



NOAA Technical Memorandum NMFS-AFSC-127

Annotated Bibliography of the Bowhead Whale, *Balaena mysticetus*, 1767-1983

by
W. M. Marquette

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center

April 2002

NOAA Technical Memorandum NMFS

The National Marine Fisheries Service's Alaska Fisheries Science Center uses the NOAA Technical Memorandum series to issue informal scientific and technical publications when complete formal review and editorial processing are not appropriate or feasible. Documents within this series reflect sound professional work and may be referenced in the formal scientific and technical literature.

The NMFS-AFSC Technical Memorandum series of the Alaska Fisheries Science Center continues the NMFS-F/NWC series established in 1970 by the Northwest Fisheries Center. The new NMFS-NWFSC series will be used by the Northwest Fisheries Science Center.

This document should be cited as follows:

Marquette, W. M. 2002. Annotated bibliography of the bowhead whale, *Balaena mysticetus*, 1767-1983. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-127, 326 p.

Reference in this document to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA.



NOAA Technical Memorandum NMFS-AFSC-127

Annotated Bibliography of the Bowhead Whale, *Balaena mysticetus*, 1767-1983

by
W. M. Marquette
National Marine Mammal Laboratory, retired

Alaska Fisheries Science Center
7600 Sand Point Way N.E.
Seattle, WA 98115
www.afsc.noaa.gov

U.S. DEPARTMENT OF COMMERCE

Donald L. Evans, Secretary

National Oceanic and Atmospheric Administration

Scott B. Gudes, Acting Under Secretary and Administrator

National Marine Fisheries Service

William T. Hogarth, Assistant Administrator for Fisheries

April 2002

This document is available to the public through:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

www.ntis.gov

Notice to Users of this Document

In the process of converting the original printed document into Adobe Acrobat .PDF format, slight differences in formatting can occur; page numbers in the .PDF may not match the original printed document; and some characters or symbols may not translate.

This document is being made available in .PDF format for the convenience of users; however, the accuracy and correctness of the document can only be certified as was presented in the original hard copy format.

CONTENTS

Introduction	iii
Scope	iii
Acknowledgement	v
Index to Keyword categories	vi
Abbreviations used in text	viii
References	1
Index	325

Introduction

The bowhead whale, *Balaena mysticetus*, is now an endangered species following an intensive commercial fishery for this cetacean for about 300 years, first in the North Atlantic Arctic from 1610 to 1910, then in the North Pacific Arctic from 1848 to 1910. The intensive annual hunt by hundreds of whaling vessels reduced the estimated residual bowhead population in the North Atlantic Ocean to a few hundred animals and that in the North Pacific Ocean to one or two thousand.

Because of the precarious status of the bowhead, beginning in 1972 the Scientific Committee of the International Whaling Commission (IWC) expressed concern about the lack of information on the status of the western Arctic bowhead, especially because of the continuing annual harvest by Alaskan Eskimos for subsistence and cultural purposes. The IWC was specifically concerned by the lack of information on population abundance, on the size of and trends in the subsistence harvest, and on the number of whales which were struck and lost during the hunt. As part of a research program begun in 1973 by the National Marine Mammal Laboratory, an extensive search of the literature was conducted to obtain information needed by scientists studying the natural history and historical record of the shore-based whaling effort and catch for this endangered species. References on commercial whaling also were collected. The results of the literature search are presented here as an annotated bibliography of selected references on the bowhead whale covering the period of 1767 to 1983.

Scope

The principal objective of this bibliography is to reference early day sources generally not familiar to or readily available by the public. The list is not comprehensive because of constraints on time, travel and funds. Many of the references cited were written by first-hand observers and therefore present original and unique observations on the natural history and behavior of bowhead whales. Additionally, references were selected from as broad a range of sources as possible to provide a survey of the various disciplines containing information on the bowhead. Also, since it was desirable to present a wide range of articles, it was not practical to list a complete series for each (e.g., a list of works by each author). Lastly, because of the increasing tempo of research conducted by numerous principals beginning in

the late 1970s, which was accompanied by a plethora of literature, the bibliography does not include articles produced beyond 1983.

Because so few publications dealing specifically with the natural history of bowheads have been produced in past years, it has been necessary to examine a multitude of articles of diverse origins and topics to compile fragments of information useful to the various ongoing studies of this cetacean. Some examples of written material containing information on bowheads includes letters, diaries, journals, logbooks, school newspapers, newspapers, church records, miscellaneous reports, periodicals, books and scientific papers, published and unpublished. The subject content in these references ranges from a single statement to a general discussion of whales and whaling. The references concentrate primarily on bowhead whales and whaling in the western Arctic (Bering, Okhotsk, Chukchi and Beaufort Seas), but several from other regions of the Arctic also have been included.

This compilation of selected references chronicles the beginning and ending of the commercial fishery for bowhead whales in the western Arctic from the early 1840s to about 1910. This fishery was so intense that in a mere 50 years the bowhead population, estimated to originally number between 10,000 to 20,000 whales, was reduced nearly to extinction.

This bibliography also provides a collection of references from diverse sources on Eskimo whaling for bowhead whales. Important information collected includes data on whaling locations, seasons, numbers of crews, whaling gear used, numbers of whales captured and for those struck but lost or killed and lost. Also, information was noted on whale products obtained and how they were utilized by the natives.

Several references pertaining to ethnological studies of Eskimos during the period also have been noted. Many references reveal how seriously the natives were impacted, both culturally and in their subsistence patterns, by the severe reduction of the bowhead population by commercial whaling. Some references may be anecdotal in nature but they provide insight into the complicated Eskimo culture during an important time when outsiders (whalemen, explorers, missionaries, etc.) began to exert considerable influence upon this previously isolated population. Sources of this information may be located and expanded upon by exploring those noted in the acknowledgement section of this publication.

Information in some references occasionally has been cited verbatim because of the uniqueness of content or method of presentation, some of which may require a bit of interpretation by the reader. Also, since Eskimos did not have a written language until modern times, early day authors used phonetic spelling for native words, a practice that resulted in a variety of spellings for the same subjects. Additionally, an anonymous author category has been avoided when possible in favor of designating the publisher as the author to expedite location of such material.

The reader should be aware that numerous colloquial names have been given to bowhead whales and caution is required when reading some accounts, especially for references to "right whale(s)" or "whale(s)". The term right whale generally was used by whalemen to denote the bowhead because of its abundant oil and baleen, it was relatively timid and easy to kill, and it usually floated when dead so it was the right whale to kill.

In conclusion, the annotations in this bibliography reflects only that information which the articles contain on bowhead whales, they do not necessarily represent a complete summary of the reference. To reiterate, the information presented herein includes only that on the

natural history of bowhead whales and data on the whale fishery by both natives and commercial whalers for this species, with emphasis on early day literature.

Acknowledgements

I am deeply grateful to Jeffrey M. Breiwick for his enthusiasm and technical assistance with this publication, and to Douglas P. DeMaster for his advice, both of whom have made it possible for me to bring this bibliography to fruition. I also wish to thank Roger Pearson who gave initial guidance for the format, and to Leola Hietala whose conscientious support in all phases of the writing is sincerely appreciated. Thanks also are due to Paul Macy and Sherry Pearson (Smrstik), former librarian, National Marine Mammal Laboratory, for providing assistance with the Russian literature. Thanks are also due to Gary Duker and staff, Publications Unit editors, for their generous support and advice in finalizing this bibliography.

I also wish to express my gratitude to the staff of various institutions for the assistance given to me. In Seattle, Washington: Pat Cook, librarian, Northwest and Alaska Fisheries Science Center Library, and Sonja Kromann, librarian, National Marine Mammal Laboratory, Alaska Fisheries Science Center; the libraries and archives sections at the University of Washington (Suzallo, Fisheries-Oceanography Library and School of Medicine), and the U.S. National Archives and Records Administration. In Edmonds, Washington: Marty Loken and Sharon Samples, Northwest and Alaska Publishing Company (now located at Anchorage, Alaska). In Juneau, Alaska: James W. Brooks, Regional Office, National Marine Fisheries Service; Verda Carey, Alaska State Library. In Fairbanks, Alaska: Marvin Falk, library and archive section, University of Alaska. In Barrow, Alaska: Lizbeth Langston, librarian, Naval Arctic Research Laboratory (now closed, library at University of Alaska, Fairbanks).

Special thanks go to Clifford H. Fiscus, Robert V. Miller, Dale W. Rice, and Allan A. Wolman, National Marine Mammal Laboratory, Seattle, Washington, for making publications in their private libraries available for my use during the preparation of this bibliography.

During the assembly phase of this bibliography several individuals generously provided assistance and also are due thanks: T. F. Albert, J. R. Bockstoce, H. W. Braham, J. J. Burns, G. Carroll, S. V. Cuccarese, M. E. Dahlheim, R. B. Dronenburg, F. E. Durham, C. D. Evans, F. H. Fay, M. A. Fraker, R. M. Gilmore, G. Y. Harry, Jr., G. H. Jarrell, C. J. Keim, I. I. Krupnik, J. S. Leatherwood, D. K. Ljungblad, L. F. Lowry, F. A. Milan, E. D. Mitchell, G. Mueller, R. K. Nelson, D. J. Rugh, G. A. Seaman, S. Stoker and M. F. Tillman. In the event I neglected to include the name(s) of anyone that assisted me in this endeavor, my sincere apologies for the oversight.

Index to KEYWORD Categories

ANTHROPOLOGY

Alaskan Eskimos, nutrition, culture

ARCHAEOLOGY

Artifacts (also see Field & Laboratory Techniques: museums, and Whaling: gear).

BEHAVIOR

Acoustics, swimming, respiration (or respiratory), breaching, communication, vocalization, hearing, diving, maternal, ice breaking, reactions, parasite removal, interaction with whaling boat, pursued, migration – home range, movements, timing, patterns, segregated, schooling, sightings, relationship with other species (animals)

BIBLIOGRAPHY

Authors of, subject matter, biographical

DISTRIBUTION

Former and present – sightings, carcasses, specimens, factors affecting, limiting and changing, differential, habitat, oil exploration effects, history – affecting

ETHNOLOGY

FIELD & LABORATORY TECHNIQUES

Age determination

census – aerial, vessel, counting stations

devices – tracing, activity recording, acoustics, photography

experimental techniques

field recognition – characteristic signs of activity, coloration, scars, voice

marking and tagging – marks, tags, radio tags

measurement – data recording, physical and chemical properties

miscellaneous – specimens collected

museums – artifacts, baleen, skeletal parts

GROWTH

Length, periodic, maximum attained, age

IDENTITY

Description

Nomenclature – common and scientific, names, *ingutuk*, Eskimo names

Races or subspecies – genetics, karyotyping

Taxonomy – classifications, systematics

MORPHOLOGY (Form and structure without regard to function)

Measurements – body, parts, estimated weight

Anatomy – histology, comparative serology, cytomorphology, chromosomes-no., etc.

Structure – baleen, skeleton, coloration

NUTRITION

Food

Feeding behavior

Feeding ground

PATHOLOGY

Abnormality

Disease

Injuries – scars, wounds

Parasites

Pollution – effects

PHYSIOLOGY (functions and vital processes)

Alimentary – digestion & absorption, blood & lymphatic

Endocrines

Excretory

Integument – skin, glands

Metabolism and diving

Muscle

- Nerve
- Receptors
- Respiratory
- Thermoregulation

POPULATION

- Abundance & density – status, numbers observed
- Age composition
- Age dynamics
- Recruitment – theory, calculated, calf counts
- Sex ratios – sex of whales caught
- Size composition – calves, young, adult (or small, medium, large)
- Mortality
 - Natural – entrapment in ice, strandings (and utilization by people, etc.)
 - Whaling – struck/lost, killed/lost, stinkers, numbers of whales captured, entrapped in nets

PREDATORS & COMPETITORS

- Scavenging

REGULATION & CONSERVATION

- Conservation – Greenpeace, etc.
- Legislation
- Management – quotas for harvest
- Regulation – Acts, Treaties, Governments, Eskimo self-regulation
- Research agencies

REPRODUCTION

- Anatomy
- Embryology
- Fecundity
- Gestation
- Lactation
- Mating & fertilization
- Maturation
- Parturition
- Periodicity – seasonal and timing
- Sex ratio (see Population)
- Aberrant phenomena

SKELETAL REMAINS (Also see Archaeology, Field & Laboratory Techniques, Morphology)

- Beachcast
- Utilization (also see: Whaling: utilization)

WHALING

- History
- Geographical areas:
 - Western Arctic = Bering, Chukchi, Beaufort, Okhotsk, East Siberian, Laptev
 - Eastern Arctic = Atlantic, Barents, Kara
- Gear – boats, floats, weapons, cost, tools
- Native – crews, techniques, costs
- Shore stations
- Catch – statistics on whales caught, oil, baleen products, recorded by Eskimos
- Film, photographs & drawings – whales, equipment
- Utilization – food, houses, implements, fuel, illumination, trade, products (oil, baleen, bones, etc.), arts & crafts, alternate food sources

Abbreviations used in text

AACS	Army Alaska Communications System
ADF&G	Alaska Department of Fish and Game
AEWC	Alaska Eskimo Whaling Commission
ArCon	Advanced Research Consultants
ARL	Arctic Research Laboratory
AVEC	Alaska Village Electric Cooperative
BLM	Bureau of Land Management
DNA	Deoxyribonucleic acid
DNR	Department of Natural Resources (Alaska)
EDF	Environmental Defense Fund
FAO	Food and Agriculture Organization (United Nations)
ICAS	Inupiat Community of the Arctic Slope
ICC	Inuit Circumpolar Conference
IWC	International Whaling Commission
MMD	Marine Mammal Division
NARL	Naval Arctic Research Laboratory
NMFS	National Marine Fisheries Service
NMML	National Marine Mammal Laboratory
NOAA	National Oceanic and Atmospheric Administration
NSB	North Slope Borough
OCS	Outer Continental Shelf
OCSEAP	Outer Continental Shelf Environmental Assessment Program
RNA	Ribonucleic acid
SDARL	Science Director, Arctic Research Laboratory
TLUI	Traditional Land Use Inventory
USC	University of Southern California
USCGC	United States Coast Guard Cutter

References

ABBOTT, JEANNE (Anchorage Daily News).

1978. U.S. bowhead regulations up for review. *Tundra Times*, Fairbanks, AK, Mar. 15, 15(11):16.

Summarizes the imposition of regulations on the Alaskan Eskimo hunt for bowhead whales by the International Whaling Commission and the U.S. government. The village allocation during 1978 is: Kaktovik, one whale landed or two struck, whichever occurs first; Nuiqsut, 1-2; Barrow, 3-3; Wainwright, 2-2; Point Hope, 2-2; Kivalina, 1-2; Gambell, 1-2; Savoonga, 1-2; Wales, zero. Federal officials said the Eskimo Whaling Commission was instrumental in helping develop the regulations.

WESTERN ARCTIC
REGULATION & CONSERVATION-management, regulation; WHALING-western Arctic, native.

ABDELBAKI, Y. Z., W. G. HENK, J. T. HALDIMAN, R. W HENRY, F. K. AL-BAGDADI, and D. W. DUFFIELD.

1980. Morphology of the kidney of the bowhead whale (*Balaena mysticetus*) of Alaska. (Abstr.) *Am. Zool.* 20(4):963.

"The gross, subgross, light and electron microscopic morphology of chunks of kidney from 6 Eskimo harvested bowheads is being studied. Preliminary findings show that the bowhead kidney, as that of other cetaceans, is highly lobulated. The reniculus range from 8.3-14.1 mm in diameter. On the other hand, it is different from those of other cetaceans as follows: 1) the reniculus are each almost completely invested with relatively thick peritoneal coverings with an extensive layer of areolar CT, 2) two renal papillae may share one calyx, 3) the intrarenicular spota muscularis does not contain any muscle fibers, and 4) extensive branching large diameter and thin walled veins course along side renicular arteries and ureteral branches. This results in complete investment of these structures by veins. It is hoped that the significance of these comparative findings will be understood after more detailed studies are completed." (From author's abstract.)

WESTERN ARCTIC
MORPHOLOGY-anatomy.

ABEGGLEN, CARL E.

1977. Sea mammals: resources and population. *In* Melvin L. Merritt and R. Glen Fuller (editors), *The environment of Amchitka Island, Alaska*, p. 493-510. U.S. Energy Res. Dev. Admin., Div. Mil. Appl. Available U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA 22161, as TID-26712.

Archaeological and historic data on animal populations indicate that the species formerly present were the same as those present today. The bowhead whale is extremely rare in the Aleutians. Bowheads (p. 505) spend the winter in the loose southern edge of pack ice, which usually extends across the central Bering Sea from Kuskokwim Bay to the northern shores of Kamchatka Peninsula.

WESTERN ARCTIC
DISTRIBUTION-Bering Sea, winter.

ACHICHA, JIMMY No. 1.

1910. Business letters from two Eskimos. The Nome Daily Nugget, Nome, Alaska. December 21, 11(7):4.

In a letter to a business associate in Nome, the writer, a Point Hope resident, stated "Cape Simpy people killed two big whales this fall." [No other information included on the location, which may be Cape Simpson, east of Barrow, since whales were taken during the fall.]

WESTERN ARCTIC
POPULATION-mortality, whaling; WHALING-Chukchi Sea, Beaufort Sea, native, catch.

ACOUSTICAL SOCIETY OF AMERICA.

1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980. Unpub. rep. by Acoust. Soc. Am., [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723. 84 p.

Results of workshop convened at request of the Alaska Eskimo Whaling Commission to assess the state of knowledge of the effects of man-made noise and vibration on Arctic marine wildlife, and to recommend a research plan to provide the information required for assessing potential environmental impacts. Subject groups consisted of Biology and Bioacoustics; Arctic Environment, Engineering, and Acoustics; and Conservation Policies and Programs. Biological information on the bowhead whale is summarized (p. 6-7), but the frequency range of maximum acoustic sensitivity for the species is not known (p. 21). Appendix 2 contains abstracts (11 refer specifically to bowheads) of invited and contributed presentations by individuals.

WESTERN ARCTIC
BEHAVIOR-migration, acoustics; DISTRIBUTION-present, Bering, Chukchi, Beaufort Seas, sightings; FIELD & LABORATORY TECHNIQUES-acoustics; MORPHOLOGY-length at sexual maturity and birth; NUTRITION-food; REPRODUCTION-mating, gestation, birth, lactation, reproductive cycle, sexual maturity; WHALING-native, Bering, Chukchi, Beaufort Seas.

ADAMS, JACOB.

1979. The IWC and bowhead whaling: An Eskimo perspective. Orca 1(1):11-12.

Adams, a 31-year old Inupiat Eskimo resident of Barrow, Alaska, Chairman of the Alaska Eskimo Whaling Commission (AEWC) and a whaling captain, reviews the dilemma facing the Eskimos who favor continuation of their subsistence and cultural hunt for the bowhead whale as opposed to concerns by the International Whaling Commission (IWC) and the United States Government for the preservation of the bowhead population. The U.S. proposal at the 1978 meeting of the IWC to limit the harvest level at 2% of the population estimate was rejected by the IWC, voting instead to grant the Eskimos 18 whales for 1979 (and 2 additional whales for 1978), less than two-thirds of the Eskimo declared needs for subsistence. The AEWC subsequently filed an objection to the IWC action and for the Fall hunt and for 1979 the Eskimo whalers will ignore the IWC limits and proceed as follows:

- 1.They will continue to engage in their own research on the bowhead whale;
- 2.Hunting methods and subsistence need limits will be established under AEWC management;
- 3.The United States regulations implementing the IWC quota will be ignored; and
- 4.The jurisdiction of the IWC over bowhead whaling by Alaskan Eskimos will be challenged in court.

WESTERN ARCTIC
POPULATION-abundance, recruitment; REGULATION & CONSERVATION-management, quotas; WHALING-western Arctic, native, crews, catch, utilization.

ADAMS, MARIE, and RAY DRONENBURG.

1980. Why not the gray whale? Substitution would affect nutrition, food chain. *Arct. Coastal Zone Manage. Newsl.* 30:9-11.

Responding to present day pressures by external sources, article temporarily presents the position of the Alaska Eskimo Whaling Commission regarding the substitution of gray whales for bowheads as recommended by Storro-Patterson report (1980). Authors state importance of the bowhead whale to Eskimo culture, religion and nutrition, and how timing of the migration fits into an intricate annual pattern of subsistence for the people. A number of dietary studies exist on the value of bowhead whales in the Eskimo diet but no such studies are available at this time for gray whales. Also, all available evidence indicates that gray whale products are not generally acceptable to the natives, much waste accompanies the harvest of these animals, and hunting of these whales would result in an unreliable source of food because of their erratic appearance off whaling villages and would also severely disrupt normal subsistence activities. Finally, grays are not hunted by Eskimos unless bowhead hunting fails for some reason and hunger dictates a need for meat.

WESTERN ARCTIC

BEHAVIOR—migrating, timing, relationship with gray whales; DISTRIBUTION—Factors affecting; FIELD & LABORATORY TECHNIQUES—census; POPULATION—mortality, whaling; WHALING—Bering Sea, Chukchi Sea, Beaufort Sea, native, catch, utilization, alternate food sources.

ADAMS, RALPH T.

1966. Sailing north for whalebone. *Alaska Sportsman* 32(7):10-13.

Describes commercial whaling for bowhead whales in the arctic waters of Alaska and the eastern Beaufort Sea during the period 1848 to 1915. The largest catch made by American whaling vessels during this period occurred between 1893-1895 when the *Narwhal* took 69 whales, the *Balaena* caught 67, and the *Beluga* captured 64. Totaling 200 whales with a value of \$1,800,000, each whale was worth \$9,000 on the market.

WESTERN ARCTIC

DISTRIBUTION—Chukchi Sea, Beaufort Sea; MORPHOLOGY—measurements, jaws, baleen; NUTRITION—food and feeding; WHALING—commercial, Chukchi and Beaufort Seas, gear, crews, catch, photographs, utilization.

AGER, THOMAS.

1982. Raven's works. *In* William W. Fitzhugh and Susan A. Kaplan, *Inua: spirit world of the Bering Sea Eskimos*, p. 39-56. *Natl. Mus. Nat. Hist.*, Smithsonian Inst. Press, Washington, D.C.

A description of the geology, flora and fauna of Beringia including Eskimo tales recorded by E. W. Nelson (1887) that recounted past experiences and events of the area. Tables 13 through 16 present the land and marine mammals, fish, birds, and edible plants utilized by the Eskimos of the Yukon-Kuskowim Delta-Norton Sound Region; the tables list the common name, genus and species, and Eskimo name for each. Nelson reported that the bowhead whale, *Balaena mysticetus*, was called arveq by the Eskimo (p. 47). The animal resources available to hunters in western Alaska and eastern Siberia and the seasonal food cycle of these resources are presented in figures 19 and 20 on pages 50-51. "The village of Wales, located at Bering Strait, specializes in hunting large sea mammals, often including whales (although none were caught in 1972.)".(p. 56)

WESTERN ARCTIC

DISTRIBUTION; WHALING—western Arctic, native, catch, utilization.

AINLEY, DAVID G., GARY W. PAGE, LISA T. JONES, LYNNE E. STENZEL, and RONALD L. LEVALLEY; drawings by HELEN C. STRONG.

1980. Beached marine birds and mammals of the North American West Coast: A manual for their census and identification. U.S. Dep. Inter., Fish Wildl. Serv., Biol. Serv. Program, Washington, D.C., FWS/OBS-80/03. 207 p.

Key to marine mammals, including bowhead (pp. 168, 180, 190). Skull narrow and long, a regular semicircular arch; head about one-third of total body length; mouth slit arch-shaped; upper margin of lower lip bordered by a smooth curved line, without scallop like outgrowths; no outgrowth on upper side of snout, between its tip and the blowhole; average number of baleen plates 330 per side, length in the middle of the jaw up to 3.5 m, black in color. Occurs in association with sea ice in the Arctic Ocean and Bering Sea. It reaches a maximum length of 21 m.

WESTERN ARCTIC

DISTRIBUTION—western Arctic Ocean and Bering Sea; FIELD & LABORATORY TECHNIQUES—field recognition;

MORPHOLOGY—baleen count, measurement.

AIRAPET'YANTS, E. SH., and A. I. KONSTANTINOV.

1970. Ekholokatsiya v prirode (Echolocation in animals). Izd. "Nauka," Leningrad. In Russian. (Translated by Isr. Program Sci. Transl., 1973, 309 p., avail. U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA., as TT72-50012.)

Reviews existing knowledge of echolocation in animals, including cetaceans (chapters 13-17) and pinnipedia (chapter 18). Contains information that the swimming speed of bowheads is 7-8 km/hr. (p. 219) and when diving they can stay down for 60 minutes and even longer (p. 221). Sounds produced by the bowhead have been recorded by Schevill and Watkins (1962)(p. 235). Also contains an extensive bibliography.

CIRCUMPOLAR

BEHAVIOR—acoustics, diving, swimming; BIBLIOGRAPHY—acoustics; IDENTITY—drawing.

ALASKA AIRLINES PRIVATE LINE.

1980. Eskimos look toward alternative food sources. Alaska Airlines Private Line, Bus. News 7(7):3.

Alaska's Bureau of Indian Affairs is providing approximately \$90,000 to the Inupiat Community of the Arctic Slope (ICAS), the regional Indian Reorganization Act Council, to fund a one year project aimed at finding alternative food resources. So far the money has gone to purchase a 40-ft. fishing vessel which will be based at Pt. Barrow with crew members from various villages. Goal of the project, funded by an Indian Self-Determination and Education Assistance Act grant, is to explore the Beaufort and Chukchi Seas for king crab, bottomfish and clams to supplement the bowhead whale. The whale has been the mainstay of the Eskimo diet for centuries. Current international agreements limit the number of whales which can be slaughtered yearly. (From Alaska Airlines Private Line).

WESTERN ARCTIC

WHALING—western Arctic, native, utilization, alternate food sources.

ALASKA AIRLINES PRIVATE LINE.

1982. Whales studied. Alaska Airlines Private Line, Bus. News, Dec., [vol. and no. omitted], p. 4.

"The petroleum industry and the state of Alaska have recently released the results of a bowhead whale study completed last summer which shows that the western Arctic bowhead population is at least 60 percent larger than previously believed. The three-month aerial study conducted by LGL Ltd. of Toronto, Canada, estimated a maximum of 3,850 animals, more than 1,500 higher than the 2,300 listed by the National Marine Fisheries Service. Since bowheads are considered a rare and endangered species under both U.S. and international standards, the study directly affects many groups who hunt the whales for subsistence and the oil and gas industry, which is interested in offshore exploration."

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—census, aerial; POPULATION—abundance.

ALASKA COASTAL MANAGEMENT PROGRAM.

1981. Cultural resources in the mid-Beaufort Sea region, a report for the North Slope Borough's coastal zone management plan, 114 p. North Slope Borough, Anchorage, Alaska.

Report is a continuation of efforts by the North Slope Borough to identify, preserve, and manage the historical and cultural resources in the American Arctic. Using the oral data collected by the Borough's Commission on History and Culture as a base, former residents accompanied scientists to make on-site determinations for as many cultural sites as possible. The first part of the report is an article by D. Libbey on cultural resource site identification, and the second part is on cultural resource site potential by E. S. Hall Jr. Bowhead whaling sites, catches, whale bones and whaling artifacts are located and discussed.

WESTERN ARCTIC
ARCHAEOLOGY—artifacts; DISTRIBUTION—former and present; MORPHOLOGY—measurements; REPRODUCTION—calf; SKELETAL REMAINS; WHALING—history, western Arctic, Beaufort Sea, native, catch, gear, photographs, utilization.

ALASKA CONSERVATION REVIEW.

1977. Bowhead hunting stopped. Alaska Conserv. Rev., Summer 1977, p. 8-9.

Discusses implications of the United States decision not to object to the International Whaling Commission ban on bowhead whaling by Alaskan Eskimos. Article is accompanied by two photographs from the files of the Alaska Department of Fish and Game showing (1) an Eskimo boat and crew close to a bowhead whale that either has just been shot or is about to be shot by a darting or shoulder gun and (2) Eskimos beginning to cut up a landed bowhead whale. Unfortunately, no additional information accompanies the photographs.

WESTERN ARCTIC
REGULATION & CONSERVATION—management; WHALING—western Arctic, native, gear, catch, photographs (unidentified).

ALASKA ESKIMO WHALING COMMISSION.

1978. Report to the Alaska Eskimo whaling captains by the Alaska Eskimo Whaling Commission. Alaska Eskimo Whaling Commission, Barrow, Alaska. Various pagination [23 p.]. Mimeographed. [Unpublished]

The Commission presents a management plan and self-regulation proposals for bowhead subsistence hunting in 1978 in reference to International Whaling Commission resolutions and U.S. government regulations.

WESTERN ARCTIC
REGULATIONS & CONSERVATION—Regulation, management; WHALING—western Arctic, natives.

ALASKA ESKIMO WHALING COMMISSION.

1981. Report on the fall 1981 bowhead whale hunt. Unpub. rep. by Alaska Eskimo Whaling Commn. to the Administrator, Natl. Ocean. Atmos. Admin., Dep. Commer. Washington, D.C., December, 5 p.

This unpublished report, prepared by the AEWG in compliance with the March 26, 1981 Cooperative Agreement between NOAA and the AEWG, supplements the report on the spring hunt submitted in July 1981. Fourteen whales were landed and 11 struck but lost during the spring hunt. Five strikes were available to the three fall whaling villages - three for Kaktovik, one for Nuiqsut, and Barrow had one strike remaining from its spring and fall allocation of 10. During the fall hunt Kaktovik used three strikes and landed all three whales; one each on September 8, 11 and 22, 1981.

WESTERN ARCTIC
REGULATIONS & CONSERVATION—management, regulation; WHALING—western Arctic, Chukchi and Beaufort Seas, native, catch.

ALASKA FEDERATION OF NATIVES.

n.d. Native Alaska: Deadline for justice. Alaska Federation of Natives, Anchorage. 16 p.

Contains two photographs by Howard Rock of bowhead whaling by Eskimos. One photo shows whaling crew near boat on ice and dead whale in water alongside ice; second photo shows whalers pulling whale up on ice with block and tackle.

WESTERN ARCTIC
WHALING—western Arctic, native, catch, gear; PHOTOGRAPHS—dead bowhead, whalers.

ALASKA FISHERMAN'S JOURNAL.

1977. Eskimos vs. federal marshals? Alaska Fisherman's J., 1(1):19.

Briefly reviews the dilemma facing Alaskan Eskimos and the United States Government when the International Whaling Commission rescinded its outright ban on the native subsistence hunt for bowhead whales and decided on December 7 to limit the Eskimos to 12 whales killed or 18 struck. In 1976 and 1977 the harvests were 48 and 29, respectively. The IWC and others are concerned over the high number of whales that are struck and lost, as in 1976 when 48 were harvested but an additional 35 were struck and lost and more were killed and lost. The natives cannot ignore the very real concern for the bowhead whale, and the government should not support or enforce quotas which are below the Eskimo's nutritional needs unless supported by hard data on the whale stocks. Present information on the numbers of bowheads is not sufficiently accurate to justify the present 12 whale quota.

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost, killed and lost; REGULATION & CONSERVATION—management, quotas; WHALING—western Arctic, native, catch.

ALASKA GEOGRAPHIC.

1978. Alaska whales and whaling. Alaska Geogr., vol. 5, no. 4, 144 p.

Describes the distribution, behavior and physical characteristics of the 15 major species of whales, including the bowhead (p. 63-67), that occur in Alaskan waters. Contains information on the history of both commercial and Eskimo whaling for bowhead whales including modern day hunting for this species by Alaskan natives. Illustrated profusely with excellent photographs and drawings.

WESTERN ARCTIC
BEHAVIOR—swimming, diving, migration; DISTRIBUTION—former and present; IDENTITY—description, nomenclature, *ingutuk*; MORPHOLOGY—measurements, body, color, baleen; NUTRITION—food and feeding; POPULATION—abundance, mortality, whaling; REPRODUCTION—mating; WHALING—Bering Sea, Okhotsk Sea, Chukchi Sea, Beaufort Sea, history, commercial, native, gear, shore stations, catch, photographs and drawings, utilization.

ALASKA MAGAZINE.

1970a. From Ketchikan to Barrow (News items): The first whale kill of the season at Barrow... Alaska 36(8):26.

A 55-foot bowhead was first whale kill of the season at Barrow, Alaska, in early May. By early May, Point Hope whalers were reported to have taken four bowheads.

WESTERN ARCTIC
WHALING–Native, western Arctic, Chukchi Sea, catch.

ALASKA MAGAZINE.

1970b. From Ketchikan to Barrow (News items): “Much muktuk” was the word... Alaska 36(9):A1.

“‘Much muktuk’ was the word flashed along Alaska’s arctic coast in early June as Barrow whalers harvested 16 whales and Point Hope hunters added eight more to the season’s catch.”

WESTERN ARCTIC
WHALING–western Arctic, Chukchi Sea, native, catch.

ALASKA MAGAZINE.

1974a. Photograph. Alaska 40(4):40-41.

(Photograph caption). “Success flag flying and red float marking quarry, four skin boats of Luther Leavitt’s whaling crew tow a 20-ton bowhead whale to Barrow.”

WESTERN ARCTIC
WHALING–western Arctic, Chukchi Sea, native, crew, gear, catch, photograph.

ALASKA MAGAZINE.

1974b. Alaska-Yukon Magazine (News items): Gambell. Alaska 40(7):A12.

Measuring 40 feet, a bowhead whale was taken here on April 26 by Allen Kulukhon, who captained a skin boat with a two-man crew.

WESTERN ARCTIC
WHALING–western Arctic, Bering Sea, native, crews, catch.

ALASKA MAGAZINE.

1974c. Alaska-Yukon Magazine (News items): Barrow-Biologists spotted 82 bowhead whales... Alaska 40(12):A2.

Biologists flying over the Beaufort and Chukchi Seas in September spotted 82 bowhead whales in a single flight. Sighting of more than 40 in a 24-hour period is unusual.

WESTERN ARCTIC
POPULATION–abundance; DISTRIBUTION–sightings, western Arctic, Chukchi Sea, Beaufort Sea.

ALASKA MAGAZINE.

1975a. These whales are found in Alaska. Alaska 41(2):30-31.

Brief descriptions of whales found in Alaska, with outline drawings of each. Notes that in 1974, two bowheads were taken by Eskimos from Gambell (St. Lawrence Island), Alaska; seven by Point Hope crews; one from Wainwright; and six by Eskimo crews from Barrow. A seventh was sighted as a dead whale at Barrow but could not be retrieved.

WESTERN ARCTIC

POPULATION—Mortality, killed and lost; WHALING—western Arctic, Bering Sea, Chukchi Sea, natives, whale drawings, catch.

ALASKA MAGAZINE.

1975b. From Ketchikan to Barrow (News items): First whales on Alaska's arctic coast... Alaska 41(7):22.

Eskimo whalers killed first bowhead of season at Point Hope, Alaska, on April 23, and another was taken a few days later. Whalers at Gambell, St. Lawrence Island, shot two whales in April but lost both.

WESTERN ARCTIC

POPULATION—Mortality, struck and lost; WHALING—western Arctic, Bering Sea, Chukchi Sea, natives, catch.

ALASKA MAGAZINE.

1975c. Photograph. Alaska 41(8):A14.

A photograph by Mike Dalton of the Fairbanks Daily News-Miner with the caption: "Eskimo whalers at Barrow had taken 10 of the huge mammals [bowhead whales] by the end of May. Twenty camps were set up on the edge of the Arctic ice pack near Barrow. This camp scene was photographed in mid-May 2 miles out on the ice from the Naval Arctic Research Laboratory at Barrow."

WESTERN ARCTIC

WHALING—Chukchi Sea, native, catch, crews, gear, photograph.

ALASKA MAGAZINE.

1975d. The Alaska Sportsman (News items): Better deal for whales. Alaska 41(11):25.

International Whaling Commission quotas for whales have been reduced by 20% for 1976. Alaskan Eskimos, allowed to kill bowheads for subsistence, harvested 10 whales in spring 1975 at Barrow, 4 at Point Hope; and 1 on St. Lawrence Island. Total catch was 15 compared to 17 for the same period in 1974.

WESTERN ARCTIC

WHALING—western Arctic, Bering Sea, Chukchi Sea, natives, catch.

ALASKA MAGAZINE.

1976. The Alaska Sportsman (News items): Bowhead whale harvest. Alaska 42(10):37.

Alaskan Eskimos in spring 1976 harvested 8 bowhead whales at St. Lawrence Island, 12 at Point Hope, 3 at Wainwright, and 13 at Barrow for a total of 36. The 1975 kill was 15, and in 1974 it was 20.

WESTERN ARCTIC

WHALING—western Arctic, Bering Sea, Chukchi Sea, natives, catch.

ALASKA MAGAZINE.

1977a. From Ketchikan to Barrow (News items): Photograph. Alaska 43(6):10.

(Photograph caption) "A whaleboat purchased from Alaskan Eskimos is maneuvered into the Whaling Museum in New Bedford, Massachusetts. It is one of two found on racks in the Arctic and purchased for the museum. One of the boats is believed to have come from the steam whaling bark *Balaena*, which went aground and broke up in the Bering Strait in 1901. The boat is on display at the museum through September 6 as part of a "Steam Whaling in the Western Arctic" exhibit."

WESTERN ARCTIC
WHALING—western Arctic, commercial, native, gear, photograph.

ALASKA MAGAZINE.

1977b. From Ketchikan to Barrow (News items): Scientists were expected to resume counting bowhead and beluga whales. Alaska 43(6):16.

"Scientists were expected to resume counting bowhead and beluga whales in the Arctic this spring as part of a continuing study of the effects of offshore oil development. The project, begun last spring by the National Oceanic and Atmospheric Administration, counted 1,300 belugas and more than 350 bowheads in the spring of 1976."

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—census.

ALASKA MAGAZINE.

1977c. From Ketchikan to Barrow (News items): Natives took more bowhead whales. Alaska 43(6):18.

"Natives took more bowhead whales last season than in any since the hunts were first tallied in 1850. Hunters along the Arctic and Bering Sea coasts took 48 of the endangered whales. Meat from four whales was reported wasted at Barrow, but an official of the National Marine Fisheries Service said the spoilage was not deliberate. The official said whalers got too far from shore and when they ran into rough weather on the way back, the meat began to spoil even before the whales were landed.

Bowheads have been protected from commercial harvest since 1946 and biologists believe there are only about 1,500 to 3,000 left worldwide. Subsistence hunting is all that has been allowed."

WESTERN ARCTIC
POPULATION—abundance; WHALING—western Arctic, native, catch, utilization.

ALASKA MAGAZINE.

1977d. The Alaska Sportsman (News items): Alaska's Eskimo hunters killed 48 bowhead whales. Alaska 43(6):71, 73.

"Alaska's Eskimo hunters killed 48 bowhead whales, an endangered species, during 1976, state and federal marine mammal biologists reported last March. It was the largest kill of bowheads in a single year by Eskimo hunters since records have been kept, about 1850.

Bowheads have been protected from commercial whalers since 1947, but the International Whaling Commission permits Natives to take bowheads for subsistence.

However, the meat of four bowheads killed at Barrow last fall spoiled before it could be cut up, according to Dr. George Harry of the National Marine Fisheries Service.

Of the 48 bowheads taken, 23 were killed at Barrow, and marine biologists think that for every whale killed by Eskimo hunters, 3 to 5 are struck by harpoons but escape, although not all die.

An estimated 1,500 to 3,000 bowheads are left worldwide, mostly in the Bering Sea and the Arctic Ocean. Bowheads average about 30 feet in length, and weigh about a ton a foot."

WESTERN ARCTIC

POPULATION—abundance, mortality, struck and lost; WHALING—western Arctic, native, catch, utilization.

ALASKA MAGAZINE.

1977e. The Alaska Sportsman (News items): Unusually good whale hunting... Alaska 43(8):16.

Alaskan Eskimos of Wainwright, Point Hope, Barrow, Gambell and Kivalina had unusually good hunting by early June 1977, with 26 bowhead whales killed and retrieved. Another 73 were struck but not recovered. Two decades ago the average annual take was about 10 but it is now 23. In 1976, 48 were taken, highest total since early 1900s.

WESTERN ARCTIC

POPULATION—mortality, struck & lost; WHALING—western Arctic, Bering Sea, Chukchi Sea, natives, catch.

ALASKA MAGAZINE.

1977f. Six bowhead whales in the Arctic. Alaska 43(9):52-53.

(Photograph caption) "Aerial photograph taken during early May flight over the Beaufort Sea, 17 miles east of Barrow, Alaska, shows six bowhead whales engaged in mating activity. Aspects of reproductive behavior are clearly evident."

WESTERN ARCTIC

BEHAVIOR; DISTRIBUTION—Beaufort Sea; REPRODUCTION—mating, photograph.

ALASKA MAGAZINE.

1977g. From Ketchikan to Barrow (News items): Bowhead whales were sighted...Alaska 43(10):43-44.

Bowhead whales were sighted in the Mackenzie River estuary in 1976, first in 5 years, by a survey firm. As many as 45 were seen in a single day during August and September. Total sightings were almost 90.

WESTERN ARCTIC

DISTRIBUTION—sightings, Beaufort Sea; POPULATION—abundance, density.

ALASKA MAGAZINE.

1977h. From Ketchikan to Barrow (News items): Eskimos: "We will hunt the bowhead whale." Alaska 43(12):34-35.

A complex political/environmental battle over Eskimo bowhead whale hunting --- forbidden by the International Whaling Commission last June --- will continue this month in Tokyo. After several court appearances regarding whether the U.S. would or would not object to the ban, the government was allowed to remain silent, thus implementing the ban. Eskimo whalers, stunned by the June IWC moratorium, formed the Alaska Eskimo Whaling Commission and announced that the hunt would continue. A review of events leading up to the December 6-7 meeting of the IWC in Tokyo is presented.

WESTERN ARCTIC
REGULATION & CONSERVATION--regulation, management; WHALING--western Arctic, native.

ALASKA MAGAZINE.

1978a. Letters, Notes and Comments: Letter to Lael Morgan from Craig Van Note. Alaska 44(1):12-13.

Letter from Craig Van Note, Monitor, to Lael Morgan of Alaska Magazine, inquired whether her photograph on p. 11, Alaska, September 1977, showed an Eskimo aiming a rifle or shoulder gun at a bowhead whale from the ice edge. Van Note, during testimony on September 8, 1977 before U.S. Department of Commerce, cited the photograph as an example of the Eskimo's wasteful hunting. Text of Van Note's testimony is included.

WESTERN ARCTIC
REGULATION & CONSERVATION--Monitor; WHALING--western Arctic, Chukchi Sea, native, weapons.

ALASKA MAGAZINE.

1978b. From Ketchikan to Barrow (News items): The International Whaling Commission in early December... Alaska 44(2):33.

The International Whaling Commission in early December 1977 set a yearly quota of 18 bowhead whales struck, or 12 landed, for Eskimo hunters in Alaska, after earlier banning bowhead hunting. Alaskan Eskimos said 12 whales were half the nutritional need for people of 8 villages, and they would not abide by the decision.

WESTERN ARCTIC
REGULATION & CONSERVATION--regulation, legislation; WHALING--utilization, drawings.

ALASKA MAGAZINE.

1978c. From Ketchikan to Barrow (News items): The Alaska Eskimo Whaling Commission... Alaska 44(3):32.

The Alaska Eskimo Whaling Commission plan for management of bowhead hunting is outlined.

WESTERN ARCTIC
REGULATION & CONSERVATION--regulation, management; WHALING--western Arctic, natives.

ALASKA MAGAZINE.

1978d. From Ketchikan to Barrow (News items): One cup of whale flesh meets nutritional needs... Alaska 44(3):32-33.

Alaska's Cooperative Extension Service reports one cup of whale flesh meets nutritional needs for 1 day in protein, riboflavin, niacin and iron. One-half cup gives U.S. recommended daily allowance (RDA) of iron. A 3-1/2 ounce serving provides 50% of the RDA of riboflavin and 40% of the RDA of both protein and niacin. Muktuk, a high energy food, provides some protein, vitamin A, thiamine and niacin.

WESTERN ARCTIC
WHALING—Utilization, food.

ALASKA MAGAZINE.

1978e. From Ketchikan to Barrow (News items): Eskimo whalers voted in January to abide... Alaska 44(4):24.

The Alaska Eskimo Whaling Commission (AEWC) voted in January to abide by the International Whaling Commission quota of 12 whales landed or 18 struck. The AEWC also assigned quotas to eight whaling villages. They claim the bowhead population is actually higher than estimate of between 680-1300.

WESTERN ARCTIC
POPULATION—abundance & density; REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, natives.

ALASKA MAGAZINE.

1978f. From Ketchikan to Barrow (News items): Whaling regulations calling for \$100 license... Alaska 44(5):33-34.

The U.S. Department of Commerce in March proposed whaling regulations calling for \$100 license fees for captains and \$10,000 fines for violations. Village limits on bowhead whales, matching those of the Alaska Eskimo Whaling Commission, also were set.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, natives.

ALASKA MAGAZINE.

1978g. Point Hope Eskimos slice sections off the flipper of a bowhead whale (Photograph). Alaska 44(5):45.

Natives, who prize the flipper as one of the more tasty parts of the whale, cut strips of flipper composed of equal amounts of skin and blubber to eat raw. In the barrels are mikiaq, meat from the body of the whale fermented in blood.

WESTERN ARCTIC
WHALING—Western Arctic, native utilization, food.

ALASKA MAGAZINE.

1978h. The students who went whaling. *Alaska* 44(5):A30-A32.

Five students from Kodiak, Alaska, visited Point Hope whaling camps in spring 1977 and describe briefly their experiences and whaling activities observed. The first whale taken this spring at Point Hope was a 29-footer, captured by Billy Weber and his crew a couple of days before the students arrived there on May 3. Another whale was taken a day after they departed [approximately May 14]. Other whaling captains identified were Henry Nashukpuk, Elijah Rock, and Joe Tawksjhea.

WESTERN ARCTIC

POPULATION—mortality, whaling; WHALING—Chukchi sea, native, catch, crews, gear, photographs, utilization.

ALASKA MAGAZINE.

1978i. From Ketchikan to Barrow (News items): Eskimos of Gambell and Savoonga on Saint Lawrence Island took two bowhead whales... *Alaska* 44(6):34.

After a late start due to heavy ice conditions and a mid-April storm, the first two whales of the 1978 season were landed by whalers at Gambell and Savoonga. The whalers also wanted to wait until the larger whales reached the island; the migration of younger, smaller whales had passed the Bering Sea island in March. Both villages were granted quotas of one whale struck or one landed each under village quotas set by the Alaska Eskimo Whaling Commission and the U.S. Department of Commerce.

WESTERN ARCTIC

BEHAVIOR—migration, segregation, timing; POPULATION—mortality, whaling; REGULATIONS & CONSERVATION—management, quotas; WHALING—Bering Sea, native, catch.

ALASKA MAGAZINE.

1978j. From Ketchikan to Barrow (News items): By mid-May Eskimo whalers.... *Alaska* 44(7):34,36.

By mid-May Eskimo whalers had taken nine bowhead whales during the first season under an International Whaling Commission quota of 12 taken or 18 struck. Barrow whalers, allowed only three bowheads under the quota, took four, and an argument developed with National Marine Fisheries Service officials over whether the whales were bowheads or what the Eskimo call *ingutuq*. Other villages that successfully landed whales included Gambell (1), Savoonga (1), Point Hope (2), and Wainwright (1). Additionally, two whales at Gambell and one at Point Hope were struck and lost. At Wainwright, a 2-foot fetus was discovered in the 53-foot, 6-inch female landed there. It was the fourth fetus known to have been taken from a pregnant bowhead. Two years ago Barrow whalers removed a 7-foot [sic] fetus from a whale and in the late 1960s a 5-inch and a 10-inch fetus were found. A census crew at Barrow reported 500 bowheads sighted by May 7, and during the same period an Eskimo crew reported an additional 200 whales. Estimates of the bowhead population range from 600 to 3,000. The lack of an accurate count is partially responsible for the implementation of the quota.

WESTERN ARCTIC

FIELD & LABORATORY TECHNIQUES—census; IDENTITY—nomenclature, *ingutuq*; REPRODUCTION—fetuses; WHALING—western Arctic, native, catch, photographs.

ALASKA MAGAZINE.

1978k. From Ketchikan to Barrow (News items): Specimens from a whale Barrow Eskimos call *ingutuk* were sent to a laboratory... Alaska 44(8):54-55.

"Specimens from a whale Barrow Eskimos call *ingutuk* were sent to a laboratory to determine if the animal is a different species from the bowhead. Barrow whalers took four whales last spring, one over the quota set by the U.S. Department of Commerce, but they claimed two of the whales were *ingutuk*, not bowheads. A statement from the North Slope Borough said the whales were black right whales and not covered by the quota."

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—specimens; IDENTITY—nomenclature, Eskimo, *ingutuk*;— POPULATION—mortality, whaling; REGULATION & CONSERVATION—management, quotas; WHALING—Chukchi Sea, native, catch.

ALASKA MAGAZINE.

1978l. From Ketchikan to Barrow (News items): Eskimo whalers will be allowed to... Alaska 44(9):26.

The International Whaling Commission in June granted an increase of two bowhead whales to Alaskan Eskimo whalers in 1978 and increased the 1979 quota to 18 whales taken or 27 struck. Eskimos had requested 37 killed or 45 struck based on scientist's beliefs that 2% harvest of estimated population of 2,264 (1,700 were counted in spring migration) would not harm the population.

WESTERN ARCTIC
POPULATION—Abundance & density; REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, native.

ALASKA MAGAZINE.

1978m. From Ketchikan to Barrow (News items): Nineteenth century whalers in the North Pacific and Arctic Oceans... Alaska 44(11):20,22.

