

## BIRDS OF LITTLE DIOMEDE ISLAND, ALASKA

By KARL W. KENYON and JAMES W. BROOKS

The Eskimo village of Ignalook on Little Diomed Island, Alaska, is isolated, and facilities for visitors are limited. Few ornithologists have visited the island. We are aware of no recorded observations on birds of the island in spring other than those given here. Summer observations, mostly of a general nature, were presented by Jaques (Auk, 46, 1929:230, and Nat. Hist. Mag., 1929:521-529) and Jenness (Can. Geog. Jour., 7, 1933:87-92). Brooks' observations of 1953 were available to Gabrielson and Lincoln during preparation of the "Birds of Alaska" (1959). Much of this material, however, was not utilized. Repetition in the present paper is avoided except in a few instances where comparisons of observations of 1953 and 1958 appear desirable.

Little Diomed is situated in Bering Strait 20 nautical miles west of Cape Prince of Wales and 2.25 miles east of Big Diomed (USSR). Fairway Rock lies 8 miles and King Island 52 miles southeast of Little Diomed. The island is 2 miles long, north to south, and 1.5 miles wide, east to west. It rises steeply to a nearly flat plateau at an altitude of 1308 feet. Vegetation is sparse and limited to patches and crevices among the tumbled granitic boulders and outcrops. Beaches, except for a few narrow stretches of large cobbles, are nonexistent; steep rocks and cliffs extend directly into the sea.

In the course of studies of marine mammals, Brooks spent the period from April 25 to June 26, 1953, and Kenyon from May 10 to June 14, 1958, on Little Diomed or on the sea in its vicinity. Both of us kept systematic records of birds, although Brooks did not attempt to list all species seen. Specimens of species presumed to be unusual at this locality were collected whenever possible in 1958.

The season of 1953 was characterized by a period of unusual warmth in early April but cool weather later caused an unusually late spring. However, leads were open near Little Diomed in April and May. In 1958 only a few narrow leads opened near the island until the latter half of May when considerable areas clear of ice appeared. This condition apparently affected the arrival dates of murrets at the island; however, breeding activities commenced at about the same time as in 1953. As will be noted in the following annotated list and table 2, the arrival dates of a number of species were nearly the same in both seasons, as were also the periods of passage of certain migrants going from Alaska to Siberia. A total of 40 species is listed of which 13 are known to breed on Little Diomed.

Table 1

Estimated Magnitude of Populations of Birds Known to Breed at Little Diomed

Species	Minimum	Maximum
<i>Phalacrocorax pelagicus</i>	100	200
<i>Larus hyperboreus</i>	100	500
<i>Rissa tridactyla pollicaris</i>	20,000	100,000
<i>Uria (aalge and lomvia)</i>	50,000	200,000
<i>Cepphus columba</i>	200	500
<i>Cyclorhynchus psittacula</i>	10,000	20,000
<i>Aethia cristatella</i>	100,000	500,000
<i>Aethia pusilla</i>	500,000	1,000,000
<i>Fratercula corniculata</i>	5,000	10,000
<i>Lunda cirrhata</i>	500	1,000
<i>Calcarius lapponicus alascensis</i>	50	100
<i>Plectrophenax nivalis nivalis</i>	200	500

Most of the small passerines observed and collected in 1958, although not previously recorded from Little Diomedé, might be expected to land there en route from wintering grounds in the Old World to breeding areas in Alaska. Species wintering in North America may find the island a convenient resting place when blown from usual spring migration routes.

Few attempts were made to census populations. An attempt was made to estimate a lower and upper limit for the numbers of each species thought to be present. Large numbers are difficult to estimate, thus the order of magnitude of the populations could be expressed as an exponent of 10. However, when the estimated upper and lower limits are given we believe that a more concrete expression of the approximate order of magnitude of each population is achieved.

