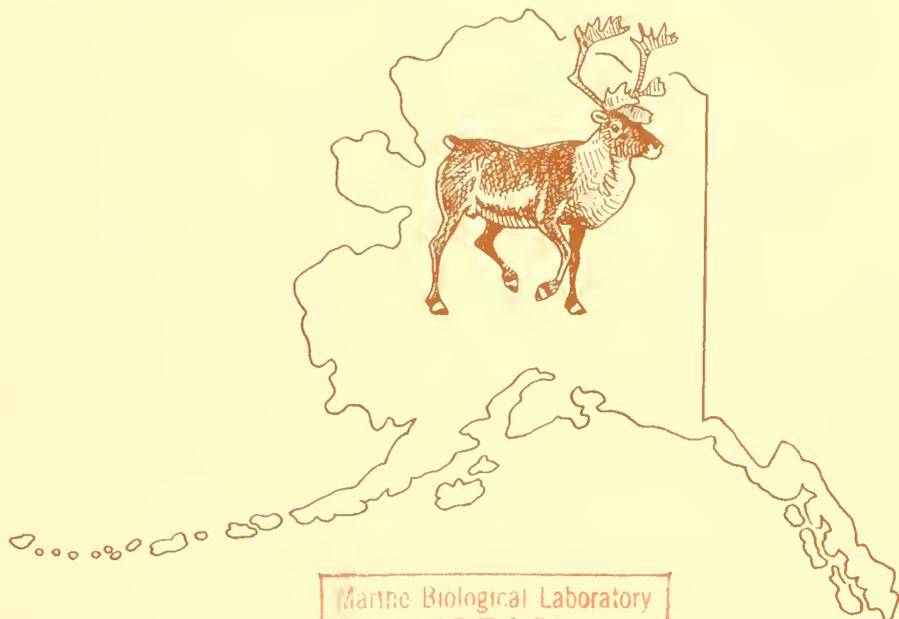


Distribution of Alaskan Mammals



Marine Biological Laboratory
LIBRARY
SEP 10 1965
WOODS HOLE, MASS



United States Department of the Interior
Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife
Circular 211

Distribution of Alaskan Mammals

By

Richard H. Manville and Stanley P. Young

Bird and Mammal Laboratories, Division of Wildlife Research



Circular 211

Published by the Bureau of Sport Fisheries and Wildlife • Washington • 1965

Printed at the U.S. Government Printing Office, Washington, D.C.

UNITED STATES DEPARTMENT OF THE INTERIOR

Stewart L. Udall, *Secretary*

Stanley A. Cain, *Assistant Secretary for Fish and Wildlife*

FISH AND WILDLIFE SERVICE

Clarence F. Pautzke, *Commissioner*

BUREAU OF SPORT FISHERIES AND WILDLIFE

John S. Gottschalk, *Director*



The Department of the Interior, created in 1849, is a Department of Conservation, concerned with management, conservation, and development of the Nation's water, wildlife, fish, mineral, forest, and park and recreational resources. It has major responsibilities also for Indian and Territorial affairs.

As America's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States, now and in the future.

CONTENTS

	Page
INTRODUCTION	
The environment.....	1
The mammal fauna.....	3
List of species.....	3
The plan.....	5
Acknowledgments.....	5
Map of major cover types.....	6-7
ACCOUNTS OF SPECIES	
Insectivora (shrews).....	8
Chiroptera (bats).....	13
Lagomorpha (cavy, hares).....	14
Rodentia (squirrels, beaver, rats, mice, porcupine).....	17
Cetacea (whales, dolphins).....	37
Carnivora (dogs, cats, bears, weasels, etc.).....	38
Pinnipedia (seals, walrus).....	54
Artiodactyla (deer, sheep, etc.).....	62
SELECTED REFERENCES.....	71
INDEX.....	73

ABSTRACT

This report describes the factors in Alaska's environment that affect the distribution of mammals in that State; it considers 103 species of mammals (including 20 cetaceans) and 116 additional subspecies. Ranges and habitat requirements are mentioned briefly. For most species, maps show record stations and general range in the State and adjacent waters; ranges of subspecies are not mapped separately. The grizzly and brown bears are lumped, pending further taxonomic studies. Listed are 128 type localities of mammals within the State of Alaska. This circular makes available current data on mammal distribution, preliminary to further systematic work.

Distribution of Alaskan Mammals

Growing interest in the native fauna of the State of Alaska, on the part of students, tourists, and those charged with management of wildlife, has prompted publication of this circular. Mammal specimens were taken in Alaska by Robert Kennicott and others before the purchase of the Territory in 1867 (Herber, 1954), and much material is now available in the national collections. The maps presented here summarize the data of interest to those concerned with mammal distribution; there remains the long-term problem of systematic revision of many of the groups. This publication is therefore preliminary in nature, to be followed (it is hoped) after some years by a more thorough treatment of the Alaskan mammals. Those desiring further details on natural history, aids to identification, and such matters, are referred to the Selected References (p. 71).

THE ENVIRONMENT

The vast State of Alaska encompasses an area of some 586,400 square miles (571,065 of land, 15,335 of inland water), about one-sixth of all the United States. It stretches 1,300 miles north and south, 2,400 miles east and west. Along its 33,000 miles of deeply indented coastline are more than 3,000 islands, large and small. Elevations range from sea level to 20,300 feet at the summit of Mount McKinley in the Alaska Range—highest point on the continent. Alpine conditions obtain also in the Brooks Range and in the Kuskokwim, Baird, Richardson, St. Elias, Wrangell, and Coast Mountains, and elsewhere. Such rivers as the Yukon, Kuskokwim, Tanana, Matanuska, Susitna, Kobuk, Porcupine, Copper, Noatak, Colville, Koyukuk, and Chandalar drain the mainland.

Physiography

Alaska today is a country of glaciers and fog-swept shores, of ice-clad peaks and erupting volcanoes, of endless tundra, flat coastal plain, and permanently frozen subsoil beyond the Arctic Circle, of countless rivers and lakes. The present scenery is, of course, the result of millennia of action by geologic forces. The oldest known rocks in Alaska, originally laid down as sediments in the

sea, are from the Precambrian era—over 520 million years ago. During later times the country was subjected to inundation by, and emergence from, the ocean; to violent earth movements that buckled and fractured the surface, raising mountains and flooding coastlines; to volcanic activity which still continues on a small scale; to climates alternately hot and cold, at times almost subtropical as far north as the Arctic Slope; and finally, during the Ice Age of perhaps a million years ago, to glaciers that covered most of the land, advancing and retreating and carving the earth as they moved.

During all this time, land surfaces above the sea were constantly eroded by wind, wave, frost, water, or ice. As the glaciers grew, the sea level dropped, and parts of the present Bering Strait became dry land, providing an avenue for movement of animals eastward and westward. Now the climate has moderated, the sea has regained a higher level, and only remnants of the glaciers are left—but the work they did put the finishing touches on the present landscapes.

The results of these geologic processes are the diverse landforms of today. Four principal regions are recognized in Alaska (Williams, 1958), each with its distinctive characteristics because of different geologic evolution. These regions in turn are subdivided into 14 smaller areas, or physiographic provinces, as follows:

Pacific Mountain System:

1. Southeastern Alaska.
2. St. Elias Range.
3. Chugach-Kenai Mountains, and Kodiak Island.
4. Wrangell Mountains.
5. Copper River Plateau.
6. Talkeetna Mountains.
7. Susitna-Cook Inlet Lowland.
8. Alaska Range.
9. Alaska Peninsula and Aleutian Islands.

Interior Alaska and Western Alaska:

10. Scattered lowlands and plains, including the islands of the Bering Sea.
11. Highlands, scattered.
12. Seward Peninsula.

Brooks Range.

Arctic Slope:

13. Foothills.
14. Coastal Plain.

Climate

Alaska is often thought of as a country of forbidding cold and constant snows. It does contain the greatest glaciers on the continent. Yet parts of Alaska have a milder climate than does northern New England. The southern coasts, particularly of the Alexander Archipelago and of the Aleutian Islands, have much fog and cloudiness, and as much as 100 inches of snow a year in Southeastern Alaska. Ketchikan has a growing season of 165 days; average temperatures are 33° for January, 58° for July; recorded extremes are 96° and -8° F.; and total annual precipitation is 150.9 inches. Along the arctic coasts precipitation is slighter; Barrow gets less than 40 inches of snow a year with a total precipitation of 4.3 inches, has a growing season of only 17 days, and has recorded extreme temperatures of 78° and -56° F. The greatest extremes of temperature have been recorded at Fort Yukon, on the Arctic Circle: 100° and -78° F.

People and industries

In this land lives a human population of 226,167 (1960 census), including Aleuts, Eskimos, and Indians as well as outlanders of many nationalities. Commercial fisheries, principally salmon, comprise the chief resource-based industry; trapping, mining, oil wells, lumbering, and agriculture are of lesser importance. Tourism provides employment for many, as do construction and other work connected with national defense. In a survey of the value of the wild vertebrates in the economy of Alaska (Buckley, 1957) it was calculated that wildlife "was worth more than three times as much as the mining industry, more than twenty times as much as agriculture, and more than ten times as much as forestry. Even leaving out the value of commercial fish, wildlife exceeded mining in financial value."

Cover types

In a country of such physiographic and climatic diversity, many distinct regions are readily recognized. Various workers, emphasizing different features of the environment, have mapped

the State as to geographic regions, life zones, biotic provinces, plant communities, biomes, and biotic areas. Perhaps the most generally useful are the forest regions mapped by Taylor and Little (1950) and indicated on pages 6 and 7. These regions are as follows:

1. Coastal forests of western hemlock (*Tsuga heterophylla*) and Sitka spruce (*Picea sitchensis*), with small numbers of red cedar (*Thuja plicata*), Alaska cedar (*Chamaecyparis nootkatensis*), cottonwood (*Populus trichocarpa*), and occasionally white spruce (*Picea glauca*) and paper birch (*Betula papyrifera*). These occur from the southeastern panhandle west to Cook Inlet and Kodiak Island, and up to elevations of 2,500 feet.
2. Interior forests of white spruce and paper birch, quaking aspen (*Populus tremuloides*), and sometimes balsam poplar (*Populus tacamahaca*), as well as willows (*Salix* spp.) and alders (*Alnus* spp.), found chiefly north of the Alaska Range. Timberline is at about 1,500 feet but varies considerably with slope exposure. Two distinct sorts are recognized, often interrupted by areas of bottomland muskeg:
 - a. Dense, heavy forest (taiga), mostly on the lower slopes; black spruce (*Picea mariana*) and sometimes (in the southern interior) tamarack (*Larix laricina*) may occur in swamps and bogs.
 - b. Sparse forests of open woodlands, generally on the upper slopes; similar areas at lower levels frequently have been burned.
3. Treeless tundra and grassland, above timberline on the mountains, beyond the limit of trees along the coasts. Grasslands occur on the Alaska Peninsula, Aleutian Islands, and some southern slopes; tundra on the southern slopes of the Alaska Range, along the western coast, and on the arctic shelf north of the Brooks Range consists of lichens, sedges, grasses, forbs, and mosses; willows and alders (rarely) may grow along the course of streams. The dwarf resin birch (*Betula glandulosa*) is common and widespread.

Probably a special category should be recognized to include the remote volcanic islands, largely treeless, often bathed in mist, and sometimes closed in by pack ice: The Aleutian chain, stretching westward to Attu Island, over 1,000 miles from the Alaskan mainland but within 250 miles of the Komandorskie Islands of Siberia; St. Lawrence, Nunivak, the Pribilof group, and St. Matthew and Hall Islands, in the Bering Sea; and the small King and Diomedé Islands in Bering Strait.

THE MAMMAL FAUNA

The mammals of Alaska, like those of other northern lands, represent a specialized fauna derived from populations of further south. Some of these forms are circumpolar in distribution; many of them have affinities with Siberian forms, for in the geological past there was traffic in both directions over the intermittent land bridging the Bering Strait.

Extinct forms

During the Ice Age, the fauna included such forms as the dire wolf, saber-tooth tiger, giant beaver, ground sloth, mastodon, woolly mammoth, and others, all extinct since the Pleistocene, as well as caribou, moose, and others that are still present. The horse, bison, and mammoth were plentiful. As recently as the Pleistocene there were lions, camels, wild horses, and yaks, but they have disappeared from the Alaska scene. The native musk ox apparently disappeared about 1850, and the sea otter nearly met the same fate.

Introduced forms

There have been many attempts to introduce and transplant mammals in the State; some transplanted species have flourished, others persisted only briefly. Many of these cases have been summarized by Elkins and Nelson (1954). As early as 1891, reindeer were imported from Siberia. Mountain goats were introduced on Baranof Island in 1923; beavers, muskrats, and snowshoe hares on Kodiak Island in 1925; bison were first introduced in 1928, Roosevelt elk in 1929, and musk oxen in 1930. In 1934, an allotment of \$25,000 was provided for restocking by the Alaska Game Commission. This resulted in additional plantings of black-tailed deer, martens, snowshoe hares, beavers, muskrats, squirrels, and marmots. Raccoons were introduced by fur farmers in 1935, and still persist on Prince of Wales Island. Foxes were widely transplanted, particularly on the Aleutians, some by the Russians early in the 19th century.

Extant forms

Although not distinguished by the variety of its mammals, Alaska does possess some of the world's most impressive creatures, both terrestrial and marine, and at times they may be surprisingly abundant. The pigmy shrew is one of the smallest of all mammals; the big brown bear of Kodiak Island is the world's largest land carnivore; the gray wolf of Alaska has been known to attain a weight of 175 pounds; the moose of the Kenai Peninsula hold the record as trophy heads.

A summary of the 103 species of mammals now occurring in Alaska is tabulated below. Details concerning each will be found beyond.

List of Species

Order INSECTIVORA

Family Soricidae, shrews.....	page 8.
<i>Sorex cinereus</i>	Masked or common shrew.
<i>Sorex tundrensis</i>	Tundra shrew.
<i>Sorex jacksoni</i>	St. Lawrence Island shrew.
<i>Sorex hydrodromus</i>	Unalaska shrew.
<i>Sorex pribilofensis</i>	Pribilof shrew.
<i>Sorex obscurus</i>	Dusky shrew.
<i>Sorex palustris</i>	Northern water shrew.
<i>Sorex alaskanus</i>	Alaska water shrew.
<i>Microsorex hoyi</i>	Pigmy shrew.

Order CHIROPTERA

Family Vespertilionidae, plain-nosed bats.....	page 13.
<i>Myotis lucifugus</i>	Little brown bat.
<i>Myotis keeni</i>	Keen's bat.
<i>Myotis volans</i>	Long-legged bat.
<i>Myotis californicus</i>	California bat.
<i>Lasionycteris noctivagans</i>	Silver-haired bat.
<i>Eptesicus fuscus</i>	Big brown bat.

Order LAGOMORPHA

Family Ochotonidae, pikas.....	page 14.
<i>Ochotona collaris</i>	Cony or pika.
Family Leporidae, hares and rabbits.....	page 15.
<i>Lepus othus</i>	Tundra or Arctic hare.
<i>Lepus americanus</i>	Snowshoe or varying hare.

Order RODENTIA

Family Sciuridae, squirrels.....page 17.
Marmota monax..... Woodchuck.
Marmota caligata..... Hoary marmot.
Citellus parryi..... Arctic ground squirrel.
Tamiasciurus hudsoni-
cus...... Red squirrel.
Eutamias minimus..... Least chipmunk.
Glaucomys sabrinus..... Northern flying squirrel

Family Castoridae, beavers.....page 22.
Castor canadensis..... Beaver.

Family Cricetidae, native rats and mice.....page 23.
Peromyscus mani-
culatus...... Deer mouse.
Peromyscus silkensis... Sitka mouse.
Neotoma cinerea..... Bushy-tailed wood rat.
Dicrostonyx groenlandi-
cus...... Greenland collared
 lemming.
Dicrostonyx exsul..... St. Lawrence Island
 lemming.
Synaptomys borealis... Northern bog lemming.
Lemmus trimucronatus.. Brown lemming.
Lemmus nigripes..... Black-footed lemming.
Clethrionomys rutilus... Tundra red-backed
 vole.
Clethrionomys goppcri.. Boreal red-backed vole.
Microtus pennsylvani-
cus...... Meadow vole.
Microtus longicaudus... Long-tailed vole.
Microtus coronarius... Coronation Island vole.
Microtus xanthognathus.. Yellow-cheeked vole.
Microtus oeconomus..... Tundra vole.
Microtus miurus..... Alaska vole.
Microtus abbreviatus... Insular vole.
Ondatra zibethicus..... Muskrat.

Family Muridae, Old World rats and mice..... page 34.
Rattus norvegicus..... Norway rat.
Mus musculus..... House mouse.

Family Zapodidae, jumping mice.....page 35.
Zapus hudsonius..... Meadow jumping
 mouse.
Zapus princeps..... Western jumping
 mouse.

Family Erethizontidae, porcupines.....page 36.
Erethizon dorsatum..... Porcupine.

Order CETACEA

Family Ziphiidae, beaked whales.....page 37.
Berardius bairdi..... Baird beaked whale.
Mesoplodon stejnegeri... Stejneger beaked whale.
Ziphius cavirostris..... Cuvier beaked whale.

Family Physeteridae, sperm whales.....page 37.
Physeter catodon..... Sperm whale or
 cachalot.

Family Monodontidae, white whales.....page 37.
Delphinapterus leucas.. White whale or beluga.
Monodon monoceros... Narwhal.

Order CETACEA—Con.

Family Delphinidae, dolphins and porpoises.....page 37.
Lissodelphis borealis... Right-whale dolphin.
Lagenorhynchus
obliquidens...... Pacific striped por-
 poise.
Grampus rectipinna... Pacific killer whale.
Globicephala scammoni.. Pacific blackfish.
Phocoena vomerina..... Harbor porpoise.

Family Eschrichtiidae, gray whale.....page 37.
Eschrichtius glaucus... Gray whale.

Family Balaenopteridae, finback whales.....page 37.
Balaenoptera physalus.. Finback whale.
Balaenoptera borealis... Rorqual or sei whale.
Balaenoptera acutoro-
strata...... Little piked whale.
Sibbaldus musculus... Blue or sulfur-bottom
 whale.
Megaptera novaeangliae.. Humpback whale.

Family Balaenidae, whalebone whales.....page 37.
Eubalaena sieboldi... Pacific right whale.
Balaena mysticetus... Bowhead whale.

Order CARNIVORA

Family Canidae, dogs.....page 38.
Canis latrans..... Coyote.
Canis lupus..... Gray wolf.
Alopex lagopus..... Arctic fox.
Vulpes fulva..... Red fox.

Family Ursidae, bears.....page 42.
Ursus americanus..... Black bear.
Ursus arctos..... Grizzly and brown
 bears.
Thalartos maritimus... Polar bear.

Family Procyonidae, raccoons.....page 45.
Procyon lotor..... Raccoon.

Family Mustelidae, weasels and allies.....page 46.
Martes americana..... Pine marten.
Martes pennanti..... Fisher.
Mustela erminea..... Short-tailed weasel.
Mustela vison..... Least weasel.
Mustela vison..... Mink.
Gulo gulo..... Wolverine.
Lutra canadensis..... River otter.
Lutra mira..... Prince of Wales otter.
Enhydra lutris..... Sea otter.

Family Felidae, cats.....page 53.
Lynx canadensis..... Lynx.

Order PINNIPEDIA

Family Otariidae, eared seals.....page 54.
Callorhinus ursinus... Alaska fur seal.
Eumetopias jubata... Northern sea lion.

Family Odobenidae, walrus.....page 56.
Odobenus rosmarus... Pacific walrus.

Family Phocidae, true seals.....	page 57.
<i>Phoca vitulina</i>	Harbor seal.
<i>Histiophoca fasciata</i>	Ribbon seal.
<i>Pusa hispida</i>	Ringed seal.
<i>Erignathus barbatus</i>	Bearded seal.
<i>Mirounga angustirostris</i> .	Elephant seal.

Order ARTIODACTYLA

Family Cervidae, deer.....	page 62.
<i>Cervus canadensis</i>	American elk.
<i>Odocoileus hemionus</i>	Black-tailed deer.
<i>Alces alces</i>	Moose.
<i>Rangifer arcticus</i>	Barren ground caribou.
<i>Rangifer tarandus</i>	Reindeer.
Family Bovidae, cattle, sheep, etc.....	page 67.
<i>Bison bison</i>	Bison.
<i>Oreamnos americanus</i>	Mountain goat.
<i>Ovibos moschatus</i>	Musk ox.
<i>Ovis dalli</i>	Dall sheep.

THE PLAN

The distribution maps, which comprise the bulk of this circular, are based on the latest data available to us. Indicated on them are locations represented by specimens or literature records in the collections and files of the Fish and Wildlife Service, as well as additional records reported by reliable observers, to whom sets of the preliminary maps were circulated for comments. Over-all ranges are indicated in a general way by surface patterns on the maps, but it should be remembered that these ranges are often unstable at best and in many cases too few records are available to map them with finality. This is particularly true of the small, inconspicuous species which may, nonetheless, be more abundant and widespread than is generally supposed.

In our treatment we follow, with few exceptions, that of Miller and Kellogg (1955). No attempt is made here to define the ranges of subspecies, but those occurring in Alaska are listed in the text, together with Alaska type localities, which are also indicated on the maps. Native names of some animals are indicated, but specifying whether the names are Indian or Eskimo, or what dialect they represent, is beyond the scope of the present work. Symbols employed are as follows:

- preserved specimen
 - literature record
 - additional report.
 - ⊙ type locality.
 - △ introduced.
- } in F&WS.

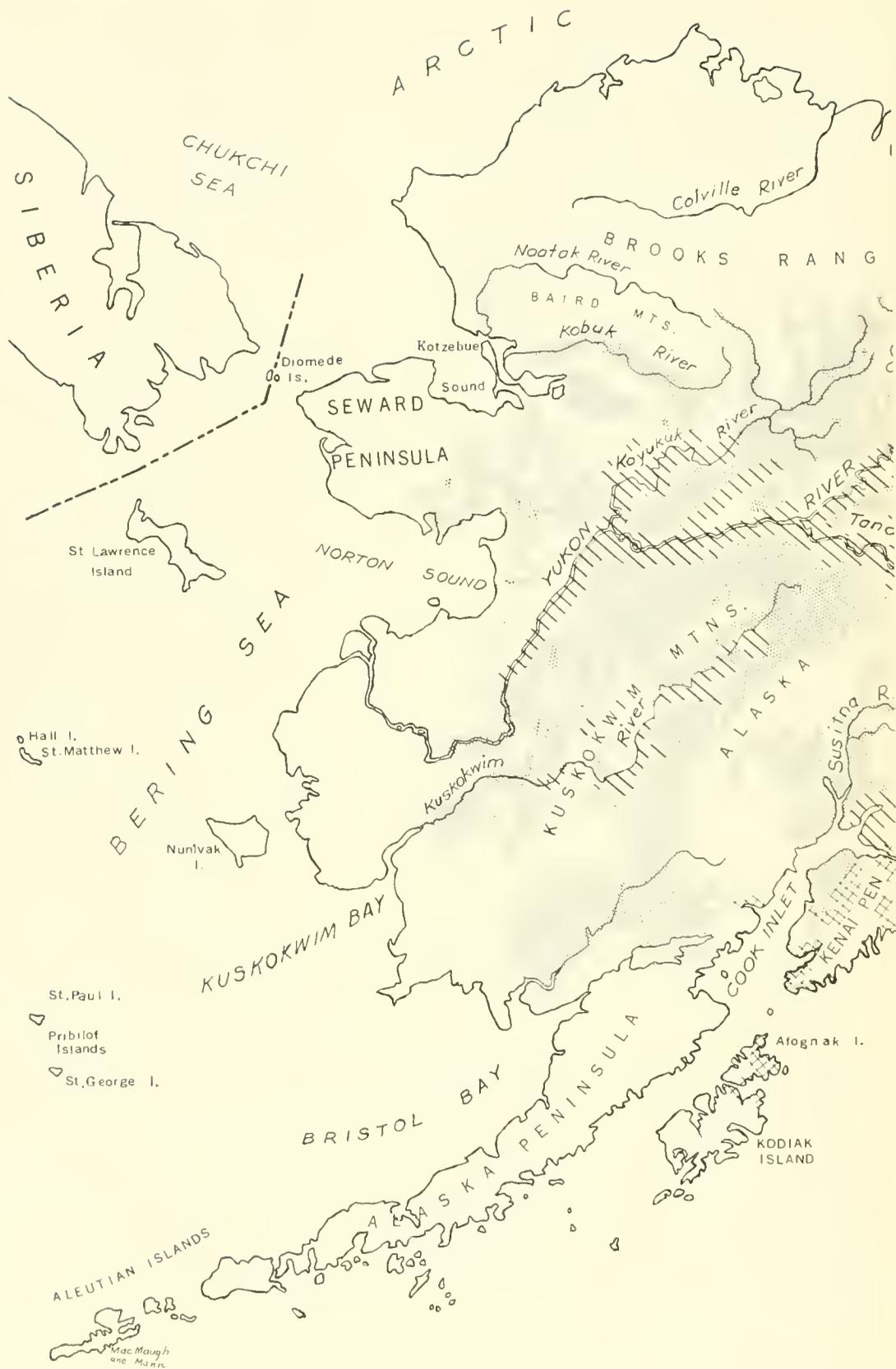
Many shortcomings still exist. We should appreciate any additions, corrections, or further data being called to our attention.

ACKNOWLEDGMENTS

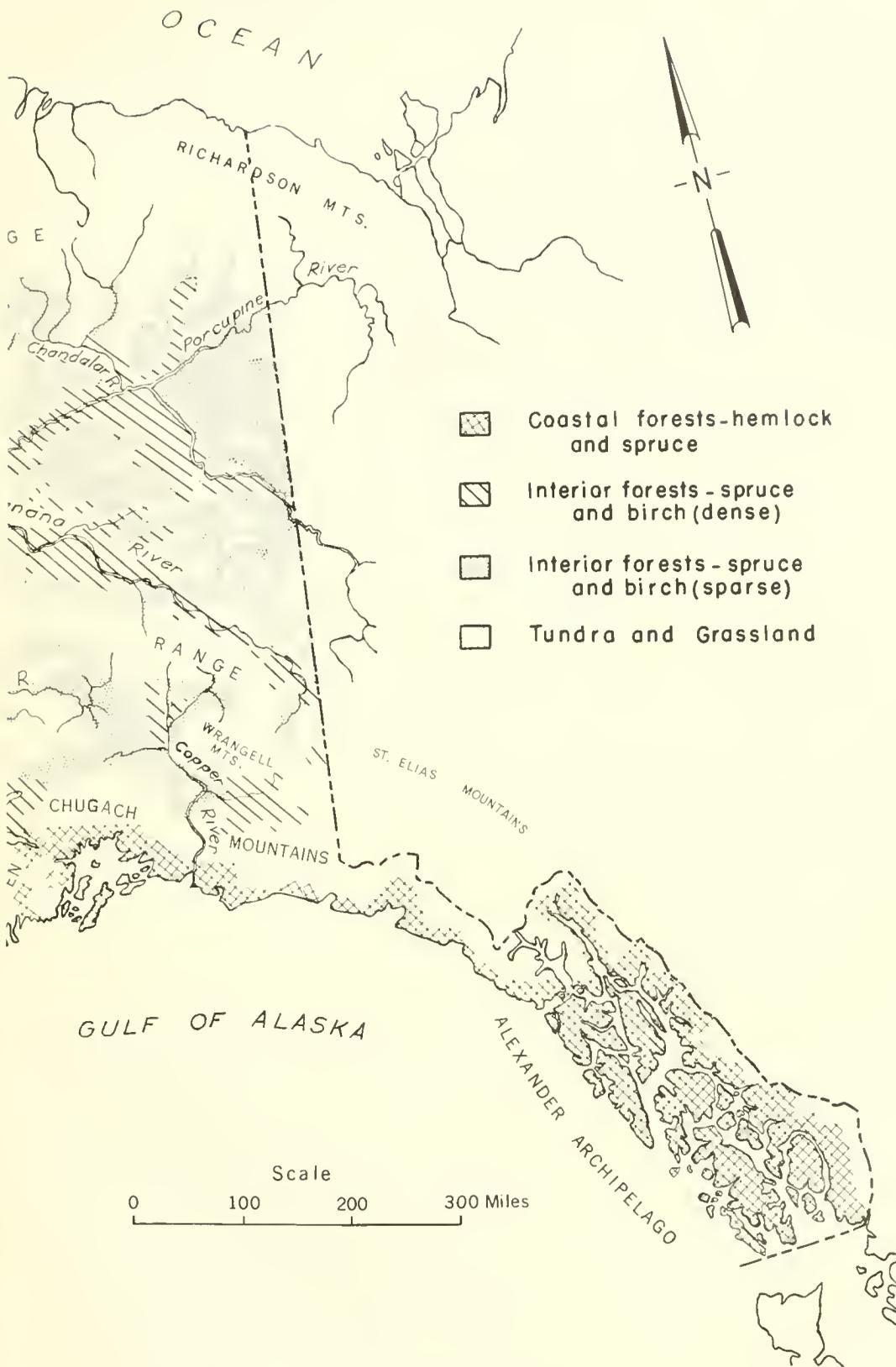
To the following we are deeply indebted for advice and information based on their personal experiences in Alaska:

Frank G. Ashbrook, formerly of the U.S. Fish and Wildlife Service; Rollin H. Baker, Michigan State University; Frederick S. Barkalow, Jr., North Carolina State College; James W. Brooks, Alaska Department of Fish and Game; John L. Buckley, U.S. Fish and Wildlife Service; Victor H. Cahalane, New York State Museum; Frederick C. Dean, University of Alaska; Frank Dufresne, formerly of the Alaska Game Commission; Francis H. Fay, Arctic Health Research Center; Joseph T. Fluckne, Arctic Institute of North America; Ira N. Gabrielson, Wildlife Management Institute; Raymond M. Gilmore, San Diego Society of Natural History; Frank Glaser, formerly of the U.S. Fish and Wildlife Service; Remington Kellogg, U.S. National Museum; Maurice W. Kelly, U.S. Fish and Wildlife Service; Karl W. Kenyon, U.S. Fish and Wildlife Service; David R. Klein, Alaska Cooperative Wildlife Research Unit; A. Starker Leopold, University of California; Adolph Murie, National Park Service; Olaus J. Murie, The Wilderness Society; William O. Pruitt, Jr., College, Alaska; Dan H. Ralston, formerly of the Alaska Game Commission; Robert L. Rausch, Arctic Health Research Center; Clarence J. Rhode, U.S. Fish and Wildlife Service; Ludwig J. Rowinski, University of Alaska; Victor B. Scheffer, U.S. Fish and Wildlife Service; Henry W. Setzer, U.S. National Museum; John H. Steenis, U.S. Fish and Wildlife Service; Lloyd W. Swift, U.S. Forest Service; H. W. Terhune, U.S. Fish and Wildlife Service; Ernest P. Walker, formerly of the National Zoological Park; and Ford Wilke, U.S. Fish and Wildlife Service.