Early whalers in the Arctic Oceans reported three different kinds of black whales, today collectively called "right whales": A large black whale resembling the right whale (*Eubalaena glacialis*); a "great polar (or ice) whale"; and the bowhead (*Balaena mysticetus*). Early whalers and Eskimos recognized the 'ice whale' as smaller and distinct from the bowhead and called it Poggy, Inito, Inyuto, Inutok, or today's term *Ingutuk*. Dr. Floyd Durham, reviewing morphological characteristics of the *Ingutuk* and bowhead, concluded the evidence seems overwhelmingly in favor of continuing to recognize *Balaena mysticetus* as a monotypic species. (Reprinted from Northwest and Alaska Fisheries Center Monthly Report, May 1978; National Marine Fisheries Service, Seattle, WA).

WESTERN ARCTIC
IDENTITY—Nomenclature.

ALASKA MAGAZINE.

1978n. From Ketchikan to Barrow (News items): Barrow whalers... Alaska 44(11):24.

Eskimo whalers at Barrow, Alaska, planned to begin a fall bowhead hunt to satisfy nutritional needs of the community despite a prohibition by the government. Villagers at Nuiqsut and Kaktovik were allowed one whale each during the fall hunt because ice conditions in spring prevent them from whaling. The National Marine Fisheries Service would not interfere with the banned hunt but would turn information on whales killed over to the Justice Department.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, Beaufort Sea, natives.

ALASKA MAGAZINE.

1978o. From Ketchikan to Barrow (News items): In mid-September the state postponed... Alaska 44(11):53.

The State of Alaska in mid-September postponed indefinitely an oil lease sale in the Point Thompson-Flaxman Island Area of the North Slope. One of five main reasons was that Eskimos and the Greenpeace Foundation opposed the sale for fear oil activity and possible drilling accidents would harm wildlife stocks, including bowhead whales.

WESTERN ARCTIC
REGULATION & CONSERVATION—conservation, management, Beaufort Sea.

ALASKA MAGAZINE.

1978p. From Ketchikan to Barrow (News items): Eskimo whalers at Kaktovik took two bowhead whales... Alaska 44(12):22.

Eskimo whalers at Kaktovik, Alaska, killed two bowhead whales during the fall migration, but winds and ice conditions prevented Barrow and Nuiqsut crews from hunting. By early October the total was 12 for the year, although the International Whaling Commission had set a quota of 14.

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, natives, catch.

ALASKA MAGAZINE.

1978q. From Ketchikan to Barrow (News items): Photograph. Alaska 44(12):24.

(Photograph caption) "North Slope School District employees Steve Mello and Stuart Johnson swam near a bowhead whale in the Arctic Ocean off Barrow. While the whale wouldn't let them approach too close, they got close enough to be tumbled around in the wake of the flukes."

WESTERN ARCTIC
BEHAVIOR—reaction to humans, photograph.

ALASKA MAGAZINE.

1979a. From Ketchikan to Barrow (News items): A planned gravel island for an offshore oil well ... Alaska 45(1):65.

Eskimos of Barrow, Alaska, and villages of Nuiqsut and Kaktovik sued the Exxon Oil Company, the U.S. Army Corps of Engineers, and the Alaska Department of Natural Resources claiming a planned gravel island for an offshore oil well near Duck Island in the Beaufort Sea threatens to alter bowhead migrations, and the company and agencies had not filed an environmental impact statement.

WESTERN ARCTIC
REGULATION & CONSERVATION—conservation, management, Beaufort Sea.

ALASKA MAGAZINE.

1979b. From Ketchikan to Barrow (News items): Eskimo whalers lost a round in their court battle... Alaska 45(3):27.

Alaskan Eskimo whalers, who had sought an injunction against a quota of 18 bowhead whales set by the International Whaling Commission in 1979, had their challenge dismissed by a federal district court judge in January.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, natives.

ALASKA MAGAZINE.

1979c. From Ketchikan to Barrow (News items): Bowhead quotas for Alaska's whaling villages... Alaska 45(4):36. (From Fairbanks Daily News-Miner)

Bowhead quotas for Alaska's whaling villages were proposed by the National Marine Fishery [sic] Service (NMFS) in January and Eskimo whalers quickly reiterated their vow to ignore the quotas, which were a refinement of the 18 whales landed or 27 struck allowed by the International Whaling Commission. Village quotas set by the NMFS are: Gambell, 2 landed or 3 struck; Savoonga, 2/3; Wales, 1/1; Kivalina, 1/2; Point Hope, 2/3; Wainwright, 2/3; Barrow, 5/7; Kaktovik, 2/3; and Nuiqsut, 1/3. The NMFS also proposed regulations prohibiting killing a calf or whale with a calf, setting license-registration procedures and setting penalties for violators. Eben Hopson, North Slope Borough mayor and outspoken critic of the quotas, stated whalers would ignore the quotas and regulations, particularly the struck-and-lost provision. He said whalers would stick to their own quota of 2% of the known whale population, which, according to various reports, is estimated at less than 3,000.

WESTERN ARCTIC
POPULATION—abundance; REGULATION & CONSERVATION—regulation; WHALING—western Arctic, native, photograph.

ALASKA MAGAZINE, with photographs by BILL BACON.

1979d. The long wait: Eskimo spring bowhead whaling. Alaska 45(6):6-8.

Brief article on Eskimo subsistence whaling based upon photographs taken by Bacon over a 30 year period. One photograph shows a dead bowhead floating alongside the ice edge preparatory to being pulled up on the ice for butchering (no identification of village or year.); another shows two old brass shoulder guns; and a photograph of the nulakatuk celebration shows two flags but neither can be identified.

WESTERN ARCTIC
WHALING—Bering, Chukchi Seas, native, catch (unidentified), gear, photographs.

ALASKA MAGAZINE.

1979e. From Ketchikan to Barrow (News items): Saint Lawrence Islanders were at sea in mid-April searching for the first bowhead whales of the season. Alaska 45(6):26.

Although no whales had been taken by April 13, the U.S. Coast Guard cutter *Polar Sea* reported seeing bowheads 50 miles south of the island. The vessel with a group of scientists aboard was cruising the Bering Sea in an effort to obtain data on the population of bowhead whales. Others were working out of Barrow for the same purpose. More accurate figures on the population are needed for better management of the Eskimo take of whales, a matter of some disagreement between scientists and the hunters. Twelve whales were taken last year under a quota extended to 14 after the season began. Barrow whalers were unsuccessful during their fall hunt last year.

WESTERN ARCTIC
BEHAVIOR—migration, timing; DISTRIBUTION—sightings; FIELD & LABORATORY TECHNIQUES—census, vessel, stations; POPULATION—mortality, whaling; REGULATIONS & CONSERVATION—management, quotas; WHALING—Bering, Chukchi & Beaufort Seas, native, catch.

ALASKA MAGAZINE.

1979f. From Ketchikan to Barrow (News items): Whalers at Point Hope had taken three bowheads by mid-May... Alaska 45(7):22.

Eskimo whalers at Point Hope, Alaska, had taken three bowheads by mid-May 1979, the only three taken on the northwest Alaska coast in the spring hunt to that time. The catch violated the village quota of two set by the National Marine Fisheries Service under the Alaska quota of 18 established by the International Whaling Commission. The Alaska Eskimo Whaling Commission, however, intends intentionally to ignore the IWC quota and take 2% of the estimated population of about 2,300 bowheads.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, natives, catch.

ALASKA MAGAZINE.

1979g. From Ketchikan to Barrow (News items): By early June Eskimo whalers... Alaska 45(8):22.

By early June Eskimo whalers had taken seven bowheads: three at Barrow, one at Wainwright, and three at Point Hope. At Barrow, the William Kaleak crew took the first, a 27-footer. Horace Ashogeak and Burton Rexford took the other two. One bowhead was taken at Wainwright by two crews in combination captained by Fred Ahmoagak and Andrew Ekakh. Hunters at Gambell took a gray whale.

WESTERN ARCTIC
WHALING—western Arctic, Bering Sea, Chukchi Sea, natives, crews, catch, photograph.

ALASKA MAGAZINE.

1979h. From Ketchikan to Barrow (News items): Commercial whaling would be stopped... Alaska 45(9):22,24.

Alaskan Eskimos did not fill the bowhead quota allowed in spring 1979 because of ice conditions. Three were taken at Point Hope and three at Point Barrow. An article is quoted from the Arctic Coastal Zone Management Newsletter reporting strange behavior of four bowhead whales taking away a probably dead whale, one bowhead even flipping the dead whale into the air with its flippers before it was pulled under the water.

WESTERN ARCTIC
BEHAVIOR; REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, Chukchi Sea, natives, catch.

ALASKA MAGAZINE.

1979i. From Ketchikan to Barrow (News items): Eskimo whalers were held to the same limit... Alaska 45(10):20.

The International Whaling Commission, at a meeting in London in July 1979, set a limit of 18 bowhead whales taken or 26 struck by Alaskan Eskimos for 1980, the same as during 1979. The quota is about 1% of the estimated bowhead population while Eskimos wanted 2%. Only nine bowheads were taken in the 1979 season.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, management; WHALING—western Arctic, natives, catch.

ALASKA MAGAZINE.

1979j. From Ketchikan to Barrow (News items): A petroleum lease sale on 514,000 acres in the Beaufort Sea. *Alaska* 45(11):34.

Under conditions of a petroleum lease sale scheduled for Dec. 11, 1979, drillers on 514,000 acres in the Beaufort Sea could operate only between November 1 and March 31, pending outcome of a study of bowhead and gray whale migrations.

WESTERN ARCTIC
REGULATION & CONSERVATION—management, Beaufort Sea.

ALASKA MAGAZINE.

1979k. From Ketchikan to Barrow (News items): Manmade obstacles don't disturb whales... *Alaska* 45(11):36.

Two scientists brought to Alaska by Sohio-BP Alaska to talk with North Slope villagers about concerns over the effects of offshore drilling on bowhead whale migrations reported manmade obstacles don't disturb whales from their migration paths.

WESTERN ARCTIC
BEHAVIOR—migration; REGULATION & CONSERVATION—conservation, management.

ALASKA MAGAZINE.

1979l. From Ketchikan to Barrow (News items): Three U. S. scientists boarded a Soviet research vessel... *Alaska* 45(12):38.

Three U.S. scientists boarded a Soviet research vessel at Saint Lawrence Island in September to participate in the first joint research project on bowhead whales. The scientists, representing the National Marine Fisheries Service and the U.S. Fish and Wildlife Service, expected to spend a month in the Chukchi Sea aboard the 200-foot research vessel *Avangard*.

WESTERN ARCTIC
DISTRIBUTION—sightings, Chukchi Sea; POPULATION—abundance and density.

ALASKA MAGAZINE.

1979m. Introduction to *Alaska* 1980: Arctic. *Alaska* 45(12):110-111.

An old photograph shows a Barrow crew, flying a flag of success, as the crew tows a 20-ton bowhead back to the village. A second photograph shows children eating slices of raw bowhead whale flipper during the Point Hope Whaling Festival.

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, crews, photographs, utilization.

ALASKA MAGAZINE.

1980a. From Ketchikan to Barrow (News items): Whalers from Kaktovik on Barter Island... *Alaska* 46(1):18-19.

The bowhead whale catch of Alaska Eskimos totaled 12 of 18 allowed under the quota. Crews at Kaktovik on Barter Island and at Point Hope exceeded their village quotas, however. Kaktovik crews took five in the fall hunt. Fog and wind hampered whalers at Nuiqsut and Barrow. The violation at Point Hope was submitted to the legal department of the National Marine Fisheries Service. A 45-foot male bowhead beached 15 miles east of Barrow but cause of death could not be determined.

WESTERN ARCTIC
POPULATION—mortality, stranding; WHALING—western Arctic, natives, catch.

ALASKA MAGAZINE.

1980b. The Six Alaskas: Arctic. *Alaska* 46(2):28-29.

Subsistence whaling is still an important part of Eskimo life. Some Eskimos hunt bowheads from oar-powered walrus skin boats using harpoons and equipment adapted from ancestral models, coordinating their efforts with modern radios. Charles Brower, who came north in days when Barrow was a supply point for the Yankee whalers who hunted the bowhead almost to extinction for their baleen and oil, stayed to become the town's most famous resident and titled his autobiography "50 Years Below Zero."

WESTERN ARCTIC
WHALING—western Arctic, history, native, gear.

ALASKA MAGAZINE.

1980c. *Alaska-Yukon Magazine*: Nome. *Alaska* 46(3):A14.

Three American scientists landed here last October after four weeks aboard the Soviet whaling ship *Avangard* observing bowhead whales in the Chukchi and Bering Seas. They followed the icepack and whales to as far as 74° north latitude between Wrangel and Herald Islands and took sections of blubber from some whales. They hoped to learn if bowheads of the Siberian side were at all different from those in American waters.

WESTERN ARCTIC
DISTRIBUTION—present; FIELD & LABORATORY TECHNIQUES—biopsy; IDENTITY—races.

ALASKA MAGAZINE.

1980d. From Ketchikan to Barrow (News items): A federal judge... *Alaska* 46(4):22.
(From the Anchorage Daily News)

"A federal judge has blocked issuance of nearly \$500 million in federal and disputed oil lease tracts in the Beaufort Sea. U.S. District Court Judge Aubrey Robinson in January said the federal government must do more research on the possible impact of Beaufort Sea oil and gas drilling on the bowhead whale and on the North Slope Inupiat Eskimos..."

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, Beaufort Sea.

ALASKA MAGAZINE.

1980e. From Ketchikan to Barrow (News items): Disagreement over the appropriate Eskimo take of bowhead whales... *Alaska* 46(4):25. (From the Anchorage Times)

"Disagreement over the appropriate Eskimo take of bowhead whales, an endangered species, may lead to a showdown this year, according to a National Marine Fisheries Service enforcement official. Proposed NMFS regulations released in January include the quotas set by the International Whaling Commission: 18 whales landed or 26 struck, whichever comes first. However, the Eskimo Whaling Commission have set a quota of 45 whales. That commission refuses to recognize the authority of either the International Whaling Commission or NMFS ... The Eskimo Whaling Commission has disputed the data upon which federal quotas have been set and has said there are legitimate needs for a higher quota."

This year's quotas by village are: Kaktovik (2 landed or 3 strikes), Nuiqsut (1/1), Barrow (5/7), Wainwright (2/3), Point Hope (2/3), Kivalina (1/2), Gambell (2/3), Savoonga (2/3), and Wales (1/1).

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, quota; WHALING—western Arctic, natives.

ALASKA MAGAZINE.

1980f. From Ketchikan to Barrow (News items): The 1980 bowhead whale harvest... Alaska 46(5):14,16. (From the Anchorage Times)

The 1980 bowhead whale harvest should be no more than 2% of the best population estimates, according to a resolution adopted by the Alaska Eskimo Whaling Commission in February. Under the quota set in the resolution each village will take no more than is needed for the community. The commission also asked the federal government to fund research to improve chances of landing whales with hand-held weapons. A bowhead whale study by the Institute of Arctic Biology at the University of Alaska was to be completed by April 30 for presentation to the International Whaling Commission. The \$35,800 contract issued by the Bureau of Indian Affairs calls for six factors to be considered: importance of the bowhead in the diet; possible adverse effects of shifts to non-native foods; availability and acceptability of nontraditional foods; historical take of bowheads by Eskimos; integrative function of the bowhead hunt in the native community; and ecological considerations.

WESTERN ARCTIC
REGULATION & CONSERVATION—management; WHALING—western Arctic, native, gear, utilization.

ALASKA MAGAZINE.

1980g. From Ketchikan to Barrow (News items): Although the bowhead whale... Alaska 46(8):23, 64-65.

Fifteen bowhead whales were taken and 26 struck this spring. Although the statewide quota set by the International Whaling Commission had not been violated, its village quota was exceeded at Barrow by four whales. The harvest was ordered halted May 29 and National Marine Fisheries Service investigative reports on the violations were sent to Washington, D.C. for deliberation. The scientific coordinator for the Alaska Eskimo Whaling Commission stated that “we do not like the idea of a quota per village, nor the particular overall quota set by the IWC. The commission has set its quota at 48 whales or 2% of the known population and has not exceeded that.” In another village quota departure, Shaktoolik got a whale when none was allocated to it, the first time in recent history. This catch was attributed to an ice barrier in the Bering Strait that delayed the spring migration. Additional village catches were Savoonga, 2; Gambell, 1; Wales 1; Wainwright, 1; and Barrow, 9.

WESTERN ARCTIC
BEHAVIOR—migration; REGULATION & CONSERVATION—regulation; WHALING—western Arctic, native, catch, photograph.

ALASKA MAGAZINE.

1980h. From Ketchikan to Barrow (News items): A decision on whether to prosecute two Barrow whaling crews... Alaska 46(9):69.

The over-all International Whaling Commission (IWC) quota of bowheads struck and whales taken was not exceeded, but natives at Barrow took nine whales rather than the seven assigned. A decision on whether to prosecute two whaling crews for taking whales beyond the federal quota assigned to their village was expected from the federal government after a July meeting of the IWC.

WESTERN ARCTIC
REGULATION & CONSERVATION—harvest quota; WHALING—western Arctic, native, catch.

ALASKA MAGAZINE.

1980i. From Ketchikan to Barrow (News items): The bowhead whale ... Alaska 46(11):27. (From Anchorage Daily News)

The bowhead whale quota for Alaska's Eskimos was reduced by the International Whaling Commission in late July. The IWC allocated a 3-year catch quota of 65 bowhead whales struck and 45 landed, with no more than 17 landed in a single year. The 1980 quota is 36 bowheads struck and 18 landed. To date the Eskimos have struck 31 and landed 16. New data indicating the bowhead herd is declining reportedly prompted the decision for a reduced quota.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation, harvest quota; WHALING—western Arctic, native, catch.

ALASKA MAGAZINE.

1981a. Alaska-Yukon Magazine: Barrow. Alaska 47(3):A28-A29.

Eskimo whalers continue to contest bowhead harvest quotas set by the International Whaling Commission and enforced by the United States. Individuals subpoenaed to appear before a grand jury convened in November still refuse to appear. The IWC's limit of 18 bowheads taken and 26 struck in a season was denounced by the Alaska Eskimo Whaling Commission, whose quota allows 45 bowheads to be taken in a year.

WESTERN ARCTIC
REGULATION & CONSERVATION—management; WHALING—western Arctic, native, gear, photograph.

ALASKA MAGAZINE.

1981b. Alaska-Yukon Magazine: Photograph. Alaska 47(3):A36.

(Photograph caption) "Umiaks, the skin boats in which the Eskimos hunt the bowhead whales by traditional methods, rest on a rack out of harm's way at Gambell on Saint Lawrence Island. The whaling season begins in early spring when the giant mammals follow leads opening between shore and pack ice in their annual migration along Alaska's northwest coast. (Chlaus Lotscher)"

WESTERN ARCTIC
WHALING—western Arctic, Bering Sea, native, gear, photograph.

ALASKA MAGAZINE.

1981c. From Ketchikan to Barrow (News items): Kudos for Alaska filmmakers! Alaska 47(4):17.

The Sea is our Life, produced by Bo Boudart of Anchorage, was one of three Alaskan films to win top honors at the Fifth Annual American Film Festival, held in San Francisco. The 16-minute documentary [containing footage on bowhead whaling] focuses on North Slope Inupiat opposition to the Beaufort Sea oil and gas lease sale.

WESTERN ARCTIC
WHALING—western Arctic, native, film.

ALASKA MAGAZINE.

1981d. From Ketchikan to Barrow (News items): We've never been conquered...Alaska 47(4):20.

In a class action suit filed in federal court, Inupiat Eskimos on the North Slope asked the court to order all revenues from mineral development be held in trust for the Eskimos. They claim sovereign jurisdiction over the Beaufort Sea beyond Alaska's three-mile limit and that their searches for bowhead and other wildlife will be irreparably damaged by oil development in the area.

WESTERN ARCTIC
DISTRIBUTION—factors; REGULATION & CONSERVATION—regulation; WHALING—western Arctic, Beaufort Sea, native.

ALASKA MAGAZINE.

1981e. From Ketchikan to Barrow (News items): It may not be offshore oil development... Alaska 47(4):21.

“It may not be offshore oil development but the International Whaling Commission that poses the greatest threat to traditional Eskimo whaling. Proposed whaling quotas released by biologists in the National Oceanic and Atmospheric Administration would bar two of the nine North Slope Native villages from hunting bowhead whales by 1983. Nuiqsut would not be allowed to hunt in 1982 or 1983, while Kivalina would be barred from the hunt in 1983.

Once the quotas are finalized, the United States is required to enforce them, and this has stirred up intense controversy among Alaska's Inupiat who depend on subsistence whaling for food. In the opposite camp are environmentalists, who claim even subsistence whaling will wipe out the endangered bowhead whales, estimated to number about 2,264.”

WESTERN ARCTIC
POPULATION—abundance; REGULATION & CONSERVATION—management; WHALING—western Arctic, native.

ALASKA MAGAZINE.

1981f. The rare beauty of baleen. Alaska 47(5):12.

To artists and craftsmen, the shell-like black or brown baleen is a valued medium for the creation of fine decorative items. The baleen plates of the bowhead, numbering up to 600, are the longest of any whale species, some reaching 12 feet or more in length. Photographs show residents of Gambell gathered around a huge fan of baleen during the butchering of a bowhead whale and some of the items made by artisans from baleen.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—museums; MORPHOLOGY—baleen; WHALING—western Arctic, Bering Sea, native, catch, utilization, photographs.

ALASKA MAGAZINE.

1981g. Photograph. Alaska 47(5):34.

(Photograph caption) “During a whale hunt, Eskimos from the village of Gambell on Saint Lawrence Island power their umiaks, walrus- or bearded seal skin-covered boats, with sails. After the whale is struck and the need for silence is gone, the hunters switch to outboard motors. (Chlaus Lotscher)”

WESTERN ARCTIC
WHALING—western Arctic, Bering Sea, native, gear, photograph.

ALASKA MAGAZINE.

1981h. From Ketchikan to Barrow (News items): And in other whaling news... Alaska 47(7):25.

North Slope whalers and the federal government signed an agreement that reduced National Oceanic and Atmospheric Administration management of the whale harvest and shifted responsibility to the Eskimos through the Alaska Eskimo Whaling Commission. The cooperative agreement allows whalers to land 17 whales or a total of 32 strikes. It allows whalers to land more than 17 simply by paying a "civil assessment" for each whale over the quota, up to a limit of 32 strikes. The extra-whale fee is designed to discourage unnecessary kills and is expected to range between \$1,000 and \$5,000 per bowhead.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation; WHALING—western Arctic, native.

ALASKA MAGAZINE.

1981i. The Alaska Sportsman (News items): Two species of cetaceans... Alaska 47(7):56-57. From Natl. Mar. Fish. Serv. Northwest and Alaska Fish Cent., Monthly Rep., Feb. 1981.

Pre-exploitation population levels have been recently estimated for the western Arctic Ocean stock of bowhead whales and the North Pacific Dall's porpoise.

Pre-exploitation levels were estimated for bowhead whales in response to recommendations of the International Whaling Commission Scientific Committee. To estimate the initial (1848) population size, the population model was projected forward by computer with a "guessed" initial size and a set of reasonable values for the natural mortality rate, maximum net recruitment rate, and lag time (time from birth to age at which young become vulnerable to the fishery). The process was repeated with revised initial values until the current population size projected by the model was equal to 2,250, the best estimate of the current population. Preliminary results suggest that the historical population size of the western Arctic bowhead whales ranged from 14,000 to 26,000.

WESTERN ARCTIC
POPULATION—abundance, model.

ALASKA MAGAZINE.

1981j. From Ketchikan to Barrow (News items): Concerned that seismic exploration... Alaska 47(12):31.

"Concerned that seismic exploration for oil and gas was threatening the fall migration of bowhead whales, Alaska's Commissioner of Natural Resources John Katz ordered a halt to the underwater blasting offshore of Kaktovik in the Beaufort Sea. The commissioner's ruling affects only permits granted by the state. The department has issued a permit to Energy Analysts Exploration 48, Inc., in June; Katz was named DNR commissioner in July.

Katz said issuance of permits in the future will involve local officials. Kaktovik, a whaling village 75 miles from the Canadian border, is within the North Slope Borough. Borough officials had feared the exploration work, which involves setting off small, underwater explosions and then charting the sound waves to make a picture of the rock formations under the sea, would interfere with the whales and fall whaling activities.

"We need to bear the responsibility for the exploration and development activity that we have initiated," said Katz, who is considering opening a DNR office in Barrow."

WESTERN ARCTIC
BEHAVIOR—migration; DISTRIBUTION—factors; WHALING—western Arctic, Beaufort Sea, native.

ALASKA MAGAZINE.

1981k. From Ketchikan to Barrow (News items): The International Whaling Commission... Alaska 47(12):33.

"The International Whaling Commission, meeting in Brighton, England, commended Alaska Eskimos for their "good will" in observing whale-catch quotas set by the 30-nation commission last year. The commission also praised efforts of Alaska's whalers to reduce the number of strikes, which are hits that injure but don't kill. Alaska's three-year quota is 45 whales killed and landed and 65 strikes. By August of this year Alaska whalers had killed 14 and struck 25 whales, the Anchorage Daily News reported."

WESTERN ARCTIC
REGULATION & CONSERVATION—management; WHALING—western Arctic, native, catch.

ALASKA MAGAZINE.

1982a. From Ketchikan to Barrow (News items): An organization that represents the Eskimo populations... Alaska 48(1):39-40.

"The Inuit (Eskimo) Circumpolar Conference hopes to define the differences between commercial and subsistence whaling and to have that definition accepted by the International Whaling Commission. Attempts to impose IWC quotas on Eskimo subsistence whalers have raised strong objections from the Eskimo community, which claims that declines in whale populations are related primarily to commercial whaling, as opposed to subsistence hunting. The first meeting of the ICC was held in 1977 in Barrow. The ICC is concerned with common problems related to whaling, subsistence, and oil and gas development."

WESTERN ARCTIC
REGULATION & CONSERVATION—management; WHALING—western Arctic, native.

ALASKA MAGAZINE.

1982b. Alaska-Yukon Magazine (News items): Anchorage. Alaska 48(5):A13.

"Anchorage --The Eskimo's subsistence hunting of the bowhead whale could be banned sometime next year, the chief executive of the International Whaling Commission said here at the conclusion of a week-long conference of the Alaska Eskimo Whaling Commission. The January meeting explored more accurate methods of counting the whales, which are the most endangered of the whale species.

Commission secretary Ray Gambell, whose organization represents 35 nations and regulates whaling throughout the world, said higher counts of bowhead whales would stop pressure by the international scientific community to ban hunting. The world's bowhead population is estimated at 2,500. The Eskimos say many bowheads are not counted.

The International Whaling Commission will meet in July on the world status of the bowhead whales, and Gambell said he foresees a possible repeat of a previous commission ban on bowhead hunting. That ban was reversed at the urging of Inupiat Eskimos and the U.S. government.

Gambell said the concern is that the species already is doomed. "It's really depressing," he told the Anchorage Daily News. "On the available evidence, the odds are against its [survival]."

WESTERN ARCTIC
POPULATION—abundance; REGULATION & CONSERVATION—management; WHALING—western Arctic, native.

ALASKA MAGAZINE.

1982c. The Alaska Sportsman (News items): Nineteen bowhead whales... Alaska 48(8):56.

Nineteen bowhead whales may be killed this year under the agreement signed in March between the Alaska Eskimo Whaling Commission and the National Oceanic and Atmospheric Administration. Under the agreement, the Eskimos will manage their own hunt with technical assistance and monitoring by NOAA. Quotas were established for each of the nine whaling villages: Barrow (5), Point Hope (3), Savoonga (2), Gambell (2), Wainwright (2), Kaktovik (2), Kivalina (1), Wales (1), and Nuiqsut (1). The agreement prohibits the killing of calves or adult whales with calves. In hopes of leaving the breeding stock intact, whaling captains are being encouraged to take whales under 39 feet which are presumably sexually immature. Mature bowheads may reach 50-60 feet in length.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation; REPRODUCTION—maturity; WHALING—western Arctic, native.

ALASKA MAGAZINE.

1982d. Alaska-Yukon Magazine (News items): Anchorage. Alaska 48(8):A28.

“Anchorage--A federal recommendation to lengthen the oil drilling season in the Beaufort Sea to 10 months has been met with mixed reactions from whalers and members of the oil industry. The Alaska Eskimo Whaling Commission was disappointed with the recommendation, according to Marie Adams, executive director. The commission sought retention of the five-month drilling limit, fearing that oil spills or blowouts during the spring and fall months could cause significant harm to whales. Although the opinion does require that no drilling be conducted when whales are in the area, the oil industry was pleased with the recommendation. “It’s about 80% of what we wanted,” said Roger Herrera, exploration officer for Sohio Alaska Petroleum Company.”

WESTERN ARCTIC
DISTRIBUTION—factors; REGULATION & CONSERVATION—regulation; WHALING—western Arctic, Beaufort Sea, native.

ALASKA MAGAZINE.

1982e. From Ketchikan to Barrow (News items): Six Eskimo whale hunters... Alaska 48(9):30.

Six Eskimo whale hunters, tossed into the cold Bering Sea by a 50-foot whale they had harpooned, survived the incident without serious injury. The whale escaped and, as it was Savoonga’s second strike this season, it signaled the end of the village’s bowhead whaling season because its quota had been used. A week earlier a Savoonga crew had landed the first bowhead--a 44-foot female. In 1976 a similar accident near Barrow resulted in the death of one hunter.

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost; WHALING—western Arctic, Bering Sea, native, catch.

ALASKA MISSIONARY CONFERENCE OF THE UNITED METHODIST CHURCH.

1979. Letters to the Editor: Whaling. Tundra Times, June 27, 16(25):12.

A resolution was passed by the Alaska Missionary Conference of the United Methodist Church, in session at Anchorage, June 16, 1979, in support of the recommendations of the Alaska (Eskimo) Whaling Commission in reference to the subsistence harvesting of bowhead whales.

WESTERN ARCTIC
REGULATION & CONSERVATION—management; WHALING—native, utilization.

ALASKA NATIVE TIMES.

1980. Alaska challenge: is the whale hunt over for Eskimos? Alaska Native Times, 7(6):4-5.

Article has been edited from the book Alaska Whales and Whaling by Alaska Geographic, and all photographs were by courtesy of that publication except where noted. One photograph, however, showing a landed whale being cut up by Eskimos, does not contain a source or caption and does not appear in the Alaska Geographic issue cited. Three other photographs included in the article are credited to Bill Marquette, National Marine Mammal Laboratory, NOAA [Identifying information on these are on file at the laboratory located at Seattle, Washington.]

WESTERN ARCTIC
WHALING—western Arctic, native, catch, gear, photographs (one unidentified).

ALASKA OFFSHORE.

1982a. New study: Bowhead population greater. Alaska Offshore, Anchorage, AK, November, p. 1, 6, 8.

A new survey commissioned by Sohio Petroleum and nine other oil companies and conducted by LGL Limited of Toronto indicates a bowhead population conservatively estimated at 3,842. The aerial census was conducted during the summer over open water of the eastern Beaufort Sea at a height of 500 to 1,000 feet. In addition to providing new population information, aerial photography revealed that the whales could be identified as individuals by distinctive patterns of markings and colors, thus providing biologists the potential to learn details of the whales' movement patterns, growth and calving intervals between years.

WESTERN ARCTIC
BEHAVIOR—migration, swimming; DISTRIBUTION—sightings, summering area; FIELD & LABORATORY TECHNIQUES—census, aerial, photography, field recognition, measurement; MORPHOLOGY—measurements; POPULATION—abundance.

ALASKA OFFSHORE.

1982b. Why whale research? Alaska Offshore, Anchorage, AK, December, p. 2.

Editorial on Sohio Petroleum Company's interest in financing research to obtain baseline biological information on the bowhead whale and its passage through Alaskan waters.

WESTERN ARCTIC
REGULATION & CONSERVATION—conservation.

ALASKA SPORTSMAN.

1937. From Ketchikan to Barrow (News items): To engage in the sport of hunting whales... Alaska Sportsman 3(6):21.

"To engage in the sport of hunting whales, heretofore overlooked by big-game hunters, Joseph Lilly, of Des Moines, Iowa, went north late in April with James Allen, Wainwright, Alaska, trader, who has killed thirty-two whales from lightweight skin canoes. They will hunt with Eskimos in the ice floes of the Arctic."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ALASKA SPORTSMAN.

1938. From Ketchikan to Barrow (News items): An abundant supply of winter meat... Alaska Sportsman 4(4):19.

“An abundant supply of winter meat is reported to have been taken by natives in Interior and Northern Alaska, including caribou from the large migration in the Koryukuk, 700 walrus at King Island, 700 on the Diomed Islands, and 400 at St. Lawrence Island. Eskimos in villages along the Arctic coast killed 15 whales.”

WESTERN ARCTIC
WHALING—western Arctic, native, catch.

ALASKA SPORTSMAN.

1941. From Ketchikan to Barrow (News items): A. D. Johnson, of the U.S. Reindeer Service... Alaska Sportsman 7(10):21.

“A. D. Johnson, of the U.S. Reindeer Service, reports from Barrow that after last winter's lean months, the Eskimos along the Arctic Coast gave whaling their serious attention and that twenty-three whales were taken during the spring season, eight of them at Barrow and fourteen at Point Hope. The twenty-third, a drifter that had been bombed at Barrow, drifted ashore at Wainwright where the Eskimos worked it up and stored it against the coming winter.”

WESTERN ARCTIC
POPULATION—mortality, whaling, killed and lost; WHALING—western Arctic, Chukchi Sea, native, catch.

ALASKA SPORTSMAN.

1943a. From Ketchikan to Barrow (News items): Eskimo whalers of the Arctic Coast... Alaska Sportsman 9(1):19.

“Eskimo whalers of the Arctic Coast don't try to hang onto a harpooned whale. The moment the harpoon is set the harpooner's helper tosses the harpoon line and float overboard. The line is about a hundred feet long. The float is an inflated seal-skin. The whalers then follow the float with their skin boats, setting more harpoons, if possible, until the whale is exhausted enough for them to approach and use the lance. In 1941, Point Hope native whalers made thirteen strikes and landed five whales in this manner.”

WESTERN ARCTIC
POPULATION—mortality, struck and lost; WHALING—western Arctic, Chukchi Sea, native, catch, gear.

ALASKA SPORTSMAN.

1943b. From Ketchikan to Barrow (News items): A hunter from Barrow... Alaska Sportsman 9(3):18.

“A hunter from Barrow got one whale during the last season. The hunters of Wainwright got 85 walrus, and those of Barrow, 117 walrus.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ALASKA SPORTSMAN.

1946. From Ketchikan to Barrow (News items): Photograph. Alaska Sportsman 12(11):25.

(Photograph caption) "Recently the British Government has been sponsoring the whale as a means of helping relieve the food shortage in Europe, and has set to work to determine the nutritional value and palatability of whale meat. To the Eskimos of the American Arctic, the whale has always been a highly valued source of food, and the capture of a whale a good reason for rejoicing. The photo below shows Barrow Eskimos turning out en masse to help drag a whale onto the beach and butcher it. Besides meat the whale yields oil, bone, and baleen."

WESTERN ARCTIC
WHALING—western Arctic, native, catch, utilization, photograph.

ALASKA SPORTSMAN.

1947a. From Ketchikan to Barrow (News items): Photograph. Alaska Sportsman 13(3):22.

(Photograph caption) "After a successful whale hunt comes the gigantic though satisfying task of dragging the animal onto the ice and butchering it. Shown in the photo below are two Point Hope Eskimos and a small, newly captured whale which is being pulled by its tail onto the shore ice. The choicest bits, the flukes of the powerful tail, have already been removed, and a strip of much prized muktuk, or blackskin with a layer of blubber, has been cut off the belly."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, photograph.

ALASKA SPORTSMAN.

1947b. From Ketchikan to Barrow (News items): Tokpuk. Alaska Sportsman 13(5):24.

"Tokpuk, the mightiest whale hunter of Barrow, died in March at the age of eighty-three. The aged Eskimo had killed more than a hundred whales during his life, three of them during the last season."

WESTERN ARCTIC
WHALING—western Arctic, Beaufort and Chukchi Seas, native, crews, catch.

ALASKA SPORTSMAN.

1948. From Ketchikan to Barrow (News items): Photograph. Alaska Sportsman 14(1):18.

(Photograph caption) "It is a glad day for the entire Eskimo village when its hunters return with a whale. Everyone shares in the spoils. The photo below shows Eskimos on the beach at Point Barrow butchering a freshly killed whale. On the shore are chunks of skin and blubber, which will make hundreds of pounds of much relished muktuk. It is interesting to note that the two boats in the foreground are not the traditional skin-covered oomiaks, but conventional wooden dories. Outboard motors are popular among the Eskimos, who are mechanically skillful."

WESTERN ARCTIC
WHALING—western Arctic, Beaufort and Chukchi Seas, native, gear, catch, photograph.

ALASKA SPORTSMAN

1949. From Ketchikan to Barrow (News items): Photograph. Alaska Sportsman 15(10):21.

(Photograph caption) "Once caught, killed and dragged onto the shore, even a middle-sized whale like the one shown below provides tons upon tons of edible meat and blubber. Even its baleen strainer is useful in making baskets and tools, and its giant ribs are ready-made rafters for the Eskimo's sod igloo."

WESTERN ARCTIC
WHALING—western Arctic, native, catch, photograph, utilization.

ALASKA SPORTSMAN.

1950. From Ketchikan to Barrow (News items): There was great joy in Barrow... Alaska Sportsman 16(9):21.

"There was great joy in Barrow last May when the village hunters brought in three whales, enough to supply the 500 Barrow Eskimos with meat, oil and blubber for months. The whales, 26, 35 and 59 feet long, were captured in an open lead in the ice only half a mile from shore..."

WESTERN ARCTIC
MORPHOLOGY—measurements; WHALING—western Arctic, Chukchi Sea, native, catch, utilization.

ALASKA SPORTSMAN.

1951a. From Ketchikan to Barrow (News items): Point Barrow Eskimos... Alaska Sportsman 17(8):28.

"Point Barrow Eskimos threw a whale of a nelikatuk June 11, a nelikatuk being a traditional celebration after a successful whaling season. Barrow hunters took seven whales during the spring season."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ALASKA SPORTSMAN.

1951b. From Ketchikan to Barrow (News items): Unique as English language newspapers go... Alaska Sportsman 17(8):28-29.

Unique as English language newspapers go is the "Mukluk Telegraph," published twice monthly in Kotzebue. Most of its columns are devoted to "news of the villages," published exactly as sent by Eskimo correspondents. From the June 9, 1951 issue come the following:

Point Hope - "Sorry we are slow this time, too much whaling. No time to write any how we caught four wright [sic] whales. I guess I better mention the names of the captain whales. Daniel Lisbourne, Patrick Attungana, Lennie Lane and Sam Rock. There will be a big celebration June 11 to 13, we better have some visitors..."

Little Diomed Island - "... One black whale was seen, also a few white whales. All boats needed for spring hunting..."

WESTERN ARCTIC
WHALING—western Arctic, native, catch, crews.

ALASKA SPORTSMAN.

1953. From Ketchikan to Barrow (News items): Point Barrow Eskimos celebrated... Alaska Sportsman 19(11):29.

"Point Barrow Eskimos celebrated the "best Nalakatuk in years" last June, with the capture of eighteen whales to cause rejoicing."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ALASKA SPORTSMAN.

1955. From Ketchikan to Barrow (News items): Every summer the Eskimos... Alaska Sportsman 21(10):22.

"Every summer the Eskimos of the far north village of Point Barrow have a big festival to celebrate their catch of whales in the spring and early summer. The festival is called a "Nulakatuk." "The 1955 Nulakatuk was celebrated after fifteen whales had been taken."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ALASKA SPORTSMAN.

1957. From Ketchikan to Barrow (News items): The treacherous Arctic ice pack... Alaska Sportsman 23(9):27.

Nine whaling crews at Barrow lost their hunting gear last April when the ice, driven by a strong wind, began to heave and break up. About 50 men escaped to shore and no lives were lost. (Guy Okakok, Barrow correspondent for the Fairbanks News-Miner).

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, crews, gear.

ALASKA SPORTSMAN.

1962. From Ketchikan to Barrow (News items): Mrs. Loraine Burdick of Puyallup, Washington, sends this bit of Alaskana... Alaska Sportsman 28(1):39.

(Copied verbatim from the Boston newspaper, Flag of Our Union, for the week ending Saturday, July 23, 1853, titled "The following is a description of an Esquimaux bear-trap [taken from Travels in the Northwest].).

Description of a bear-trap consisting of a thick, strong piece of whalebone about four inches broad and two feet long, that is bent double and wrapped with pieces of blubber and allowed to freeze. When eaten by a bear, the blubber soon loosens and allows the whalebone to spring back to its old position, wreaking havoc with the animals intestines and causing its death.

WESTERN ARCTIC
WHALING—western Arctic, utilization.

ALASKA SPORTSMAN.

1962. From Ketchikan to Barrow (News items): Point Hope. *Alaska Sportsman* 28(8):38.

“Point Hope. The village of Point Hope has enjoyed a good whaling season. Five bowhead whales were taken before the end of May, compared with only two last year. Allan Rock and his crew, who got a 60-ton whale last year, got another this year. This is Rock's second whale and he was able to select the best part of the whale, the breast portion which is rich in fine meat and tender muktuk. Last year, as is traditional with the first whale, Rock got one of the whale's lips. The lip, however, was 22 feet long and weighed three tons.”

WESTERN ARCTIC

ETHNOLOGY—whale culture; MORPHOLOGY—measurements; WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ALASKA SPORTSMAN.

1965a. June in Alaska's history: June 16, 1865. *Alaska Sportsman* 31(6):29.

The armed cruiser *Shenandoah* of the Confederate States Navy, commanded by Lieut. James I. Waddell, sailed to the Bering and Chukchi Seas where it pursued and destroyed or captured Yankee vessels, most of which were whalers. The *Shenandoah* cruised for 12 months and captured 38 Yankee ships, 25 of them after the Civil War was over.

WESTERN ARCTIC

WHALING—western Arctic, Bering and Chukchi Seas, commercial, drawing.

ALASKA SPORTSMAN.

1965b. From Ketchikan to Barrow (News items): The little Eskimo village of Gambell... *Alaska Sportsman* 31(10):39.

The little Eskimo village of Gambell on St. Lawrence Island in the Bering Sea got its first whale in four years last spring. The last whale was caught in the spring of 1961. The whale captured this spring was taken by John Apangalook.

WESTERN ARCTIC

WHALING—western Arctic, Bering Sea, native, catch, crews.

ALASKA SPORTSMAN.

1966. From Ketchikan to Barrow (News items): By the first of June, Point Hope Eskimo whaler crews... *Alaska Sportsman* 32(8):29.

“By the first of June, Point Hope Eskimo whaler crews had captured five bowhead whales and expected more with favorable ice conditions. Successful whaleboat captains were Patrick Attungana, Amos Lane, Seymour Tuzroylke, and Allen Rock.”

WESTERN ARCTIC

WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ALASKA SPORTSMAN.

1967. From Ketchikan to Barrow (News items): It's a long way from Los Angeles...
Alaska Sportsman 33(5):4.

Dr. Floyd Durham, a biologist with the University of Southern California at Los Angeles, is making a study of the bowhead whale and Eskimo whaling under a grant from the Arctic Institute of North America. In exchange for Norwegian flensing knives, harpoons, and plastic floats to replace more primitive equipment, Dr. Durham receives skeletal parts of bowhead whales. To date he has amassed over three tons of bones, the largest collection in the country. Durham states Eskimo whaling methods are inefficient and at present an average of only one in five of the whales struck are recovered.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—museum, skeletal parts; POPULATION—mortality, whaling, struck and lost;
WHALING—western Arctic, native, gear.

ALASKA SPORTSMAN.

1968. From Ketchikan to Barrow (News items): There is a bountiful supply of muktuk...
Alaska Sportsman 34(9):45.

“There is a bountiful supply of muktuk in the villages of Alaska's northwest Arctic coast, but the Eskimos of Kotzebue have found that appeasing a hankering for the whale delicacy is costly. Caught in Point Hope up the coast, black muktuk is selling for \$2.25 a pound in Kotzebue.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, utilization.

ALASKA SPORTSMAN.

1969a. From Ketchikan to Barrow (News items): Joash Tukle and his crew of Barrow whalers... Alaska Sportsman 35(2):28.

Joash Tukle and his crew of Barrow whalers recently lost a big whale off the Barrow coast. Tukle's boat ran out of gas while towing one of the largest whales taken off Barrow in recent years. The crew was stranded in the ice pack for two days before rescue came. And just a few weeks after Tukle lost his whale, Nome residents were busy carving up a 27-ton whale that had drifted to shore five miles west of the town.

WESTERN ARCTIC
POPULATION—mortality, killed and lost, stranding; WHALING—western Arctic, native, catch, crews, utilization.

ALASKA SPORTSMAN.

1969b. From Ketchikan to Barrow (News items): Photograph. Alaska Sportsman 35(5):36.

(Photograph caption). “This fearsome fellow was carved by a Point Hope Eskimo from the vertebrae of a whalebone. Relying on a buried supply of whalebones, the rare mask material is carved after thorough drying. Most of the carving is done by men. Eyes of fresh bone or ivory are inserted, with the iris usually made from black baleen of bowhead whales.”

WESTERN ARCTIC
SKELETAL REMAINS; WHALING—western Arctic, native, utilization.

ALASKA SPORTSMAN.

1969c. From Ketchikan to Barrow (News items): "Quweasukpuktugut' ...". Alaska Sportsman 35(8):14. (From Tundra Times, and Nome Nugget)

"Quweasukpuktugut', which means, 'We are very thankful' in Eskimo was the headline used by the Tundra Times to report a harvest of seven bowhead whales by Barrow whalers." Also, an article in the Nome Nugget reported that a whale was taken at Gambell on St. Lawrence Island by Stanley Oogevaseuk.

WESTERN ARCTIC
WHALING—western Arctic, Bering and Chukchi Seas, native, crews, catch.

ALASKANA.

1971. An Arctic tragedy. Alaskana 1(6):10-12.

Recounts an incident when 33 whaling vessels were lost to the ice between Icy Cape and Point Belcher in 1871. All 1,219 survivors (one man elected to spend the winter there) travelled down the coast in small whaling boats to be rescued by seven ships that had waited for them south of the ice. The following summer a smaller whaling fleet made its way north and discovered the one sailor on the beach waiting for them. Near Point Belcher the bark *Minerva* was found, still seaworthy, and it was brought back to San Francisco.

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, commercial, gear, catch.

ALBERT, THOMAS F.

1980. Tissue structure studies of the bowhead whale. Arct. Coastal Zone Manage. Newsl. 28:15-19.

Describes a Bureau of Land Management research project with funding provided the University of Maryland (T. F. Albert) to obtain basic biological information from bowhead (and to a lesser extent gray whales) utilizing animals harvested by Eskimo hunters, including stranded whales. Reports on whale 78KK1 taken by Herman Aishanna during the fall of 1978 at Kaktovik, including photographs; five bowheads taken at Kaktovik during the fall of 1979, including food items found in their stomachs and a nearly intact heart from whale 79KK1; and radiographic study of a gray whale flipper from an individual found stranded near Barrow in the fall of 1978. Of particular interest was the finding of a healed penetrating injury in bowhead 78KK1 suggesting the animal recovered from a wound possibly inflicted by a harpoon or bomb. Includes a flow chart indicating types of tissue samples collected from whales and studies conducted by principal investigators located at various institutions.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—age determination, measurements, specimens collected; IDENTITY—subspecies, ingutuk; MORPHOLOGY—measurements, anatomy; NUTRITION—food; PATHOLOGY; PHYSIOLOGY; POPULATION—mortality, natural, whaling, struck and lost; REPRODUCTION; WHALING—Chukchi Sea, Beaufort Sea, native, catch, crews, photographs.

ALBERT, THOMAS F., GEORGE MIGAKI, HAROLD W. CASEY, and L. MICHAEL PHILO.

1980. Healed penetrating injury of a bowhead whale. U.S. Natl. Mar. Fish. Serv., Mar. Fish. Rev. 42(9-10):92-96.

A male bowhead whale 10.6 m in length landed at Kaktovik, Barter Island, Alaska, in September 1978, evidenced a healed, penetrating injury. Although positive proof is lacking, the authors believe that a reasonable explanation is that the penetration was due either to a harpoon or a bomb fired from a shoulder gun by an Eskimo whaler. The discovery is important because in recent years increasing concern has been expressed over the rising number of animals taken or struck and lost during the subsistence hunt for bowheads. A detailed histological study of the tissues involved with the injury is described.

WESTERN ARCTIC
MORPHOLOGY—measurements, injury; POPULATION—mortality, whaling, struck and lost; WHALING—western Arctic, Beaufort Sea, native, catch.

ALDRICH, HERBERT L.

1889. Arctic Alaska and Siberia, or, eight months with the Arctic whalers. Rand, McNally & Co., Chicago and New York, 234 p.

A popular account of the author's voyage with a whaling ship to the Bering Sea, Pt. Hope, Pt. Barrow, and the Chukchi Sea in 1887. Describes whaling gear and whaling techniques of commercial whaling vessels and of natives of eastern Siberia and northern Alaska. Also describes customs and lives of Eskimos of the area, including hunting, clothing, and storage and use of whale meat as food. Includes comments that bowheads are believed to communicate by singing.

WESTERN ARCTIC
BEHAVIOR—vocalization; WHALING—western Arctic, Bering Sea, Chukchi Sea, history, commercial, natives, utilization, catch.

ALLEN, ARTHUR JAMES.

1978. A whaler and trader in the Arctic 1895 to 1944. My life with the bowhead. Alaska Northwest Publ. Co., Anchorage, Alaska, 213 p.

Account of commercial and subsistence whaling for bowhead whales based upon personal experience. Observations on life in the Arctic aboard whaling vessels and in Eskimo villages. Describes native customs and traditions associated with the hunt for bowheads, equipment used, time periods hunted, environmental conditions, whale behavior, catches and utilization of whale products.

