

we came across individual birds in the dense forest. In October was not nearly so common.

85. *Ixoreus naevius naevius*. VARIED THRUSH.—Rather common being found distributed in the forest fairly adjacent to the lake, but less so up the mountain side. Its delightful song was heard each day in May, especially at morning and evening and during the rainy and misty weather, being in perfect harmony with its wild environment. Also commonly seen in October.

MIGRATION OF THE YELLOW-BILLED LOON.¹

BY JOSEPH DIXON.

THE lack of information relative to the migration routes of the Yellow-billed Loon (*Gavia adamsi*) has been shown most forcefully in Professor W. W. Cooke's interesting article in 'The Condor' (vol. XVII, 1915, pp. 213-214).

The tentative theories advanced by Cooke, await, of course, the support or contradiction of further data, and certain field observations of the writer are here set down as a possible contribution toward the ultimate solving of the problem.

The Harvard Alaska-Siberia Expedition, of which I was a member, was obliged, on account of unfavorable ice conditions, to spend considerable time in 1913 and 1914 in what, according to the A. O. U. 'Check-List', is supposed to be the center of the breeding range of this species, the Arctic coast of Alaska between Point Barrow and the mouth of the Mackenzie River. This expedition was financed in part by Mr. John E. Thayer, to whom the writer is indebted for permission to use such of the information obtained, as is needed in this paper.

We naturally observed the arrival of the Yellow-billed Loons with interest, and, during the time we spent there, especial attention was given to the loons in general, in the hope of finding an authentic nest of the Yellow-bill. Not only did we fail to find any

¹Contribution from the Museum of Vertebrate Zoölogy of the University of California.

nest of this species, but none of the nine males and five females taken between June 3 and July 16 showed, upon dissection, any signs of breeding. (See Brooks, Bull. Mus. Comp. Zool., vol. LIX, 1915, p. 368.)

Doctor R. M. Anderson, leader of the Southern Division of the Canadian Arctic Expedition, in discussing this problem with me in the winter of 1913, assured me that the four seasons he had spent between Point Barrow and the mouth of the Coppermine River had been equally barren as regards definite breeding records of this species. In Stefánsson's 'My Life with the Eskimo' Macmillan Co., New York, 1913, p. 456) Anderson says: "The Yellow-billed Loon is found in most places on the Arctic coast in summer, from northwestern Alaska to Coronation Gulf but does not seem to be very common anywhere. . . . I have never been able to find a nest of this bird or hear of any white man or native in the North who has ever done so. The Common Loon or Great Northern Diver occasionally straggles to the Arctic Coast, both in Alaska and Canada." He mentions the occurrence of the Common Loon at Flaxman Island, in Alaska, and Coronation Gulf on the Canadian side.

R. MacFarlane (Proc. U. S. National Museum, vol. 14, 1891, p. 416) states, regarding the nesting of the Yellow-billed Loon: "During the period of reproduction this loon abounds in considerable numbers in Franklin and Liverpool bays, where several examples were shot. It is also sometimes met with on the larger lakes of the interior. Although most anxious to possess eggs of this species, we all failed to discover even one well-authenticated nest, while it is possible that the two *adamsii* eggs referred to on page 452, of vol. II, of the aforesaid Water Birds of North America, may have belonged to the Great Northern Diver."

Grinnell (Pacific Coast Avifauna, No. 1, 1900, p. 70) failed to find the species at all during two summers spent at Kotzebue Sound, where it had previously been supposed to be of common occurrence. Altogether, careful analysis of the various Alaskan records of the Yellow-billed Loon, do not disclose any definite or authoritative information as to breeding habits or habitat.

The results of our observations of the migrations of the Yellow-billed Loon do not accord in all particulars with the conclusions

of Cooke (loc. cit.), but they do support his theory regarding the probable spring migration route of the species. Although only negative information can be contributed as to the fall route traversed, I think that if we had but enough of such negative information we might be able to solve the problem. In other words we may find out where the species migrates by learning that it does not follow certain other routes.