Table 2  
Arrival Dates of Birds at Little Diomedé

Species	1953	1958	Remarks
<i>Chen hyperborea</i>	May 22-24	May 20-June 1	Migration passed
<i>Grus canadensis</i>	May 15-22	May 17-20	Migration passed
<i>Rissa tridactyla pollicaris</i>	May 15	May 14	First sighted
	May 21	May 20	First on cliffs
<i>Uria (aalge and lomvia)</i>	April 27	May 16	First seen
	May 3	May 20	First on cliffs
	June 11	June 9	First breeding behavior
<i>Cyclorhynchus psittacula</i>	May 29	May 26	First on rocks
<i>Aethia cristatella</i>	May 22	May 20	First seen
<i>Aethia pusilla</i>	May 18	May 23	First seen
	ca. May 25	May 27	First on rocks
<i>Fratercula corniculata</i>	June 2	June 2	First seen
<i>Lunda cirrhata</i>	June 2	May 26	First seen
<i>Nyctea scandiaca</i>	May 23	May 26	First seen

#### SPECIES LIST

*Fulmarus glacialis rogersii*. Fulmar. Ira N. Gabrielson (*in litt.*) saw only two at Little Diomedé, both white phase, near Fairway Rock on July 26, 1946. In 1953 Brooks was told by the Eskimos that the Fulmar, locally called "walrus bird" is not known to nest on Little Diomedé. In 1958 Kenyon saw none near the cliffs. All those seen at Little Diomedé in 1958 were of the white phase. The first was seen on May 29, flying over narrow leads among ice floes about 1 mile east of Little Diomedé. Other individuals were seen on June 3, 5, and 9. On June 10, 20 Fulmars circled and fed in the channel in front of Ignalook Village. On June 13 the birds were numerous and constantly in view over the water from the village.

*Phalacrocorax pelagicus pelagicus*. Pelagic Cormorant. Brooks found cormorants present on April 25, 1953, and he believes he observed two species, one larger than the other. In 1958 only *pelagicus* was noted but no special search for *Phalacrocorax urile* was made. One cormorant was seen near the north end of the island from the aircraft before landing on May 11, 1958. The natives said that cormorants are present throughout the winter, when they feed in leads, particularly around the north point of the island. Large numbers were not seen on the cliffs until May 18. The greatest concentrations were at the north and south ends of the island. While we hunted walrus from umiaks, groups of cormorants were often seen resting on broken pressure ridges of ice floes. Croaking mating calls were heard from the cliffs frequently on May 20.

*Olor columbianus*. Whistling Swan. On May 20, 1958, two flew past Little Diomedé and disappeared in the direction of Siberia. They flew low over leads, passing among ice floes. The bills appeared completely black.

*Branta nigricans*. Black Brant. On June 3, 1958, a flock of ten was seen flying westward toward Big Diomedé. On June 9 a subadult was seen sitting on the hillside north of the village.

*Chen hyperborea*. Snow Goose. In 1953 the first flocks appeared on May 22 and by the evening of May 24 the migration had ended. On May 20, 1958, a flock of four in company with three Sandhill Cranes, flying in line, headed directly west over the ice south of the village. On May 23 a flock of six was closely observed resting on an ice floe as it drifted with the current past the south point of the island. On May 29 and 30 several flocks flew westward, and on June 1 they were heard calling while moving over the village in a westerly direction.

*Anas acuta*. Pintail. On May 18, 1958, an adult male circled over the village. On May 23 one pair was seen on a lead near shore at the south end of the island. On June 9 an adult male flew north along the shore near the village and a male in subadult plumage was shot on the hillside behind the village. Gonads were enlarged ( $25 \times 7$  mm.).

*Anas crecca*. Green-winged Teal. On June 10, 1958, an adult female (*nimia* or *carolinensis*?) was seen resting on an ice floe near the village. It was driven away by dogs and no others were subsequently seen.

*Polysticta stelleri*. Steller Eider. Small flocks were seen between May 25 and June 5, 1953. None was seen in 1958. Apparently the northward migrants usually stay close to continental coast lines.

*Clangula hyemalis*. Oldsquaw. In 1953 these ducks appeared to pass in greatest abundance near Cape Prince of Wales. On May 14, 1958, the first pair was seen in a lead at the south point of the island. Pairs and small flocks, headed north or east, were seen on the open water during the entire period.

*Histrionicus histrionicus*. Harlequin Duck. The first were seen on June 2, 1958, a flock of approximately ten, flying northward over open leads near the south end of the island. On June 5 two pairs were seen near shore ice north of the village.