Records to September 1956, were compiled by Miss Emma M. Charters for the preliminary maps. The maps and drawings were made by Mrs. Bess O'M. MacMaugh and Mrs. Mary W. Mann.



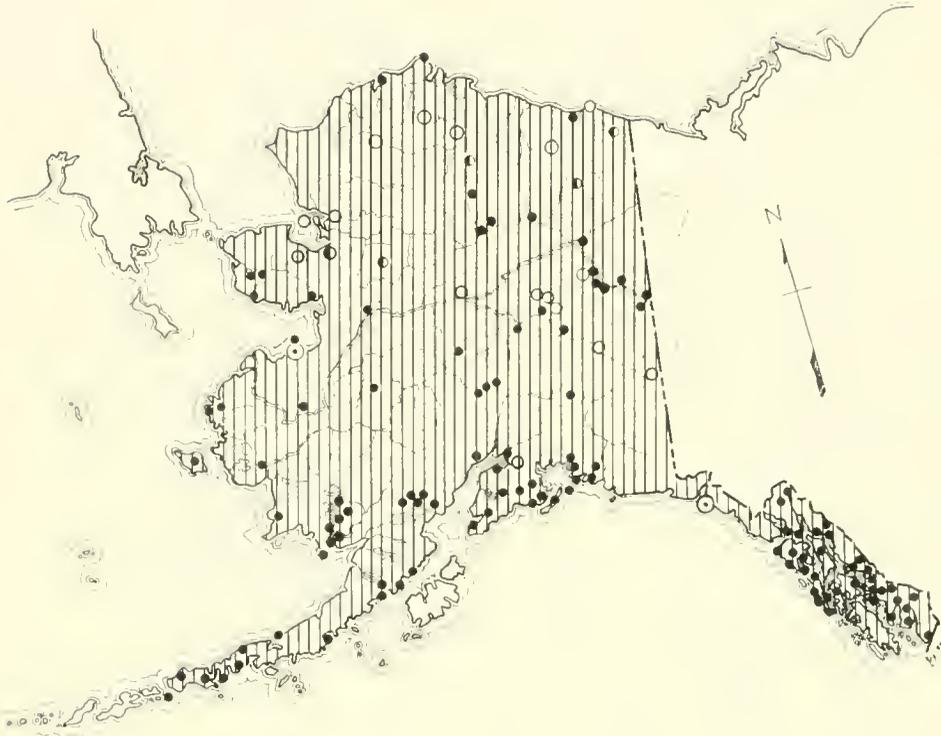
Forest regions of Alaska (see p. 2).



Forest regions of Alaska (see p. 2).

MASKED or COMMON SHREW, *Sorex cinereus*

(Ugrugruk)

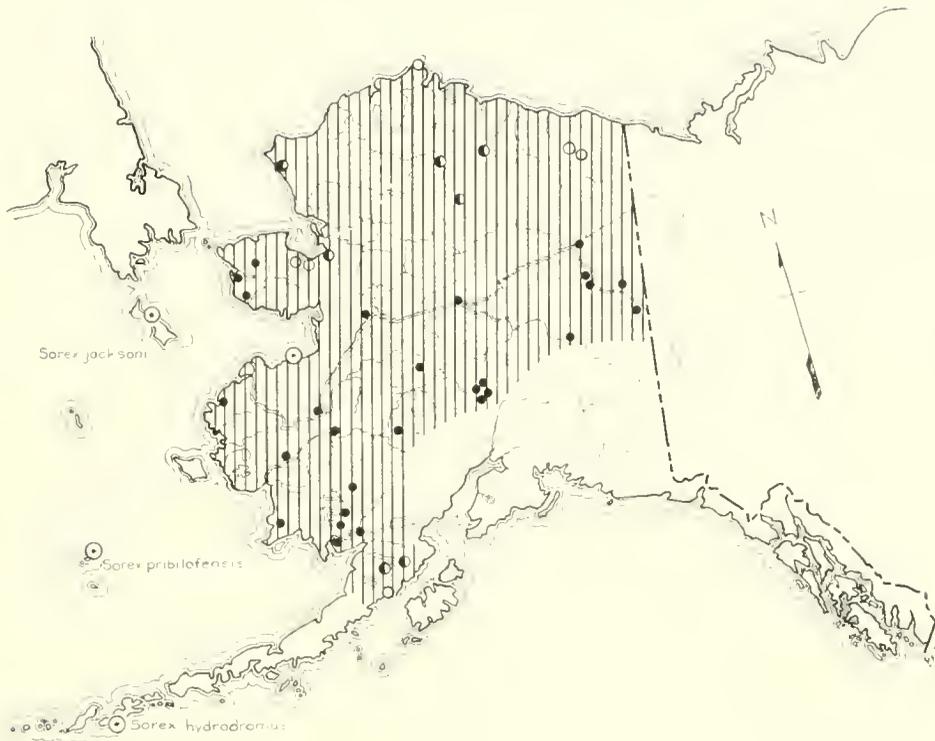


Range.—Most of northern North America, south in mountains to New Mexico and Tennessee.

Habitat.—Forests, marshes, and rocky areas; especially common in moist situations in interior spruce-birch forests, but uncommon in Arctic tundra.

Races in Alaska.—The typical *cinereus* occupies the interior and the Kenai Peninsula; *ugyugruk* occurs along the Arctic Shelf west to Point Barrow; *streatori* (type locality: Yakutat) inhabits the coastal strip from Dixon Entrance to Seward; *hollisteri* (type locality: St. Michael, Norton Sound) is found along the western coast from near Point Barrow to Unimak Island.

TUNDRA SHREW, *Sorex tundrensis*, and allies



Range.—Most of Alaska; regarded by some as the same species as the Arctic shrew, *Sorex arcticus*, which extends eastward in a broad belt to Labrador and Nova Scotia.

Habitat.—Wet or dry tundra.

Related species.—Type locality of *tundrensis* is St. Michael, Norton Sound. Closely related island forms include *Sorex jacksoni* of St. Lawrence Island (type locality: Savoonga, 2 miles east of North Cape); *Sorex hydrodromus*, confined to Unalaska Island, the type locality (no specimen is now known to exist); and *Sorex pribilofensis*, known only from St. Paul Island, the type locality. *Sorex tundrensis*, in some instances, appears to integrate with *S. arcticus* of the east.



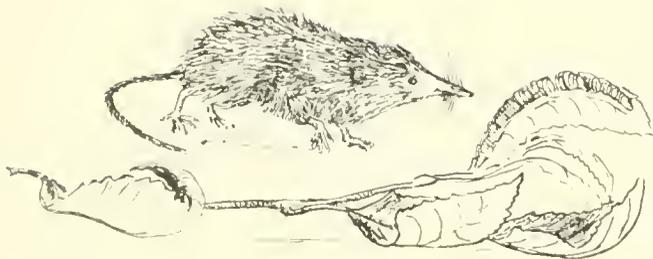
DUSKY SHREW, *Sorex obscurus*



Range.—Alaska generally from Brooks Range south, in mountains, nearly to Mexican border.

Habitat.—Moist, shaded areas.

Races in Alaska.—The typical *obscurus* occurs in the interior, north at least to Anaktuvuk Pass; *shumaginensis* (type locality: Popof Island, Shumagin Islands), ranges on the west from the Seward Peninsula to Unimak Island and the Kenai Peninsula; *alascensis* (type locality: Yakutat Bay) occupies the coastal strip from Seward to Juneau; *malitiosus* (type locality: east side of Warren Island) is known only from Warren and Coronation Islands; *classodon* occupies Admiralty, Baranof, Prince of Wales, Duke, Mitkof, and Forrester Islands; *longicauda* (type locality: Wrangell) occurs along the coastal region from Port Snettisham southward, as well as on Etolin, Gravina, Revillagigedo, Sergief, and Wrangell Islands.



NORTHERN WATER SHREW, *Sorex palustris*



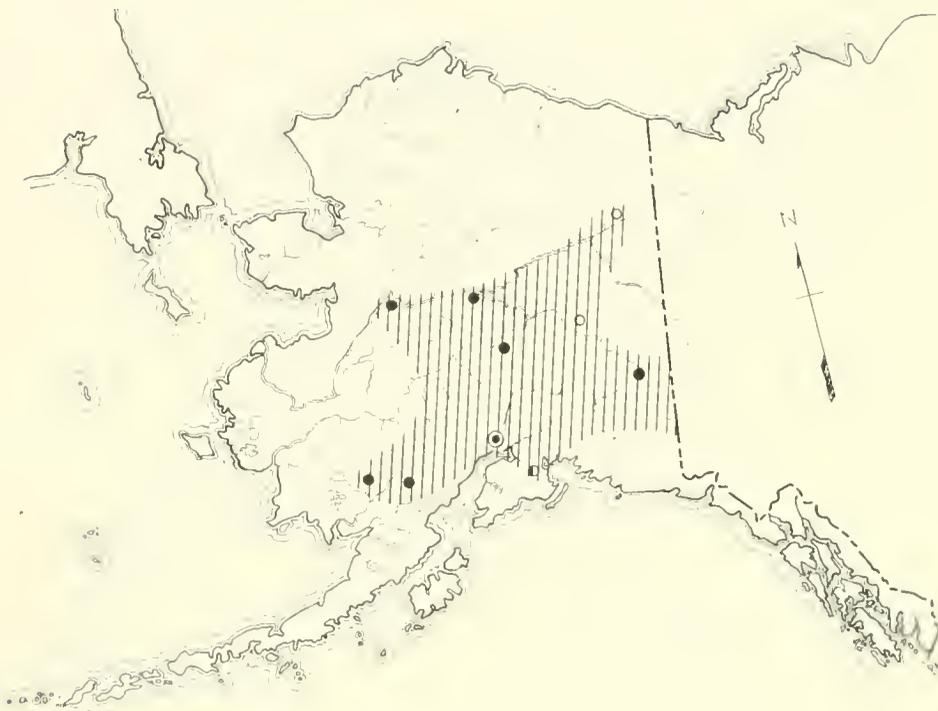
Range.—Southern Alaska, south to Colorado and east to Atlantic.

Habitat.—Humid situations in and near streams, at sea level and in mountains.

Forms in Alaska.—The race in Alaska is *navigator*. The Alaska water shrew, *Sorex alaskanus* (type locality: Point Gustavus, entrance to Glacier Bay), is regarded by some as of the same species as *palustris*; it is known only from the type locality.



PIGMY SHREW, *Microsorex hoyi*

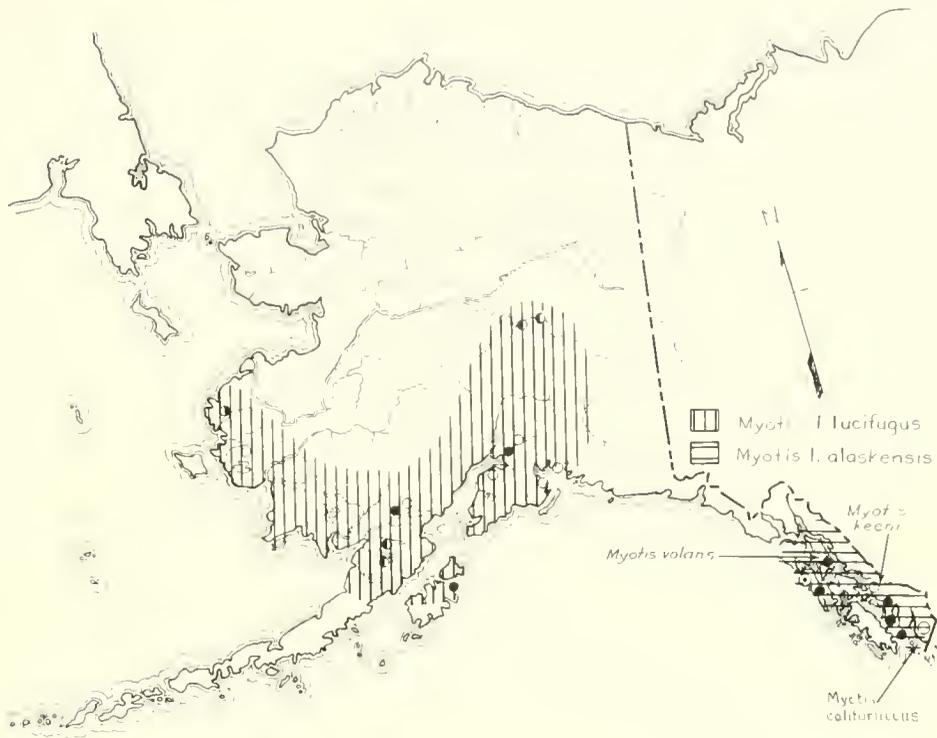


Range.—South-central Alaska and a broad belt east to Atlantic and south to Great Lakes and Blue Ridge Mountains.

Habitat.—This shrew sometimes appears rare, but may in fact be common at times. It burrows in leaf mold and uses tunnels of other animals; it prefers drier situations, in grassy clearings and thickets or ferns, than do other shrews.

Race in Alaska.—The pigmy shrew is the smallest of all mammals (adults weigh about as much as a dime). The subspecies in Alaska is *eximius* (type locality: Tyonek, Cook Inlet).

LITTLE BROWN BAT, *Myotis lucifugus*, and allies



Range.—Most of North America, from Texas to limit of trees.

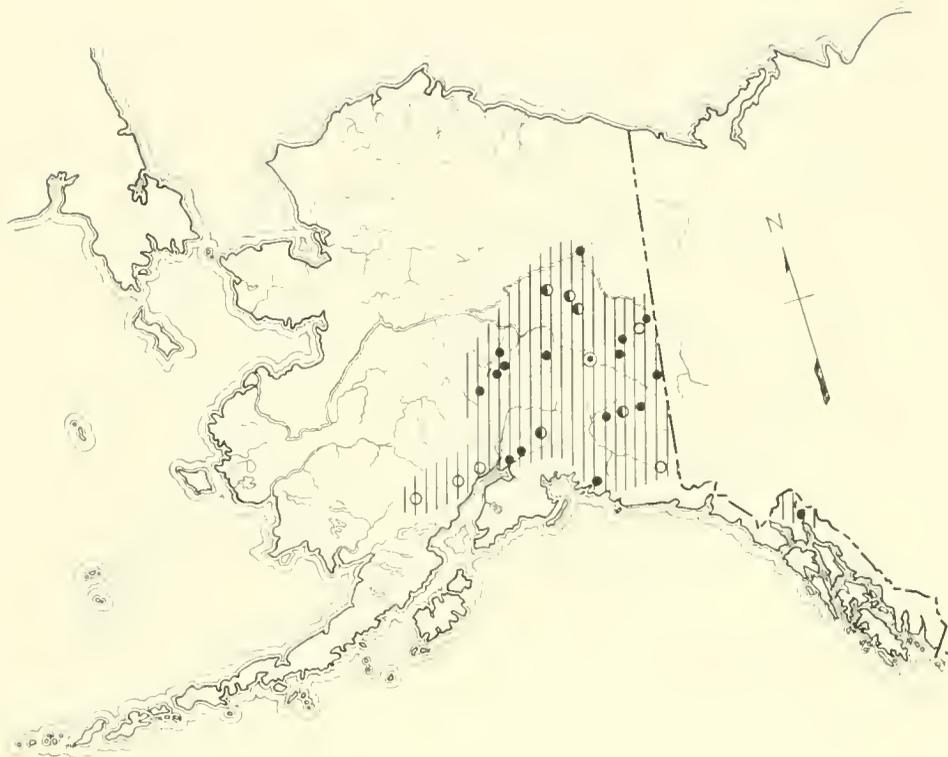
Habitat.—Along watercourses and in open forests at dusk; in caves, hollow trees or buildings by day.

Races in Alaska.—The typical *lucifugus* occurs in the southern interior; the race *alascensis* (type locality: Sitka) is found in the humid southeastern archipelago. There are records of *Myotis* from Kodiak and Afognak Islands.

Other species.—Indicated on the same figure are the Keen's bat, *Myotis keenii keenii*, which has been recorded at Wrangell; the long-legged bat, *Myotis volans longierus*, north to Admiralty Island; and the California bat, *Myotis californicus caurinus*, at the extreme southern end of the Alaska archipelago. The silver-haired bat, *Lasionycteris noctivagans*, has been reported as far west as the vicinity of Prince William Sound; and the big brown bat, *Eptesicus fuscus pallidus*, in the vicinity of Juneau and at Shaw Creek near the Richardson Highway.



CONY or PIKA, *Ochotona collaris*



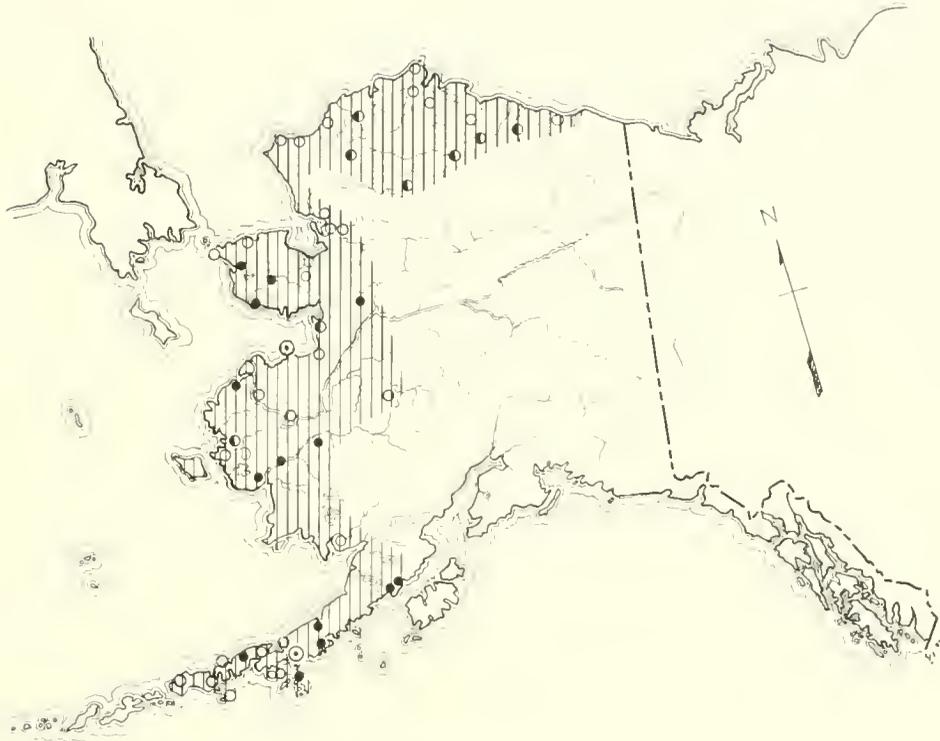
Range.—Central and southern Alaska and Yukon.

Habitat.—Rock piles and talus slopes, usually at higher elevations above timberline.

Related species.—Type locality of *collaris* is near the head of the Tanana River, about 200 miles south of Fort Yukon. Some regard this as a race of *Ochotona princeps*, which ranges widely through the Rocky Mountain and Sierra Nevada ranges further south. However, the ranges of the two have been separated since the Pleistocene, and there seems to be sound basis for regarding them as distinct species.



TUNDRA or ARCTIC HARE, *Lepus othus*
(Ukalisukruk)



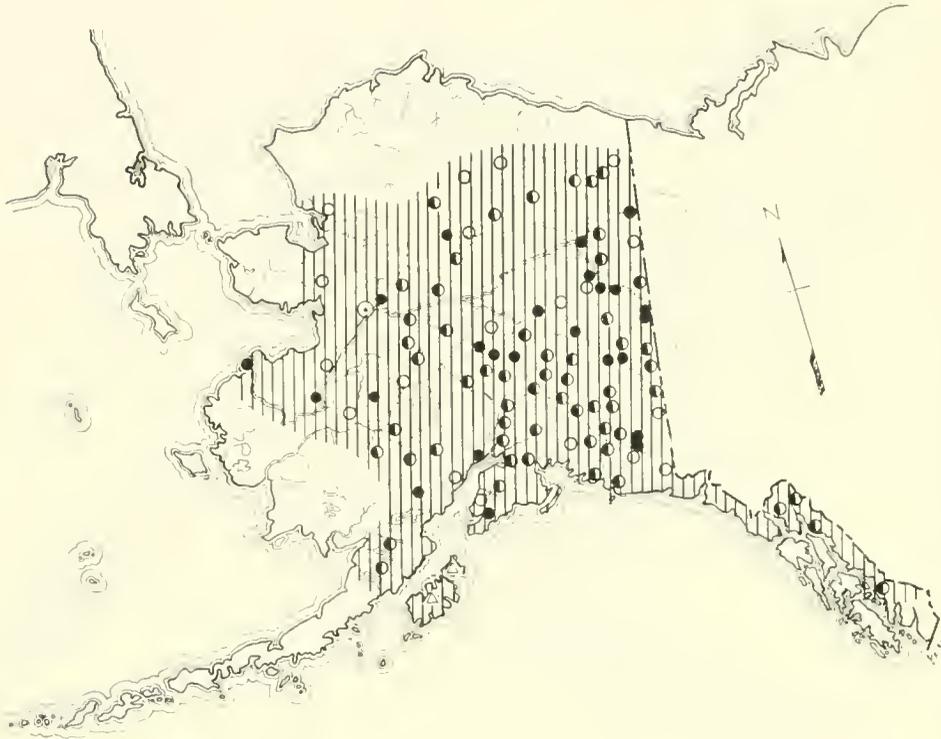
Range.—Western margin of Alaska, Arctic coast, and north slope of Brooks Range; probably the same species as the Arctic hare, *Lepus arcticus*, that occupies the barren grounds east of the Mackenzie River to Greenland.

Habitat.—Brushy tundra and rocky slopes; very spotty distribution.

Races in Alaska.—The typical *othus* (type locality: St. Michael, Norton Sound) occupies the tundras south to the Kuskokwim River region; *podromus* (type locality: Stepovak Bay) occurs in the Alaska Peninsula and Bristol Bay district.



SNOWSHOE or VARYING HARE, *Lepus americanus*
(Ukalichak)

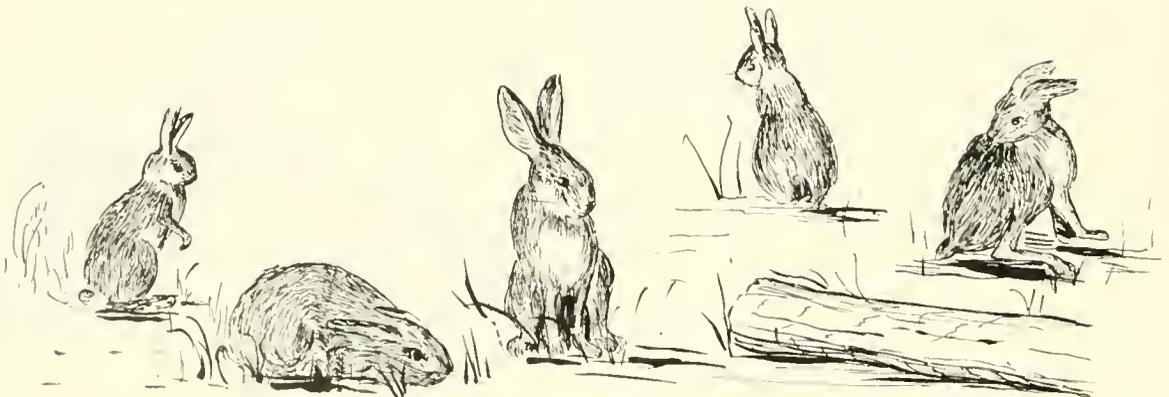


Range.—Northern half of the continent to limit of trees.

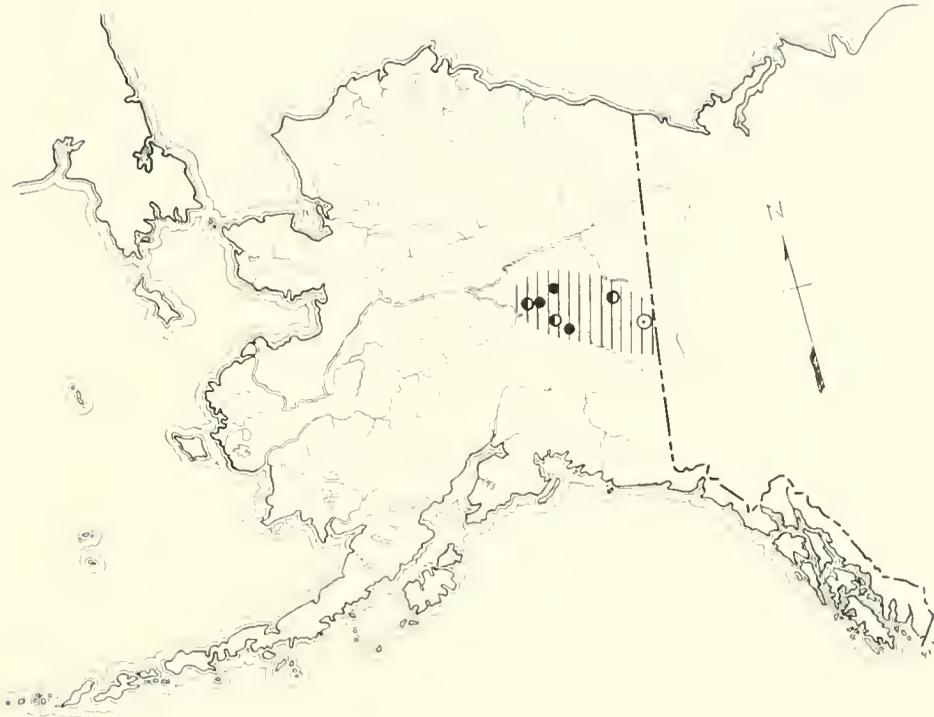
Habitat.—Mixed forests, wooded swamps, and brushy areas, from near sea level up to about 2,000 feet. At times of high population, hares occur on the north slope of the Brooks Range along water-courses grown to willow.

Races in Alaska.—The subspecies *macfarlanei* occurs in most of Alaska, from below Fort Yukon to the Alaska Peninsula and southward; *dalli* (type locality: Nulato River) occupies the western portion from Bristol Bay north.

Introductions.—Introduced on Raspberry, Afognak, and Kodiak Islands, 1935–36.



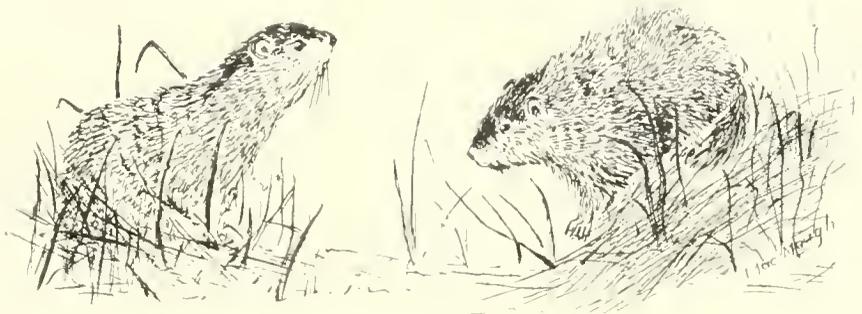
WOODCHUCK, *Marmota monax*
(Sigrikpuk)



Range.—Eastern interior Alaska and most of United States and Canada south of limit of trees.

