

A REPORT ON THE BIRDS OF NORTHWESTERN ALASKA AND REGIONS ADJACENT TO BERING STRAIT. PART I*

WITH SIX PHOTOS

By ALFRED M. BAILEY

WHILE the primary object of the expedition to northwestern Alaska here reported upon was to secure specimens of mammals, birds, and other materials intended for the composition of habitat groups in the Colorado Museum of Natural History (see footnote), there were exceptional opportunities for general collecting and a study of the ranges and habits of the many birds that breed only in the far north. The results of these investigations are set forth in the following pages.

The preparation of these notes brings into retrospective view incidents and associations difficult to treat with brevity. This is especially true in regard to the aid that was extended us so generously and the uniform kindness and hospitality we enjoyed at

* NOTE.—In 1918 the Colorado Museum of Natural History received through the generosity of the late Ellen M. Standley, funds for the construction of the north wing of the Museum building, a memorial to her deceased husband, Joseph Standley. As the Museum's plans for exhibits included a series of habitat groups of North American mammals and birds, the main and second floors of the Standley wing were reserved for that purpose and the work of securing the desired class of specimens was undertaken. These preparatory activities involved sending collecting parties into the field, and as northwestern Alaska appeared to be exceedingly promising, because of the great variety and interest attached to the species found there, an expedition to that region was, in 1921, organized.

As work there would be largely confined to the territory north of the Arctic Circle, it was apparent that little could be accomplished during one season and that it would be necessary to establish a winter headquarters and devote a full year to intensive work at stations most likely to be productive of the desired results. Wainwright Inlet, one hundred miles southwest of Point Barrow, the northernmost land in Alaska, was therefore decided upon as affording the greatest advantages as a base.

Weather conditions were known to have a great influence on the movements of both birds and mammals in the far north and, for that reason, it seemed advisable that the early spring and summer work be carried on at widely separated points. With this in view, duplicate materials and supplies were stored at Cape Prince of Wales, the westernmost point of Seward Peninsula. Then, too, work at the Cape, the nearest point to the Siberian Coast, seemed likely to be productive of worth-while scientific results, although it involved a late winter journey of six hundred and fifty miles from the winter quarters at Wainwright to be on hand to meet the first migratory movements.

As the scene of prospective activities was far removed from points reached by commercial transportation facilities, and owing to the scant accommodations for wintering so far north, in planning the expedition it was at once apparent that the museum must seek the aid of the federal bureaus operating there. In this it was successful to a most gratifying degree. Mr. Bailey refers to items of this character in his report, as well as to the aid and hospitality so generously extended him by residents of all the places he visited. To each one the Colorado Museum of Natural History desires to acknowledge a deep sense of appreciation.

Under the most favorable circumstances, work in the region of the Arctic Circle and northward involves many hardships and its success is dependent upon the degree of interest and endurance maintained by the men engaged. For this undertaking, then, Mr. Alfred M. Bailey was selected as leader and Mr. Russell W. Hendee appointed as his assistant. That the choice of the personnel of the expedition was exceedingly fortunate is fully attested in the remarkably large and varied character of the collections obtained. Their preservation and delivery to the museum without loss entitles Messrs. Bailey and Hendee to the highest praise and the Museum's grateful appreciation.—J. D. FIGGINS, *Director, Colorado Museum of Natural History.*

the hands of all with whom we came in contact. In this I feel quite helpless, since my best efforts in expressions of appreciation would scarcely prove adequate. Perhaps it suffices to say that each one whose name appears hereafter aided by every means in his power and that the degree of such aid was measured only by his opportunities.

After completing plans and forwarding to Nome, Alaska, an abundant supply of provisions, camp impedimenta and materials for a year's field work in the region of Wainwright and Cape Prince of Wales, the writer, accompanied by Mr. Russell W. Hendee, boarded the S. S. Victoria at Seattle on June 9, 1921. Hardly had the Victoria cleared Cape Flattery for the "outside" passage to Nome than interest in the birds was aroused by the convoy of gulls and the Black-footed Albatrosses. But days thereafter passed when the avian fauna of the troubled waters aroused no interest whatever. As the vessel neared Unimak Pass there came the long anticipated sight of the hordes of northern species that nest on the cliffs of the Aleutian Islands; and Tufted Puffins, Pelagic Cormorants, Murres, Pacific Kittiwakes, Glaucous-winged and Glaucous gulls were then seen in great numbers.



