

A WADER MIGRATION AT TLELL, QUEEN CHARLOTTE ISLANDS, BRITISH COLUMBIA

WITH THREE ILLUSTRATIONS

By J. A. MUNRO

While at Tlell, on the east coast of Graham Island, during the period April 29 to May 30, 1935, I had an opportunity to conduct daily observations on a wader migration. The flight probably had been under way for some days prior to my arrival, and it reached the peak shortly afterward. It terminated so far as most species were concerned on May 11, after which only Sanderlings (*Crocethia alba*) were abundant.

The chief feeding ground for waders was an expanse of boulder-strewn seabottom interspersed with areas of clear sand or of shingle, part of which was always available except at extreme high tide when the reef was completely submerged. Some of these boulders were encrusted with barnacles, others with gastropods, chiefly *Littorina scutulata*. Limpets clung to their sides and the spaces between harbored various other species of molluscs. The overturning of a stone usually dislodged little crabs, isopods or other small animals, and a high-water mark deposit of drifted eel-grass held still others including amphipods in abundance—in short, it was a rich feeding ground not only for waders but also for gulls, bald eagles, crows and ravens.

Here on the evening of April 29, with all save several small parts of the reef covered by the rising tide, a large company of waders, chiefly Black Turnstones (*Arenaria melanocephala*), but including also Aleutian Sandpipers (*Arquatella ptilocnemis couesi*), Western Sandpipers (*Ereunetes mauri*), Sanderlings, Dowitchers (*Limnodromus griseus*) and Red-backed Sandpipers (*Pelidna alpina sakhalina*) was assembled. As I approached, the birds arose and flew along the beach, now in small bands, now together, the black and flashing white of the Black Turnstones predominating as the flock wheeled and settled again along the seaward margin of stones. Here they clustered close together in a compact mass which a moment later commenced to disintegrate and flow over the reef in a dark-colored stream. From the slight elevation on which I stood, the birds' backs were visible but their fast moving feet could not be seen, so that an illusion of movement without effort was created.

Subsequently it was observed that the greatest activity took place during the period in which the size of the feeding ground was steadily increasing on a falling tide. Thus on the afternoon of May 3 large numbers of waders were busily feeding over the reef which momentarily was growing larger. Small flocks were restlessly flying from place to place and others constantly were arriving, sometimes in flocks of considerable size, so that it was not practicable to make accurate counts. As before, Black Turnstones were greatly in the majority, and the other species among them, relatively less conspicuous against a neutral background of boulders, sometimes were difficult to distinguish.

The feeding ground of the Black Turnstones was entirely restricted to the stony sea bottom described, and usually their hunting was done close to the constantly shifting water's edge. Beyond the seaward edge of this reef isolated boulders of considerable size appeared at low tide and these were eagerly searched for food. Frequently fifty or more birds might be seen walking over these larger rocks, which were separated from the main feeding ground by a stretch of open water.

When this reef was covered, the birds rested on the beach in a compact flock or else flew restlessly up and down the shore. Thus on May 4 a large flock came whirling down the beach, wheeled and alighted out of sight behind a slight elevation near the water's edge. Walking slowly toward them, I was able to approach within thirty-five yards. The Turnstones were assembled in a densely packed flock, and on the landward edge of this gathering were clustered some 200 Aleutian Sandpipers and 100 Sanderlings.

These birds were kept under observation for three-quarters of an hour. The feeding ground was entirely under water and the birds were more than usually restless, taking sudden flights from one part of the beach to another. Sometimes the entire company would rise suddenly and travel out to sea, first in a dense cloud, then in a long straggling line, finally to re-assemble on the same place which had been vacated a few minutes before. When in flight the smaller waders (the Aleutians and Sanderlings) were sometimes hard to detect among the Black Turnstones; but



Fig. 44. Mass of Black Turnstones in oval-shaped flock, at Graham Island, British Columbia.

immediately after landing on the beach the former invariably ran through the mass of Turnstones and took up a position at the inner edge of the flock, the Aleutian Sandpipers strung out between the Black Turnstones and the Sanderlings.

Sometimes the Black Turnstones would crowd together so closely on the beach as to present at a distance the illusion of a large, oval, black object lying on the white sand (see fig. 44). Approaching this flock when in such formation, as I did a number of times, I saw that the Black Turnstones became restless first. The black oval of the flock began to lengthen, as first a trickle then a stream of birds from among those at the part of the flock farthest from me moved along the sea edge, until finally the oval lengthened to a long, black ribbon and a moment later the birds arose, the Black Turnstones a little ahead of the others. Again the flock flew out to sea, swinging, turning, and again alighted on the sand, with the smaller sandpipers always taking up a position at the inward edge. These periodic shiftings stopped when a young Duck Hawk suddenly appeared, put the birds off the beach and stooped into the wheeling mass, whereupon the flock quickly dissolved into smaller bands which sped out to sea and vanished.

