

occasion, I found young birds being fed on April 11; but my usual luck was to find three eggs, which are grayish, blotched rather heavily with purplish brown about the larger end.

Yellowstone Park, Wyoming, April 11, 1921.

A TWELVEMONTH WITH THE SHOREBIRDS

By ALLAN BROOKS

IT WOULD be difficult in most localities to be able to study shorebirds during every month of the year; and the present notes owe whatever interest they may possess to the fact that changes of location made it possible for me to keep in touch with my favorite group of birds during the whole of the year 1920.

The last days of December, 1919, found me at Comox, on the east coast of Vancouver Island. The fall and early part of the winter had been of exceptional severity; even here on the seacoast there had been over twenty degrees of frost, and I hardly expected to see much in the way of Limicolae. Yet while waiting for Brant on a collection of bars some miles out to sea, large flocks of Black Turnstones, Sanderlings, and Dunlins were constantly in evidence. Among the first named, seeking their food on the stony shores instead of the tidal flats, were several Aleutian Sandpipers, one of which I secured. A large plover which was either a Black-bellied Plover or a Surfbird flew low over the water, but the sun-wash on the water made it impossible to be positive of its identity. I think, however, from its silence that it was a Surfbird. Anyway there were five different species of shorebirds on that island on that cold winter's day; and a few days later, January 2nd, I saw Killdeers and Wilson Snipe on the estuary of the Courtenay River, making seven species wintering at Comox—not bad for latitude 50°!

The first migrating shorebird arrived on April 9, a Greater Yellowlegs; and a few days later I left Comox for Masset, Queen Charlotte Islands, some hundreds of miles farther up the coast. I arrived there April 15 and as the latitude was 54° I did not expect much migration for about a month. Here a surprise awaited me; for the movement of shorebirds was in full swing before the end of April, at its height by May 7, and mostly over by the middle of that month.

The following probably all wintered at Masset, though all were not identified until May 2: Black Oystercatcher, Black Turnstone, Dunlin, Aleutian Sandpiper, and probably Sanderling. The first undoubted migrants were Greater Yellowlegs, on April 22, and Least Sandpiper April 26. Semipalmated Plover and Western Sandpiper came in on the 29th; and the next day brought Black-bellied Plover, Long-billed Dowitcher, and Surfbird, all in flocks and in high plumage.

The Surfbirds were in a flock of one hundred and fifty or more and may have arrived before, or even wintered, as I have a specimen taken here about the middle of April. They were not seen again, but all the other species got

more plentiful up to May 7. This was the height of the rush; there had been heavy rains turning to snow and the ground was white in the morning and the mud flats covered with shorebirds. The new arrivals were Knot, Baird Sandpiper and Marbled Godwit, the latter identified by J. A. Munro, who also doubtfully recorded a small flock of Lesser Yellowlegs. No specimens were taken of either of these last two species then.

The tidal flats of the lagoon at Masset, called Delcatla Inlet, were covered with shorebirds all in full spring plumage. The shore line of Dixon Entrance to the north also showed a good many flocks and where a few rocks cropped out there were Aleutian Sandpipers, Black Turnstones, and Oystercatchers, none of which occurred on the tidal flats.

Wandering Tattler and Spotted Sandpiper both arrived on the 10th. The main rush had distinctly fallen off, but there were still large numbers of waders. Pectoral Sandpiper came on the 12th, never becoming common. Hudsonian Curlew showed up on the 16th; and the next day I took a Western Solitary Sandpiper, a bird I hardly expected to meet so far out from the mainland. It was accompanied by another which rose and performed a flight-song in the air—a wild career, of a series of steep inverted V's. I thought I might have spoilt a chance of finding the nest, as the locality was eminently suitable; but on dissecting my bird later I found that it, also, was a male, which would not have bred for over two weeks. The species was never seen again here. A parallel case was that of Wilson Snipe which was "bleating" in the regular nuptial flight about this time, but left a few days later for more northern breeding grounds.

The last spring migrant to arrive was the Turnstone—not the Ruddy subspecies, but the dark-backed Old World form, a single specimen of which was taken on May 20. This practically brought the spring migration to a close. A few birds lingered on, Sanderlings, Western Sandpipers, Hudsonian Curlews, and Wandering Tattlers, both the latter being seen as late as June 4 when Semipalmated Plovers were sitting on hard-set eggs. These Plovers together with Black Oystercatcher and Spotted Sandpiper were the only shorebirds that remained to breed, although a few pairs of Greater Yellowlegs undoubtedly breed along the east coast of Graham Island.