WESTERN ARCTIC
BEHAVIOR—migration, when chased; DISTRIBUTION—former; IDENTITY—nomenclature; MORPHOLOGY—measurements; PATHOLOGY—injury; REPRODUCTION—calves; WHALING—western Arctic, commercial, native, gear, catch, photographs, utilization.

ALLEN, EDWARD W.

1947-53. Commercial fisheries of Alaska. 17 p. *In*: V. Stefansson (editor), *Encyclopedia Arctica*, vol. 3, Zoology, pt. 2, no. 11. Avail. Dartmouth College Library, Hanover, NH 03755. Unpubl. manuscr.

Describes importance of commercial fisheries, including sealing and whaling, to the state of Alaska. Includes a brief summary of American whaling fleet operations in the North Pacific and Arctic Oceans, with statistics on the fleet, fleet disasters and products obtained, chiefly from bowhead whales.

WESTERN ARCTIC
WHALING—western Arctic, commercial, history, gear, catch, products.

ALLEN, EVERETT S.

1973. *Children of the light: the rise and fall of New Bedford whaling and the death of the arctic fleet.* Little, Brown and Co., Boston, 302 p.

Very interesting review of whaling based on literature, journals and letters of whalers. Includes descriptions of bowhead size, migration, feeding, breathing, swimming. Preparations of Alaska Eskimos for hunting, their gear and rituals, and the actual hunt are detailed. Letters from captains and whalers provide observations and opinions about bowhead behavior, calving, ice breaking, food, seasonal distribution, and other subjects. Commercial whaling gear, techniques, products, cutting and rendering flesh are described in detail. The importance of the whaling industry to Hawaiian history and development is discussed.

WESTERN ARCTIC

BEHAVIOR—swimming, respiratory, ice-breaking, migration; DISTRIBUTION—sightings; NUTRITION—food; REPRODUCTION—parturition, embryology; WHALING—western Arctic, history, commercial, native, catch, gear, utilization.

ALLEN, GLOVER M.

1916. *The whalebone whales of New England.* Mem. Boston Soc. Nat. Hist. 8(2):106-322.

The bowhead, being an Arctic species, is not certainly known from New England but was common in former times as far south as Newfoundland and the Gulf of St. Lawrence. Whales recorded as taken near Cape Cod., Mass., in 1736 and near Chatham, Mass., in 1843, however, were unusually large and yielded exceptional amounts of oil and whalebone, suggesting they may have been stray bowheads (p. 134-135).

EASTERN ARCTIC

DISTRIBUTION—Former sightings; WHALING—Eastern Arctic (possible catch off New England), commercial, catch.

ALLEN, GLOVER M.

1930. *The walrus in New England.* J. Mammal. 11(2):139-145.

Occurrence of walrus off New England in historical and colonial days as determined from the literature, including fossil remains. It formerly occurred in some numbers in the western Atlantic as far south as the Gulf of St. Lawrence, Cape Breton, and Sable Island off southern Nova Scotia, and penetrated into the Gulf of Maine, probably following the colder waters that enter this area from the north, and form the natural boundary in a general way for a number of other northern animals, including among mammals, the white whale, the Northern blackfish, and formerly the bowhead whale.

EASTERN ARCTIC

DISTRIBUTION—former, factors; eastern Arctic, western Atlantic.

ALLEN, GLOVER M.

1941. *Our rarer mammals.* Audubon 43(2):150-160.

Summary of several rare mammals, including the bowhead (p. 158), with some information on biology and events leading to the present status of each. Although all stocks of bowhead were severely depleted by commercial whalers, this activity by most nations ceased in 1937 and there is encouraging evidence [not presented] that the North Pacific group is once more slowly building up, even though Eskimos continue to take a few each year for food.

EASTERN ARCTIC, WESTERN ARCTIC

BEHAVIOR—migration; DISTRIBUTION—historical and present; MORPHOLOGY—size; NUTRITION—food; WHALING—eastern Arctic, western Arctic, commercial and native.

ALLEN, GLOVER M.

1942. Extinct and vanishing mammals of the Western Hemisphere with the marine species of all the oceans. *Am. Comm. Int. Wild Life Prot., Spec. Publ.* 11, 620 p.

Bowhead (*Balaena mysticetus*) is reviewed on p. 506-511. The whale is described, three populations recognized by whalers in the eastern and western Arctic are listed, and the history of whaling for the species is given. Includes some catch statistics and the present status of stocks.

EASTERN ARCTIC, WESTERN ARCTIC
MORPHOLOGY; DISTRIBUTION; POPULATION—abundance & density; WHALING—eastern Arctic, western Arctic; history, drawings (whales), commercial, catch.

ALLEN, JOEL ASAPH.

1881. Preliminary list of works and papers relating to the Mammalian Orders *Cete* and *Sirenia*. *Bull. U.S. Geol. Surv. Territ.* 6(3), Art. 18. 562 p. + index of authors. Washington, D.C. (Reprinted by A.D. Lilly, Hythe, Kent, England, 1977.)

Annotated bibliography of a history of the species of North American *Cete* and *Sirenia*, believed by the author to cover nearly everything of importance bearing upon their technical aspects. Few papers dealing with their economic and commercial aspects have been included. The titles are consecutively numbered and arranged chronologically. Includes about 1,000 published works 1495 through 1840. Because of illness, an additional 2,000 titles, comprising the most important part from the systematic standpoint, was never published (see J.A. Allen, 1908, *Bull. Am. Mus. Nat. Hist.* 24:279-280).

EASTERN ARCTIC
BIBLIOGRAPHY—general.

ALLEN, J. A.

1908. The North Atlantic right whale and its near allies. *Bull. Am. Mus. Nat. Hist.* 24(Art. 18):277-329, pl. 19-24.

Differences in ideas of the classification and identification of the right whale and the bowhead whale detailed in quotations and review of literature of the 17th - 20th centuries.

EASTERN and WESTERN ARCTIC
IDENTITY—Nomenclature, taxonomy.

ALLEN, K. RADWAY.

1980. Conservation and management of whales. *Wash. Sea Grant Publ., Univ. Wash. Press, Seattle*, 107 p.

Brief history of the whaling industry and its regulation by the International Whaling Commission. Concepts and techniques scientists use to study whale populations and how information is used as guide for management and conservation is discussed.

Recent observations on Bering Sea bowhead whales showed that calves sighted constituted only about 1.3% of the population (p. 80). Unless this figure is a substantial underestimate it implies that in this population, which is probably at about 10% of its original level, the pregnancy rate may be only about 5%. This is so much lower than rates normally found in baleen whales and suggests that in this badly depleted population a reversal of the usual density-dependent effect may have occurred.

WESTERN ARCTIC
DISTRIBUTION—habitat; IDENTITY—taxonomy; NUTRITION—food; POPULATION—estimated abundance; REGULATION & CONSERVATION—regulation, management; REPRODUCTION—fecundity; WHALING—history, western Arctic, eastern Arctic.

ALTMAN, PHILIP L., and DOROTHY S. DITTMER (compilers and editors).

1972. Biology data book, vol. 1, 2nd ed. Fed. Am. Soc. Exp. Biol., Bethesda, Maryland, 606 p.

The physical and chemical properties of whale oil from *Balaena mysticetus* are given on p. 348 as follows: Specific gravity, 0.892; Refractive index, 1.460; Iodine value, 120; and Saponification value, 195.

CIRCUMPOLAR
FIELD & LABORATORY TECHNIQUES—measurement of physical and chemical properties.

AMERICAN CETACEAN SOCIETY

1977. Aboriginal Whaling: U.S. dilemma. . Am Cetacean Soc., San Pedro, California, Action Lett. July, p. 2.

“The [International Whaling] Commission adopted a moratorium on the killing of bowhead whales in the North Pacific by aboriginal peoples. Bowheads are thought to be the most depleted of the great whales, having declined to as little as 10% of the unexploited level. This action means that the U.S. will be in violation of IWC regulations unless Alaskan Eskimos end their bowhead harvest. This year's kill hit a record high of 26 killed and recovered, one killed and lost, and 77 struck and lost. Since 1970, the number of whaling crews, the average annual take, and the percentage struck and lost have all increased sharply.”

WESTERN ARCTIC
POPULATION mortality, whaling killed/lost, struck/lost; REGULATION & CONSERVATION—regulation; WHALING—western Arctic, native, catch, crews.

ANCHORAGE DAILY NEWS.

1978a. Whalers pass feds' quota. Anchorage Daily News, Anchorage, Alaska, May 5, p.1.

Eskimo whalers at Barrow violated the village quota of three bowhead whales by taking a fourth one on Wednesday evening. The last whale was taken by Jonathan Aiken. Jacob Adams, chairman of the Alaska Eskimo Whaling Commission, “... said the hunt would continue because only two bowhead whales had been taken. He said the other two whales were 'ingutuk', not bowheads.” The International Whaling Commission allowed a quota of 12 whales killed or 18 struck for eight whaling villages during 1978. The article is accompanied by a photograph showing an Eskimo at Point Hope carving into the first bowhead taken in that village this year.

WESTERN ARCTIC
IDENTITY—nomenclature, Eskimo, ingutuk; POPULATION—mortality, whaling; REGULATION & CONSERVATION—management, quota; WHALING—Chukchi Sea, native, catch, crews, photograph.

ANCHORAGE DAILY NEWS.

1978b. Editorial: An uncommon whaling hunt. Anchorage Daily News, Anchorage, Alaska, May 10, p. 4.

Editorial on effect of the first catch quota imposed by the International Whaling Commission on the hunt for bowhead whales by Alaskan Eskimos. Last year's take of 29 whales was cut to 12 this year by the IWC, and the Eskimos are worried that food will run short in the villages. It appears unlikely that the Eskimos will even take their full quota during this year's hunt as only nine whales have been caught to date.

WESTERN ARCTIC
POPULATION—mortality, whaling; REGULATION & CONSERVATION—management, quota; WHALING—Bering, Chukchi, Beaufort Seas, native, catch, utilization.

ANCHORAGE DAILY NEWS.

1979. Million spent studying whales produces no new information. Anchorage Daily News, Anchorage, Alaska, September 21.

“A million dollar research effort by the National Marine Fisheries Service has failed to produce any important new information about bowhead whales or to increase whale population estimates. A major goal of the research was to estimate the number of newborn calves, but though an intensive effort was made, only six calves were identified out of a sampling of 170 whales.” Poor weather hampered observation of whales and whaling. The International Whaling Commission quota for this year is 18 whales or 27 strikes but only seven were landed by the Eskimos during their spring hunt.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—census; POPULATION—abundance, calves; REGULATION & CONSERVATION—management, quota, WHALING—Bering, Chukchi and Beaufort Seas, native, catch.

ANCHORAGE TIMES.

1978a. Barrow whalers get their quota. Anchorage Times, Anchorage, Alaska, May 3, p. 7.

Whalers from Barrow have taken three bowheads in two days, reaching the quota set for Barrow under the newly established quota system. Robert Akin's crew took the first whale Monday. Crews led by Harry Brower and Jake Adams, chairman of the [Alaska] Eskimo Whaling Commission, took two whales Tuesday. The St. Lawrence Island villages of Savoonga and Gambell were the first to report whale kills this year. Each village was entitled to one whale.

WESTERN ARCTIC
POPULATION—mortality, whaling; REGULATION & CONSERVATION—management, quotas; WHALING—Bering Sea, Chukchi Sea, native, catch, crews.

ANCHORAGE TIMES.

1978b. Whale season means hard work for villagers. Anchorage Times, Anchorage, Alaska, May 11.

Photo essay on the landing and cutting up of a 53-1/2 foot long bowhead whale landed at Wainwright on May 6. It was the first whale of the season for the village.

WESTERN ARCTIC
MORPHOLOGY—measurements, length; POPULATION—mortality, whaling; WHALING—Chukchi Sea, native, catch, crews, gear, photographs, utilization.

ANDERSEN, HARALD T. (editor).

1969. The biology of marine mammals. Academic Press, New York and London, 511 p.

Summarizes the general biology of marine mammals including a review of the literature. Subjects discussed by chapter are: age determination, hydrodynamics of swimming, deep diving, physiological properties of blood, cardiovascular adjustments to diving, temperature regulation, nervous system, reproduction, endocrine organs, echolocation and communication.

EASTERN and WESTERN ARCTIC
BEHAVIOR—communication, swimming; FIELD & LABORATORY TECHNIQUES—age; PHYSIOLOGY—blood, endocrines, nerve, thermoregulation; REPRODUCTION.

ANDERSON, GEORGE.

1947. A whale is killed. *Beaver*, Outfit 277(4):18-21.

Account of the capture and cutting up of a Greenland whale by two crews from Pangnirtung, Cumberland Sound, in July, 1946. It measured 36 feet long, 23 feet in girth, and the baleen was more than 5 feet in length. Hunting equipment, method of flensing, and tools used are described.

EASTERN ARCTIC

BEHAVIOR—when shot; MORPHOLOGY—measurements; WHALING—eastern Arctic, native, crews, gear, catch, photographs, utilization.

ANDERSON, RUDOLPH MARTIN.

1926. Report on the natural history collections of the expedition. *In Vilhjalmur Stefansson, My life with the Eskimo*, p. 436-527. Macmillan Co., New York. (1st ed., 1913.)

Reports the author's journeys, observations, and collections of plants and animals made on the Stefansson-Anderson Arctic Expedition of the American Museum of Natural History, 1908-1912. Section on the bowhead whale (p. 496-500) lists the historic Eskimo whaling areas of the region, whale migrations and whaling seasons, commercial whaling techniques and equipment, behavior of whales under pursuit, and a brief history of whaling and catches by white men in the region. The author notes the size of a captured bowhead and remarks that the bowhead lacks parasites such as barnacles and "lice."

WESTERN ARCTIC

BEHAVIOR—swimming, diving; DISTRIBUTION—former & present; MORPHOLOGY; PATHOLOGY—parasites; WHALING—history, western Arctic, Chukchi Sea, Beaufort Sea, gear, natives, catch.

ANDERSON, RUDOLPH MARTIN.

1939. Mammals of the Province of Quebec. *Annu. Rep. (1938) Provancher Soc. Nat. Hist. Can.*, p. 50-114.

The bowhead whale (p. 96) is hardly to be expected in Quebec waters except in Hudson Strait, which according to Low (1906:257) was entered by the whalers as early as April, going to Repulse Bay and Foxe Channel, and passing eastward of Hudson Strait late in autumn. The right whales have no dorsal fin. (Author).

EASTERN ARCTIC

DISTRIBUTION—Eastern Arctic, history.

ANDERSON, RUDOLPH MARTIN.

1946. Catalogue of Canadian recent mammals. *Natl. Mus. Can., Bull. 102, Biol. Ser. 31*, 238 p.

A distributional list of the different forms of mammals that are known to exist, or to have existed within historic time, north of the southern boundaries of the Dominion of Canada, with exception of Alaska. Includes a brief description of the range of the bowhead whale in the eastern and western Arctic (p. 90-91). Time of migration and route in western Arctic is given. Commercial whaling began in Bering Sea and neighboring arctic regions in 1848, reaching Canadian waters around Herschel Island, Yukon, in 1888. The bowheads were soon reduced to limited numbers and whaling discontinued in the western Arctic about 1912, although Eskimos with old whaling tackle occasionally killed a bowhead along the shore for domestic uses for some years afterward.

EASTERN and WESTERN ARCTIC

BEHAVIOR—migration; DISTRIBUTION—History; WHALING—History, western Arctic, native.

ANDREWS, CLARENCE L.

1918. Alaska whaling. *Pac. Northwest Quart.* 9 (1):3-10.

A general historical description of commercial whaling in Alaskan waters, including comment (p. 3) "In the arctic near Point Barrow the Eskimo kill a smaller whale than the bowhead known to them as the ing-ah-took, which is considered by them to be a separate species."

WESTERN ARCTIC

DISTRIBUTION—history; IDENTITY—Eskimo, ing-ah-took; WHALING—history, western Arctic, commercial, Eskimo.

ANDREWS, CLARENCE L.

1939. The Eskimo and his reindeer in Alaska. The Caxton Printers, Ltd., Caldwell, Idaho, 253 p.

General account of Eskimo life and activities in Alaska observed first hand by author who was a government employee in the School and Reindeer Service. Spring whaling for bowheads along an open lead (called flaw whaling) off Wainwright is described. That year (1925 or 1926, text not explicit) hunters at Wainwright took two bowheads, two walrus and six polar bears, and at Icy Cape one bowhead was landed (p. 139, 148). At Cape Prince of Wales, once one of the greatest whaling villages, no whales were taken between 1906 and 1915 (p. 242).

WESTERN ARCTIC

WHALING—western Arctic, Bering Strait, Chukchi Sea, native, catch, photographs, utilization.

ANDREWS, CLARENCE L.

1972. Clarence L. Andrews collection. Collection accession number 72-154, Alaska and Polar Regions Dep. Elmer E. Rasmuson Lib., Univ. Alaska, Fairbanks.

Collection of notebooks and photographs (in boxes number 3, 4 and 6) containing information on commercial and native whaling for bowhead whales in Alaskan waters.

WESTERN ARCTIC

WHALING—history, western Arctic, commercial, native, catch, photographs.

ANDREWS, ROY CHAPMAN.

1911. Shore-whaling: a world industry. *Natl. Geogr. Mag.* 22(5):411-442.

A popular account on whales and shore-based whaling. "On the great bowhead, or Greenland right whale, which lives in the intensely cold waters of the Arctic Ocean, the blubber is 12 or 14 inches thick in some places." (Author).

EASTERN & WESTERN ARCTIC

MORPHOLOGY—measurements; WHALING—Commercial, shore stations.

ANDREWS, ROY C.

1914. Monographs of the Pacific Cetacea. The California gray whale (*Rhachianectes glaucus* Cope). Its history, habits, external anatomy, osteology and relationship. Mem. Am. Mus. Nat. Hist. New Ser. 1 (Part 5): 227-287.

Reviews the knowledge of the gray whale to date including life history, external anatomy, osteology, and classification of the species. The discussion on osteology contains numerous comparisons with *Eubalaena*, *Balaenoptera*, and *Megaptera*, including a single reference (on page 282) to the bowhead: "The presence of a foramen perforating the pelvic rudiment has been recorded by Struthers in the case of *Balaena mysticetus* but it is rare in other cetaceans."

CIRCUMPOLAR
MORPHOLOGY—structure, skeleton.

ANDREWS, ROY CHAPMAN.

1916. Whale hunting with gun and camera. D. Appleton & Co., New York and London, 333 p.

Popular style description of the author's observations about various species of whales, as well as general information from scientific literature and observations of other individuals. Chapter about bowhead and right whale (p. 245-257) gives very brief general facts about bowhead biology and behavior, whaling customs and techniques of Alaskan Eskimos, and distribution. Appendix includes a key to whales and brief scientific descriptions of the species.

EASTERN & WESTERN ARCTIC
BEHAVIOR; DISTRIBUTION; WHALING—history, gear, natives.

ANDREWS, ROY CHAPMAN.

1954. All about whales. Random House, New York, 148 p.

Popular style book written for young people. Chapter 9 (p. 90-102) presents general information on right and bowhead whales including physical description, baleen length and industrial uses, distribution, behavior, feeding and whaling by American whalers and Eskimos.

EASTERN & WESTERN ARCTIC
BEHAVIOR—general; DISTRIBUTION—eastern and western Arctic; MORPHOLOGY—general; WHALING—commercial and native, utilization.

ANSON, CHARLES LYMAN.

1949. Arctic man. Alaska Sportsman 15(12):20-23, 28-29.

Brief biography of Charles D. Brower by a person that assisted in the publication of Brower's book, Fifty years below zero. In a letter Brower sent to Anson he stated that four whales had been killed that year off Point Barrow [No date given, but possibly was during 1943].

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ANTHONY, H. E.

1928. Field book of North American mammals. G. P. Putnam's Sons, New York, London, 674 p.

Descriptions of every mammal known north of the Rio Grande, together with brief accounts of their geographical ranges, habits, etc. The bowhead (p. 559) is described as "a large whale, 50 to 65 feet long, with very large head and highly arched upper jaw; head more than one-third of total length; baleen very long, finely fringed. Geographical distribution circumpolar seas."

EASTERN & WESTERN ARCTIC
DISTRIBUTION—circumpolar; MORPHOLOGY—general.

APPLEYARD, GLENN.

1979. Whales. Naut. Q. No. 3: 18-35.

Review of the whaling industry and whale species. The depletion of most stocks of whales led to the formation of the International Whaling Commission in 1946 which developed self-imposed rules for regulation of the industry. It prohibited killing the nearly extinct gray, bowhead and right whales except aborigines were permitted to take them for subsistence. Before exploitation there were an estimated 10,000 bowhead, but these have been reduced to about 2,000 today. In 1977 a ban was declared by the IWC on the killing of bowheads by Eskimos, but this was subsequently modified in December of that year when special limits were set for the Eskimos permitting the killing of 12 bowheads or the striking of 18, whichever came first. Population scientists are now attempting to better estimate the size of the world stock of cetaceans. Based on these estimates, many cetologists believe that current hunting quotas do not pose an extinction threat to any great whale species.

WESTERN ARCTIC
POPULATION—abundance; REGULATION & CONSERVATION—management; WHALING—western Arctic, native, catch, drawing.

ARCTIC.

1949. Archaeological work on Cornwallis Island. Arctic 2(3):201.

Scientists excavating old Eskimo sites in the region of Resolute Bay, Cornwallis Island, in summer 1948 found several examples of pictographic art, including one showing a whale being harpooned from a umiak. Very few examples of pictographic art have been found at Thule sites in Canada or Greenland. This one showing a typical Eskimo umiak, with the steersman in the stern, three paddlers and the harpooner in the act of hurling a harpoon at a whale is a fine example. The Thule people were primarily whale hunters, and from skulls and other evidence the bowhead whale appeared to be abundant in their time. Today there are none in the region.

EASTERN ARCTIC
ARCHAEOLOGY—eastern Arctic; DISTRIBUTION—former and present; POPULATION—abundance; WHALING—native, pictographs.

ARCTIC BULLETIN.

1976. Marine research: [U.S.] Department of Commerce. Arctic Bull. 2(8):117-124.

Describes the Department of Commerce's arctic research responsibilities, including financial expenditures to study the bowhead whale and other marine mammals. In 1974 and 1975 biologists began assessing the bowhead whale population and the effect of the Eskimo harvest on the population. Aerial surveys were conducted over the Chukchi and Beaufort Seas from September 12 to 25, 1974, to observe the fall distribution of marine mammals. Approximately 12,874 km of trackline were flown between the Mackenzie Delta on the east and 174° W. and from the coast north to the ice. The expenditure for bowhead research in fiscal 1975 was approximately \$35,000 and that for fiscal 1976 will exceed three times this amount.

WESTERN ARCTIC

DISTRIBUTION—present, sightings; FIELD & LABORATORY TECHNIQUES— census, aerial; POPULATION—mortality, whaling; WHALING—Bering, Chukchi, Beaufort Seas, native, gear, catch.

ARCTIC BULLETIN.

1977. Marine research: [U.S.] Department of Commerce. Arctic Bull. 2(11):205-209.

Reviews the Department of Commerce's arctic research for fiscal 1976. Information on the distribution and abundance of bowhead whales was obtained by aerial surveys for the population in the Bering, Chukchi and Beaufort Seas under the Outer Continental Shelf Environmental Assessment Program. Aerial surveys were also conducted out of Point Barrow, Alaska, from May 27 to June 7 and June 17-20. The Eskimo spring harvest of bowhead whales was monitored by the Marine Mammal Division from April 22 to June 3, 1976. The Eskimos harvested 8 whales on St. Lawrence Island, 12 at Pt. Hope, 3 at Wainwright, and 13 at Barrow for a catch of 36 (preliminary figures). Monitoring began in 1974, with 20 whales harvested; there were 15 in 1975.

WESTERN ARCTIC

DISTRIBUTION—present, sightings; FIELD & LABORATORY TECHNIQUES— census, aerial; POPULATION—mortality, whaling; WHALING—Bering, Chukchi, Beaufort Seas, native, catch.

ARCTIC BULLETIN.

1978. Marine research: [U.S.] Department of Commerce. Arctic Bull. 2(15):369-378.

Reviews the Department of Commerce's arctic research for fiscal 1977. Assessment of the bowhead whale population continued by a census station established on the ice at Point Barrow, Alaska. From April 23 to June 3, an estimated 840 whales migrated past the station. Aerial surveys were conducted from Barrow during late spring and again in the fall. The Eskimos harvested 26 whales during the spring and at least 3 more were taken in the fall. In the last 4 years the annual harvest has varied from about 15 to 48 whales.

WESTERN ARCTIC

DISTRIBUTION—present, sightings; FIELD & LABORATORY TECHNIQUES—census, ice station, aerial; POPULATION—mortality, whaling; WHALING—Bering, Chukchi and Beaufort Seas, native, catch.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1977a. Alaska Eskimo Whaling Commission organized at historic gathering of whaling captains in Barrow. Arct. Coastal Zone Manage. Newsl. 6:[3].

On August 29, 1977, 72 whaling crew captains from around the Arctic coast met in Barrow to discuss the International Whaling Commission subsistence bowhead whaling moratorium and develop defensive strategy. They organized the Alaska Eskimo Whaling Commission, and authorized NSB [North Slope Borough] Eben Hopson to speak for the commission. The new commission is expected to develop any subsistence whaling regulations that may be needed.

WESTERN ARCTIC

REGULATION & CONSERVATION—regulation, Eskimo.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1977b. Whalers face-off opponents in Tokyo for IWC showdown. Arct. Coastal Zone Manage. Newsl. 8:1-6.

Describes special meeting of the International Whaling Commission at Tokyo, Japan in December 1977 to reconsider the sperm whale quota and the moratorium imposed on Eskimo subsistence whaling for bowheads during its annual meeting held this past summer. It was decided to allow a quota of 12 bowhead whales landed or 18 struck for 1978. One concern of the opponents was how the Alaska Eskimo Whaling Commission would prevent their crews from taking lactating females with calves. "Arnold Brower responded by pointing out that the taking of females with calves was unusual because such females customarily traveled together in the 3rd run which usually occurred when the ice turned rotten. He said that this run occurred far offshore, and was customarily not hunted by Inupiat whalers."

WESTERN ARCTIC
BEHAVIOR-migration, timing, segregated, calves; REGULATIONS & CONSERVATION-management, quota.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1978a. Federal whaling regs published. Arct. Coastal Zone Manage. Newsl. 10:11-12.

Contains published federal regulations on native subsistence whaling for bowhead whales by Alaskan Eskimos for 1978, including quotas, prohibited acts and penalties. The quota of 12 whales taken or 18 struck is to be distributed as follows: Gambell, 1 landed or 2 struck; Savoonga, 1 (2); Wales, 0 (0); Kivalina, 1 (2); Point Hope, 2 (2); Wainwright, 2 (2); Barrow, 3 (3); Nuiqsut, 1 (2); and Kaktovik, 1 (2). The remaining strike may be allocated upon consultation with the whalers and any unused landing or strike quota for a village may be transferred to another village.

WESTERN ARCTIC
REGULATION & CONSERVATION-management, quota.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1978b. The bowhead: The hunt is on! Arct. Coastal Zone Manage. Newsl. 11:5-6.

The year 1978 marks the beginning of a self-regulating regime of Eskimo subsistence bowhead whaling by the Alaska Eskimo Whaling Commission (AEWC). A state of Alaska legislative bill granting the AEWC a \$250,000 bowhead whale study appropriation was signed by Governor Jay Hammond on April 20. The state funding for the study will be managed by the Arctic Environmental Information and Data Center of the University of Alaska. "Meanwhile, off St. Lawrence Island in the Bering Sea, whaling captain Roland Olowa and his crew took the first whale of the year April 16. It was a large 40-ton whale that was struck at 7:30 a.m. and beached by 9:30 that same morning near the village of Savoonga.

WESTERN ARCTIC
MORPHOLOGY-measurement, estimated weight; REGULATION & CONSERVATION-bowhead whale study, Alaska State funds, regulation, quota; WHALING-Bering Sea, native, catch.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1978c. The bowhead: Villages hit hard as quota prevails, whalers confront NOAA chief. Arct. Coastal Zone Manage. Newsl. 12:1-3.

Brief account of visit by Richard Frank, Director of the National Oceanic and Atmospheric Administration (NOAA) to Barrow, Alaska on May 7 to resolve disagreement between NOAA representatives and Eskimos over the status of small whales designated as ingutuks by the whalers. The dispute arose when Jacob Adams, chairman of the Alaska Eskimo Whaling Commission, took a so-called ingutuk and thereby exceeded the village quota of three bowhead whales. The Eskimos agreed to stop whaling because of the possibility that the ingutuk was a type of bowhead and all agreed that the incident was an honest difference of opinion and misunderstanding. By the end of May all the whalers had taken a total of 10 bowheads compared to 27 last year and 48 the year before. A photograph of a large whale (unidentified) pulled up on the ice in April accompanies the article on page 2.

WESTERN ARCTIC

IDENTITY-Eskimo, ingutuk; MORTALITY-whaling, catch; REGULATION & CONSERVATION-management, quota; WHALING-Chukchi Sea, native, catch, photograph.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1978d. Elders Conference reveals possible westward shift of bowhead breeding habitat. Arct. Coastal Zone Manage. Newsl. 12:3.

Elders spoke of reports over the past 2 years "... of seeing unusual numbers of bowhead breeding and calving in the area between Kaktovik and Herschel Island, far west of their usual breeding habitat near Banks Island. They speculate two things could account for this: population growth or habitat displacement caused by Canadian Beaufort offshore oil and gas operations."

WESTERN ARCTIC

BEHAVIOR-migration, habitat, influences; REPRODUCTION-mating, parturition.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1978e. The bowhead: Weather blocks bowhead hunt. Arct. Coastal Zone Manage. Newsl. 15:4.

Alaska Eskimo Whaling Commission Chairman Jacob Adams announced the commission's decision to ignore the quota imposed by the International Whaling Commission (IWC) but Barrow whalers were prevented from challenging the IWC quota because of wind, fog, and ice conditions. The IWC had added another four to the 1978 quota of 12 whales for the year. During fall whaling Kaktovik hunters caught two whales, with one struck but lost.

WESTERN ARCTIC

POPULATION-mortality, whaling, struck and lost; REGULATION & CONSERVATION-management, quota; WHALING-Beaufort Sea, native, catch.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1979a. The spring whaling season. Arct. Coastal Zone Manage. Newsl. 20:10.

Only six whales were taken this spring on Alaska's arctic coast, a season hampered by bad weather. Three whales were taken at Point Hope by Darrel Frankson, John Oktollik and John Tingnook. At Barrow whales were taken by Horace Ahsogeak, William Kaleak and Burton Rexford. In an unusual event, Ahsogeak's crew struck and apparently killed a whale, but four other whales came and took it away. Spring whaling ended at Barrow on May 29th.

WESTERN ARCTIC

BEHAVIOR-protective; POPULATION-mortality, whaling, killed but lost; WHALING-Chukchi Sea, native, catch, crews.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1979b. The Beaufort Sea hearings. Arct. Coastal Zone Manage. Newsl. 21:7-18.

Contains comments made during public hearing during May-June 1979 at Kaktovik, Nuiqsut and Barrow on the Draft Environmental Impact Statement on the Beaufort Sea Federal/ State Oil and Gas Lease Sale scheduled for December. One whaling captain reported that bowhead whales travel in shallow water, smaller whales often entering areas as shallow as 10 feet. Other whalers confirmed that whales often traveled inside the barrier islands in the lease area, especially when wind and currents bring pack ice shoreward. Many residents expressed concern over the effects that oil and noise pollution would have on bowhead behavior patterns, especially those of feeding and traveling close to shore where they are available to whalers in the fall. One Kaktovik resident stated that bowheads have been observed feeding all the way from Herschel Island to Kaktovik. Another person recalled an incident in 1944 when a Navy ship grounded east of Barrow and dumped its cargo of oil overboard to lighten the ship, causing the death of many animals.

WESTERN ARCTIC

BEHAVIOR-migration, patterns, Beaufort Sea; NUTRITION-feeding ground; PATHOLOGY-pollution, oil, noise.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER

1980a. Bowhead in Norton Sound raise controversy. Arct. Coastal Zone Manage. Newsl. 28:11-12.

An ice barrier at Bering Strait blocked the northward migration of bowhead whales until May 14 when they were first sighted off Point Hope. Meanwhile, at Southwest Cape Savoonga captains Raymond Toolie and Ray Gologergen each took a large whale in mid-April. Gambell whalers struck and lost two bowheads before Alex Oosevals crew captained by Gordon Oosevaseuk took a whale. This whale had been struck years before as bomb fragments, of an old type not used since the 1930s, were found encased in scar tissue on the side of the head. Ice blockage of the entire bowhead migration resulted in two unusual events: (1) Andrew Sitook of Wales took a whale, the first caught there in a decade, and (2) a 33-foot bowhead was taken by Edgar Jackson of Shaktoolik and no one could remember a bowhead being taken at that village. Due to this spring's unusual events, local officials are concerned and see serious implications for future oil and gas development in the Norton Sound area, and the use of inappropriate weapons to take bowheads.

WESTERN ARCTIC

BEHAVIOR-migration, schooling; DISTRIBUTION-factors affecting, ice blockage; POPULATION-mortality, whaling, struck and lost; REGULATION & CONSERVATION-management, quotas, weapons; WHALING-Bering Sea, Chukchi Sea, native, catch, crews, gear.

ARCTIC COASTAL ZONE MANAGEMENT NEWSLETTER.

1980b. Barrow celebrates successful bowhead season. Arct. Coastal Zone Manage. Newsl. 30:1-6.

Thirty-four whaling crews took nine bowhead whales at Barrow during the spring season of 1980. Whales were taken by Arnold Brower, Sr. (May 7), Ralph Ahkivgak, Arnold Brower, Harry Brower and Pat Tukle (other crews were not named). One whale was taken by Wainwright hunters. The all village quota for 1980 was 18 [8 total for Barrow]. Also reports the Alaska Eskimo Whaling Commission's viewpoints concerning the status of bowheads and Alaskan Eskimo subsistence whaling at current meetings of the International Whaling Commission and the adoption of a three-year quota of 45 whales, with the provision that no more than 17 can be taken in a single year.

WESTERN ARCTIC

BEHAVIOR-migration, delayed by ice barrier; FIELD & LABORATORY TECHNIQUES-census; POPULATION-mortality, whaling; REGULATION & CONSERVATION-management, quotas; WHALING-Chukchi Sea, native, catch, crews.

ARCTIC DIGEST.

1978. Alaskan leases may stimulate transport hub. *Arct. Dig.* 10(4):13.

Alaska Governor Jay Hammond announced that the scheduled Point Thompson (50 miles east of Prudhoe Bay, Beaufort Sea) oil lease sale had been postponed. Public hearings revealed almost unanimous opposition to the sale at this time. Among those groups known to be against the lease sales are people concerned about the effects on bowhead whales which calve in the area. North Slope natives who conduct subsistence hunts for the bowhead opposed the sale and are supported by legal groups and the environmental Greenpeace organization. The whales may be covered by proposals to amend the Endangered Species Act now being considered by the U.S. Congress.

WESTERN ARCTIC

DISTRIBUTION—Beaufort Sea; REGULATION & CONSERVATION—regulation, conservation; REPRODUCTION—parturition; WHALING—western Arctic, Beaufort Sea, native.

ARCTIC RESEARCH LABORATORY.

1950a. April 29 [Two bowheads caught by Eskimos at Point Barrow, Alaska.] U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, *Arctic Res. Lab. Newsl. No. 10:6*.

“Routine work at the laboratory was interrupted in mid-afternoon when word was received that one of the whaling camps had a whale. A general exodus in the direction of the camps followed—and only Harry remained to hold down the fort. By six o'clock about 300 Eskimos were at the camp with approximately 50 dog teams. An acre of ice was occupied by family groups around their sleds or around gasoline or oil stoves heating water in preparation for cooking muktuk.

The whale, a young bowhead not much over 25 feet in length, was drawn out of the water onto the ice by means of block and tackle attached to the tail and anchored to the ice. Two triangular holes were made in the ice about 18 inches apart and to a depth of 2 feet and then a hole was made under this 18-inch by 2-foot section so that a rope could be drawn under it. The pulling is then done by hand—many hands.

Even before the whale was out of the water pieces of muktuk had been cut off. Some of it is eaten raw, but most of the Eskimos seem to prefer to cook it when it is fresh. Once out of the water the animal was soon flensed and strips of the muktuk were dragged out of the way with hooks and later hauled to the village on sleds.

About 7:30, with the aid of a telescope, some of the Eskimos sighted a flag at another whaling camp some distance away. A flag announces the taking of a whale. There was vocal jubilation at the first camp.”

WESTERN ARCTIC

MORPHOLOGY—measurements (estimated length); WHALING—western Arctic, Chukchi Sea, native, catch, utilization.

ARCTIC RESEARCH LABORATORY.

1950b. April 30 [Length of second bowhead caught by Eskimos at Point Barrow, Alaska, on April 29.] U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, *Arctic Res. Lab. Newsl. No. 10:6*.

“Rex Rowray, the only ARL representative to visit the second whaling camp last night, came in 7:00 a.m. today. Natives had worked all night caring for the second whale, which was about 45 ft. long.”

WESTERN ARCTIC

MORPHOLOGY—measurements (estimated length); WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1950c. May 1 [Another whale caught by Eskimos at Point Barrow, Alaska]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 11:1.

"The Eskimos got another whale today and some ARL photographic fans loaded with equipment arrived on the scene in the late afternoon in time to see the carcass after it had been flensed. Several were daring enough to try eating raw muktuk; the chief requisite for which is a strong pair of jaws and a good set of teeth--coupled with an open mind, of course."

WESTERN ARCTIC
WHALING--western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1950d. May 8 [Another whale caught by Eskimos at Point Barrow, Alaska]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 11:3.

"The Eskimos have another whale. There should be much celebrating in Barrow village about June."

WESTERN ARCTIC
WHALING--western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1950e. May 18 [Another whale, a stinker, landed by Eskimos at Point Barrow, Alaska.] U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 11:5.

"The Eskimos got another whale. This time it was one that had been shot several days ago and came up under the ice. It was necessary to blast the ice to get at the whale. Such whales are called "stinkers", an appropriate appellation, we are informed by an ArCon lady who went to the scene to take pictures. The muktuk from such "stinkers" is eaten, but the flesh is fed to the dogs. Muktuk from a stinker is said to be superior to that from a fresh whale, no doubt because of a softening process due to decomposition."

WESTERN ARCTIC
POPULATION--mortality, whaling, struck and lost, stinker; WHALING--western Arctic, Chukchi Sea, native, catch, utilization.

ARCTIC RESEARCH LABORATORY.

1950f. June 13 [Barrow village celebrated the catching of whales.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 12:4-5.

"Barrow village was the scene of a celebration today--celebrating the catching of whales' Festivities began in the afternoon, but, with the exception of Wennesland and Nelda Black, visitors from the ARL could not attend until after dinner. Blanket tossing was in progress and continued until nearly midnight, when the tossing gear was lowered and the dancing mat was put down. Pete was one of the six or seven drummers and both Jake and Chester took part in the dancing. Unfortunately, the sun was not cooperative and 1:00 a.m. saw most of the camera fans departing, although the Eskimos danced for another hour."

WESTERN ARCTIC
WHALING--western Arctic, native.

ARCTIC RESEARCH LABORATORY.

1950g. June 15 [Barrow villagers held another whale celebration today.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 12:5.

“Another whale celebration was held today—a bigger and better one it was reported. ARL visitors were conspicuous by their absence, Wennesland being the chief representative, although the Wickhams got over for a 20 minute stay. No sun. Several people who remained at camp stayed up, watching and hoping that the sun would appear about midnight, the usual time for dancing to begin. Still no sun.”

WESTERN ARCTIC
WHALING—western Arctic, native.

ARCTIC RESEARCH LABORATORY.

1950h. September 14 [A dead beached whale found near Barrow, Alaska.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 15:3.

“A whale about 25 feet long washed ashore near the sled shop today. It probably had been killed last spring and trapped under the ice so was very ripe. However, it is being cut up for dog meat.”

WESTERN ARCTIC
MORPHOLOGY—measurements (estimated length); POPULATION—mortality, stranding (utilization).

ARCTIC RESEARCH LABORATORY.

1950i. September 25 [Barrow villagers kill a whale]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 15:4.

“The Villagers killed a whale this evening. It was about 10:00 p.m. before they succeeded in getting it on the beach so not many attended from ARL. We understand that it was about 30 feet long which makes it one of the larger ones taken this year.”

WESTERN ARCTIC
MORPHOLOGY—measurements (estimated length); WHALING—western Arctic, Beaufort Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1950j. October 12 [Point Barrow Eskimos killed but lost a whale yesterday.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 16:3.

“The Eskimos reported that another whale was killed late yesterday, but was lost owing to the onset of darkness before it could be secured and kept afloat.”

WESTERN ARCTIC
POPULATION—mortality, whaling, killed/lost; WHALING—western Arctic, Beaufort Sea, native.

ARCTIC RESEARCH LABORATORY.

1950k. October 13 [A small whale caught late yesterday by Point Barrow whaler.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 16:3.

“The Eskimo workmen reported that Ned Nusinginga's whaling crew got a small whale late yesterday. It was hauled ashore and all cut up before midnight.”

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1951a. April 19 [Whaling season begins at Point Barrow, Alaska.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 22:4.

"The Eskimo whaling season is beginning to get underway. With the advent of warm weather, leads in the sea ice are beginning to open up and the whales are beginning to run. One whaling crew took advantage of the well-packed trail to Rudy's offshore cable station to move an umiak to the open water. At the present time, the open water nearest Camp lies about 7 miles offshore, beyond the pressure ridge."

WESTERN ARCTIC
BEHAVIOR--migration; WHALING--western Arctic, Chukchi Sea, native.

ARCTIC RESEARCH LABORATORY.

1951b. May 3 [Two whales killed by Eskimos.] U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 23:1.

"Yesterday's rumors of a whale kill proved true and a second whale has been thrown in for good measure. Jake and Miles didn't make it to work today: it's apparent that they've gone to the whaling camps to haul in a load of meat. Neither of the whales was killed near the camp so no [one] has gone sightseeing."

WESTERN ARCTIC
WHALING--western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1951c. May 6 [Another whale killed and two more struck but lost.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 23:2.

"Another whale was killed this afternoon. The Eskimos now have three and two more have been wounded. The Eskimos still hope to recover the carcasses of the wounded whales as the ocean currents shift the ice about."

WESTERN ARCTIC
POPULATION--mortality, whaling, struck and lost; WHALING--western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1951d. May 9 [A dead whale (a stinker) is recovered.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 23:2.

"The Lab is short-handed again. The Eskimo whalers caught a "stinker" last night and Jake and Miles failed to put in their appearance. ("Stinker" is the Eskimo's term for a whale which has been wounded and recovered by the hunters a number of days after death.) Pete tells us that whale meat is now selling for 35 cents a pound in the village, and muktuk--the skin and several inches of the attached blubber--is bringing 60 cents a pound."

WESTERN ARCTIC
POPULATION--mortality, whaling, struck and lost, stinker; WHALING--western Arctic, Chukchi Sea, native, catch, utilization.

ARCTIC RESEARCH LABORATORY.

1951e. May 12 [Another whale taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 23:3.

"The Eskimos brought word today that another whale was killed at 3:00 a.m. Sleds loaded with meat are coming in on the trail just off shore from camp."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1951f. May 15 [A whale is killed but lost to moving ice.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 23:4.

"Another whale was killed last night. However, after the animal was hauled up onto the ice, the ice broke off and the floe drifted out to sea. The Eskimos made it back to the shore-fast ice in their boats, but were forced to let the whale go. They're in hope the floe will ground again farther down the coast, making it possible for another crew to get the meat."

WESTERN ARCTIC
POPULATION—mortality, whaling, killed but lost; WHALING—western Arctic, Chukchi Sea, native.

ARCTIC RESEARCH LABORATORY.

1951g. May 16 [Whale lost yesterday is recovered.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 23:4.

"Whale number six—the big one that got away yesterday—was recovered by another crew. The ice flow on which it floated to sea, grounded some 20 miles south of the village and the meat is now on its way to Barrow by the sledload."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1951h. May 29 [Seventh whale taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 23:6.

"The seventh whale of the season was taken last night. What a celebration the village will have this year."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1951i. June 19 [First Nelakatuk held by villagers.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 24:5.

"... Nelakatuk. The entire Camp turned out almost en masse for the celebration. Two ArCon LVT's, completely jammed, carried the crowd to the village to witness the festivities, which followed the classic pattern: blanket toss, lots of free muktuk, and the native dance in the wee morning hours."

WESTERN ARCTIC
WHALING—western Arctic, native.

ARCTIC RESEARCH LABORATORY.

1951j. June 21 [Second Nelakatuk held by villagers.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 24:6.

A second Nelakatuk to celebrate a successful whaling season was held at Barrow today.

WESTERN ARCTIC
WHALING—western Arctic, native.

ARCTIC RESEARCH LABORATORY.

1951k. September 28 [Seven crews are whaling.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 27:6.

“Now that duck hunting is becoming passe, the Eskimos are turning to a greater thrill (and greater reward) of whale hunting. Some seven crews now are operating from the Point. A number of whales were reported sighted far offshore today, but none of the crews made kills.”

WESTERN ARCTIC
BEHAVIOR—migration; WHALING—western Arctic, Beaufort Sea, native, crews.

ARCTIC RESEARCH LABORATORY.

1951l. October 5 [A 40-foot whale killed but lost.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 28:2.

“Pete returned from his annual leave today, bringing many a tall tale of the fall whaling season. His stories of the whale which surfaced beneath the umiak and gave the boat crew a short, rough ride; of the 40-footer, killed after a 2-hour battle, which finally was cut adrift and abandoned when the sea became too rough to continue the tow...”

WESTERN ARCTIC
BEHAVIOR—interaction with whaling boat; POPULATION—mortality, whaling, killed but lost; WHALING—western Arctic, Beaufort Sea, native.

ARCTIC RESEARCH LABORATORY.

1951m. October 28 [A whale was killed late yesterday.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 28:5-6.

“A whaling crew outfitted by Ned Nusunginya, the ArCon labor foreman, made a kill yesterday. Three boats were sighted opposite camp, towing a small whale from the Point to the village. The animal was beached at the water's edge and later was dragged well out of the water by a tractor.”

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1952a. April 20 [No whales taken to date.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 34:5.

“Open water is only about 3 miles or less offshore NW of Barrow. No gulls or ducks have appeared yet and, although 3 whaling camps have been established, no whales have been taken to date.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1952b. May 19 [No whale catch to date.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 35:5.

“Chester Lampe allows this is a very poor whaling season. No catch yet...”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1952c. May 26 [No open water and no whales off Brower's whaling camp.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 35:6.

“An ArCon weaselful of Barrowites drove out to Brower's whaling camp in hopes of coming within sight and smell (?) of muktuk. No open water, no whale, but thousands of king eider ducks flying overhead.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1952d. July 17 [Eskimo who singlehandedly took a whale.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 37:7.

“Bert Carter hired five Eskimo assistants to help with the [archaeological] digging. Included in his crew is John Quincy Adams, an older man held in great respect for his hunting ability. John took a whale once from an oomiak, singlehanded.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crew.

ARCTIC RESEARCH LABORATORY.

1952e. September 24 [Eskimos whaling unproductive.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 39:6.

“Eskimos are out whaling this month. Boats out for several days but not one flies the flag to show a whale was caught.”

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1952f. September 26 [No whales sighted to date.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 39:7.

“Eskimo crews report still no whale sighted.”

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1952g. December 4 [Polar bear kill eases lack of whales during the past season.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 42:2.

“Polar bears to the right of us, polar bears to the left of us! Next thing they will be parading down main street. If this sort of invasion keeps on, the natives at the village will feel less keenly the lack of whales during the past season.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, Beaufort Sea, native, catch

ARCTIC RESEARCH LABORATORY.

1953a. March 30 [A good whaling year predicted.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 45:12.

“Ned Nusunginya declares that the Eskimo hunters are going to get a fine catch of whale this spring. He doesn't say how he knows, but he's positive in his statements.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953b. April 9 [Nusunginya whaling crew out today.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 46:4.

“We hear that Ned Nusunginya and his whaling crew go out today. The Eskimos at ARL are excited about the prospects for a good whaling season.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, crews

ARCTIC RESEARCH LABORATORY.

1953c. April 15 [Two crews set up whaling camps.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 46:6.

“Pete [Sovalik] reported this morning that two crews left the village to set up their whaling camps on or near the lead. Pete said they and the others in the Village were greatly excited about the coming season and all are hoping for many whales and an abundance of muktuk.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, crews.

ARCTIC RESEARCH LABORATORY.

1953d. April 19 [One whale sighted near Wainwright but none at Barrow yet.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 46:7.

“The Eskimo whalers are still at their stations on the ice, but no whales have been spotted yet. A report came in that one had been seen near Wainwright, but only for a short time and a kill was not made.”

WESTERN ARCTIC
BEHAVIOR—migration; WHALING—western Arctic, Chukchi Sea, native.

ARCTIC RESEARCH LABORATORY.

1953e. April 27 [First whale of the season was struck but lost.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 46:11.

"The reports on the preparations and constant watching at the whaling camps continue to come in each morning as the Eskimo men come to work. Ned Nusinginya makes a trip to the village once or twice a day and today brought back word that one crew had shot a whale with a shoulder gun, but that the bomb had failed to explode so they lost the first whale struck this season. He reported too that Tom Brower had attempted to get a whale with a darting gun--a wooden harpoon-like tool with a bomb ingeniously fastened to the tip of it so the contact of a protruding rod with the whale's body explodes a small shell, which in turn drives a bomb into the animal where the bomb is supposed to explode--but had missed as the whale was a little too far from the ice for Tom to make good his cast. However, none of the Eskimos seem to be discouraged by the first miss or two for they believe that if there are so many whales in the vicinity this early in the season they will have better luck soon."

WESTERN ARCTIC

POPULATION--mortality, whaling, struck but lost; WHALING--western Arctic, Chukchi Sea, native, crews, gear.