*Somateria mollissima*. Common Eider. This species is often taken for food by the Eskimos. On May 16, 1958, approximately 100 were seen on open leads south of Little Diomedede. Although we saw a number of flocks while on walrus hunting trips at sea, we also spent several entire days on the water in late May without seeing this species.

*Somateria spectabilis*. King Eider. Between May 14 and June 2, 1958, flocks of from 4 to 35 were seen on several occasions flying low over the water among ice floes. Dead individuals were seen at several Eskimo homes on May 11 and the Eskimos said that they often take them on leads in the winter and early spring. Brooks has observed that while great numbers migrate northward near Cape Prince of Wales in May relatively few are seen near the Diomedede Islands.

*Lampronetta fischeri*. Spectacled Eider. This species did not appear numerous at Little Diomedede in 1958. One adult male was brought in by a hunter on May 11 and several hunters said that they had seen a few after this date.

*Grus canadensis*. Sandhill Crane. In 1953 the migration passed between May 15 and 22. Flocks en route from Alaska to Siberia frequently passed both north and south of Little Diomedede in mid-May, 1958. During periods of low visibility, the birds could often be heard but not seen. On May 17 four flocks were seen; on May 18 a flock of 27 and another of 24 were closely observed and a number of others were reported by Eskimos. On May 20 a flock of 62 and 3 other individuals, accompanied by 4 Snow Geese, passed by. A number of hours was spent in the field subsequent to May 20. On May 23 a particular effort was made to record the passing of cranes but none was seen during nine hours of field observations and none was reported by hunters. Apparently the entire migration passed in four days, from May 17 to 20.

*Erolia alpina pacifica*. Dunlin. Only stray migrants were seen. On May 20, 1958, a lone bird flew north along the edge of the ice pack and alighted on floating ice about 2 miles east of Little Diomedede. Another was seen on the ice near shore rocks at the south end of the island on May 30. A male in breeding condition was taken on June 1 (USNM no. 465837) as it looked for food among rocks and snow patches at the water's edge.

*Phalaropus fulicarius*. Red Phalarope. A few migrants stopped at Little Diomedede in late May and June. On May 29, 1958, an adult in breeding plumage, probably a female, searched for food in a pool of melt water on shore ice. On June 6, two flew among the ice floes about 8 miles south of Little Diomedede. Between June 10 and 14, 10 to 15 birds searched energetically for food under and near the shore ice shelf along the west shore of Little Diomedede. A male in breeding condition was taken on June 10 (USNM no. 465841).

*Stercorarius pomarinus*. Pomarine Jaeger. On May 20, 1958, a flock of eight, in dark plumage, was headed north in direct flight close to the water 1 mile east of Little Diomedede. On May 29 five were seen and on June 10 one was seen. On June 14 and 15 several were seen at Wales where they appeared more numerous than at Little Diomedede.

*Larus hyperboreus*. Glaucous Gull. On June 7, 1953, the Eskimos brought in about two dozen Glaucous Gull eggs, some of which were in late stages of incubation. Although some gulls nest on Little Diomedede, the Eskimos say that the Fairway Rock colony is larger. Gulls were relatively scarce at Little Diomedede until about May 15, 1958. On June 10 Eskimos from Diomedede visited Fairway Rock and found full sets of eggs which had been laid only a few days previously.

*Rissa tridactyla pollicaris*. Black-legged Kittiwake. Incubation was in progress on July 26, 1946, when Ira N. Gabrielson visited the island (*in litt.*). In 1953, the first kittiwakes were seen at Little Diomedede on May 15, the first landed on the cliffs on May 21, and egg laying had not begun on June 25.

On May 11, 1958, several flocks of 20 to 100 were seen in open leads among the ice during a flight between Nome and Little Diomedede. On May 14 four were seen flying over the ice south of Little Diomedede. As leads opened near the island, the birds became numerous. Twenty were seen on May 16 and on May 18 huge flocks of many thousands were present on open leads near the island. On May 20 at 8:00 a.m. thousands rested on cliff ledges, many of them on the snow. By 7:00 p.m. thousands more had come to the cliffs. Previous to May 20 not one bird had been seen on the cliffs. By 1:00 a.m. on May 21 the cliffs were again completely deserted by kittiwakes. Until May 26 no birds were seen visiting the cliffs and relatively small numbers were seen near the island over open water. On May 26 several hundred birds rested on ice and open water near shore but only about 100 to 200 were on the cliffs. The cliff population gradually increased until by May 29 every available ledge and old nest was occupied by pairs of kittiwakes. The first subadult bird was seen on June 5 and numbers had increased considerably by June 14.