Fig. 8. COAST GUARD CUTTER "BEAR" AT DEMARCATION POINT, ALASKA, AUGUST 15, 1921.

The Victoria headed through Unimak Pass on June 15 and worked northward through the stormy waters of Bering Sea. Anticipating delays, because of prospective ice conditions, we were none the less hopeful of an early and more intimate contact with the birds of the vicinity of Nome. In this we were fortunate, as we landed on June 18, and while awaiting the arrival of the revenue cutter *Bear* (Captain C. S. Cochran commanding), to which we were to transfer our supplies and proceed northward, we devoted the time to photographing and collecting specimens about the tundras of that vicinity. In this work we were favored in having the interest and able assistance of Mr. Frank Dufresne, now connected with the U. S. Bureau of Biological Survey.

It may be said here that we had scarcely boarded the *Bear* when we felt assured that the days to follow would be exceedingly pleasant and profitable ones by reason of the exceptional advantages of transportation. We owe to Captain Cochran and his officers, Lieutenants Parker, Todd and Perham, a degree of appreciation not easily expressed; for it was through Captain Cochran's kindness that we were privileged to visit St. Lawrence Island, the Siberian coast, and many places as far east as Demarcation Point. As Captain Cochran provided us with facilities for going ashore and engaging in work at the various places at which the *Bear* touched, there were few idle moments and the collections grew rapidly.

It was planned that I should work at Cape Prince of Wales, Seward Peninsula, during the following spring and early summer months; and with that in view, supplies and equipment were landed at the latter point and stored there in the care of Mr. Thomas Killeen. That these important articles were ultimately found in perfect condition, in spite of the fact that the natives had experienced a very "lean" winter, illustrates the reliance that can be placed in the people of the north.

On August 6, Mr. Hendee, with all the remaining stores, was landed at Wainwright Inlet, which we were to make our winter headquarters. Proceeding northward aboard the *Bear* to Point Barrow, I there enjoyed my first meeting with Mr. Charles Brower, whose name has been associated with the history of northwestern Alaska during the past thirty-eight years. To him I am equally indebted for his generous aid and his uninterrupted interest in making our work a success.

After a profitable but uneventful trip through ice to Demarcation Point, three hundred miles east of Point Barrow, the *Bear* was headed westward. Landings were made at Point Humphrey and Cape Simpson, and then, after a brief visit at Barrow, I rejoined Mr. Hendee at Wainwright on August 22. Wainwright is a typical Eskimo village, consisting of about thirty igloos, a trading post, and the building of the U. S. Bureau of Education. It was through the kindness of Mr. W. T. Lopp,



Fig. 9. WAINWRIGHT VILLAGE, ALASKA, AS THE SUN RETURNED, JANUARY 26, 1922.

Superintendent of the Alaskan division of that bureau, that we enjoyed the privilege of making a part of one of these school buildings our headquarters, this being but one of the many instances of aid Mr. Lopp extended to us.

At Wainwright intensive work was engaged in, and the large number of specimens we were unable to prepare were stored in ice-cellars, these to afford us a profitable occupation during at least a part of the long Arctic night in prospect. The birds taken in September proved to be in perfect condition for preserving the following February, except for a tendency of the smaller specimens to dry around the head and wings.

To the north, east, and south of Wainwright stretch miles of low tundras, dotted with shallow ponds and clothed with mosses, lichens, and a few coarse grasses. Dwarfed willows from a few inches in height on the exposed tundras to three or more feet tall in favored localities, fifty miles inland, are the only bushes to be found, and while a botanist would doubtless discover numerous species of plants to enthuse over, to me vegetation seemed scant indeed.

A couple of miles below the village is the mouth of Wainwright Inlet, a bay-like arm which extends inland for many miles and into which empty the icy waters of several tundra rivers. The high banks of the inlet are composed of layers of stratified shale and sandstone, with many outcroppings of lignite coal, the latter affording us a supply of excellent fuel. The village, of about 140 inhabitants, is built up on a twenty-five foot embankment; and, as it faces the ocean, it is exposed to the full force of the winter gales. It proved to be ideally situated, however, for extended collecting trips inland, along the ocean beaches to the north and south, and, during the spring of 1922, far out on the ice. A description of Wainwright would be quite incomplete without a word regarding that prince of traders, "Jim" Allen, who helped us in so many ways. He is a veteran of the Arctic, having been active in hunting the bow-head whale in the "old days." To him we owe more than we can ever repay.