It was not possible to determine what proportion of the daily numbers seen

were fresh arrivals or for how long individual birds remained in the vicinity; but it seems reasonable to suppose that between two and three thousand birds passed through. On May 3 after a strong southeast wind on the preceding night practically all the waders previously noted were absent from the beach and it was assumed that flocks arriving subsequently were newcomers.

DAILY ESTIMATE OF WADERS AT TLELL, BRITISH COLUMBIA, APRIL 29 TO MAY 16, 1935

Day of month	April		May																
	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Total number	915	1662	1257	1134	280	1123	34	247	71	28	530	476	92	4	6	21	111	22	
Species:																			
Semipalmated Plover	0	1	6	6	.....	20	.....	10	0	6	18	.....	2	2	.....	2	.....	2	.....
Black-bellied Plover	5	0	0	15	0	1	7	0	0	0	7	9	0	0	0	0	0	0	0
Black Turnstone	500	800	700	900	0	1000	0	150	0	1	85	150	50	0	0	0	0	0	0
Hudsonian Curlew	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	5
Greater Yellow-legs	0	1	.....	.....	1	1	.....	.....	6	.....	8	4	.....	2	6	.....	.....	.....	.....
Aleutian Sandpiper	50	50	200	150	200	0	0	40	0	20	82	40	40	0	0	0	0	1	0
Least Sandpiper	0	400	0	0	0	0	0	7	10	0	30	30	0	0	0	0	0	0	0
Red-backed Sandpiper	40	300	350	3	0	0	0	4	40	0	230	200	0	0	0	0	10	3	0
Western Dowitcher	60	24	0	35	4	0	19	0	5	0	10	16	0	0	0	0	0	0	0
Western Sandpiper	210	50	0	0	0	0	0	35	10	0	30	25	0	0	0	0	0	0	0
Sanderling	50	35	0	20	75	100	8	0	0	0	30	0	0	0	0	19	100	12	.....
Killdeer			1 observed April 30.																
Ruddy Turnstone			2 observed May 2; 2 observed May 10.																
Wilson Snipe			1 observed May 1.																
Wandering Tattler			1 observed May 6.																
American Knot			1 observed May 2.																

The large flocks of Black Turnstones, Aleutian Sandpipers and Sanderlings always were carefully scrutinized on the chance that other less common waders might be among them, and this resulted in one record for an American Knot (*Calidris canutus rufus*) and two occurrences of Ruddy Turnstone (*Arenaria interpres morinella*).

A dead Red Phalarope (*Phalaropus fulicarius*) picked up on the beach constituted the only record of this species. On its ventral surface the specimen shows a few reddish feathers of the summer plumage.

Several miles of hard sand beach lie between the reef and the mouth of the Tlell River to the north, and at the height of the migration small flocks of Sanderling, Western Sandpiper, Western Dowitcher and Black-bellied Plover (*Squatarola squatarola*) were met there. Occasionally a Hudsonian Curlew (*Phaeopus hudsonicus*) flying north up the beach would alight near the water's edge attracted by other waders; but a log-strewn slope of soft sand above high-water mark seemed more attractive to this species and this was also the haunt of the Semipalmated Plover (*Charadrius semipalmatus*). (See fig. 45.)

On May 4, I watched a male of the last named species perform the mating flight, as with short bat-like wing beats the bird continued to fly along an elliptical course, at varying heights above the ground, for six minutes. Sometimes the performer would be a hundred feet in the air and continue to fly at this altitude for a short time, then, like a falling leaf, flutter down to a lower elevation. A single note, repeated at regular intervals of about five seconds—syllabized as *weet, weet, weet*—was given during the entire flight. Finally, from a high elevation the bird dropped in a slanting course to the sand and alighting there continued to call for several minutes. On this same day other Semipalmated Plover, in two's and three's, constantly crossed the beach and circled in and out among the logs, such movements being interpreted as part of the courtship display.