The behavior of kittiwakes, in making a preliminary visit to nesting cliffs in great numbers and then deserting them completely for five days before returning to stay, is of interest because of its similarity to behavior patterns of other larids. For example, the Sooty Tern (*Sterna fuscata*) approaches the colony site at first by night, then in daylight for several days before finally resting on the ground intermittently at night. The periodic approach of the flock to the colony site is described for the Herring Gull, *Larus argentatus* (Tinbergen, *The Herring Gull's World*, 1953:44-45).

*Uria aalge* and *Uria lomvia*. Common Murre and Thick-billed Murre. On April 27, 1953, large flocks (50 to 200) began passing Little Diomedede heading north, and their migration continued until about May 5. During the same period, several thousand birds accumulated in the open leads near Little Diomedede and began landing on the cliffs at the south end of the island on May 3. Breeding was observed on June 11, and the first eggs were found on June 19.

So many of these birds were seen that it was not ascertained which species was more numerous. Large flocks were seen on open water on May 11, 1958, during the flight from Nome to Little Diomedede. Their number decreased sharply on the narrow leads 2 or 3 miles south of the island. None was seen near Little Diomedede until May 16 when leads opened near the island, at which time flocks of several hundred were present, and by May 20 many thousands were present on the water. In the morning none rested on the cliffs, although by 7:00 p.m. many thousands were there, most of them sitting on snow and ice. Several birds were seen fighting and in one case two birds locked in combat fell to the surface of the shore ice where they continued to fight, their beating wings leaving a trail for several yards in the snow. By midnight the majority of birds had left the cliffs and by 3:00 a.m. on the morning of May 21 not one remained. Between this date and May 31 a few birds occupied the cliffs intermittently but at 1:00 p.m. on May 31 none was seen there. They again began to occupy ledges by midafternoon. From this time on the cliff population steadily increased and birds were present there at all hours. Breeding behavior was observed on June 9.

*Cephus columba*. Pigeon Guillemot. In 1953 small numbers were seen on April 25, but no eggs had been found by June 25. On May 14, 1958, two were seen in a narrow lead south of Little Diomedede; in the course of a day at sea on May 20 approximately 20 individuals, some in pairs, were seen. Erratic courtship flight was observed near an open lead on May 21. The number of pairs occupying open water south of the island increased. On May 26 six pairs were seen near shore. By May 31 sev-

eral pairs were seen flying close to island cliffs and on June 2 several pairs occupied holes in cliffs at the south end of the island. By June 13, when open water was available all around Little Diomedé, the number of Pigeon Guillemots had increased to a hundred or more pairs.

*Cyclorhynchus psittacula*. Parakeet Auklet. In 1953 this species was first seen to settle on Little Diomedé on May 29. The first flocks of five to ten individuals were seen on May 20, 1958, well offshore on open water among ice floes. By 7:00 p.m., 500 to 600 birds were seen near shore. By May 23



Fig. 1. Habitat areas at the top of Little Diomedé Island on June 2, 1958. Two Wheatears fed among rocks at the edge of the tundra patch in the foreground. Longspurs had taken territories on the rock-strewn plateau at left, and auklets (*Aethia* and *Cyclorhynchus*) occupied the rock slides on the right. Photograph by Kenyon, June, 1958.

thousands flocked on open water near shore. On May 26 auklets were flying high above the island and a few individuals landed on the highest rocky outcrops. By May 31 large numbers began to assemble high on the rocky slopes at about 4:30 p.m. Between this date and June 4 the numbers increased rapidly. The Parakeet Auklet appears to be the least numerous of the three species of small alcids. During late May, the most auklets were in the air from late afternoon until the early morning hours in spite of the fact that daylight prevailed during 24 hours. On foggy days the auklet flights began later than on sunny days.