The first Yellow-billed Loon collected by us in 1914 was a female taken on June 3 at Humphrey Point, Arctic Alaska. This is roughly two-thirds of the way from Point Barrow to the mouth of the Mackenzie River, and near the Alaska-Canada boundary line. Other loons had been seen a few days before this, some of which I believe were Yellow-bills. From this date on until July 16, when we went aboard the ship, Yellow-bills were common. That is, from three to twenty were seen in one day (twenty-four hours) flying along the lagoons or open leads a few rods offshore. A few cut across the tundra, but our hunters out on the sandspits waiting for flights of brant and ducks, who observed and kept a record of the different species that passed, said that most of these loons followed the lagoons. After June 20 several were seen, paired, in large ponds a few miles inland, but they did not breed there, although they hung around up to the time that we left (July 16). Pacific Loons nested in the same ponds where the Yellow-bills were found, so that an inexperienced person, even with the best intentions, could easily confuse the two.

I heard of various sets of Yellow-billed Loon eggs that had been taken in this locality and near Point Hope, but when I came to run the reports down, I found that the eggs were usually collected by Eskimos, or that the collector *had seen* Yellow-billed Loons flying about the nesting ponds. The methods employed by the captains of whaling and other vessels, as well as some collectors, to secure rare Arctic eggs, has too often been to give a native some trinket to bring the eggs in. While natives are fairly accurate and observing, they are more interested in securing the reward than they are in obtaining dependable scientific facts. Hence I am reluctant to accept such evidence at full value. Then, too, many, probably nearly all, of the nesting records of the Yellow-billed Loon are from territory where the Common Loon has been known

to occur, so it seems to me that nothing short of the capture of the parent bird together with the set of eggs, by some responsible party, would constitute a dependable record.

There is another point also in this connection that may, perhaps, be emphasized here, and that is that the occurrence of many individuals in a region during the nesting season does not necessarily prove that the species breeds commonly there. During the spring of 1907, in the Sitkan district of southeastern Alaska, we found Northern Bald Eagles in abundance, as many as twenty birds being in sight at one time. Over two-thirds of these birds were adults, yet I was able to find only one pair of birds breeding, although many old, uninhabited nests were investigated. At St. Lawrence Island in Bering Sea, on June 25, 1913, Emperor Geese were found to be very numerous. Flocks of from seven to twenty were observed flying over the large lagoon on the south side of the island. We saw over one hundred birds, but none of those dissected showed signs of breeding, and no recent nests could be found. Along the whole coast of Alaska non-breeding water birds occur in numbers throughout the summer, in places far outside their breeding ranges.

Under these conditions it seems evident that something more than identification of a species is necessary to establish its status as a breeder in a locality.

The flight of the Yellow-billed Loon in migration was one of the most impressive sights of our Arctic trip. A dim speck low over the frozen tundra or glaring ice fields suddenly develops wings which beat rapidly with the rhythm and energy of a steam engine. The huge bill and neck seem to be extended slightly upwards, and the bird glides swiftly forward in a straight line with none of the undulating movements of the brant and eider ducks. The rapid "swish, swish," of the huge wings dies away in the Arctic silence, and the next moment one is gazing in the distance where a rapidly diminishing dark object seems to be boring a hole in the low clouds in the east. There was no variation in speed or direction, and the birds traveled at least forty miles an hour over a measured distance. Most of those secured were "through travellers" in full flight, and all were exceedingly fat. I weighed the fat that I clipped off of one skin, and found it to be a good two pounds. The bird weighed twelve pounds before skinning.

I believe that the spring route of the Yellow-billed Loon as suggested by Cooke is correct; at least our observations support his conclusions. The first definite data on Yellow-billed Loons were secured at Point Hope and Cape Lisburne, some two hundred miles north of Bering Strait, on the Alaska side. Here the Eskimo had cartridge or tool bags made of the necks of this species. These bags were of recent origin and could not well have been trade goods from farther north. Point Barrow seems to be the next point where the birds have been observed. Swinging wide from this point, they turn south-eastward along the Arctic coast, and head for the mouth of the Mackenzie River. Yellow-billed, or "King" Loons, as they are known locally, are reported to have been found by whalers in great numbers in a lagoon on the south end of Banks Land during the last of August and first of September.