ARCTIC RESEARCH LABORATORY.

1953f. April 28 [First whale of the season landed.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 46:11-12.

The first whale of the season was killed about a mile straight out from the village. The carcass was examined by an ARL scientist for parasitic copepods but the animal proved to be exceptionally clean and not a parasite was found. "Afterward Pete informed him that the "whale lice" were hardly ever found on the bowhead whale, which this one was, but on the humpback [gray] whales that appear in this vicinity later in the season."

WESTERN ARCTIC

BEHAVIOR--migration (relationship with other species); PATHOLOGY--parasites; WHALING--western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953g. April 29 [Two more whales taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 46:12.

"We learned at breakfast this morning that a second whale had been killed and all cut up during the night. At coffee time, 9:30 A.M., more excitement marked the arrival of word that a third one had been taken by Roxy's crew and that the "cutting in" process would begin shortly. The whale had just been killed less than an hour earlier and it was tied up to the ice straight out from the AACS station.

Eventually the whale was pulled up on the ice, and it appeared to be somewhat smaller than the one obtained the day before. The one taken yesterday was about thirty-four feet long, this one only 26 feet long, but a good deal broader in the beam, proportionally than the longer whale."

WESTERN ARCTIC

IDENTITY--nomenclature (ingutuk?); MORPHOLOGY--measurements; WHALING--western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1953h. April 30 [Whale number four taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 46:13.

Just before midnight the ARL learned that whale number four for this season had been taken by Alfred Hopson's crew offshore from the "Duck shooting station."

WESTERN ARCTIC

WHALING--western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1953i. May 1 [A “stinker” is recovered.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 47:1.

“The SDARL concluded the Newsletter for 30 April with an incomplete reference to another whale. He, Chester, Chester’s twelve-year-old son, and Adam Leavitt rode part way out to the camp in a weasel, then proceeded on foot a distance of about a mile to the open lead where Alfred Hopson had caught his second whale of the season. Although it was only a little after one o’clock in the morning when they arrived at the whaling camp there was enough light by which to take black and white pictures and Doc began “shooting” with the Speed Graphic immediately after arriving. The whale was already out on the ice and the flukes had been cut off when the ARL group arrived but Alfred Hopson delayed further “cutting in” until measurements could be taken. All of the laboratory group helped cut up the carcass and both Chester and Adam received a share of the meat and muktuk. They arrived back at camp at 0615 and Doc turned in for a few hours sleep. At 1000 he returned to the laboratory, just to learn that still another whale, a “stinker”, had been hauled alongside the solid ice almost straight out from camp, so Doc and Dorothy Wiggins, Marcella Lawson, Mike Dalton, Olive DePrang and Bert Ames hiked through the snow to camp. It was a strenuous hike, but not half as hard going out as it was returning at the end of the day! The whale had been hit first on the 29th of April but had sunk and only came to the surface this morning. Joe Sikvoygak and his crew had sighted it and hauled it ashore, having lost a whale on Tuesday at about the place where this one came to the surface. When it was hauled out of the ice -- only after a series of comical episodes involving the breaking of the rope tackle and some spills on the ice -- lively interest in finding one of the bombs kept all hands working on the animal. One chap was standing on top of the carcass when his flensing iron struck too deeply and punctured the body cavity of the bloated “stinker”. The whale blew up like an over-inflated tire and a generous quantity of the viscera rained down around his head and shoulders! The hilarity that accompanied the “blow-out is rarely equaled!

When the bomb was finally located there was some uncertainty about the marking on it, so Joe and Otis Ahkivgak both claim the whale and are still arguing about it.”

WESTERN ARCTIC

POPULATION–mortality, whaling, struck and lost, stinker; WHALING–western Arctic, Chukchi Sea, native, catch, crews, gear, utilization.

ARCTIC RESEARCH LABORATORY.

1953j. May 5 [Total whale catch to date is 12 at Barrow; none caught at Wainwright.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 47:2.

“Three groups of Eskimos arrived in the Village today by dog team from Wainwright. They came to buy whale meat, which is selling for fifty cents a pound. No whales have been caught at Wainwright because the leads are all in shallow water.

The total catch of whales stands at twelve today, the Native Store crew having taking its second whale today!”

WESTERN ARCTIC

WHALING–western Arctic, Chukchi Sea, native, catch, crews, utilization.

ARCTIC RESEARCH LABORATORY.

1953k. May 7 [Whale catch to date totals 14.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 47:2.

“The whaling crews now have a total of fourteen whales.”

WESTERN ARCTIC

WHALING–western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953l. May 11 [A “stinker” is recovered.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 47:3.

“The Eskimos get another whale today but it turned out to be another “stinker”, one which had been shot several days ago.”

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost, stinker; WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953m. May 18 [Some crews stop whaling.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab., Newsl. No. 47:5.

“The whaling crews are beginning to break camp. There have been no whales caught in the past week and it would seem that the first of the two annual whaling seasons is behind us.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953n. May 20 [Three polar bears sighted feeding on a whale carcass.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 47:6.

“General Van Fleet and Col. Waltz had attempted to hunt a polar bear and from the plane located three of them feeding on the carcass of a whale.”

WESTERN ARCTIC
POPULATION—mortality, whaling, struck/lost, stranding; PREDATORS & COMPETITORS—scavengers.

ARCTIC RESEARCH LABORATORY.

1953o. May 28 [Another whale struck but lost; 18 taken to date.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 47:7-8.

“Pete says the whalers shot a whale last evening but were unsuccessful in catching it. Seems they did not have any harpoons around so Mr. Whale got away. He'll probably end up a “stinker”. Pete didn't seem to mind too much though for they had a very good season so far. Eighteen whales have been taken by the Barrow crews.”

WESTERN ARCTIC
POPULATION—mortality, whaling, struck/lost; WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953p. May 29 [Whale number 19 is caught.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 47:8.

“Today there was much excitement around the lab again. The Eskimos got another whale. It turned out to be a “baby whale” about twenty-five feet long.”

WESTERN ARCTIC
MORPHOLOGY—measurements (estimated length); WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953q. June 9 [Nulakatuk to be held-first in two years.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 48:5.

"This morning ARL received an invitation from the President of the Barrow Village Council, Mr. Eben Hopson, to attend the "Nulakatuk". This is a celebration given after a successful whaling season, sponsored by the crews who got the whales. It is most interesting and colorful. This is the first big celebration in the last two years, as no whales were caught during the 1952 whaling season."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, Beaufort Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1953r. June 11 [Nulakatuk tonight.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 48:5.

"Four of the successful whaling crews will stage the Nulakatuk in the Village tonight. Everyone at ARL is invited."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native.

ARCTIC RESEARCH LABORATORY.

1953s. June 12 [First Nulakatuk held last evening; two more to be held, one on Monday and one on Thursday of next week.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 48:6.

"A number of the ARL people went to the Village for the Nulakatuk last evening. It was held on the beach ... The Laboratory people have been invited to attend the next two celebrations, one on Monday (the 15th), the next on Thursday [the 18th] of next week."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native.

ARCTIC RESEARCH LABORATORY.

1955a. April 25 [Some whaling crews on the ice.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 1:2.

"From Barrow Village we learn that whaling parties are out on the ice-but no flags hoisted as yet."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native.

ARCTIC RESEARCH LABORATORY.

1955b. May 6 (Friday.). [Season's first whale landed.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:3.

"A pressure ridge is grounded out about two miles and beyond this is an extensive lead. The natives have established several whaling camps along it and today they took their first whale, a small bowhead, about six miles south of the Village. Horace Ahsogeak is the crew chief of the season's first whale."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1955c. May 7 (Saturday.). [Whale number two landed.] U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:3.

"Pete Sovalik and Chester Lampe were all smiles this morning, because Luther Leavitt brought in whale no. 2 of the season."

WESTERN ARCTIC
WHALING--western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY

1955d. May 10 (Tuesday.): [Whales sighted in lead four miles offshore.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:4.

"A Bush Plane coming in from southwest coastal area reports many whale visible in the lead about four miles out, and the Eskimos have already made for that direction."

WESTERN ARCTIC
BEHAVIOR-- migration; WHALING western Arctic, Chukchi Sea, native.

ARCTIC RESEARCH LABORATORY.

1955e. May 12 (Thursday.). [A whale is struck but lost.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:4.

"Word was received today that a third whale was shot today by Fred Ipalook's crew but that it got away because the crew did not have enough bombs to finish it off. No doubt this whale will end up as a "stinker"--the term used by the local Eskimos to describe a whale which is mortally wounded and is found at a later date either at the surface of the ocean or below the ice. In such cases, Chester Lampe reports that the muktuk is still good eating but the meat of the stinker is fed to the dogs."

WESTERN ARCTIC
POPULATION--mortality, whaling, struck/lost; WHALING--western Arctic, Chukchi Sea, native, catch, crews, utilization.

ARCTIC RESEARCH LABORATORY.

1955f. May 13 (Friday.). [Whale number three landed.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:4.

"Muktuk tonight! Eli Solomon's crew bagged whale No. 3 today."

WESTERN ARCTIC
WHALING--western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1955g. May 14 (Saturday.). [Three more whales landed.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:5.

"Lots of muktuk tonight! Eli Solomon brought in No. 4 (his second whale of the season); Dan Leavitt's crew killed whale No. 5; and Al Hopson came through with whale No. 6."

WESTERN ARCTIC
WHALING--western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1955h. May 15 (Sunday.). [Another three whales captured.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:5.

“Another field day for the Eskimo Whaling Teams, and much muktuk tonight for the Lab's Eskimo assistants. Eli Solomon's crew got whale No. 7 (his third); Luther Leavitt got No. 8 (his second); and Wyman Panigeo had to be satisfied with his first whale of this season, whale No. 9.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1955i. May 16 (Monday.). [Tenth whale of season taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:5.

“The cry of “Muktuk” continues to ring throughout the Village and Camp, when word came through that Edward Nukapigak killed whale No. 10.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1955j. May 18 (Wednesday.). [Whale number 11 is taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:6.

“More muktuk! Al Hopson took possession of whale no. 11 (his second of the season.). However, the whale was a “stinker”, having been shot by Al's crew about May 16 and identified today by the bomb which was taken out of the whale in the process of butchering it. The dogs must be fed too; so the stinker is hardly any loss at all insofar as the odorous meat is concerned.”

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost, stinker; WHALING—western Arctic, Chukchi Sea, native, catch, crews, utilization.

ARCTIC RESEARCH LABORATORY.

1955k. May 19 (Thursday.). [Two stinkers recovered.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:6.

“Two stinkers made an appearance. Steve Hopson (brother of Al Hopson) was in charge of the crew that got Nos. 12 and 13 today. These two whales were shot by Steve's crew a few days ago and were recovered today.”

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost, stinker; WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1955l. May 23 (Monday.). [Two more stinkers recovered.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:7.

“Good o’l Joshua Sakegak brought the total of whales killed thus far this season to No. 14, even though he had to be satisfied with a stinker. And whale No. 15—also a terrible stinker—was recovered several miles south of the Village. In fact, the distance to be covered by dog teams was so prohibitive that the Eskimos decided to salvage only the “muktuk” and left the rest of the stinker out on the ice. The crew responsible for killing this 15th whale is unknown.”

WESTERN ARCTIC

POPULATION—mortality, whaling, struck and lost, stinker; WHALING—western Arctic, Chukchi Sea, native, catch, crews, utilization.

ARCTIC RESEARCH LABORATORY.

1955m. May 31 (Tuesday.). Recap of whales killed during the month of May in the vicinity of Point Barrow. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Newsl. No. 2:10.

“RECAP OF WHALES KILLED DURING THE MONTH OF MAY IN THE VICINITY OF POINT BARROW”

Whale number	Crew Chief	Date Whale Killed
1	Horace Ahsogeak	May 6
2	Luther Leavitt	May 7
3	Eli Solomon	May 13
4	Eli Solomon	May 14
5	Dan Leavitt	May 14
6	Al Hopson	May 14
7	Eli Solomon	May 15
8	Luther Leavitt	May 15
9	Wyman Panigeo	May 15
10	Edward Nukapigak	May 16
11	Al Hopson	May 18 (“stinker”)
12	Steve Hopson (Al’s brother)	May 19 (“stinker”)
13	Steve Hopson	May 19 (“stinker”)
14	Joshua Sakegak	May 23 (“stinker”)
15	Unknown	May 23 (“stinker”).”

WESTERN ARCTIC

POPULATION—mortality, whaling, struck and lost, stinker; WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1956a. Monthly Progress Report for May. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Monthly Prog. Rep. for May:3.

“On May 19 a report reached the Laboratory just about noon that a whale had been taken at one of the less distant whaling camps, so an attempt was made to secure pictures, specimens of parasites and barnacles from the carcass. Most of the staff members, including Chester Lampe and Phil Sovalik, drove as far as was deemed prudent then left the two weasels and walked about six miles farther out on the ice. The trip was fruitless, for the two whales had been completely cut up by the time the party reached the camp. This was the only concerted attempt on the part of the Laboratory staff to participate in actual field work during the month.”

WESTERN ARCTIC

WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1956b. Monthly Progress Report for June. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Monthly Prog. Rep. for June:3.

“Various members of the staff attended one or more of three nelakatuk celebrations staged during the month by the natives of Barrow Village following a successful whaling season. A moderate amount of Kodachrome 16mm movie film was exposed for addition to the ARL documentary film during these celebrations.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, film.

ARCTIC RESEARCH LABORATORY.

1957. Ecology of crustaceans. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Monthly Prog. Rep. for May:6.

“Field work was planned with two-fold objective: a) observation of bowhead whaling for general data and specifically for gathering parasitic materials, and b) under-ice measurements and collecting at the halocline Nuwuk Lake, Point Barrow. The first objective was not achieved.

Only two beluga were taken before the writer [Dr. John L. Mohr] left and the subsequent destruction of most of the whaling fleet by storm action removed the chances of getting bowhead specimens for this year.”

WESTERN ARCTIC
BEHAVIOR—relationship with other species; WHALING—western Arctic, Chukchi Sea, native, catch, gear.

ARCTIC RESEARCH LABORATORY.

1961. May 6 [First spring whale caught.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

“The first spring whale was caught directly off Barrow village at 0640 [hrs.]. It was a 26 foot bowhead.”

WESTERN ARCTIC
MORPHOLOGY—measurements (estimated length); WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1965. May 5 [First spring whale caught.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

“The Barrow village whaling crews produced the first whale of the spring season today.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1966a. April 15 [Spring whaling begins.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

“Whaling season opened today and several whaling parties put out from the village.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, crews.

ARCTIC RESEARCH LABORATORY.

1966b. April 23 [Five crews whaling.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"Dickerson reported five whaling camps sighted."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, crews.

ARCTIC RESEARCH LABORATORY.

1966c. May 10 [First spring whale caught.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"The first whale of the season was caught by Harold Itta's crew."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1966d. May 18 [Two more whales taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"Two more bowhead whales were taken by the Barrow whalers today."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1966e. June 24 [Three whales caught-Nalakatuk tonight.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"Barrow village nalakatuk was held tonight. Three whales taken so far this season."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1966f. October 7 [First autumn whale taken.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"First whale of season brought in by Whitlam Adams."

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1966g. October 11 [Another whale landed.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"Another whale brought in."

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, native, catch.

ARCTIC RESEARCH LABORATORY.

1966h. October 13 [Bowhead sighted off ARL.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"Loralee Lance spotted a small bowhead whale about 20 yards offshore by the camp in the morning."

WESTERN ARCTIC
BEHAVIOR—migration.

ARCTIC RESEARCH LABORATORY.

1966i. October 22 [Five boats unsuccessfully pursue whale.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"Ice moved away from shore today for a few miles. A whale was seen close to shore at noon-up to five boats were dispatched to the scene (no immediate luck)."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, Beaufort Sea, native, crews.

ARCTIC RESEARCH LABORATORY.

1966j. October 23 [A small whale caught.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"A small whale was brought in today at the village. It was quite small, but very tender and tasty according to local source. Taken by a 14-year old boy in Whitlam Adam's boat."

WESTERN ARCTIC
WHALING—western Arctic, Beaufort Sea, Chukchi Sea, native, catch, crews.

ARCTIC RESEARCH LABORATORY.

1967. May 22 [No whales captured to date.]. U.S. Dep. Navy, Arctic Res. Lab., Point Barrow, Alaska, Arctic Res. Lab. Log.

"A N.E. wind, necessary to open the leads for the whalers, sprang up today, but lasted only a few hours. No whales have yet been taken this season."

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ARNASON, ULFUR.

1981. Localization of NORs in cetacean karyotypes. *Hereditas* 95:269-275.

A silver staining technique was used for locating the nucleolar organizing regions (NORs) in 7 cetacean species, four odontocetes and three mysticetes. In the introduction to this paper, the author stated that the similarity between the $2n=44$ odontocete and mysticete karyotypes was demonstrated in studies of the fin whale. This species, along with the bottlenose dolphin and the pilot whale, exhibited associations between the nomologs of the smallest pair of chromosomes. Studies of additional species conforming to the general $2n=44$ cetacean karyotype showed that the occurrence of associations between the homologs of the smallest pair was ubiquitous. In karyotypes not conforming to the general $2n=44$ karyotype, associations involving one pair have been observed in the sperm and pygmy sperm whales and in the bowhead whale. These species all have $2n=42$. The sperm and pygmy whale karyotypes differ radically from the general $2n=44$ karyotype, whereas the bowhead karyotype shows considerable similarities to it.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—karyotypes, nomologs; IDENTITY—genetics.

ARNASON, ULFUR.

1982. Southern blot hybridization in cetaceans, using killer whale restriction fragment as a probe. *Hereditas* 97:47-49.

"...Killer whale [*Orcinus orca*] DNA [deoxyribonucleic acid] was hybridized to different cetacean DNAs according to the Southern blot technique. The DNAs originated from the whitebeak dolphin, harbor porpoise, and the belukha, minke and bowhead whales ... Hybridization to the bowhead DNA was virtually nonexistent." (From author's abstract.)

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—DNAs; IDENTITY—genetics.

ARNASON, ULFUR, IAN F. PURDOM, and KEN W. JONES.

1982. Cetacean molecular hybridization using balenopterid satellite DNA cRNAs as probes. *Hereditas* 97:33-36.

"RNAs [ribonucleic acid] complementary to two unrelated DNA satellites of the mysticete genus *Balaenoptera* were hybridized to total DNA of several cetacean species. The results showed that sequences related to the light ($\rho=1.702/1.703$) balenopterid satellite [sic] were not present in the odontocete materials investigated. Limited hybridization to bowhead DNA was registered ... In the balenopterid karyotypes the heavy satellite ($\rho=1.710/1.711$) occurs in terminal C-bands; the same general pattern occurred in the bowhead. The results of the molecular hybridization are consistent with a monophyletic origin of odontocetes and mysticetes." (From author's abstract.)

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—karyotypes; IDENTITY—genetics.

ARNOLD, CHARLES D.

1980. A Paleoeskimo occupation on southern Banks Island, N.W.T. *Arctic* 33(3): 400-426.

"Archaeological remains found from the Lagoon site, on Banks Island, N.W.T., provide a new perspective on the nature of changes that occurred within Paleoeskimo cultures during the first millennium B.C. (From author's abstract.)

Although rare, walrus and bowhead whales are known to occur in offshore waters of Banks Island. Artifacts discovered include two baleen lashings and a scapula of an immature whale. As there is nothing in the artifact inventory to indicate that whales were hunted, the author concludes it is likely that the remains are those of a drift carcass.

WESTERN ARCTIC
ARCHAEOLOGY; DISTRIBUTION—history; FIELD & LABORATORY TECHNIQUES—artifacts; SKELETAL REMAINS—beachcast; WHALING—history, western Arctic, Beaufort Sea, natives.

ARON, WILLIAM.

1981. International whaling management. *In* Robert W. Schoning and Naomi Krant, Science, politics, and fishing: a series of lectures, p. 41-46. Sea Grant College Program ORESU-W-81-001, Ore. State Univ., Corvallis, OR 97331.

Briefly reviews evolution of the International Whaling Commission from an organization focused on promoting the advancement of commercial whaling without concern for the status of the various whale populations to a conservation orientated one recognizing the importance of intelligent biological management of each species and its role in the ecology of the marine environment. Includes the difficult problem the United States government faced in the 1970s concerning the survival of the bowhead whale and the survival of a human population as well - the Eskimos of the Alaskan North Slope community whose cultural tradition depends upon the bowhead whale.

WESTERN ARCTIC

POPULATION—abundance, mortality, whaling, number landed, struck and lost; REGULATION & CONSERVATION—management, quotas; WHALING—Bering, Chukchi and Beaufort Seas, native, catch, gear, utilization.

ARSEN'EV, V. A., V. A. ZEMSKII, and I. S. STUDENETSKAYA.

1973. Morskije mlekopitayushchie (Marine mammals). Pishchevaya Promyshlennost; Moscow. 232 p. *In* Russian. [Seen and annotated by Paul Macy.]

“Reviews all marine mammals in chapters 1-5, ... *B. mysticetus* is discussed on p. 27-29. Includes brief review of general knowledge on distribution, food, behavior, migration, reproduction, growth and development, parasites, and abundance....”

WESTERN ARCTIC

BEHAVIOUR—swimming, respiration; DISTRIBUTION—Bering and Chukchi Seas; GROWTH—development; NUTRITION—food, feeding; PATHOLOGY—Parasites; POPULATION—abundance.

ARUTYUNOV, S. A., I. I. KRUPNIK and M. A. CHLENOV.

1982. “Kitovaya alleya.” Drevnosti ostrovov proliva Senyavina (“Whalebone alley.” Antiquities of the islands in Proliv Senyavina.) Izd. Akad. Nauk SSR, Inst. Ethnogr. N.S. Miklukho-Maklai, 174 p. *In* Russian, with English abstract.

In 1976 ethnographers in the U.S.S.R. discovered an ancient Eskimo ceremonial site containing bowhead whale bones, stone structures and meat caches on the northern shore of Yttygran Island off the southeast coast of the Chukchi Peninsula. The monument, named “Whalebone Alley,” consisted of whale skulls aligned in a definite geometric pattern and arranged in 15 groups at regular intervals of 10m and occasionally at 20m, that the authors surmised as representing a length and double length of the traditional umiak and that each skull group represented a whaling crew. Additionally, a bit farther inland is a row of mandibles stuck upright into the ground. The authors dated the monument to the final Penuk period (ca. 1300 A.D.).

WESTERN ARCTIC

ARCHAEOLOGY—skulls, mandibles, ceremonial site; WHALING—history, Bering Sea, native, crews, photographs and drawings.

ARVY, LUCIE.

1973-74a. Mammary glands, milk and lactation in cetaceans. *In* G. Pilleri (editor), *Investigations on Cetacea*, 5:157-202. *Brain Anat. Inst.*, Berne, Switzerland.

Reviews known information on mammary glands and secretions in cetaceans. Glass et al. (1967) is included in table 1, containing authors of principal works published on this subject, and on p. 189 author states "The fatty acids of *Balaena mysticetus* (Glass et al., 1967) are also well known.", but complete reference was omitted at end of paper. Also, caption to Plate 2, figure 3 reads: "The mammary gutterings (fe) on either side of the genital orifice in a *Pterobalaena minor groenlandica* (= *Balaena mysticetus*), after Eschricht (1849)."

CIRCUMPOLAR.

IDENTITY–nomenclature; NUTRITION–food, milk; PHYSIOLOGY–glands, milk; REPRODUCTION–anatomy, lactation.

ARVY, LUCIE.

1973-1974b. The kidney, renal parasites and renal secretion in cetaceans. *In* G. Pilleri (editor), *Investigations on Cetacea*, 5:231-310. *Brain Anat. Inst.*, Berne, Switzerland.

A detailed study of the cetacean kidney. "The kidneys of adult *B. physalus* and *B. musculus* are semicircular in outline and their greatest width is approximately at mid-length. Their section is triangular. Similar conditions (Fig. 3) were found in the Greenland whale fetus examined by Meek (1918)." (p. 237). Figure 3 (on p. 238) is a drawing from Meek showing the kidney of a 41 cm long *Balaena mysticetus* fetus. Table 11 on page 270 shows *Filariam crassicaudam* as a parasite found in the urinary passages of *B. mysticetus*.

CIRCUMPOLAR

MORPHOLOGY–anatomy; PATHOLOGY–parasites.

ARVY, LUCIE.

1977a. Asymmetry in cetaceans. *In* G. Pilleri (editor), *Investigations on Cetacea*, 8:161-201. *Brain Anat. Inst.*, Berne, Switzerland.

A review of asymmetry in cetaceans. "As De Luca (1878) observed in the Biscayan right whale, there is apparently a slight asymmetry in cetacean ribs with a bias towards the left. The asymmetry effects both the length and number of ribs. Differences in the length of the ribs in a *Balaena mysticetus* and in Japanese grey whales are shown in Tables 13 and 14. (p.180). The asymmetry of the thymus has been known since Simon(1845) in *Balaena mysticetus*." (p. 185).

CIRCUMPOLAR

MORPHOLOGY–structure, asymmetry.

ARVY, LUCIE.

1977b. Contribution to the knowledge of morphological anomalies in cetacean teeth. *In* G. Pilleri (editor), *Investigations on Cetacea*, 8:245-254. *Brain Anat. Inst.*, Berne, Switzerland.

Reviews dental anomaly in cetaceans. The first systematic French study of the teeth of whalebone whales seems to have been made by Rousseau in 1856. Before him E. Geoffroy Saint Hilaire (1807) had merely noted the existence, in the lower jaw of a right whale (*Balaena mysticetus*), of tooth germs resembling those of the sperm whale.

MORPHOLOGY–tooth germs.

ARVY, LUCIE.

1977c. La peau, les phaneres et leurs parasites chez les cetaces (Blubber, skin structure and their parasites in cetaceans). *Vie Milieu, Ser. A, Biol. Mar.* 27(2):137-190. In French.

This is a study, in Odontoceti and Mysticoceti, of the skin-structures (epidermis and dermis) and adipose tissue (blubber, melon and jaw oils). Eye-lashes and eyebrows, as well as whale bones are compared. Cutaneous commensals, parasites or predators (*Cyamus*, *Coronella*, *Balanus*, *Pennella*, etc.) are also compared. The economical importance of skin (for leather) and blubbers (for oils) are emphasized. (From author's abstract in English).

CIRCUMPOLAR
MORPHOLOGY--structure; PATHOLOGY--parasites; WHALING--commercial, products, utilization.

ARVY, LUCIE.

1979. The abdominal bones of cetaceans. *In* G. Pilleri (editor), *Investigations on Cetacea*, 10:215-227. *Brain Anat. Inst.*, Berne, Switzerland.

Author reviews literature on the presence of abdominal or pelvic bones in cetaceans. Table 1 on page 221 lists the species for which abdominal bones have been described together with the reporting authors. Reinhardt (1846-1848) is shown as reporting on *Balaena mysticetus*, but Reinhardt and Eschricht (1861) is the only reference shown for Reinhardt.

CIRCUMPOLAR
MORPHOLOGY--structure.

ARVY, LUCIE.

1980. Les cetaces du Canada: la baleine a tete d'arc (*Balaena mysticetus*) et le marsouin blanc (*Delphinapterus leucas*) autemps de Charlevoix et de Maurepas (Cetaceans of Canada: the great polar whale (*Balaena mysticetus*) and the white porpoise (*Delphinapterus leucas*), at the time of Charlevoix and Maurepas. *Ann. Soc. Sci. Nat. Charente-Marit.* 6(7):633-645. In French.

Contains information on the occurrence of the great polar whale and of the white porpoise during the 17th and 18th centuries off the coasts of Canada, their behavior and on their parasites.

EASTERN ARCTIC
BEHAVIOR; DISTRIBUTION--history; PATHOLOGY--parasites.

ARVY, LUCIE.

1982. Phoresies and parasitism in cetaceans: a review. *In* G. Pilleri (editor), *Investigations on Cetacea*, 14:233-335. *Brain Anat. Inst.*, Berne, Switzerland.

Reviews the literature on external and internal parasites of cetaceans including *Balaena mysticetus* (p. 274 -75, 283, and Table 1.). In this short review no account has been taken of possible synonymies, and in most cases the name given to both host and parasite is the one used by the observer who discovered them.

CIRCUMPOLAR
PATHOLOGY--parasites.

ARVY, L., and G. PILLERI.

1977. The sternum in Cetacea. *In* G. Pilleri (editor), *Investigations on Cetacea*, 8:123-148. *Brain Anat. Inst.*, Berne, Switzerland.

A systematic comparison of the cetacean sternum. Previous descriptions of the sternum of the bowhead were presented by Eschricht and Reinhardt (1866), Van Beneden and Gervais (1880), Slijper (1936), and Nishiwaki and Kasuta (1970). Sternal articular surfaces vary according to species with the exception of the whalebone whales (including *Balaena mysticetus*) where the sternum only articulates with the first pair of ribs.

CIRCUMPOLAR
MORPHOLOGY—structure.

ASHLEY, CLIFFORD W.

1938. *The Yankee whaler*. Houghton Mifflin Co., Boston, Mass, 156 p., [112] pls. (Copyright 1926 and 1938.)

Briefly reviews the history of whaling in various areas, its development in North America, the life of the sailors, and the gear and whaling techniques for different species. The chapter on whales gives limited descriptions of biology, behavior, physiology and other aspects of various species. The chapter includes the author's opinion that the ability of smooth-bellied whales, including the bowhead, to resist pressure at depth is explained principally by the ability to contract their bodies, increasing their specific gravity. Other comments about bowheads include physical description, feeding behavior and mouth structure, behavior when attacked, and how whalers adjust to take advantage of that behavior.

EASTERN & WESTERN ARCTIC
BEHAVIOR—swimming, diving, respiratory, vocalization; MORPHOLOGY; NUTRITION—feeding behavior; PHYSIOLOGY—metabolism and diving; WHALING—history.

ASKINS, CHARLES, COL.

1982. The giant of the Chukchi Sea. *Am. Hunter* 10(1):24-25, 52, 60.

Describes an aerial hunt for trophy polar bears (prior to enactment of the 1972 Marine Mammal Protection Act) during the month of April (year not given) over ice of the Chukchi Sea off the coast of the Soviet Union. Routinely flying from their base at Kotzebue, Alaska, the hunters flew toward Mys Dezhneva (East Cape) until the radar dome there was in sight, then flew to the northwest approximately 50 miles offshore looking for bears. On the first day of their hunt, and about one hour after turning northwestward from near East Cape, the carcass of a large whale frozen in the ice was sighted. It was estimated that 30 or 40 feet of the animal was visible. There were 17 polar bears, most sows with cubs, and four boars feeding. On the third day of the hunt they found three more whales and two wolves frozen in the ice. The dead whales were not identified.

WESTERN ARCTIC
POPULATION—mortality, strandings (bowheads?); PREDATORS & COMPETITORS—scavenging.

AUSTRALIAN FISHERIES.

1978. Canada bans hunting of bowhead whales. *Aust. Fish.* 37(10):36.

"To honor Canada's obligation as a member of the International Whaling Commission to implement a regulation adopted by the Commission in 1977, with the agreement of the Inuit people of Canada, the hunting of bowhead whales in Canadian waters has been prohibited for 1978. As a result the moratorium on the hunting of bowhead whales, which previously applied only to commercial whaling, has been extended to cover aboriginal subsistence whaling as well. Commercial whaling for bowhead whales has been banned in Canada since 1952 but native people have been permitted to carry on traditional whaling activities for their own use." (Fisheries and Environment Canada news release.)

WESTERN ARCTIC, EASTERN ARCTIC
REGULATION & CONSERVATION—regulation; WHALING—western and eastern Arctic, commercial, native.

AUSTRALIAN FISHERIES.

1979. Worldwide whale catches to be reduced. *Aust. Fish.* 38(9):25, 27-28.

A 20% reduction in the worldwide whale catch was made at the July meeting of the International Whaling Commission in London. Agreement was reached to reduce the [Eskimo] take to 26 bowhead whales struck or 18 landed. J. D. Ovington, Australian Commissioner to the IWC meeting, had expressed strong concern that the available scientific evidence indicated even this catch could further reduce the bowhead whale population and would not be in the long-term interests of the Eskimo people and their cultural requirements.

WESTERN ARCTIC
REGULATION & CONSERVATION—management; WHALING—western Arctic, native.

BAILEY, ALFRED M.

1928. An unusual migration of the spotted and ribbon seals. *J. Mammal.* 9(3):250-251.

A resident of Cape Prince of Wales, Alaska, wrote a letter dated August 1, 1927, to the author reporting an unusual overland migration of seals after the lagoon they had occupied froze over suddenly, blocking their access to the open sea. The writer also stated that "I lost a whale in April on account of the young ice." (p. 250).

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost; WHALING—Bering Strait, native, crews.

BAILEY, ALFRED M.

1943. The birds of Cape Prince of Whales, Alaska. *Proc. Colorado Mus. Nat. Hist.* 18(1):1-113.

During spring of 1922, the author collected bird and mammal specimens in an area around the Eskimo village of Wales. A bowhead whale was sighted in Bering Strait waters on June 4 (p. 54).

WESTERN ARCTIC
BEHAVIOR—migration, timing; DISTRIBUTION—present, sighting.

BAILEY, ALFRED M.

1948. Birds of Arctic Alaska. Colorado Mus. Nat. Hist., Popular Ser. No. 8, 317 p.

Author made collections of birds and mammals of Cape Prince of Wales during spring 1922. The first bowhead whale of the season was sighted on April 13 (p. 109). There were at least three boats at Wales.

WESTERN ARCTIC
BEHAVIOR—migration, timing; WHALING—Bering Strait, crews, photographs.

BAILEY, ALFRED M.

1971. Field work of a museum naturalist. Denver Mus. Nat. Hist., Mus. Pict. 22, 192 p.

A narrative account of field work in southeastern Alaska for the U.S. Biological Survey 1919-1921, and in Arctic Alaska for the Denver Museum of Natural History 1921-1922. While at the village of Cape Prince of Wales during the spring of 1922, the author noted that there were six hunters, each with a skin oomiak (boat) and crew, but Arthur Nagorzruk was the only one who had a portable motor which he could attach to the end of his skin boat for emergency use. The others had to depend upon sailing their crafts when the winds were favorable. The first whale of the season was seen on 13 April and another on the next day (p. 159). Many white whales were sighted on April 28.

WESTERN ARCTIC
BEHAVIOR—migration; WHALING—western Arctic, Bering Strait, native, gear, crews.

BAILEY, ALFRED M., and RUSSELL W. HENDEE.

1926. Notes on the mammals of northwestern Alaska. J. Mammal. 7(1):9-28.

Account of the Colorado Museum of Natural History expedition of 1921 and 1922 to Alaska. Hendee worked from their winter base at Wainwright and Bailey departed on 12 March by dogteam to make observations at Cape Prince of Wales on Bering Strait. Thirty-three species of mammals are described, including a detailed account of whaling for bowheads at Wainwright where three were landed and two more were struck but lost during the spring of 1922. One of the bowheads landed was called "inito" by the Eskimos and it has long been recognized by them and Yankee whalers alike to be a small form of the species. Hendee noted the external differences between the two animals which he described in detail, and included information on internal differences that were provided by Charles Brower of Barrow and James Allen of Wainwright. The natives at Wales informed Bailey that many whales were formerly killed there as they passed through the strait, but the residents are no longer successful whalers and the animals are rarely killed there. Figure 7 is a photograph of a small bowhead taken off Point Barrow.

WESTERN ARCTIC
IDENTITY—nomenclature; POPULATION—mortality, struck and lost; WHALING—western Arctic, commercial, native, gear, catch, photograph.

BANDI, HANS-GEORG (translated by Ann E. Keep).

1969. Eskimo prehistory. Univ. Alaska Press, College, Alaska, distributed by Univ. Washington Press, Seattle, 226 p. (First publ. by Gustav Fisher Verlag, Stuttgart, Germany, 1964, as *Urgeschichte der Eskimo*).

Surveys Eskimo prehistory in Arctic Alaska and Canada. Describes and illustrates whaling implements and theorizes about their use.

EASTERN ARCTIC, WESTERN ARCTIC
ARCHAEOLOGY—anthropology, ethnology; WHALING—eastern Arctic, western Arctic, gear, natives.

BANFIELD, A. W. F.

1974. The mammals of Canada. Univ. Toronto Press, Toronto, Canada, 438 p.

Basic reference to the 196 mammalian species that occur in Canada or did in the past. Includes description of the bowhead whale (p. 283-285), giving their distribution, migration, general biology, a review of commercial and native whaling, and utilization. The annual catch of Alaskan Eskimos is 10 to 15 whales per season, but the Canadian catch is much smaller. Pond Inlet and Southampton Island are two areas of native whaling in the Canadian Arctic.

EASTERN & WESTERN ARCTIC

BEHAVIOR—general; DISTRIBUTION—eastern Arctic, western Arctic, history; IDENTITY—description; MORPHOLOGY—measurements, structure; NUTRITION—food; REPRODUCTION—gestation, mating, parturition, lactation; WHALING—history, eastern Arctic, western Arctic, commercial, native, catch, utilization.

BARBOUR, JOHN A.

1969. In the wake of the whale. Crowell-Collier Press, Collier-Macmillan Ltd., London, 102 p.

Brief description of the bowhead, its size, and former commercial importance. It is now considered endangered and an estimated 1,000 exist in the Bering Sea.

WESTERN ARCTIC

DISTRIBUTION—western Arctic; IDENTITY—description; POPULATION—abundance.

BAUMAN, MARGIE.

1978. North Slope Borough hosts first elders conference. Tundra Times, May 31, 15(22):3.

Ernie Frankson, chairman of the Borough Commission on ancestry and culture, told the reporter that the elders discussed the changing migration pattern of bowhead whales to the westward and the reasons they believe this is happening are oil spills, an increasing population, and [industrial] development

WESTERN ARCTIC

BEHAVIOR—migration, changes; POPULATION—abundance (observed); REGULATIONS & CONSERVATION—conservation, industrial development.

BAYLIS, H. A.

1923. On *Odontobius ceti*, Roussel de Vauzeme, a nematode living on the baleen of whales. Ann. Mag. Nat. Hist. Ser. 9, 12:617-623.

R. de Vauzeme described a number of organisms, including *Odontobius ceti*, living as parasites or commensals on Antarctic whales. The host was clearly the southern right whale (*Balaena australis*), although he gives the determination of his whales incorrectly as *B. mysticetus*. The author describes and presents remarks on the biology of *O. ceti*.

CIRCUMPOLAR

PATHOLOGY—parasites.

BAYLIS, H. A.

1932. A list of worms parasitic in cetacea. *Discovery Rep.* 6:393-418.

A three-section catalogue of the worm parasites of cetacea: (1) A list of parasites; (2) A list of hosts; and (3) a bibliography. *Balaena mysticetus* is host for the following parasites: *Lecithodesmus goliath* (found in the liver, p. 397); *Phyllobothrium physeteris* (found in blubber and skin, p. 399); and *Bolbosoma porrigens* (found in the intestine, p. 406).

CIRCUMPOLAR
PATHOLOGY-parasites.

BEAN, TARLETON H.

1887. The fishery resources and fishing-grounds of Alaska. In G. B. Goode et al., *The fisheries and fishing industries of the United States*, Sect. III, p. 81-115. Gov. Print. Off., Wash., D. C.

Contains information on fishing and fishery grounds of Alaska, including notes on gear used and importance of other animals to the natives. "On St. Lawrence Island whales supply a large part of the food of its people. Their catch of whalebone and walrus ivory is disposed of to traders for rum, rifles, and ammunition (p. 102). In the spring of 1880, the Point Hope men sold the bone from five whales which they had killed after the vessels left in 1879. The season of 1880 was a remarkable one for all concerned in the fishery; the Eskimo were fairly gorged with blackskin and blubber, while every sail carried away a heavy cargo of oil, bone, and ivory." (p 110)

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, Chukchi Sea, native, gear, catch, utilization.

BEAN, TARLETON H.

1902. A naturalist's adventures. In R. Kersting (editor), *The white world*, p. 241-266. Lewis, Scribner & Co., New York.

In 1880 the author made a voyage on the schooner *Yukon* from San Francisco to points along the east coast of Siberia and the west coast of Alaska to Wainwright Inlet and return. They arrived at Port Providence, Plover Bay, Siberia, on August 11 where ".when whales ran up into this bay the village was large and thriving; now it has dwindled to two canoe-loads." On the cruise they met several whaling vessels and the number of bowheads taken by each to date is given.

WESTERN ARCTIC
WHALING-western Arctic, commercial, native, catch, crews.

BEDDARD, F. E.

1900. A book of whales. G.P. Putnam's Sons, New York, 320 p.

Reviews knowledge about various species, citing scientific and popular literature. Observations about *Balaena mysticetus* include physiology of muscle, stomach, skeleton, and existence of rudimentary teeth. Also briefly reviews morphology, body color, diving behavior, food and feeding behavior and maternal behavior. Considers the species *B. australis* and notes the existence of a smaller variety of *B. mysticetus*, known as "Poggy," in the Okhotsk Sea.

EASTERN & WESTERN ARCTIC
BEHAVIOR-maternal, swimming, diving, breeding; IDENTITY; MORPHOLOGY-skeleton; NUTRITION;
PHYSIOLOGY-alimentary, muscles.

BEE, JAMES W., and E. RAYMOND HALL.

1956. Mammals of northern Alaska on the Arctic Slope. Univ. Kansas, Lawrence, Mus. Nat. Hist. Misc. Publ. 8, 309 p.

Account of 42 species of mammals occurring on the Arctic Slope of Alaska. In addition to the scientific names, the common and Eskimo names are given. A list of pertinent references precedes each species account. A detailed description of the bowhead (*Agvik*), *Balaena mysticetus*, includes a line drawing of the skull and measurements, records of occurrence, and remarks on the species. Authors conclude from measurements presented that Eskimos took principally young whales. The bowhead formerly was abundant but its numbers have been greatly reduced. Because the season was at least 3 weeks late in the spring of 1952 the Eskimos of Point Barrow, on June 17, had not taken a whale. These Eskimos at that time were depending on the meat of whales that were taken at Wainwright. (p. 165-167)

WESTERN ARCTIC

ARCHAEOLOGY; BEHAVIOR-migration; DISTRIBUTION-former and present; IDENTITY-nomenclature, description; MORPHOLOGY-measurements; WHALING-western Arctic, native, catch, utilization.

BEECHEY, FREDERICK WILLIAM.

1832. Narrative of a voyage to the Pacific and Bering's Strait, to co-operate with the polar expeditions: performed in His Majesty's ship *Blossom*, under the command of Captain F. W. Beechey, R. N. in the years 1825, 26, 27, 28. Carey & Lea, Philadelphia, Pa., 493 p. (Originally published in 1831 by H. Colburn and R. Bentley, London. In 2 vol. (vol. 1, 392 p.; vol. 2, p. 393-742.f))

Expedition to Bering Strait and Chukchi Sea with object to meet with Franklin's second overland expedition. He explored the coast as far at 156.5°21' W long., just east of Point Barrow. Pack ice and warlike Eskimos forced the party to turn back before they could meet with Franklin.

Beechey noted number of native boats at various locations, and stated (p. 232) that on August 9, 1826 they found "... the carcass of a dead whale. It had an Esquimaux harpoon in it, and drag attached, made of an inflated sealskin..." [presumably a bowhead]. In describing Icy Cape (p 273) he stated "Off here we saw a great many black whales--more than I remember ever to have seen, even in Baffin's Bay." While at Chamisso Island, two native boats from the vicinity of Cape Prince of Wales arrived that had a quantity of whalebone, among numerous other items. He gives Ah-ow-look as the Eskimo name for whale (bowhead?).

WESTERN ARCTIC

DISTRIBUTION-former, sightings; IDENTITY-Eskimo, Ah-ow-look; POPULATION-mortality, whaling, struck and lost, stranded; WHALING-western Arctic, Chukchi Sea, native, gear, utilization.

BELL, OLIVE JOSLIN.

1972. Nagroouk-A matter-of-fact whale hunt. *Alaskana* 2(3):4.

Description of the Eskimo hunt for bowhead whales during the spring at Barrow, Alaska. [This is an abridged version of an article by Frank North titled "I was their talisman." See: *Alaska Sportsman* (1940) 6(10):18-20, 22.]

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, gear, catch, photographs, utilization.

BERGER, CARL.

1977a. Poor wind conditions plague Point Hope whaling. *Tundra Times*, Jun 8, 14(23):1, 9.

The spring whaling season at Point Hope has been plagued by poor wind conditions and the lack of open leads in the sea ice. The first whale of the season, about 36 feet in length, was taken by Billy Weber's crew. The second whale of the season was 48 feet, 5 inches and was caught by Luke Koonook, Sr. on May 24. Elijah Rock's crew struck but lost a whale on the evening of May 26. The whaling feast for Point Hope is scheduled for June 10-12.

WESTERN ARCTIC
MORPHOLOGY-measurements, length; POPULATION-mortality, whaling, struck and lost; WHALING-Chukchi Sea, native, catch, crews.

BERGER, CARL.

1977b. Whalers pack Kotzebue hearings. *Tundra Times*, Fairbanks, Alaska, Sep. 21, 14(38):1, 3.

A hearing was held by the National Marine Fisheries Service on Sep. 15 to receive testimony in response to the International Whaling Commission's ruling to ban the hunting of bowhead whales by Eskimo subsistence hunters. Includes information that Billy Weber made one of two successful strikes at Point Hope this past spring, and the Luke Koonook Sr. crew caught their first bowhead last spring.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

BERING STRAIGHTS.

1980a. First whale of year landed. *Bering Straights*, Nome, AK, April 18, 5(7):1,12.

The first bowhead whale of the year was landed at Southwest Cape on St. Lawrence Island April 15 at about 4 P.M. by captain Raymond Toolie of Savoonga. The whale was 50 feet long. It was cut up and divided equally by the captains and residents of both Savoonga and Gambell.

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-Bering Sea, native, catch, crews, photographs, utilization.

BERING STRAIGHTS.

1980b. Wales lands whale! *Bering Straights*, Nome, AK., 5(11):1.

Andrew Seetook of Wales took a bowhead whale measuring over 30 feet on May 3rd, 20 to 30 miles north of the village. This is the first whale taken by the 67 year-old boat captain. This was the first whale taken in Wales since 1970, and only the second since 1934. Also, Gambell landed one whale and Savoonga filled its quota of landing two whales this year.

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-Bering Sea and Bering Strait, native, catch, crews, records.

BERNARDI, S. ROGNON.

1902. An ultra-fashionable reception and dance of Kingegan Eskimos. *The Nome News*, Nome, Alaska, Sep. 19, 4(65):2.

Author describes ceremony by Kingegan Eskimos that she attended early in the winter of 1901-1902. During 1900 no whales were caught, so no ceremonies were held the previous year.

WESTERN ARCTIC
WHALING—Bering Strait, native, catch.

BERNARDI, SUZANNE ROGNON.

1912. Whaling with Eskimos of Cape Prince of Wales. Woman teacher of local nativity writes of the sport of the sea and attendant weird customs among the aborigines of Alaska. *Courier-Journal*, Louisville, KY, October 20, Sect. 4, p. 1, 12.

Author describes Eskimo whaling for bowheads at the village of Wales where she taught school in the early 1900s. "During 1900 no whales were caught, so silence reigned in the queer old Kozga or dancehouse all that winter. Not so the next winter. Eight whales were killed in seven days this year." [1901]. That year the vessel *Alexander*, in command of Capt. Tilton, struck and killed a large whale in the middle of Bering Strait. It was nearly 70 feet long, the baleen was 12 feet long, and five men stood abreast in its mouth. After the baleen was removed the carcass was given to the Eskimos.

WESTERN ARCTIC
MORPHOLOGY—measurement; WHALING—western Arctic, Bering Strait, commercial, native, gear, catch, photographs.

BERNARDI, SUZANNE R.

1981. Story of a whale hunt. *Alaska* 47(8):22-25.

The author made photo albums for friends one Christmas and, although each are similar, none is quite like the others. How many she made is not known, but two exist at the University of Alaska Archives [see Lusk, 1959; Bunnell, 1958] and a third, from which this material has been taken, belongs to Mrs. Alizabeth McBride of Valdez. The text of this article was taken from her handwritten captions beneath each photo. Eleven of those photos are reproduced for this article.

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, native, gear, catch, photographs.

BERNARDI, SUZANNE ROGNON.

1981. Story of a whale hunt. *In* Virginia McKinney (compiler and editor), *The Alaska Journal: a 1981 collection*, p. 134-143. Alaska Northwest Publ. Co., Anchorage.

Essentially the same as an earlier article published in *Alaska* 47(8):22-25, except this one contains 20 photographs and a reproduction of page 1, section 4, of the original story as it appeared in the *Courier-Journal*, Louisville, Kentucky, on October 20, 1912.

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, native, gear, catch, photographs.

BERTHOLF, E. P.

1899. Report of Second Lieut. E. P. Bertholf, R. C. S. *In* Report of the cruise of the U.S. revenue cutter *Bear* and the overland expedition for the relief of the whalers in the Arctic Ocean, from November 27, 1897, to September 13, 1898, p. 18-27, 103-114. U.S. Gov. Print. Office, Washington, D.C. (Treas. Dep. Doc. 2101; also 56th Congr., 2d Sess., House Doc. 511).

Notes (p. 25) that thirteen whaling stations, owned and run by white men, were located along the shore between Point Hope and Cape Seppings, Alaska, during the winter of 1897-98.

WESTERN ARCTIC
WHALING-history, western Arctic, Chukchi Sea, commercial, shore stations.

BERZIN, A. A., and A. A. KUZ'MIN.

1975. Serye i gladkie kity okhotskogo moria (Gray and right whales of the Okhotsk Sea). *In* Morskije mlekopitaiushchie (Marine mammals), Part 1, p. 30-32. In Russian. Izd. Nauk, Kiev. (Transl., by U.S. Dep. Commer., Off. Foreign Fish., Language Serv. Div., Washington, D.C., 2 p.)