The notable features of the spring migration of the shorebirds at Masset were its unanimity and early date, especially when compared with a similar latitude on the Atlantic coast or in the interior. The entire migration of birds that were obviously strong adults was over by May 20. After that date only immature and crippled birds were to be seen and not a single one of even these after June 4.

The fall migration at Masset opened with a flock of Western Sandpipers, all adults, wheeling over the flats on the afternoon of July 1. The next day a flock of about eighty-five were busy feeding, having arrived about the middle of the afternoon, and were carefully conned with a binocular at close range. At least sixty-five per cent (and probably more) were females, and not a single young bird in the flock. Very soon they rose and continued their flight southwards.

July 3 found me in a little "gas-boat" anchored four miles out in Dixon Entrance, watching for Shearwaters while the owner fished for halibut. A strong wind due west kicked up a good sea and presently I noticed that there was a big migration of Sandpipers on. Flock after flock passed low over the

waves, driving dead down wind and giving the boat a wide berth. It was more than difficult to get them even for a moment in the field of the binoculars, as one had to hang on to a stay with one hand and use the glasses with the other. Also the birds flew so low that they were only visible as they topped a wave; but as far as one could see there was the flash of their white undersurfaces far out to sea. Western Sandpipers, all adults, constituted the bulk of this huge movement. The only other species thoroughly identified were Sanderlings and Northern Phalaropes, although once I saw what I took to be about three hundred Red-backed Sandpipers or Dunlins.

Here was a great migration of shorebirds travelling with a beam wind down the coast, which, as the wind freshened, had turned down wind through Dixon Entrance to get in the lee of the Queen Charlotte group to pass south through Hecate Strait. We got our anchor up with some difficulty in the middle of the afternoon and as we headed back for Masset we saw the last of the migration. It would be hard to estimate the thousands of shorebirds that had passed and were still passing, for the wind continued for three days; yet along the shore and on the tide flats not a single bird of all this host could be seen.

Two days afterwards six Western Sandpipers were seen on the shore, the only ones seen until the 8th of July when twenty-five Western and two Least Sandpipers arrived, and except an odd bird of these two species the only other migratory waders seen during the month were a few Black Turnstones and Black-bellied Plovers which arrived about the middle of the month. Like the Sandpipers all were summer-plumaged adults.

August brought some movement; two Turnstones (*interpres*) and a Wandering Tattler arrived on the 2nd, together with about 350 Western Sandpipers, among them seven young birds, the first young of any migratory wader to date. Sandpipers and Northern Phalaropes were seen on the 6th, all adults, and the first juvenile Least Sandpiper on the 8th. The next arrivals were Pectoral and Baird Sandpipers on the 10th, a few birds of each, and all juveniles. I have never seen an adult Baird Sandpiper in over 30 years observation of the fall migrations.

On the same date I took the only Golden Plover taken this year, an adult female retaining only a few of the black feathers of the under parts. This is an undoubted Pacific Golden Plover (*Pluvialis dominicus fulvus*); the whole upper surface is broadly margined with bright yellow; cheeks, throat and chest suffused with paler yellow, with an ochre tinge; measurements—wing, 177; tail, 61; tarsus, 43.

The first returning Hudsonian Curlew was seen August 12, a single adult; and the same day brought four Turnstones, *interpres*, adults, and a very large flock of Sanderlings, with not a single young bird in the flock. On the 13th a few Semipalmated Sandpipers arrived, all juveniles (one was taken to ensure identification). I was pretty sure I saw a single bird of this species on the 31st of July, but could not take it without killing a number of Western Sandpipers at the same shot, and so it was allowed to go as I was confident that I would see the species again. During the balance of August this species was frequently seen, usually in company with Sanderlings or Semipalmated Plovers on the outer sea-beach and not on the tide flats. It never became common as it does in the interior of the Province and at Sumas near the coast; so the main migration line of the species must be farther east.