*Aethia cristatella*. Crested Auklet. On May 20, 1958, three were seen flying over open leads 3 miles east of Little Diomedé. By May 25 flocks of from 5 to 30 birds flew high above the upper slopes of the island in early afternoon; by late afternoon the flocks approached the rocks closely and a few landed on the higher slopes. An assemblage of many thousands gathered on an open lead south of the island, then took to the air, broke into smaller flocks and circled up about the island. The citrus-like odor of this auklet is often quite noticeable, both on the water and in nesting areas. On May 29 the odor of a flock of about 10,000 auklets was quite strong at least half a mile downwind while the birds were hidden from view by fog. Large flocks on the water increased daily until by June 3 a number of flocks consisted of an estimated 5000 to 10,000 birds. As soon as a large flock took to the air, it broke into small groups of four to ten birds and circled upward around the island. The greatest number of birds was in the air and on the rocks at about 2:00 a.m.

*Aethia pusilla*. Least Auklet. The first was seen on May 23, 1958, and by May 26 a few flew about the upper slopes. At 3:00 a.m. on May 27 thousands flew over the village and landed among the rocks. By June 10 Least Auklets were by far the most numerous birds about Little Diomedede. The heaviest flights occurred from 9:00 p.m. to about midnight. By June 8 it appeared that the majority of available nesting areas had been taken and flocks of 500 to 600 Least Auklets, accompanied by a few of the other two species, rested on snow drifts that still covered portions of the rocky hillside. These birds appeared to be awaiting access to nesting areas. On June 10 at twelve noon not one bird could be seen flying. By 2:00 p.m. a few were flying and the number rapidly increased during the afternoon and evening hours.

*Fratercula corniculata*. Horned Puffin. The puffins are the last summer residents to reach Little Diomedede. The first puffins arrived on June 2, 1953, and egg laying had not commenced by June 25. The first puffin was also seen flying over open water on June 2 in 1958. On June 3 two were seen on cliffs at the south end of the island and two others flying along the cliffs. On June 6 several pairs flew over open water and along the cliffs. On June 10 many hundreds occupied cliff ledges. This species outnumbered the Tufted Puffin to a considerable degree.

*Lunda cirrhata*. Tufted Puffin. On May 26, 1958, one bird made numerous close passes along the rocky cliffs at the south point of the island. Numbers increased slowly until June 13 when scattered pairs occupied cliffside ledges.

*Nyctea scandiaca*. Snowy Owl. In 1953, one was seen on May 23 and the Eskimos said that this owl is more numerous in fall than spring. One adult was seen on the top of the island on May 26, 1958.

*Asio flammeus*. Short-eared Owl. Two were seen flying westward past Little Diomedede on May 20 and 22, 1953. The species was not observed in 1958.

*Corvus corax*. Raven. On April 25, 1953, three flew from Big Diomedede to Little Diomedede. Subsequently they were seen almost daily. On May 14, 1958, one was seen flying about near open leads south of Little Diomedede and on June 1 a lone bird flew from Big Diomedede toward the north end of Little Diomedede. The Eskimos said that two or three Ravens always wintered at the Diomededes and that sometimes they nested on the higher outcroppings of Little Diomedede. It is doubtful that any nested there in 1958. The species is apparently present in small numbers throughout the year.

*Oenanthe oenanthe oenanthe*. Wheatear. On June 2, 1958, a pair of birds was flushed from among large boulders near the edge of the flat top of Little Diomedede. They were quite wary but a female was taken (USNM no. 465838). Although this species is recorded as breeding at Wales and a specimen was taken on Little Diomedede by Dufresne in 1924 (Gabrielson and Lincoln, *The Birds of Alaska*, 1959:668), it is not known to breed there.

*Phylloscopus borealis kennicotti*. Arctic Warbler. Only one individual was seen, on June 12, 1958. It hopped about energetically among large granite boulders as it searched for food among lichens and patches of dead grass near the schoolhouse. The bird, an adult female, was taken (USNM no. 465842). Although this species is not previously recorded from Little Diomedede, its presence there is not surprising. It winters in tropical Asia, has been recorded from other Bering Sea islands, and breeds in western Alaska.

