surface water (Bartholomew and Cade, op. cit.) it would not be surprising if its salt tolerance and its ability to discriminate between salt solutions of different concentrations actually function in promoting the biological success of the species. Whether this is actually the case will have to be shown by the results of future field studies.

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THE CANVASBACK, COMMON GOLDENEYE, AND BUFFLEHEAD IN ARCTIC ALASKA

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In Alaska, the Canvasback (*Aythya valisineria*) has been recorded north to Kotzebue Sound, 66° 45′ N, 163° 00′ W (Hansen, Condor 63:137, 1960); the Common Goldeneye (*Bucephala clangula*), north to "the lower reaches of the Porcupine" River (Gabrielson and Lincoln, Birds of Alaska, p. 191, 1959), the mouth of which lies at 66° 34′ N, 145° 19′ W; and the Bufflehead (*Bucephala albeola*), north, probably, to the village of Kobuk, 66° 55′ N, 156° 52′ W (Irving, U.S. Natl. Mus., Bull. 217:135, 1960). This paper reports the occurrences of these species in the central Brooks Range.

Canvasback. On 19 June 1958 I saw a flock of five adult male and female Canvasbacks on a lake one-half mile west of the John River at about 67° 9′ N, 151° 52′ W. The lake lies well within the forest, more than 55 air miles south southeast of the tree line in the John River valley. The ducks were closely observed, both in the air and on the water, with the aid of 8× binoculars.

Common Goldeneye. On 4 June 1963 Richard E. Morlan and I saw an adult female on the Koyukuk River, at Bettles Field (66° 55′ N, 151° 30′ W). On 10 June 1963 we saw an adult female on a lake beside the John River at the mouth of McKinley Creek (67° 24′ N, 152° 03′ W). On 13 June 1963 we found an adult male and an adult female on the John River at Threetime mountain (67° 14′ N, 151° 54′ W), and collected the female (*B. a. americana*, U.S. Natl. Mus. 529781). The largest egg follicle measured 6 mm. On 25 June 1963 we saw what appeared to be another adult female on the Alatna River at the mouth of Siruk Creek (66° 42′ N, 153° 18′ W). These several localities are in the forest; the northernmost, the mouth of McKinley Creek, lies 38 air miles south of the tree line in the John River valley.

Bufflehead. On 3 July 1956 I saw an adult male on a tundra pond beside the John River at about 68° 6′ N, 151° 52′ W. This locality is four air miles southwest of the summit of Anaktuvuk Pass. On 13 June 1961 William T. Stuart and I found an adult male and two adult females on a pond in the upper John River valley at about 68° 4′ N, 152° 00′ W, and collected the male (Peabody Mus. Nat. Hist. 8599). The testes measured 16 mm. On 19 June 1961 Joseph Mekiana and I flushed an adult female from a dense mat of dwarf birch (*Betula* sp.) beside the pond noted in the reference to 1956, above. Diving frequently, it refused to leave the water. A search for the nest was unsuccessful. On 8 June 1963 Morlan and I saw an adult male and an adult female on the Koyukuk River at Bettles Field. With the exception of Bettles Field, the localities where Buffleheads were observed are north of the forest; the southernmost lies 11 air miles northeast of the tree line in the John River valley.

On the above evidence, one may conclude that the Common Goldeneye and the Bufflehead probably breed in the central Brooks Range. Because the Nunamiut Eskimos have names for nearly all of the birds occurring within the limits of their present and recent territory (Irving, op. cit.), and because they do not recognize the three species noted here, one may further conclude that their occurrences in the central Brooks Range may represent recent, northward range extensions.

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SUBSPECIFIC STATUS OF *BRANTA CANADENSIS* IN THE CENTRAL BROOKS RANGE, ALASKA

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Kessel and Cade (Biol. Papers Univ. Alaska 2:31–32, 1958) assign Canada Geese of the Colville River, north Alaska, to *B. c. taverneri*, remarking that on the Colville this race equals "*B. c. minima* in part of 5th edition A.O.U. Checklist; and *B. c. leucopareia* of Bailey, 1948." Irving (U.S. Natl. Mus., Bull. 217: 34–35, 1960) similarly assigns to *taverneri* the Canada Geese from Anaktuvuk Pass (on the central Brooks Range divide) and from the wooded Koyukuk and Alatna Rivers in the south-central Brooks Range.