August 22 saw a large influx of shorebirds: Sanderlings (all adults ex-

cept one young which consorted with Semipalmated Plovers), Baird, Least, Western, and Semipalmated Sandpipers (all juveniles), Turnstones (juveniles) and one each of Northern Phalarope, Pacific Golden Plover, and Lesser Yellowlegs, the latter taken to ensure identity, a bird of the year. Two more Lesser Yellow-legs and the first Wilson Snipe were seen on the 28th; and the month closed with the influx of large flocks of juvenile Sanderlings which kept separate from the adults, and the presence of nearly all the species seen during the month in fair numbers, except Golden and Black-bellied Plovers and Lesser Yellowlegs which were not seen again. The resident Spotted Sandpipers and Semipalmated Plovers were in reduced numbers; the adults of both had all or mostly left.

I left the Queen Charlotte Islands on the 4th of September and except for a few Wandering Tattlers and enormous numbers of Northern Phalaropes saw no waders among the islands nearer the coast where I spent the next few weeks. Towards the end of September I arrived at my home on Okanagan Lake in the southern interior of British Columbia. Usually, although the climate is mild, all the shorebirds have left by this time except a few Black-bellied and Killdeer Plovers, Greater Yellowlegs, and Pectoral and Spotted Sandpipers. This season must have been a very remarkable one, however, as on the 25th of September I saw eight species on one small alkaline pond in the foothills—one Black-bellied Plover, five Killdeers, six Pectoral, one Least, one Baird and one Stilt Sandpiper, and one Long-billed Dowitcher. The Stilt Sandpiper was taken, a young bird changing to winter plumage. Surprising as this collection was for so late a date, it was nothing compared to what I saw about a month later in the Province of Alberta.

I arrived at my duck-shooting grounds there on the 9th, and although the nights were cold with quite thick ice on the smaller ponds there were numbers of Black-bellied and Killdeer Plovers and Greater Yellowlegs still remaining. On October 21st, when duck-shooting at Beaver Hills lake, 45 miles east of Edmonton, I was astonished at the number of small shorebirds. There had been very heavy frosts, at least 17°, and all the ponds were frozen, with a good deal of ice along the edges of the lake; yet the following waders were positively identified: Black-bellied Plover (common), Semipalmated Plover (1), Sanderling (3), Baird Sandpiper (3), Pectoral Sandpiper (5), Stilt Sandpiper (1 in full winter plumage taken, a young bird), Dowitcher (Long-billed? 3), Wilson Snipe (common)—eight species in winter conditions in latitude 54°. I saw a Greater Yellowlegs on the 24th flying over an icebound lake. This brought my observations on the fall migration to a close for 1920.

The north end of Graham Island, where most of my work was done, while offering every attraction to shorebirds, is evidently not one of their stopping places, although the large migration seen on July 3 proved that it was directly in the way of their flight-line. The large number of Peale Falcons breeding along the coast here may have something to do with this. Falcons are inveterate hunters of shorebirds, and here they breed in greater numbers than in any part of the world, I should think. At the height of the shorebird migration, the end of July, I spent about a week on Langara Island, at the extreme north end of the Queen Charlotte group. Every rocky point held the aerie of a pair of falcons, and sometimes the yelping of three different broods of young birds could be heard from one stand. The rocky reefs should have been covered with Turnstones and Surfbirds yet not a single one was seen; nor were there

any Sandpipers along the suitable beaches. My companion, Mr. C. deB. Green, heard the note of a Greater Yellowlegs high up in the air; he whistled it down and instantly a Falcon struck at it and missed. Away went the Sandpiper only to return to the alluring whistle. Again the Falcon, a young and inexperienced bird, struck and missed, and then the Yellowlegs left that unhealthy spot for good. Black Oystercatchers, however, seemed to be immune, rearing their young right under the Falcons' nests, unmolested.

Another notable feature of the fall migration is the absence of the Red-backed Sandpiper until about the middle of October, when large flocks of young birds in winter plumage arrive; yet there are numbers of records for September in California, far to the south. It looks as if the adults skipped British Columbia on the southward journey. This dual migration of adults and young is very remarkable and is not peculiar to any particular species. In the case of the Western Sandpiper the flight-line of the adults is evidently more coastwise or even out to sea than that of the young. Considering the enormous number of adults seen on Graham Island, the young were notably scarce; while at Sumas Lake only 60 miles from the coast I have never seen an adult in the fall migration although the young are very abundant.