*Motacilla alba*. White Wagtail. Single birds were seen on June 4, 10, and 13, 1958. They were very elusive and shy. Each bird passed rather rapidly along the island shore and did not return to an area after leaving it. An unsuccessful effort was made to collect each individual. Identifying characteristics were observed through binoculars. Nesting of this species on St. Lawrence Island is recorded (Fay and Cade, *Univ. Calif. Publ. Zool.*, 63, 1959:129).

*Motacilla flava tschutschensis*. Yellow Wagtail. On June 13, 1958, an adult female was observed for half an hour (12:30 p.m. to 1:00 p.m.) before it was obtained (USNM no. 465844). It repeatedly flew to an altitude of about 75 feet over a selected spot, then while descending on rapidly vibrating wings uttered a high-pitched trill. One other was observed later the same afternoon as it flew rapidly along the steep Diomedede hillside. The breeding range of this species includes western Alaska areas but it has not been recorded previously from Little Diomedede.

*Anthus cervinus*. Red-throated Pipit. On June 12 and 13, 1958, several pipits were observed as they flew low over the rocks and grassy patches on the steep lower slopes of Little Diomedede. The birds were quite wary and exact identification of the five or six pipits seen was not certain. However, two adult males in breeding condition were collected (USNM nos. 465843 and 465845), one on June 13

and one on June 14. This species has not previously been recorded from Little Diomedé but there is one nesting record from Wales (Bailey, Condor, 34, 1932:47). A more careful exploration of Little Diomedé may show that it breeds there also. The species is represented by only three other specimens from North America.

*Acanthis hornemanni*. Hoary Redpoll. One bird was seen on May 18 and another on June 13, 1958. Both were quite light colored and were thus considered to be this species. They flitted among rocks along a steep hillside and were so persistently chased by Snow Buntings that neither could be obtained. Although not previously recorded from Little Diomedé, redpolls probably visit there in small numbers on migration as they do at other Bering Sea islands.

*Junco hyemalis hyemalis*. Slate-colored Junco. On June 5, 1958, one bird, a male in breeding condition, was obtained (USNM no. 465840) on the rocky hillside behind the village. The bird was chased by a White-crowned Sparrow but repeatedly returned to one area where it was taken. Two Eskimos said they had never seen a bird like it there before. The species has been found on other islands of the Bering Sea but not previously on Little Diomedé.

*Zonotrichia leucophrys gambelii*. White-crowned Sparrow. On June 5, 1958, a male in breeding condition was first heard singing from the hillside behind the village where it remained for about 12 hours before being taken (USNM no. 465839). The Eskimos said that usually they saw one or two of these birds in the spring, but they had never found its nest on Little Diomedé. This is a common species on the mainland of Alaska and is probably blown occasionally from its usual migration route to islands in the Bering Sea. It is not previously recorded from Little Diomedé.

*Calcarius lapponicus*. Lapland Longspur. In 1953 only a single pair was observed. On May 27, 1958, an adult male was seen on a grassy stretch among rocks above the village. On May 29 several males in soaring song flight were frequently visible in this area. On June 2 about ten pairs were seen on the flat top of Little Diomedé. A nest with five fresh eggs was found on June 9 about 300 yards north of the schoolhouse. On June 13 this nest contained six eggs and a second nest with seven partly incubated eggs was found nearby.

*Plectrophenax nivalis nivalis*. Snow Bunting. In 1953 the birds arrived in the first part of April. Eggs were found on June 1. Birds of this species were numerous along the lower slopes of Little Diomedé on May 11, 1958. Courtship behavior was apparent on May 14. On May 18 numerous males sang and disputed territorial boundaries among rocky outcrops. Between the hours of 11:00 p.m. and 2:00 a.m. no singing was noted. Singing began about 3:00 a.m. and continued throughout the day. On May 23 four females and one male were seen to arrive at the island from the south. On May 24 females were first seen gathering nesting material and by May 31 numerous mated pairs occupied territories along the shore and hillside. Only one nest, with a female incubating, was found on June 10. One male (USNM no. 465836) was taken on May 31, 1958.

*United States Fish and Wildlife Service, Seattle, Washington, and Alaska Department of Fish and Game, Juneau, Alaska, February 1, 1960.*