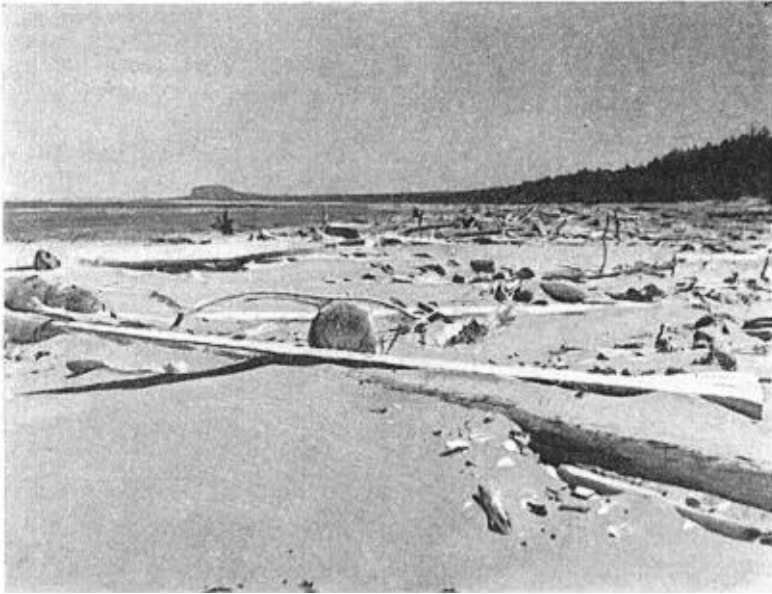


Fig. 45. The upper beach, frequented by Hudsonian Curlew and Semipalmated Plover, at Graham Island, British Columbia.

Second in importance as a feeding ground were the tide flats three miles from the mouth of the Tlell River which runs parallel with the sea at only a short distance inland (see fig. 46). Here with a falling tide appeared expanses of soft mud in which were many small polychaetes and, on the surface, an abundance of amphipods, while many of the shallow tidal pools held newly hatched sculpins (*Lep-*



Fig. 46. Tide flat on Tlell River, Graham Island, British Columbia, showing a feeding flock of Red-backed Sandpipers.

tocottus armatus) in large numbers. These semi-transparent fry, less than an inch long, were eaten by several species of waders. Other parts of the riverside, comprising stretches of clay, sand or gravel and producing less animal life, were not used to any extent except by Greater Yellow-legs (*Totanus melanoleucus*) and the scarce Wandering Tattler (*Heteroscelus incanus*). The most abundant species were Red-backed Sandpiper, Least Sandpiper (*Pisobia minutilla*) and Western Sandpiper. This area, more than any other, was frequented by Western Dowitchers, and these were the tamest of all the waders so that it was usually possible to walk within a few yards of where they stood before an alarm was given. One or more Greater Yellow-legs were seen here frequently, and at least two of these remained after the migration was over.

Food.—Analyses of the stomach contents of waders taken at Tlell showed that Black Turnstones had fed exclusively on barnacles and gastropods, which also were the chief food of Aleutian Sandpipers plus a small number of limpets, blue mussels, amphipods and a small nereid. The food of Sanderlings was entirely crustacean, comprising amphipods, isopods and mysids. Sculpin fry had been eaten by a Greater Yellow-legs, a Wandering Tattler and two Western Dowitchers. The food of Red-backed Sandpipers was the amphipod *Corophium spinicorne* exclusively, except in one instance where a small polychaete had been eaten. A Hudsonian Curlew had fed upon amphipods and a shore crab (*Hemigrapsus* sp.); a Semipalmated upon ground beetles and an amphipod, and a Least Sandpiper on larvae of Diptera and Coleoptera. The material found in Western Dowitchers comprised gastropods, polychaetes, sculpin fry and larvae of Diptera and Coleoptera. A Black-bellied Plover had taken 8 small clams (*Macoma* sp.), gastropods, amphipods, 1 mysid, 2 isopods and a small fish.

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Okanagan Landing, British Columbia, March 6, 1936.

CHARLES EDWARD HOWARD AIKEN

WITH PORTRAIT

By EDWARD R. WARREN

Charles Edward Howard Aiken, who may well be termed Colorado's pioneer ornithologist, was born at Benson, Vermont, September 7, 1850, the son of James E. and Harriet Ann (Howard) Aiken, and died at Colorado Springs, Colorado, January 15, 1936. There were seven children in the family; two died in infancy. Charles was the oldest of the surviving children, and had four sisters, three of whom are now living. The boyhood years were spent in Chicago, to which place the family had moved. Here Charles began, in 1868, the study and collection of birds, which he continued to the end. He once told me that he used to shoot warblers and other small birds which he sold in the flesh to a Chicago taxidermist. Perhaps he gained his first knowledge of taxidermy from that man.

The following note was found among Aiken's papers. It is interesting as showing that he was acquainted with the now extinct Passenger Pigeon (*Ectopistes migratorius*). It was probably written within the last few years. Ross is in Indiana, southeasterly from Chicago, and is still a small place, 125 being the population as given in the Century Atlas. There are seven skins of the Passenger Pigeon in the