Classification of right whales in the Okhotsk Sea was a matter of dispute until A. A. Rovnin (1969) clarified this problem. "Rovnin, relying on old data at hand, considered them typical Greenland right whales. However, as our observations showed in 1974, significant morphological differences exist between right whales of the western areas of the Okhotsk Sea and Greenland right whales. With Greenland arctic right whales as with Pacific right whales, the spray from the spout, when observed from front and back, disperses at an angle of 35-45½ (Tomilin, 1957 and others, our observations). We succeeded in observing right whales in the western Okhotsk Sea many times from various distances (the smallest distance was at the ship's side) and at varied angles of approach. These observations showed that the spray from the spout of all whales that we came upon without exception was emitted practically parallel or at the smallest angle (up to 5½)... The demonstrated distinct (in 100% of the instances morphological and also ecological) differences of right whales of the Arctic and Okhotsk Seas, until we receive additional morphological data, permit us to say only that... (they) obviously belong to another subspecies of polar whales. Judging by the presence of whales with relatively small dimensions alongside the grown ones, the whales obviously multiply well."

WESTERN ARCTIC
BEHAVIOR-breathing; DISTRIBUTION-sightings; IDENTITY-races or subspecies; POPULATION-calf sightings.

BERZIN, A. A., and L. P. VLASOVA.

1982. Fauna of the Cetacea *Cyamidae* (Amphipoda) of the world ocean. *In* G. Pilleri (editor), Investigations on Cetacea, 13:149-164. Brain Anat. Inst., Berne, Switzerland.

Reviews the existing literature and original material collected during the last few years of the cetacean parasite of the family *Cyamidae* which, including a new species found in 1980, now consists of 6 genera and 22 species. Only one species, *Cyamus ceti*, has been found to date on bowhead whales

CIRCUMPOLAR
PATHOLOGY-parasites.

BILLS, PAUL.

1980. Alaska. A 20th Century saga north of the Yukon river. Radiant Books, Gospel Publ. House, Springfield, Mo., 160 p.

The author, a missionary, served in Alaskan missions at North Pole, Beaver, Barrow, Nome, and Anchorage, for twenty years. He resided at Barrow from 1958 to 1965. His grandfather had resided in Connecticut where he served as a whaler. A brief, general description of whaling at Barrow is provided (p. 125-128), including a statement that there may be 10 to 30 different whale camps set up along the ice off the village during the spring season.

WESTERN ARCTIC
BEHAVIOR-migration, swimming; WHALING-Chukchi Sea, native, crews, gear, utilization.

BIRD, JAMES E.

1977. Whales, whaling, dolphins and porpoises. An annotated bibliography. Am. Cetacean Soc., San Diego, Calif., Pub. No. ACSSD-1, 85 p.

Contains nearly 500 references on books, magazine articles, records and tape recordings, and audiovisual material. The references are annotated, indicating the reading level, interest level, and a brief description of content.

CIRCUMPOLAR
BIBLIOGRAPHY.

BIRKET-SMITH, KAJ.

1933. Geographical notes on the Barren Grounds. Rep. Fifth Thule Exped., 1921-24, vol. 1, no. 4, 128 p. Gyldendal, Copenhagen.

A study of the area west of Hudson Bay lying between Churchill, Repulse Bay and Coronation Gulf. "The right whale (*Balaena mysticetus*) (p 84) was formerly hunted as far south as Marble Island, but the whaling grounds were later moved to Roe's Welcome. Now the right whale is rare, although in the beginning of September 1922 the Eskimos at Repulse Bay succeeded in killing a young male (Fig. 29). Here are measurements that may be of interest to zoologists:

Length from nose to tail-cleft	42' 2"
Distance from anus to tail-cleft	11' 4"
Distance from anus to penis-slit	0' 6"
Penis slit.	1' 0"
Distance from flipper to tail-cleft	24' 9"
Length of flipper	6' 0"
Breadth of flipper	2' 11"

The colour was black with irregular white patches on the underside. In each jaw were about 275 baleens of a length of up to 9'."

EASTERN ARCTIC
DISTRIBUTION-former and present; MORPHOLOGY-measurements; WHALING-eastern Arctic, native, catch, photograph.

BIRKET-SMITH, KAJ.

1959. *The Eskimos*. 2nd ed. Methuen & Co., Ltd., London, 262 p. (Orig. publ. 1936).

Anthropological study of Eskimos. Most marine mammals including *Balaena mysticetus*, avoid firm ice and therefore only approach the shore periodically (p. 71). Describes whaling areas, methods and gear; but in none of the eastern regions was whaling as important as in northern Alaska where up to 20 whales were killed in a single season (p. 100).

EASTERN ARCTIC, WESTERN ARCTIC
ANTHROPOLOGY-Eskimos; BEHAVIOR-migration; WHALING-eastern and western Arctic, native, gear, catch, utilization.

BIXBY, WILLIAM.

1965. *Track of the Bear*. David McKay Co., Inc., New York, 390 p.

Popular account of the history of the northern whaling industry, the search for a Northwest Passage, and the activities of the famous vessel *Bear* from its launching in 1874 to its sinking in 1963. As a U.S. Revenue Marine Service ship the *Bear* patrolled the Bering, Chukchi and Beaufort Seas, frequently administering to the bowhead whaling fleet. Numerous events concerning whaling ships, whalers, Eskimos, government employees, school teachers, explorers, villages, etc. are noted, providing information such as dates, locations, names of ships and individuals, etc. An appendix provides a chronological list of major events during the life of the vessel.

EASTERN ARCTIC, WESTERN ARCTIC
WHALING-history, western Arctic, commercial.

BOCKSTOCE, JOHN.

1975. *Contacts between American whalers and the Copper Eskimos*. *Arctic* 28(4):298-299.

It was generally believed that no contacts between white men and Copper Eskimos occurred before about 1902-1908. The author cites several instances, however, strongly indicating that early day whaling vessels probably made contact with these Eskimos during the period 1891 to 1905. It was noted that Stefansson (1914) described a whaler's harpoon found by the Eskimos in a dead whale that was stranded in Coronation Gulf.

WESTERN ARCTIC
DISTRIBUTION-former; POPULATION-mortality, whaling, struck and lost, stranding; WHALING-western Arctic, Beaufort Sea, commercial, native.

BOCKSTOCE, [JOHN] R.

1976a. *Alaskan Eskimo shore whaling: its impact on the bowhead whale, Balaena mysticetus, of the western Arctic*. (Abstr.) In *Symposium Proceedings of Scientific Consultation on the Conservation and Management of Marine Mammals and Their Environment*, August 31-September 9, 1976, Bergen, Norway, 2 p. Food Agric. Organ. U.N., Rome, *Advis. Comm. Mar. Resour. Res., ACMRR/MM/SC/70*.

"The Eskimos of the western Arctic have hunted bowhead whales, *Balaena mysticetus*, for more than 2,000 years. In response to external influences their hunting has evolved through [4] general phases: I. Aboriginal phase (to 1885),..., II. Commercial phase (1885-1910)...,III. Subsistence phase (1910-1960)...,IV. Recent phase (1960-present)." (From author's abstract.)

WESTERN ARCTIC
WHALING-western Arctic, commercial, native, shore stations, crews, gear, catch, utilization.

BOCKSTOCE, [JOHN] R.

1976b. Nineteenth Century commercial whaling: its impact on the bowhead whale, *Balaena mysticetus*, of the western Arctic. (Abstr.) In Symposium Proceedings of Scientific Consultation on the Conservation and Management of Marine Mammals and Their Environment, August 31-September 9, 1976, Bergen, Norway, 1 p. Food Agric. Organ. U.N., Rome, Advis. Comm. Mar. Resour. Res., ACMRR/MM/SC/71.

"A rich and untapped source of information on the bowhead whale of the western Arctic exists in whaling logbooks and other records of the industry. There are about 400 extant logbooks spanning the history of the fishery (1840-1910) which give information on about 600 seasonal voyages to the western Arctic and thus cover about 100,000 days of observation...

From a preliminary survey of three years-at the beginning, middle and end of the fishery-it is estimated that more than 30,000 whales were taken between 1840 and 1910 north of 55½ N in the Bering, Chukchi, East Siberian and Beaufort Seas. Of these, approximately 2,000 were taken by shore-based Eskimo whalers.

The New Bedford Whaling Museum proposes to extract all relevant data from the extant logbooks and printed sources for this fishery to establish a body of information which will allow estimates of the size of the population before, during and after commercial exploitation as well as about its range, migratory patterns, possible changes in behaviour due to hunting pressure and other relevant topics." (From author's abstract.)

WESTERN ARCTIC

BEHAVIOR-reactions (when hunted), migration; DISTRIBUTION-former, sightings; POPULATION-mortality, whaling; WHALING-western Arctic, Bering Sea, Chukchi Sea, E. Siberian Sea, Beaufort Sea, commercial, native, catch.

BOCKSTOCE, JOHN.

1976c. Speculations on the increase in bowhead population. *Cetacean Times* 2(1):8-9.

Recognizing that any effort to gain an accurate estimate of the number of bowheads alive today would require an enormous expenditure of funds, the author relies on useful historical data from published and manuscript sources to perceive indications that their numbers have been increasing since about 1920. The author does "...not believe that the Eskimos today are putting a deleterious pressure on the bowhead population in the Western Arctic."

WESTERN ARCTIC

POPULATION-abundance, mortality, whaling; WHALING-Bering, Chukchi and Beaufort Seas, commercial, native, catch, crews, gear.

BOCKSTOCE, JOHN.

1976d. On the development of whaling in the Western Thule culture. *Folk* (Copenhagen) 18:41-46.

The development of Eskimo whaling in northwest Alaska and Bering Strait is discussed briefly in relation to archaeological discoveries, native technology, human organizations, food resources, population, climate, and land forms. Whaling developed in the Bering Strait region about 1,000 years before it is known to have been practiced intensively in northwestern Alaska. It was not until about A.D. 1,000 that climatological, biological, demographic, technological and organizational factors coincided to allow the development of intensive whaling in northwestern Alaska.

WESTERN ARCTIC

ARCHAEOLOGY; WHALING-history, natives, western Arctic.

BOCKSTOCE, JOHN R.

1977a. An issue of survival: bowhead vs. tradition. *Audubon* 79(5):142-145.

Author describes the conflict between the survival of the bowhead whale, an endangered species, and the traditional cultural and subsistence practices of the Alaskan Eskimo. Early day commercial whaling by Yankee whalers and the effect upon Eskimo subsistence whaling is reviewed, including catch statistics. Concludes with the total moratorium imposed by the International Whaling Commission in 1977 because of its concern for this relict population and suggestions by the author how this conflict may be resolved.

WESTERN ARCTIC
REGULATION & CONSERVATION-management; WHALING-history, western Arctic, commercial, native, gear, catch, utilization.

BOCKSTOCE, JOHN.

1977b. The Arctic whaling disaster of 1897. Prologue (*Journal of the U.S. National Archives*): 9(1):27-42. (Reprinted in 1978 by *Explorers J.* 56(1):38-44. Excerpts printed in 1978 by *Alaska Geogr.* 5(4):27-33.)

Account of four whaling vessels lost to the ice in the vicinity of Point Barrow, Alaska, in 1897; four others were frozen in the ice for the winter, and more than 100 men were forced to seek shelter for eleven months at Point Barrow. Following the loss of 31 ships in 1871 and 12 ships in 1876, the 1897 disaster dealt a severe blow to the Arctic bowhead whaling industry. The great steam whalers were never to be replaced because, although the price of baleen continued to climb, the catch declined faster. Arctic whaling ended 10 years later when the demand for baleen plummeted due to introduction of a substitute, spring steel.

WESTERN ARCTIC
WHALING-western Arctic, commercial.

BOCKSTOCE, JOHN.

1977c. Eskimo whaling in Alaska. *Alaska* 43(9):4-6.

Reviews the history of hunting in northwest Alaska for bowheads which probably was developed nearly 2,000 years ago on St. Lawrence Island. Commercial whaling by foreigners began in 1848 and collapsed in 1908. That collapse started the third phase of Eskimo whaling, a return to subsistence activity carried on nearly 60 years as the entire stock recovered from a severely reduced level. The most recent phase, beginning about 1970, is controversial. Expansion in number of Eskimo whaling crews has greatly increased the numbers of whales taken, causing conservationists to protest that the whale population cannot withstand the hunting pressure.

WESTERN ARCTIC
POPULATION-abundance; WHALING-history, western Arctic, natives, crews, catch, photographs.

BOCKSTOCE, JOHN R.

1977d. Steam whaling in the Western Arctic. Old Dartmouth Hist. Soc., New Bedford, Mass., 127 p.

Describes commercial hunt for the bowhead whale, *Balaena mysticetus*, in the Chukchi and Beaufort Seas from 1848 to 1910, with emphasis on the period 1880 to 1910 when steam whalers became important because of declining numbers of bowhead whales. The inclusion of chapters on The Design and Construction Of Steam Whalers by William A. Baker; Ship Biographies by John R. Bockstoce; and, A Chronological List of Commercial Wintering Voyages, 1850-1910 by John R. Bockstoce and Charles F. Batchelder; and numerous excellent photographs make this a valuable reference book for researchers on this subject.

WESTERN ARCTIC

BEHAVIOR—when hunted, migrations; DISTRIBUTION—former and present; WHALING—History, commercial, vessels, catch, photographs, utilization.

BOCKSTOCE, J. R.

1977e. Eskimos of northwest Alaska in the early nineteenth century. Edited by T. K. Penniman. Univ. Oxford, Pitt Rivers Mus., Monogr. Ser. No. 1, 139 p.

Catalogue of ethnographic collections made by Captain Frederick Beechey and Lieutenant Edward Belcher during the voyage of H. M. S. *Blossom* in 1826 and 1827 to Bering Strait and beyond. Contains excellent photographs and descriptions of artifacts in the collections. Noteworthy are the numerous uses made by Eskimos of baleen and bones from bowheads for fishing and hunting equipment and for tools and manufacturing implements. Figures of whales or whales' flukes have been incised on bag handles, and possibly drilling bows, representing whales killed.

WESTERN ARCTIC

ANTHROPOLOGY—artifacts, Alaska Eskimos; WHALING—Bering, Chukchi Seas, native, gear, catch (recording of by Eskimos), utilization.

BOCKSTOCE, JOHN.

1978. History of commercial whaling in Arctic Alaska. *Alaska Geogr.* 5(4), Alaska whales and whaling: 17-25.

Author briefly traces history of commercial whaling in northwestern Alaska from the appearance of whale ships in the Gulf of Alaska in 1835 to the sudden collapse of the industry in 1907. The expansion and progress of whaling in relation to specific economic factors, evolution of whaling gear, and industrial use of products is outlined.

WESTERN ARCTIC

WHALING—history, western Arctic, commercial, gear, catch, utilization.

BOCKSTOCE, JOHN.

1979. The Point Barrow refuge station. *Am. Neptune* 39(1):5-21. (Reprinted in 1979 by the Peabody Museum of Salem, Salem, Mass.)

Historical account of the bowhead whaling industry in the western Arctic, including the establishment of a refuge station in August 1889 near Cape Smythe, 11 miles south of Point Barrow. The refuge station was sold in 1896 to the Pacific Steam Whaling Company. A year later it was sold to the Cape Smythe Whaling and Trading Company and today remains under its ownership as Brower's Restaurant-Arctic Alaska's oldest frame building.

WESTERN ARCTIC

WHALING—history, western Arctic, commercial.

BOCKSTOCE, JOHN.

1980a. A preliminary estimate of the reduction of the Western Arctic bowhead whale population by the pelagic whaling industry: 1848-1915. *Mar. Fish. Rev.* 42(9-10):20-27. Also unpubl. report prepared for U.S. Mar. Mammal Comm., Washington, D.C., Rep. No. MMC-77/08, (1978), 32 p., Processed. Also *Int. Whaling Comm.*, SC/30/Doc. 47. Also avail. U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA., as PB 286 797.

The report is the first systematic endeavor to estimate the kill of bowhead whales by whaling vessels in the western Arctic, 1848-1915. Data from the 'Whalemen's Shipping List and Merchants' Transcript' was augmented and correlated with information from other newspapers, over 500 books, magazines, manuscripts, government documents, and logbooks. It is estimated that the 2,609 whaling cruises identified represent 98% of all whaling cruises to the western Arctic from 1848 to 1915, and that 19,142 to 21,448 bowheads were killed. Tables present data on average size of whales taken, average catch and effort per vessel, estimated number of whales taken by known vessels, estimated number of whales killed and struck-and-lost by known vessels, and estimated number of whales taken and killed by all whaling vessels.

WESTERN ARCTIC

POPULATION-mortality, struck and lost; WHALING-western Arctic, history, commercial, catch.

BOCKSTOCE, JOHN.

1980b. Battle of the bowheads. *Nat. Hist.* 89(5):52-61.

Historical review of the Alaskan Eskimo hunt for bowhead whale in the western Arctic, near extirpation of this animal by commercial whalers during the last half of the nineteenth century, and steps taken in the 1970s by the International Whaling Commission to regulate the Eskimo harvest by placing an annual quota on numbers of whales taken. Notes that there were 12 crews whaling at Point Hope [no date given, probably in 1978] (p. 53); and that 48 whales were taken in 1976 with another 43 known to have been wounded; in 1977, 28 taken and an additional 77 wounded (p. 57).

WESTERN ARCTIC

POPULATION-mortality, whaling, struck and lost, killed and lost; WHALING-history, Bering Chukchi and Beaufort Seas, commercial, native, catch, crews, gear, photographs, utilization.

BOCKSTOCE, J. [John].

1981. Man's exploitation of the western Arctic bowhead. *In* *FAO Advisory Committee on Marine Resources Research Working Party on Marine Mammals, Mammals in the Seas*, Vol. 3, p. 163-170. *FAO Fish. Ser.* 5, Vol. 3.

Reviews effects of Alaskan Eskimo and commercial whaling on the population of bowhead whales in the western Arctic, noting the near extinction of this whale by 1910, when commercial whaling ended; a continuing hunt by natives with a relatively steady and low total number of whaling crews until 1965, when the number of crews began to increase. Total catch also began to increase from about 15 whales per year between 1910 and 1965 to numbers that caused concern throughout the world: 20 whales captured, 3 killed but lost, and at least 28 struck and lost in 1974; 48 captured, 8 killed but lost, and at least 35 struck and lost in 1976; and with the autumn season still to come in 1977, 26 whales captured, 2 killed but lost, and 77 struck and lost during the spring season. To determine whether the present population of whales can tolerate this level of harvest and unknown effects of offshore oil development, it is important to know the present size of the population and its size before 1948 [*sic*, 1848].

WESTERN ARCTIC

FIELD & LABORATORY TECHNIQUES-census, aerial, counting stations, historical vessel records; POPULATION-abundance; REGULATION & CONSERVATION-management, quotas; WHALING-history, commercial, native, catch, crews.

BOCKSTOCE, JOHN R., and CHARLES F. BATCHELDER.

1977. A chronological list of commercial wintering voyages to the Bering Strait region and Western Arctic of North America, 1850-1910. Univ. Saskatchewan, Saskatoon, Can., Inst. Northern Studies, Musk-Ox No. 20:3-8, + frontispiece. Reprinted by The Am. Neptune, 1978, 38(2):81-91.

"A chronological list of wintering voyages by American whalers to the Bering Strait-Beaufort Sea area for the period from 1848 when the western Arctic whaling grounds were first discovered, until 1910 when the industry collapsed." (From author's abstract.)

WESTERN ARCTIC
WHALING-history, western Arctic, commercial.

BOCKSTOCE, JOHN R., and CHARLES F. BATCHELDER.

1978. A gazetteer of whalers' place-names for the Bering Strait region and the western Arctic. Names, J. Am. Name Soc. 26(3):258-270.

Lists place-names for locations in the western Arctic (Bering, Chukchi and Beaufort Seas) commonly used by commercial whaling vessels in pursuit of the bowhead whale during the period from 1848 to 1910.

WESTERN ARCTIC
WHALING-western Arctic, shore stations.

BODFISH, HARTSON H., recorded by JOSEPH C. ALLEN.

1936. Chasing the bowhead. Harvard Univ. Press, Cambridge, Mass., 281 p.

Captain Bodfish's popular-style narrative describes 31 years of whale hunting and experiences, mostly north of Bering Strait, including observations on biology and behavior of bowhead whales. Includes observations about gear, techniques, catches, and utilization.

WESTERN ARCTIC
BEHAVIOR-diving, swimming under pursuit, respiratory, migration; DISTRIBUTION; MORPHOLOGY-measurements, structure (baleen); NUTRITION-food, feeding behavior; WHALING-western Arctic, history, gear, natives, catch.

BODFISH, WALDO, as told to J. LESTER MINNER.

1947. Nine polar bears. Alaska Sportsman 13(9):22-23, 41-42. Reprinted 1960 in the Alaska book: story of our northern treasureland, p. 156-158, by J. G. Ferguson Publ. Co., Chicago.

Account of two whaling crews during May 1927 at Wainwright, Alaska. The hunters discovered 35 to 40 polar bears feeding on a floating whale [probably a bowhead] carcass, and nine men in the party killed nine polar bears; the other bears ran off without attacking the hunters. An introductory panel to the article described Waldo Bodfish as the son of Captain Hartson H. Bodfish, the well-known Arctic whaler whose book, Chasing the Bowhead, was published in 1936. Waldo Bodfish has a whaling crew each year at Wainwright and last spring [1947?] his crew killed two whales.

WESTERN ARCTIC
POPULATION-mortality (whaling?), stranding; PREDATORS & COMPETITION-scavenging; WHALING-Chukchi Sea, native crews, catch.

BOERI, DAVID.

1983. *People of the ice whale*. E. P. Dutton, Inc., New York, NY. 285 p.

Author describes Alaskan Eskimos whaling for bowheads at Gambell in 1978 and 1979, and at Barrow in 1979 and 1980. In 1978 a total of 18 crews captured one 45-foot long bowhead and struck but lost four others (p. 7, 151-155). Hunters at Savoonga took one whale that year (p. 133). In 1979 Gambell hunters failed to get a whale, but 30-plus crews at Barrow (p. 214) landed at least two and one-half bowheads and struck but lost nine and one-half whales (author considered a stinker as one-half of a whale, p. 217). In 1980 the author reported that at least 10 crews at Barrow captured two whales and struck but lost one (p. 226, 230).

WESTERN ARCTIC

MORPHOLOGY—length; POPULATION—mortality, whaling, struck and lost, stinkers; WHALING—native, catch, gear, utilization.

BOGOJAVLENSKY, SERGEI.

1969. *Imaangmiut Eskimo careers: skinboats in Bering Strait*. Ph.D. Thesis, Harvard Univ., Cambridge, Mass., 250 p. [Unpublished]

Author's dissertation research among the King and Little Diomed Islander Eskimos between November 1966 and July 1968 provides considerable detail about Eskimo kinship, crews and factions, hunting, economy and ceremonies as they relate to everyday living for these people. A whale [species not stated, presumably a bowhead] was captured by Little Diomed Island hunters in the late 1930s, an occasion that was followed by elaborate ritual observances (p. 225). The high jump, using old boatskins as a kind of trampoline, is used at Little Diomed as part of the celebration (p. 244). As to the number of crews, there have not been more than eight captains on each of the islands in the past 30 years (p. 206)

WESTERN ARCTIC

WHALING—western Arctic, Bering Strait, native, crews, gear, catch.

BOGOSLOVSKAYA, L. S., and L. M. VOTROGOV.

1981. Russian title. (Mass winterings of birds and whales in ice lanes in the Bering Sea). *Priroda* (Mosc.) 1:42-43. (In Russ.) (Transl. Available as Int. Whaling Comm. Doc. SC/33/02, 3 p.)

An area of open water exists all winter off the coast of the Chukchi Peninsula that is an important wintering area for an abundance of wildlife. Because of its location opposite the ancient Eskimo village of Sireniki, it has been named Sireni-kovskaya. A small population of bowhead whales is present throughout the winter and calves the size of two walrus have been observed here in early April. In spring the bowheads gradually migrate northward through mid-June. In 1980, about 30 bowheads first appeared off Sireniki on 12 April and the majority of these were calves.

WESTERN ARCTIC

BEHAVIOR—migration; DISTRIBUTION—wintering area; REPRODUCTION—periodicity, calves.

BOGOSLOVSKAYA, L. S., L. M. VOTROGOV, and I. I. KRUPNIK.

1981. Bowhead whale off the Chukotka: migrations and aboriginal whaling. Rep. Int. Whaling Comm. SC/33/PS-16, 44 p. (unpublished).

An historical review of whaling (mainly bowhead and gray whales) by Eskimos of the Chukotsk Peninsula, USSR. Former and present whaling villages are given, together with information on approximate number of boat crews in each and capture estimates derived from sparse data on the annual catch of whales by each village. Migrations are discussed with opinion that part of bowhead population enters the western Chukchi Sea for the summer.

Reasons for the apparent cessation of bowhead whaling in the area during the 1940s and 1950s are not discussed. The paper concludes with a proposal to the Scientific Committee of the International Whaling Commission that Soviet Eskimos be permitted to begin taking two to three bowheads annually for the purpose of conserving cultural traditions.

WESTERN ARCTIC
ARCHAEOLOGY; BEHAVIOR-Breaching, resting, migration; DISTRIBUTION-former and present; IDENTITY-ingutuk;
REPRODUCTION-periodicity of calving; WHALING-history, western Arctic, eastern USSR, natives, catch, crews.

BOLAU, HEINRICH.

1895. Die geographische verbreitung der wichtigsten wale des Stillen Ozeans. (The geographical distribution of the great whales of the Pacific Ocean). Abh. Naturwiss. Vet. Hamburg 3(5), 22 p., plus 1 map. (In Ger.). (Transl. by P. McGuire, 1976, available Natl. Mar. Mammal Lab., Alaska Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way N.E., Seattle, WA 98115.)

Drawing on the literature, author briefly describes the great whales, including the Polar or Greenland whale (American bowhead) *Balaena mysticetus*, and its circumpolar distribution. From specimens observed by others, he believes bowheads in the Okhotsk and Bering Sea are of the same population. In support of his opinion he cites Van Beneden and Gervais (1865-1878:10, p. 8 in transl.) as stating that a Danish Captain Sodring from Petropavlovsk observed two bowheads, near other baleen whales, opposite the east coast of Kamchatka below 53½' N., thus they were below the southern limit of these whales.

CIRCUMPOLAR
BEHAVIOR-migration, range; IDENTITY-description, nomenclature, taxonomy; MORPHOLOGY-measurements;
NUTRITION-food; WHALING-eastern Arctic, western Arctic, commercial.

BOWER, WARD T.

1925. Alaska fishery and fur-seal industries in 1923. Rep. U.S. Comm. Fish., 1924, append. 3, p.47-140. (Doc. 973.)

Detailed annual reports and statistics on the fishery and fur-seal industries by district in Alaska. "The North Pacific Sea Products Co., at Akutan, was the only firm engaged in the whaling industry of Alaska in 1923. It employed 120 whites and 28 natives. The investment, covering value of plant, vessels, wages, and other operating charges, was \$472,998. Whaling was carried on in the North Pacific Ocean and Bering Sea, and the catch was 2 bowheads, 151 finbacks, 155 humpbacks, 29 sulphur bottoms, 16 sperm, 1 right, and 1 sei whale. Products consisted of 655,250 gallons of oil, valued at \$317,417; 2,313,980 pounds of fertilizer, valued at \$59,660; 3,280 pounds of whalebone, valued at \$2,604; and 130,000 pounds of pickled whale meat, valued at \$9,000.

The United States Whaling Co. discontinued operations at Port Armstrong, and transferred its activities to the South Pacific Ocean in the region of New Zealand." (p.108)

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, commercial, shore stations, catch.

BOWER, WARD T., and HENRY D. ALLER.

1915. Alaska fisheries and fur industries in 1914. Rep. U.S. Comm. Fish., 1914, append. 9, 89 p. (Doc. 819.)

Detailed annual reports and statistics on the fishery and fur industries by district in Alaska. "In 1914 the offshore whaling fleet consisted of four vessels that caught a total of 24 bowheads. The number of whales and corresponding yield of whalebone by vessel was: *Herman*, 6 (10,000 pounds); *Jeanette*, 3 (2,461); *Polar Bear*, 10 (17,000); and the *Belvedere*, 5 (8,000). The *Karluk*, for years identified with the San Francisco whaling fleet, went north with the Stefansson Arctic expedition in the spring of 1913. Although official advices have not as yet been received, it appears that this steamer was crushed in the ice near Herald Island, 80 miles from Wrangel Island, Alaska, in December, 1913, or in January, 1914. The bark *Gay Head*, which left San Francisco in October, 1913, on a voyage to southern whaling grounds, worked northward into Alaskan waters in the spring of 1914. While cruising along that coast the vessel stranded in heavy weather on June 27, 1914 at Chignik Bay and became a total loss. The steamers *Beluga*, *Bowhead*, *Narwhal* and *Thrasher* did not engage in whaling this year, but were laid up in Oakland Creek" (p. 58-62).

WESTERN ARCTIC
WHALING-western Arctic, commercial, catch, gear.

BOWER, WARD T., and HENRY D. ALLER.

1917. Alaska fisheries and fur industries in 1916. Rep. U.S. Comm. Fish., 1916, append. 2, 118 p (Doc. 838.)

Detailed annual reports and statistics on the fishery and fur industries by district in Alaska. "Shore stations: The whaling industry in Alaska is represented chiefly by the operations of two companies-The United States Whaling Co., at Port Armstrong, and the North Pacific Sea Products Co., at Akutan. Whales taken in shore operations in 1916 were: 1 bowhead, 161 finbacks, 121 humpbacks, 64 sulphur-bottoms, 20 sperm, 1 right, and 21 sei whales, a total of 389. Offshore whaling fleet: The steamer *Herman*, of 229 net tons, was converted into a motor-power vessel and was chartered to Capt. L.A. Pedersen, who sailed her from San Francisco early in 1916 on a trading trip to Siberian waters, from which she returned in November. Incidentally, some whaling was done, netting a small quantity of oil and bone. The auxiliary whaling schooner *Belvedere* (400 tons net) sailed from Seattle in the spring of 1916 on a similar voyage to northern waters and returned to the same port in the fall with a small cargo of whale and walrus products. This vessel had heretofore been listed as a steamer." (p. 73-74).

WESTERN ARCTIC
WHALING-western Arctic, commercial, shore stations, catch, gear.

BOWER, WARD T., and HENRY D. ALLER.

1918. Alaska fisheries and fur industries in 1917. Rep. U.S. Comm. Fish., 1917, append. 2, 123 p. (Doc 847.)

Detailed annual reports and statistics on the fishery and fur industries by district in Alaska. The United States Whaling Co., at Port Armstrong, and the North Pacific Sea Products Co., at Akutan, continued as the principal operators in the whaling industry. Whales taken in shore operations in 1917 were: 2 bowheads, 153 finbacks, 44 humpbacks, 138 sulphur-bottom, 51 sperm, 9 beluga and 26 others, a total of 423. (p. 51-52).

WESTERN ARCTIC
WHALING-western Arctic, commercial, shore stations, catch, gear.

BOWER, WARD T., and HARRY CLIFFORD FASSETT.

1914. Fishery industries. Rep. U.S. Comm. Fish., 1913, append. 2, p. 37-139. (Doc. 797.)

Detailed annual reports and statistics on the fisheries by district in Alaska. "Operations of the San Francisco fleet in northern waters during 1913 amounted to comparatively little. The steamer *Belvedere* (339 tons) left March 11, 1913, on a whaling voyage to the Arctic. This vessel was frozen in near Griffen Point, and will be forced to winter in the north. The power schooner *Elvira* (60 tons) cleared from San Francisco May 26, on a cruise to the Arctic. On account of unfavorable conditions, this vessel was also seized in the ice, and late in September capsized and became a total loss. So far as known at present, no whales were killed this season, either by the *Belvedere* or *Elvira*. The Eskimos succeeded in getting four bowheads near Point Barrow." (p. 132).

WESTERN ARCTIC

WHALING-western Arctic, commercial, native, catch, gear.

BOYD, WILLIAM L.

1972. Jarvis and the Alaskan Reindeer Caper. *Arctic* 25(2):75-82.

In 1897 several whaling vessels were trapped in the arctic by ice and the seamen were forced to spend the winter there. The whalers sought help from the nearest point of civilization which was the village of Utkiavik and Charles D. Brower's whaling station located a bit north of Cape Smythe. During the winter of 1897-1898, in response to an apparent crisis, Lieutenant David H. Jarvis of the U.S. Revenue Cutter *Bear*, leading a three-man relief party, successfully drove a herd of reindeer 800 miles from Cape Nome to Point Barrow to provide the whalers with an emergency food supply. During April and May, Brower and the natives carried out whaling, and the additional meat helped to relieve food shortages for all.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, Beaufort Sea, commercial, native, utilization.

BRAHAM, HOWARD W., WILLMAN M. MARQUETTE, TERESA W. BRAY and J. STEPHEN LEATHERWOOD.

1980. The bowhead whale: whaling and biological research. *Mar. Fish. Rev.* 42(9-10):1-96.

Seventeen articles present recent scientific information, most from original research conducted since 1973, on the natural history and historical catch of bowhead whales by Eskimos and commercial whalers in the western Arctic. One article discusses the Spitsbergen bowhead stock.

WESTERN ARCTIC, EASTERN ARCTIC

BEHAVIOR-diving, group size, ice-breaking, migration, respiration, vocalization; DISTRIBUTION-history, former, present; FIELD & LABORATORY TECHNIQUES-acoustics, census, devices, specimens; IDENTITY-ingutuk; MORPHOLOGY-anatomy, fetuses, calves; NUTRITION-food, feeding, growth; PATHOLOGY-injuries, scars; PHYSIOLOGY-excretory; POPULATION-abundance, mortality, trends, recruitment; REPRODUCTION-fetuses, neonates, mating, periodicity; WHALING-history, commercial, native, catch, utilization

BRAUND, STEPHEN R.

1981. The skin boats of St. Lawrence Island, Alaska. M.A. Thesis, Univ. Alaska, Fairbanks, 221 p. (unpublished)

Detailed account of the construction, maintenance, and use of the angyapik (often loosely termed an umiak) by the Eskimos of St. Lawrence Island. Today's walrus hide covered open boat is the product of major changes which reflect the influence of early day commercial whalers and traders. Although Gambell residents had approximately 28 usable skin boats plus three usable frames without skin covers in 1973, most are used for hunting walrus and a smaller number is used for bowhead whaling. The use of these boats for whaling is described (p. 101-102); in 1973 14 crews actively whaled at Gambell (p. 110, 112). Citing Ellanna (1980), author reports Gambell had 18 whaling crews in 1974 and 19 in 1976, and that Savoonga had a minimum of 3 crews [presumably for both years]; and in 1980 Ellanna (personal communication) identified 22 active crews at Gambell and 8 at Savoonga (p. 112). An historical account of early day commercial whaling and its influence upon St. Lawrence Islanders is recounted (p. 153-180).

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, commercial, native, gear, photographs, utilization.

BREIWICK, JEFFREY M., EDWARD D. MITCHELL, and DOUGLAS G. CHAPMAN.

1980. Estimated initial population size of the Bering Sea stock of bowhead whale, *Balaena mysticetus*: an iterative method. Fish. Bull., U.S. 78(4):843-853.

Initial stock sizes of bowhead whales in the western Arctic (Bering, Chukchi and Beaufort Seas) were calculated iteratively for the period 1848-1978. Estimates of initial stock size ranged between 14,000 and 26,000 whales. It appears likely that stock size between 1910 and 1978 was probably < 10% of the initial stock level.

WESTERN ARCTIC
POPULATION –initial abundance, calculated.

BREIWICK, J.M. and E.D. MITCHELL.

1983. Estimated initial population size of the Bering Sea stock of bowhead whales (*Balaena mysticetus*) from logbook and other catch data. In Tillman, Michael F. and Gregory P. Donovan, (Editors), Historical whaling records, p. 147-151. Rep. Int. Whaling Comm., Spec. Issue 5, Paper SC/33/PS7.

Initial population estimates for the Bering Sea stock of bowhead whales were made using the method of Breiwick *et al.* (1980) and pelagic and shore-based catch data. The range of resulting population estimates is from 8,000 to 18,000 bowheads. Results suggest that the maximum net recruitment rate may be ≤ 0.03 and that the initial population size was probably nearer the upper range of estimates obtained. (From author's abstract.).

WESTERN ARCTIC
POPULATION –initial abundance, calculated.

BROOKS, JAMES W.

1979. Status of marine mammal stocks in Alaska. Proc. Alaska Sci. Conf. 29:59-69.

A summary of the more significant aspects of the status and associated problems of marine mammal stocks in Alaska. Subjects briefly reviewed for the bowhead whale are distribution and migration, general biology, management problems, and current research.

WESTERN ARCTIC
BEHAVIOR-migration; DISTRIBUTION-present; POPULATION-abundance, mortality, whaling, struck and lost; REGULATION & CONSERVATION-management, regulation; REPRODUCTION-fecundity, gestation, mating, parturition; WHALING-western Arctic, native, catch.

**BROOKS, JAMES W., JAMES C. BARTONEK, DAVID R. KLEIN, DAVID L. SPENCER,
and AVERILL S. THAYER.**

1971. Environmental influences of oil and gas development in the Arctic Slope and Beaufort Sea. U.S. Dep. Int., Fish Wildl. Serv., Bur. Sports Fish. Wildl., Resource Pub. 96, 24 p.

The Bureau of Sport Fisheries and Wildlife and the Bureau of Commercial Fisheries, charged with assembling all available information and with conducting field studies to keep abreast of rapid developments and their ecological implications, present results of their initial studies in this report on the Arctic Slope and Beaufort Sea. "Bowhead whales, belugas, and harbor seals are present during the summer and fall, but migrate to the Bering Sea in winter." Productivity rises sharply during the summer when ice-free areas develop and light intensities rise. Thus, suckling bowhead whale calves are able to double their length while their mothers feed on zooplankton during a single summer in the Beaufort Sea. (p. 18-19).

WESTERN ARCTIC

DISTRIBUTION—Beaufort Sea; GROWTH—summer period; NUTRITION—feeding ground, zooplankton.

BROWER, CHARLES DAVID [DeWITT]

1863-1899 [1937]. The northernmost American: an autobiography. Vol. 1, Part 1:1-201; Vol. 1 Part 2:202-435, Vol. 1, Part 3:436-542; Vol. 2, Part 1:543-696; Vol. 2, Part 2:697-895; Vol. 3, 70 p. (Unpublished) Available Baker Library, Dartmouth College, Hanover, N.H. Condensed and published as: Brower, C.D. 1942. Fifty years below zero. Dodd, Mead and Co., New York, N.Y., 310 p.

This manuscript was typed by Brower at his home located at Cape Smythe (Barrow Post Office), Alaska, and installments were sent two or three times a year to V. Stefansson. Contains considerable information on whaling for bowhead whales in the Arctic, commercially and by Eskimos, by means of vessels and shore-based whaling sites, during the period 1885-1937. Author describes the commercially valuable bowhead, including a small one called "inyouto" which many people thought to be a separate species; the behavior and timing of migrating whales; and data on the length of whales taken and/or the length of baleen obtained from those killed. Includes much information on the transition of Eskimo whaling culture and techniques from traditional ways to methods and equipment introduced by the commercial whalers. This is the most complete record available on the numbers of crews whaling annually during the period as shore-based whalers, commercial and native, at Barrow and on the numbers of whales captured or struck and lost by them. Also presents some information on bowhead whales taken by Siberian Eskimos during 1886.

WESTERN ARCTIC

BEHAVIOR—migration; IDENTITY—nomenclature, Eskimo, inyouto; MORPHOLOGY—measurements; POPULATION—mortality, whaling, struck/lost, killed/lost; REPRODUCTION—fetus; WHALING—western Arctic, Bering Sea, Chukchi Sea, Beaufort Sea, commercial, native, shore-stations, crews, catch, utilization.

BROWER, CHARLES D.

1886-1937. Diary [of Charles D. Brower]. (Available Baker Library, Dartmouth College, Hanover, N.H.). (Unpublished)

Brower's diary contains much valuable if laconic information on the shore-based whaling for bowheads at Barrow, Alaska, during the period 1886-1931. Although some of this information is included in the author's manuscript "The northernmost American: an autobiography", his "Diary" presents much information on whaling that either compliments or is in addition to data found in the former. Contains data on whaling seasons, whales caught during spring and autumn hunts, animal size designated as small or large, length or pounds of baleen collected is frequently noted, and names of successful crew leaders are given.

WESTERN ARCTIC

BEHAVIOR-migration; MORPHOLOGY-measurements (small or large size), structure (baleen); POPULATION-mortality, whaling (struck/lost, killed/lost); WHALING-western Arctic, Chukchi Sea, Beaufort Sea, commercial, native, shore-stations, catch, crews, utilization.

BROWER, CHARLES D., in collaboration with PHILIP J. FARRELLY and LYMAN ANSON.

1960. Fifty years below zero. A lifetime of adventure in the far north. Dodd, Mead & Co., New York, 310 p. (Originally published 1942.)

Account of Brower's experiences as a whaler and trader, mainly at Barrow, Alaska, and vicinity, from 1884 through 1940 [Brower died on February 11, 1945.]. Contains considerable information on commercial and native whaling for bowhead whales in the Arctic, including data on whaling methods, crews, numbers caught and whales struck but lost. Because Brower was famous for his intimate knowledge of the Arctic and its inhabitants, and because he never failed to give assistance when needed, visitors to the region made it a point to visit him and these occasions were duly noted by this most northerly American citizen.

WESTERN ARCTIC

BEHAVIOR-migration; POPULATION-mortality, whaling; WHALING-western Arctic, Chukchi Sea, Beaufort Sea, commercial, native, shore stations, catch, crews, utilization.

BROWER, RONALD.

1979. Cultural uses of Alaska marine mammals. (An edited version of the transcript of Brower's presentation.). Proc. Alaska Sci. Conf. 29:71-73.

Comments by a resident of Barrow, Alaska, on past and present status of marine mammals of the Arctic utilized by Eskimos for subsistence, and recent changes in the environment and wildlife status due to oil exploration and other new activities in the area. The bowhead whale supplies most of the Eskimos nutritional needs over the winter period, and new uses for baleen are being studied. Traditional whaling is growing due to an increasing native population and the numbers of crews, which averaged 26 every season during the 1930s up to the 1960s, has increased to about 48, of which approximately 30 are in Barrow. The only change in traditional whaling has been the use of 1850s model whaling guns that were used by the New England whalers during the 1800s and the use of orange colored floats that are easier to use than the traditional seal floats.

WESTERN ARCTIC

WHALING-western Arctic, native, crews, gear, utilization.

BROWN, ROBERT.

1868. Notes on the history and geographical relations of the Pinnipedia frequenting the Spitzbergen and Greenland Seas. Proc. Zool. Soc. Lond. 1868:405-440.

Contents include physiological remarks on the habits and instincts of seals in general, notes on the species of Pinnipedia, and the commercial importance of the seal fisheries. In discussing the habits and food of walrus, the author states (p. 429-30) "...whenever it was killed near where a whale's carcass had been let adrift its stomach was invariably found crammed full of the krang or flesh of that cetacean."

EASTERN ARCTIC
PREDATORS & COMPETITORS-scavenger.

BROWN, S. G.

1975. Twenty-sixth meeting of the International Whaling Commission, 1974. Polar Rec. 17(109):402-403.

A brief summary of activities during the IWC meet held June 24-28, 1974 in London. It was reported that 37 bowhead whales were taken by American Eskimos during 1973.

WESTERN ARCTIC
WHALING-western Arctic, native, catch.

BROWN, VINSON.

1976. Sea mammals and reptiles of the Pacific coast. Macmillan Pub. Co., Inc., New York, 265 p.

Contains brief descriptions of sea mammals and reptiles using imaginary actions and events around a framework or skeleton of facts for some of the more interesting, important, or well-known species. The bowhead (a drawing on p. 225) is briefly described (p. 226-227) with information of a general type usually found in the popular literature.

WESTERN ARCTIC
BEHAVIOR; DISTRIBUTION; IDENTITY.

BRUEMMER, FRED.

1971. Whalers of the North. Beaver 302(3):44-55.

Brief historical review of commercial whaling for bowheads in the eastern and western Arctic. Contains general description of the bowhead whale, the value of its products, and catch data, including two whales taken in the eastern Arctic by Eskimos. One, a half-grown individual, was taken at Pangnirtung Fiord in 1946; the other, a large animal, was taken by a Jens Munk Island resident in 1965.

EASTERN ARCTIC, WESTERN ARCTIC
DISTRIBUTION-history; IDENTITY-description; MORPHOLOGY-structure; NUTRITION-food; POPULATION-abundance; SKELETAL REMAINS; WHALING-eastern Arctic, western Arctic, commercial, native, catch, utilization, photographs.

BRUEMMER, FRED.

1977. Life on a cold rock. *Nat. Hist.* 86(3):54-65.

Popular account describing the living conditions and activities of Eskimos on Little Diomedede Island in the Bering Strait. They have seven umiaks, four 30-foot long and three 18-foot long, and the author describes their construction and use (p. 63). The islanders mainly hunt walrus and seals. "Whales pass, but they are rarely pursued. By tradition and inclination Diomededers are primarily walrus hunters."

WESTERN ARCTIC
WHALING-western Arctic, Bering Strait, native, gear.

BRUEMMER, FRED.

1979. Monopoly games sea birds play. *Nat. Hist.* 88(3):69-75.

Article on the sea birds about Prince Leopold Island in Barrow Strait, west of Lancaster Sound. In late July 1819, William Edward Parry, commanding H.M.S.'s *Hecla* and *Griper*, sailed into the area and was amazed by the wildlife wealth of the region. Among the wildlife, "white whales were swimming about the ships in great numbers, narwhal were very numerous, and on August 1 they saw 82 bowhead whales."

EASTERN ARCTIC
BEHAVIOR-relationship other species; DISTRIBUTION-former; POPULATION-abundance.

BRUEMMER, FRED.

1980. 'Herschel! The big town.' *Beaver* 311(3):26-35.

Article describes the rise and fall of the bowhead whaling industry in the western Arctic from the discovery of "a great many black whales (bowheads)" by Beechey along the Alaskan coast to Herschel Island in the eastern Beaufort Sea. Author details significant events for Herschel Island from 1888 when Joseph Tuckfield traveled there from Barrow and discovered whales in the Beaufort Sea "thick as bees"; through 1908-1909 when not a single ship wintered at Herschel; and finally to today when only one family now lives there. Catch data for several whaling vessels are given.

WESTERN ARCTIC
IDENTITY-description, nomenclature; MORPHOLOGY-structure; POPULATION-abundance; WHALING-western Arctic Beaufort Sea, commercial, catch, gear, utilization, photographs, drawings.

BUICE, BETTY.

1947. When the ice cake broke away. *Alaska Sportsman* 13(4):16-17, 46-47.

Account by a U.S. Weather Bureau employee of bowhead whaling at Barrow, Alaska, during spring 1945. Eighty-year-old Tokput's crew shot the first whale of the season, a 30-foot long animal. It was lost, however, when the ice it had been pulled up on broke away and everyone was forced to run for safe ice. The janitor for the weather station had a crew and they caught two whales.

WESTERN ARCTIC
MORPHOLOGY-measurement; WHALING-western Arctic, Chukchi Sea, native, crews, catch, photographs.

BULLEN, FRANK T.

1899. The cruise of the "Cachalot" round the world after sperm whales. D. Appleton & Co., N.Y. 379 p. (Other editions: Smith, Elder & Co., London, 1901; 2nd ed., D. Appleton and Co., 1923; Paperback ed., Dover Publ. Inc., N.Y., 1962).

Although primarily a popular account from a seaman's viewpoint of a sailing cruise for sperm whales in the South Pacific, the book includes interesting observations about bowheads in the Okhotsk Sea (p. 191-205). Describes bowhead, spouting activities, whaling chase and behavior when harpooned, processing of oil and whalebone aboard ship, and behavior of a bowhead under attack by killer whales.

WESTERN ARCTIC

BEHAVIOR-respiratory, relations with other species, diving; PREDATORS & COMPETITORS-killer whale; WHALING-western Arctic, Okhotsk Sea, gear, catch, utilization.

BULLEN, FRANK T.

1904. Denizens of the deep. Fleming H. Revell Co., N.Y., 430 p.

Popular style book describing knowledge about various fish, mammals, and birds, including the author's observations' while aboard whaling ships. Chapter on bowhead (p. 39-56) presents general information about food and feeding behavior; parasites; personal observations of predation by killer whales (*Orca*), swordfish (*Xiphias*), and thresher shark (*Alopias vulges*); and behavior in removing parasites and in ice-breaking.

BEHAVIOR-ice-breaking, general; NUTRITION-food, feeding behavior; PATHOLOGY-parasites; PREDATORS & COMPETITORS-killer whale, swordfish, thresher shark.

BUNNELL, CHARLES.

1958. Charles Bunnell collection of Bernardi. Album, accession number 58-1026, Alaska and Polar Regions Dep., Elmer E. Rasmuson Libr., Univ. Alaska, Fairbanks.

Album titled "story of a whale hunt" contains pen sketches by Mrs. S. R. Bernardi and photographs with captions describing bowhead whaling by Eskimos at Wales, Alaska. No background information accompanied the album when C. Bunnell donated it to the library in 1958, but it apparently was prepared by S. R. Bernardi, who was a U.S. Government school teacher at Cape Prince of Wales at about 1902. (Also see Lusk collection of Bernardi, accession number 59-875, Univ. Alaska, and S. R. Bernardi, Alaska 47(8):22-25 for additional information).

WESTERN ARCTIC

WHALING-history, native, gear, catch, photographs and drawings.

BURCH, ERNEST S., JR.

1966. Authority, aid, and affection: the structure of Eskimo kin relationships. Ph.D. thesis, Univ. Chicago, Chicago, Ill., 336 p. [Copy avail. at Naval Arctic Research Laboratory, Barrow, AK.]