Upon my arrival at Wainwright, August 22, bird life was not abundant in species. The Red Phalarope and Golden Plover were common upon the tundra, together with the little Snowflakes and Longspurs, while occasional Red-throated and Pacific loons passed overhead, to and from their breeding grounds. Arctic Terns worked the shallow water adjacent to the large bar at the mouth of the inlet, where many young were just beginning to fly; a few eider ducks and bands of brant were seen daily, many Old Squaw ducks, Glaucous Gulls, and occasional Parasitic and Pomarine jaegers. Shore birds came like scurrying flakes from a passing snow squall, small flocks of one form being present one day and absent the next; but at no time during the fall was there an abundance of species, although individuals of some species were common enough.

We had our first snow fall the last of August and from then on snow was the usual thing, although we had little freezing weather until after the middle of September. The first week in September we made a trip to Icy Cape, about fifty miles down the coast, in a whale-boat with Jim Allen and a crew of eskimos. The large lagoon near the cape is the favorite feeding ground of the Black Brant at this time of year and a large number of birds was taken. October brought real winter weather with freezing temperature and plenty of snow; in fact, more snow fell that month than all the rest of the winter months put together. Most of the birds departed by the last of September, the first two weeks of that period being the time for the departure of the greatest number. The Ross and Ivory gulls were collected during October, however; and occasional bands of eider ducks were seen as late as December. Hendee and I made a sled trip with Allen to Point Barrow the last of October and secured a few Ivory Gulls at that place.

The season was an unusual one (as is always the case when one goes afield), for the old ice was not driven inshore and permanent young ice did not form until after the middle of December. Constant offshore winds broke the forming ice and carried it seaward which made hunting practically impossible. (Mr. Brower told me that this was the first time in his thirty-eight years' residence in the north that the old ice failed to "come in" at Barrow.) Strong winds prevented the natives from attending their traps and made travelling up and down the coast extremely hazardous. The weather was not severe, forty-six below zero being the coldest registered by our minimum thermometer, and the days which seemed the coldest to us were but ten or twelve below zero. Blizzards raged from the southeast, carrying snow with such force that it worked its way through double storm windows to the floor of our room, in spite of the fact that our windows were carefully calked with cotton. It seemed impossible to keep our rooms warm and one of us would sit up late to keep the fire going. The building shook with the fury of the wind, and sleds and kyaks not lashed down were carried away.

We had a "January thaw" in the middle of that month, when the thermometer rose to forty above zero. This was a godsend to the traveller, for while the sea ice was too rough for travelling and the tundra too soft, after the thaw it was all a sheet of ice over which the dogs pulled the sledges with ease. The sun disappeared below the horizon on November 20, not to appear again for over two months, or January 26.

In accordance with plans, I left Wainwright on March 12 for Cape Prince of Wales, 650 miles down the coast, leaving Hendee to continue work at our northern station until taken off by the *Bear* the following summer. With an eskimo guide and twelve dogs I reached Point Hope in six days, experiencing all the usual pleasures and discomforts of overland travel in the Arctic. After resting the dogs at this village a few days we continued to Kotzebue, where two other teams were secured for the remainder of the trip to Wales. I visited the Chamisso bird islands in Kotzebue Sound en route. How different the appearance of these precipitous little islands during the winter months from that of summer, when the myriad of wild fowl crowd their slopes! A solitary Raven flew overhead voicing his raucous protest. The entire journey took but twenty-six days and was made without accident or unusual hardship.

I found Wales village a small settlement of one hundred natives. Mr. and Mrs. Thomas Killeen were in charge of the school and they very kindly took me into their home, showing me that hospitality which is found only in the far north. The cape has the reputation of having the worst all-year-round climate in Alaska and, without hesitation, I can vouch for the truth of the statement. Constant winds make work along the edge of the ice extremely hazardous; but when the migration is at its height, there is such satisfaction in being afield that one forgets the discomforts. The currents in Bering Strait shift back and forth in April, but in early May they flow steadily northward. As Wales is on a peninsula we could hunt far offshore with a north wind only, for without a fair breeze, we could not sail the bulky skin oomiaks back to safety. I hunted far offshore in the pack ice with a crew of ten eskimos during May and June, making two trips into Siberian waters, and visiting the Diomed Islands and Fairway Rock. The oomiaks are strong, seaworthy boats and so constructed that they withstand a great deal of punishment in the ice. We were often hunting offshore for fifty hours at a time, always watching for a south wind which warned us to hurry homeward. When a lull came, and a great movement of seabirds began from the south, the eiders massing over the leads in such numbers that their whistling wings sounded like the distant scraping of ice along the "ice-foot"; then we made for shore, for a storm from the south was sure to follow.