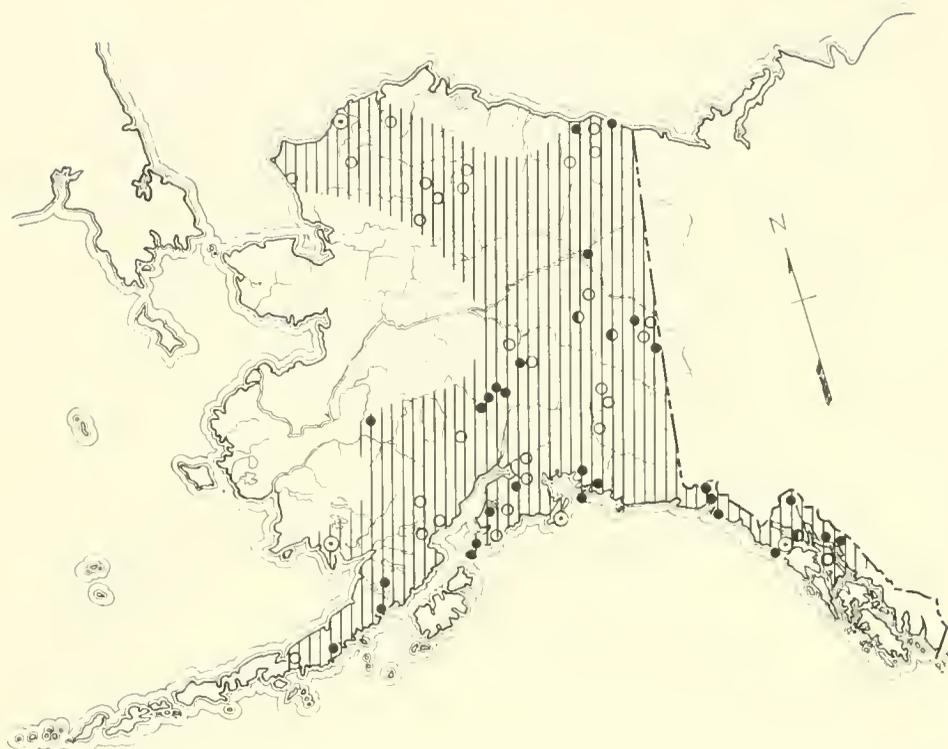
Habitat.—Open woodlands and thickets and near fields and clearings, in dry soil; very spotty distribution at margins of range.

Race in Alaska.—The woodchuck of Alaska is the subspecies *ochracea* (type locality: Forty-mile Creek).



HOARY MARMOT, *Marmota caligata*

(Sigrikpuk)



Range.—Most of Alaska and mountains of western North America south to Washington and Idaho.

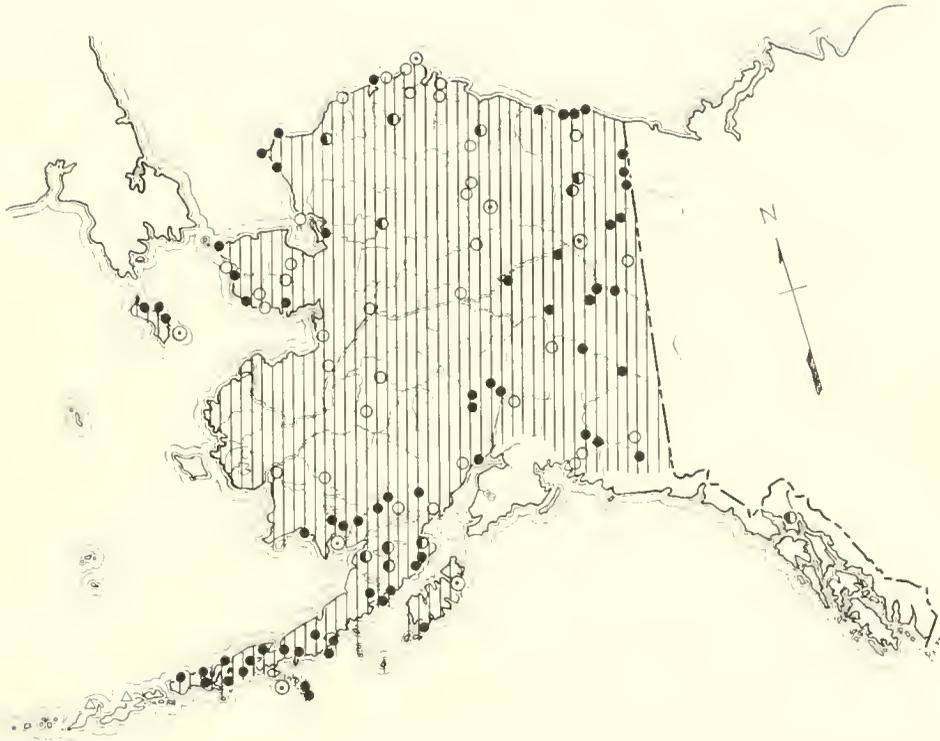
Habitat.—Rocky outcrops and talus slopes near vegetation, above timberline in mountains.

Races in Alaska.—The typical *caligata* (type locality: near Bristol Bay) occupies most of Alaska south of the Brooks Range; *broweri* (type locality: Point Lay) occurs in the Brooks Range; *sheldoni* (type locality: Montague Island) is known only from the type locality; *vigilis* (type locality: west shore of Glacier Bay) is known only from the type locality.



ARCTIC GROUND SQUIRREL, *Citellus parryi*

(Sikrik)



Range.—Arctic North America from Alaska to Hudson Bay.

Habitat.—Well-drained soils in tundra, from sea level to the uplands.

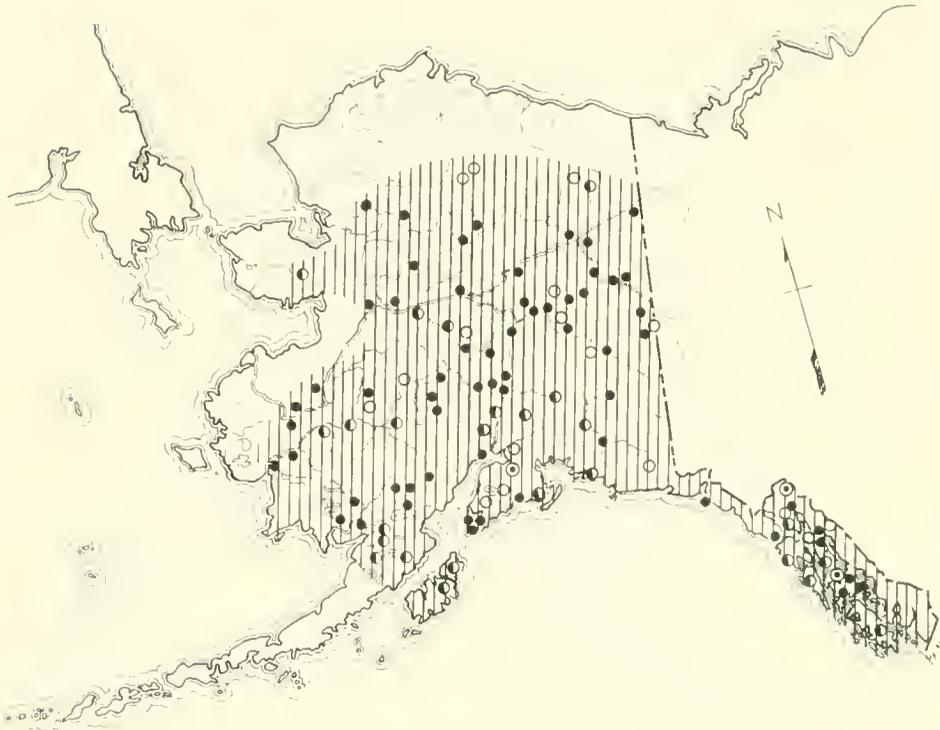
Races in Alaska.—Along the Arctic coast from Point Hope eastward is *barrowensis* (type locality: Point Barrow); the race *plesius* occurs in east-central Alaska and widely in the Alaska Range; *ablusus* (type locality: Nushagak) occupies west-central Alaska to the tip of the Alaska Peninsula, mainly south of the Yukon; *nebulicola* (type locality: Nagai Island) occurs only on the Shumagin Islands of Nagai, Simeonoff, and Koniuji; *lyratus* (type locality: Iviktook [now Ivctok] Lagoon, St. Lawrence Island) is known only from that island.

Related forms.—Described as full species, but probably only races of *parryi*, are *Citellus kodiakensis* (type locality: Kodiak Island), known only from the type locality, and *Citellus osgoodi* (type locality: Fort Yukon) from the Yukon Valley.

Introductions.—The Arctic ground squirrel (*C. p. ablusus*) has been introduced on Unnak, Unalaska, and Kavalga Islands of the Aleutians.



RED SQUIRREL, *Tamiasciurus hudsonicus*
(Shakalatieyik)



Range.—Most of forested North America, south in mountains to South Carolina and nearly to Mexican border.

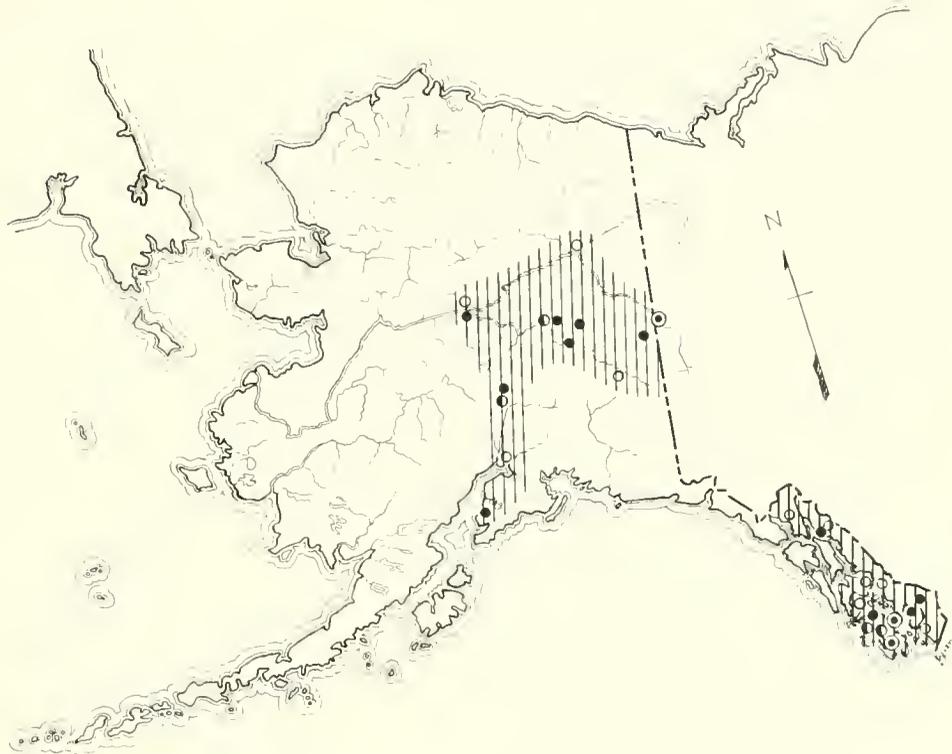
Habitat.—Principally in coniferous forests.

Races in Alaska.—The common form throughout most of Alaska is the subspecies *preblei*; on the Kenai Peninsula occurs *kenaiensis* (type locality: Hope, Cook Inlet); *petulans* (type locality: Glacier, White Pass) occupies the Chilkat Valley and Glacier Bay region of southern Alaska; *pictus* (type locality: Kupreanof Island) occurs near the Lynn Canal and on Kulu Island, and generally throughout southeastern Alaska on the mainland and nearby islands.

Related species.—The least chipmunk, *Eutamias minimus caniceps*, has not yet been recorded from Alaska, but there are records from the neighborhood of Skagway at Bennett, British Columbia, and in the vicinity of Dalton Post and Kluane, Yukon.



NORTHERN FLYING SQUIRREL, *Glaucomys sabrinus*



Range.—Alaska to Labrador, south in the mountains to California and Tennessee.

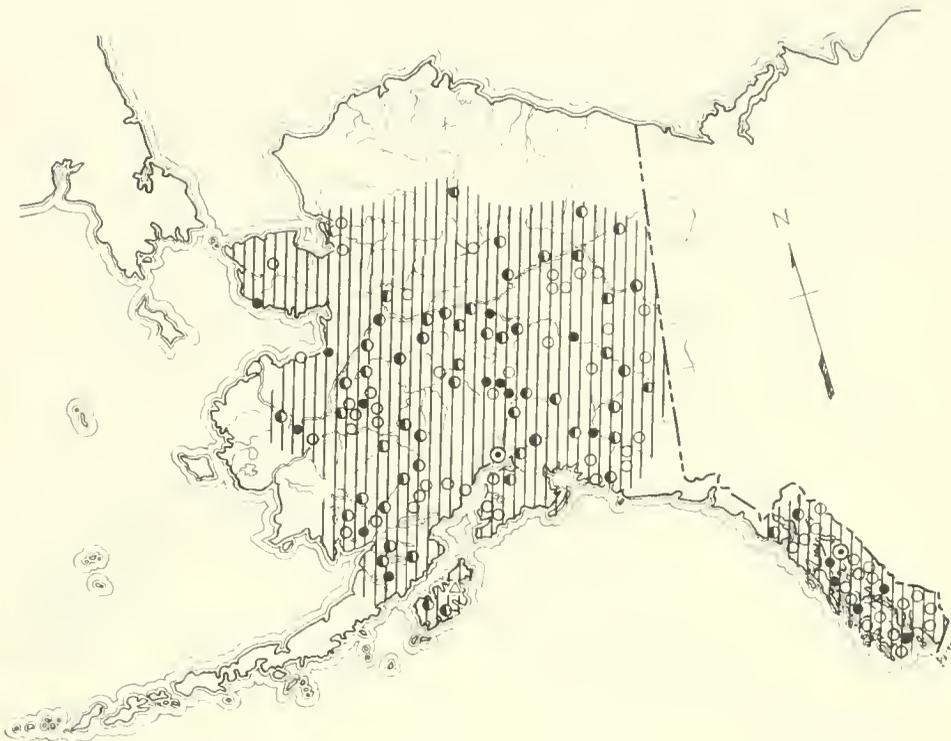
Habitat.—Mixed hardwood and evergreen forests.

Races in Alaska.—The form in the interior is *yukonensis* (type locality: Camp Davidson, Yukon River, near the Alaska-Canada boundary); in southeastern Alaska *griseifrons* (type locality: Lake Bay, Prince of Wales Island) is known only from that island; *zaphaeus* (type locality: Helm Bay, Cleveland Peninsula) occurs also on Etolin Island; there are records of *alpinus* from 6 and 9 miles north of Juneau.



BEAVER, *Castor canadensis*

(Kigiak, Paluktok)



Range.—Most of the continent north of Mexico.

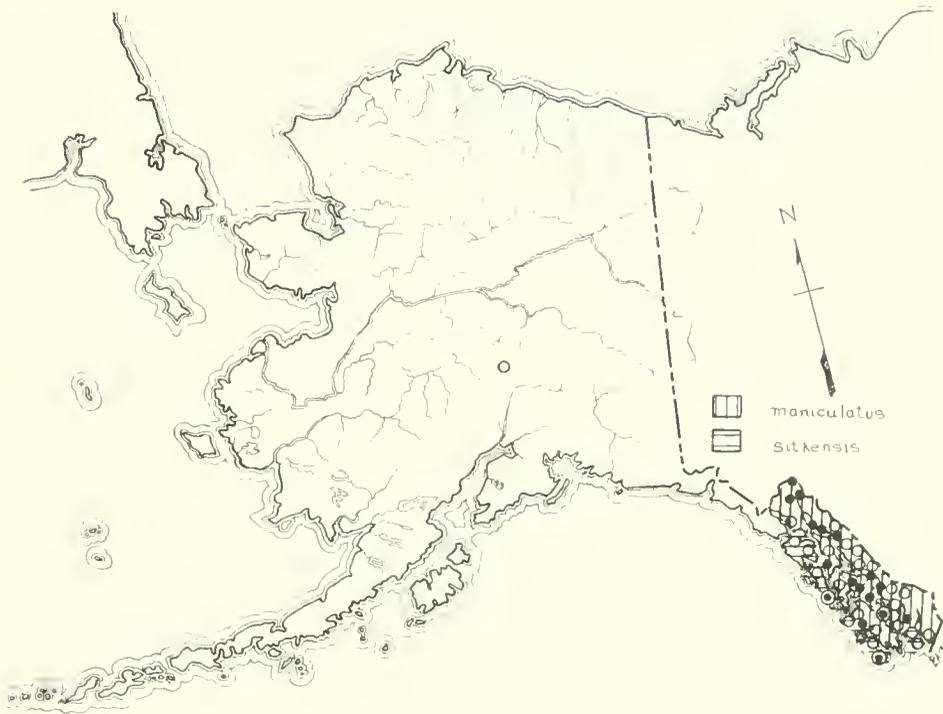
Habitat.—Along streams and lakes, particularly in proximity to stands of poplar, birch, and willow.

Races in Alaska.—The typical race *canadensis* has been reported near the Kobuk River, northwest Alaska; *belugae* (type locality: Beluga River, Cook Inlet region) occurs over most of Alaska; *phaeus* (type locality: Pleasant Bay, Admiralty Island) occurs on that island and on Chichagof Island.

Introductions.—Beavers were introduced at Spruce Lake, on Kodiak Island, and on Raspberry Island in 1929-31 and have become established.



DEER MOUSE, *Peromyscus maniculatus*, and allies



Range.—Practically cosmopolitan throughout continent south of tree line.

Habitat.—Usually in forested areas in Alaska, but inhabits a great variety of vegetation types.

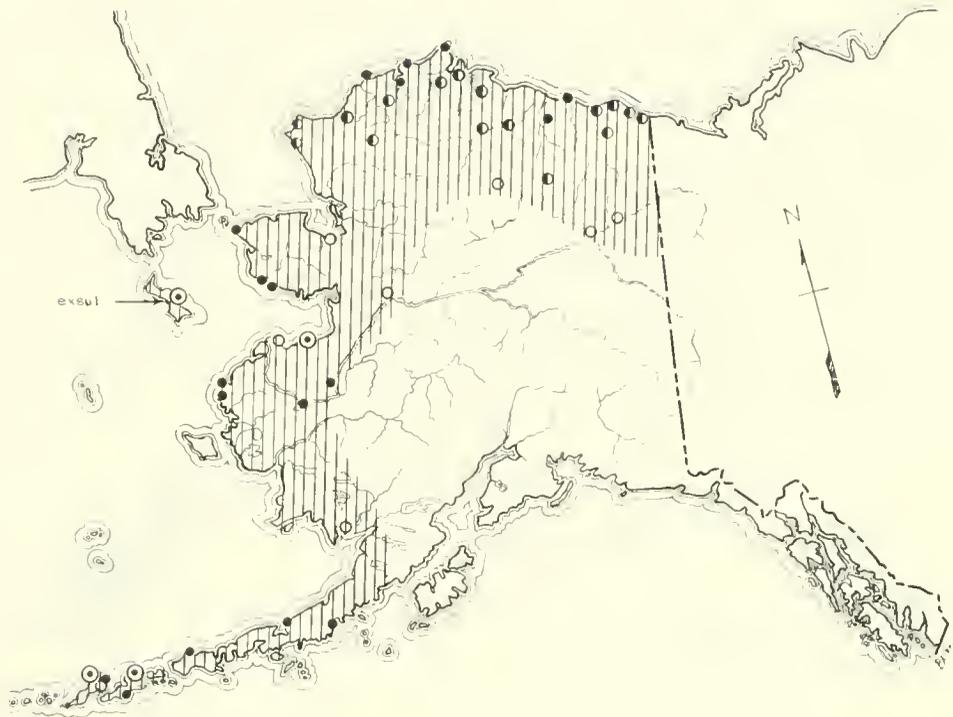
Races in Alaska.—The subspecies *algidus* occurs near the head of the Lynn Canal at Haines, Skagway, and White Pass; *macrorhinus* occupies the mainland coast of southern Alaska and the adjacent Revillagigedo, Woronkofski, and Wrangell Islands; *hylaesus* (type locality: Hollis, Kasaan Bay, Prince of Wales Island) ranges on the mainland from Lynn Canal to Frederick Sound and on the Prince of Wales, Kupreanof, Mitkof, and Admiralty Islands; *borealis* has been reported (Dixon, 1938) from a low elevation in Mount McKinley National Park, but this record has been questioned by many workers.

Related species.—The Sitka mouse, *Peromyscus sitkensis*, is known in Alaska only from a few islands in the southeastern archipelago: *P. s. sitkensis* (type locality: Sitka) occurs on Baranof, Chichagof, Warren, Duke, and Coronation Islands; *P. s. oceanicus* (type locality: Forrester Island) is known only from the type locality.

The bushy-tailed wood rat, *Neotoma cinerea*, is a distantly related form living in woods and rocky areas of western North America. The race *sax-amans* is known in southeastern Alaska from two specimens in the U.S. National Museum, taken on the Unuk River and at the mouth of the Lower Taku River.



GREENLAND COLLARED LEMMING, *Dicrostonyx groenlandicus*
(Kilakmiutak)



Range.—Coastal and adjoining Arctic areas, Alaska to Labrador and Greenland.

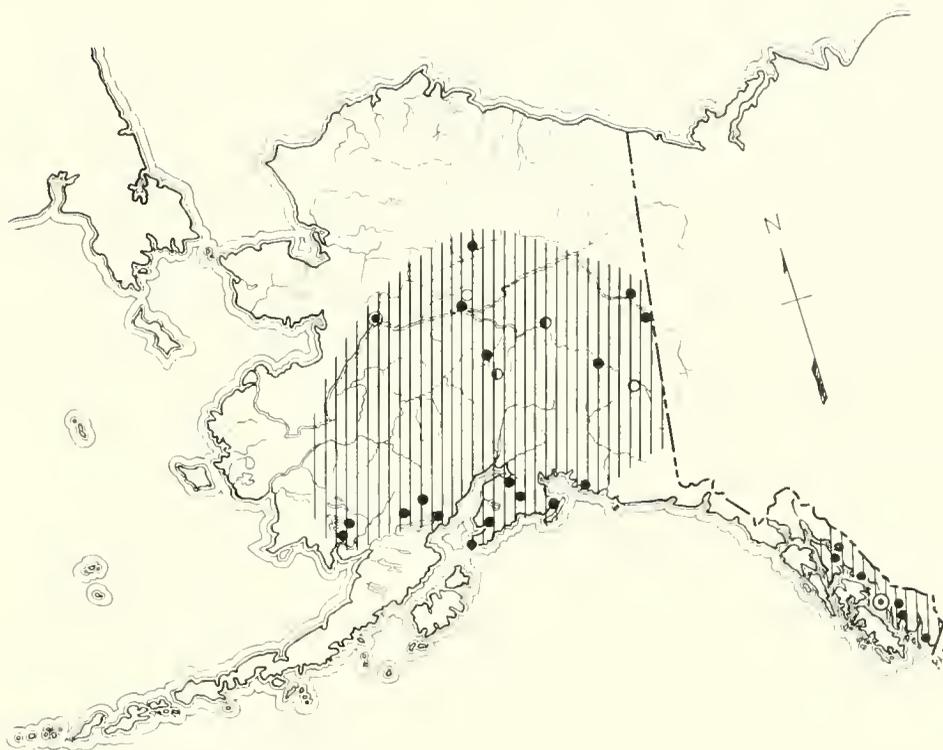
Habitat.—Tundra and zone beyond tree line, usually in soils with some plant cover; dry uplands in Brooks Range, wet habitats on Arctic coastal plain.

Races in Alaska.—The mainland races are *rubri-eatus* (type locality: American side of Bering Strait); *nelsoni* (type locality: St. Michael, Norton Sound); and *peninsulae* (type locality: Urilia Bay, Unimak Island). Two Aleutian Island forms are *unalascensis* (type locality: Unalaska Island) and *stevensoni* (type locality: Umnak Island), both restricted to the type localities; these are regarded by some as a full species, *unalascensis*.

Related species.—*Dicrostonyx exsul* (type locality: St. Lawrence Island) is known only from this site; it differs only slightly from the mainland forms.



NORTHERN BOG LEMMING, *Synaptomys borealis*



Range.—Transcontinental south of limit of trees throughout most of Canada.

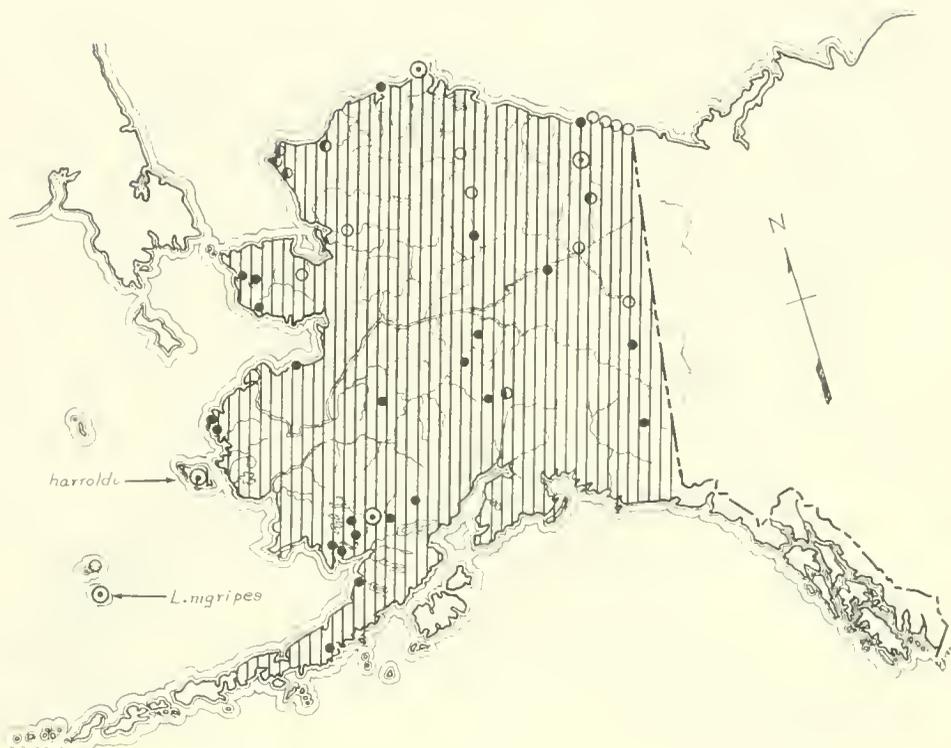
Habitat.—Wet tundras and sphagnum bogs, occasionally in dry or moist meadows.

Races in Alaska.—The widespread form in Alaska is *dalli* (type locality: Nulato, Yukon River); *wrangeli* (type locality: Wrangell, Alexander Archipelago) occupies a few islands and the mainland near the mouth of the Stikine River.



BROWN LEMMING, *Lemmus trimucronatus*

(Avingapiak)



Range.—Most of Alaska and Arctic Canada west of Hudson Bay, Baffin Island.

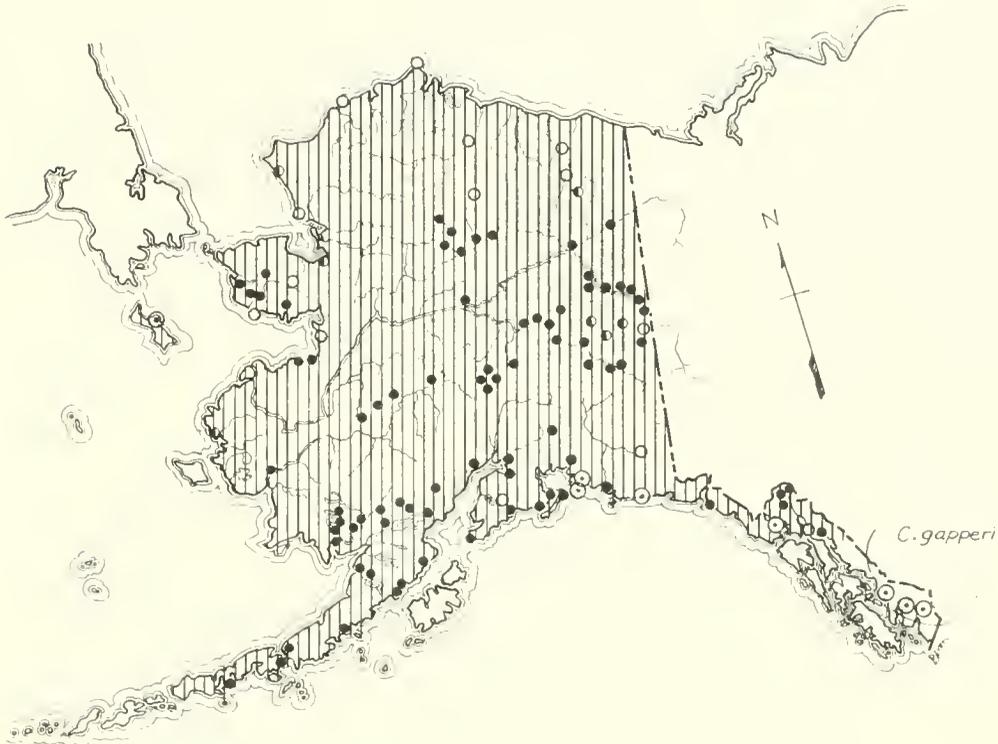
Habitat.—Typically prefers damp tundra on Arctic coastal plain, but occasionally in drier upland areas, as in Brooks Range and alpine areas of Alaska Range.

Races in Alaska.—On the mainland are the races *alascensis* (type locality: Point Barrow); *minusculus* (type locality: near junction of Kakhtul and Mulehatna Rivers); and *subarcticus* (type locality: Lake Schrader, Brooks Range). The race *harroldi* (type locality: Nunivak Island) is apparently restricted to this island.

Related species.—The black-footed lemming, *Lemmus nigripes* (type locality: St. George Island, Pribilof Islands) is known only from this island.



RED-BACKED VOLE, *Clethrionomys rutilus*, and allies
(Avingak)



Range.—Most of Alaska except for a narrow coastal strip in the southeast, and northern Canada to Hudson Bay.

Habitat.—These ground-dwelling voles prefer cool, moist situations, with some overhead cover; they occupy tundra and forested regions, and are perhaps the most common small mammal in Alaska.

