

4. The chick in one of the first two eggs laid in Nest 1 was cheeping at 4:45 p.m., July 9. The four chicks emerged between 12:30 (at which time there was a small hole in each egg) and 5:30 a.m., July 11. The period between the laying of the last egg and the hatching of the brood was at least 23 days, 9 hours, and 40 minutes; at most 23 days, 19 hours, and 10 minutes.

5. The chicks at Nest 2 began hatching on July 12 (in the late afternoon one egg had a hole in it); and one chick was still hatching at 8 a.m., July 16. Hatching of that brood extended, therefore, over at least a four-day period.

6. A Nest 1 chick, color-banded when less than one day old on July 12, was still somewhat downy and unable to fly on July 28, though its flight-feathers were about half-developed. Nest 1 chicks were still unable to fly on August 2, when 22 days old, but they could fly well on August 11, when 31 days old. The fledging period was, therefore, between 22 and 31 days.

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THE PEREGRINE FALCON ON BAFFIN ISLAND

BY GEORGE M. SUTTON AND DAVID F. PARMELEE

In the summer of 1953 at least three pairs of Peregrine Falcons (*Falco peregrinus*) nested about the head of Frobisher Bay, south-eastern Baffin Island—one pair on a low cliff near the mouth of the Sylvia Grinnell River, just west of the Royal Canadian Air Force Base at which we had our headquarters (Lat. 63° 45' N., Long. 68° 33' W.); another on the bold eastern front of Silliman's Fossil Mount, near the mouth of the Jordan River, 16 miles west of the Base; and a third on a high, bluff island (not named on maps at hand), across the bay about 15 miles south of the Base. We did not see the species at Lat. 68° 31',

N., Long. 71° 22' W., about a large lake 50 miles east-northeast of Wordie Bay, August 8; at Lat. 65° 20' N., Long. 77° 10' W., near Cape Dorchester, August 11; or at Lat. 64° 38' N., Long. 70° 28' W., along the southeast shore of Lake Amadjuak, August 8 and 15. At these places there were no cliffs, so our failure to find the bird did not surprise us. In general the Peregrine and Rough-legged Hawk (*Buteo lagopus*) occupied about the same areas. The Rough-leg did not, however, nest on Silliman's Fossil Mount or the high island across the bay south of the Base; and the Peregrine did not, so far as we know, nest anywhere about Tarr Inlet, a region inhabited by two pairs of Rough-legs.

According to Wynne-Edwards (1952:366) the most northerly breeding station for the Peregrine on Baffin Island is at the head of Gibbs Fjord (Lat. 70° 37' N., Long. 72° 30' W.), along the east coast. Here a pair observed between June 27 and July 12, 1950 "appeared to be nesting low down on a high cliff, about one-half mile from the water." Another nest reported by Wynne-Edwards (*loc. cit.*) for that same season was in a rocky gully at the west end of Kranck Lake, near the head of Clyde Inlet. Soper (1928:107) discusses a nest with "three half-grown young in the downy stage" found August 10, 1925, at Amittok Lake, near the head of Nettilling Fjord; refers to Hantzsch's breeding record (June 17, 1910) for the same place; and informs us that the MacMillan expedition to southwest Baffin Island, 1921-22, obtained "eggs and skins." More recently Soper (1946:224) has called attention to the rarity of the Peregrine in Foxe Peninsula, where he observed adults of the species only three times "during the entire expedition of 1928-1929." He does mention, however, "three well-fledged young on a cliff at Schooner Harbour," a locality presumably near the "Peregrine Point" of his sketch map (1946:10). Kumlien (1879:82), who considered the Peregrine a "regular breeder" in Cumberland Sound, mentioned "nearly full-fledged young . . . taken from the nest on a high cliff in the Greater Kingwah Fjord" in August.

We suspect that *Falco peregrinus* nests northward along the whole east coast of Baffin Island and also on Bylot, Devon and Ellesmere Islands. Salomonsen (1950:443) informs us that it breeds in the vicinity of Thule, Greenland. Shortt and Peters (1942:342-3) report its breeding at Fort Ross, Somerset Island. According to Taverner (1934:119), the northern limits of breeding in eastern arctic America are the Cumberland and Boothia peninsulas.