As the specimens intended for a group of walrus were not secured until June 25, I could not spend as much time with the birds as I desired, but during the first week in July, with two eskimos, I took a skiff overland to Lopp Lagoon, a broad, shallow body of water which extends for miles inland. The ice had not entirely melted, but by dragging the skiff over the ice and along the shore for ten miles, we finally reached open water. Three weeks were spent on the tundra searching for the nests of the Emperor Goose, loons and shorebirds, when I returned to Wales to pack my specimens for shipment.



Fig. 10. LITTLE DIOMEDE ISLAND FROM THE SHORE ICE, JUNE 3, 1922; THE SEAMED SLOPES ARE RESORTED TO FOR NESTING BY NUMEROUS WATER BIRDS, THOUGH EGG-LAYING DOES NOT BEGIN UNTIL ABOUT JULY 1.

During the spring work at Wainwright, Hendee accompanied Allen and the eskimos, making camp at the edge of the floe ice far offshore. Thus he met the first arrival of the migrants, loons and eiders, and secured specimens of the rare Ivory Gull. Ice conditions were very bad during the early summer, with few open leads for the migratory wild fowl to follow, so Hendee found work upon the tundra very profitable. He was taken aboard the *Bear* August 23, and he remained with the ship until it arrived at Seattle late in September. Thus he again visited King Island and St. Lawrence Island, and then worked Dutch Harbor and the near vicinity.

The collector in the Arctic can not work along the beach and expect to obtain the best results—he must hunt with the natives. The field man is dependent upon the eskimos, and whenever possible we secured their aid, accompanying them on their hunting trips and interesting them in our work. In this way we secured valuable additions to the collection, and as the natives kill in quantities whenever they have the opportunity, always killing for food, we were able, many times, to select the best specimens from a great number of birds. Our series of eider and brant best illustrate

this principle. The few white men along the coast can always be depended upon for help, and I never think of the Arctic coast but the word "hospitality" comes to mind and the names Charles Brower, Jim Allen, and Fred Hopson. They are men who have lived for years far north of the "circle" and the fact that they retain the respect of the natives, as well as the whites, is proof enough of their character and fair dealing.

The following notes on the birds of northwest Alaska are the result of the combined work of Mr. Hendee and myself. I was exceedingly fortunate in having Mr. Hendee as an assistant, for he was not only a tireless worker in the field but proved himself competent under all conditions. In addition to those mentioned above, I wish to acknowledge our indebtedness to Mr. McGuire and Mr. Dupertius of the U. S. Bureau of Education, as well as to the many other white people and our native friends who helped make our work both enjoyable and profitable; to Mr. Outram Bangs and Dr. H. C. Oberholser for the identification of our doubtful specimens, and to Dr. E. W. Nelson who not only granted the necessary permits for work in Alaska but gave us many helpful suggestions. To Mr. J. D. Figgins, Director of the Museum, I am indebted for the opportunity of carrying on ornithological work in so interesting a field, as well as for his advice in outfitting and in the preparation of specimens. He planned the expedition and worked it out in detail, which made our work comparatively simple. I wish also to acknowledge the kindness of Dr. Joseph Grinnell, who has gone over my manuscript critically, and of Mrs. Irma B. Tanner, upon whom fell the tedious burden of typing these notes.

HORNED GREBE. *Colymbus auritus.*

Hendee collected two examples of this species at Unalaska on September 21, 1922. The birds flushed on the approach of his motor boat but were forced to the water by the attack of a Peale Falcon. Several other grebes were seen upon the same date.