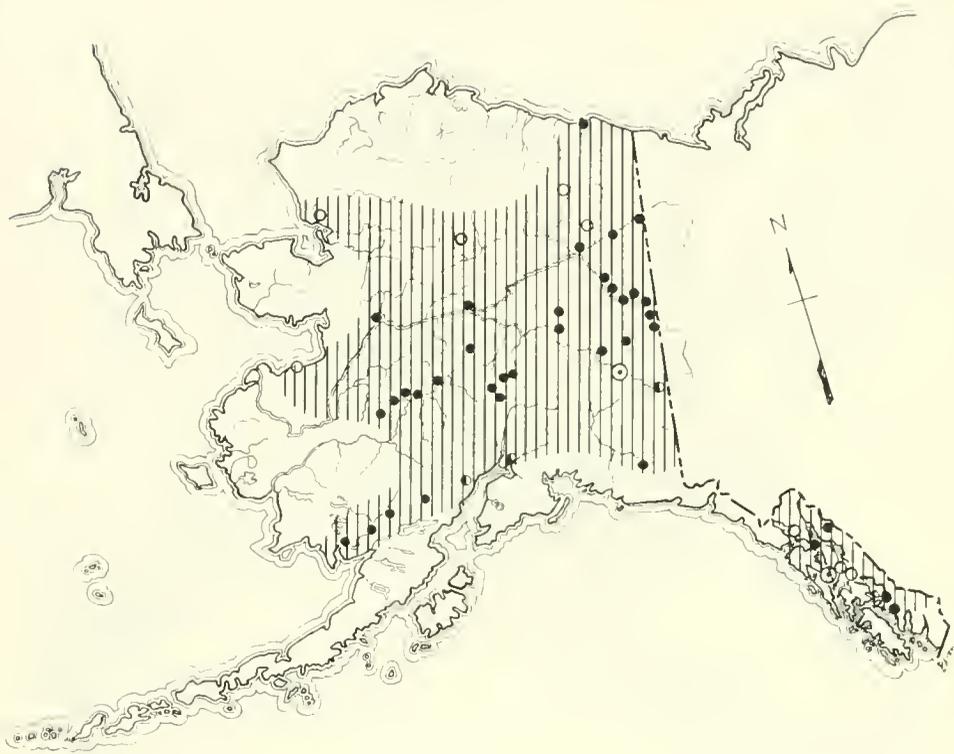
Races in Alaska.—The tundra red-backed vole, *Clethrionomys rutilus*, occurs over most of the mainland; the common race is *dawsoni*. Several other races, restricted in range, are the following: *glacialis* (type locality: Glacier Bay), known only from vicinity of the type locality; *insularis* (type locality: west side of Canoe Passage, Hawkins Island, Prince William Sound), known only from Hawkins and Hinchinbrook Islands; *orca* (type locality: Orca), from several islands in the western part of and the mainland bordering Prince William Sound; *watsoni* (type locality: Cape Yakataga), known only from the Cape Yakataga region in southeastern Alaska. An island form, *albiventer* (type locality: Savoonga, 2 miles east of North Cape), is known only from St. Lawrence

Island, where it lives among rocks; it is regarded by some as a full species, by others as a race of *rutilus*.

Related species.—Several races of the boreal red-backed vole, *Clethrionomys gapperi*, occupy small ranges in southeastern Alaska, as follows: *phaeus* (type locality: Marten Arm, Boca de Quadra) ranges from the Chickamin River (Behm Canal) southward in Alaska; *solus* (type locality: Loring, Revillagigedo Island) occurs only on this island; *stikinensis* occurs at Bradfield Canal and Helm Bay on the Cleveland Peninsula; *wrangeli* (type locality: Wrangell) is known only from Wrangell and Revillagigedo Islands.



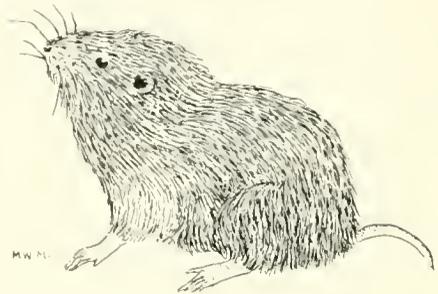
MEADOW VOLE, *Microtus pennsylvanicus*



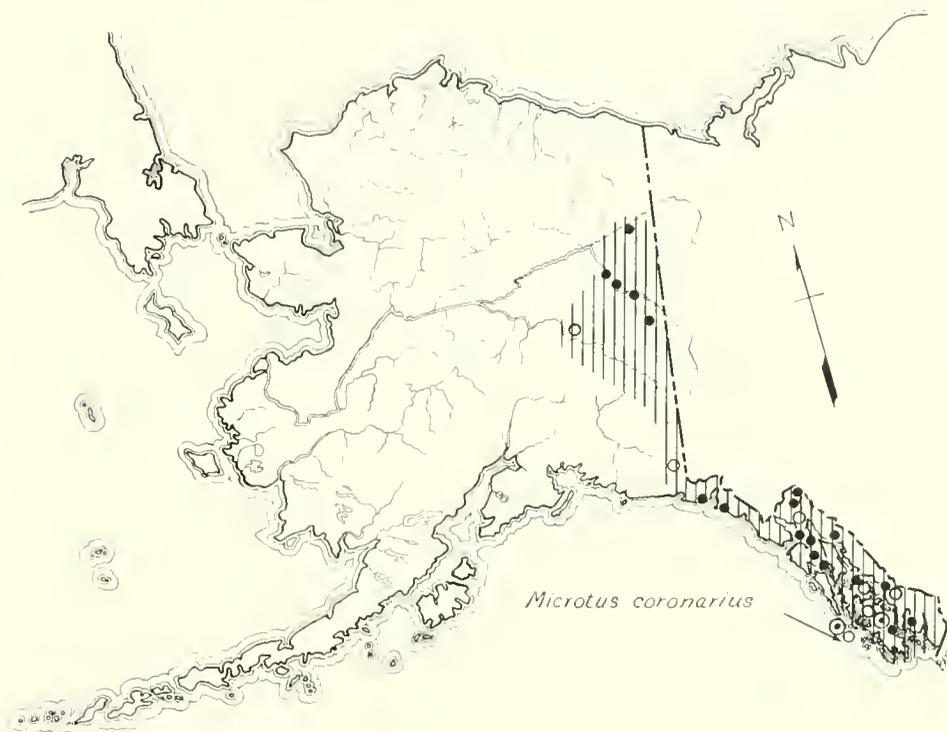
Range.—Most of North America from Richardson Mountains south to central United States (Colorado to South Carolina).

Habitat.—Typically in grassy areas, inhabiting narrow surface runways, at any elevation; in spruce forest in the Paxson area.

Races in Alaska.—Four races occur in Alaska, as follows: *admiraltiae* (type locality: Windfall Harbor, Admiralty Island) is known only from this island; *alcorni* occurs in southern Alaska from Naknek Lake, Cook Inlet, Deadman Lake, Chilkat River, and Haines; *rubidus* has been taken at Fort Wrangell and the Taku River; *tananaensis* (type locality: Yerrick Creek, west of Tok Junction) is known from Bettles, Fort Yukon, Eagle, Mount McKinley National Park, and Nulato.



LONG-TAILED VOLE, *Microtus longicaudus*



Range.—Western North America from southeastern Alaska to Arizona and New Mexico.

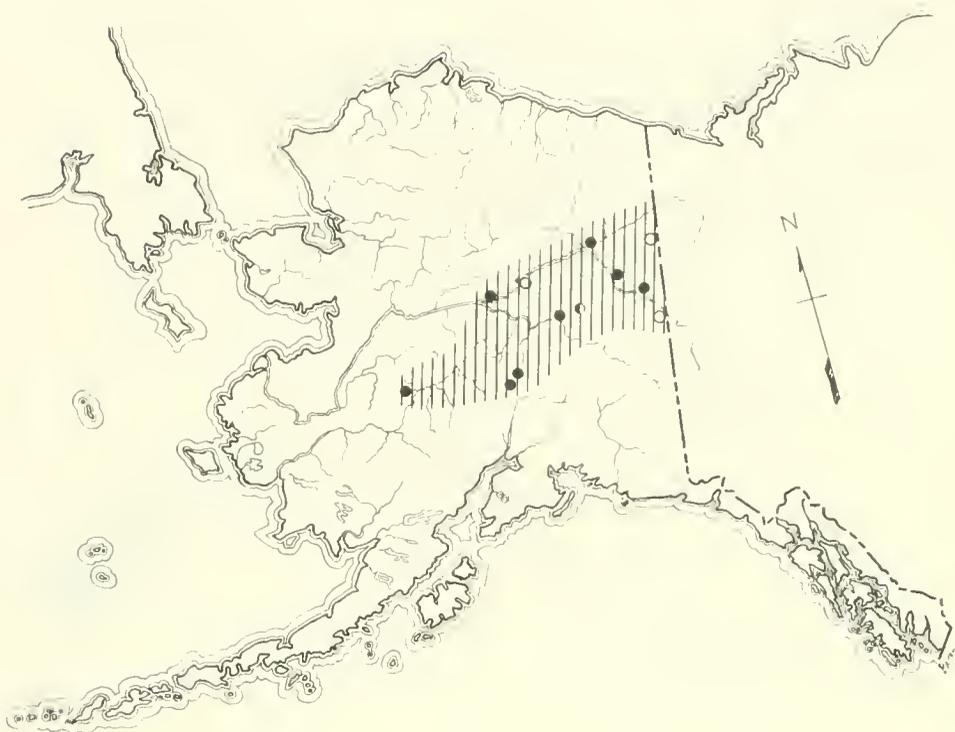
Habitat.—Usually in dry, grassy situations, sometimes far from water.

Races in Alaska.—Two subspecies occur in Alaska: *littoralis* (type locality: Shakan, Prince of Wales Island) occupies the mainland coast and most islands of southeastern Alaska from Yakutat southward; *vellerosus* has been recorded from Circle, Skagway, the Chitina River Glacier, and the north side of the Saleha River, southeast of Fairbanks.

Related Species.—The insular species, *Microtus coronarius* (type locality: Egg Harbor, Coronation Island), is known only from Coronation, Forrester, and Warren Islands, in extreme southeastern Alaska.



YELLOW-CHEEKED VOLE, *Microtus xanthognathus*



Range.—Central Alaska east to Hudson Bay, north to the Arctic Coast, and south to the Canadian prairie provinces.

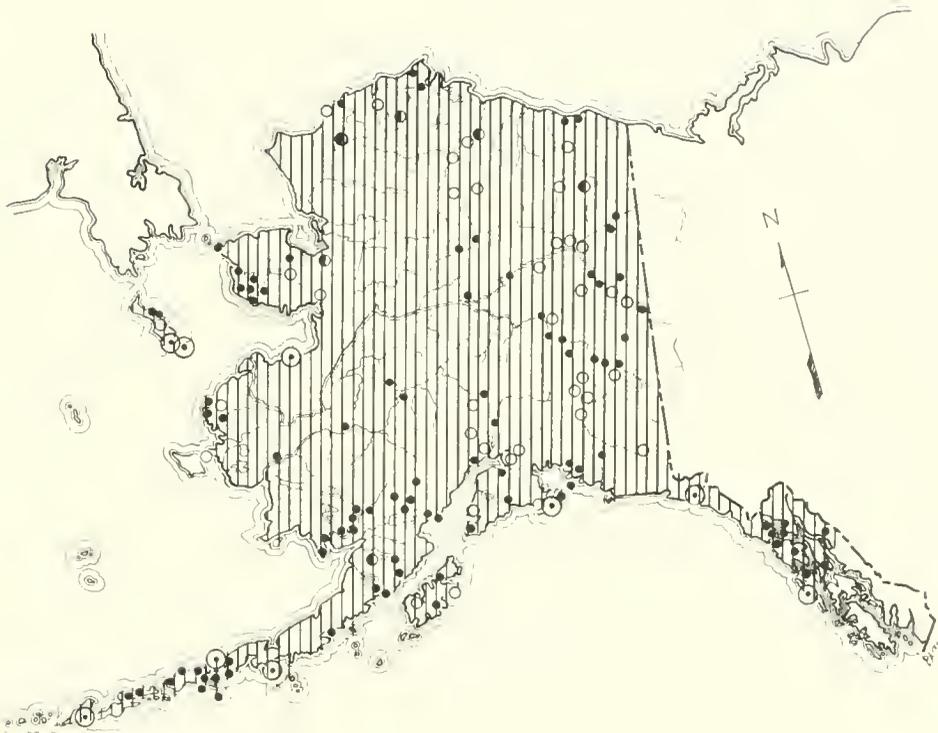
Habitat.—In conspicuous surface runways or burrows in dry soil, among trees or shrubs.

Form in Alaska.—This is a monotypic species.



TUNDRA VOLE, *Microtus oeconomus*

(Avingak)



Range.—Most of Alaska, Yukon, and District of Mackenzie.

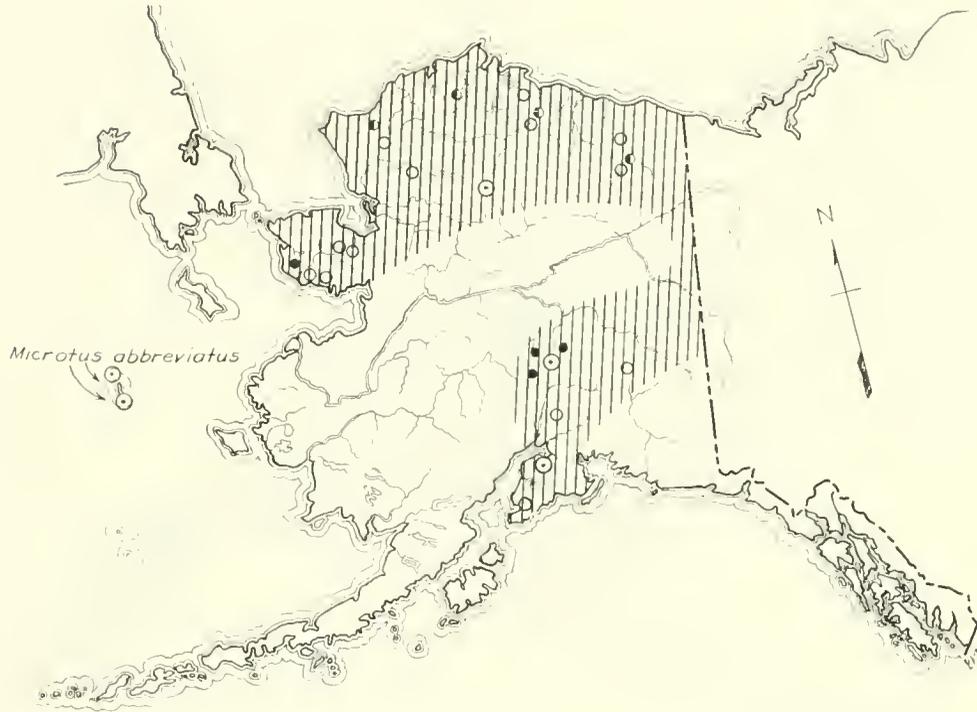
Habitat.—Tundra, grassy or sedgy areas, damp or dry; in wet, brushy areas in northeastern Brooks Range; ubiquitous at Cape Thompson.

Races in Alaska.—Ten races occur widely in Alaska. The mainland forms include *macfarlani* of northern and eastern Alaska, east of the Utukak River; *operarius* (type locality: St. Michael, Norton Sound) of the western and southern mainland, as well as Kodiak and Afognak Islands; and *yakutatensis* (type locality: north shore of Yakutat Bay) from Yakutat Bay to Point Gustavus. Island forms are the following: *amakensis* (type locality: Amak Island, Bering Sea) restricted to Amak Island; *elymocetes* (type locality: Montague Island, Prince William Sound) restricted to Montague Island; *innuitus* (type locality: North-east Cape, St. Lawrence Island) restricted to St.

Lawrence Island; *popofensis* (type locality: Popof Island, Shumagin Islands) known only from Popof and Unga Islands; *punukensis* (type locality: Big Punuk Island, near east end St. Lawrence Island) restricted to the Punuk Islands; *sitkensis* (type locality: Sitka) known only from Baranof and Chichagof Islands; and *unalascensis* (type locality: Unalaska) known from Sanak, Tigalda, Unalaska, and Unimak Islands.



ALASKA or SINGING VOLE, *Microtus miurus*
(Avingak)



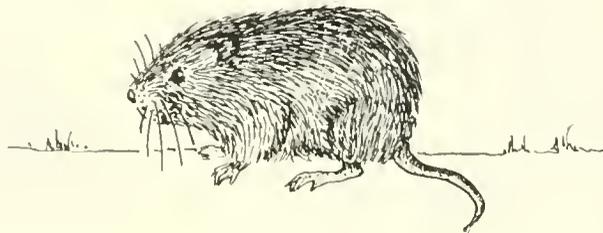
Range.—Most of Alaska and Yukon Territory.

Habitat.—Tundra or grassy areas beyond limit of trees, dry to quite moist; from low elevations to high in mountains; in alpine tundra near Paxson, areas of snow deposition at Cape Thompson, and brushy forest-tundra in northeastern Brooks Range.

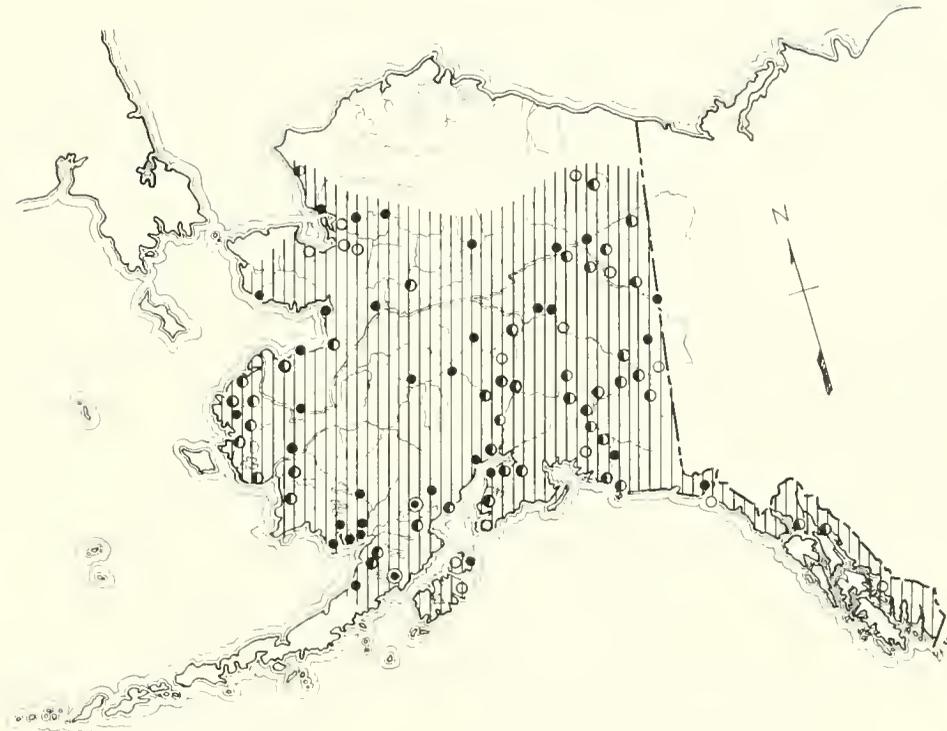
Races in Alaska.—Four races of the Alaska vole occur in the State: *cantator* has been recorded from Fish Creek, north of Paxson; *miurus* (type locality: head of Bear Creek in mountains near Hope City) occupies the mountains of the Kenai

Peninsula; *muriei* (type locality: Kutuk River, tributary to Alatna River, Endicott Mountains) occurs in the Endicott Mountains and Brooks Range, north to Umiat; *oreus* (type locality: Toklat River, Alaskan Range) has been recorded from the vicinity of Mount McKinley east to the head of Jarvis Creek.

Related species.—The insular vole, *Microtus abbreviatus*, is restricted to Hall and St. Matthew Islands in the Bering Sea. Each island has its own race: *abbreviatus* (type locality: Hall Island); and *fisheri* (type locality: St. Matthew Island).



MUSKRAT, *Ondatra zibethicus*
(Kigwaluk)



Range.—Most of North America above Mexican boundary, to limit of trees and beyond.

Habitat.—Fresh-water and salt-water marshes and in vicinity of rivers and streams; occasionally several miles from water.

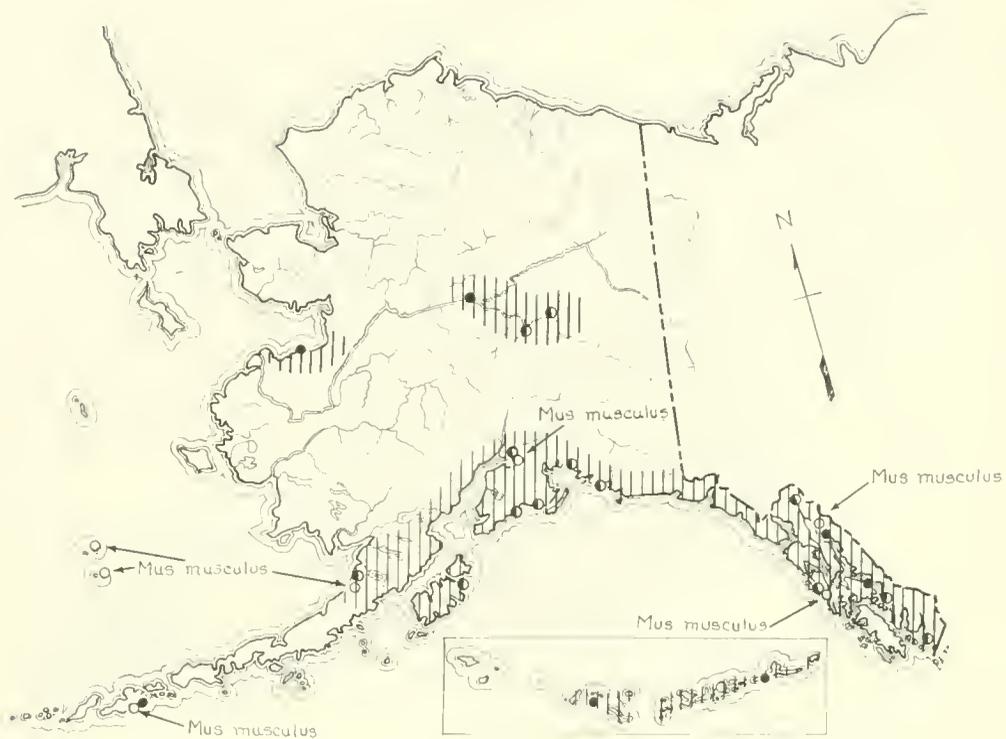
Races in Alaska.—The race *zalophus* (type locality: Becharof Lake) ranges on the Alaska Peninsula from north of Nushagak to the head of Cook Inlet. Most Alaska muskrats belong to the

race *spatulatus*; in addition to interior localities south of the Brooks Range, there are records from Yakutat Bay and Revillagigedo Island in southeastern Alaska.

Introduction.—Muskrats were introduced in 1925 on Long Island, in 1929 on Kodiak Island, and later on Afognak and Raspberry Islands. Other transplants have been made to the Pribilofs and Prince of Wales Island.



INTRODUCED RATS AND MICE

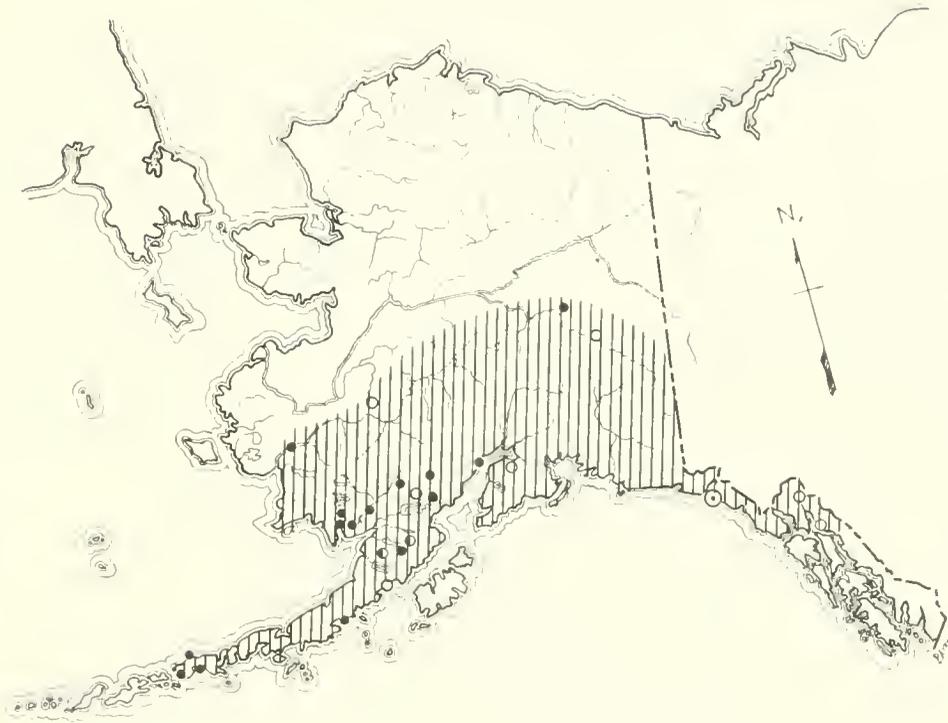


Distribution.—Practically all of North America permanently inhabited by white man. These species, native to the Old World, reached Alaska by human transport, as stowaways on ships and among food products. They have become established and persist in the vicinity of human habitations, where they are notorious pests.

Races in Alaska.—The Norway rat, *Rattus norvegicus*, occurs chiefly in or near the larger settlements of southern and interior Alaska and at Nome. After World War II, these rats were extremely numerous on Amchitka and other Aleutian Islands. The house mouse, *Mus musculus domesticus*, exists in similar situations in southern Alaska. It has also been introduced on St. Paul and St. George Islands, in the Pribilofs; it has persisted on St. Paul since 1872, but is apparently unable to survive the winters on St. George.



MEADOW JUMPING MOUSE, *Zapus hudsonius*

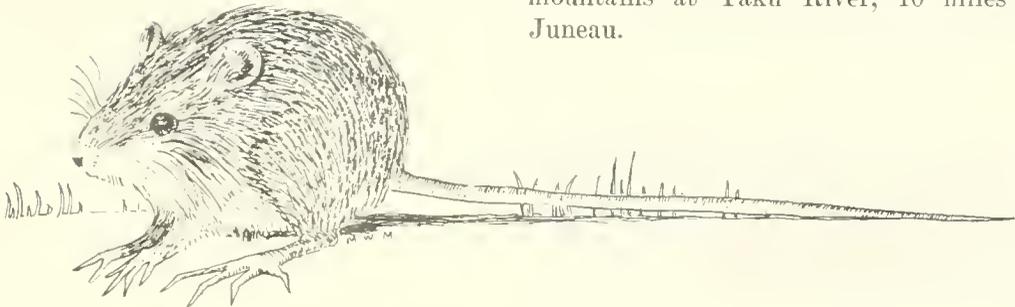


Range.—Most of the continent, south in the east to South Carolina.

Habitat.—In grassy or marshy areas or in open woods, chiefly at low elevations.

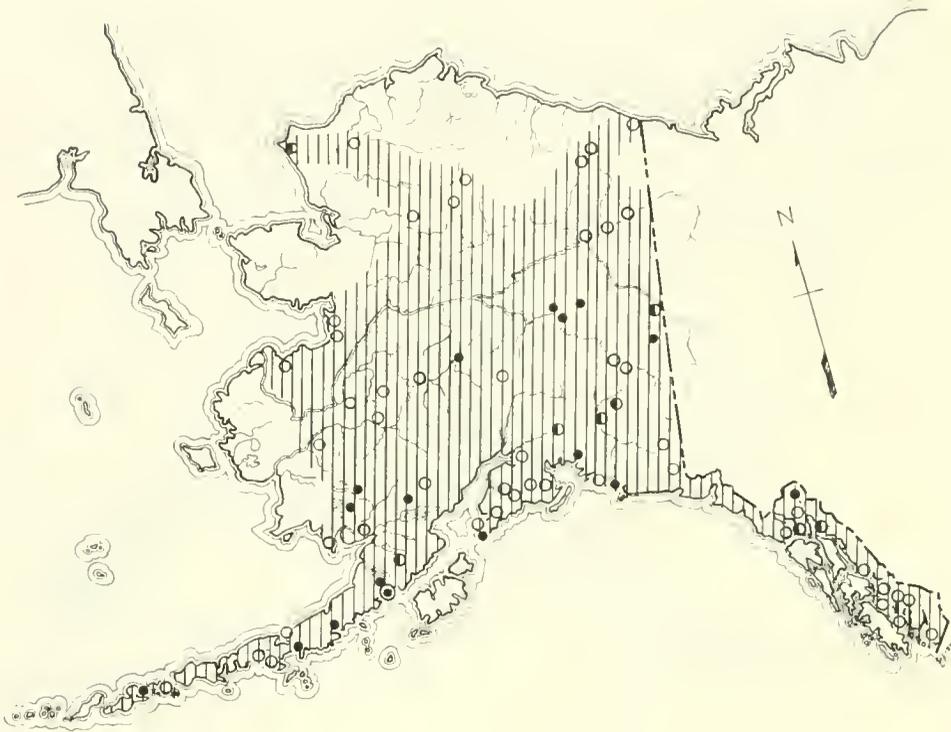
Race in Alaska.—The meadow jumping mouse is represented in Alaska by the race *alascensis* (type locality: Yakutat Bay), occurring south of the Yukon River from the Alaska Peninsula to Portage Cove, on Revillagigedo Island.

Related species.—The western jumping mouse, *Zapus princeps saltator*, has been recorded in the mountains at Taku River, 10 miles south of Juneau.