Describes relationships of the "Kiwaliinarmiut" ("Kivalina People") among themselves and with other Eskimos in that region of Alaska. "The village of Kivalina was established when a school was built at its present location in 1905. Kivalina is not a whaling village, most of the whale migration passing too far out at sea to permit hunting from the village. Consequently, anyone from Kivalina who wishes to hunt whales usually goes to Point Hope for the purpose. In the spring they moved to the coast, where they hunted seals, and sometimes set up a whaling station at the so-called 'Cape Seppings', some distance northwest along the coast from the site of the modern village, continuing this until the sea ice departed in late June. By the winter of 1897-98, however, there were thirteen whaling stations strung out along the coast between Point Hope and Cape Seppings (Van Stone, 1962:23), some of them being well within the Kivalina area, and these stations were owned and run by white men." (p. 34-38).

WESTERN ARCTIC
BEHAVIOR—migration, timing; WHALING—Chukchi Sea, commercial, native, shore stations.

BURCH, ERNEST S., JR.

1980. Traditional Eskimo societies in Northwest Alaska. *In* Y. Kotani and W. B. Workman (editors), *Alaska native culture and history*, Senri Ethnol. Studies No.4, p. 253-304. Natl. Mus. Ethnol., Suita, Osaka, Japan.

A reconstruction of the general 19th century social and demographic structures of the Inupik-Eskimo-speaking population of Northwest Alaska. Based upon personal interviews with 74 individuals between 1960 and 1976, supplemented by information extracted from literary and archival sources. This material was analyzed separately for three different time periods, 1816-1842, 1848-1854, and 1880-1889, and the author replaces the Nunamiut/Tariurmiut dichotomy with societies. The yearly subsistence cycle, including whaling where applicable, is noted for all societies of Northwest Alaska. This paper is significant because the ethnographic record presented contains important data for a reconstruction of bowhead whaling effort by the Inupiat during the time period of this study.

WESTERN ARCTIC
WHALING—historical, western Arctic, native.

BURCH, ERNEST S., JR.

1981. The traditional Eskimo hunters of Point Hope, Alaska: 1800-1875. North Slope Borough [Barrow, Alaska]. 89 p.

Author reconstructs the annual subsistence cycle of Point Hope area hunters based upon personal research, oral sources and the literature. Includes general information on bowhead whaling "...by eight-man crews, of which there may have been as many as 20 as late as mid-century." In addition to a spring season, whaling was also conducted in the fall, mostly north of the Point, but the hunt was apparently abandoned, at least as a regular enterprise, by about 1860 due to reduction of the whale population by the American whaling fleet after discovery of the whales north of Bering Strait in 1848 (p. 23-24).

WESTERN ARCTIC
BEHAVIOR—migration, timing, patterns; WHALING—Chukchi Sea, commercial, native, crews, photographs, utilization.

BURDICK, LORAINÉ.

1956. He jumps in the skin. *Alaska Sportsman* 22(2):26-27, 38-40.

Brief, general description of spring bowhead whaling activity at Barrow, Alaska, including the celebration called Nalakatuk after the season ends. There can be no Nalakatuk unless at least one whale is caught. Illustrated with eleven photographs, two of a dead bowhead.

WESTERN ARCTIC
WHALING-western Arctic, native, gear, catch, photographs, utilization.

BURGESS, STEPHEN.

1972. Marine mammal phenology in western St. Lawrence Island waters. (Abstr.) *Proc. Alaska Sci. Conf.* 23:49.

Author's observations made while on St. Lawrence Island during 1970-1972 indicates that bowhead whales, *Balaena mysticetus*, accompanied by beluga whales, *Delphinapterus leucas*, are present in these waters as they travel south in the month of December and again north during April and May.

WESTERN ARCTIC
BEHAVIOR-migration, other species.

BURGESS, STEPHEN M.

1974. The St. Lawrence islanders of Northwest Cape: Patterns of resource utilization. Ph.D. Thesis, Univ. Alaska, Fairbanks, 289 p. (Unpublished.)

"For the spring hunt of 1972 boats [from Gambell] were on the water for 9 days between April 11 and May 1, when the single whale for the season was taken west of the Cape. The number of boats hunting varied from 3 to 12 (all 16 boats were out only on one day) (p. 115) for a total of 70 boat trips for the hunt which averaged 9 hours for each of the days out. Crews varied from about 5 to 7 men. From one boat about 30 whales were sighted and from all boats 3 whales were struck before a male was killed. The whale measured 17 feet 5 inches (about 5.2 m) across the fluke and appeared about 45 feet (13.5 m) long. This whale was divided equally with the community of Savoonga which had divided the whale taken at the SW Cape several weeks earlier with Gambell. That whale was estimated at 35 feet in length." (p.155-156). No whales were taken at Gambell in 1970 (p. 218).

WESTERN ARCTIC
DISTRIBUTION-sightings; MORPHOLOGY-measurements; POPULATION-mortality, struck and lost; WHALING-western Arctic, Bering Sea, native, crews, gear, catch, utilization.

BURKHER, PAULINE CHASTAIN.

1944. From the whale's mouth. *Alaska Sportsman* 10(2):14-15, 24.

Describes baleen baskets made from whalebone, or baleen, obtained from bowhead whales. There are 300 or more of these baleen plates in two rows in the whale's mouth in graduated lengths of one to 12 feet. The basket makers choose the five or six foot strips of baleen as the most suitable for baskets. After completion the baskets are sterilized in a formaldehyde solution. The average annual catch of bowheads at Barrow is three or four whales. When an ankahtuk (bowhead) is sighted by the whalers, they may strike him with from one to a dozen bombs-which cost as much as ten dollars each.

WESTERN ARCTIC
IDENTITY-nomenclature; MORPHOLOGY-structure; WHALING-western Arctic, native, catch, gear, utilization.

BURNS, JOHN J.

1981. Overview of marine mammals in the Beaufort Sea. (Abstr.) *In* Acoustical Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 58. Unpub. rep. by Acoust. Soc. Am., [Washington D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

Marine mammals utilizing the Beaufort Sea are categorized as year-around residents (ringed and bearded seals, polar bears); regular summer occupants (above species plus bowhead, beluga, killer, and gray whales, harbor porpoises, walrus and ribbon and spotted seals); and infrequent residents (Steller sea lion, narwhal, hooded and harp seals, and species presumed to occasionally occur in the western Beaufort Sea include humpback, fin, sei, minke and sperm whales.)

WESTERN ARCTIC
BEHAVIOR-relations with other species; DISTRIBUTION-Beaufort Sea.

BURNS, JOHN J., and JAMES E. MORROW.

1973. The Alaskan Arctic marine mammals and fisheries. Fifth Int. Congr. Arctic oil and gas: problems and possibilities, Le Harve, May 2-5, 1973, 22 p.

Concerned with the problems and possibilities of oil and gas development on fishes and mammals in the Chukchi Sea and nearshore areas off the coast of Alaska. "Beluga and bowhead whales both occur in association with pack ice. Bowhead whales, as indicated by Tomilin (1957) are strictly confined to the floating ice region. Both belugas and bowheads are seasonally migratory, occupying Bering Sea in winter, deeply penetrating the pack ice in spring, when it is unstable and disintegrating. During summer and early fall, bowhead whales occur along the edge of the polar pack ice. Beluga whales commonly frequent near shore areas except when they are excluded by landfast ice. Based on our experiences, bowheads occur most commonly away from shore, except during the spring (and to a lesser extent, fall) migrations when they follow extensive leads in the ice which pass close to prominent land-heads such as Point Hope and Point Barrow.

Oil and gas development in the north would probably have little direct effect on bowhead whales. Belugas, on the other hand could be directly affected through disturbance in the bays, estuaries and river mouths which they frequent during the summer..."

WESTERN ARCTIC
BEHAVIOR-migration, interaction with beluga, ice; PATHOLOGY-pollution, oil & gas development.

BURNS, J. J., L. H. SHAPIRO, and F. H. FAY.

1977. The relationships of marine mammal distributions, densities, and activities to sea ice conditions. *In* Environmental assessment of the Alaska continental shelf, annual reports of principal investigators for the year ending March 1977, Vol. 1, Receptors-mammals, p. 503-554. U.S. Dep. Commer., Natl. Oceanic Atmos. Admin., Environ. Res. Lab., Boulder, Colo.

Presents tentative conclusions on study of ice dynamics and its relationship to habitats of marine mammals in the Bering and Chukchi Seas. During the winter-spring season several marine mammals, including some bowhead whales, evidently winter in the southern edge of the Bering Sea ice in a zone described as the "front" (p. 530).

WESTERN ARCTIC
BEHAVIOR-winter range; DISTRIBUTION-factors affecting, ice coverage.

BURNS, JOHN. J., LEWIS H. SHAPIRO, and FRANCIS. H. FAY.

1981. Ice as marine mammal habitat in the Bering Sea. *In* Donald W. Hood and John A. Calder (eds.). *The eastern Bering Sea shelf: oceanography and resources*, Vol. 2, p. 781-797. Univ. Wash. Press, Seattle.

Summarizes annually recurring features of the ice sheet in the Bering Sea and different ice habitats used by eight species of marine mammals, including the bowhead whale, *Balaena mysticetus*. Benefits of ice to bowheads are not clear, and other topics discussed include winter habitat, adaptations to ice, ice breaking, winter feeding, spring and autumn migrations, reproduction, association with belugas, and occupation of open waters of the northern Chukchi and Beaufort Seas during summer and early autumn (p. 781, 788, 791-794).

WESTERN ARCTIC

BEHAVIOR—ice breaking, respiration, migration timing and pattern, relationship with belugas; DISTRIBUTION—factors affecting, habitat; MORPHOLOGY—head; NUTRITION—feeding; REPRODUCTION—mating, parturition; WHALING—Bering Sea, native, gear, photograph.

BURNS, J. J., F. H. Fay, and L. SHAPIRO.

1978. Marine mammal distribution in relation to ice conditions in the Bering, Chukchi, and Beaufort Seas. (Abstr.) *Proc. Alaska Sci. Conf.* 27:178.

Studies are directed toward an understanding of (1) habitat requirements, (2) the dynamic processes operating to produce those habitats, and (3) the spatial and temporal distribution of critical habitats. The ice associated marine mammals of this vast region include the polar bear, walrus, ringed, bearded, ribbon, and spotted seals; and bowhead and belukha whales.

WESTERN ARCTIC

BEHAVIOR—ice, migration; DISTRIBUTION—factors affecting.

BURNS, WALTER NOBLE.

1919. *A year with a whaler*. Macmillan Co., New York, 250 p., 16 pls. (Copyright, 1913, by Outing Publ. Co., N.Y.).

Popular narrative of the author's adventures as a seaman on a whaling ship in the Bering and Chukchi Seas. Describes whaling and processing of whales aboard ship as well as the daily lives of whalers. Of bowheads, gives their physical features, behavior (feeding and after harpooning), description of baleen, food, breaching, and predation by killer whales.

WESTERN ARCTIC

BEHAVIOR—swimming, breaching; NUTRITION—food, feeding behavior; PREDATORS & COMPETITORS—killer whales; WHALING—history, western Arctic, Bering Sea, Chukchi Sea, commercial, gear, utilization, photographs and drawings.

BUTWIN, DAVID.

1971. Top of the world. *Saturday Rev.*, July 31, p. 35-36.

Barrow, Alaska, as viewed by a tourist. "Village whalers claimed an even dozen kills, and the following day, June 22, most of Barrow would be down on the shore to celebrate the catch."

WESTERN ARCTIC

WHALING—western Arctic, Chukchi Sea, native, catch, utilization (baleen).

CALDWELL, MELBA C., and DAVID K. CALDWELL.

1966. Epimeletic (care-giving) behavior in cetacea. *In* K. S. Norris (editor), *Whales, dolphins and porpoises*, p. 755-789. Univ. Calif. Press, Berkeley.

A historical review of observations on epimeletic behavior in cetaceans including an annotated review by species. Care-giving incidents reported for *Balaena mysticetus* are given (p. 779-780). "The Eskimos at Point Barrow, Alaska, reported an instance of maternal behavior to a field representative of the U.S. Fish and Wildlife Service (Dale W. Rice, personal communication, 1962). In the fall of 1961 they killed a baby bowhead and attached a line to the flukes, preparatory to hauling it out onto the ice. At this point the mother appeared and pushed the infant away. The mother was struck with a dart gun, but both mother and dead young disappeared and were not seen again."

WESTERN ARCTIC

BEHAVIOR-maternal; POPULATION-calf, whaling mortality, killed and lost, struck and lost; WHALING-western Arctic, native, gear.

CALL, SAMUEL.

1897-1898. Call collection of photographs. U.S. Navy Arct. Res. Lab., Barrow, Alaska.

"The collection of photographic negatives and lantern slides made by Dr. Samuel Call in 1897-1898 on the Overland Relief Expedition to Point Barrow were sent to Dr. Ernest N. Patty at the University of Alaska on April 15 as a gift from Mr. and Mrs. Fred Booth. Through the courtesy of the latter, ARL [Arctic Res. Lab] now has an excellent set of prints of these valuable, historical photographs, all catalogued." (ARL Monthly Prog. Rep. April, 1957, p. 5.) Photographs of bowhead whales [Commercial and native], boats, ships, and shore whaling stations at Cape Prince of Wales and Point Barrow.

WESTERN ARCTIC

WHALING-history, western Arctic, commercial, native, gear, catch, photographs.

CAMERON, AUSTIN W.

1951. Greenland right whale recorded in Gaspé County, Quebec. *Natl. Mus. Can. Bull.* 123:116-119.

A fragmentary whale skull which subsequently proved to be that of *Balaena mysticetus* was unearthed at Ste. Anne des Monts, Gaspé County, Quebec, in May 1949. The following measurements were obtained:

Greatest width of skull	268 cm
Greatest width of articular surface of zygomatic process	79
Diameter of foramen magnum (transverse)	12.1
Diameter of foramen magnum (ant.-post.)	14.1
Length of occipital condyle	27
Width of occipital condyle	18

"The above measurements along with a number of photographs were forwarded to Dr. Remington Kellogg, Curator of Mammals, United States National Museum, Washington, D.C., who identified the skull as that of *Balaena mysticetus* Linnaeus." This discovery is significant because it extends the known range of this species in the Atlantic region some 1,200 miles to the south of its previously known range.

EASTERN ARCTIC

DISTRIBUTION-former; FIELD & LABORATORY TECHNIQUES-museum, skull; MORPHOLOGY-measurements, skull, drawing, photographs.

CARIBOU NEWS.

1977a. Point Hope takes first bowhead whale. Caribou News, Kotzebue, Alaska, May 9, 1(1):2.

“Captain Billy Weber of Point Hope and his crew landed the first bowhead whale of the season in the open water off Point Hope on Sunday, April 30. The whale was 29 feet long.”

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

CARIBOU NEWS.

1977b. Swan’s crew captures whale. Caribou News, Kotzebue Alaska, May 24, 1(2):8.

“Captain Clinton Swan’s crew captured Kivalina’s first whale in 5 years—a 33 foot bowhead—on Monday, May 9, at about 2:00 p.m. The whale was taken in a lead about 2-1/2 or 3 miles out and about 6 miles north of town. It was struck by Victor Swan.” “This is the first whale to offer itself to Kivalina hunters since 1972. Three other Kivalina crews are hoping to have similar luck. They are captained by Oran Knox, Daniel Norton, and Oscar Swan.”

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

CARIBOU NEWS.

1977c. Luke Koonook takes 48-foot bowhead. Caribou News, Kotzebue, Alaska, June 8, 1(3):2.

“POINT HOPE, ALASKA: The oars pointed skyward last week in Point Hope from the umiak of Captain Luke Koonook, Sr. after his crew successfully landed a bowhead whale measuring forty-eight feet, five inches in the early evening of May 24th. His son Henry made the strike with his harpoon gun from the edge of the lead and the whale was towed up on the ice several hours later. The butchering began in the early morning hours and continued throughout the following days, with assistance coming from several other crews. This was the second whale taken this season, which has been plagued by poor wind conditions and the lack of open leads in the ice. The first whale for the Koonooks. Earlier in the month a bowhead whale measuring approximately thirty–six feet was successfully taken by Captain Billy Weber and his crew. A third strike was made on the evening of May 26th by Rex Allen Rock, son of Captain Elijah Rock, but the whale did not re-surface and has not been found up to this time. A south wind the following evening closed the lead and the crews broke camp and returned to the village to await improved weather conditions.” “The whaling feast for Point Hope this year is scheduled for June 10, 11 and 12.”

WESTERN ARCTIC
MORPHOLOGY-measurement; POPULATION-mortality, whaling, struck & lost; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

CARIBOU NEWS.

1977d. Bowhead whale hunting studied. Caribou News, Kotzebue, Alaska, July 1, 1(5):1.

The National Marine Fisheries Service held an informal meeting in Washington, D.C., two weeks ago to discuss the regulation of hunting bowhead whales by Alaskan Eskimos because of concern by various environmental groups about the survival of the bowheads. Attention focused on the Barrow hunters in attendance “because of the large number of whales caught in Barrow in recent years. During the 1977 season, Barrow hunters took 19 whales, while Wainwright, Saint Lawrence Island, and Point Hope hunters each took two, and Kivalina took one. The total take in 1977 was 26.” A hearing will probably be held in Kotzebue this summer for input from other local hunters.

WESTERN ARCTIC
REGULATION & CONSERVATION-conservation; WHALING-western Arctic, native, catch.

CARIBOU NEWS.

1977e. International Whaling Commission's deletion of native exemption for bowhead whaling: excerpts from the DEIS. Caribou News, Kotzebue, Alaska, Sep. 13, 1(9):6-7.

A presentation of selected key items in the Draft Environmental Impact Statement [produced by the National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce] concerning the banning by the IWC of bowhead whaling by Alaskan Eskimos. Contains data [reproduced] on the number of crews whaling at various villages during the spring from 1971-1976; numbers of whales struck and lost and killed and recovered at Point Hope for various years during the period 1915-1962; and the number of whales landed, struck and lost, and killed but lost in the Alaskan Eskimo fishery from 1973 through 1977.

WESTERN ARCTIC

POPULATION-mortality, whaling, struck & lost, killed & lost; WHALING-western Arctic, native, catch, crews.

CARIBOU NEWS.

1977f. Bowhead whale hearings. Caribou News, Kotzebue, Alaska, Oct. 5, 1(10):4-5.

During hearings held in Kotzebue on September 15 and 16 by the U.S. Department of Commerce, National Marine Fisheries Service, concerning bowhead whaling by Alaskan Eskimos, the testimony by northwest Alaska Eskimos was unanimous in favor of Eskimo whaling and the culture on which it depends. "Meanwhile, the villagers of Kaktovik, on Barter Island, took the first whale of the fall hunting season, under the supervision of the newly formed Eskimo Whaling commission. The EWC was formed at a meeting of whaling captains from all whaling villages from Barter Island to St. Lawrence Island, gathered at Barrow on August 31. Using traditional subsistence techniques, the Kaktovik crew hauled a 44-foot bowhead ashore to provide winter subsistence."

WESTERN ARCTIC

MORPHOLOGY-measurements; REGULATION & CONSERVATION-regulation; WHALING-Western Arctic, Beaufort Sea, native catch.

CARIBOU NEWS.

1977g. Cousteau supports whalers. Plans Arctic Study in Spring. Caribou News, Nov. 19, 1(13):1.

Jacques Cousteau met on October 28 with Barrow and St. Lawrence Island whalers to discuss plans for four Arctic expeditions and studies of the bowhead whale. Among those attending were whaling captains Roger Siluk and Abraham Kaningok of Gambell. "In discussions with the whaling captains, he learned that whale strikes at one point near St. Lawrence Island trigger flight reactions in whales as far as 30 miles away; and that there are complex color differences among bowheads which determine which ones the whalers will strike."

WESTERN ARCTIC

BEHAVIOR-reaction to strikes, communication (?); FIELD & LABORATORY TECHNIQUES-field recognition, coloration; WHALING-Bering Sea, native, crews.

CARLSON, GERALD F.

1966. Two on the rocks. David McKay Co., Inc., New York, 193 p.

Author and wife were school teachers at the village of Ingaluk, Little Diomedede Island, 1953–1954. Hunting for various species is discussed on p. 151-171, seals and walrus being the principal animals harvested. The Diomeders are not whalers by inclination and, although they go through a lot of preparation for the hunt, they haven't taken a live whale in years (p. 158). Several years before the Carlson's arrival an unsuccessful attempt was made to take a sleeping whale (bowhead?) with a shoulder gun.

WESTERN ARCTIC
WHALING-western Arctic, native, gear, catch.

CARNAHAN, JOHN W.

1979a. Cross Island: a link between the past and the future. *Arct. Coastal Zone Manage. Newsl.* 22:11–14.

Cross Island is the central focus of a subsistence zone for Eskimo activities such as whaling, fishing, and bird hunting, the core of Inupiat culture. Testimony from Inupiat residents recorded in The Beaufort Sea Traditional Land Use Inventory, an oral history project by the North Slope Borough, documents the value and previous use of the area as a center for subsistence whaling. Contains data on whales killed, year taken, crews and crew members.

WESTERN ARCTIC
MORPHOLOGY-measurements (baleen); WHALING-western Arctic, Beaufort Sea, native, catch, crews, utilization.

CARNAHAN, JOHN.

1979b. Cross Island: Inupiat cultural continuum. North Slope Borough, Anchorage. 43 p.

Documents use of Cross Island for generations by North Slope Eskimos for hunting, trapping and bowhead whaling. Oral reports record bowheads captured there in 1921 (1 whale, p. 31); 1922 (1 whale, p. 26,32); 1927 (1 whale, p. 26-27); 1927 or 1928 (1 whale, baleen was 11 feet long, p. 27); and 1938 (1 whale, p. 28). It was also noted that Taaqpak, a famous whaler of the area, made a mark on his umiaq every time a whale was caught, and that he also added a tattoo mark on his cheek for each whale.

WESTERN ARCTIC
WHALING—Beaufort Sea, native, catch, crews, photographs, records.

CARNAHAN, JOHN.

1980a. Inupiat take their history into their own hands. *Alaska J.*, 10(2):17-23.

The North Slope Borough, Barrow, Alaska, undertakes program to identify and document elements of Inupiat culture and subsistence as an aid in preserving their traditional lifestyle. Contains four photographs of early-day whaling by Ernest Leffingwell and one by F. C. Dakin.

WESTERN ARCTIC
WHALING—Chukchi and Beaufort Seas, native, historical, catch, crews, photographs, utilization.

CARNAHAN, JOHN W.

1980b. Nominating maritime–subsistence sites to the National Register. *Arct. Coastal Zone Manage. Newsl. No. 26:19-22.*

Describes problems associated with nominating islands in the Beaufort Sea with a history of continuous subsistence by the Inupiat of Alaska's North Slope. "Unlike the eastward migration in spring, during which the bowhead follow open leads in the pack ice, usually far from shore, the fall (westward) migration carries them much closer to land. Cross Island, the outermost of the barrier islands, has long been a favored fall whaling camp of the Inupiat. Here, Taaqpak, a locally renowned whaler, made his annual camp. He hunted whales with amazing success from before 1920 until the mid 1940s. (Traditional Land Use Inventory, NSB)"

WESTERN ARCTIC
BEHAVIOR-migration, movements, timing; WHALING-Beaufort Sea, native, catch, crew, utilization.

CETACEAN TIMES.

1975. The bowhead: part 1. *Cetacean Times 1(6):59-63.*

Contains notes of remarks made by some participants at the National Whale Symposium held at Bloomington, Indiana. Includes brief discussions on Alaskan Eskimo whaling for bowheads conducted in an uncontrolled and wasteful manner; present status of the stock, including the question of whether there may be more than one subspecies; dispersion of the whales between Pacific and Atlantic arctic waters; and a brief general description of the whale itself.

EASTERN ARCTIC, WESTERN ARCTIC
BEHAVIOR-migration; IDENTITY-description; MORPHOLOGY-structure; POPULATION-abundance, recruitment, mortality, whaling (struck/lost); REGULATION & CONSERVATION-management, regulation; WHALING-eastern Arctic, western Arctic, native, catch, drawings.

CETACEAN TIMES.

1976. The bowhead: part 2. *Cetacean Times 2(1):1-16.*

Second and final part of article which attempts to summarize and analyze the problems associated with an existing controversy over the status of the bowhead, *Balaena mysticetus*. Contains notes on subjects discussed by participants at the Marine Mammal Biology and Conservation Conference in Santa Cruz, California, held in December 1975. Includes a discussion of numerous elements of the subsistence hunt for bowheads by natives; the effect of the hunt on the population, such as numbers killed, struck and lost, estimates of abundance, recruitment, size and maturity of animals killed; effects of the environment on survival of bowheads; and legislation concerning the regulation and management of the stocks remaining today.

WESTERN ARCTIC
DISTRIBUTION-factors effecting; GROWTH-rate (estimated); MORPHOLOGY-measurements; POPULATION-abundance, recruitment, mortality, whaling (struck/lost); REGULATION & CONSERVATION- regulation; WHALING-western Arctic, native, catch.

CHAMBERLAIN, F. M., and JOHN N. COBB.

1912. Statistics of the fisheries of Alaska for 1911. *Rep. U.S. Comm. Fish., 1911, p. 29-65. (Doc. 766.)*

Detailed annual reports and statistics on the fisheries by district in Alaska. Although the number of bowheads taken is not given, the table on p. 36 shows 2,767 pounds of whalebone valued at \$7,014 as a product of the Arctic District. (This baleen most likely was obtained from bowhead whales by shore stations).

WESTERN ARCTIC
WHALING-western Arctic, shore-stations, catch.

CHAMBERLAIN, FRED M., and WARD T. BOWER.

1913. Fishery industries. Rep. U.S. Comm. Fish., 1912, p. 18-73. (Doc. 780.)

Detailed annual reports and statistics on the fisheries by district in Alaska. "Operations of the San Francisco fleet in northern waters during 1912 were not of an extensive or satisfactory nature. The steamer *Belvedere* (339 tons), which sailed north in the spring of 1911 and wintered in the Arctic, arrived November 1 with 900 barrels of oil and 32,800 pounds of whalebone, also a shipment of furs. The schooner *Alice Stofen* (17 tons) cleared on a whaling voyage May 16, but had not returned up to the end of the year. The power schooner *Elvira* (60 tons) arrived November 7 from a cruise in northern waters, during which 12 bowhead whales were captured that produced 17,544 pounds of bone. The *Herman*, *Karluk*, *Jeanette*, *Beluga*, *Bowhead*, *Narwhal*, and the *Thrasher* did not sail this year. (p. 69). Whalebone was produced in the shore-station whaling operations in western and Arctic Alaska to the extent of 11,317 pounds, valued at \$18,012. This whalebone is from the right or bowhead whale and is much more valuable than the ordinary baleen of commerce. The price, however, has been low this year." (p. 70-71).

WESTERN ARCTIC
WHALING-western Arctic, commercial, shore-stations, gear, catch.

CHAMBERS, JOHN R.

1970. Arctic bush mission. Superior Publ. Co., Seattle, Washington, 174 p.

The experiences of a missionary bush pilot in Arctic Alaska, with his home base at Barrow, during 1958 to 1965. In the spring of 1960, 18 crews caught 14 whales, the first landed there in six seasons (p. 96-99). Book contains 197 photographs, including whaling scenes during 1960; one shows Vincent Nageak by small whale he captured, and another is of a larger but unidentified whale, perhaps 50 feet long.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch, utilization, photographs.

CHANCE, NORMAN A.

1966. The Eskimo of north Alaska. Holt, Rinehart and Winston, Inc., New York, 107 p.

An ethnographic study of Eskimos living in Barrow, Kaktovik, and Wainwright, Alaska, during 1958, 1961 and 1962. Social, cultural, and economic standards of the pre-contact, early post-contact, and recent times are described and changes resulting from contact with white people and products of the modern world are discussed. Commercial whaling for bowheads and the importance of this whale to whites and Eskimos is briefly reviewed. By 1867, whaling vessels were common along the north Alaska coast and rifles, ammunition, and other products were being traded for baleen and labor. Traditional whaling customs of the Eskimos are described, including changes brought about by the arrival of the commercial whalers. Whaling was such a profitable activity for a time that several Eskimos entered into business for themselves. "In 1908 the explorer Stefansson found a few Eskimos at Point Barrow maintaining as many as five or six boat crews and paying equal wages with whites." (p. 14). After collapse of the baleen market in the early 1900's, Eskimos still relied on the whale for subsistence and prestige needs, but the costs for ammunition and other supplies effectively limited the number of boat crews hunting each spring, and the number of boats today is governed by one's ability to raise the \$300-400 necessary to outfit a boat (p. 38).

WESTERN ARCTIC
BEHAVIOR-migration; WHALING-western Arctic, commercial, native, gear, crews, drawing, utilization.

CHAPELLE, HOWARD I.

1964. Arctic skin boats. *In* Adney, Edwin Tappan and Howard I. Chapelle, *The bark canoes and skin boats of North America*, p. 174-211. Smithsonian Inst., Bull. 230, Wash., D.C.

Describes types and varieties of skin boats made by the Eskimos of Arctic North America. Includes photographs of umiaks (skin boats) at St. Lawrence Island, 1930; Cape Prince of Wales, 1936; and four on racks in front of the village on Little Diomedede Island, July 30, 1936. Also included is a drawing (Fig. 171, p. 187) of an umiak of the model used by Eskimos in offshore whaling at Point Barrow and vicinity. All photographs by Henry B. Collins.

EASTERN ARCTIC, WESTERN ARCTIC
WHALING—native, gear, photographs.

CHEEVER, HENRY T. (Ed. by W. SCORESBY).

1850. *The whaleman's adventures in the southern ocean: as gathered by the Rev. Henry T. Cheever, on the homeward cruise of the "Commodore Preble."* Sampson Low and David Bogue, London, 304 p.

Narrative and notes by Rev. Cheever during a whaling voyage to the South Seas and Pacific Ocean and edited by Scoresby. Observations of bowhead whales included behavior when undisturbed, feeding and pursued; food and use of baleen as a filter: physical description including color of the skin; abundance, reproduction; predators; also some interesting remarks about the effects of whaling upon survival of the population (p. 47-100).

WESTERN ARCTIC
BEHAVIOR—Respiration, maternal; DISTRIBUTION—former, Chukchi Sea; FIELD & LABORATORY TECHNIQUES—age determination (baleen ridges); MORPHOLOGY—measurements, structures; NUTRITION—food and feeding; PREDATORS & COMPETITORS—killer whales, sword—fish and thrashers; REPRODUCTION—gestation, parturition, periodicity; WHALING—Bering and Chukchi Seas, commercial, techniques, products.

CHIPMAN, KENNETH G., and JOHN R. COX.

1924. *Geographical notes on the Arctic coast of Canada. Rep. Can. Arctic Exped. 1913-18, vol. 11: Geology and Geography, Pt. B: 1B-57B*, King's Printer, Ottawa.

Traveling north from Nome in July 1913 in the vessels *Alaska* and *Mary Sachs*, they were forced to overwinter at Collinson Point, on the north coast of Alaska, owing to unusual ice conditions that summer. In 1914 their work was confined to the mainland coast from Darnley Bay on the west to Bathurst Inlet on the east in Coronation Gulf and includes Eskimo names for numerous locations, including Akuvillik ("Place where a whale carcass was found.") (p. 38B) and Nuyugyuk: a small sandspit on the west side of Langton where there are a number of whale skulls [species not given in either case] (p. 42B).

WESTERN ARCTIC
DISTRIBUTION—carcass, skulls; POPULATION—mortality (unknown cause); SKELETON REMAINS—beachcast, skulls.

CLARK, A. HOWARD.

1887. *The American whale-fishery, 1877-1886. Science (Supplement) 9(217):321-324.*

A brief discussion of the whaling industry and a report of the numbers of vessels involved in each and the products obtained for the period 1877 through 1886. During this time the value of whale oil averaged \$0.45-0.50 per gallon, and whale-bone \$2.41 per pound. About three-fourths of the whale-oil and nearly all the whalebone landed by American whaling vessels is taken by the North Pacific fleet, cruising north of Bering Strait and in the Okhotsk Sea.

EASTERN ARCTIC, WESTERN ARCTIC
BEHAVIOR—migration; DISTRIBUTION—former; WHALING—eastern Arctic, western Arctic, commercial, catch, utilization.

COBB, JOHN N.

1906. The commercial fisheries of Alaska in 1905. Rep. U.S. Comm. Fish., 1905, 46 p. (Doc. 603.)

Detailed annual reports and statistics on the fisheries by district in Alaska. Contains a brief description of bowhead whaling by Alaskan Eskimos including some data on the historical catch. "In 1891 they took from 10 to 15 whales, while in 1892—a very poor season, owing to the large quantities of ice on the eastern shore at the time the whales were passing north—about 15,000 pounds of whalebone were secured. In 1880 it is estimated that natives put up 5,000 gallons of whale oil, valued at \$500. During the period from 1883 to 1889, both inclusive, the Alaska Commercial Company shipped 33 packages of whalebone from Alaska. The weight and value of the packages are not given. In 1882, 166 barrels and in 1889, 13 barrels of whale oil were shipped from Alaska by the same company. In 1905, 8,057 pounds of bone, valued at \$51,197, were taken. All of the bone secured by the natives is sold to the whaling vessels, and it is very probable that large quantities so obtained in barter are reported at the home port as part of the catch of the vessel." (p.36–38). A final entry in the table on p. 42 indicates that a whale's head and skull (weight 1,850 pounds, value \$1,500) was shipped from Arctic Alaska as a natural history specimen, but no further information is given.

BEHAVIOR—migration; FIELD & LABORATORY TECHNIQUES—museum specimen; WHALING—western Arctic, commercial, native, catch.

COBB, JOHN N., and HOWARD M. KUTCHIN.

1907. The fisheries of Alaska in 1906. Rep. U.S. Comm. Fish., 1906, 70 p. (Doc. 618.)

Detailed annual reports and statistics on the fisheries by district in Alaska. A table showing the products of the Alaska fisheries in 1906 indicates that 8,854 pounds of whalebone valued at \$42,232 (\$4.77 per pound) was obtained from the Arctic Alaska district in 1906.

WESTERN ARCTIC
WHALING—western Arctic, commercial, native, catch.

COCKE, ALBERT K.

1974. Dr. Samuel J. Call. Alaska J. 4(3):181–188.

Biography of Dr. Call's service and experiences in Alaska. During the winter of 1897–98, he was a member of the overland expedition for the relief of whalers in the Arctic Ocean led by Lieut. David H. Jarvis of the U.S. Revenue Marine Service. Dr. Call was an accomplished photographer and during his travels he took a great many pictures of Eskimos, whaling vessels and their crews, shipmates, and scenes in native villages. Some of his photographs are in the University of Alaska Archives and others are in the Alaska Historical Library. Several of his prints showing bowhead whaling scenes (commercial and native) are in the library of the Naval Arctic Research Laboratory (see Samuel Call, 1897–1898).

WESTERN ARCTIC
WHALING—western Arctic, commercial, native, photographs.

COLLINS, HENRY B., JR.

1933. Archeological investigations at Point Barrow Alaska. *In* Explorations and field work of the Smithsonian Institution in 1932, p. 45–48. Smithson. Inst. Publ. 3213.

Brief review of Mr. J. A. Ford's excavations at sites of Birnirk age around Point Barrow in 1932. Contains three photographs of bowhead taken at Point Barrow in the fall of 1931 (see J. A. Ford, 1959): "Fig. 46.—Eskimos cutting up bowhead whale killed at Point Barrow; Fig. 47.—James A. Ford hauling whale skull from Point Barrow to Barrow; Fig. 48.—Hauling whale jaw to Barrow with sled and dog team."

WESTERN ARCTIC
ARCHAEOLOGY; WHALING—western Arctic, Beaufort Sea, native, catch, photographs.

COLLINS, HENRY B., JR.

1937a. Archeological excavations at Bering Strait. *In* Explorations and field-work of the Smithsonian Institution in 1936, p. 63–68. Smithson. Inst. Publ. 3407.

Description of excavations at Kurigitavik, at Cape Prince of Wales, the only Thule site thus far known in Alaska. On p. 67 is a photograph of a dead whale which beached near Wales and is captioned as follows: "Fig. 61.—A dead whale which has drifted ashore near Wales provides meat for the entire village. The Eskimos are particularly fond of the black outer skin, or "muktuk." [Author's reference to "black outer skin, or muktuk" strongly suggests that this small whale was a bowhead.]

WESTERN ARCTIC
ARCHAEOLOGY; POPULATION—mortality, stranding, photograph.

COLLINS, HENRY B., JR.

1937b. Archeology of St. Lawrence Island, Alaska. Smithson. Misc. Collect. 96(1), 431 p. Smithson. Publ. 3411.

Detailed description of excavations and findings made under auspices of the Smithsonian Institution in 1930 and 1931, and discussion of relationship of Old Bering Sea culture to Punuk, Birnirk, Thule, Dorset, Kachemak Bay and modern Eskimo cultures. "The fact that 10 whaling harpoon heads were found at Seklowaghyaget and the old section of Gambell, the two sites where the least amount of excavating was done, whereas only two heads and three fragments were found at Miyowagh and Levoghiyoq, shows conclusively that it is only in relatively recent times that whaling has become an important occupation with the St. Lawrence Eskimos. The few specimens from Miyowagh and Levoghiyoq (four of them bearing Punuk decoration and one plain) show that whaling had begun to be practiced to a slight extent in Punuk times; on the other hand, the absence not only of whaling harpoon heads, but also of whale bones, at the Hillside site, would seem to indicate that the Old Bering Sea Eskimos had not hunted the whale at all. The baleen at the Hillside site might have been obtained from animals that had drifted ashore after having been killed by killer whales." (p. 217)

WESTERN ARCTIC
ARCHAEOLOGY; PREDATORS & COMPETITORS—killer whales; WHALING— history, western Arctic, native, gear.

COLLINS, HENRY B., JR.

1939. Exploring frozen fragments of American history. On the trail of early Eskimo colonists who made a 55-mile crossing from the Old World to the New. *Natl. Geogr.* 75(5):633–656.

Popular account of an archaeological expedition to Cape Prince of Wales in 1936. One morning a young bowhead whale was found about 12 miles down the coast. Five umiaks towed the whale to the village where it was cut up completely and the meat distributed to the residents. "In years past the Wales Eskimos were famous whalers. But in 1915 most of the expert whalers died in an influenza epidemic and whaling disappeared at Wales." (p. 651). (Also see H. B. Collins, 1937, fig. 61.)

WESTERN ARCTIC
ARCHAEOLOGY—whalebones, baleen; POPULATION—mortality, stranding (utilized by natives).

COLLINS, HENRY B., JR.

1951. Old Bering Sea and Penuk Cultures. *In* V. Stefansson (editor), *Encyclopedia Arctica*, Vol. 8, Pap. 36, 16 p. (Available at the Stefansson Collection, Baker Library, Dartmouth College, Hanover, N.H. Copy at Naval Arctic Research Laboratory, Barrow, Alaska). (Unpublished)

One of five articles prepared for V. Stefansson's *Encyclopedia Arctica* which was never published. "Like their present-day descendants, the Old Bering Sea Eskimos were a strictly maritime people, depending entirely on the resources of the sea for their livelihood. Although the bones and baleen of bowhead whales were used in many ways and the meat and blubber probably eaten, these animals do not seem to have been actively hunted by the Old Bering Sea People, for only one whaling harpoon head has been found in contrast to the many that turn up at all Penuk and later sites. The earlier Eskimos may have obtained their whales by salvaging those that drifted ashore dead, the victims of killer whales (p. 5)." Whale bones were utilized by the Eskimos to make their houses, picks and mattocks: baleen was used for such items as pails and for toboggans to haul meat and blubber.

WESTERN ARCTIC
ARCHAEOLOGY; PREDATORS & COMPETITORS—killer whales; WHALING—western Arctic, Bering Sea, native, gear, utilization.

COOK, JOHN A.

1926. Pursuing the whale. A quarter-century of whaling in the Arctic. Houghton Mifflin Co., Boston, 344 p.

Narrative of whaling voyages to the Bering, Chukchi and Beaufort Seas for bowhead whales during the years 1890–1906. Cook owned and commanded the vessel *Bowhead* from 1897 to 1906. It made one more trip to the Arctic in 1907 under Captain James A. Tilton before Cook sold it in January 1908 because substitutes were rapidly replacing baleen in the market and because of his wife's ill health. Contains considerable information on bowhead whaling and how baleen and oil were handled aboard ship. Describes catches made, difficulties endured by overwintering whalers at Herschel Island, and value of Eskimo assistants. Contacts and relations with Siberian and American Eskimos are described, including some information on native shore-based whaling methods, equipment, and catches.

WESTERN ARCTIC
BEHAVIOR—swimming, migration; DISTRIBUTION—history, former; POPULATION—abundance and density, mortality, struck/lost; REPRODUCTION—calves; WHALING—western Arctic, gear, catch, commercial, native, photographs, utilization.

COOK, JOHN A., and SAMSON S. PEDERSON.

1937. "Thar she blows." Experiences of many voyages chasing whales in the Arctic. Chapman and Grimes, Boston. 314 p.

Presents essentially the same information as published earlier (1926) by John A. Cook in "Pursuing the whale. A quarter-century of whaling in the Arctic." Some additional descriptive information and photographs complement details provided in the earlier book.

WESTERN ARCTIC

BEHAVIOR—swimming, migration; DISTRIBUTION—history; POPULATION—abundance and density, mortality, struck and lost; REPRODUCTION—calves; WHALING—western Arctic, native, commercial, gear, catch, photographs, utilization.

COTLOW, LEWIS.

1971. The twilight of the primitive. MacMillan Co., New York, 257 p.

Describes the acculturation of primitive peoples in Africa, South America, the Arctic, in Australia and Oceania, and questions some of the accepted "solutions" that are intended to save the remaining traditional societies from extinction. Information of interest on Alaskan Eskimos and bowhead whaling (p. 75–105) includes the capture of four whales at Barrow during the period the author was there, and a report by resident Pete Sovalik that they had taken nine whales in all the previous year (p. 97.).

WESTERN ARCTIC

WHALING—western Arctic, Chukchi Sea, native, catch.

COUSTEAU, JACQUES-YVES.

1981. The ocean. Natl. Geogr. 160(6):780–791.

Briefly discusses how the sea can help mankind survive. Includes a photograph (p. 786–787) of polar bears feeding on a dead bowhead whale [no location or date given].

CIRCUMPOLAR

PREDATORS & COMPETITORS—scavenging (polar bears); POPULATION—mortality (cause unknown).

COWLEY, SUSAN.

1974. Whaling and whalers. A living remembrance. Americana, 1(6):16–19.

Describes the private collection of Barbara Johnson, New Jersey, which is the largest whaling collection in the United States and includes 11,000 books, whaling gear, paintings, log books, letters, manuscripts, ship models, whalebone artifacts, and scrimshaw. "The collection includes a 200,000 card file, with information on almost every known whale ship and sailor, and a 15,000 picture file of existing scrimshaw pieces."

CIRCUMPOLAR

WHALING—commercial, gear, records, log books, manuscripts, letters, photographs, paintings.

CRAD, JOSEPH. (pseudonym used by Edward Clarence Trelawney–Ansell) .

1939. *Trailing through Siberia*. The Travel Book Club, London, 270 p.

Author describes his experiences in Alaska, including a trip to Siberia along the coast of the Chukchi Sea. While he was visiting a village located about 20 miles east of Cape Jakan, the Eskimos landed a medium sized whale while hunting on the ice during the late spring/early summer of 1900. When leads open in all directions in the weakening ice, the great whales, usually bowheads, come swimming and feeding along these channels. A description of “floor” whaling by the natives follows.

WESTERN ARCTIC

BEHAVIOR–swimming, feeding; DISTRIBUTION– Chukchi Sea, coast of Siberia; WHALING–history, western Arctic, gear, natives, catch.

CRANTZ, DAVID.

1767. *The history of Greenland: containing a description of the country, and its inhabitants: and particularly, a relation of the mission, carried on for above these thirty years by the Unitas Fratrum, at New Herrnhuth and Lichtenfels, in that country*. Printed for the Brethren's Society for the Furtherance of the Gospel among the Heathen, and sold by J. Dodsley...(etc.), London. In 2 vols.: 405 p., 498 p. Translated from the High–Dutch.

Book II contains descriptions of fishes and mammals (chapters 2–4). Chapter 2 mentions food of the Greenland whale. Chapter 3 includes a description, based on writing of other observers, of the Greenland whale, its size, respiratory behavior, baleen, mouth, feeding and feeding areas, and extent and catches of the whaling fleet. In addition, the whaling procedures, gear, reaction of the whales to pursuit and harpooning, processing the captured whale, and whaling by natives is described.

EASTERN ARCTIC

BEHAVIOR–swimming, respiratory; MORPHOLOGY–measurements, structure; NUTRITION–food, feeding behavior; WHALING–history, eastern Arctic, gear, natives, catch.

CUMMINGS, WILLIAM C.

1981. *Bioacoustic considerations. (Abstr.) In Acoustical Society of America*. 1981. San Diego workshop on the interaction between man–made noise and vibration and Arctic marine wildlife, February 25–29, 1980, p. 63. Unpub. rep. by Acoust. Soc. Am., [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

Discusses considerations regarding bioacoustics of marine wildlife of the Arctic. A description is given of the known physical features of sounds from bowhead, gray, and beluga whales, ringed and bearded seals, and the walrus.

EASTERN ARCTIC and WESTERN ARCTIC

BEHAVIOR–vocalization; FIELD & LABORATORY TECHNIQUES– acoustics.

CUMMINGS, WILLIAM C., WILLIAM T. ELLISON, and D. V. HOLLIDAY.

1981. Near shore ambient noise off the North Slope of Alaska. (Abstr.) *J. Acoust. Soc. Am.*, Suppl. 1, 70 (Fall): S84–S85. (abstr. MM11.)

Ambient noise measurements (10 Hz to 10 KHz) were made at a number of locations off the North Slope of Alaska in 1980. "Measurements were made to establish baseline ambient noise levels in areas typical of the spring habitats of the bearded and ringed seals as well as the spring and fall migration paths of the bowhead and beluga whales." (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR—migration, vocalization; DISTRIBUTION—Chukchi and Beaufort Seas; FIELD & LABORATORY TECHNIQUES—acoustics.

CUMMINGS, WILLIAM C., D. VAN HOLLIDAY, and WILLIAM T. ELLISON.

1981. Measurements of man-made underwater noise off North Slope, Alaska. (Abstr.) *J. Acoust. Soc. Am.*, Supple 1, 70 (Fall): S82–S83. (abstr. MM1.)

Recordings were made in winter, spring, and fall of man-made underwater noise to provide an acoustical base for studies of its effect on marine life [including bowhead whales] in the region.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—acoustics.

DAHLHEIM, MARILYN.

1981. Comments on bowhead acoustics. (Abstr.) *In* Acoustical Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25–29, 1980, p. 64. Unpub. rep. by Acoust. Soc. Am. [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

The National Marine Mammal Laboratory, Seattle, Washington, conducted studies on the sounds produced by the bowhead whale, *Balaena mysticetus*. Data during 1978 and 1979 also included behavior of this whale in the presence of research vehicles during aerial and vessel surveys. (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR—vocalization, reactions to vessels and aircraft; DISTRIBUTION—early spring, Bering Sea; FIELD & LABORATORY TECHNIQUES—census, acoustics.

DAILEY, MURRAY D., and ROBERT L. BROWNELL, JR.

1972. A checklist of marine mammal parasites. *In* S. H. Ridgway (editor), *Mammals of the sea, biology and medicine*, p. 528–589. Charles C. Thomas, Springfield, Ill.

A comprehensive checklist with references of reported parasites from marine mammals throughout the world. The following have been reported found in the Greenland right or bowhead whale: Trematoda, *Lecithodesmus goliath* and *Ogmogaster pilcatus*; Cestoda, *Phyllobothrium delphini*; Acanthocephala, *Bolbosoma balaenae*; and Nematoda, *Crassicauda crassicauda*. [p. 557]

CIRCUMPOLAR
PATHOLOGY—parasites.

DAVIDSON, ART.

No date. Eskimo hunting of bowhead whales. Rural Alaska Community Action Program, Anchorage, Alaska, in cooperation with Community Enterprise Development Corporation and the John Muir Institute for Environmental Studies, 37 p.

A review of existing information on the relation of Eskimos and bowhead whales in the 1970's that seeks to answer four important questions: 1) What is the regulatory status of bowhead whales, 2) what is the extent of native use of bowhead whales, 3) what impact does Eskimo whaling have upon the present population of bowhead whales, and 4) what options are there for preserving bowhead whales and traditional Eskimo hunting of these whales? Contains information on whaling stating that Eskimos from seven whaling villages annually take between 15 and 25 bowheads. It is likely that the Russian Eskimos take about as many whales as Alaskan Eskimos. In Barrow in 1972 there were 27 whaling crews of eight to ten men each. The number of boats [crews] today is governed by a potential crew's ability to raise the \$300 to \$400 necessary to outfit a boat. On May 11, 1972, at the Senate Ocean Mammal hearing, Nome, Alaska, Martha Aiken stated that eleven whales have been killed to date at Barrow. Report includes comments by ten individuals and the Friends of the Earth who are recognized as having considerable professional knowledge of bowhead whales and Eskimo whaling. Report concludes with research needed to help in setting guidelines for continued native use of bowhead whales.

WESTERN ARCTIC
REGULATION & CONSERVATION—conservation; WHALING—western Arctic, native, catch, crews, utilization, photographs, drawing.

DAVIS, C. H. (editor).

1876. Narrative of the North Polar Expedition, U. S. Ship *Polaris*, Captain Charles Francis Hall commanding. U. S. Gov. Print. Off., Washington, D.C., 696 p.

Narrative was prepared from papers and journals of an expedition under Capt. C. F. Hall in the eastern Arctic to Davis Strait and Baffin Bay areas. Notes that one of the purposes of the expedition was the probability of discovering new whaling grounds. Capt. Hall reported in a letter in 1871 that a bay off Barrow Strait at lat. 73°43'N, long. 83°W, abounded in *Balaena mysticetus*. "So abundant are the whales that the natives sometimes kill, in their rude way, as many as five large ones in a few days." (p. 40). Capt. Hall was convinced the new bay would be as valuable to whalers as Cumberland Sound where the whale fishery had gradually diminished.