One of the strange features of our experience with the Yellow-bill was our absolute failure to gain information as to the fall migration. The interval between July 24 and September 3, 1913, was spent between Point Barrow and Demarcation Point, Alaska. Numerous collecting excursions were made ashore while the ship was tied up to the ice, but no Yellow-bills were seen during this time. Our ship was "frozen in" about seven miles off Humphrey Point, Alaska, on September 3, 1913, and here again we failed to observe any large loon, although we especially watched for them among the waterfowl that were outward bound for Point Barrow. From our winter camp ashore we kept a continual watch for them, but observed none during the entire fall and winter. No Yellow-bills were seen during the next fall (1914) although observations were carried on until we reached Nome on September 19. Stops were made at Wainwright Inlet and Point Hope on the way down. A week was spent at Kotzebue Sound, but no sign of fall migration of the "King" Loon could be secured. In Siberia we also failed to find any sign of it during our collecting on the Chuckchi Peninsula, between June 1 and 22, 1913. Trips were made from the southern part of the Peninsula north to Cape Serdze during June and July, with collecting stops at John Howland, Providence and Plover bays, Emma Harbor, Indian or Chaplin Point and East Cape, without seeing any evidence of even the remains of the bird among the belongings of the Eskimo.

It seems probable that in southeastern Alaska the Yellow-billed Loon is rather more than a mere straggler, as would be inferred from Cooke's (loc. cit) mention of the Admiralty Island occurrence. While possibly his statement regarding this record may be considered as technically correct in viewing the May 25 observation as the only one strictly a spring record, still the capture of two specimens on Admiralty Island in May and August, 1911, respectively, and the sight of three others in the same general region during June of the same year, together with still others observed during June and November, 1910 (Swarth, Condor, vol. 13, 1911, p. 211) all tend to establish the fact that the coast of southeastern Alaska lies in the Yellow-billed Loon's regular line of travel. From personal experience with an individual apparently of this species, at Admiralty Island in the spring of 1907 (see Grinnell, Univ. Calif. Publ. Zool., vol. 5, 1909, p. 182), the writer believes that the species might occur there more regularly than is supposed, and still be overlooked.

In connection with the general problem of the migration of this species it is, perhaps, desirable to record here a specimen in the collection of the Museum of Vertebrate Zoology (no. 16694), an adult male, taken by F. Kleinschmidt at Teller (Port Clarence), Alaska, July 6, 1907.

The points brought out by our observations on the Yellow-billed Loon may be summarized as follows.

1. Corroboration in general of the spring migration route outlined tentatively by Cooke: From eastern Asia to Bering Strait, to Point Barrow, and to the Mackenzie River delta. The parts of skins seen in possession of natives at Point Hope and Cape Lisburne, Alaska (two hundred miles north of Bering Strait), and the hundreds of birds seen migrating eastward at Humphrey Point, Alaska (between Point Barrow and the Mackenzie River), in June and July, form supporting evidence.

2. Improbability that the species breeds on the Arctic coast of Alaska and Canada, which coast it traverses in migration. Collection and dissection of numerous specimens, and careful observation of living birds, are sufficient basis for this statement. Circumstances, as previously detailed, cast doubt in the writer's mind on most, or all, of the breeding records so far made from this region.

3. Our surprising failure to obtain any information regarding the fall migration. There seems to be little doubt that the Yellow-billed Loon does not leave its supposed breeding ground in the fall through the region we visited, which is evidently the highway only in the spring.

4. There seems reason to believe, from evidence as cited above, that the coast of southeastern Alaska may still be profitably scrutinized to yield information regarding the migratory movements of the yellow-billed Loon.

NOTES ON SOME MAINE BIRDS.

BY ARTHUR H. NORTON.

THE following notes refer to species of more or less unusual occurrence within the boundaries of the state of Maine together with records of two species new to the State list. One of the latter not having been previously recorded in the United States.

Stercorarius pomarinus. POMARINE JAEGER.—While not venturing to criticise the general statement, that the present species is probably the rarest of the three jaegers,¹ from local experience the statement comes as a surprise. On this coast, between Saco Bay and West Quoddy Head, the Pomarine Jaeger has been the only species found at all commonly. Of course jaegers are not common compared with gulls of the common species, yet almost any day in summer, spent at sea three or more miles beyond the bays, will usually show one or more Pomarine Jaegers, while the other species are seldom seen.

It frequently enters the broad bays, and is often to be found in the vicinity of the large tern colonies harrying the terns. The birds are well known to all fishermen and distinguished by an obscene name.

On the Maine coast they occur throughout the summer.

My extreme records are May 29 (1914) and September 22 (1913).

In late August and early September there are usually evidences of a migratory movement, as an increase of birds is noticed for a week or more.

¹ 1915. Cooke, Bull. 292, U. S. Dept. Agric., p. 7.