PORCUPINE, *Erethizon dorsatum*

(Ilyucotuk, Kingagaluk)



Range.—Most of forested North America north of Mexican boundary and central Appalachian Mountains.

Habitat.—Chiefly forested areas, particularly of conifers and aspen, but often on tundra well beyond treeline, as at Point Hope.

Race in Alaska.—The race *myops* (type locality: Portage Bay, Alaska Peninsula) is the form that occurs in Alaska. It is most common south of the Yukon River, but recorded from Driftwood, Chandler Lake, Icy Reef, and Hulahula and John Rivers in the north, and from Wrangell Island and Le Conte Bay in southeastern Alaska.

CETACEANS: WHALES and PORPOISES

Twenty kinds of cetaceans have been recorded from Alaskan waters. Many are important in the economy of the Eskimos. They range in size from the blue whale, largest known animal, living or extinct, to the smaller porpoises. Some, like the beluga, frequent shallow coastal waters and have been seen 500 miles up the Yukon River (at Nulato), while others, such as the right whale, occur only in deep waters. The gray whale makes long annual migrations, while the bowhead is resident in the Arctic Ocean. The sperm and finback whales are cosmopolitan, while the narwhal occurs only in polar regions. Other species have been reported, but without authentication. Probably other cetaceans, normally limited to more southern waters, will in time be recorded as straying into Alaskan waters. Mapping locality records of the cetaceans is impractical here, but the following list indicates their general occurrence:

Principally north of Bering Strait:

- White whale or beluga, *Delphinapterus leucas* (Sisuak).
- Narwhal, *Monodon monoceros* (Sisuak tuvalik).
- Bowhead whale, *Balaena mysticetus* (Agvik, Ingotuk).

North and south of Bering Strait:

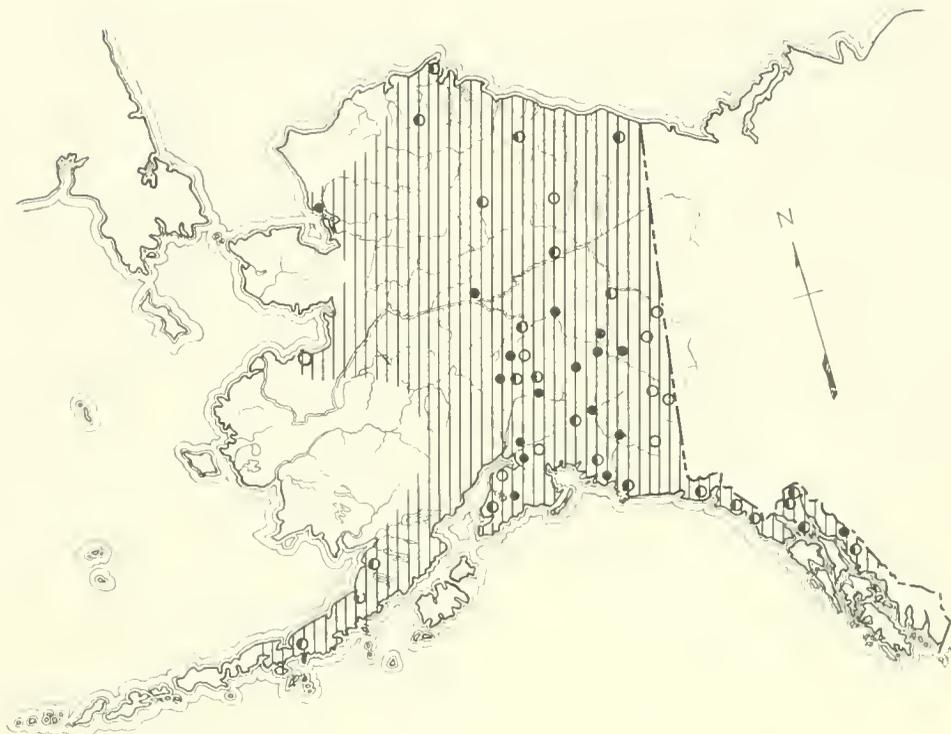
- Pacific killer whale, *Grampus rectipinna* (Aglu).
- Harbor porpoise, *Phocoena vomerina* (Agvisuak).
- Gray whale, *Eschrichtius glaucus* (Agvikluak).
- Little piked whale, *Balaenoptera acutorostrata*.
- Finback whale, *Balaenoptera physalus*.
- Humpback whale, *Megaptera novaeangliae*.

Principally south of Bering Strait:

- Baird beaked whale, *Berardius bairdi*.
- Stejneger beaked whale, *Mesoplodon stejnegeri*.
- Cuvier beaked whale, *Ziphius cavirostris*.
- Sperm whale or cachalot, *Physeter catodon* (Ahovikgluk).
- Right-whale dolphin, *Lissodelphis borealis*.
- Pacific striped porpoise, *Lagenorhynchus obliquidens* (Agamakchik).
- Pacific blackfish, *Globicephala scammoni*.
- Dall porpoise, *Phocoenoides dalli*.
- Rorqual or sei whale, *Balaenoptera borealis*.
- Blue or sulfur-bottom whale, *Sibbaldus museulus*.
- Pacific right whale, *Eubalaena sieboldi* (Ahovik).

COYOTE, *Canis latrans*

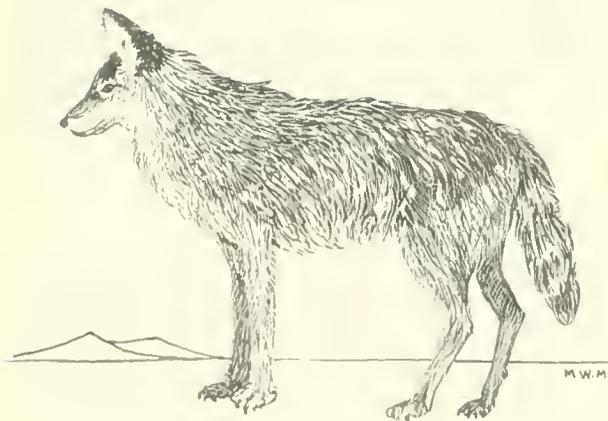
(Amagurak)



Range.—Most of western North America above Panama. In recent years it has been extending its range, eastward to the Atlantic and further north into Alaska. Coyotes first entered Alaska early in the 20th century.

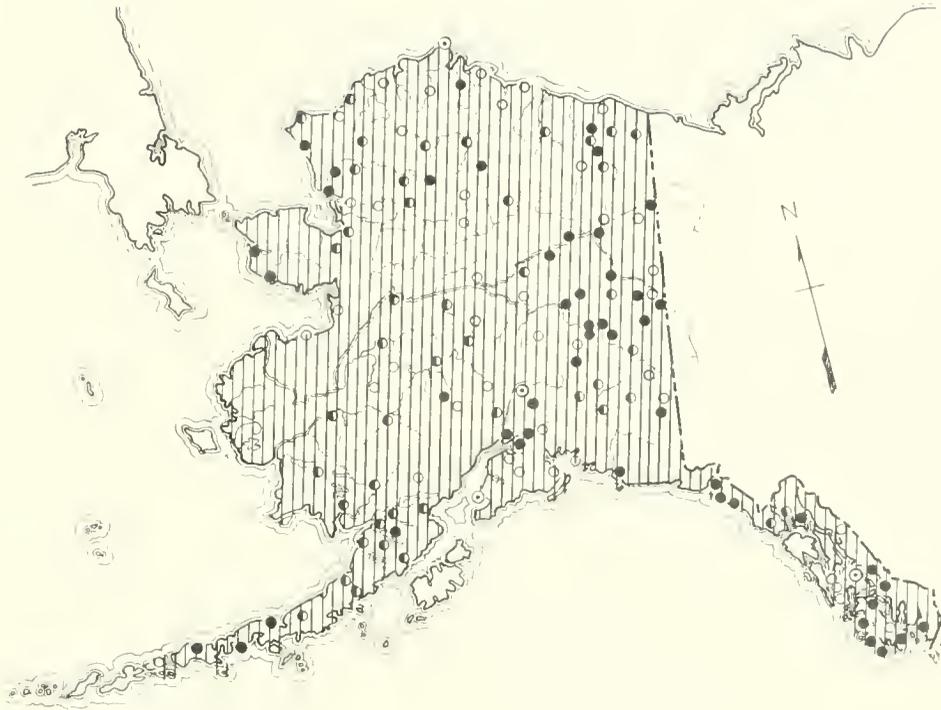
Habitat.—Occupies many habitats from forests to plains, with a preference for open areas, from sea level to well up in the mountains.

Race in Alaska.—The only race in Alaska is *incolutus*, ranging on the mainland from the southeastern panhandle north to Point Barrow.



GRAY WOLF, *Canis lupus*

(Amauk, Kigilunuk)



Range.—Northern North America, now principally in Canada and Alaska.

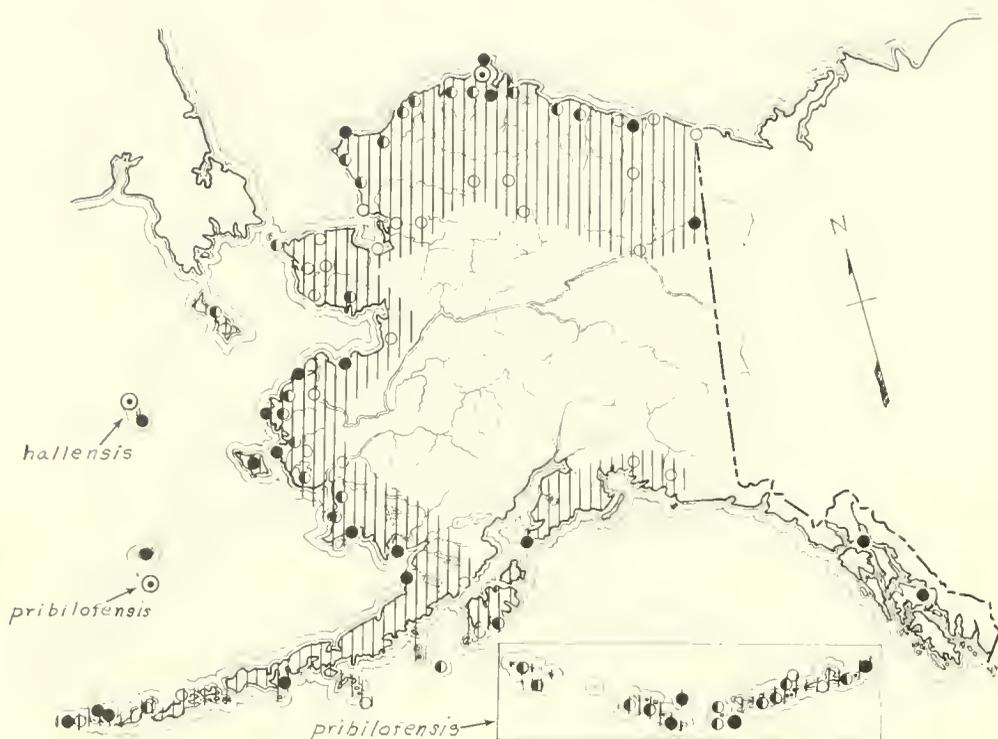
Habitat.—Wild areas remote from human habitation, both forests and open areas at all elevations.

Race in Alaska.—The race *alces* (type locality: Kachemak Bay), now extinct, occurred only near the southern end of the Kenai Peninsula; *ligoni* (type locality: head of Duncan Canal, Kupreanof Islands) occupies the Alexander Archipelago (except for Admiralty, Baranof, and Chichagof Islands) and adjacent mainland of southeastern Alaska, north to Yakutat Bay; *tundrarum* (type locality: Point Barrow) occurs in the tundra region along the Arctic Ocean and Chukchi Sea coasts south to the Noatak River; *pambasileus* (type locality: Susitna River, Mount McKinley region) occupies most of interior Alaska, from the Seward Peninsula and Kuskokwim River valley east to central Yukon.



ARCTIC FOX, *Alopex lagopus*

(Tigannek, Kaynroktoruk)



Range.—Circumpolar, largely above the Brooks Range and beyond the limit of trees.

Habitat.—Primarily along the marine coasts, on open tundra or rocky beaches; in winter goes out long distances on sea ice; occasionally considerable distances inland.

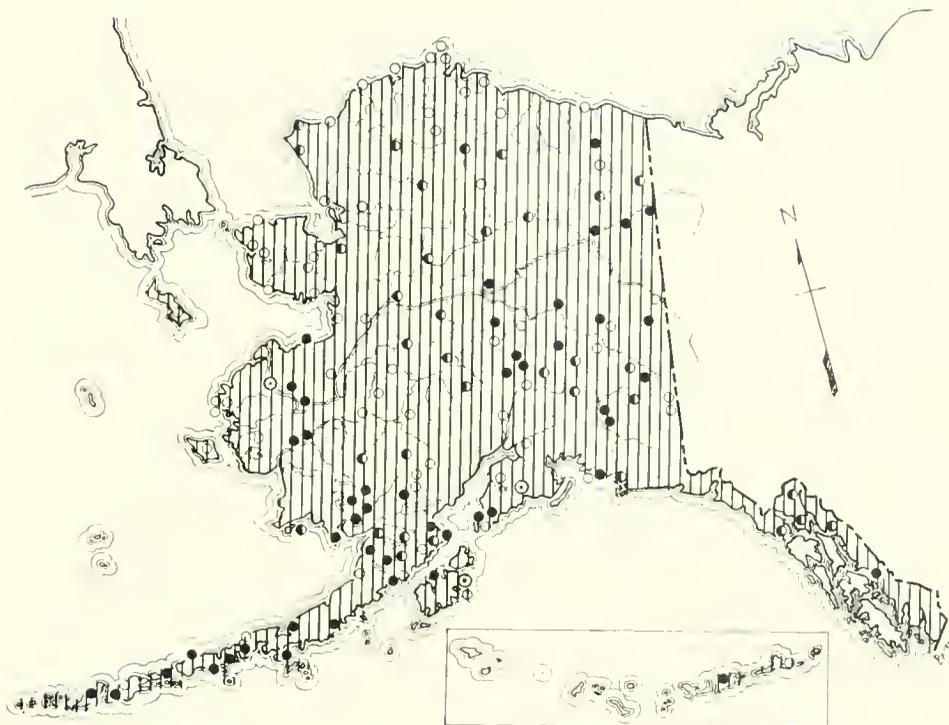
Races in Alaska.—The mainland race is *innuitus* (type locality: Karogar River, Point Barrow). Two island species have been described, but are now regarded as subspecies: *hallensis* (type locality: Hall Island, Bering Sea) occurs on Hall, St. Lawrence, and St. Matthew Islands; *pribilofensis* (type locality: St. George Island) occurs on the Pribilof Islands and most of the Aleutian Islands west of Unalaska.

Introductions.—Since the days of the Russians, in the mid 18th century, blue foxes have been transplanted to the Pribilofs, most of the Aleutians, and many other islands, often to the detriment of native species.



RED FOX, *Vulpes fulva*

(Kayuktuk, Kaynok)



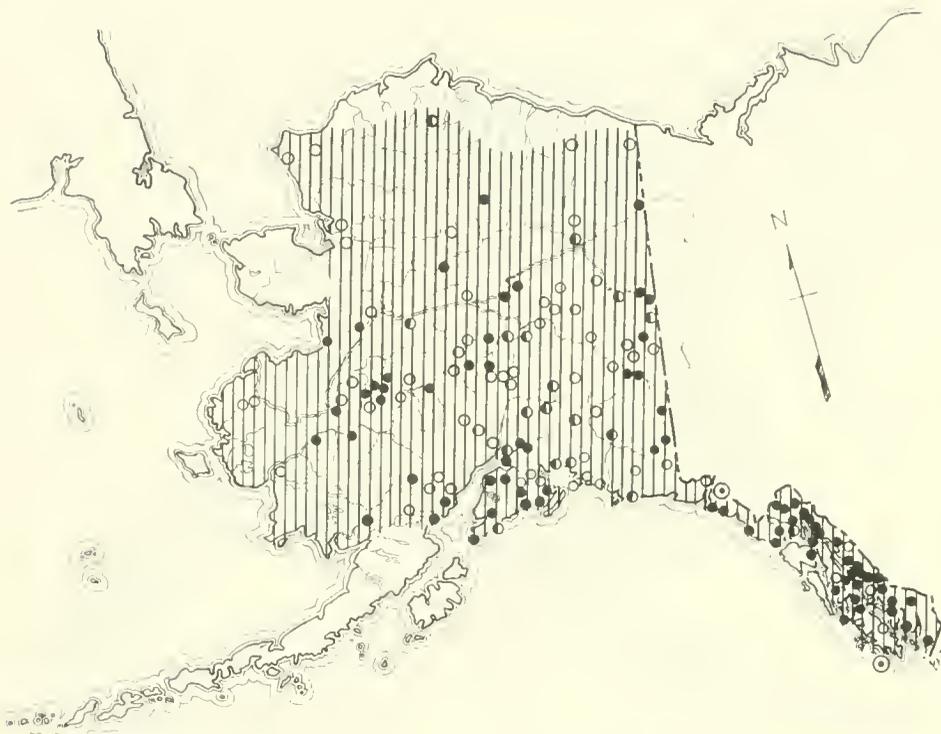
Range.—Most of North America south to Texas and northern Georgia, except arid southwestern United States.

Habitat.—Dry country, at all elevations, particularly broken areas having open patches interspersed with cover; at home both in heavy forests and open tundra, occasionally about marshes and at great distances on the sea ice, as at St. Lawrence and the Pribilof Islands.

Races in Alaska.—The red fox of most of northern and central Alaska is *alascensis* (type locality: Andreafski, about 70 miles above delta of the Yukon River); *harrimani* (type locality: Kodiak Island) is found only on that island; *kenaiensis* (type locality: Kenai Peninsula) is apparently largely restricted to that area; *abietorum* is probably the race on the mainland of southeastern Alaska, where it is sparse.

BLACK BEAR, *Ursus americanus*

(Igagrik)



Range.—Most of forested North America.

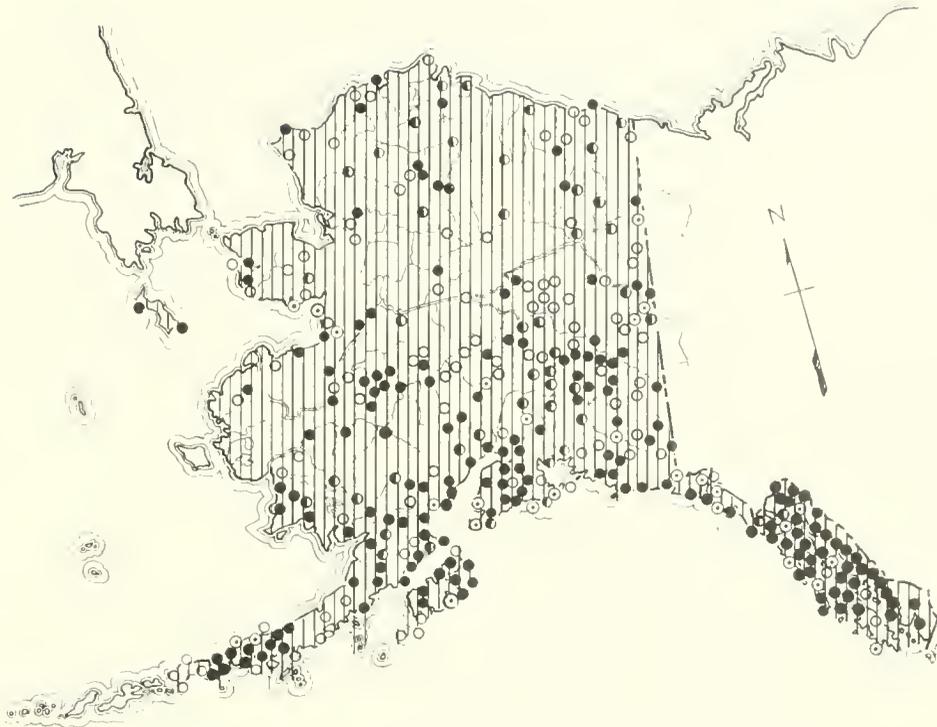
Habitat.—Woodlands or swamps, from sea level to coniferous forests and lower tundra, high in the mountains to well above timberline in summer.

Races in Alaska.—The mainland race in most of Alaska from the south slope of the Brooks Range and below is the typical *americanus*; there are records from Anaktuvuk Pass and Hunt Fork. The race *perniger* (type locality: Homer, Kenai Peninsula) occupies the southern mainland from the Kenai Peninsula to the vicinity of Yakutat Bay, where it intergrades with *emmonsii*; the island race *pugnax* (type locality: Rocky Bay, now Bobs Bay, Dall Island) occurs on islands south of Frederick Sound in southeastern Alaska; the "blue" or "glacier" bear, *emmonsii* (type locality: Saint Elias Mountains, near Yakutat Bay) ranges on the mainland from the type locality south at least to the Taku River. This last form was originally described as a distinct species, but is now generally regarded as merely a color phase of the black bear.



GRIZZLY and BROWN BEARS, *Ursus arctos*

(Aklak, Oglok)



Range.—Mountainous regions of western North America; practically all of mainland Alaska, and many of the islands.

Habitat.—Swamps, streams, forests, and tundra; from sea level to snow fields above timberline.

Forms in Alaska.—Much confusion has long existed in the nomenclature of the large Alaska bears, and the relationships between the typical grizzly bear (*U. horribilis*), big brown bear (*U. middendorffi*), and the Old World brown bear (*U. arctos*) are still far from clear. At least 76 species and 35 additional races of these American bears have been proposed; to present workers, this seems preposterous. Locations of Alaska type localities are indicated on the map, but for the present it seems best to treat all these bears with dished-in facial profiles and humped shoulders as one highly variable and wide-ranging population which, according to the rules of nomenclature, should be termed *Ursus arctos*. The widely accepted “grizzly” and “brown” bears are then properly considered forms of *U. arctos*. Much work remains to be done before the exact status of these forms is clear.

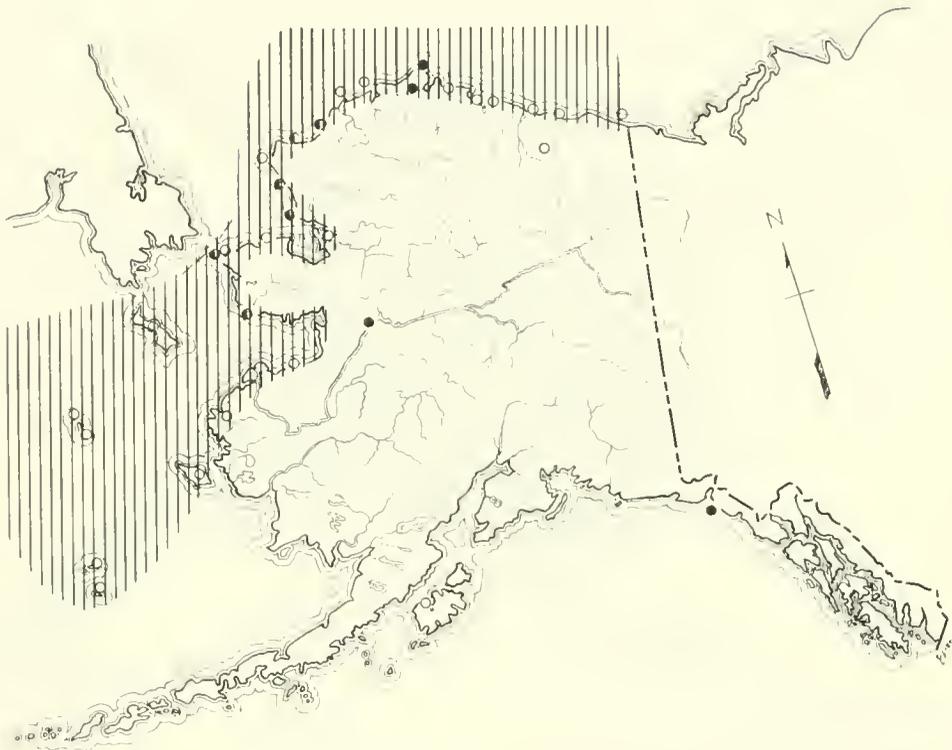
The principal forms which were named in the past are, on the mainland, *dalli* (type locality:

northwest side of Yakutat Bay), *gyas* (type locality: Paulov Bay, Alaska Peninsula), *horribilis*, *kenaiensis* (type locality: Cape Elizabeth, extreme west end Kenai Peninsula), and 16 others now regarded as synonyms. Typical island forms include *beringianus* (St. Lawrence Island), *eltonclarki* and *sitkensis* (Chichagof and Baranof Islands), *eulophus*, *insularis*, *mirabilis*, *neglectus*, and *shirasi* (Admiralty Island), *middendorffi* (Kodiak Island), *nuchek* (Hinchinbrook Island), and *sheldoni* (Montague Island).



POLAR BEAR, *Thalarctos maritimus*

(Nanook)



Range.—Circumpolar in Arctic Ocean.

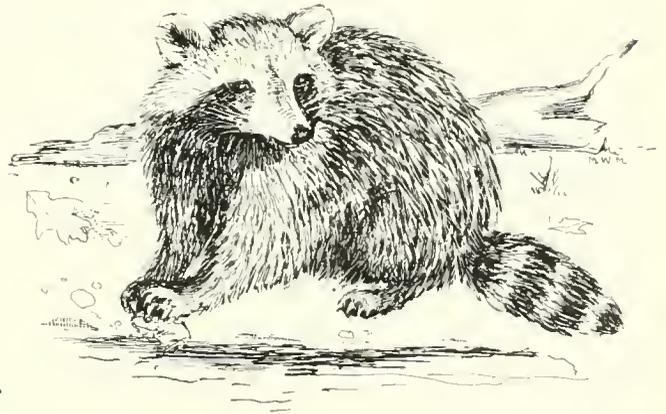
Habitat.—This is essentially a marine mammal, typically found far at sea on the pack ice; it occasionally comes to the coast and even appears on mainland tundra areas, but seldom far inland.

Race in Alaska.—The polar bear of Alaska waters is the typical race, *maritimus*. Its pres-

ence south of St. Lawrence Island is sporadic, and the records from Kodiak Island and Yakutat Bay are definitely of freak occurrences. "White bear skins" seen at Prince William Sound in 1778, as reported in the *Voyages* of Captain James Cook (vol. 2, p. 305, 1842), were probably the hides of mountain goats.



RACCOON, *Procyon lotor*



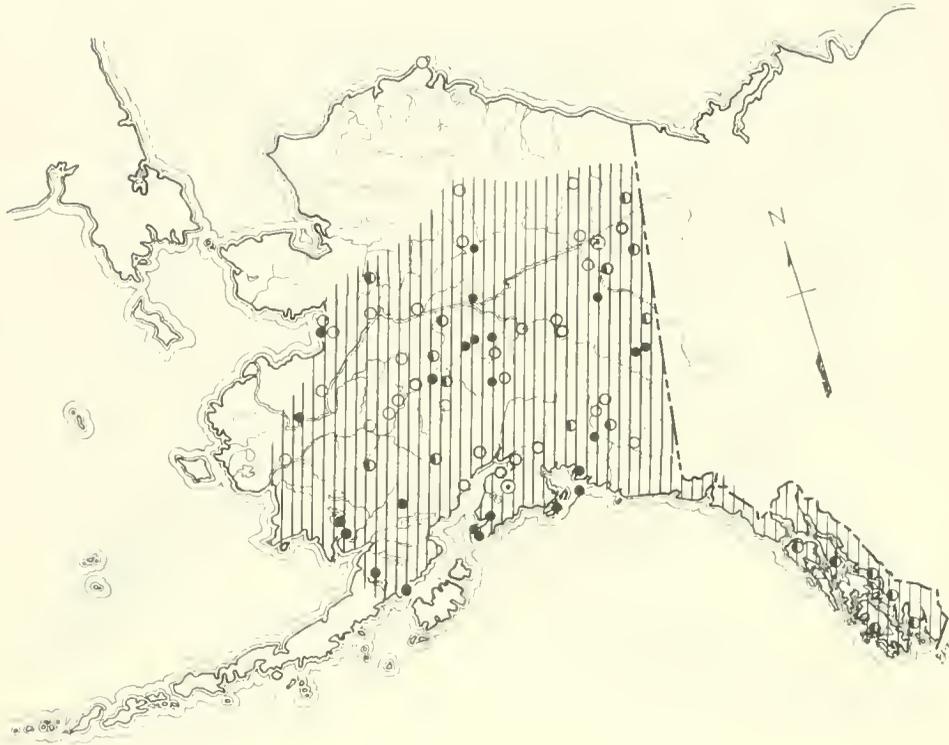
Range.—Most of North America from Panama north to southern Canada.

Habitat.—Wooded areas, particularly near swamps, streams, or lakes.

Introductions.—The raccoon was introduced on Long Island, near Kodiak, about 1935, and was still present in 1948. In the 1930's fur farmers introduced raccoons on Baranof and Prince of Wales Islands; they are still present on the latter. In 1941 eight black raccoons (from Indiana) were released on Singa Island in southeastern Alaska; they later spread to El Capitan and three other nearby islands. In 1950, tame raccoons were released on Japonski Island at Sitka.

PINE MARTEN, *Martes americana*

(Kavaycheak)



Range.—Most northern timbered areas from Bering Strait to Labrador and south in mountains to California and Colorado.

Habitat.—Preferably mature conifers, from sea level to above timberline in the mountains.

Races in Alaska.—The race *actuosa* (type locality: Fort Yukon) occupies most of mainland Alaska below the southern Brooks Range (specimen from Hunt Fork), except the southern coast; *kenaiensis* (type locality: Kenai Peninsula) occupies this peninsula and the adjoining southern coastal area; *nesophila* has been reported in southeastern Alaska from Three-mile Arm, Kuiu Island; *caurina* occurs in the Alaskan Panhandle and southward in the coastal ranges.