In 1953 we first recorded the Peregrine on June 18. That day we walked to the mouth of the Sylvia Grinnell River and upstream a mile or so. Walking on hard-packed, water-gouged snow along the bank, we scrutinized the slopes ahead of us, wondering whether any of them could be steep enough for Peregrines or Gyrfalcons (*Falco rusticolus*), the latter a species we hoped very much to find. Using our glasses, we saw scattered white splashings on the rocks. All at once a male Peregrine flew out, squealing in a shrill voice. It did not dive at us; instead, flying up over the cliff, it alighted on a high rock. With a roundabout approach, we collected this bird (GMS 11707). As we shot, the female flew out below us. Her voice was deeper than her mate's and she flew close, as if to attack. After shooting her (GMS 11708) we



FIG. 1. Nesting cliff of Peregrine Falcon near the mouth of the Sylvia Grinnell River, Frobisher Bay, Baffin Island. The nest-site was near the dark spot in upper-left. Photographed August 17, 1953.

clambered about the rocks a long time before locating the nest, a depression in dry, sandy earth in a sheltered niche. The three eggs lay, not side by side, touching, but some distance apart from each other.

Both Peregrine specimens were fully adult and in excellent feather. The stomach of the male contained remains of a Red Phalarope (*Phalaropus fulicarius*), a species then migrating through the area in some numbers. The crop and stomach of the female were packed with the remains of five adult lemmings—four *Dicrostonyx groenlandicus* and one *Lemmus trimucronatus*. At the foot of the cliff we found feathers of several Snow Buntings (*Plectrophenax nivalis*), of at least one Red Phalarope, and of one White-rumped Sandpiper (*Erolia fuscicollis*). Two of the three falcon eggs were fresh; in the third there was a small embryo.

About a mile northeast of this eyrie, on a cliff above a small stream, a pair of Rough-legged Hawks were nesting. While we were at this cliff on June 21, a large falcon flew over us. We thought it was a Gyrfalcon, but it may have been a female Peregrine. The Rough-legs did not attack it. Their attitude toward Snowy Owls (*Nyctea scandiaca*) was different. When an owl flew up or down the valley near their nest they dived at it fiercely.

Near the Hudson's Bay Company post, about a mile east of the Base, bluff land fronted the sea. On June 22, while we were climbing about the rocks there, two Peregrines engaged in playful maneuvers above us. The birds appeared to be small and of the same size, so they were prob-

ably both males. As they circled, chasing each other, they cackled and squealed. Occasionally they met head-on, reached their feet out toward each other, and fell through the air, catching themselves while still well above the rocks.

On June 28, while we were making observations at the nest of a Wheatear (*Oenanthe oenanthe*), a Peregrine flew in low over the rocks. The Wheatears, which had been much in evidence, hid promptly. They were nowhere to be seen or heard while the predator was in the vicinity (see Sutton and Parmelee, 1954:299).

July 13 V. C. Wynne-Edwards found a Peregrine eyrie along the front of Silliman's Fossil Mount, near the mouth of the Jordan River. The nest was in a high crevice among the crumbling limestone. Below it on the talus were remains of Snow Buntings and lemmings. Brandon Halloran shot the male falcon (GMS 11754) for us. The stomach contained parts of a Snow Bunting. We did not visit this eyrie ourselves until some days later.

July 14 Dr. Wynne-Edwards saw a Peregrine about half way between the Base and the Hudson's Bay Company post.

July 17, while we were in the gorgelike channel between Bishop and Hill Islands, a Peregrine flew in high from the west. We were close to a Rough-leg eyrie and the Rough-legs were screaming at us. The Peregrine did not cackle or dive at us, and it seemed to pay no attention to the Rough-legs.

July 18, while we were searching for young Snowy Owls on the top of Silliman's Fossil Mount, we saw a Peregrine pounce fiercely three times on an adult owl which had alighted near the falcon's eyrie. When the falcon stooped the fourth time, the owl flew upward to meet it, throwing its feet out clumsily while upside down midair. The owl's nest was on the very top of the Mount, but the young owls, still unable to fly, had scattered widely. The young Peregrines were fledging. We saw two of them flying about that day. On July 19 we saw the adult Peregrine go with food to the nest-niche while the two young followed it, so another eyas might still have been in the nest. We saw only one adult bird there on July 18 and 19.

On July 29, the latest date on which we recorded the Peregrine, we found a pair on a high island across the bay about 15 miles south of the Base. The birds dived at us repeatedly, especially the large, deep-voiced female. We failed to find the nest, though we saw a big patch of white-washing two hundred feet up on a cliff. Along a narrow band of wet shore below there were scattered Snow Bunting remains.