YELLOW-BILLED LOON. *Gavia adamsi.*

The Yellow-billed Loon was noted quite commonly during the summer and fall of 1921. The first was observed on St. Lawrence Island June 28, near the old village of Kookooluk, two were seen offshore at Nome June 17, and two at Teller on July 29. The trader had a native-made skin and told me the "king loon" was common earlier in the season but that few stayed all summer. Three were seen at Cape Blossom August 1, one at Point Barrow August 8, one at Cape Halkett August 10, several at Demarcation Point August 15, several at Humphrey Point August 16, and two at Wainwright September 1. On September 4 we started down the coast to Icy Cape in a whale-boat and saw several of these loons daily between the 4th and 13th, all going south, flying fairly close to the water and a couple of hundred yards offshore. September 19 over a dozen were seen on their southward journey, but at no time did we observe more than three together. We collected no specimens until September 20, although we might have done so. With a couple of eskimos and a skin canoe, on this date we lined up the shore of Wainwright Inlet, a dog team furnishing the power. Few birds were seen until about eight miles up, where I secured a fine adult. The Inlet here is at least half a mile wide, with several prominent points, and as we progressed a flock of a dozen birds swam from the shadows and, taking wing, soon disappeared toward the distant shore. From then on until dusk we had an unusual opportunity to observe these rare birds, for they were continually rising before us and alighting far ahead. To give an accurate estimate of their numbers would be impossible, for we doubtless saw many individuals again and again; but at one time, when a flock arose with a roar of wings, we counted thirty birds milling over the surface of the inlet. I have never before seen as many loons of any species so congregated. They circled about, crossing our bow just out of gunshot, flying with arrow-like direct-

ness. Two birds in adult plumage were "boxed" in shallow water close to shore and allowed us to come near enough to secure them as they took to wing. All the loons observed closely enough to make out colors were undoubtedly still in full summer dress and we failed to observe a single young bird, at least to identify it as such. Several rivers empty into the inlet where we observed this throng of loons and doubtless the shallow waters were favorable for feeding, for we continued to note them until dusk, when falling snow made further work impossible.

The next morning about two o'clock a great clamor arose from the bay in the near vicinity. The night being quiet, sounds carried with remarkable distinctness. There was the swish of water as heavy bodies surged into it and the flutter of wings as the birds took to flight, while the characteristic notes of the loons sounded clear and resonant, somewhat like a "Claxon horn," muffled by distance. The wailing "oh-o-o-oh" of the Pacific Loon could occasionally be heard, the mournful sound evidently recalling to our eskimo a case of poisoning in the village a few nights previous, for he stirred in his bag and muttered, "Um, him got belly-ache". On the 21st only a few loons were

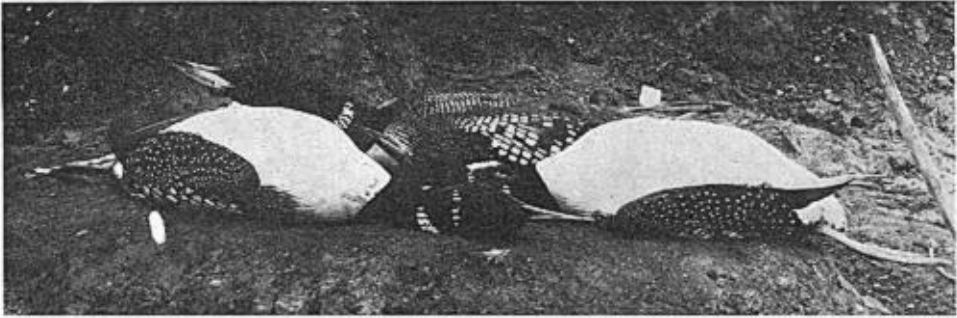


Fig. 11. FRESHLY COLLECTED YELLOW-BILLED LOONS; WAINWRIGHT, ALASKA, SEPTEMBER 20, 1921.

noted in comparison, and only five on the 22nd. When we questioned Karmuk as to the reason, he explained their probable assembling for migration in a few words, "Mebbe gone San Francisco," which is the native way of describing the "outside". The last bird of the season was noted September 25, off-shore, near Wainwright.

In the spring migration at Wainwright the Yellow-billed Loons were fairly common, the first being seen over an open lead on May 22. Four others were observed May 29, and during the first week in June they were common. Hendee reported that "on June 2, one or more loons were always in sight, and that in every case they were flying singly. The height of the migration was covered by the period from June 2 to June 19. During the first few days and the last week of this period, however, few specimens were collected on account of unfavorable ice conditions. After that time, single birds, or pairs, were not infrequently seen flying over the land or in the water at the mouth of the inlet. They were seen regularly throughout the summer but never on the fresh-water ponds or tundra lagoons. The natives claim that they nest occasionally, and twice I was told by them that these birds would fight desperately in defense of their nests." Hendee secured a fine series of these rare divers.