Six Canada Geese which I collected at Anaktuvuk Pass, on the Alatna River, and on the wooded John River, south of Anaktuvuk Pass, also represent *taverneri*. However, on 7 July 1961 at 68° 30′ N, 149° 57′ W on the upper Itkillik River, north-central Brooks Range, I took a nonbreeding adult male of the race *parvipes* (Yale Peabody Mus. 8596), from a flock of five adults. This bird, while not particularly fat, weighed 3202 g. The Itkillik River specimen of *B. c. parvipes* was appreciably heavier and larger than the adults and subadults of *B. c. taverneri* collected by me and reported by Kessel and Cade (op. cit.) and Irving (op. cit.) from the localities noted.

On 18 June 1963 Richard E. Morlan and I closely

observed a flock of six very small adult or subadult Canada Geese on a mud bar on the lower John River at about 66° 57′ N, 151° 39′ W. As I stalked them, two much larger geese flew into the resting flock and aggressively drove the smaller birds up and down the bar until the latter took wing and flew out of sight. I collected one of the larger geese, a first-year male, apparently non-breeding, of the race *taverneri* (U. S. Natl. Mus. 529775). It weighed 2438 g. From a distance of 30 yards, observing with 7× binoculars, it was my impression that the two larger birds were three or four inches taller than all members of the flock of six.

The above evidence establishes that both *B. c. taverneri* and *B. c. parvipes* occur in the central Brooks Range. The evidence further suggests that another race also occurs there.

I am indebted to John W. Aldrich, Fish and Wildlife Service, United States Department of the Interior, for his critical determinations of specimens, and for his excellent, instructive comments on genotypical and phenotypical variability among the forms of *Branta canadensis*. Field studies from which this report is derived were supported, mainly, by the Arctic Institute of North America, the Office of Naval Research, and the National Science Foundation. The United States Government is permitted to reproduce this paper in whole or in part.

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INCUBATION AND NESTLING PERIODS OF THE HORNED PUFFIN

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As in the case of many alcids, the basic features of the breeding biology of Horned Puffin (*Fratercula corniculata*) have remained relatively unknown. While studying breeding biology of plankton-feeding alcids on St. Lawrence Island, Alaska, in 1966 and 1967, I obtained data on two phases of this puffin's breeding cycle—the durations of incubation and nestling periods. All nests studied were on Sevuokuk Mountain in the Northwest Cape area of the island.

Laying-hatching intervals were determined in 1967 for the single eggs in five nests, where both events were known to the nearest day. This interval averaged 41.4 days with a range of 40–43 days. For the Common Puffin (*F. arctica*), Lockley (Puffins, 1953) gave periods of 40, 42 and 43 days; Myrberget (Medd. Statens Viltundersøk, 11:1, 1962) gave it as 40–45 days and averaged 41.8 days; and Kartaschew (Die Alkenvögel des Nordatlantiks, p. 85, 1960) stated that this period was "usually 35–37 days" but "may be 40–42."

One observation of the nestling period of Horned Puffin on St. Lawrence Island in 1967 was 38 days; the chick departed for sea during the night or early morning and possessed complete juvenal plumage. For the Common Puffin, Lockley (op. cit.) observed nestling periods of 47, 49 and 51 days; Kartaschew (op. cit.) gave it as 38–45 days; Myrberget (op. cit.) reported an average of 47.7 days; and Uspenski (The Bird Bazaars of Novaya Zemlya, Transl. of Russian Game Reports, 4:1, 1958) recorded two observations, 36 and 37 days.

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A CANADA GOOSE FROM THE MIDDLE PLEISTOCENE OF NEBRASKA

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In the summer of 1967 the University of Nebraska State Museum field party accompanied by C. Bertrand Schultz and Lloyd G. Tanner collected a number of fossils from the type locality of the Sappa Formation, U.N.S.M. Coll. Loc. Hn-102, NW ¼ of NW ¼ of Section 11, T 2 N, R 20 W, Harlan County, Nebraska. This site is an abandoned volcanic ash mine on the farm of C. A. Bose. The fossils mentioned in this report are from the sandy silt just below the Pearlette Volcanic Ash bed in the Sappa Formation, which is generally regarded as Late Kansan in age. A geologic section taken at this locality has been published by E. C. Reed and V. H. Dreezen (Nebraska Geol. Surv. Bull. 23:56–57, 1965).

The fossils collected included a number of rodent incisors and skeletal elements, some turtle plastron fragments and the distal end of the left humerus of a goose, U.N.S.M. 20038, which though abraded, can be identified as a Canada Goose, *Branta canadensis* in the size range of a modern *B. c. canadensis* or *B. c. moffitti*. The stratigraphic data place this specimen quite accurately in the middle Pleistocene.

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