DESCRIPTION OF SPECIMENS

Our three specimens we sent to the U. S. National Museum for sub-specific identification. Dr. Herbert Friedmann reports on them as follows (letter of March 10, 1955): "I make them out to be the North American race *anatum*, and find no evidence in them that suggests the so-called buff colored small duck hawks supposedly coming from the arctic or sub-arctic tundra.

"I may say that the North American race *anatum* is at best a very poor one. There is no constant difference in either size or coloration between it and the typical subspecies of Europe. On the whole, there is a slightly greater size evident in North American birds, but the difference is small enough and inconstant enough to make it difficult to identify individual specimens. Pending the time when someone with really comprehensive material of both North American and Eurasian birds shall make a careful . . . study of the whole problem, I prefer to go along with current usage and call the North American birds *anatum*."

The three specimens measure as follows (in millimeters):

GMS No.	Sex	Wing	Tail	Culmen	Tarsus
11707	Male	306	142	19.0	50.0
11754	Male	310	143	15.5 (much worn)	47.0
11708	Female	362	175	24.0	56.0

The three eggs measure as follows (in millimeters): 53.0 x 42.5, 52.5 x 40.0, 50.0 x 39.5.

REPRODUCTIVE SUCCESS AND SPECIES SURVIVAL

The three nestings discussed above were more or less successful. The river-mouth pair near the airfield were successful to the point of laying a full clutch of three eggs. At the Silliman's Fossil Mount eyrie at least two young fledged about July 18 despite the death of the male parent July 13. The island pair across the bay from the airfield probably had young on July 29, the date of our only visit to that area. Along the channel between Bishop and Hill Islands a pair almost certainly nested, but we did not discover the eyrie. Peregrines which we saw after June 18 in the vicinity of the airfield may or may not have been breeding.

Nowhere about the head of Frobisher Bay were alcids or shorebirds common enough to furnish the Peregrines a ready food-supply all summer. Snow Bunting remains at three eyries and in one Peregrine's stomach were evidence that the bunting was preyed upon. Phalarope and sandpiper remains at an eyrie in mid-June were evidence that shorebirds were captured while migrating through the region. At two eyries we found lemming remains. The stomach and crop of a female Peregrine collected June 18 were packed with lemmings. Below the island eyrie across the bay from the airfield we found bunting remains but no lemming remains. The Snowy Owls and Rough-legged Hawks nesting about the head of the bay preyed exclusively, so far as we could tell, on lemmings. Nowhere about the head of the bay was either the Weasel (*Mustela erminea*) or Arctic Fox (*Alopex lagopus*) at all common.

Nowhere did we find Peregrines sharing a cliff with Rough-legged Hawks or Ravens (*Corvus corax*). The river-mouth eyrie near the airfield was fully a mile from the nearest Rough-leg eyrie.

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EXPERIMENTS WITH THE ALL-PURPOSE TRAP

BY JOHN V. DENNIS

With a view to finding out more about the factors which limit or increase trap take, the writer during part of November and December, 1953, and January 1954, conducted a number of experiments with the All-Purpose Trap (described by Seth Low, *Bander's Manuel IX*: 10-11, 1953). Six traps were built for the study. Each was constructed according to specifications but certain refinements, such as concrete floors and drip pool, were not included. The traps were not identical in every detail as some differences, such as in degree of curvature and size of entrances, proved unavoidable.

As originally planned the study was to include comparative tests on baits, water-drip versus grain, and trap take in relation to habitat and to weather and time of day. The traps were placed in pairs, each unit in a pair approximately equivalent so far as location and habitat was concerned. None of the tests required banding of birds, but all birds taken in the traps were examined and given bands, if none were present. Banding was not a necessary part of the study, but a desirable part since the writer wanted to simulate as nearly as possible actual conditions at a banding station. Traps remained in the same position from day to day except when a new phase of the study required removal. Food was constantly maintained in the traps, and, when not in use for experimentation, a section of the top was opened so as to allow birds free entrance and exit. Prior to the study period, except for some experimental runs, no banding or artificial feeding had been carried on in the trapping area. But for many years birds had been in the habit of coming to the area for an abundant supply of weed seeds and such attractions as the ripening heads of the common sunflower.

Considered in this report are preliminary findings in respect to habitat, baits, weather and time of day. Owing to wet weather no tests