EASTERN ARCTIC
DISTRIBUTION—former; WHALING—eastern Arctic, natives, catch.

DAVIS, NEIL.

1978. Alaska Science Forum: What came before plastic? Bowhead Baleen! Tundra Times, Fairbanks, AK, July 12, 15(28):4.

Briefly describes bowhead baleen and its use by the whale in capturing its food, including a drawing showing a cross section of the mouth and how baleen filters food from the water. The long, tough fibers forming the baleen plates were so strong that they were once used for many applications now taken over by fiberglass or plastics.

WESTERN ARCTIC
NUTRITION—feeding; WHALING—western Arctic, commercial, utilization, baleen.

DAVIS, ROLPH A., KERWIN J. FINLEY, and W. JOHN RICHARDSON.

1980. The present status and future management of Arctic marine mammals in Canada. Prepared for Science Advisory Board Northwest Territories, Yellowknife, N.W.T., by LGL Ltd., Environ. Res. Assoc., Toronto, Canada, 93 p. Avail. from Dep. Info., Gov. Northwest Territories, Yellowknife, N.W.T. X1A 2L9.

Reviews the available information on marine mammals in the Canadian Arctic with respect to the future management of these species. The amount of information presented for each species correlates with what is known about each and is supported by important references. Contains sections on primary production processes, limits to secondary production, important food chains involving marine mammals, information required for management, species accounts for 10 species, concepts of sustainable yield, summary of gaps in management information, conclusions and recommendations, and literature cited. Contains a discussion of bowheads in the eastern and western Arctic, including food, feeding and food chains (p. 14, figs. 5, 7, 8), distribution, status and size of populations, population structure and dynamics, and harvest and utilization (p. 37–39.).

WESTERN ARCTIC, EASTERN ARCTIC
 BEHAVIOR—migration, diving; DISTRIBUTION—history; NUTRITION—food, feeding; POPULATION—abundance;
 REGULATION & CONSERVATION—regulation, management; REPRODUCTION—mating, parturition; WHALING—western Arctic, eastern Arctic, commercial, native, catch, utilization.

DAVIS, WILLIAM M.

1874. *Nimrod of the sea; or, the American whaleman*. Harper & Brothers, Pubs., New York. 403 p. (Republished in 1972 by the Christopher Publ. House, North Quincy, Mass., with addition of a foreword and an Appendix E, 405 p.).

Combining personal experiences recorded in his well-detailed journal and the adventures of others the author presents a quarter century of whaling during the 17th century (p. 14, 17). The final two chapters (23 and 24) and Appendix A describe right and bowhead whales and hunting methods employed to take them.

WESTERN ARCTIC
 BEHAVIOR—swimming; DISTRIBUTION—former; NUTRITION—food, feeding behavior; WHALING—western Arctic, commercial, gear, drawings.

DeARMOND, ROBERT N.

1937. War's end in Bering Sea. *Alaska Sportsman* 3(7):11, 36–38, 40–42. (Reprinted 1981 in V. McKinney (compiler and editor), *The Alaska Journal*, a 1981 collection, p. 80–83.)

Account of the capture and destruction of Yankee whaling vessels by the Confederate ship *Shenandoah* in 1865. The *Shenandoah* cruised for 13 months and covered 58,000 miles. Although she neither took a life nor lost one, she captured 38 Yankee ships; 25 of them after the Civil War was over.

WESTERN ARCTIC
 WHALING—history, western Arctic, commercial.

DECHASEAUX, COLETTE.

1961. Cetacea. In Jean Piveteau, Traite de paleontologie, Tome 6, vol. 1:831–886. Masson et Cie, Paris. (In French.) Transl. by Sharon Masingale.

A systematic review of cetacea. Figure 11 [p. 842] contains a drawing of the pelvis and posterior limb of *Balaena mysticetus* from Vialleton [1933].

CIRCUMPOLAR
IDENTITY–taxonomy; MORPHOLOGY–structure.

DELYAMURE, S. L.

1955. Gel'mintofauna morskikh mlekopitayushchikh v svete ikh ekologii i filogenii (Helminthofauna of marine mammals (ecology and phylogeny)). Izd. Akad. Nauk SSSR, Moscow, 517 p. (In Russian.) (Transl. by Israel Program. Sci. Transl., 1968, 522 p., available U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA, as TT67–51202.).

As a result of the research work of Soviet and other authors, 168 species of helminths that parasitize pinnipeds and cetaceans have been described. These comprise 42 trematode, 41 cestode, 65 nematode, and 20 acanthocephalan species. Subjects covered include taxonomy, discovery, anatomy and morphometry, development, hosts and organs affected. Appendices contain tables on distribution of helminths according to hosts and lists those from seals and whales of Soviet waters. Parasites found in bowhead whales are *Lecithodesmus qoliath* (p. 29), *Phyllobothrium delphini* (p. 194), *Crassicauda crassicauda* (p. 306), and *Bolbosoma balaenae* (p. 328).

WESTERN ARCTIC
PATHOLOGY–parasites.

DELYAMURE, S. L.

1961. O neobkhodimosti vsestoronne i sistematically issledovat' parazitov promyslovykh morskikh mlekopitaiushchikh (The necessity for a thorough and systematic investigation of commercial sea mammal parasites). Tr. Soveshch. Ikhtiol. Kom. Akad. Nauk SSSR 12:39–55. (In Russian.) (Transl. by Joint Publ. Res. Serv., 1963, 18 p., available U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA, as OTS:63–21211.)

Briefly reviews information on parasites from about 600 publications covering 174 known species of helminths. A table six pages long lists the parasite, host, localization (where found in host), and geographic location where found. Helminths found in bowheads include *Lecitodesmus goliath* (p. 45), and *Phyllobothrium delphini* (p. 47).

WESTERN ARCTIC
PATHOLOGY–parasites.

DeSMET, W. M. A.

1977. The regions of the cetacean vertebral column. In R. J. Harrison (editor), *Functional anatomy of marine mammals*, Vol. 3, p. 59–80. Academic Press, London, New York, San Francisco.

Table I (p. 63) presents data about the skeleton of a right whale, *B. mysticetus*, in the collection of the Institut Royal des Sciences naturelles de Belgique. The seven cervical vertebrae of *B. mysticetus* form a fused mass. The author also gives a formula for describing cervical vertebrae of three cetaceans, including *B. mysticetus*.

GENERAL
MORPHOLOGY—structure, skeleton.

DEWHURST, HENRY WILLIAM.

1834. *The natural history of the Order Cetacea, and the oceanic inhabitants of the Arctic regions*. Publ. by the author, London, 331 p.

A compilation of knowledge on the natural history of marine inhabitants of the Arctic regions, based upon the author's own observations on a cruise to "...the Greenland and adjacent seas in the year 1824, as principal surgeon of the ship *Neptune* of London...", and upon a review of the significant literature up until that time. The species account for *Balaena mysticetus* (p. 15–41) and information on Arctic whaling and the whaling industry is mostly derived from the works of W. Scoresby. Also contains accounts of invertebrates, fish, and sea serpents.

EASTERN ARCTIC
BEHAVIOR; DISTRIBUTION—eastern Arctic; GROWTH; IDENTITY—description, names; MORPHOLOGY—measurements; NUTRITION—food, feeding; PREDATION & COMPETITORS; REPRODUCTION; WHALING—eastern Arctic, commercial, catch, gear, drawings, utilization.

DIVOKY, GEORGE JOSEPH.

1972. *The pelagic birds and mammals of the Chukchi Sea in fall*. M.S. Thesis, Michigan State Univ., East Lansing, 97 p. (Unpublished.)

Observations of pelagic birds and mammals were made in the eastern Chukchi Sea between September 22 and October 17, 1970 aboard the U.S. Coast Guard vessel *Glacier*. Single whales tentatively identified as bowheads (*Balaena mysticetus*) were observed on September 24 at 71°08'N, 158°55'W and on October 1 at 70°34'N, 163°16'W. Both individuals were next to the pack ice. No gray whales (*Eschrichtius gibbosus*) were observed in the fall of 1970, but a group of five to eight killer whales (*Orcinus orca*) was observed in a lead in the ice at 70°05'N, 168°53'W on October 8. In 1971, while aboard the *Glacier* en route from Long Beach, California, to Barrow, Alaska, the author observed a single gray whale in the Bering Strait on August 13 and a group of five on August 14 ten miles north of Cape Lisburne.

WESTERN ARCTIC
DISTRIBUTION—sightings, *Balaena mysticetus*, *Eschrichtius gibbosus*, *Orcinus orca*.

DOHL, THOMAS.

1981. Bowhead whale survey needs and methods. (Abstr.) In Acoustical Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25–29, 1980, p. 65–66. Unpub. rep. by Acoust. Soc. Am. [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

Author lists important biological and aircraft considerations that should be observed for making aerial surveys for bowhead whales in the Beaufort Sea. (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR—migration; FIELD & LABORATORY TECHNIQUES—census, aerial.

DOUTHIT, JIM.

1969. The whalers. *Alaska Sportsman* 35(4):14–15, 43–44.

Brief popular description of bowhead whaling by Alaskan Eskimos, including the capture and landing of a whale, but location and date are not given. One photograph caption describing Eddie Hopson as a leader of a whaling crew suggests that this event occurred at Barrow. Author states muktuk has the flavor of jungle-ripened coconut tinged with the vaguest aroma of fish.

WESTERN ARCTIC
BEHAVIOR—migration, breathing, when shot; WHALING—western Arctic, Chukchi Sea, native, gear, catch, crews, photographs, utilization.

DRAL, A. D. G.

1977. On the retinal anatomy of Cetacea (mainly *Tursiops truncatus*). In R. J. Harrison (editor), *Functional anatomy of marine mammals*, Vol. 3, p. 81–134. Academic Press, London, New York, San Francisco.

Reviews knowledge from literature about retinal anatomy of Cetacea. Reference is made several times to work of Ritter (1864). Ritter's findings from histological studies of *B. mysticetus* are compared to research of others with other species.

EASTERN ARCTIC
PHYSIOLOGY—receptors.

DREWANCE, GEORGE.

1941. The *Bear* went to the rescue. *Alaska Sportsman* 7(11):16–18, 20–24.

Account of American whaling vessels caught in the western Arctic ice over the winter of 1897–98, and the rescue effort put in operation by the U.S. Revenue Cutter *Bear* commanded by Captain Francis Tuttle. An overland relief party led by Lieutenant Jarvis drove a herd of reindeer from the Seward Peninsula to Barrow to provide food for the stranded whalers.

WESTERN ARCTIC
WHALING—history, western Arctic, commercial, photographs.

DRIGGS, JOHN B.

1908. Natives capture nearly 70 bears. (Letter to the Nome Daily Nugget.) The Nome Daily Nugget, Nome, Alaska, April 21, 8(95):1.

In a communication to the Nome newspaper, J. B. Driggs stated "The annual whaling season will begin the latter part of April, when twenty-two whaling crews will move out on the ice to watch for bowheads. Most of the canoes are not well manned."

WESTERN ARCTIC
BEHAVIOR—migration, timing; WHALING—Chukchi Sea, native, crews.

DUNBAR, M. J.

1953. Arctic and subarctic marine ecology: immediate problems. *Arctic* 6(2):75–90.

Plankton production and biology, benthonic and littoral fauna, and fishes and marine animals of the arctic present problems to the fisheries and Eskimos of the area. Diagram (p. 85) illustrates the biological cycle in the arctic and subarctic marine zones. The Greenland whale or bowhead was brought to the verge of extinction by European commercial whalers. "The Eskimo, by themselves and uninfluenced by Europeans, had struck a natural balance between themselves and their sea mammal resources. They were themselves part of an established ecological system. Since the almost complete extinction of the bowhead before the First World War, it has been given protection, and there are signs now that the population has been very slowly increasing..."

EASTERN ARCTIC
NUTRITION—food; POPULATION—abundance; REGULATION & CONSERVATION—management; WHALING—eastern Arctic, commercial, native.

DURHAM, FLOYD E.

1966a. The biology of the bowhead whale. Two-year progress report working copy for the Arctic Institute of North America. Rep. prepared for Arctic Inst. North Am., subcontract ONR–376, 57 p. (Available from Naval Arctic Res. Lab., Barrow, Alaska.). (Unpublished.)

Discusses the anatomy of bowhead whales taken by Alaskan Eskimos for subsistence during 1961 through 1966, and gray whales taken during that period by both Eskimo whalers and a commercial whaling station at Richmond, California, from 1964 to 1967. Subjects discussed were: parasites, disease and deformities, predation, mouth, throat grooves, stomach and contents, blowhole, larynx, eye, ear, skeleton, body regions, pelvic bones, reproductive systems, and the urinary bladder.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—museums, specimens; MORPHOLOGY—anatomy; NUTRITION—food and feeding; PATHOLOGY—disease; parasites; POPULATION—mortality, whaling, strandings; PREDATORS & COMPETITORS; REPRODUCTION—anatomy; WHALING—western Arctic, Chukchi Sea, Beaufort Sea, native, catch.

DURHAM, FLOYD E.

1966b. Body regions in the bowhead whale (*Balaena mysticetus*) in light of adaptive changes in the axial skeleton. Paper submitted to the Forty-sixth Ann. Meet. Am. Soc. Mammal., June 12-16, 1966, Calif. State College at Long Beach.

Body regions, sharply defined in land mammals, are less distinct in marine mammals; author describes differences that exist between the two. (From author's abstract.)

WESTERN ARCTIC
MORPHOLOGY—skeleton.

DURHAM, FLOYD E.

1969. A new approach to correlating the age of the bowhead whale with the structure of the baleen plates. (Abstr.) Western Society of Naturalists, Fiftieth Ann. Meet., Abstracts of symposium and contributed papers, p. 26 (Held in Los Angeles, California, Dec., 27-30, 1969.) Abstracts available from California State Polytechnic College, San Luis Obispo.

Author describes measuring transverse sculpturing on the baleen plates of bowhead whales with a modified machinist's micrometer to determine age. He reports that his "...speculation on age derived from baleen agrees with my size classes of immature whales and with my meager reproductive data derived from measuring the size of testes and counting scars on ovaries."

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—age determination, baleen, device.

DURHAM, FLOYD E.

1972a. Greenland or bowhead whale. *In* Alice Seed (compiler), *Baleen whales in eastern North Pacific and Arctic waters*, p. 10–14. Pac. Search, Seattle, Wash.

Describes the bowhead whale; its adaptations to the Arctic environment since Miocene geologic time; migration; food and feeding; reproduction; behavior; whaling and its products useful to Eskimos and industry, predators, and disease. Includes a discussion of the effects on bowheads of drift ice cycles in the Arctic. From 1600 to 1910 there were five known drift ice advances at about 60 year intervals with subcycles also interspersed within the major cycles. These drift ice cycles had a direct effect upon the capture of bowheads by Eskimos and commercial whalers.

CIRCUMPOLAR
BEHAVIOR—reactions, migration, ice-breaking; DISTRIBUTION—circumpolar, factors affecting; IDENTITY—description; MORPHOLOGY—measurements, structure; NUTRITION—food and feeding; PATHOLOGY—parasites; POPULATION—abundance; PREDATORS & COMPETITORS—killer whales, sharks; REPRODUCTION—parturition, periodicity; WHALING—circumpolar, history, commercial, native, utilization.

DURHAM, FLOYD E.

1972b. History of bowhead whaling. *In* Alice Seed (compiler), *Baleen whales in eastern North Pacific and Arctic waters*, p. 5–9. Pac. Search, Seattle, Wash.

History of whaling for bowheads by Eskimos and commercial interests is briefly reviewed. Fully mature whales, the target of all commercial whalers, yielded as much as 30 tons of oil and 10–12 foot long baleen weighing about 2,000 pounds. When petroleum began to replace whale oil in the 1860s, the lowered demand and price for whale oil only accelerated the whaler's search for baleen and the rest of the carcass was discarded. Thus about 10 tons of meat, or about 20% of the total weight of the whale, and some 20 tons of blubber, or about 40% of the total weight, were wasted by the commercial whalers to obtain about one ton of baleen which amounted to about 2% of the total weight of a large whale. Bowhead whaling ended soon after the discovery of plastics around 1908.

CIRCUMPOLAR
WHALING—circumpolar, commercial, native, catch, utilization.

DURHAM, FLOYD E.

- 1972c. Eskimo effort in bowhead whaling at Pt. Barrow, Alaska. Univ. Southern Calif., Los Angeles. (Available Arctic Inst. North Am., Univ. Calgary, 2500 Univ. Dr. N.W., Calgary, Alberta, Canada T2N 1N4, Rep. ONR-367, 19 p.). (Unpublished).

A critique contrasting historical and present day whaling methods used by Eskimos at Point Barrow, Alaska, to take bowhead whales. Contains information on numbers of crews, equipment used, whales caught and their utilization, method for estimating the weight of whales and thus their value for subsistence, and the cost to a captain required in order to support a whaling crew for about 6 weeks. Also discusses subsistence needs of the Eskimos and how the bowhead presently relates to this need.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch, utilization.

DURHAM, FLOYD E.

- 1972d. Biology of the bowhead whale (*Balaena mysticetus* L.) in the western Arctic. Unpubl. ms., 93 p. plus 15 tables and 69 figures. Avail. From Dep. Biology, University of Southern California, Los Angeles, CA 90007.

Detailed account describing biology of the bowhead whale based upon data obtained from field research examining animals caught by Alaskan Eskimos, primarily at Barrow from 1961 to 1972, and information gleaned from the literature. The text is accompanied by numerous illustrations (unorganized) and tables containing a considerable amount of morphological information on a species about which little was known at the time.

WESTERN ARCTIC

BEHAVIOR—swimming, respiratory, hearing; DISTRIBUTION—former, present, circumpolar; FIELD & LABORATORY TECHNIQUES—age determination, field recognition, measurement, specimens, museums; GROWTH—length, weight; IDENTITY—races; MORPHOLOGY—measurements, structure; NUTRITION—food; PATHOLOGY—injuries, scars, parasites; PHYSIOLOGY—integument; POPULATION—recruitment, sex ratio, size, mortality, whaling; REPRODUCTION—fecundity, gestation, mating, parturition; WHALING—Chukchi and Beaufort Seas, native, catch, photographs.

DURHAM, FLOYD E.

- 1972e. Variation and the ingutuk problem in the bowhead whale. Unpubl. manuscr., 16 p. Univ. Southern Calif., Los Angeles, 90007. (Copy avail. Natl. Mar. Mammal Lab., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way N.E., Bldg. 4, Seattle, WA 98115.)

Alaskan Eskimo whalers contend that a whale known to them as ingutuk is a species different from the well-known bowhead, citing several morphological features as proof. After reviewing the literature, interviews with Eskimo whalers, and studying his own field observations, author concludes the evidence indicates we should continue to recognize *Balaena mysticetus* as a monotypic species.

CIRCUMPOLAR

IDENTITY—nomenclature, ingutuk; MORPHOLOGY—anatomy, comparative; WHALING—circumpolar, commercial, native, catch.

DURHAM, FLOYD E.

1973a. Ancient and current methods of taking the bowhead whale. Univ. Alaska, Anchorage, Alaska Sea Grant Rep. 73–9, 15 p. Excerpts of this paper reprinted as “An historical perspective on Eskimo whaling and the bowhead controversy” by ORCA (1979), 1(1):5–6.

Briefly describes the various hunting techniques used by whalers on the Arctic coast from pre-historic times to the present. Citing accounts by several explorers, historians, geographers and whalers, author notes regional variations in Eskimo techniques for taking bowheads. In a personal communication to the author, Dr. T. Poulter stated that in 1968 twenty Eskimo boats were out hunting under sail, from St. Lawrence Island. Experience and methods used by Yankee whalers during the 1800s are reviewed and the effect of the industry upon Eskimo whaling is discussed, including a comparison of whaling techniques. International whaling codes are discussed, noting that they fail to recognize that modern whaling by Alaskan Eskimos includes the use of whaling guns and bombs originally introduced by the Yankee whalers, a practice bearing little resemblance to aboriginal whaling described in the whaling codes. Author concludes by recommending Eskimos return to the old Eskimo technique of killing whales and to practice conservation to preserve the bowhead stock for future generations.

WESTERN ARCTIC
REGULATION & CONSERVATION—regulation; WHALING—history, western Arctic, commercial, native, crews, gear, utilization.

DURHAM, FLOYD E.

1973b. U.S. to continue bowhead whale research. *BioScience* 23(8):491.

“The National Oceanic and Atmospheric Administration has taken steps to ensure continuation of ongoing research on bowhead whales. A contract has been signed with the University of California and Floyd Durham, who has worked with bowhead whales and the Eskimo people in the Alaskan Arctic for the past decade. During this time, Durham has studied the biology of the bowhead whale including reproduction, food habits, and size, in addition to gathering data on the number of whales taken by the Eskimos. The bowhead is on the Endangered Species List and is protected by the Marine Mammal Protection Act of 1972, but the Eskimos are permitted to take the mammals for subsistence and for handicraft work. Data obtained by Durham have been made available to the Federal government and to the International Whaling Commission, and the flow of information will continue under the new arrangement.”

WESTERN ARCTIC
MORPHOLOGY—measurements; NUTRITION—food; REPRODUCTION; WHALING—western Arctic, native, catch.

DURHAM, FLOYD E.

1973c. Census and spring migration studies on the bowhead whale in western Arctic in 1973. Rep. by Allan Hancock Found., Univ. Southern Calif., Los Angeles, for Natl. Mar. Fish. Serv. [Mar. Mammal Div.], Seattle, Wash. (Available Natl. Mar. Mammal Lab., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way NE, Seattle, WA 98115.) (Unpublished.)

Report of bowhead whaling and catch by Alaskan Eskimos during spring 1973. These field studies, funded by the Marine Mammal Division of the NMFS, culminated annual excursions made by the author to the Arctic since 1961 to study the bowhead. Although the reported catch for the spring season is incomplete, this report is the first in a series produced annually since then by the MMD (now the National Marine Mammal Laboratory) on the harvest of bowhead whales by Alaskan Eskimos. Subjects discussed includes the author's itinerary, a catalog of whales killed, an inventory of specimens provided to NMML, whale measurement records, a summary of whale measurements, crews and their equipment, spring catch of bowheads, a census of migrating bowheads, copies of letters mailed by the author to obtain information on bowhead whales, and a discussion of whale losses during the season. The catch of whales by village was: Barrow (15), Wainwright (3), and Point Hope (5).

WESTERN ARCTIC

BEHAVIOR—migration; FIELD & LABORATORY TECHNIQUES—specimens collected; MORPHOLOGY—measurements; POPULATION—abundance; REPRODUCTION—newborn calf; WHALING—western Arctic, Chukchi Sea, native, crews, catch, utilization.

DURHAM, FLOYD E.

1973d. Eskimo fact and fiction about the bowhead whale. *Pacific Search* 7(4):8-10. Reprinted in edited form by *Whalewatcher* (1981), 15(4):3-5.

Article briefly recounts some of the Alaskan Eskimo's beliefs concerning the bowhead whale.

WESTERN ARCTIC

ANTHROPOLOGY—Alaskan Eskimos; PREDATORS & COMPETITORS—killer whale; REPRODUCTION—parturition, Eskimo belief; WHALING—native, catch, photograph.

DURHAM, FLOYD E.

1979a. The catch of bowhead whales (*Balaena mysticetus*) by Eskimos, with emphasis on the western Arctic. *Nat. Hist. Mus. Los Angel. Cty., Contrib. Sci.* 314, 14 p.

Conditions favorable for shore-based whaling by Alaskan Eskimos are described. Catch statistics are presented for the villages of Barrow, 1852-1973; Point Hope, 1879-1973; and Wainwright, 1922-1973. Although the annual catch for these three villages averaged 12.5 whales per year, that for several minor stations active from 1961 to 1973 averaged only 2 whales per year. (From author's abstract.)

EASTERN ARCTIC, WESTERN ARCTIC

BEHAVIOR—migration; DISTRIBUTION—former and present; WHALING—eastern Arctic, western Arctic, native, catch.

DURHAM, FLOYD E.

1979b. Recent trends in bowhead whaling by Eskimos in the western Arctic with emphasis on utilization. Center for Environ. Educ., Washington, D.C., 53 p. (Unpublished.)

Compares past and modern day equipment and techniques used by Eskimos to take bowhead whales. Subjects discussed include: equipment employed to take whales, the fate of struck and lost whales, sex and size data on whales caught, exploitation of newborn calves and cows, futility of taking very large whales, utilization, changing food preferences of Eskimos, and trends in regulations. Contains data on several whales killed by Eskimos.

WESTERN ARCTIC

BEHAVIOR—migration; MORPHOLOGY—measurements; PATHOLOGY—wounds; POPULATION—sex ratios; REGULATIONS AND CONSERVATION—regulation; REPRODUCTION—calves; WHALING—western Arctic, native, crews, gear, catch, utilization.

DURHAM, FLOYD E.

1979c. Modern aboriginal-subsistence living. *Whalewatcher* 13(2):8-9.

Author believes all commercial and native whaling must be reduced and managed to protect the remaining stocks of great whales. He especially deplores the continuing "aboriginal-subsistence" hunt for the endangered bowhead whale in Alaska by Eskimos using "traditional" weapons, which in fact are semi-modern guns that fire bombs. Author observed the butchering of two bowheads in spring 1961 but location not given.

WESTERN ARCTIC

WHALING—commercial, natives, catch, gear.

DURHAM, FLOYD E.

1980. External morphology of bowhead fetuses and calves. *Mar. Fish. Rev.* 42(9-10):74-80.

During a 13-year period 1961-73, the author collected specimens and measurements from several fetal, neonatal and juvenile bowhead whales in Alaska. Although the number of specimens collected is not large, the information reported is the first descriptive material on early development of the species.

WESTERN ARCTIC

GROWTH—sub—adults; MORPHOLOGY—measurements; REPRODUCTION—fetuses, neonatals, calves; WHALING—Chukchi Sea, Beaufort Sea, native catch, photographs.

EIDE, ARTHUR HANSIN.

1952. *Drums of Diomedé. The transformation of the Alaska Eskimo.* House—Warren Publ., Hollywood, Calif., 242 p.

Account of the author's experiences as a U.S. Government teacher on Little Diomedé Island. One photograph caption states that the oomiaks are readied for whaling and another shows eleven boats under sail returning to the village. "During the next six months they killed 500 seals, 125 walrus, 7 white whale (beluga), 7 polar bears, and 3 bow-headed whales, each between 50 and 70 feet long and weighing around 140,000 pounds apiece. Enough meat to last them two full years." (p. 170.) [Dates could not be determined from the text but the Eskimo, published in 1917 (vol. 1, no. 9, p. 7), stated that "...two whales were caught on Little Diomedé and one on Big Diomedé." The available data therefore suggests that the three bowheads reported by Eide were probably taken in 1917.]

WESTERN ARCTIC

MORPHOLOGY—measurements (estimated lengths); WHALING—western Arctic, Bering Strait, native, crews, catch.

EISENBERG, MICKEY S., and THOMAS R. BENDER.

1978. Botulism in Alaska. *Alaska*, Aug., 44(8):64-65.

Article by two medical doctors describes botulism, its cause, foods it is frequently found in (including whale meat), symptoms of illness, and that it frequently ends in death. Thus far, all reported cases in Alaska have involved natives, and in all instances the illness has been associated with eating uncooked subsistence foods. At the head of the article is a photograph of a bowhead whale being butchered at Barrow (only identification provided is the photographer, Dr. J. Kenneth Fleshman.)

WESTERN ARCTIC
WHALING—Chukchi Sea, natives, catch (unidentified), photograph, utilization (sickness).

EISLER, DAVID C.

1978. Subsistence activities in the proposed Bering Land Bridge National Reserve. Anthropology and Historic Preservation Cooperative Park Studies Unit, Univ. Alaska, Fairbanks. 123 p. rep. Available from U.S. Dep. Inter., Nat. Park Serv., Anchorage, Alaska. (Unpublished.)

Detailed account of subsistence activities conducted by Eskimos from the villages of Shishmaref, Brevig Mission, Teller, Deering, and Wales, Alaska. Near Shishmaref, "Seukat ("a point of land") was a site where beluga were driven on the Serpentine River. The bones are still to be seen at this site. It is also reported that a black whale was driven onto this spot." (p. 16). At Wales, "Whaling activities [for bowhead whales] declined in the 1960's but made a partial comeback in the early '70's. Today, although the men have not caught a whale in several years, a few crews go out every year in the search. In 1977, one whale was shot, but it could not be retrieved. A whale catch today is very highly valued. However, costs of outfitting a crew and boat are high, the amount of time spent in the search is great, there are hazards, and the whales are less frequently seen than in the past."(p. 98).

WESTERN ARCTIC
POPULATION-abundance, mortality, whaling, struck but lost; WHALING—western Arctic, native, catch, crews, utilization.

ESKIMO.

1916a. Eskimo news. *Eskimo* 1(1):6.

"Warren Adloot of Wales, who has been the regular Mission interpreter at Wales for years, and the official interpreter of the "Bear," is now the great big "Oomalik" at Wales. He killed the first whale caught there in ten years. Warren furnished enough fresh meat to feed every family at Wales for a month, and gave away most of the bone."

WESTERN ARCTIC
WHALING—western Arctic, native, catch, crews, utilization.

ESKIMO.

1916b. Schools and teachers. *Eskimo* 1(2):8.

"Mr. and Mrs. Dupertius who have been assigned to the school at St. Lawrence Island will certainly have their hands full. In addition to the school work there is a cooperative store that is run for the benefit of the natives. This store has been financially successful during the past few years, and the natives have recently purchased two powerful gasoline motors with the surplus funds to be used in their whaling operations."

WESTERN ARCTIC
WHALING—western Arctic, Bering Sea, native, gear.

ESKIMO.

1917a. Ayoukytookty says. Eskimo 1(7):4.

“It is reported that there has been a great shortage of whales [species not stated] all along the coast this year, in other words there is “a crying need for blubber.””

WESTERN ARCTIC
POPULATION—abundance.

ESKIMO.

1917b. Eskimo news [Little and Big Diomed Islands]. Eskimo 1(9):7.

“It is reported that two whales were caught on Little Diomed and one on Big Diomed.” [Species not stated]

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, native, catch.

ESKIMO.

1917c. Hunting and trapping. [News items]. Eskimo 1(10):7.

“Kivalina: 2 whales [species not stated]. Point Hope: 1 whale [species not stated] is reported from that place...”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ESKIMO.

1917d. Schools and teachers [News items]: Gambell. Eskimo 1(12):8.

“The meat supply was low at this place last year, says Mr. John Dupertuis in his annual report, because many people were sick and the well ones had to remain home nursing the sick instead of hunting. Many deaths occurred. Three whales [species not noted] were caught and proved a Godsend to the people.”

WESTERN ARCTIC
WHALING—western Arctic, Bering Sea, native, catch.

ESKIMO.

1917e. Whaling. Eskimo 2(1):12.

“Many whales were sighted off Wainwright this year, but none were captured by the natives because the small ice prevented the canoes from approaching close enough. Three canoes whaled steadily for several weeks. Two whales were shot and lost, the sea—monsters sinking under the ice before the men could reach them. Mr. Earl Forest’s annual report tells of large whales rising at the small holes in the ice and raising the surrounding masses with their bulk. The ice would crack and rise in small hillocks and the huge creatures would suddenly be revealed.”

WESTERN ARCTIC
BEHAVIOR—breathing, breaking ice; POPULATION—mortality, struck and lost; WHALING—western Arctic, Chukchi Sea, gear, crews, catch.

ESKIMO.

1918. Point Hope and Prince of Wales. Eskimo 2(8):5.

Five whales were taken at Point Hope. The first whale in 2 years was caught at Prince of Wales, but the hunters were not able to land it because the ice came in and carried it away.

WESTERN ARCTIC
POPULATION—mortality, killed but lost; WHALING—western Arctic, native, catch.

ESKIMO.

1936. Whale. Eskimo 3(4):7.

“The scarcity of the whale in the opening years of the 20th century, is shown by the statement in “The Eskimo” of September 1916, that Warren Adeooat of Wales...killed the first whale caught there in ten years. “The Eskimo Bulletin,” published at Wales in 1902, gives the kill of the year before at eight whales.”

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, native, catch, crews.

ESKIMO.

1937. Kivalina. Eskimo 4(1):7.

Four whales were killed at Point Hope during the spring of 1936.

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ESKIMO.

1938. Notes from the reindeer ranges. Eskimo 5(3):7.

“Wainwright says: “Four whales [species not stated] killed last spring [1938] and something like fifteen Oogoorook. Oogoorook hunting bad last spring, we usually get about 50, but was bad hunting last spring.”

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ESKIMO.

1941. Wainwright. Eskimo 8(1):5.

“The Wainwright Eskimo is a hunter man, during 1939–40 the catch of the village was 7 walrus, 10 wolves, and 16 cubs; 275 fox.” Since no whale catch was mentioned, apparently no bowheads were captured during the spring of 1940 [assuming the time period reported on extended from the winter of 1939 through the summer of 1940, when walrus would be taken].

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native, catch.

ESKIMO.

1943. Point Hope. Eskimo 10(2,3):2.

Reverend Gordon writes that the spring whaling was short of hunters, owing to the war draft.

WESTERN ARCTIC
WHALING—western Arctic, Chukchi Sea, native.

ESKIMO.

1975. Photographs. Eskimo, New Ser. 9:18–19.

Contains two photographs showing remains of a bowhead whale killed in 1971 at Hall Beach by S. Amimiarjuk. (Also see photograph in Mitchell and Reeves, 1981, p. 649).

EASTERN ARCTIC
WHALING—eastern Arctic, native, catch, crews, photographs.

ESKIMO BULLETIN.

1893. Local items [News items]: two whales. Eskimo Bull. 1(1):1. [Cape Prince of Wales, Alaska.]

In this hand printed news pamphlet issued in May by W. T. Lopp, editor and publisher, under the heading “Local items” he succinctly reported “Two whales.” [The apparent meaning is that two bowhead whales were taken by local Eskimos this spring.]

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, native, catch.

ESKIMO BULLETIN.

1895. Locals [News items]: no whales. Eskimo Bull. 2(1):4.

This news pamphlet issued in June simply stated “No whales.” [The apparent meaning is that no bowhead whales were caught by Cape Prince of Wales this spring.]

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, native, catch.

ESKIMO BULLETIN.

1897. Chief Kokituk’s death. Eskimo Bull. 3 (July):1, 3–4.

On the night of January 2, 1897 at Cape Prince of Wales, Chief Kokituk was shot and stabbed to death by two brothers. Kokituk, a young man about 28 years old, “...had always been a successful trader and hunter, having killed one whale, and more white bears than any other native here.”

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, native, catch, crews.

ESKIMO BULLETIN.

1897. Locals [News items]: Several whales were seen, but none captured. Eskimo Bull. 3 (July):2–3.

This news pamphlet issued in July simply stated “Several whales were seen, but none captured.” [The apparent meaning is that no bowhead whales were caught by Cape Prince of Wales hunters this spring.] Included in several news items concerning whaling vessel activities is this: “Capt. Williams took advantage of a south wind and went to Pt. Hope before coaling. He reports that out of thirty-two whales caught there, only two were big ones.”

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, Chukchi Sea, native, catch.

ESKIMO BULLETIN.

1898. Locals [News items]: Two whales—calves. Eskimo Bull. 4 (July): 2,4.

Brief mention is made (p. 2) of “two whales—calves” for Cape Prince of Wales. [The apparent meaning is that two young bowhead whales were caught by local whalers this spring.] A news item concerning Point Hope (p. 4) states: “Two small whales are the catch of 70 canoes and whale—boats.”

WESTERN ARCTIC
WHALING—western Arctic, Bering Strait, Chukchi Sea, native, catch, crews.

EVERITT, ROBERT D., and BRUCE D. KROGMAN.

1979. Sexual behavior of bowhead whales observed off the north coast of Alaska. Arctic 32(3):277–280.

During aerial surveys conducted off the north coast of Alaska from April 30 to June 30, 1976, six bowhead whales were observed on May 8 engaging in sexual behavior. Their activities are reported and illustrated with a drawing and photograph. These observations help support previous conclusions that bowheads may mate during the spring migration.

WESTERN ARCTIC
BEHAVIOR—migration; REPRODUCTION—mating, photograph.

FAIRBANKS DAILY NEWS—MINER.

1970. Photographs. Fairbanks Daily News—Miner, Fairbanks, Alaska, May 28, p. 6.

(Photograph caption) “BARROW SPRING—Springtime in Barrow does not mean ice cream for these village youngsters, but also it is the time for the whaling season. Eleven bowhead whales have been taken at Barrow up to now with some measuring 70 feet long and weighing 70 tons. Bottom photo shows meat butchered and ready for storage in underground freezer pits.” (Wien Consolidated Airlines photos by Frank Whaley)

WESTERN ARCTIC
MORPHOLOGY—measurements (estimated length); WHALING—western Arctic, Chukchi Sea, native, catch, photograph.

FAIRBANKS DAILY NEWS-MINER.

1978a. One crew defies whaling order. Fairbanks Daily News-Miner, Fairbanks, Alaska, May 8, p. 1 and 2.

During spring bowhead whaling at Barrow in 1978, a dispute arose between native hunters and U.S. government agents over whether two of the four whales captured to date were bowheads or right whales that were not subject to the quota (the quota for Barrow was three bowheads, thus they had exceeded the village quota by one whale.). The chairman of the Alaska Eskimo Whaling Commission requested the 20-plus crews on the ice to come ashore to avoid a confrontation with federal agents and all complied except one. It was also noted that Wainwright had taken the first of two whales allotted to it.

WESTERN ARCTIC
REGULATION & CONSERVATION—management, quotas; POPULATION—mortality, whaling, struck and lost; WHALING—Chukchi Sea, natives, catch, crews.

FAIRBANKS DAILY NEWS-MINER.

1978b. Editorial: Peace in Barrow. Fairbanks Daily News-Miner, Fairbanks, Alaska, May 9, p. 4.

Describes event when Barrow natives exceeded the first ever quota allotted to Alaskan whaling villages and the whalers claimed only two of the four they had taken were bowheads. The claim was not allowed by authorities who then stated it was an honest dispute and no prosecution would follow. As of yesterday, a total of nine whales had been taken, Wales, Kivalina and Wainwright were the only villages still entitled to hunt. Wainwright had only taken one of two whales it was allowed, and Barrow hunters stopped whaling after taking four whales and striking but losing a fifth.

WESTERN ARCTIC
IDENTITY–Nomenclature, ingutuk; POPULATION–mortality, whaling, struck and lost; REGULATION & CONSERVATION–Quota; WHALING–Chukchi Sea, natives, catch.

FAIRBANKS DAILY NEWS-MINER.

1978c. Photograph caption: Cutting up a whale. Fairbanks Daily News-Miner, Fairbanks, Alaska, May 9, p. 2.

“Eskimos from the village of Wainwright mark up this 53-foot long bowhead whale for cutting. The whale, the ninth taken by Eskimos this season, was killed early Saturday [May 6th] in the Arctic Ocean near Wainwright.”

WESTERN ARCTIC
MORPHOLOGY–measurements; POPULATION–mortality, whaling; WHALING–Chukchi Sea, native, catch, photograph.

FAIRBANKS DAILY NEWS-MINER.

1978d. Whale studied to determine its species. Fairbanks Daily News-Miner, Fairbanks, Alaska, May 10, p. 2.

Specimens from one of the disputed whales taken at Barrow this spring have been sent to a laboratory to confirm that the animal is a bowhead whale; the Eskimos claim the whale is an ingutuk, a species other than a bowhead. Two of the four whales taken by Barrow hunters this spring are claimed by them to be of this type.

WESTERN ARCTIC
IDENTITY–nomenclature, ingutuk; POPULATION–mortality, whaling; REGULATION & CONSERVATION–quota; WHALING–Chukchi Sea, natives, catch.

FAO ADVISORY COMMITTEE ON MARINE RESOURCES RESEARCH. WORKING PARTY ON MARINE MAMMALS.

1978. Mammals in the seas. Volume 1. Report of the FAO Advisory Committee on Marine Resources Research. Working Party on Marine Mammals. FAO Fish. Ser.5, vol. 1, 264 p.

A comprehensive review of the status of marine mammal species and populations, their roll in marine ecosystems, effects of human activities on marine mammals, and vice versa, conservation and management, research and recommendations. Although no worthwhile estimates of stock sizes are available, the bowhead whale (p. 58–59) population is thought to be far below an estimate of 5,000 made in the 1960s. The absence of an increase in sightings in recent years may be due to inadequate sightings effort and/or to the suppression of any increase in abundance, at least in some areas, by continuing catches by Eskimos under the IWC's "aboriginal clause." An average of 30 to 40 bowheads per year has been taken by eight Eskimo communities in northwestern Alaska. This landed catch is less than the total catch. Estimates of the ratio of whales struck and lost to those landed range from 1:1 to 1:4. Since an unknown proportion of animals struck but lost may die of their wounds, it is not possible to estimate the total kill. An additional source of concern about the effects of the Alaskan Eskimo fishery on the bowhead population is the fact that, since 1970, there has been a significant increase in the number of whaling crews. One bowhead was taken in 1975 in the eastern Canadian Arctic, and effort in that area also appears to be increasing. One or two bowheads are also taken annually by Siberian natives. A need to redefine aboriginal fishery and subsistence is discussed on p. 171–172.

EASTERN ARCTIC, WESTERN ARCTIC

POPULATION—abundance, mortality, struck and lost; WHALING—eastern Arctic, western Arctic, native, catch.

FAO ADVISORY COMMITTEE ON MARINE RESOURCES RESEARCH. WORKING PARTY ON MARINE MAMMALS.

1981. Mammals in the seas. Volume 3, general papers and large cetaceans. FAO Fish. Ser. 5, vol. 3, 504 p.

Contains 14 general papers covering management objectives and modelling techniques, followed by 24 papers on large cetaceans that discuss the status of various species, techniques for population assessment, management, exploitation, and growth and energy budgets. Three of the papers (J. Bockstoce, p. 163–170; W.M.A. DeSmet, p. 301–309; K. R. Martin, p. 369–373) provide information on bowhead whaling, fossil remains, and museum collections of vessel logbooks and whalers' journals as a source of data on whale species and whaling.

CIRCUMPOLAR

ARCHAEOLOGY—paleontology; DISTRIBUTION—history; POPULATION—mortality; WHALING—history, eastern Arctic, western Arctic, commercial, native, catch.

FAY, F. H.

1975. Mammals and birds. *In* D. W. Hood and Y. Takenouti (editors), Bering Sea oceanography: an update 1972–1974, Results of a seminar and workshop on Bering Sea oceanography under auspices of the U.S.–Japan Program, Office Int. Programs Natl. Sci. Found.–Sci. Council of Japan, p. 133–138. Univ. Alaska, Fairbanks, Inst. Mar. Sci. Rep. 75–2.

Mentions that the Marine Mammal Division, National Marine Fisheries Service, recently began investigations of the bowhead population and its utilization by Eskimos of northern Alaska. Effort is centered in the Chukchi and Beaufort Seas. The population is believed to be about 1,000 whales and to be increasing steadily. Acoustic and aerial remote sensing are being used for population assessment, and more efficient harvest methods for Eskimos are being investigated.

WESTERN ARCTIC

FIELD & LABORATORY TECHNIQUES—census, tracking; POPULATION—abundance & density; REGULATION & CONSERVATION—management.

FEDOSEEV, G. A.

1966. Aerovizual'nye nablyudeniya za morskimi mlekopitayushchimi v Beringovom i chukotskom moryakh (Aerial observations on marine mammals in the Bering and Chukchi Seas). *In*: K. I. Panin (ed.), *Nastayashchii tom izvestii TINRO posvyashchei rezul'tatam issledovaniï morskikh mlekopitayushchikh* (Soviet research on marine mammals in the Far East), *Izv. Tikhookean Nauchn.-issled. Inst. Rybn. Khoz. Okeanogr.* 58:173-177. In Russian. (Transl. By U.S. Joint Publ. Res. Serv., 1966, p. 98-102, avail. Transl. Program, Natl. Mar. Fish. Serv., Washington, D.C.)

During the time period September 28 to December 17, 1960, flights were conducted over coastal waters from Kresta Bay in the Gulf of Anadyr to the mouth of the Kolyma River in the Eastern Siberian Sea, and in waters surrounding Wrangel and Herald Islands, to count walrus and other marine mammals. Seven bowhead whales were identified: two on September 29 at 73-74°50' N lat. and 175-177° E long.; three on October 10 at 70-71° N lat. and 177-180° E long.; and one at 73° N lat. and 175° W long., and one at 72-73° N lat. and 173-174° W long. on October 12.

WESTERN ARCTIC

MIGRATION—sightings; DISTRIBUTION—Chukchi Sea; FIELD & LABORATORY TECHNIQUES—census, aerial, field recognition.

FEDOSEEV, G. A.

1982. Aerial sightings to bowhead whales distribution and their numbers in the Chukchi and east Siberian Seas. Unpubl. Manuscr., 5 p. + 1 fig. *Izv. Tikhookean. Nauchno-issled. Inst. Rybn. Khoz. Okeanogr.* (TINRO), Nagaevskaya 51, Magadan 685013, U.S.S.R. (Submitted to the Scientific Committee, International Whaling Commission, Cambridge, England, in June 1982 as Document SC/34/PS23.)

Reports sightings of bowhead whales recorded during aerial surveys for walruses and seals off the Chukotka Peninsula between 1960 and 1980. Author combines these sightings and information from the literature to derive a migration pattern for the animals in this area, the influence of ice conditions on their distribution, and an estimate for the total number of bowheads in this region of the U.S.S.R. at about 3,500 animals.

WESTERN ARCTIC

BEHAVIOR—migration, timing, pattern; DISTRIBUTION—sightings, factors affecting; FIELD & LABORATORY TECHNIQUES—census, aerial; POPULATION—abundance.

FEDOSEEV, G. A., and V. N. GOL'TSEV.

1975. Novye dannye po raspredeleniyu; i chislennosti morskikh mlekopitayushchikh v beringovom i chukotskom moryakh. (New data on the distribution and abundance of marine mammals in the Bering and Chukchi Seas.) *In: Morskije Mlekopitayushchie.* [A collection of articles containing materials from the 6-th All-Union Conf. On Mar. Mammals, October 1975.] Part 2, p. 144. Izd. Naukova Dumka, Kiev. In Russian. (Transl. By Leda Sagan. Avail. Alaska Fish. Science Cent., Natl. Mar. Mammal Lab., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way N.E., Seattle, WA 98115.) (Abstr. Only.).

During aerial surveys of 1970-1974, and a Soviet-American joint expedition aboard the *Alpha Helix* in 1973, bowhead whales were repeatedly encountered during the first one-half of October amid cake-ice in coastal waters near Cape Vankarem (About 60 animals), at Cape Schmidt (23 animals), and near the village of Neshkan on the Ildidlya Island (about 60 animals). The bowhead whales are gradually increasing in abundance.

WESTERN ARCTIC
DISTRIBUTION—sightings, Bering and Chukchi Seas; FIELD & LABORATORY TECHNIQUES—census, aerial, vessel;
POPULATION—abundance, numbers observed.

FEJES, CLAIRE.

1966. People of the Noatak. Alfred A. Knopf, New York, 368 p.

Popular narrative about the people of two Eskimo villages, Noatak and Point Hope. Bowhead whaling in past years at Point Hope is briefly reviewed, including an incident in 1950 (p. 80) when the native store shipped to Seattle by the annual supply ship 40 drums of whale and seal oil for the manufacture of candles and soap; however, such shipments proved unprofitable and were discontinued. During spring 1960 four bowheads were captured, and two were landed in 1961.

WESTERN ARCTIC
WHALING—history, western Arctic, native, gear, crews, catch, drawings, utilization.

FERGUSON, ROBERT.

1938. Arctic harpooner. A voyage on the schooner *Abbie Bradford* 1878–1879. Univ. Penn. Press, Philadelphia, 216 p. (Edited by Leslie Dalrymple Stair).

A whaling voyage to Hudson Bay on the schooner *Abbie Bradford* that lasted 16 months. The whaler sailed from New Bedford on May 8, 1878 and returned on August 31, 1879 after wintering—over at Marble Island. Captured a bowhead that all officers said was the largest right whale that they had ever seen—about 95 feet long, considerably longer than the ship (waterline length of 87.4 feet, p. 3)! The whale yielded 130 barrels oil and 2,900 pounds of bone (baleen).

EASTERN ARCTIC
DISTRIBUTION—former; MORPHOLOGY—total length; WHALING— history, eastern Arctic, Hudson Bay, gear, catch, utilization.

FETCHER, E. S., Jr.

1939. The water balance in marine mammals. *Q. Rev. Biol.* 14(4):451–459.

A compilation of data on the problem of the maintenance of the water balance in marine mammals, including the analysis of whole blood for bowheads as reported by A. B. Macallum in 1926.

CIRCUMPOLAR
PHYSIOLOGY—blood.

FISCUS, CLIFFORD H., and WILLMAN M. MARQUETTE.

1975. National Marine Fisheries Service field studies relating to bowhead whale harvest in Alaska, 1974. NWFC Processed Rep., 23 p. Natl. Mar. Mammal Lab., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way N.E., Seattle, WA 98115.

Results of subsistence whaling for bowhead whales, *Balaena mysticetus*, by Alaskan Eskimos during 1974. Six villages whaled during the spring season and three during the autumn. Twenty whales were landed, three were killed but lost, and an additional 28 were struck and lost. Includes review of regulations governing the take of bowheads by aborigines, accounts of whaling activities for each village and discussions on whaling methods, whaling effort, utilization of the animal products, migration, and other species sighted and taken by the hunters.

WESTERN ARCTIC

BEHAVIOR—migration; MORPHOLOGY—measurements; POPULATION—abundance, mortality (whaling, struck/lost, killed/lost); REGULATION & CONSERVATION—regulation; WHALING—western Arctic, native, crews, catch, utilization, photographs.