At Cape Prince of Wales I was afforded an excellent opportunity to study the migrating birds, for I hunted offshore with the natives every time weather conditions were such that we could launch a boat. I saw but a single Yellow-billed Loon during June (on the 3rd, near the native village). They proved quite common, however, along Lopp Lagoon in July, only about twenty miles up the coast from Wales, and

especially on the lakes a few miles inland. Mint River and the nearby vicinity was a very good place for these loons during the second week in July. At this time the eggs of the shore birds were hatching, the Whistling Swans had downy young, and the eggs of the Emperor Geese were far advanced in incubation; but the three species of loons were just beginning to nest. On the 11th, after a week of unsuccessful hunting for eggs of the Yellow-billed Loon, the eskimos reported birds on the lakes at the foot of the Potato Mountains. We were camped on a gravel bar of the Mint River and all night I could hear the then distant calls, a more mournful and lonely sound than the weird cry of the Common Loon.

The next day was stormy, with alternate rain and snow squalls, but we were afield early, determined to cover as much territory as possible. We first investigated the large lake where Nagozruk had seen the birds the previous day and I shot the male as it swung up the center of the lake, the female making her escape. Although



Fig. 12. MINT RIVER, WHICH EMPTIES INTO LOPP LAGOON. THIS IS ONE OF THE BEST NESTING GROUNDS FOR WILD FOWL ON THE SEWARD PENINSULA, ALASKA.

we saw them rise from a little, grass-grown pond back of the lagoon, we found nothing but a crude nest of grass, and empty. I worked pond after pond that day and every one of any size had its pair of Yellow-billed Loons, and usually from one to three empty nests along the shore—all but recently built. They looked as though the loons had cut out turf and overturned it to make mud platforms. After nearly all day afield I determined on one more lake, so crawling carefully to the summit of a ridge which separated this chain of lagoons, I surveyed the broad expanse with my binoculars. About four hundred yards away was a Yellow-billed Loon sitting upon the bank of a little grass-grown peninsula. I stood up and again looked for the bird. It was gone. Hurrying around the pond I came to the vicinity where the bird had been and there was a nest, but empty. I walked on for about ten feet and found a mud mound with a scant lining of grass and a single egg. Beyond this nest at intervals of about ten feet were two other fresh mounds.

Nagozruk had solemnly warned me to be very careful if I found any eggs, for the old birds were very vicious. I had anticipated adding a pair of the loons to my collection, but I could not even get them within rifle range. The Yellow-billed Loon is not wild when in flight and I often decoyed birds into range when we were sailing, by merely giving a loud "whoo-oo", which invariably caused them to swerve toward our boat, possibly to find the cause of such an unfamiliar noise.

Mr. Joseph Dixon has given an interesting account of the migration of this species (Auk, xxxiii, October, 1916, p. 370). His work proved the correctness of Cooke's outline (Condor, xvii, November, 1915, p. 213) of the migration route of this species on its northward flight, namely, from Bering Strait on up the Arctic coast, as well as along the Siberian side. Negative evidence is worthless insofar as the migration of water birds is concerned, for weather conditions are often so unfavorable that observers cannot be on hand to witness the flights. I did not see any number of loons at Wales (the westernmost point in North America) on their spring flight, and yet, just twenty miles away they were common all summer. I have collected a number of these loons in southeastern Alaska and have commented on their abundance in certain localities (Condor, xxiv, December, 1922, p. 204). There can be no doubt that they occur regularly along our southeastern Alaskan coast, and on their northward journey skirt the sea coast practically the entire distance. It is possible, however, that these birds, following offshore along Bering Sea, instead of rounding Cape Prince of Wales, make the short cut-off across Seward Peninsula, exactly as do the Black Brant and the Cackling and White-fronted geese.

Mr. Dixon maintained the "improbability that the species breeds on the Arctic coast of Alaska and Canada, which coast it traverses in migration." I think he is mistaken and that the Yellow-billed Loon nests along the entire coast, from Cape Prince of Wales to the eastward of the Mackenzie. For one thing, this species seems to be later in nesting than other water birds, at least judging from my own experience. I travelled between Barrow and Cape Prince of Wales by dog sled and talked with all the natives en route. They informed me that the "king loon" nested along the lakes back from the coast. Rev. Hoare, who was formerly at Point Hope, collected the eggs of this species, and I talked with the natives and Joe Tuckfield, who helped him secure the eggs. I think there can be no doubt that these records are authentic. And, finally, the writer has secured one egg, having first seen the bird on the nest with the glasses. Although the parent birds were not taken, they were carefully observed as they swam back and forth well out of gun range. Our collection of this species consisted of thirty-nine specimens and not a single Common Loon was observed on the trip.