December found me in Florida where I expected to make the acquaintance of a good many shorebirds that I had not met before. In this I was somewhat disappointed. At Jupiter, on the west coast of the state, the same species were wintering that I knew so well on the Pacific side of the continent—Black-bellied, Killdeer, and Semipalmated Plovers, Least and Spotted Sandpipers and Sanderlings. Except the last, all were represented by one or two individuals only, and these stuck to one locality, being noted almost every day throughout January and February. At Sewall Point, St. Lucie Inlet, there were good feeding grounds and here on February 7, a good number of waders were seen, among them two pairs of Oystercatchers, large flocks of Red-backed and Semipalmated Sandpipers and a few Knots. Pectoral Sandpipers and Lesser Yellowlegs were seen March 3, but the first birds that looked like migrants were a pair of Wilson Plover that arrived at Jupiter on March 24. And shortly afterwards I myself migrated to the North.

Four Least Sandpipers taken at Jupiter on March 5 are interesting in the fact that two are adults and two young birds—all in the gray winter plumage; but while that of the adults is much worn, the young are in fresh feather. On my way home via Texas, California and Oregon I was struck with the abundance of the Hudsonian Curlew at all suitable points; and the wave of these birds that reached Puget Sound a few weeks later showed that here at any rate was a conspicuous shorebird that is more than holding its own.

This ended my twelvemonth or more with the shorebirds, during which time I had the opportunity of meeting with just thirty species of these most interesting birds.

A note on the Surf-bird, although not part of my last year's observations, is worth recording here. Mr. C. deB. Green sent me seven of these birds which he took on Porcher Island, off the mouth of the Skeena River, July 12 of this year. Five of these were females and two males; all were in rather patchy summer plumage, a good deal of the former winter plumage showing on the chest. This made me take them for immature and non-breeding birds. But all, and especially the females, show the double incubating patches common to the Limicolae, and had only recently been sitting on eggs. Of course the date is nothing

out of the way, since they have been taken as far south as Chili by the end of June; but still it looks as if the much-sought-after breeding grounds of these mysterious birds lie not so very far north. Black Turnstones which breed south of the Yukon-mouth do not arrive from the north until the middle of July.

I have a theory that many of the females of the Limicolae, especially when they are larger and handsomer than the males, do not remain on the breeding grounds after the young are hatched, but turn them over to the care of the males and start on their southbound journey at once. There is considerable evidence to corroborate this, covering a number of species.

Okanagan Landing, British Columbia, July 30, 1921.

BIRD NOTES FROM SOUTHEASTERN ALASKA

By G. WILLETT

DURING several years spent in southeastern Alaska, principally on the more southern islands of the Alexander Archipelago, the writer has accumulated considerable data on the birds of the region, some of which seems to add to previously published knowledge of their distribution and habits. During the past winter he has also enjoyed the privilege of access to the notes and collection of mounted birds of Mr. Fred H. Gray, of Wrangell. Mr. Gray has resided in that locality continuously since 1899, during which period he has covered a great deal of the surrounding territory and acquired much interesting information on local birds, considerable of which is, through Mr. Gray's courtesy, included herein.

In the following notes the intention of the writer is to include only species regarding which some fact or facts have come to light that add to previously published matter regarding them.

Stercorarius pomarinus. Pomarine Jaeger. *Rissa tridactyla pollicaris*. Pacific Kittiwake. These two species are apparently striking examples of birds that use different migration routes fall and spring. The first is common and the last abundant in fall migration, but both are rare in spring.

The Pomarine is the only one of the jaegers that the writer has met with in any numbers along inside channels, the migrations of *parasiticus* and *longicaudus* appearing to be almost entirely made over the open ocean. The earliest fall record for *pomarinus* is of a bird in the dark plumage taken near Howkan, Long Island, August 30, 1919. The latest record is of several birds seen between Shakan and Point Baker, Prince of Wales Island, October 3, same year. The species has been taken at Craig from September 5 (1919) to September 15 (1920), and four birds were seen off Zarembo Island September 25, 1920. The only spring record is of a single bird seen at Craig May 16, 1921.

The Pacific Kittiwake is an abundant fall migrant, being most plentiful during the month of September. The earliest record for the fall migration is August 8, 1919, on which date it was common at Waterfall, Prince of Wales Island. During the fall of 1920 it remained fairly common at Wrangell until October 28 and several birds were seen as late as November 12. Immature birds are occasional during the summer months, but the writer has seen no adults at this season south of Sitka Sound. The only spring record is of a single bird seen at Waterfall April 23, 1916.

Chlidonias nigra surinamensis. Black Tern. Nine birds seen (two collected) by Gray near Wrangell September 18, 1903.