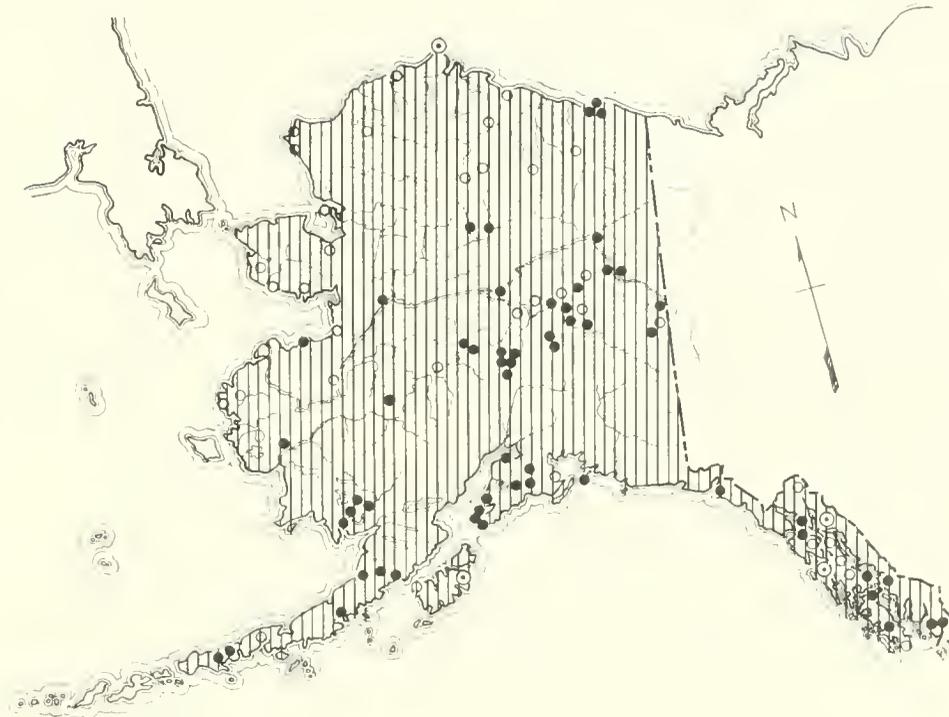
Introductions.—In 1934, 22 martens from the mainland of southeastern Alaska were released on Prince of Wales and Baranof Islands.

Related species.—The considerably larger fisher, *Martes pennanti*, is also arboreal in habits. The form *pacifica* (whose validity as a race is questioned by some) has been reported from the extreme southern Alaska Panhandle (vic. Boca de Quadra).



SHORT-TAILED WEASEL or ERMINE, *Mustela erminea*

(Tigak)



Range.—Most of North America, south to New Mexico.

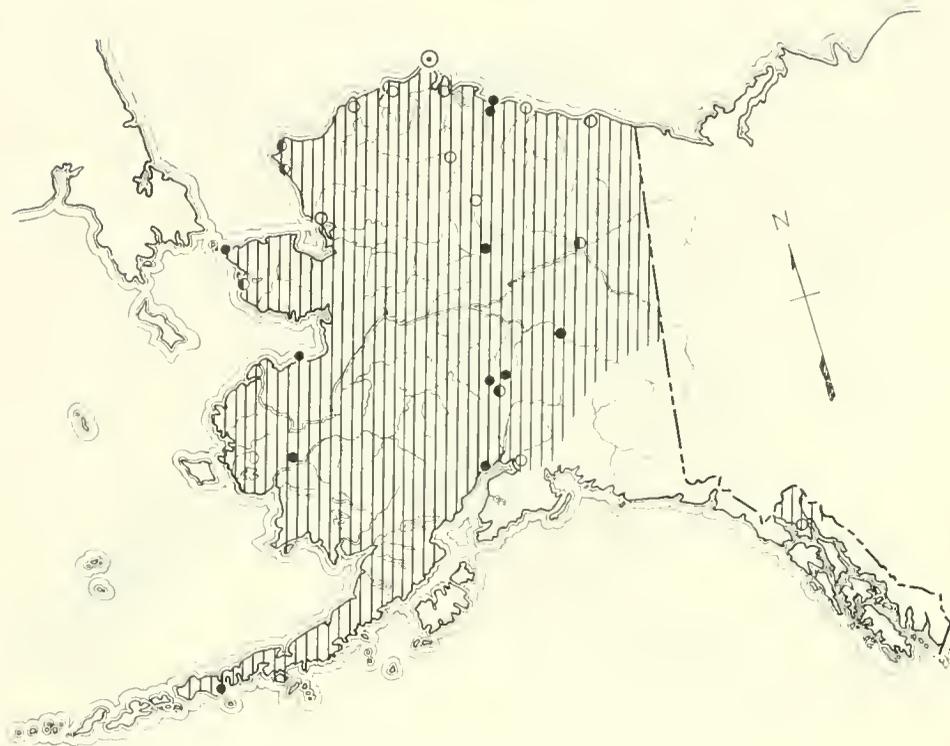
Habitat.—Woodlands, open areas, and most terrestrial habitats within its range.

Races in Alaska.—The race *arctica* (type locality: Point Barrow) occupies all of the mainland except the area where *alascensis* occurs; *alascensis* (type locality: Juneau) occupies a coastal strip from the Taku River southward, and occurs on Revillagigedo, Mitkof, Zarembo, and Wrangell Islands; *kodiacensis* (type locality: Kodiak Island) is known only from Kodiak Island. On the islands of the southeastern archipelago there are four other described races: *celenda* (type locality: Kasaan Bay, Prince of Wales Island) occurs also on Long and Dall Islands; *initis* (type locality: Saook Bay, Baranof Island) occurs also on Chichagof Island; *salva* (type locality: Mole Harbor, Admiralty Island) and *seclusa* (type locality: Port Santa Cruz, Suemez Island) are known only from these islands.



LEAST WEASEL, *Mustela rixosa*

(Naulayuk)



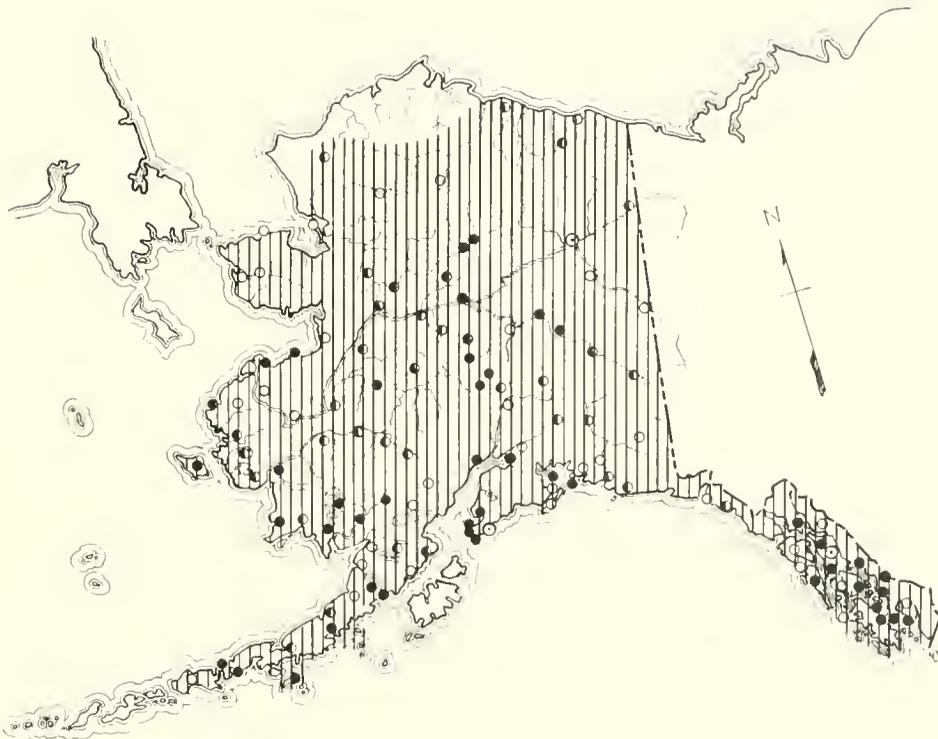
Range.—Northern North America south to Nebraska and North Carolina.

Habitat.—Open woods and brush; apparently rare everywhere, except on Arctic Slope tundra during times of high microtine populations.

Race in Alaska.—The only race occurring in Alaska is *eskimo* (type locality: Point Barrow), reported from widely separated localities on the mainland and in adjacent Yukon Territory.



MINK, *Mustela vison*
(Tigakpuk)

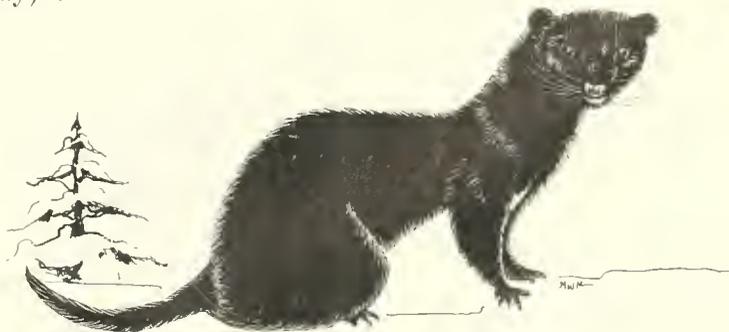


Range.—Most of North America south to the Gulf of Mexico.

Habitat.—Margins of streams, lakes, marshes, and marine islands; may occur in woods some distance from water in winter.

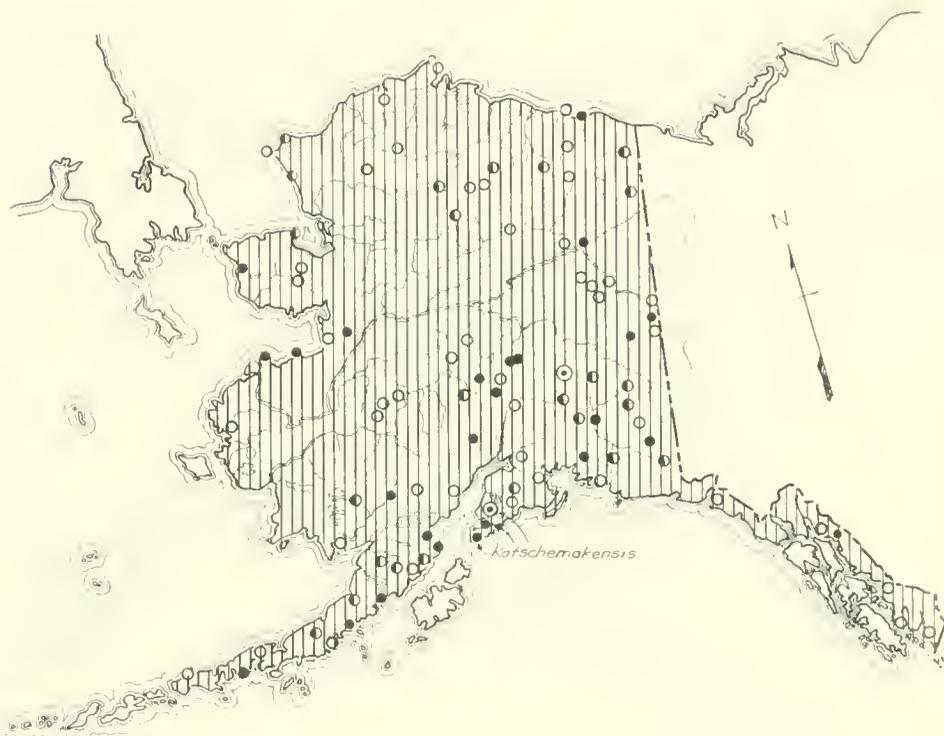
Races in Alaska.—The race *ingens* (type locality: Fort Yukon) ranges over most of mainland Alaska except in the southern coastal areas and the Arctic Slope; *melampeplus* (type locality: Kenai Peninsula) ranges along the southern mainland from the Alaska Peninsula (Cold Bay) to

Prince William Sound; *nesolestes* (type locality: Windfall Harbor, Admiralty Island) occurs on Admiralty, Baranof, Chichagof, Coronation, Kupreanof, Prince of Wales, and Revillagigedo Islands, and on the Cleveland Peninsula of the southeastern archipelago; *energumenos* occupies much of western Canada and the mainland of southeastern Alaska below the lower Taku River.



WOLVERINE, *Gulo gulo*

(Kavik)



Range.—Northern North America from Alaska to Labrador.

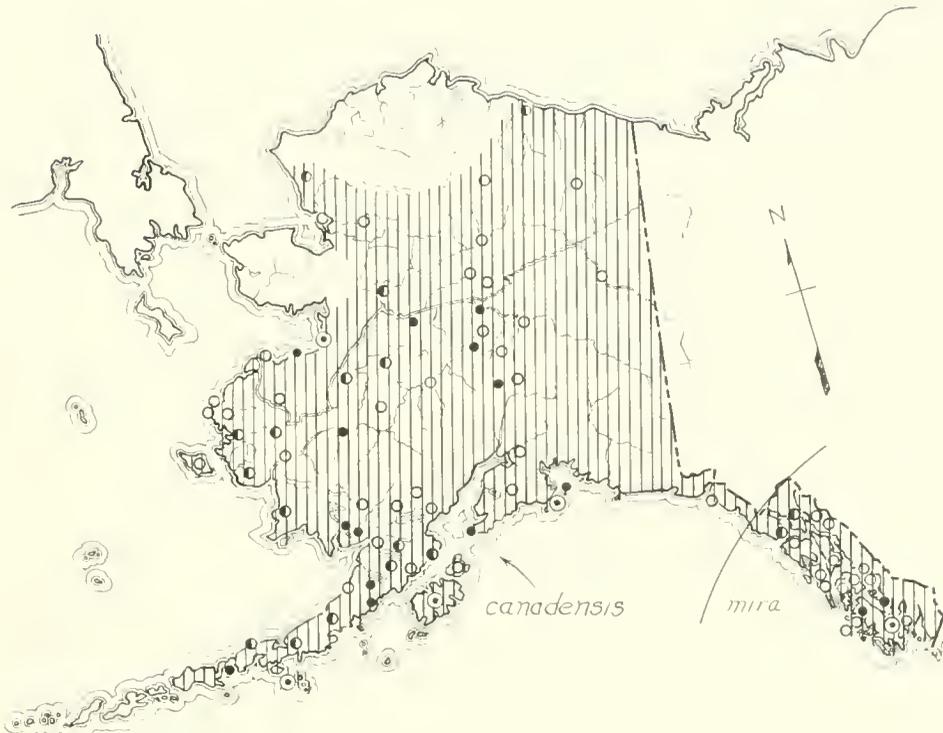
Habitat.—Forests and tundra areas, from sea level to high in mountains.

Forms in Alaska.—Recently the American and Old World wolverines were shown (Kurten and Rausch, 1959) to be conspecific. What then becomes the race *luscus* occurs throughout most of the Alaska mainland. The forms *katschemakensis* (type locality: Katschemak [=Kachemak] Bay, Kenai Peninsula) and *hylaesus* (type locality: Susitna River, near Mount McKinley) have been described as separate species, but are generally regarded as indistinguishable from the race *luscus*.



RIVER OTTER, *Lutra canadensis*

(Pameaytuk)



Range.—Most of North America north of Mexico, to beyond treeline.

Habitat.—Usually associated with rivers, streams, or marine estuaries; occasionally some distance from water.

Races in Alaska.—The race *yukonensis* (type locality: Unalakleet, Norton Sound) occurs on most of the Alaska mainland from the Alaska Peninsula and Bering Sea coast to the eastern border. Three island races have been described from Alaska: *extera* (type locality: Nagai Island, Shumagin Islands) known only from Nagai Island; *kodiakensis* (type locality: Uyak Bay, Ko-

diak Island) from Kodiak and Afognak Islands; and *optiva* (type locality: Zaikof Bay, Montague Island) from Montague and Hinchinbrook Islands and from Cape Elizabeth on the adjacent Kenai Peninsula. In southeastern Alaska the race *pacifica* occupies the mainland west of the Coast Range, and *periclyzomae* has been recorded from Yakutat Bay and from Admiralty and Baranof Islands.

Related species.—The species *mira* (type locality: Kasaan Bay, Prince of Wales Island) occupies the Alexander Archipelago and probably the adjacent mainland of southeast Alaska. This may prove to be merely another race of *canadensis*.



SEA OTTER, *Enhydra lutris*

(Amikuk)

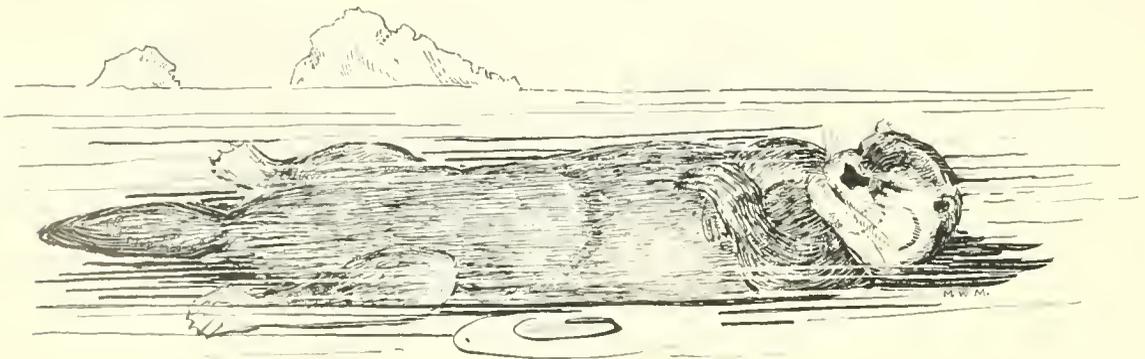


Range.—Bering Sea from Kamchatka to the Aleutians and southward sporadically along coast to Baja California.

Habitat.—Shallow marine waters along coast and islands, usually among kelp beds, or on rocky shores and reefs; forages to depths of 150 feet.

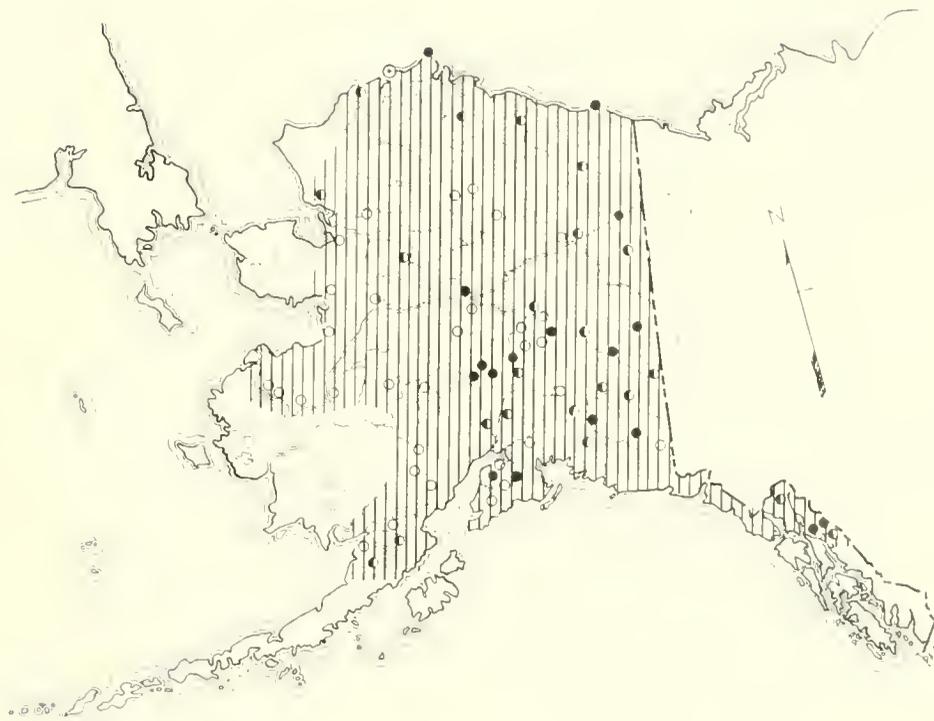
Race in Alaska.—The typical race *lutris* (type locality: Kamchatka, U.S.S.R.) is the one present in Alaskan waters.

Remarks.—Exploitation of the sea otter for its fur nearly exterminated this species by about 1911. Protection since then has allowed it to recover favorably, with the present population concentrated about Amchitka. On the map are indicated the former range as well as recent records.



LYNX, *Lynx canadensis*

(Nutukek)



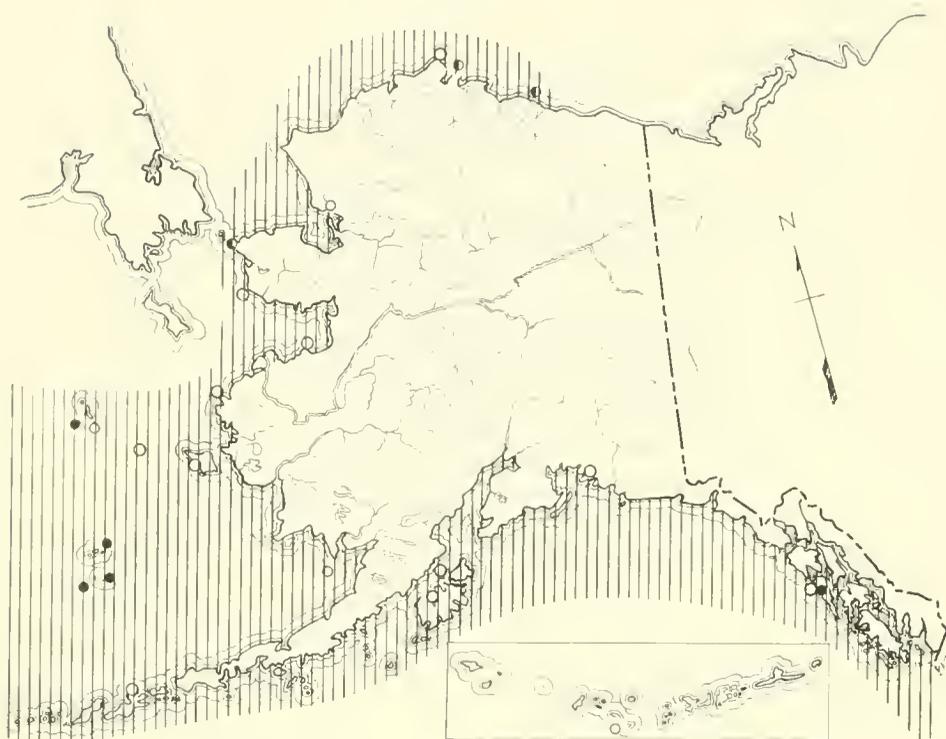
Range.—Most of mainland Canada and Alaska, south into the mountains of western United States.

Habitat.—Forests and open country, wherever the snowshoe hare may be found.

Race in Alaska.—The typical race *canadensis* occurs in most of mainland Alaska. The race *mollipilosus* (type locality: Wainwright Inlet) is generally regarded as indistinguishable from *canadensis*.



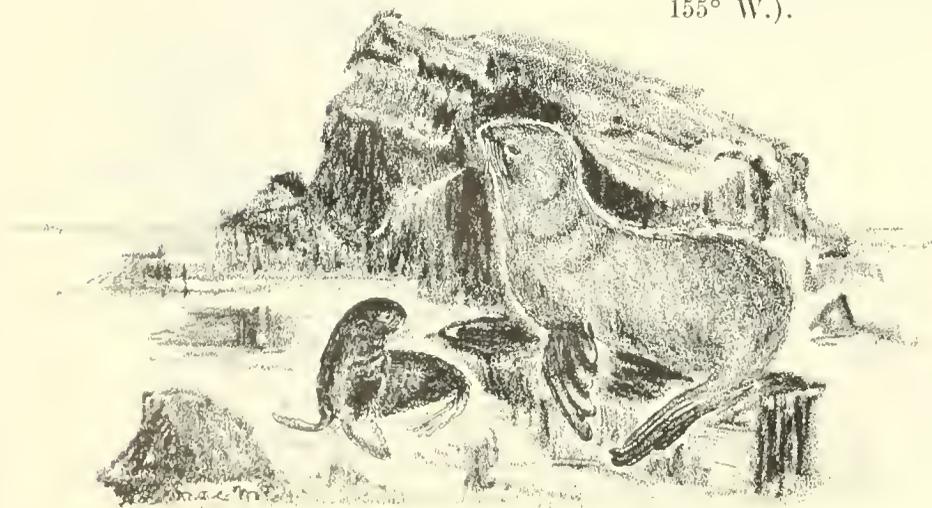
ALASKA FUR SEAL, *Callorhinus ursinus*
(Hlakudak)



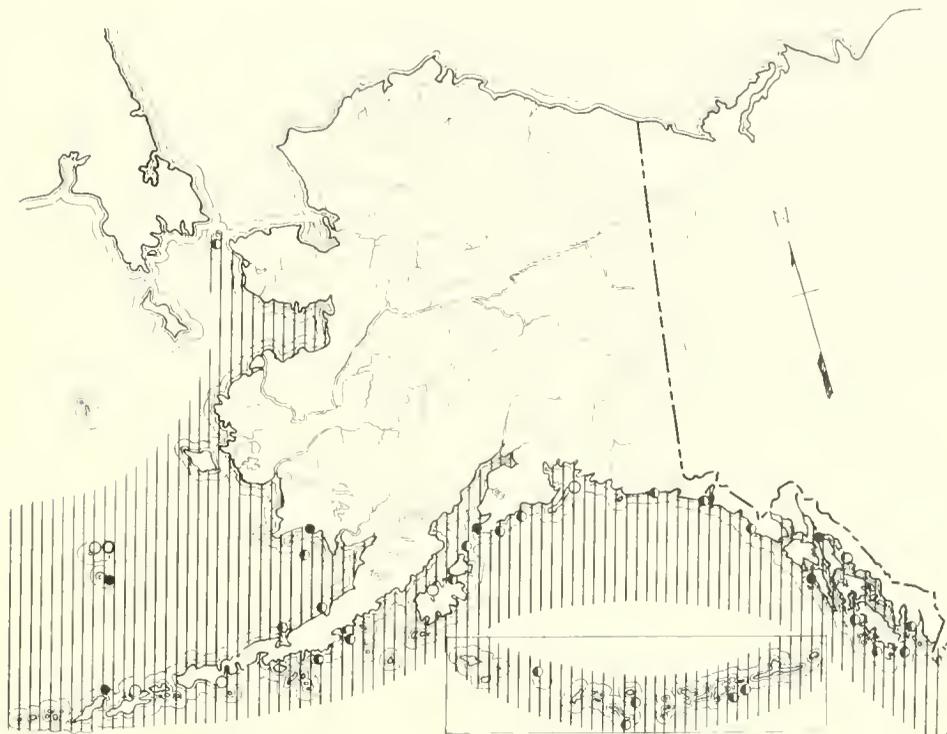
Range.—North Pacific Ocean and adjacent seas; breeds on Pribilof and Kurile Islands; occurs casually north to a point east of Point Barrow.

Habitat.—Marine; breeds on shores of islands; pelagic and migrates south in winter.

Race in Alaska.—The race in Alaskan waters is *cynocephalus* (type locality: south of Alaska Peninsula approximately at lat. 53° N., long. 155° W.).



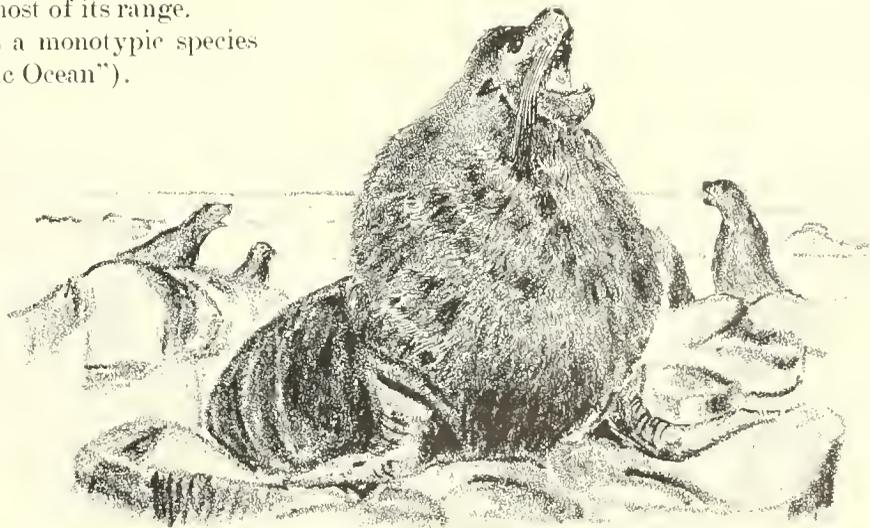
NORTHERN or STELLER SEA LION, *Eumetopias jubata*
(Urgak)



Range.—Bering Sea, Hall Island and Pribilof Islands, and Bristol Bay north to Bering Strait and south to islands off southern California.