My native assistant returned to Mint River and the neighboring vicinity in the spring of 1923 and reported the season three weeks earlier than during my visit. He collected a set of Yellow-billed Loon eggs which were identical with the egg I secured, and sent me photographs of the nest and eggs. In 1924 he again returned to the same locality and collected two more sets, together with the parent birds. In remaking the skins of these birds, I noted the lower belly had not been picked, as I had supposed, but that the feather tracts had expanded, to allow the egg contact with the bare skin. I then examined my other breeding loons and found this to be the case. Our eggs of the Yellow-billed Loon measure in millimeters as follows:

Bailey: Mint River, July 11, 1922; 93 x 55.

No. 5365 Nagozruk: Mint River, July 5, 1923; 90 x 56, 91 x 57.

No. 5503 Nagozruk: Mint River, July 3, 1924; 90 x 59, 88 x 58.

No. 5504 Nagozruk: Mint River, July 3, 1924; 85 x 53, 83 x 53.

The ground color of the first three is a warm brown, the eggs being mottled with dark brown spots, while that of set no. 5504 is a yellowish olive, both eggs being dotted with blackish.

PACIFIC LOON. *Gavia arctica pacifica*.

This species is fairly common along the Alaskan coast from Point Barrow southward, but we did not observe it as abundantly on our summer cruise as I had hoped. Three were seen at St. Michael July 20, these being the only records we made until September. None was observed after that date. The big migration of water fowl of all species occurred between the 1st and 20th of September, and a great many Pacific Loons were then noted offshore, making their way southward. They were especially numerous at sea near Icy Cape September 7 and 8; often bands of half a dozen would pass our whale boat. A great many used the broad lagoon back of the cape as a feeding ground and were frequently seen flying across the tundra, soon to return with a dangling fish. The young birds often must be forced to make a short overland journey afoot because of the freezing of the lagoons in bad seasons. In 1921



Fig. 13. NEST AND EGGS OF PACIFIC LOON AT TUNDRA LAKE NEAR MINT RIVER, ALASKA, JULY 11, 1922.

the smaller ponds were frozen by the 10th of September and we noted birds carrying the fish inland as late as September 18. We arrived at our winter station too late to make any nesting records and failed to secure any young.

Pacific Loons arrived at Wainwright on June 2 the following spring, when a specimen was taken over the lead. They were never abundant in the early spring, apparently arriving later than the Yellow-billed Loon, and they frequented the ponds and lakes of the tundras. They were common the latter part of June, in pairs, and eggs were secured on July 3, 6, and 7.

Many of these birds were seen in the vicinity of Cape Prince of Wales, the first on June 8. Unlike the former species a number were observed in migration, especially

on June 16 when they straggled up the coast, oft-times in small flocks. They were frequently seen near the village and on the small ponds adjacent to Lopp Lagoon. During the first two weeks in July, I found them quite common along Lopp Lagoon and several sets of eggs were taken on the tundra lakes. One set was placed upon the mud of a peninsula, with no pretense of a nest, while the others were on well-built platforms of grass along the margins of the lagoons. I located a couple of nesting birds with the binoculars while the loons were still upon the eggs. They were extremely shy and slid into the water as soon as they saw me; and, as their nests were rather well concealed in the brown marsh grass, they might easily have been overlooked. As with the Yellow-billed Loon, these birds are late in nesting, and the eskimos assured me that the ponds often froze before the young loons were able to fly.

There is an enormous variation in the color, shape and size of the eggs of this species and also considerable variation in the size of the birds. At first, I thought possibly there was a subspecific difference in the birds, but later found little to warrant such a conclusion. The following measurements in millimeters will show how the different sets vary as to size.

- Set no. 5086, Wainwright; 2 eggs, averaged 83 x 47.
- Set no. 4920, Wales; 2 eggs, averaged 80 x 49.
- Set no. 4929, Wales; 1 egg, 71 x 50.
- Set no. 4934, Wales; 2 eggs, averaged 70 x 46.
- Set no. 5099, Wales; 1 egg, 67 x 47.

GREEN-THROATED LOON. *Gavia viridigularis*.

