; but at close range the bare strips between the patches of verdure showed plainly. Walking on the vegetation did not help; the foot sank several inches at every step.

In this same area on August 15, we collected two young Purple Sandpipers, both short-winged and short-tailed, but able to fly well. Their call-note we jotted down as *tee-tee* or *weep-weep*. Both proved to be males (G.M.S. 11841-2). One was more downy on the head, both above and below, than the other. They were the only Purple Sandpipers we saw in that area. In another place, a mile away and a half a mile from water, we came upon two more Purple Sandpipers, an agitated adult, which we failed to obtain, and a young bird, which we collected (female, G.M.S. 11843). In all these young birds the chest and sides were spotted rather than streaked. The bills were dusky with yellowish olive base and the feet were dull brown with an orange tinge.

We did not see a Purple Sandpiper anywhere after August 15.

DESCRIPTION OF ADULT SPECIMENS

Our seven adult specimens, all females, are alike in one respect; they are not in a complete plumage of any sort. The mixture of plumages is especially noticeable on the chest and lower foreneck, where many of the feathers are brownish gray, inconspicuously edged with grayish white, and where there is a sprinkling of dark-centered feathers. As for the "sooty-brown" breast and the "large oval sooty-brown spots" of the lower breast referred to by Witherby *et al.* (1948:275), there is much individual variation (see fig. 2).

The series is uniform in that the neck proper, both in front and behind, is clearly streaked. Every bird has very dark scapulars and back plumage, the feathers being so worn that very little white, buff, or rufous remains. Every bird is dark-crowned except G.M.S. 11815, which was molting heavily. Here the whole head, except for the chin, throat and eye-ring, is largely smooth gray, that is, it is in fresh winter plumage.

Salomonsen (1951:230-231) believes that *Erolia maritima groenlandica* (Løven-

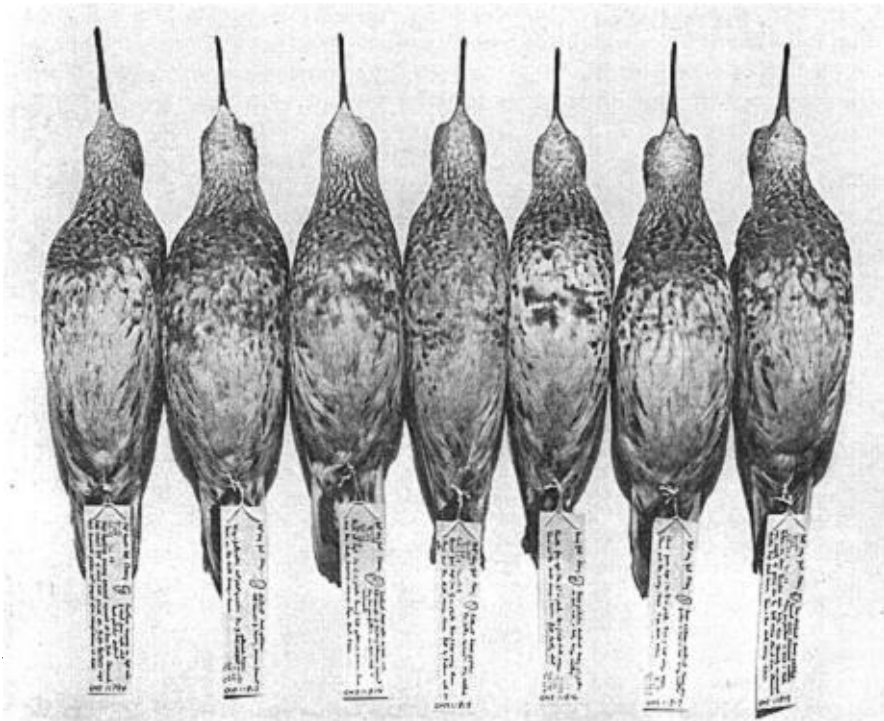


Fig. 2. Adult female Purple Sandpipers collected in southern Baffin Island in the summer of 1953. The bird at the right was taken on the tundra near Lake Amadjuak; the others are from rocky islands at head of Frobisher Bay. The three birds at the left are the only ones having unmolted remiges. Left to right: GMS nos. 11794, 11813, 11814, 11815, 11816, 11817, 11819.

skjold), allegedly of Greenland and Iceland, is not separable from the form found in Scandinavia and Spitsbergen. His measurements of specimens from Greenland, Scandinavia, Iceland, and the Faroes show the Iceland birds (51 males, 36 females) to be noticeably large, but his measurements reveal so much overlapping that he believes recognition of the large race is not warranted. Our Baffin Island adult females measure as follows (in millimeters):

G.M.S. no.	Date	Wing	Tail	Culmen	Tarsus
11794	July 29	131	64	37	24
11813	August 6	130	63	33	23
11814		128	64	33	22.5
11815		127	64	32.5	23.5
11816		125	33	23.5
11817		131	61	34.5	23.5
11819	August 8	127	62	33.5	23

ACKNOWLEDGEMENTS

These studies were aided by a contract between the Office of Naval Research, Department of the Navy and the Arctic Institute of North America N7onr-367-01. We wish to thank Messrs. Ross Peyton and Brandon Halloran, of the Hudson's Bay Com-

pany, for helping us to reach certain islands in Frobisher Bay, Constables Robert Van Norman and Robert Pilot, of the Royal Canadian Mounted Police, for taking us by boat to the mouth of the Jordan River, and personnel of the Royal Canadian Air Force for permitting us to accompany them on flights to remote parts of southern Baffin Island.

LITERATURE CITED

- Bent, A. C.
1927. Life histories of North American shore birds. Order Limicolae (Part 1). Bull. U. S. Nat. Mus., 142:1-420.
- Kumlien, L.
1879. Contributions to the natural history of arctic America, etc. Bull. U. S. Nat. Mus., 15: 69-105 (Birds). Reissued in Smithsonian Misc. Coll., 23 (1882).
- Nicholson, E. M.
1930. Field-notes on Greenland birds. Ibis, 1930:280-313; 395-428.
- Soper, J. D.
1928. A faunal investigation of southern Baffin Island. Nat. Mus. Canada (Ottawa) Bull. 53: 76-116 (Birds).
1946. Ornithological results of the Baffin Island expeditions of 1928-1929 and 1930-1931, together with more recent records. Auk, 63:1-24, 223-239, 418-427.
- Salomonsen, F.
1950-51. The birds of Greenland. Part 2 (Copenhagen, Ejnar Munksgaard).
- Taverner, P. A.
1934. Birds of the eastern arctic. In "Canada's Eastern Arctic": 113-128 (Department of the Interior, Ottawa).
- Trevor-Battye, A.
1897. The birds of Spitsbergen, as at present determined. Ibis, 1897:574-600.
- Witherby, H. F., Jourdain, F. C. R., Ticehurst, N., and Tucker, B. W.
1948. The handbook of British birds. Vol. 4, fifth impression (London, H. F. and G. Witherby, Ltd.).

Department of Zoology, University of Oklahoma, Norman, Oklahoma, January 14, 1955.