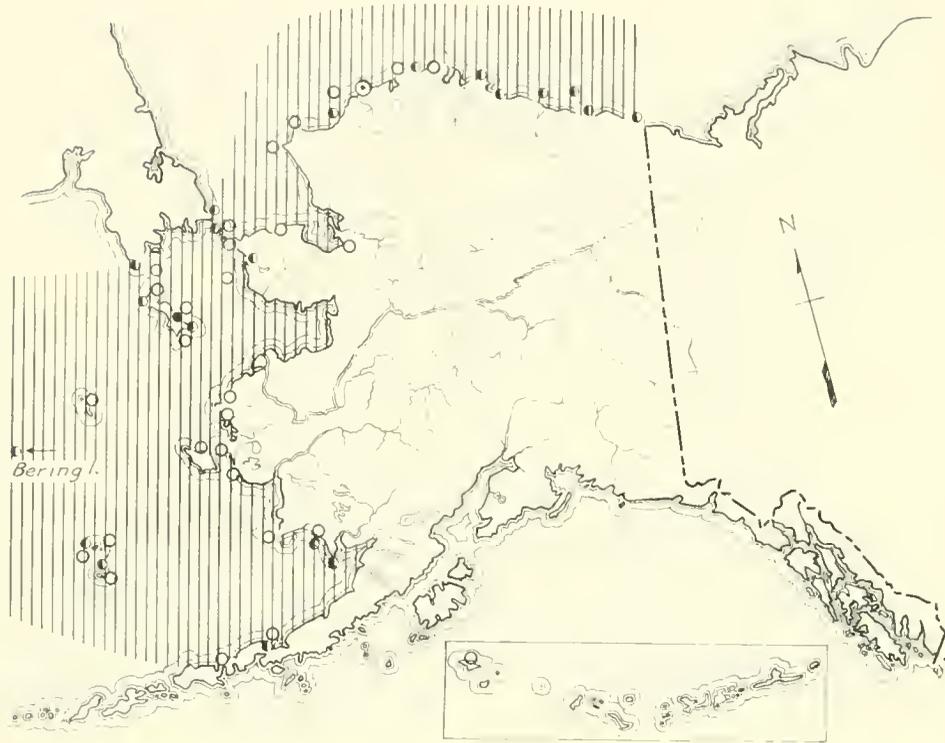
Habitat.—Marine, usually along open seacoasts; breeds on shore throughout most of its range.

Form in Alaska.—This is a monotypic species (type locality: "North Pacific Ocean").



PACIFIC WALRUS, *Odobenus rosmarus*

(Aivuk, Amiak)



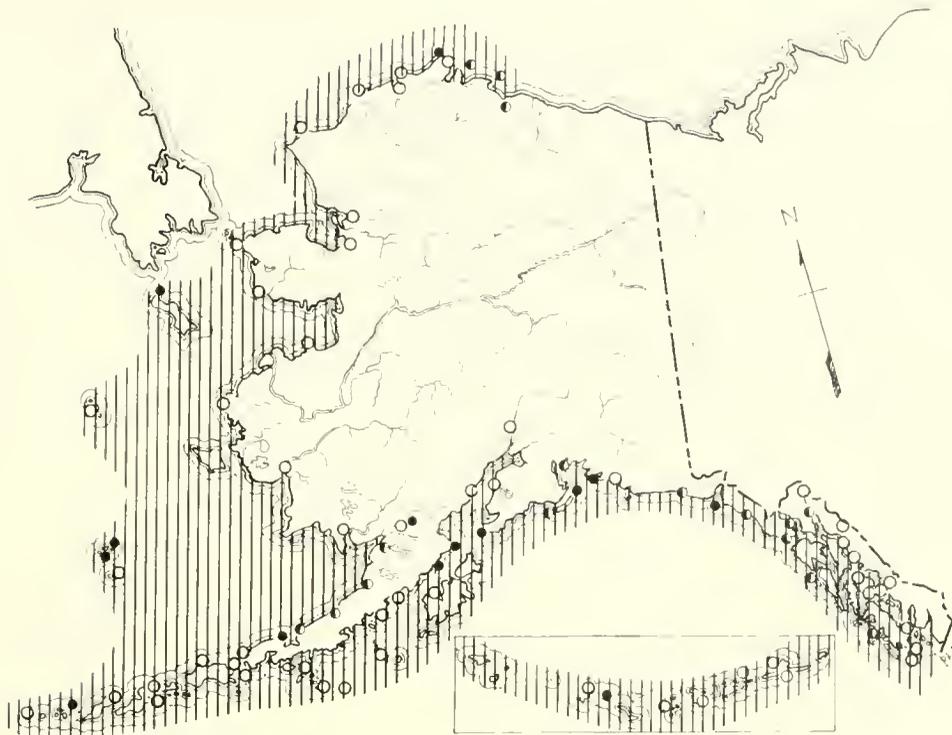
Range.—Walrus Island in Bristol Bay, Pribilof Islands north to Point Barrow in summer, and occasionally further east; most walrus migrate north in summer and south in winter.

Habitat.—Marine and on ice floes; occasionally haul out on land, as at Round Island in Bristol Bay.

Race in Alaska.—The Alaska walrus is *divergens* (type locality: about 35 miles south of Icy Cape). The Atlantic race, *rosmarus*, is regarded by some as a full species.



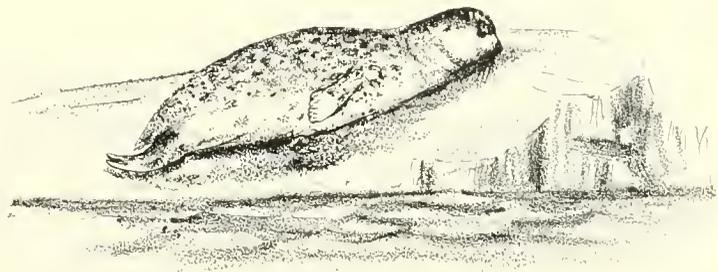
HARBOR, HAIR, or SPOTTED SEAL, *Phoca vitulina*
(Kashigiak)



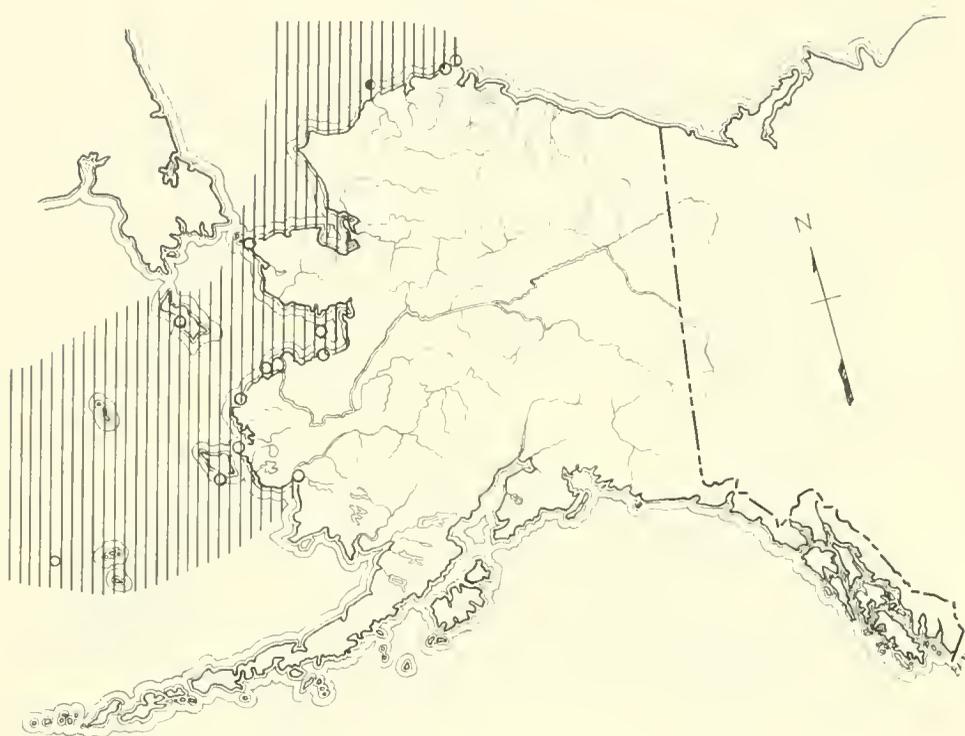
Range.—Bering Sea to coast of Mexico, occasionally north to Point Barrow and east to Herschel Island, Yukon; widespread in northern American waters of Atlantic and Pacific Oceans.

Habitat.—Along coasts, usually in protected bays or on offshore islands; occasionally in large inland lakes. Hauls out on sandbars or rocks, but seldom in vicinity of pack ice.

Race in Alaska.—The race in Alaskan coastal water is *richardii* (type locality: Vancouver Island, British Columbia).



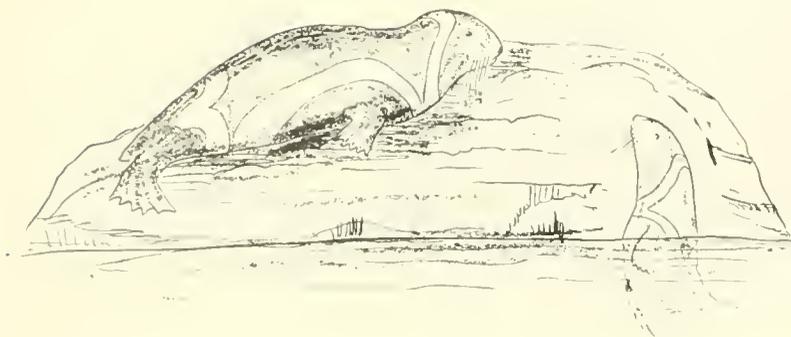
RIBBON SEAL, *Histiophoca fasciata*
(Kaolik, Kukupuk)



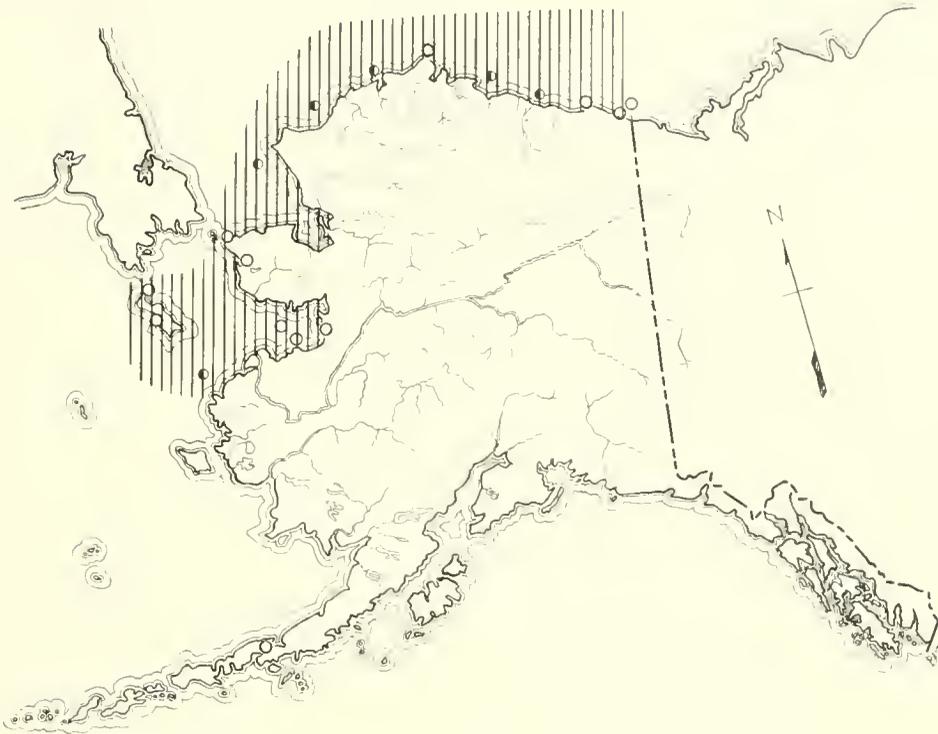
Range.—Okhotsk, Bering, and Chukchi Seas, from northern Hokkaido and Bristol Bay to Point Barrow.

Habitat.—In Alaska, occurs chiefly among ice floes of Bering Sea, at southern edge of ice pack.

Form in Alaska.—This is a monotypic species (type locality: Kurile Islands, Japan).



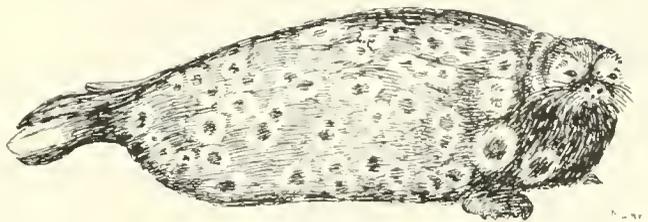
RINGED or HAIR SEAL, *Pusa hispida*
(Netchek, Malak)



Range.—Arctic seas, circumpolar; in Alaska chiefly in Chukchi and Bering Seas, south to the Pribilof Islands.

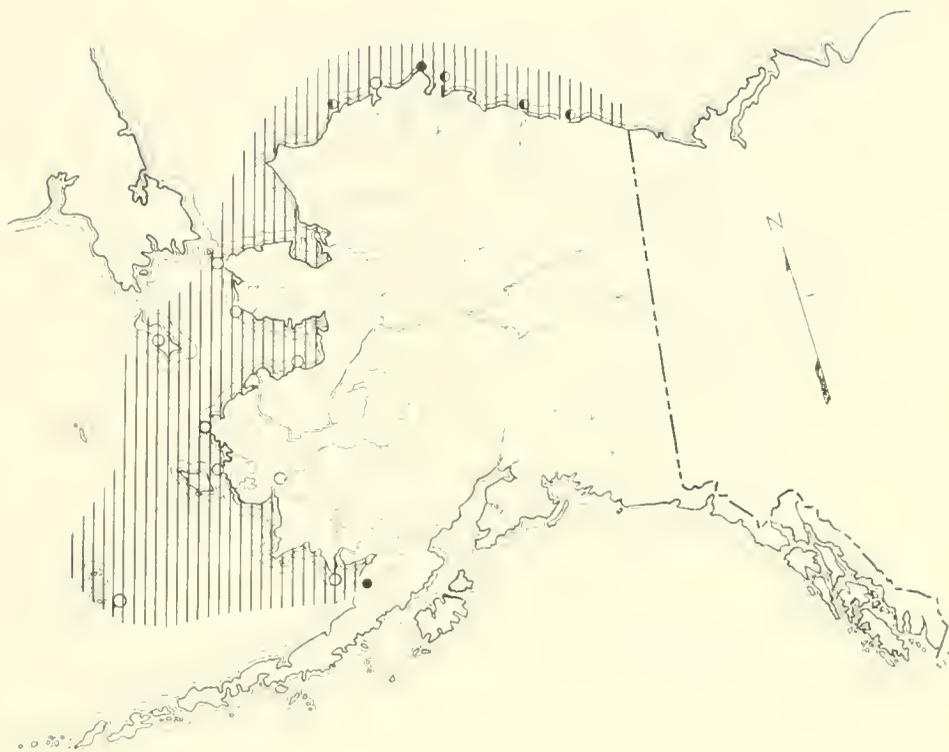
Habitat.—Among ice floes and pack ice.

Race in Alaska.—The Alaskan race is *beaufortiana* (type locality: Cockburn Point, Dolphin and Union Strait, Mackenzie District).



BEARDED SEAL, *Erignathus barbatus*

(Ugruk)



Range.—Polar seas north to lat. 85° N., Arctic coast and Bering Sea south to Bristol Bay and Pribilof Islands.

Habitat.—Marine, moving southward with the ice pack in winter; abundant in spring near south edge of ice pack.

Race in Alaska.—The race *nauticus* (type locality: Okhotsk Sea) occurs in the waters off Alaska.

ELEPHANT SEAL, *Mirounga angustirostris*



Range.—American coasts of Pacific Ocean from Baja California and Guadalupe Islands north sporadically to Kuiu Island in southeastern Alaska.

Habitat.—Coasts and coastal islands, breeding on islands off California and Mexico.

Form in Alaska.—This is a monotypic species (type locality: San Bartolome Bay, Baja California).



AMERICAN ELK or WAPITI, *Cervus canadensis*



Range.—Formerly most of United States and Canada; now persists in the wild chiefly in mountainous areas of the West.

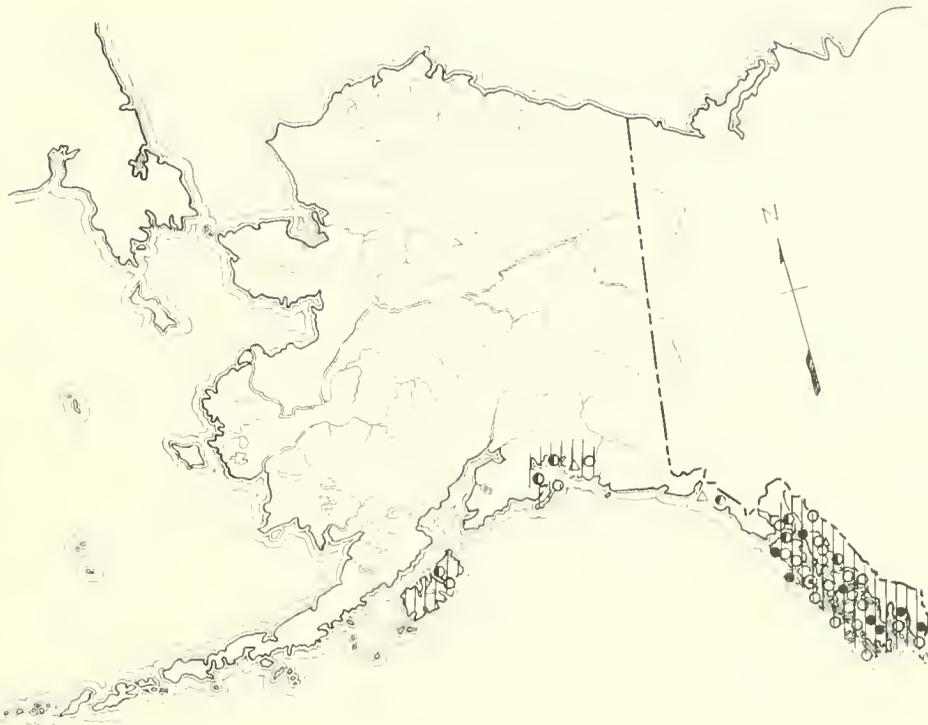
Habitat.—Open woodlands, humid forests, arid plains, typically in mountainous country.

Race in Alaska.—The introduced American elk of Alaska belong to the race *roosevelti*.

Introductions.—In 1927 a group of eight Roosevelt elk, captured in the Olympic Mountains of Washington, were liberated on Afognak Island. Here they thrived, despite a somewhat restricted winter range, increased to over 300 by 1953, and spread to the adjacent Raspberry and Kodiak Islands. Introductions on Baranof and Revillagigedo Islands failed to survive. In 1961 the population on Afognak and Raspberry Islands was approximately 1,200. The elk had failed to become established on Kodiak Island by 1962, when further introductions were made to Gravina Island.



MULE or BLACK-TAILED DEER, *Odocoileus hemionus*

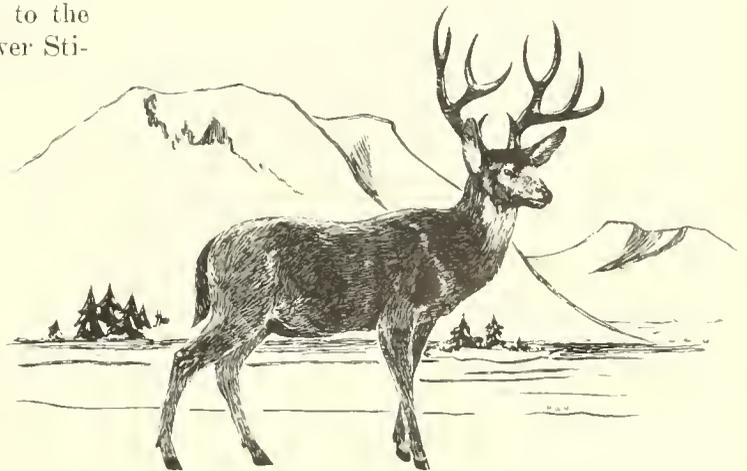


Range.—Western North America from southern Yukon to Baja California and Mexico.

Habitat.—Forests and open country, in mountains and at sea level.

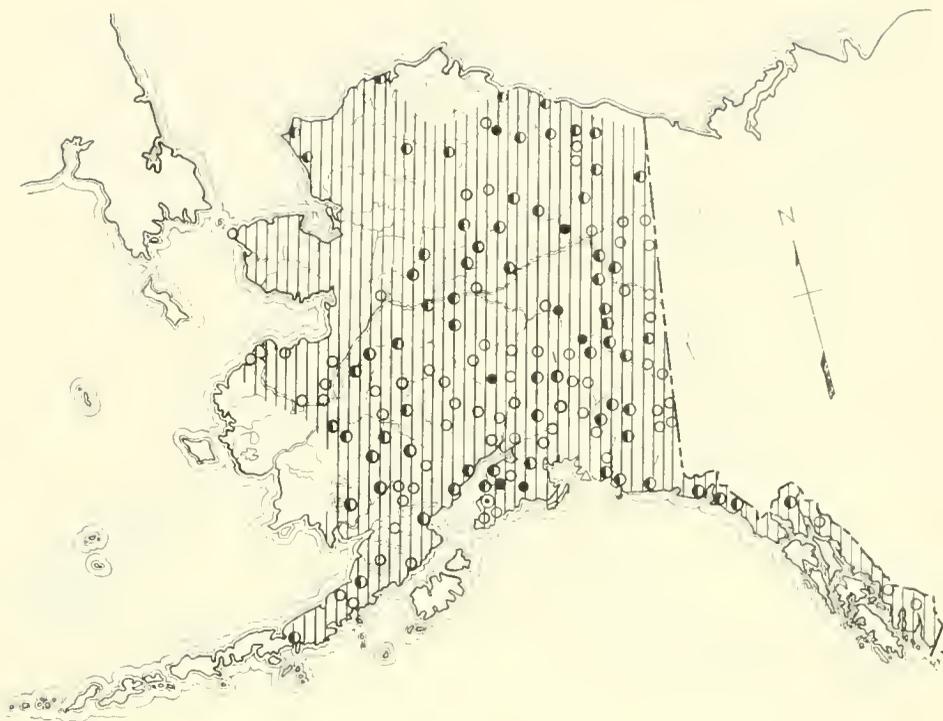
Races in Alaska.—The native deer of Alaska, known as the Sitka black-tailed deer, of the race *sitkensis* (type locality: Sitka), occupy the coastal islands and mainland of southeastern Alaska, north to Juneau. The more wide-ranging, typical race *hemionus* occupies adjacent country to the east, and was reported from along the lower Stikine River in the fall of 1961.

Introductions.—Black-tailed deer were introduced on Long Island in 1924 and 1930 and on Kodiak Island in 1934, and other transplants have become established on the islands of Prince William Sound and at Yakutat.



MOOSE, *Alces alces*

(Tutuvak)



Range.—Transcontinental, Bering Sea to Nova Scotia, mostly in Canada and Alaska, further south in the Rocky Mountains.

Habitat.—Forests, particularly along water-courses, with a preference for areas supporting willows; also extends into tundra areas, as at mouth of Colville River, Point Lay, Kotzebue, and Cape Wales.

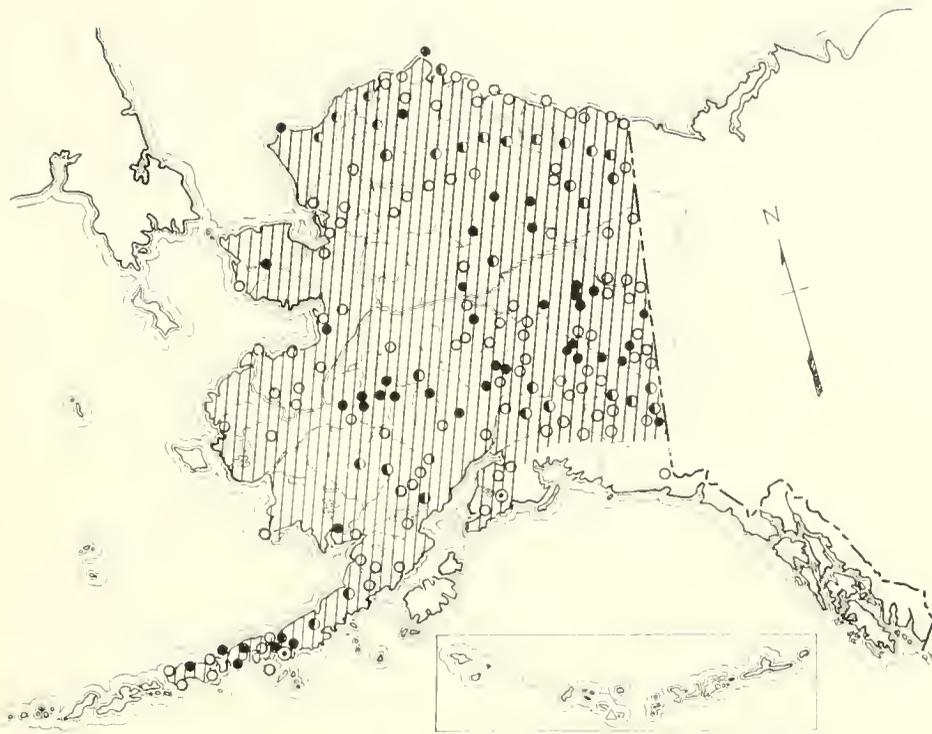
Race in Alaska.—The Alaska moose all belong to the race *gigas* (type locality: north side of Tustumena Lake, Kenai Peninsula).

Transplants.—In 1958, 15 calves from the Anchorage area were released at Berner's Bay, north of Juneau; 6 more were successfully transplanted to the same area in 1960.



BARREN GROUND CARIBOU, *Rangifer arcticus*

(Tutu, Tutupiak)

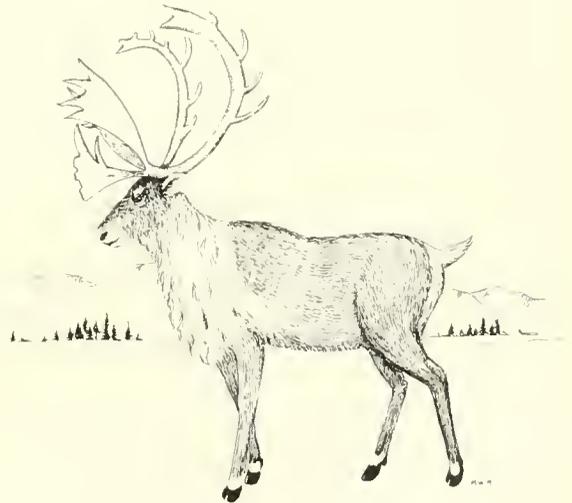


Range.—Arctic North America beyond the limit of trees, Alaska to Greenland and Newfoundland.

Habitat.—Open, well-grown tundra areas, mainly on the higher plateaus; frequently into open coniferous forests in winter.

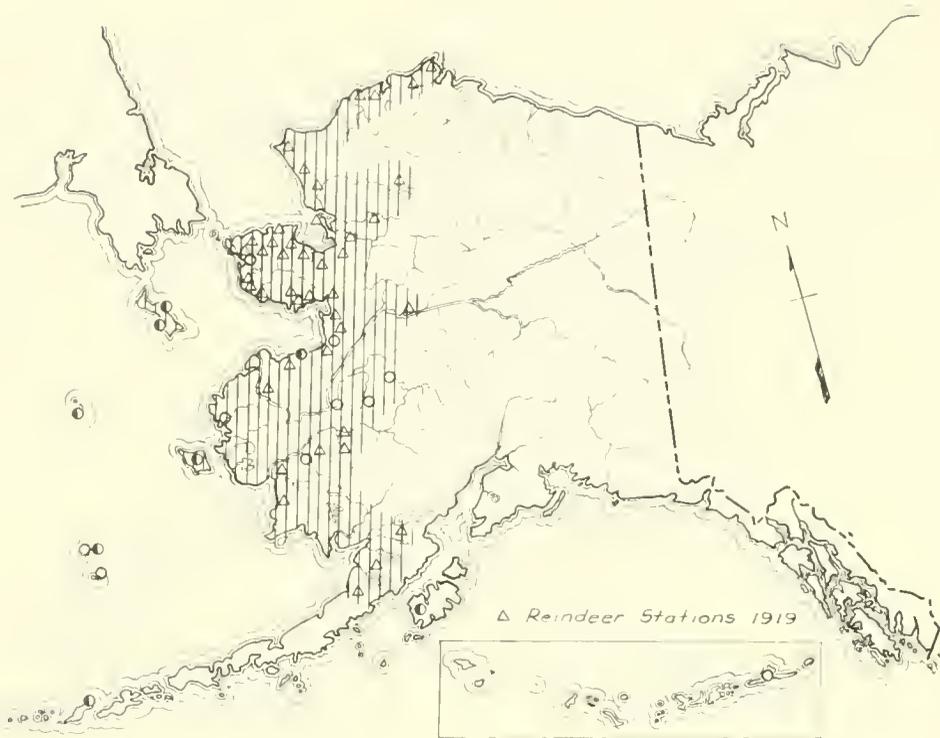
Races in Alaska.—The race *stonci* (type locality: Kenai Peninsula) occupies most of central and northern Alaska, but has disappeared on the Kenai Peninsula. The race *granti* (type locality: west end of Alaska Peninsula, opposite Popof Island) occupies the Alaska Peninsula and Unimak Island; it formerly occurred also on Unga and other islands near the type locality, and westward along the Bering seacoast.

Introduction.—In the summers of 1958 and 1959, a band of 23 calves from the Nelchina area east of Anchorage were taken to Adak Island. Bottled at first by a group of U.S. Marines, they survived and had increased to 36 in number in 1962.



REINDEER, *Rangifer tarandus*

(Conyik)



Range.—The reindeer, a relative of the native caribou, is an Old World form introduced into Alaska, where it occurs chiefly from Bristol Bay northward to Barrow.