I watched for this species at Wales and warned my native assistant to search for it, but we did not secure a specimen. The following season, however, I had natives return to my collecting ground along Mint River and on July 6 a brooding female and her single egg were secured. As far as I am aware, this is the fourth North American specimen of the species recorded and the first breeding record. The skin was submitted to Mr. Outram Bangs who verified our identification. A native took another set of two eggs with the female bird in the same locality on July 8, 1924. The eggs of the two sets are entirely different in coloring, the single egg having the ground color a snuff brown, with large dark brown blotches over the entire egg. The set of two is olive with fine blackish dots which are most numerous on the large end. The eggs measure in millimeters:

- Set no. 5364, Mint River, July 6, 1923: 77 x 51.5.
- Set no. 5505, Mint River, July 8, 1924: 80 x 51.5, 79 x 52.5.

The birds are identical in coloring and measure in millimeters:

- No. 10471, female, July 6, 1923: Culmen 60, wing 322, tarsus 82.
- No., female, July 8, 1924: Culmen 56, wing 310, tarsus 76.

RED-THROATED LOON. *Gavia stellata*.

This is the most abundant of the loons which came under our observation in the north. It was noted at so many different places along the coast that it is evident the breeding range is very wide. The birds were seen regularly in the vicinity of Nome the latter part of June. I saw two birds at Emma Harbor, Siberia, the 30th of June, and Hendee made daily records on St. Lawrence Island between the 1st and the 8th of July. We also noted them at St. Michael on July 20, at Cape Blossom, Kotzebue Sound, August 1, and at the Corwin coal mine August 3. These birds, at times, circled high in the air, their resonant "kok-a-row" being constantly heard. There is a weirdness to their call which seems fitting with the desolate background of their summer home, with the wide expanse of barren tundra and windswept lagoon. A pair

of downy young birds was collected August 9 at Wainwright by Hendee, and I observed several adults at Demarcation Point on August 14 and at Humphrey Point two days later.

Red-throated Loons were common at Wainwright in August and the first half of September. Hundreds were seen migrating offshore at Icy Cape September 7 and 8—great strings of them wending their way southward, some flying high, others skimming the water. After the middle of the month loons became scarce, for the lagoons were frozen over, and the few records made were along Wainwright Inlet, or at sea. Several fully grown young were taken September 23 and 24. They were diving for fish close to the beach.

The Red-throated Loons proved abundant the following season; the first arrivals appeared at Wainwright early in June. A nest containing two eggs was found at a small pond not far from the beach on July 3. Several other sets were discovered during that week. One nest was in a depression at the edge of a tundra lake; the others were built of mud and grass to raise them above the level of the water. The birds were noted commonly all summer and were the most abundant of the loons at Cape Prince of Wales; the first was seen in that section on May 28. From that date on, a few were seen daily; on June 16 great numbers were on their northward journey. They were abundant along Lopp Lagoon during the first two weeks in July and we took several sets of eggs. I found that this species differs from the Pacific Loon in its choice of nesting place; as a rule, the Pacific Loon preferred a rather large lake, while the Red-throated builds in marshy, reed-grown places on the tundra, in inconspicuous little spots which are hardly noticeable.

Denver, Colorado, December 2, 1924.

WHITE PELICANS IN NEVADA

WITH ONE PHOTO

By LAURA MILLS

CIRCLING high in the bright blue of Nevada's sunny summer skies, flying single file above the river course, or fishing in some pond or shallow stream, the White Pelicans capture our attention. From the time of their arrival in April, until their departure in October, they sail gracefully about, always silent, save for the beating of their wings; never, apparently, in an undignified hurry.

Their fishing habits vary with the depth of the water. In the shallow river, they alight and quickly forming in a widening circle, beat the water with great wing-flappings, and scoop at the fleeing fishes with their large pouched bills. Those at the rear, perhaps, turn sedately back, and then swim to the fore of the fishing fleet, which moves steadily along.

If the flock is a large one, two hundred or more, it frequently works both ways. When some of the pelicans get too far in the rear, they fly ahead of the main party and continue fishing. We have seen them "fish out" a quarter of a mile stretch of river at a time. One day, frightened by someone's sudden appearance, the flock rose and flew over the brow of the high river bank. One unfortunate bird, heavily loaded, flew against the post of a pole-vaulting standard, and unloaded his still flopping four-and-a-half pound carp. (We weighed the fish.)

Where the water is deep, as above Diversion Dam and on Lahonton Lake, the pelican pursues a different method of catching his fish. Sometimes he is not at all