Habitat.—Tundra areas, more so than caribou.

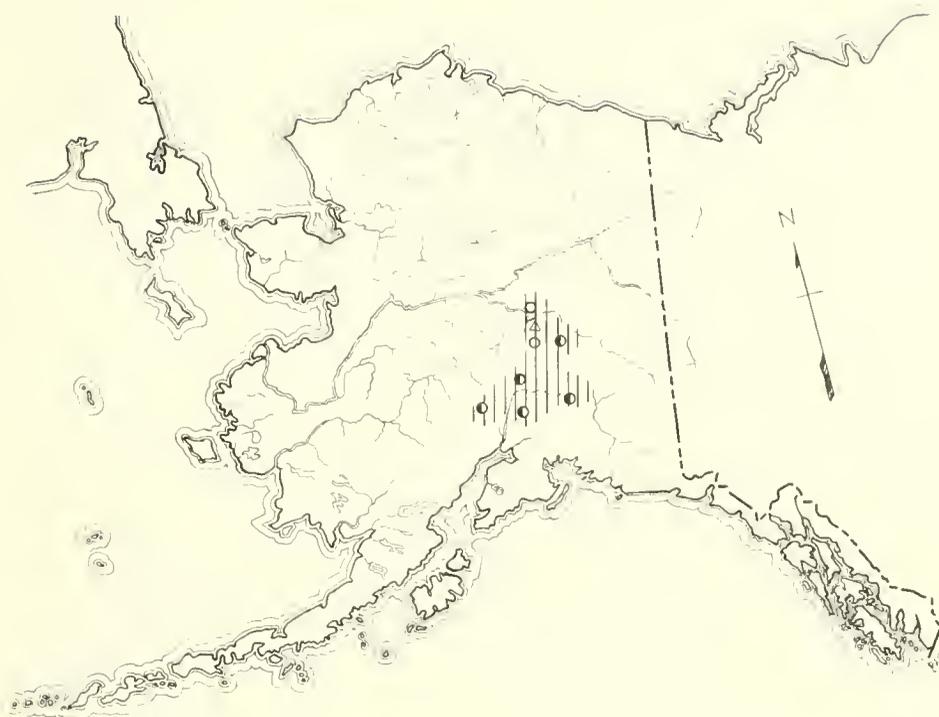
Form in Alaska.—There is not general agreement on the relationship between caribou and reindeer. A recent revision (Banfield, 1961) places them both in the species *Rangifer tarandus*. The introduced reindeer has been variously referred to *Rangifer arcticus asiaticus* and to *Rangifer tarandus sibiricus*.

Introduction.—To provide a dependable source

of meat, 1,280 semidomesticated reindeer from the Chukotsk Peninsula and the Gulf of Anadyr coast, Siberia, were transplanted to northwestern Alaska, mainly on the Seward Peninsula, from 1891 to 1902. They thrived at first, and increased to 600,000 by 1936, but then declined to about 25,000 in 1950. In 1929 the Canadian Government purchased about 2,400, the nucleus of the present herds near the Mackenzie and Anderson Rivers, and on Richards Island. Reindeer compete for food and space with the native caribou, with whom they also interbreed; they now appear to be established on the tundra from the south shore of Norton Sound (St. Michael) to Point Barrow, as well as on Atka, Kodiak, Nunivak, the Pribilofs, St. Lawrence, St. Matthew, and Umnak Islands. A total of 768 animals (130 of them calves) were tallied on Kodiak Island in 1963, most of them near the Olga Bay Narrows. In 1944, 29 animals were released on St. Matthew Island; they had increased to 1,350 by 1957; by 1963 they were estimated at approximately 6,000. This increased pressure on the range was evidenced by reduced lichen growth, dying back of willows, and adult reindeer weighing less and possessing practically no subcutaneous fat.



BISON, *Bison bison*



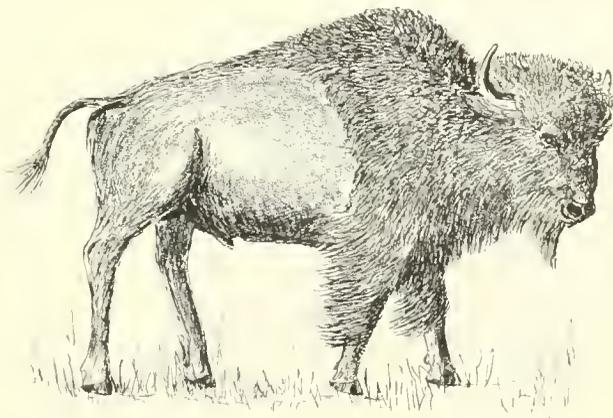
Range.—Formerly over much of North America north of Gulf of Mexico; now persists only in a few isolated herds, some in a semidomesticated condition.

Habitat.—Woodlands and grasslands, sometimes to elevations of 10,000 feet.

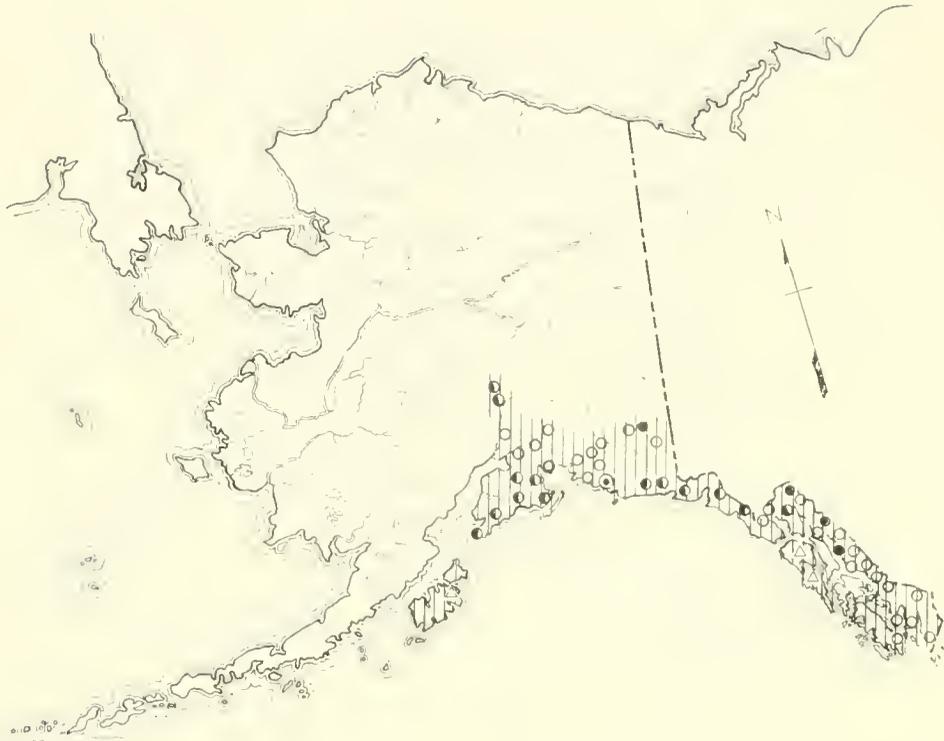
Races in Alaska.—The woodland bison, *B. b. athabascae*, perhaps once ranged as far west as the Seward Peninsula and Arctic Coast of Alaska (specimen from St. Michael, type of *occidentalis*), but is now absent in the State. The plains bison, *B. b. bison*, is the race now present in Alaska.

Introductions.—In 1928, 6 bulls and 17 cows from the National Bison Range in Montana were transplanted to the Big Delta section on the Tanana River about 90 miles southeast of Fairbanks. From the start they fared well, withstanding the most severe winter weather and increasing to a herd of 350 by 1953. There are now two principal herds established in interior Alaska. The Big Delta herd was estimated as 350, of which 12 percent were calves, in 1961; most of these frequent the Clearwater homestead area in the fall.

The Copper River herd in 1961 consisted of at least 50 animals; they had moved from their original placement site near Nabesna to the area from Copper Center to Chitina. A further transplant to the McCarthy area was made in the summer of 1962.



MOUNTAIN GOAT, *Oreamnos americanus*



Range.—Mountains of western North America, south to Oregon and central Idaho.

Habitat.—Cliffs and rocky slopes, usually above timberline in summer, but in winter occasionally down to sea level in timber.

Races in Alaska.—The race *kennedyi* (type locality: mountains at mouth of Copper River, opposite Kayak Island) ranges in the coastal mountains from the Kenai Peninsula to the Chugach and Talkeetna Mountains; the race *columbiae* has been recorded on the mainland of southeastern Alaska from Boca de Quadra and near the Taku River.

Introductions.—Goats from the vicinity of Juneau were introduced on Baranof Island in 1923, and became established there. Others were introduced on Chichagof Island, but it was not known by 1954 if they had become established. Still others were introduced on Kodiak Island about 1952; they have survived to the present but are not numerous.



MUSK OX, *Ovibos moschatus*
(Umikmak)



Range.—Arctic Coast and islands, formerly west to Point Barrow, Cape Dyer, and Kotzebue Sound; now largely restricted to arctic Canada and Greenland.

Habitat.—Tundra and well-vegetated open lands beyond the limit of trees, at or near sea level; in winter to barren uplands.

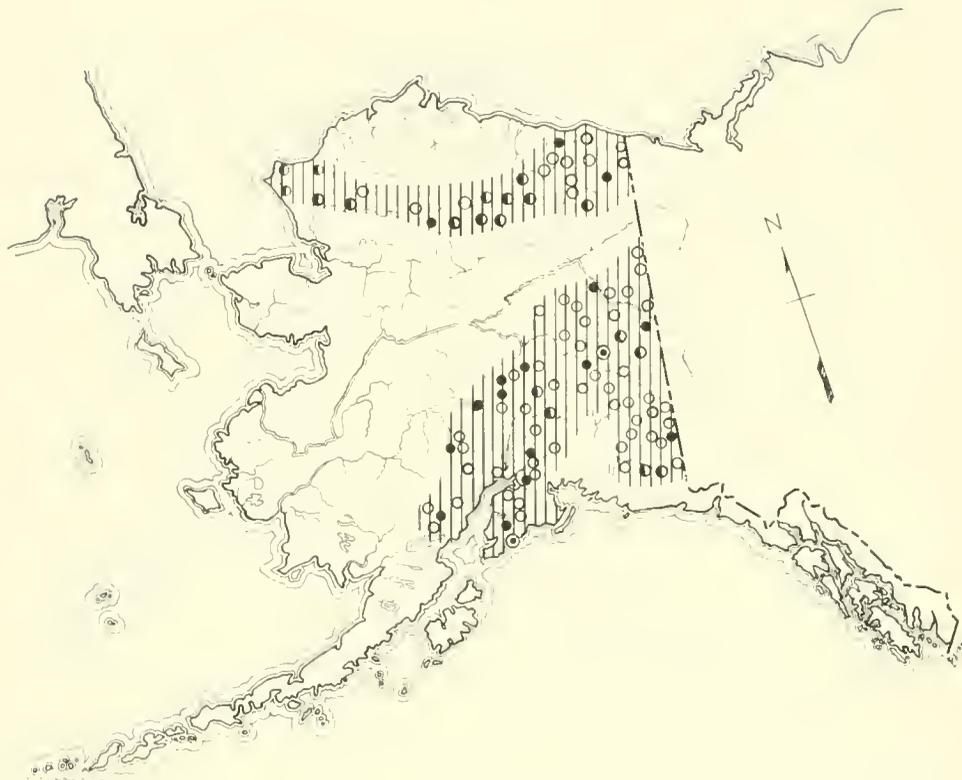
Races in Alaska.—The last musk ox native to Alaska, of the typical race *moschatus*, was believed killed west of Point Barrow in 1865. The herd now established on Nunivak Island is of the eastern race, *wardi*.

Introductions.—In 1930, a herd of 34 musk oxen captured in Greenland were brought to the vicinity of Fairbanks. The remaining 31 of this group were moved to Nunivak Island in 1935–36, where they increased, despite competition with the introduced reindeer. In 1960 the Nunivak herd numbered 256, including 57 calves; in March 1963 this herd numbered 360.



DALL SHEEP, *Ovis dalli*

(Imnaik)



Range.—Alaska, Yukon, and northern British Columbia.

Habitat.—Rugged, inaccessible mountainous areas, above timberline; at lower elevations in winter, but avoids any dense forest.

Races in Alaska.—Two races of the Alaska big-horn or white sheep occur in the State: the typical *dalli* (type locality: south of Fort Yukon on west bank of Yukon River; probably Tanana Hills) is widely distributed in proper habitat; *kenaiensis* (type locality: head of Sheep Creek, Kenai Peninsula) is apparently restricted to this peninsula.



SELECTED REFERENCES

The following list is restricted largely to titles of recent years and of general or historical interest. In the publications cited will be found many further references to the literature on Alaskan wildlife.

- BAILEY, ALFRED M., and RUSSELL W. HENDEE.
1926. Notes on the mammals of northwestern Alaska. *Journal of Mammalogy*, vol. 7, No. 1, p. 9-28.
- BAKER, ROLLIN H.
1951. Mammals taken along the Alaska Highway. University of Kansas Publications, Museum of Natural History, vol. 5, No. 9, p. 87-117.
- BANFIELD, A. W. F.
1961. A revision of the reindeer and caribou, genus *Rangifer*. National Museum of Canada, Bulletin 177, Biological Series No. 66. 137 p.
- BEE, JAMES W., and E. RAYMOND HALL.
1956. Mammals of northern Alaska—on the arctic slope. University of Kansas, Museum of Natural History, Miscellaneous Publication 8. 309 p.
- BUCKLEY, JOHN L.
1957. Wildlife in the economy of Alaska. *Biological Papers of the University of Alaska*, No. 1 (Revised), 33 p.
1958. The Pacific walrus. U.S. Fish and Wildlife Service, Special Scientific Report—Wildlife No. 41. 29 p.
- CLARK, AUSTIN H.
1945. Animal life of the Aleutian Islands. P. 31-61, 75-76. in *Smithsonian Institution, War Background Studies No. 21*. (Publication 3775).
- CLARK, W. KIM.
1958. The land mammals of the Kodiak Islands. *Journal of Mammalogy*, vol. 39, No. 4, p. 574-577.
- DICE, LEE RAYMOND.
1921. Notes on the mammals of interior Alaska. *Journal of Mammalogy*, vol. 2, No. 1, p. 20-28.
- DIXON, JOSEPH S.
1938. Birds and mammals of Mount McKinley National Park. National Park Service, Fauna Series No. 3. 236 p.
- DUFRESNE, FRANK.
1946. Alaska's animals and fishes. A. S. Barnes and Co., New York. 297 p.
- ELKINS, W. A., and URBAN C. NELSON.
1954. Wildlife introductions and transplants in Alaska. Presented at the Fifth Alaska Science Conference, Anchorage, Sept. 7-10. Mimeo., 21 p.
- GEIST, OTTO WILLIAM, JOHN L. BUCKLEY, and RICHARD H. MANVILLE.
1960. Alaskan records of the narwhal. *Journal of Mammalogy*, vol. 41, No. 2, p. 250-253.
- HAGMEIER, EDWIN M.
1956. Distribution of marten and fisher in North America. *Canadian Field-Naturalist*, vol. 70, No. 4, p. 149-168.
- HANNA, G. DALLAS.
1923. Rare mammals of the Pribilof Islands, Alaska. *Journal of Mammalogy*, vol. 4, No. 4, p. 209-215.
- HELLER, EDMUND.
1910. Mammals of the 1908 Alexander Alaska Expedition. University of California Publications in Zoology, vol. 5, No. 11, p. 321-360.
- HERBER, ELMER C.
1954. Spencer Fullerton Baird and the purchase of Alaska. *American Philosophical Society, Proceedings*, vol. 98, p. 139-143.
- JACKSON, HARTLEY H. T.
1958. The return of the vanishing musk oxen. *Smithsonian Institution, Annual Report for 1957*, p. 381-389 (Publication 4327).
- KENYON, KARL W.
1960. A ringed seal from the Pribilof Islands, Alaska. *Journal of Mammalogy*, vol. 41, No. 4, p. 520-521.
1960. The Pacific walrus. *Oryx*, vol. 5, p. 332-340.
1961. The sea otter in Alaska. *Alaska Sportsman*, vol. 27, No. 2 (February), p. 16-18.
1961. Cuvier beaked whales stranded in the Aleutian Islands. *Journal of Mammalogy*, vol. 42, No. 1, p. 71-76.
- KENYON, KARL W., and DALE W. RICE.
1961. Abundance and distribution of the Steller sea lion. *Journal of Mammalogy*, vol. 42, No. 2, p. 223-234.
- KENYON, KARL W., and VICTOR B. SCHEFFER.
1955. The seals, sea-lions, and sea otter of the Pacific Coast. U.S. Fish and Wildlife Service, Circular 32. 34 p.
- KENYON, KARL W., and DAVID L. SPENCER.
1960. Sea otter population and transplant studies in Alaska, 1959. U.S. Fish and Wildlife Service, Special Scientific Report—Wildlife No. 48. 29 p.
- KLEIN, DAVID R.
1959. Saint Matthew Island reindeer range study. U.S. Fish and Wildlife Service, Special Scientific Report—Wildlife No. 43. 48 p.
- KURTEN, B., and R. RAUSCH.
1959. Biometric comparisons between North American and European mammals. *Acta Arctica*, vol. 11, p. 1-44.
- LANTIS, MARGARET.
1950. The reindeer industry in Alaska. *Arctic*, vol. 3, No. 1, p. 27-44.
- LENSINK, CALVIN J.
1960. Status and distribution of sea otters in Alaska. *Journal of Mammalogy*, vol. 41, No. 2, p. 172-182.

- LEOPOLD, A. STARKER, and F. F. DARLINO.
1953. Wildlife in Alaska—an ecological reconnaissance. Ronald Press, New York. 129 p.
- LIBBY, WILBUR L.
1958. Records of the pika in the Tanana Hills, Alaska. *Journal of Mammalogy*, vol. 39, No. 3, p. 448-449.
1959. The distribution of some small mammals in eastern interior Alaska. *Journal of Mammalogy*, vol. 40, No. 4, p. 607-609.
- MACFARLANE, R.
1905. Notes on mammals collected and observed in the northern Mackenzie River district . . . U.S. National Museum, Proceedings, vol. 28, p. 673-764 (No. 1405).
- MILLER, GERRIT S., Jr., and REMINGTON KELLOGG.
1955. List of North American Recent mammals. U.S. National Museum, Bulletin 205. 954 p.
- MOSSMAN, ARCHIE S., and W. KIM CLARK.
1958. Winter records of bats in Alaska. *Journal of Mammalogy*, vol. 39, No. 4, p. 585.
- MURIE, ADOLPH.
1944. The wolves of Mount McKinley. National Park Service, Fauna Series No. 5. 238 p.
1961. A naturalist in Alaska. Devin-Adair Co., New York. 302 p.
1962. Mammals of Mount McKinley National Park. Mount McKinley Natural History Association. 56 p.
- MURIE, OLAUS J.
1935. Alaska-Yukon caribou. U.S. Bureau of Biological Survey, North American Fauna 54. 93 p.
1940. Wildlife introductions in Alaska. Transactions of the Fifth North American Wildlife Conference, p. 432-436.
1959. Fauna of the Aleutian Islands and Alaska Peninsula. U.S. Fish and Wildlife Service, North American Fauna 61. 406 p., illus.
- NELSON, EDWARD W.
1887. Natural history collections made in Alaska in the years 1877-1881. In the Arctic Series of publications. U.S. Army Signal Service, No. 3. 337 p. Washington, D.C.
- ORR, ROBERT T.
1945. A study of the *Clethrionomys dawsoni* group of red-backed mice. *Journal of Mammalogy*, vol. 26, No. 1, p. 67-74.
- OSGOOD, WILFRED H.
1909. Biological investigations in Alaska and Yukon Territory. U.S. Bureau of Biological Survey, North American Fauna 30. 96 p.
- PARADISO, JOHN L., and RICHARD H. MANVILLE.
1961. Taxonomic notes on the tundra vole (*Microtus oeconomus*) in Alaska. Biological Society of Washington, Proceedings, vol. 74, p. 77-92.
- PREBLE, EDWARD A., and W. L. MCATEE.
1923. A biological survey of the Pribilof Islands, Alaska; I, Birds and mammals. U.S. Bureau of Biological Survey, North American Fauna 46. 128 p.
- QUAY, W. B.
1951. Observations on mammals of the Seward Peninsula, Alaska. *Journal of Mammalogy*, vol. 32, No. 1, p. 88-99.
- RAUSCH, ROBERT L.
1951. Notes on the Nunamint Eskimo and mammals of the Anaktuvuk Pass region, Brooks Range, Alaska. *Arctic*, vol. 4, No. 3, p. 147-195.
1953. On the status of some Arctic mammals. *Arctic*, vol. 6, No. 2, p. 91-148.
1958. Some observations on rabies in Alaska, with special reference to wild Canidae. *Journal of Wildlife Management*, vol. 22, p. 246-260.
1961. Notes on the black bear, *Ursus americanus* Pallas, in Alaska, with particular reference to dentition and growth. *Zeitschrift fur Säugetierkunde*, vol. 26, No. 2, p. 1-31.
1963. Geographic variation in size in North American brown bears, *Ursus arctos* L., as indicated by condylobasal length. *Canadian Journal of Zoology*, vol. 41, No. 1, p. 33-45.
- RHODE, CLARENCE J., and WILL BARKER.
1953. Alaska's fish and wildlife. U.S. Fish and Wildlife Service, Circular 17. 60 p.
- SCHEFFER, VICTOR B.
1947. Raccoon transplanted in Alaska. *Journal of Wildlife Management*, vol. 12, p. 350-351.
- SHAW, JAMES H.
1962. The bushy-tailed wood rat in southeastern Alaska. *Journal of Mammalogy*, vol. 43, No. 3, p. 431-432.
- STRECKER, ROBERT L., FRED A. RYSER, WILLIAM J. TIETZ, and PETER R. MORRISON.
1952. Notes on mammals from Alaska. *Journal of Mammalogy*, vol. 33, No. 4, p. 476-480.
- TAYLOR, RAYMOND F., and ELBERT L. LITTLE, Jr.
1950. Pocket guide to Alaska trees. U.S. Forest Service, Agriculture Handbook 5. 63 p.
- WILLIAMS, HOWEL, editor.
1958. Landscapes of Alaska: their geologic evolution. University of California Press, Berkeley. 148 p.
- YOUNG, STANLEY P.
1943. The return of the musk ox. Smithsonian Institution, Annual Report for 1942, p. 317-322 (Publication 3720).

INDEX

- Alces alces*, 64.
Alopex lagopus, 40.
- Balaena mysticetus*, 37.
Balaenoptera acutorostrata, 37.
 borealis, 37.
 physalus, 37.
- bat, big brown, 13.
 California, 13.
 Keen's, 13.
 little brown, 13.
 long-legged, 13.
 silver-haired, 13.
- beaked whale. See whale.
- bear, black, 42.
 brown, 43.
 grizzly, 43.
 polar, 44.
- beaver, 22.
- beluga, 37.
- Berardius bairdi*, 37.
- bison, 67.
- Bison bison*, 67.
- blackfish, Pacific, 37.
- buffalo (= bison), 67.
- cachalot, 37.
- Callorhinus ursinus*, 54.
- Canis latrans*, 38.
 lupus, 39.
- caribou, barren ground, 65.
- Castor canadensis*, 22.
- Cervus canadensis*, 62.
- Citellus parryi*, 19.
- Clethrionomys gapperi*, 27.
 rutilus, 27.
- cony, 14.
- coyote, 38.
- deer, black-tailed, 63.
 mule, 63.
- deer mouse. See mouse.
- Delphinapterus leucas*, 37.
- Dicrostonyx exsul*, 24.
 groenlandicus, 24.
- dolphin, right-whale, 37.
- elk, American, 62.
- Enhydra lutris*, 52.
- Eptesicus fuscus*, 13.
- Erethizon dorsatum*, 36.
- ermine, 47.
- Erignathus barbatus*, 60.
- Eschrichtius glaucus*, 37.
- Eubalaena sieboldi*, 37.
- Eumetopias jubata*, 55.
- Eutamias minimus*, 20.
- fisher, 46.
- flying squirrel. See squirrel.
- fox, arctic, 40.
 blue (= arctic), 40.
 red, 41.
- fur seal. See seal.
- Glaucomys sabrinus*, 21.
- Globicephala scammoni*, 37.
- goat, mountain, 68.
- Grampus rectipinna*, 37.
- ground squirrel. See squirrel.
- Gulo gulo*, 50.
- hare, arctic, 15.
 snowshoe, 16.
 tundra, 15.
 varying, 16.
- Histiophoca fasciata*, 58.
- jumping mouse. See mouse.
- Lagomorhynchus obliquidens*, 37.
- Lasionycteris noctivagans*, 13.
- lemming, black-footed, 26.
 brown, 26.
 Greenland collared, 24.
 northern bog, 25.
 St. Lawrence Island, 24.
- Lemmus nigripes*, 26.
 trinucronatus, 26.
- Lepus americanus*, 16.
 othus, 15.
- lion, northern sea, 55.
 Steller sea, 55.
- Lissodelphis borealis*, 37.
- Lutra canadensis*, 51.
 mira, 51.
- lynx, 53.
- marmot, hoary, 18.
- Marmota caligata*, 18.
 monax, 17.
- marten, pine, 46.
- Martes americana*, 46.
 pennanti, 46.
- Megaptera novaeangliae*, 37.
- Mesoplodon stejnegeri*, 37.
- Microsorax hoyi*, 12.
- Microtus abbreviatus*, 32.
 coronarius, 29.
 longicaudus, 29.
 miurus, 32.
 oeconomus, 31.
 pennsylvanicus, 28.
 ranthognathus, 30.
- mink, 49.
- Mirounga angustirostris*, 61.
- Monodon monoceros*, 37.
- moose, 64.
- mouse, deer, 23.
 house, 34.
 meadow jumping, 35.
 Sitka, 23.
 western jumping, 35.
- Mus musculus*, 34.
- musk ox. See ox.
- muskrat, 33.
- Mustela erminea*, 47.
 rixosa, 48.
 vison, 49.
- Myotis californicus*, 13.
 keeni, 13.
 lucifugus, 13.
 volans, 13.
- narwhal, 37.
- Neotoma cinerea*, 23.
- Ochotona collaris*, 14.
- Odobenus rosmarus*, 56.
- Odocoileus hemionus*, 63.
- Ondatra zibethicus*, 33.
- Oreamnos americanus*, 68.
- otter, river, 51.
 sea, 52.
- Ovibos moschatus*, 69.
- Ovis dalli*, 70.
- ox, musk, 69.

- Peromyscus maniculatus*, 23.
sitkensis, 23.
- Phoca vitulina*, 57.
- Phocoena vomerina*, 37.
- Phocoenoides dalli*, 37.
- Physeter catodon*, 37.
- pika, 14.
- porcupine, 36.
- porpoise, harbor, 37.
 Pacific striped, 37.
- Procyon lotor*, 45.
- Pusa hispida*, 53.
- raccoon, 45.
- Rangifer arcticus*, 65.
tarandus, 66.
- rat, bushy-tailed wood, 23.
 Norway, 34.
- Rattus norvegicus*, 34.
- red-backed vole. See vole.
- reindeer, 66.
- rorqual, 37.
- seal, Alaska fur, 54.
 bearded, 60.
 elephant, 61.
 hair, 57, 59.
 harbor, 57.
 ribbon, 58.
 ringed, 59.
 spotted, 57.
- sea lion. See lion.
- sea otter. See otter.
- sheep, Dall, 70.
- shrew, Alaska water, 11.
 common, 8.
- shrew, dusky, 10.
 masked, 8.
 northern water, 11.
 pigmy, 12.
 Pribilof, 9.
 St. Lawrence Island, 9.
 tundra, 9.
 Unalaska, 9.
- Sibbaldus musculus*, 37.
- Sorex alaskanus*, 11.
cinereus, 8.
hydrodromus, 9.
jacksoni, 9.
obscurus, 10.
palustris, 11.
pribilofensis, 9.
tundrensis, 9.
- sperm whale. See whale.
- squirrel, Arctic ground, 19.
 northern flying, 21.
 red, 20.
- Synaptomys borealis*, 25.
- Tamiasciurus hudsonicus*, 20.
- Thalarctos maritimus*, 44.
- Ursus americanus*, 42.
arctos, 43.
- vole, Alaska, 32.
 boreal red-backed, 27.
 Coronation Island, 29.
 insular, 32.
 long-tailed, 29.
 meadow, 28.
 singing, 32.
- vole, tundra, 31.
 tundra red-backed, 27.
 yellow-cheeked, 30.
- Vulpes fulva*, 41.
- walrus, Pacific, 56.
- wapiti, 62.
- water shrew. See shrew.
- weasel, least, 48.
 short-tailed, 47.
- whale, Baird beaked, 37.
 blue, 37.
 bowhead, 37.
 Cuvier beaked, 37.
 finback, 37.
 gray, 37.
 humpback, 37.
 little piked, 37.
 Pacific killer, 37.
 Pacific right, 37.
 sei, 37.
 sperm, 37.
 Stejneger beaked, 37.
 sulfur-bottom, 37.
 white, 37.
- white whale. See whale.
- wolf, gray, 38.
- wolverine, 50.
- woodehuck, 17.
- wood rat. See rat.
- Zapus hudsonius*, 35.
princeps, 35.
- Ziphius cavirostris*, 37.

MBL WHOI Library - Serials



5 WHSE 00241

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
WASHINGTON, D.C. 20240

MARINE BIOLOGICAL LABORATORY
LIBRARY
135 WOODS HOLE MASS

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF THE INTERIOR