FITZHUGH, WILLIAM W., and SUSAN A. KAPLAN.

1982. Inua: spirit world of the Bering Sea Eskimo. Natl. Mus. Nat. Hist., Smithsonian Press, Washington, D.C., 295 p.

Publication was prepared in conjunction with an exhibit of selected items (from a total of 10,000) in the Edward William Nelson Eskimo ethnology collection of the National Museum of Natural History. Excellent photographs present a visual ethnography of the Bering Sea Eskimo and the text places their life in a regional and chronological framework. The contents are divided into sections on the land, the animals, life in the village, the spiritual life, their neighbors, and changes in the past hundred years. Contains information and numerous photographs illustrating the importance of the bowhead whale to the Eskimo culture and the many uses made of its products. (p. 224–232).

WESTERN ARCTIC

ARCHAEOLOGY—artifacts; FIELD & LABORATORY TECHNIQUES—museum; WHALING—western Arctic, native, gear, photographs, utilization.

FLOWER, WILLIAM HENRY.

1864. Notes on the skeletons of whales in the principal museums of Holland and Belgium, with descriptions of two species apparently new to science. Proc. Zool. Soc. Lond. 1864:384–420.

Discussion of cetacean skeletal parts describing the specific and generic characters of these animals, including the classification and nomenclature employed for the various species. Skeletons of *Balaena mysticetus* are in the collections at the Museum of Royal College of Surgeons at London (47'F), Royal Museum of Natural History at Brussels (50'), and the Royal Museum at Leyden (skull only of young). Author states that the skeleton at Brussels is the only one to be seen at present in any museum in Europe, except at Copenhagen [institute not given].

EASTERN ARCTIC

FIELD & LABORATORY TECHNIQUES—museums; MORPHOLOGY—structure.

FLOWER, WILLIAM HENRY, and RICHARD LYDEKKER.

1891. An introduction to the study of marine mammals living and extinct. Adam and Charles Black, London, 763 p.

Reviews knowledge of mammals to date and is based largely upon the article "Mammalia," together with 40 shorter articles, written by Flower for the ninth edition of the Encyclopedia Britannica. The Greenland, or more properly Arctic Right Whale (*Balaena mysticetus*), is described (p. 236–240) largely based upon the works of Eschricht and Reinhardt (1866), and Scammon (1874). Of interest is a drawing by Robert Gray showing the external form of the animal with a hump along the dorsal ridge of the peduncle. A drawing showing the inner and outer aspects of a right tympanic bone of an immature animal is also presented.

CIRCUMPOLAR
DISTRIBUTION—history; IDENTITY—classification; MORPHOLOGY—structure.

FOOTE, DON CHARLES.

1964a. American whalers in northwestern Arctic Alaska. *Arctic Anthropol.* 2(2):16–20. (Also read before the Symp. on the Arctic and Sub-Arctic, Sec. H, Am. Assoc. Adv. Sci., Dec. 29, 1964, Montreal, Can.).

Brief review of the early history of American whaling north of the Bering Strait discusses some aspects of contact between Arctic Alaskan Eskimos and whalers from 1819 to 1880. Trading schooners were reported in the region as early as 1820 and, in the long run, the most important agent of change in Arctic Alaska may not have been the American whalers but the sailors of these small, elusive schooners. In 1848, at least three whalers drifted or sailed through Bering Strait into the Arctic Ocean where they found numerous whales. Until 1854 apparently few ships sailed any distance north of Bering Strait, but in that year at least five whalers reached Point Barrow. From 1848 to 1885 the whalers probably killed upward to 10,000 whales in the region from Anadyr Gulf to Point Barrow; of these probably more than half were bowheads.

WESTERN ARCTIC
ANTHROPOLOGY—Alaskan and Siberian Eskimos; WHALING—western Arctic, commercial, native, catch, gear, utilization.

FOOTE, DON CHARLES.

1964b. Observations of the bowhead whale at Point Hope, Alaska. Unpubl. Manusc., 73 pp. plus 5 p. biblio. McGill Univ., Montreal, Quebec, Canada. Copy on file at Natl. Mar. Fish. Serv., Natl. Mar. Mammal Lab., Seattle, WA.

Author lived and studied as a human geographer from autumn 1959 to autumn 1962 at Point Hope, Alaska. During that period he took part in spring hunts for bowhead whales and recorded his observations of these animals including their migration behavior, daily and hourly counts, classification by size including ingutuks and calves, and hunting statistics such as animals struck and lost, killed but lost, and killed and recovered. In the spring of 1960 seven whales were struck and lost while four were captured; in spring 1961 one whale was struck and lost, one was killed but lost, and two were captured; and in spring 1962 one whale was struck and lost and three were captured. On May 24, 1961 a large lactating cow was killed and recovered but a small calf struck and killed 45-minutes earlier sank and was lost. The author reports that "Interviews provided only one reference to a full-grown foetus found in a whale killed at Point Hope about 1900." On pages 51-73 the author, using interviews with Eskimos, personal observations and the literature, reviews the ingutuk problem.

WESTERN ARCTIC
ANTHROPOLOGY—Alaskan Eskimos; BEHAVIOR—swimming, breaching, reactions, respiration; FIELD & LABORATORY TECHNIQUES—census, shore station, field recognition; IDENTITY—nomenclature, Eskimo; POPULATION—Abundance, sightings, size, recruitment, calf counts, mortality, numbers captured, struck and lost; REPRODUCTION—mating; WHALING—Chukchi Sea, history, natives, catch, crews, gear, photographs.

FOOTE, DON CHARLES.

1964c. Changing resource utilization by Eskimos in northwestern Arctic Alaska, 1850-1962. Read before the section on the Arctic and Sub-Arctic VII International Congress for the Science of Anthropology and Ethnology, August 5, 1964, Moscow, U.S.S.R.

This study compares author's theoretical calculations of food resources required by Eskimos groups in the 1850s to those needed a hundred years later (field observations at Point Hope from 1959-1962). Discussing food items collected, he states that the people of Point Hope often took 15 to 20 Greenland whales in one season. He concludes that the Eskimos of present day Point Hope and Noatak use far fewer natural resources than did their ancestors in 1850.

WESTERN ARCTIC
WHALING—Chukchi Sea, natives, catch, utilization.

FOOTE, DON CHARLES.

1965a. Whaling in the Beaufort Sea. Unpubl. Prepared for the Northern Service Canadian Broadcasting Corporation, January 11, 1965, 4 p.

Briefly reviews historical importance of bowhead whaling by native and commercial whalers extending from the Bering Sea to the Beaufort Sea, where the eastward limit of Eskimo whaling was probably around Dolphin and Union Strait. In the summer of 1889, seven steamers from the whaling fleet sailed to Hershel Island for the first time and subsequently hunted these waters until 1914. The value of the bowhead whale was stated by Scammon (1874:52), who reported that a 60-foot whale might give 8,000 gallons of oil and 3,500 pounds of baleen, and that in the late 19th century such a whale would be worth nearly \$20,000.

WESTERN ARCTIC
BEHAVIOR—migration; DISTRIBUTION—Bering, Chukchi and Beaufort Seas; IDENTITY—Eskimos names, Ingotok; POPULATION—abundance; WHALING—history, commercial, native, utilization.

FOOTE, DON CHARLES.

1965b. Exploration and resource utilization in northwestern Arctic Alaska before 1855. Ph.D. Thesis, McGill Univ., Montreal, Can., 400 p.

Contains extensive information derived from the literature on visits of Europeans and Americans to the region before 1855. Drawing upon this information, population estimates are made for three groups of Eskimos living in the area, the Tigeragmuit, Naupaktomuit and the Noatagmuit. Knowledge of Eskimo seasonal activities, diet, caloric needs and the nutritional value of animals and plants is combined with the estimated number of people and their dogs to construct a theoretical kill of wildlife. Regarding bowhead whales: total 10^4 calories obtained from a whale averages 10,090 (Table 19, p. 273); a possible estimated caloric need for bowhead products in the Eskimo diet is estimated at 35% in winter and 5% in summer (Table 24, p. 286); the possible annual kill of bowheads in 1850 was estimated to be 11 animals (Table 27, p. 290, and evidence indicating that this is a reasonable estimate is discussed on p. 299–300); and, in appendix B, the caloric value for various portions of the bowhead carcass is presented (p. 350). Contains 235 bibliographic references.

WESTERN ARCTIC
ANTHROPOLOGY—Alaskan Eskimos; WHALING—western Arctic, natives, catch, utilization.

FOOTE, DON CHARLES.

1966a. ...Of whales and whalers. *In* Maja van Steensel (editor), *People of light and dark*, p. 29–33. Queen's Printer, Ottawa.

Contains a brief description of size and habitat of the bowhead, historic hunting techniques of Alaskan Eskimos, and history of the development and decline of whaling in Alaska waters.

WESTERN ARCTIC
WHALING—western Arctic, history, natives, catch statistics, utilization.

FOOTE, D. C., and H. A. WILLIAMSON.

1966b. A human geographical study. *In* Norman J. Wilimovsky and John N. Wolfe (editors), *Environment of the Cape Thompson region, Alaska*, Chapt. 36, p. 1041–1107. U.S. Atomic Energy Comm., Washington, D.C.

From 1850 to 1885 American whalers caused important changes in the Eskimo way of life. After 1885 a new pattern of Eskimo life began when Americans settled on the land as whalers, traders, missionaries, and government officials. Four Eskimo groups centered at Point Hope, Kivalina, and Noatak, Alaska, were studied during the period May 29, 1959 to August 31, 1962. At Pt. Hope there are 10 to 13 bowhead whaling crews. In 1960 whaling began April 6 and ended June 2; 4 bowheads and 19 white whales were killed. The 1961 season lasted from April 8 until June 2; 2 bowheads and 8 white whales were landed.

WESTERN ARCTIC
BEHAVIOR—migration, relationship with other species; WHALING—history, western Arctic, commercial and native, shore stations, catch, crews, photographs, utilization (food) .

FORBES, ALLAN. Edited by RALPH M. EASTMAN and K. G. ROGERS.

1955. *Whaleships and whaling scenes as portrayed by Benjamin Russell*. Second Bank-State Street Trust Co., Boston, Mass., 79 p.

One (number 39) of a series of historical brochures showing for the first time in one volume all of Russell's paintings. "Russell spent four years at sea in one of his father's whalers, and this experience, with that gained along the waterfront of New Bedford, fitted him to paint with care and expert knowledge the vessels which were associated with New Bedford and whaling." Contains color reproductions of paintings accompanied by information on ship's captains, private signals (flags) of the whaling vessels, vessels, dates of voyages, whaling scenes, songs, and a few whaling statistics. A Greenland 10 Kroner bill which features a bowhead whale is reproduced on p. 18. Several interesting photographs with comments provide information on early day whalers and vessels that add to the value and usefulness of this publication.

CIRCUMPOLAR
WHALING—history, eastern and western Arctic, commercial, gear, paintings, photographs.

FORD, JAMES A.

1959. Eskimo prehistory in the vicinity of Point Barrow, Alaska, with an appendix, skeleton remains from the vicinity of Point Barrow, Alaska, by T. D. Stewart. *Am. Mus. Nat. Hist., Anthropol. Pap.* 47, pt. 1, 272 p.

Archaeological research by the author in 1931–1932, again in 1953, and by others to 1956 in the vicinity of Point Barrow for the Smithsonian Institution is described. In the fall of 1931 the author joined a boat crew that killed a bowhead whale east of Point Barrow. As Ford's portion of the kill, the Eskimos detached the skull and hauled it in to the beach. In the summer of 1932 this skull was shipped to Seattle on the sailing schooner *Holmes* and is now on display at the U.S. National Museum (p. 13; also, see H. B. Collins, 1933, for photographs).

In 1932, spring whaling at Barrow began on May 2 and Ford joined Dave and Bobby Brower's boat crew. They spent six weeks camping at various places along the shifting leads 5 to 10 miles from shore. Although they saw many whales, they did not kill one. Only two whales were taken at Barrow that spring (p. 15).

WESTERN ARCTIC
ARCHAEOLOGY; FIELD & LABORATORY TECHNIQUES—museums; WHALING—western Arctic, Chukchi Sea, Beaufort Sea, native, catch, crews.

FORREST, ELIZABETH CHABOT.

1937. *Daylight moon*. Frederick A. Stokes Co., New York, N.Y., 340 p.

Author and husband were U.S. Government teachers who succeeded the Van Valins at Wainwright, Alaska, during 1915–1917. A whale was taken by James Angashuk's crew in the spring of 1916. The baleen was eight feet long (p. 205–206). The names of two other whaling captains were given (p. 212), Adam Neakok and Kotook.

WESTERN ARCTIC
MORPHOLOGY—measurements (baleen); WHALING—western Arctic, Chukchi Sea, native, crews, catch.

FRAKER, M. A.

1977. The 1976 white whale monitoring program, Mackenzie estuary, N.W.T. Prepared for Imperial Oil Ltd. Calgary, by F. F. Slaney and Co., Ltd., Vancouver, Canada. 73 p.

Imperial Oil Limited conducts oil exploration activities in Canadian waters of the eastern Beaufort Sea and has supported studies of white whales, *Delphinapterus leucas*, for the past five years [1972–1976]. In 1976 for the first time in the five years of study, bowhead whales, *Balaena mysticetus*, were observed in the Mackenzie Estuary and the species is briefly discussed (p. 60–70). Subjects discussed include background information on the bowhead, status of the North Pacific bowhead population, population size, movements, food and feeding behavior, reproduction, and human utilization. Appendix 6 (p. 2–3) contains a transcript of a tape-recorded interview with a village elder, Tom Elanik of Aklavik, who relates an account of a bowhead whale taken in the vicinity of Niakunak (West Whitefish Station) when he was a young lad. [In a personal communication to W. M. Marquette, Fraker suggested this bowhead may have been captured in about 1918.]

WESTERN ARCTIC
BEHAVIOR—migration; DISTRIBUTION—sightings; NUTRITION—food and feeding; POPULATION—abundance (former); REPRODUCTION; WHALING—western Arctic, eastern Beaufort Sea, native, catch.

FRAKER, MARK A.

1981. Responses of bowhead whales (*Balaena mysticetus*) to activities related to offshore oil and gas exploration. (Abstr.) J. Acoust. Soc. Am., Suppl. 1, 70 (Fall):S83. (abstr. MM2.)

Behavior of bowhead whales in the vicinity of offshore oil and gas exploration activities in the eastern Beaufort Sea was studied during August 1980. Surfacing, breathing pattern, and inter-animal distances were examined. (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR-reactions to man-made objects, noise; DISTRIBUTION- Beaufort Sea, sightings; FIELD & LABORATORY TECHNIQUES-acoustics.

FRAKER, MARK A.

1982. Distribution, numbers and productivity of the western Arctic stock of whales (*Balaena mysticetus*) in the eastern Beaufort Sea and Amundsen Gulf, summer 1981. (Abstract). Proc. Alaska Sci. Conf. 33:38.

A census of the western Arctic stock of bowhead whales on its summer range in the Canadian Beaufort Sea was conducted in 1981.

"The number of bowheads within the study area was estimated to be between 2,983 to 3,824, considerably greater than the previously accepted estimate of 2,264. Calves were estimated to comprise about 3.5% of the population, but this is probably well below the actual proportion. Known-scale vertical photographs were successful in allowing accurate measurement estimates of whales. The study also revealed that a large proportion of the population carries distinctive marks that permit individual recognition." (From author's abstract.)

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-field recognition, coloration, scars, photographs; POPULATION-abundance, recruitment.

FRAKER, MARK A., DAVID E. SERGEANT, and WYB HOEK.

1978. Bowhead and white whales in the southern Beaufort Sea. Beaufort Sea Proj., Dep. Fish Environ., Sidney, B.C., Tech. Rep. 4, 114 p.

Study of the biology and distribution of bowhead and white whales in the eastern Beaufort Sea and an assessment of the possible effects of oil and gas exploration on the whales. Information on the natural history of these whales is reviewed and presented with field data obtained in the area between 1972 and 1976. Bowhead subjects discussed include migration, distribution, population status, biology and harvest. Concerns and possible effects of current oil and gas explorations in the region are discussed, recognizing that little data has been obtained to date studying the basic whale behavior and biology in relation to the activities of offshore exploration. Data on sightings and strandings in the area are presented in the appendices.

WESTERN ARCTIC
BEHAVIOR-migration; DISTRIBUTION-former, present, oil exploration effects; NUTRITION- food and feeding; POPULATION-abundance, mortality; SKELETAL REMAINS-beachcast; WHALING-western Arctic, Beaufort Sea, commercial, catch.

FRANCIS, GEORGE.

1977. Some Kotzebue news from George Francis. Caribou News, Kotzebue, Alaska, June 22, 1(4):5.

The new museum in Kotzebue was opened to the public for viewing of its collection of Alaskan animals and Arctic people in natural settings, including Arctic whale hunting.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—museums; WHALING—western Arctic, native.

FRANKSON, DAVID.

1963. From Ketchikan to Barrow [News items]: Point Hope, May 16. Alaska Sportsman 29(9):4. (From Fairbanks Daily News—Miner).

The whaling crews are all out on the ice and have taken three whales so far. On April 29th Nicholas Hank found a bowhead under the ice that had been dead about four days and salvaged all the muktuk and blubber. On May 11th Mark Kumievauk's [sic] crew and Laurie Kingik's crew each caught one bowhead. The whales are large sized and the whole carcasses were saved. About five or six whales were shot and escaped because the wind was blowing. About 20 to 25 belugas and a few oogrucks and seals have also been killed by the whalers.

WESTERN ARCTIC
POPULATION—mortality, struck and lost; WHALING—western Arctic, Chukchi Sea, native, catch, crews.

FRANKSON, DAVID.

1969. (Title unknown). Fairbanks Daily News—Miner, June 2.

Citing F. E. Durham (1979:22–23), David Frankson reported “We at Pt. Hope has bad lucks, we lost about 18 whales and caught only two.”

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost; WHALING—Chukchi Sea, native, catch.

FRANKSON, DAVID.

1970. Point Hope. Fairbanks Daily News—Miner, Fairbanks, Alaska, May 11.

Whaling began at Point Hope on April 20th and three whales were captured during that week, one after it had been dead a few days. In addition, one whale was killed but could not be recovered because of wind and ice. At least ten whales were shot at but not taken, and two dead whales were sighted from an airplane far out from shore. One polar bear and many belugas have also been killed this spring.

WESTERN ARCTIC
POPULATION—mortality, struck and lost; WHALING—western Arctic, Chukchi Sea, native, catch.

FRANKSON, DAVID.

1973. From Ketchikan to Barrow [News items]: Point Hope. Alaska 39(2):79. (From Fairbanks Daily News—Miner)

“Last Sunday morning November 15th slush ice drifted in the south beach and in the afternoon three crew whalers that caught a whale last spring feasted in Tigara Hall each with the tail of the whale they caught—everyone have full stomachs with muktuk and whale meat.”

WESTERN ARCTIC
ETHNOLOGY—culture; WHALING—western Arctic, Chukchi Sea, native, catch, crews.

FRANKSON, DAVID.

1974. From Ketchikan to Barrow [News items]: Today Bill Weber and his crew. *Alaska* 40(8):24. (From Fairbanks Daily News-Miner)

Two bowhead whales taken in the spring of 1974 at Point Hope, Alaska, were lost when ice closed the lead and buried them. Most of Billy Weber's whale was saved but Amos Lane's was lost.

WESTERN ARCTIC
POPULATION—mortality, killed and lost; WHALING—western Arctic, Chukchi Sea, native, catch, crews, utilization.

FRASER, F. C.

1949. Some letters of William Scoresby Junior. *Polar Rec.* 5(37–38):306–308.

A bound volume of letters in the library of the British Museum (Natural History) contains eight letters written by William Scoresby, Junior between 1809 and 1819. Figure 1 is Scoresby's drawing of a Greenland Right Whale. In the letter dated December 4, 1809, to E. Home, he comments on the speed of the whale when harpooned as being about 8 or 9 m.p.h. (not more). In a letter of August 8, 1810, Scoresby describes a whale calf 17 feet long which he had dissected on the deck of his vessel. In the letter of November 19, 1811 Scoresby relates to a skull of a Greenland whale calf which he sent to Home. The letter dated December 4, 1812 acknowledges the receipt of a copy of Home's (1813) paper dealing with the ear of this whale. A letter dated August 30, 1813 contains Scoresby's comments on the weather associated with the lack of success of the whaling, although his ship the *Esk* took 15 large whales producing 190 tons of oil. The cargo of this voyage he says was valued at 11,000 pounds sterling.

EASTERN ARCTIC
BEHAVIOR—swimming; GROWTH; MORPHOLOGY; REPRODUCTION—calves; WHALING—catch, commercial, drawing, gear.

FRASER, F. C.

1977. Royal fishes: The importance of the dolphin. *In* R. J. Harrison (editor), *Functional anatomy of marine mammals*, Vol. 3, p. 1–44. Academic Press, London, New York, San Francisco.

The interest in whales and whaling, the presence of whalebone along roadways and its use as monuments, as well as the use of the words “whalebone” and “whale” in names of inns and places in 17th century England are expressions of the fully active Greenland whale fishery emanating from the Thames and parts of eastern England at the time. Refers to some early publications that describe the Greenland whale and the fishery (p. 26–29).

EASTERN ARCTIC
WHALING—history, eastern Arctic, commercial, utilization.

FRASER, F. C., and P. E. PURVIS.

1954. Hearing in cetaceans. *Bull. Br. Mus. (Nat. Hist.) Zool.* 2(5):103–113.

In describing the functioning of the cetacean ossicles, the authors state (p. 111) that “The smooth curved surfaces of the facets tend to slip over one another in one or both directions when the oscillation is transverse or longitudinal to the processus gracilis. This factor must be of great importance in the exclusion of extraneous vibrations. In this last connection it is necessary to examine the hypothesis of Lillie and Kellogg (v. supra) [1910, 1938] in more detail and as a preliminary it will be useful to recall Beauregard's (1894) conclusions on the subject.

“The tympanic bulla cannot be regarded as an apparatus for resonance as has been asserted by various anatomists and physiologists (Hunter, Home, Esser, etc.).”

CIRCUMPOLAR
MORPHOLOGY—anatomy; PHYSIOLOGY—receptors (hearing).

FRASER, F. C., and P. E. PURVIS.

1960. Hearing in cetaceans. Evolution of the accessory air sacs and the structure and function of the outer and middle ear in recent cetaceans. *Bull. Br. Mus. (Nat. Hist.) Zool.* 7(1), 140 p.

Detailed discussion on the hearing structures and their functions based upon the examination of specimens, results of experiments, and supported by the evidence of existing literature. Authors conclude that the configuration of the ventral aspect of the cetacean skull, which is associated with the development of air spaces, provides a fairly reliable guide to the systematic arrangement of the Order Cetacea. Further conclusions are preceded by one stating that the Mysticeti as a whole are more primitive than the Odontoceti. Includes the available information on *Balaena mysticetus*.

CIRCUMPOLAR
MORPHOLOGY—anatomy; PHYSIOLOGY—receptors (hearing).

FRAZER, J. F. D.

1976. Herd structure and behaviour in cetaceans. *Mammal Rev.* 6(1):55–59.

Brief review of herding in cetaceans and behavior as it relates to individuals, groups, species and vessels. Citing other authors (Scoresby, 1820; Southwell, 1898), in days when the bowhead was abundant in the Spitsbergen and other Arctic areas, whalers merely had to anchor in one spot till they had taken their fill. At one time the species migrated in schools of hundreds, while the migrations today only show a few dozen at a time. It is known that the largest whales spend the summer farther south (away from the ice–edge) than the females, and the nursery whales are farther north again, while the same individuals may be found in one locality for nearly a decade. Males and females use different, but roughly parallel migratory routes.

CIRCUMPOLAR
BEHAVIOR—migration, separation of sexes and within habitat; FIELD & LABORATORY TECHNIQUES—field recognition; POPULATION—abundance; WHALING—eastern Arctic, western Arctic, commercial.

FREUCHEN, PETER.

1935. Field notes and biological observations. *In* Magnus Degerbol and Peter Freuchen, *Mammals*, part 2, p. 68–278. *Rep. Fifth Thule Exped. 1921–24*, v. 2, no. 4–5. Gyldendal, Copenhagen.

The distribution of *Balaena mysticetus* in Hudson Bay and vicinity, Eastern Arctic, and whaling by commercial whalers and natives is described. One whale was taken by the Eskimos at Repulse Bay in 1922, and another was caught there Sep. 9, 1923. The latter one was 20 feet long and died at the first harpoon. Several sightings of bowheads during 1922–1923 were recorded, including a cow–calf pair seen on July 23, 1923. Author relates an incident, confirmed by residents at Pond Inlet, when some Eskimos killed a bowhead with rifle fire. The animal, apparently chased by killer whales, surfaced in a crack in thick ice where it evidently became stuck. Hunters fired repeatedly at the immobile whale until it died. (p. 270–275).

EASTERN ARCTIC
BEHAVIOR—when hunted; DISTRIBUTION—former, sightings; NUTRITION—food and feeding; POPULATION—mortality; PREDATORS & COMPETITORS—killer whales; REPRODUCTION—calf; WHALING— history, eastern Arctic, commercial, native, gear, catch.

FREUCHEN, PETER.

1938. Arctic adventure: my life in the frozen North. Halycon House, New York, 467 p. (Orig. publ. 1935, by Farrar & Rinehart, New York.)

Account of the author's experiences in northern Greenland from 1906–1925. Hunting for marine mammals by Eskimos is described. Whaling vessels still hunting for bowhead whales in the area; in summer of 1911 author informed Captain Adam of the *Morning of Dundee* that he had found a dead whale with his harpoon in it during the last summer (p. 156). Author hunted bowheads with the natives at Repulse Bay during the summer of 1923 and assisted in the capture of two whales (p. 420). Entrapment of narwhals by ice accompanied by the mass killing of these animals by natives is recorded.

EASTERN ARCTIC

DISTRIBUTION—history; MORTALITY—killed/lost; WHALING— history, eastern Arctic, shore whaling stations, native, catch.

FREUCHEN, PETER, and FINN SALOMONSEN.

1958. The arctic year. G. P. Putnam's Sons, New York, 438 p.

Account of the Arctic, its boundaries, inhabitants and history. Describes how man, animals and plants exist under arctic conditions, from the months of January through December. Marine mammals of the region are discussed, including information on the bowhead whale such as distribution and migration (p. 56, 179, 219, 319, 345); food and feeding (p. 106, 259, 275); predation (p. 345); mating (p. 219); and whaling (p. 106–107, 345). In the eastern Arctic, the Eskimo inhabitants of Atangmik attempted to kill a bowhead in March of 1956 by firing hundreds of rounds of shot into its body, but they did not succeed. Badly wounded, the whale sought the open sea and disappeared. It reappeared about a month later at Napassok where the natives pursued and killed it with rifle shots. In 1955, 19 bowheads were taken by the Eskimos at Point Barrow (p. 107).

WESTERN ARCTIC, EASTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION-eastern Arctic; NUTRITION-food and feeding; POPULATION-abundance, mortality; PREDATORS & COMPETITORS-killer whale; REPRODUCTION-mating; WHALING-eastern Arctic, western Arctic, commercial, native, gear, catch.

FRIEND.

1853. (News item). The Friend, a monthly journal devoted to temperance, seamen, marine and general intelligence. Vol. 10. Honolulu, Hawaii.

[The Siberian Eskimos at the village of Uelen captured one bowhead whale during 1851. Copy seen by J. R. Bockstoce.]

WESTERN ARCTIC

WHALING—western Arctic, Chukchi Sea, native, catch.

FROST, KATHRYN J., and LLOYD F. LOWRY.

1981. Feeding and trophic relationships of bowhead whales and other vertebrate consumers in the Beaufort Sea. Alaska Dep. Fish & Game, Fairbanks, 99701, Contract No. 80-ABC-00160 with Natl. Mar. Fish. Serv., Natl. Mar. Mam. Lab., Seattle, WA 98115. Final Rep. dated April 1, 106 p. plus 3 appendices. [Unpublished.].

Authors conducted a study on the feeding and trophic relationships of bowhead whales in the Beaufort Sea. Field work funded by the NMML was conducted in the vicinity of Beaufort Lagoon from September 4-19, 1980, and additional work (funded by OCSEAP) was carried out near Pingok Island from August 20 through September 1, 1980. Their results incorporated an extensive literature search and analyses of stomach content data from bowheads, ringed seals, and arctic cod, collected over the past 6 years by the ADF&G and the NMML.

Dominant prey of bowheads are euphausiids, principally *Thysanoessa raschii*, and calanoid copepods, primarily of the genus *Calanus*. The authors discount the presumed importance of benthic organisms in the bowhead diet. Most feeding apparently occurs on the feeding grounds during summer, while little occurs during winter and the spring migration. Estimates of consumption rates were generated for the major consumers.

Available information suggests that competition and food limitation are very real possibilities among the major vertebrate consumers in the Beaufort Sea.

WESTERN ARCTIC

DISTRIBUTION-habitat; NUTRITION-food; feeding behavior; PREDATORS & COMPETITORS-food competition among vertebrate consumers; WHALING-western Arctic, Beaufort Sea, native, catch.

GALLAGHER, H. [HUGH] G. [GREGORY].

1974. Etok: a story of Eskimo power. G. P. Putnam's Sons, New York. 269 p.

Biography of Charles Edwardsen, Jr.—Etok is his Eskimo name—of Barrow, Alaska, describing his interest in Eskimo rights and his efforts on behalf of his people to obtain passage by the United States Congress of the Alaska Native Land Claims Settlement Act of 1971. Edwardsen describes bowhead whaling at Barrow (p. 31-39) providing a native's evaluation of the traditional hunt and why it is so important to the Eskimo people and their culture. Etok has wounded two, but does not yet have a whale to his credit. In a discussion of the "1961 duck war", an undated Tundra Times article by Guy Okakok is cited (p. 109) as stating "The people will need the ducks now because whalers didn't get whales this spring." [This information, however, is incorrect as other reliable sources report that four bowhead whales were taken at Barrow in the spring of 1961.]

WESTERN ARCTIC

BEHAVIOR-migration; MORPHOLOGY-length, weight (estimates?); POPULATION-abundance (observed), mortality, struck and lost; WHALING-Chukchi and Beaufort Seas, native, crews, gear, utilization.

GAMO, MASAO.

1980. The band structure and acculturation among the Eskimos of Nelson Island, Southwestern Alaska. In Y. Kotani and W. B. Workman (editors), Alaska native culture and history, Senri Ethnol. Studies No.4, p. 157-167. Natl. Mus. Ethnol., Suita, Osaka, Japan.

A brief description of the band structure and acculturation among the Eskimos on Nelson Island, including brief remarks concerning the villages of Point Hope and Anaktuvuk Pass. In 1962, 12 whaling crews were formed at Point Hope (p. 165.).

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, crews.

GEIST, OTTO WM.

1937. The spy in the igloo. *Alaska Sportsman* 3(12)8–9, 22.

Account of whale hunting ceremonies and customs practiced by Eskimos on St. Lawrence Island as observed by the author. He joined a whaling crew in the spring and they struck two large whales which were lost when they went under the heavy pack ice with all the gear. [The year, not stated in the article, was determined to be 1928 by consulting Geist and Rainey, 1936, and Keim, 1969].

WESTERN ARCTIC
POPULATION—mortality, struck and lost; WHALING—western Arctic, Bering Sea, native.

GEIST, OTTO WILLIAM, and FROELICH G. RAINEY.

1936. Archaeological excavations at Kukulik, St. Lawrence Island, Alaska; preliminary report. *Univ. Alaska, Fairbanks, Univ. Alaska Misc. Publ. 2, (U.S. Public Works Admin. Proj. No. 417)*, 391 p.

O. W. Geist conducted archaeological research on St. Lawrence Island from 1926–35. Describes artifacts associated with bowhead whaling, including explanations how whale bones used in construction of dwellings and equipment, and utilization of baleen for a variety of purposes.

WESTERN ARCTIC
ARCHAEOLOGY; WHALING—western Arctic, Bering Sea, native, gear, photography & drawings, utilization.

GELLER, M. KH.

1957. Ob okhrane morskikh promyslovykh sverei Chukotki (Conservation of maritime game of Chukot). *In Okhrana priorody i zapovednoe delo v SSSR (Conservation of natural resources and the establishment of reserves in the USSR)*. Akad. Nauk SSSR, Komissiya po Okhrane Prirody, *Byull.* 2:98–117. In Russian. (Transl. by Isr. Program Sci. Transl., 1960, p. 98–107; avail. U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA, as OTS 60–51170).

When we were at Naukan during the summer of 1954, the natives reported they catch whale calves weighing up to 10 tons. They avoid hunting humpback and gray whales because to do so from small boats is dangerous. B. A. Zenkovich (1938) records that the natives mostly hunt bowheads and take up to ten per year. The instructor of the Chukot Okrug Executive Committee, M. Baiko, informed us that many whales usually enter the vicinity of Mechigmen Bay. The methods for hunting them, however, is most primitive. The hunt is conducted by four to five whale boats, each with a crew of five to six men. The hunters pursue a whale all day, shooting at it all the while. Although up to 1,000 cartridges may be used on a whale, it would often escape. Since they are generally unable to take large whales, they usually catch young ones weighing 4–5 tons. Many wounded whales escape but perish at sea beyond recovery by the hunters.

WESTERN ARCTIC
DISTRIBUTION; POPULATION—mortality, whaling (struck and lost); WHALING—western Arctic, Bering Strait, native, gear, catch, crews.

GERACI, J. R., and MARK C. KEYES.

1970. Veterinary medicine in the conservation and management of marine mammal resources. *J. Am. Vet. Med. Assoc.* 157(11):1970–1974.

Population of the Bering, Chukchi and Beaufort Seas stock of *Balaena mysticetus* (cited from Red Data Book) is estimated at 1,000 animals. Scientists are now able, within certain limits, to maintain marine mammal populations at levels at which their future is much less threatened, concurrently providing a means of livelihood for the hunters. Through their unique training, veterinarians can provide valuable service to the conservationist and resource manager of marine mammals.

WESTERN ARCTIC
DISTRIBUTION—Bering, Chukchi and Beaufort Seas; POPULATION—abundance, REGULATION & CONSERVATION—conservation, management.

GERACI, J. R., and D. J. ST. AUBIN.

1982. Study of the effects of oil on cetaceans. Univ. Guelph, Guelph, Ont., final report, 272 p. (Avail. from U.S. Dep. Interior, Bur. Land Manage., Washington, D.C.). (Unpublished).

Studies on the effects of petroleum on cetaceans included detection, avoidance, effects on skin, measurement of phospholipid synthesis, effects of inhalation of vapors, ingestion, baleen fouling and on structural properties of baleen. Baleen samples from bowheads were not obtained in time for testing. The authors observed (p. 266) hydroxyapatite crystals in right whale samples but other reports indicate that the baleen of the bowhead lacks calcium salts (Pautard, 1963). The study found that for fin, gray and right whales, prolonged exposure to petroleum substances did not seem to have any dramatic effects on the integrity of baleen plates. However, exposure to petroleum causes some leaching of trace elements, particularly from the fibers, and may also remove lipids from both the matrix and the fibers of baleen, but how the loss of these components might affect the plates was not determined.

CIRCUMPOLAR
MORPHOLOGY—baleen; PATHOLOGY—pollution, effects.

GILBERT, BENJAMIN FRANKLIN.

1967. The confederate raider *Shenandoah*. In Morgan B. Sherwood (editor), *Alaska and its history*, p. 188–207. Univ. Washington Press, Seattle, Wash. (Reprinted from *J. West*, Apr. 1965, 4:169–182).

The confederate warship *Shenandoah* cruised into the North Pacific in the last days of the Civil War, raiding the whaling fleet, destroying ships, and capturing prisoners. This article summarizes the raider's journeys from literature review and historic records.

WESTERN ARCTIC
WHALING—history, western Arctic, commercial, gear.

GILLILAND, JERRY.

1978. Letter to J. Michael Holloway, Subsistence Department Rural Cap, Anchorage, Alaska. *Tundra Times*, April 5, 15(14):5.

The writer, Special Assistant to the Secretary [U.S. Department of Interior, Bureau of Indian Affairs] describes the objectives of a study to determine the effects of the whaling quota, recently imposed by the International Whaling Commission on Alaskan whaling villages, on the diet of these people. The results of the study will be presented at the June meeting of the IWC in June in London.

WESTERN ARCTIC
ANTHROPOLOGY—Eskimos, nutrition; REGULATIONS & CONSERVATION—regulation; WHALING—western Arctic, native, utilization.

GLASS, R. L., HEIDI A. TROOLIN, and ROBERT JENNESS.

1967. Comparative biochemical studies of milks—IV. Constituent fatty acids of milk fats. *Comp. Biochem. Physiol.* 22:415–425.

Fatty acid analyses of milk fats of 57 species representing 11 orders of mammals are presented...Milk fat from the three orders of marine mammals [including Cetacea: *Balaena mysticetus*] that were studied contained high concentrations of C_{16:1} and poly-unsaturated acids with 20 or more carbons. (From author's abstract.)

GENERAL
PHYSIOLOGY—integument, glands (milk).

GLOVER, RICHARD.

1982. Arctic profiles: Moses Norton (ca. late 1720s–1773). *Arctic* 35(3):440–441.

Moses Norton was commander of Prince of Wales' Fort, at Churchill, for the Hudson's Bay Company, from 1762 until his death in 1773. "On his northward voyages Norton had doubtless seen bowhead whales (*Balaena mysticetus*) and in 1765 he persuaded his employers to start a whaling business at Churchill. The result was disastrous. A century later bowheads were profitably hunted around Southampton Island, but Norton ordered his whalers to stay south of Marble Island. There only four whales were caught in 7 years, and in 1772 the Company cancelled this enterprise after losing over 20,000 pounds sterling."

EASTERN ARCTIC
WHALING—eastern Arctic, commercial, shore station, catch.

GODSELL, PHILIP H.

No date. The "Blond" Eskimos and the "created want.". In Ernest F. Gates (compiler and curator of the Jib-boom Club, New London, Conn.), *Journal of whaling voyage of ship Mentor of New London, Capt. William M. Baker, kept by James A. Rogers*, 3 p. Reynolds Printing, New Bedford, Mass. (Reprinted from *Natural History*, and book *Arctic Trader and other writings—1938*; *Forest and outdoors*, Aug. 1938, 34:231–234, 254.)

Account of impact of American whalers headquartered at Herschel Island on Mackenzie delta Eskimos and subsequently the Copper Eskimos to the east during the late 1800s and early 1900s. At the time, a large bowhead whale, which would provide around a ton of whalebone, was worth approximately \$10,000 and vessel catches often ran as high as 50 and more for a two-year cruise.

WESTERN ARCTIC
WHALING—western Arctic, eastern Beaufort Sea, commercial, catch.

GOLD, JOY P.

1982. Sources of information on whales, dolphins, porpoises and whaling. *Natl. Mus. Nat. Hist., Smithsonian Inst., Washington, D.C.*, 42 p.

A list of selected references divided into several categories as follows: technical, popular, whaling, bibliographies, and sources of additional information. No index of any type is provided, but several of the publications concern the bowhead whale.

CIRCUMPOLAR
BIBLIOGRAPHY—technical, popular, whaling.

GRANT, CAMPBELL.

1969. Captain Scammon of Scammon Lagoon. *Pac. Discovery* 22(5):1–10.

Biographical sketch of Charles Melville Scammon. “For nearly 2 years Captain Scammon appears to have been on a standby basis with the Revenue Service as he again went whaling in 1862–63 as master of the *William C. Nye*. The summer cruise was to the Okhotsk Sea for bowhead whales and was notably unsuccessful. Only three whales were taken and the 4th mate and two seamen were killed by whales.” (p. 4.)

WESTERN ARCTIC
WHALING—western Arctic, Okhotsk Sea, commercial, catch.

GRAY, J. E.

1864a. Note on the bonnet of the right whale. *Proc. Zool. Soc. Lond.* 1864:170–171.

Mr. Holdsworth presented to the British Museum a specimen which had been received from an American whaler, as “the bonnet of *Balaena mysticetus*, obtained at the Sandwich Islands.” This individual and Dr. Gray concluded that it was a natural growth previously observed on *Balaena antarctica* and *Balaena antipodarum*. The author stated “I believe that a prominence of the kind is to be observed in all the species of the genus *Balaena*, although I have never seen them described as hard and horny...”

WESTERN ARCTIC
MORPHOLOGY—structure.

GRAY, J. E.

1864b. Notice of the atlas and other cervical vertebrae of a right whale in the Museum of Sydney, New South Wales. *Proc. Zool. Soc. Lond.* 1864:587–594.

Author examined photographs sent to him by the director of the Museum of Sydney of several unidentified cetacean bones. Some cervical vertebrae were judged to belong to *Balaena* but comparison with those of the Greenland specimen of *Balaena mysticetus* in the Museum of the Royal College of Surgeons collection revealed that it was not the same species.

EASTERN ARCTIC
FIELD & LABORATORY TECHNIQUES—museums, skeletal parts.

GREEN, PAUL, aided by ABBE ABBOTT.

1959. I am Eskimo – Aknik my name. Alaska–Northwest Publ. Co., Juneau, Alaska, 86 p. Reprinted serially in *Alaska Sportsman*, Nov. 1958–Aug. 1959.

An autobiography in the simple language of the author, an Eskimo who lived his early life at Kivalina and Point Hope, includes descriptions of bowhead whaling at Point Hope, timing of migration, construction and use of gear, the cutting up and division of whales among the villages, storage of meat in underground ice cellars, utilization of whale products, and the importance of the whale in Eskimo life. Also identifies locations and personnel of two commercial whaling stations operated by non-natives in the early 1900s near Point Hope.

WESTERN ARCTIC
BEHAVIOR—migration, timing; WHALING—Chukchi Sea commercial shore stations, native, crews, gear, utilization.

GREENE, CHARLES R.

1981. Underwater noise from oil industry activities in the Beaufort Sea. (Abstr.) J. Acoust. Soc. Am., Suppl. 1, 70 (Fall):S84. (abstr. MM10.)

Noises from oil industry activities in the Canadian Beaufort Sea were recorded during the summers of 1980 and 1981 while bowhead whales in the area were observed and their behavior noted. (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR—acoustics, reactions; DISTRIBUTION—Canadian Beaufort Sea, sightings; FIELD & LABORATORY
TECHNIQUES—acoustics.

GROOM, HARRY.

1963. In quest of the great bow-head whale. Anchorage Daily News, September 21, Alaska Living and TV Week: 2–8.

Account of a hunt for bowhead whales at Barrow, Alaska, in spring 1963. Twenty-one crews were on the ice, spread out along 20 miles of lead about 7 miles offshore. Author accompanied Jimmie Arey's crew when they pursued a large cow with a calf. Only one of four bombs fired struck the big female but it misfired and the animal escaped. In 1963 it cost about \$1,000 to support a crew for the season, and the following prices prevailed for equipment: shoulder or darting gun, \$200; bomb, \$10; and harpoon, \$12.

WESTERN ARCTIC
POPULATION—mortality, whaling, struck and lost; REPRODUCTION—calf; WHALING—western Arctic, Chukchi Sea, native, crews, gear, photographs.

GUNN, WADE W.

1973. Bibliography of the Naval Arctic Research Laboratory. Arctic Instit. No. Am. Tech. Pap. No. 24, 176 p.

A bibliography of writings resulting from work conducted at, or assisted by, the Naval Arctic Research Laboratory at Barrow, Alaska. It contains 2,426 entries dating from 1948 to 1972. (From author's abstract.)

WESTERN ARCTIC
BIBLIOGRAPHY.

HADLEY, JACK.

1915. Whaling off the Alaskan coast; from the journal of Jack Hadley of Point Barrow, Alaska. *Bull. Am. Geogr. Soc.* 47(12):905-921.

Account describing whaling for bowheads in the western Arctic by whaling vessels and in the vicinity of Point Barrow and Herschel Island by shore stations manned by Eskimos and white men during the late 19th and 20th Centuries. In 1888, Joe Tuckfield travelled in his boat to Key Point, about 30 miles east of Herschel Island, where he caught one small whale. The following spring he made a quick trip to Point Barrow with the information that he had seen hundreds of whales near Herschel Island during the previous fall. This news encouraged whale vessels to sail to the eastern Beaufort Sea for the first time in 1889. In 1892 and 1893, the greatest season on record, over 300,000 pounds of whalebone were secured and the price dropped from \$5 a pound to \$2 a pound. Fall whaling was first tried at Point Barrow in 1907. About 20 boats, 8 owned by the station and the remainder by the natives, were actively whaling. At least one whale was caught on Oct. 15, 1911 as indicated by the caption for Figure 9. Two whales were captured during spring whaling in 1912, one on May 8 and one on May 20, as indicated in the captions for Figures 3 and 4.

WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION-former; IDENTITY-nomenclature; WHALING-western Arctic, Chukchi Sea, Beaufort Sea, commercial, native, shore stations, catch, crews, photographs.

HALEY, NELSON COLE.

1951. Whale hunt. The Travel Book Club, London, 319 p. (Orig. pub. 1950.)

Narrative of a sperm whaling voyage by the author in the ship *Charles W. Morgan* from 1849 to 1853. Haley's description of polar whales (p. 14-16) was lifted from the body of the original text in order to furnish an introduction to the prey of whalers as they saw the animals. Although bowheads were not hunted during his voyage of 1849-1853, the author did hunt them on later cruises to the arctic and his physical description stems from personal observations.

WESTERN ARCTIC

IDENTITY-common name; MORPHOLOGY-structure; NUTRITION-food, feeding behavior; WHALING-western Arctic, commercial, catch.

HALL, DANIEL WESTON.

1861. Arctic roivings: or, the adventures of a New Bedford boy on sea and land. Pub. by Abel Tompkins, Boston, 171 p. (Reprinted by William R. Scott, Inc., N.Y., 1968, and edited by Jerome Beatty, Jr., 144 p.).

Author signed on as sailor aboard the whaler *Condor* at the age of 15 years for a cruise to the Okhotsk Sea. During a second cruise to the Okhotsk Sea he and another youth deserted ship because of ill treatment by the captain and they spent the winter living in a Siberian village before being rescued the following summer. Brief description of whaling practices and of species hunted, including the bowhead.

WESTERN ARCTIC

BEHAVIOR-when hunted; FIELD & LABORATORY TECHNIQUES-brief descriptions species hunted; DISTRIBUTION-Okhotsk Sea; WHALING-history, western Arctic, commercial, catch.

HALL, E. RAYMOND, and KEITH R. KELSON.

1959. The mammals of North America. The Ronald Press, New York, N.Y., 2 vols., 1083 p. 2nd Ed., authored only by E. R. Hall, was printed in 1981 by John Wiley & Sons, New York, N.Y., 1181 p.

A key to North American mammals, including *Balaena mysticetus*. Presents very brief description of the species, general distribution, mates in late summer; have one young after gestation period of about 9-1/2 months; and food consists of crustaceans, mollusks, and plankton. Total length to 65 feet, length of skull is approximately 40 percent of total length of animal and has about 360 plates of baleen, the central ones being the longest (up to 12 feet long.) (p. 840.) Second edition is even more brief, lacking much of the above information.

CIRCUMPOLAR

DISTRIBUTION-world; IDENTITY-nomenclature; FIELD & LABORATORY TECHNIQUES-museums, skeletal part; MORPHOLOGY-measurements, structure; NUTRITION-food; REPRODUCTION-gestation, mating.

HALL, EDWIN S., JR.

1981. Cultural resource site potential. *In* Cultural resources in the mid-Beaufort Sea region, a report for the North Slope Borough's coastal zone management plan, p. 4-86. Alaska Coastal Manage. Program, Anchorage, Alaska.

Primarily a survey of the known cultural resources of the mid-Beaufort Sea coast through ethnoarchaeological studies wherein archaeological data are illuminated by the recollection of individuals who inhabited and created the historic sites. Faunal remains including whale bones and whaling artifacts were located and identified at several locations on Pingok and Thetis Islands and Niglik, an early day trading center near the mouth of the Colville River. Numerous references to researchers and literature on the area are presented in Table 5 and in the bibliography at the end of the paper.

WESTERN ARCTIC

ARCHAEOLOGY-artifacts; SKELETAL REMAINS; WHALING-history, western Arctic, Beaufort Sea, native, gear, photographs.

HALL, J. D.

1981. Monitoring bowhead whales in the Beaufort Sea. (Abstr.) *In* Acoustical Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 66. Unpub. rep. by Acoust. Soc. Am., [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

A proposal by Global Marine Services, Inc. to develop a bowhead whale monitoring system for the Beaufort Sea OCS lease area using trained beluga whales, *Delphinapterus leucas*, to detect the presence of bowheads through use of the belugas' sonar and hearing. "Upon detection, the belugas, with a telemetry and cine-acoustic package and cues to swim close by, ... would ... photograph and record the bowhead whales." (From author's abstract.)

WESTERN ARCTIC

DISTRIBUTION-Beaufort Sea; FIELD & LABORATORY TECHNIQUES-census, acoustics, activity recording with telemetry and cine-acoustics.

HAMLET, O. C.

1906. Letter from captain O. C. Hamlet to the Secretary of the Treasury, September 11, 1906. Historical files of the Public Affairs Div., U.S. Coast Guard, Washington, D.C. [Cited by D. L. Noble and T. R. Strobridge, 1977, p. 10.].

Reported that a dead whale was sighted near the village of Point Barrow. The *Thetis* "steamed out to get the carcass as food for the natives and returned with it and grounded it off the village."

WESTERN ARCTIC
POPULATION-mortality (whaling?), utilization (by natives).

HAMMOND, KATHERINE A. GREEN.

1980. Fisheries management under the Fishery Conservation and Management Act, the Marine Mammal Protection Act, and the Endangered Species Act. Prepared for the U.S. Marine Mammal Commission, Washington, D.C. 52 p. and appendices A-K (various pagination). (Avail. U.S. Dep. Commer., Springfield, VA. 22161, Natl. Tech. Inf. Serv. Publ. PB 80-180-599.)

The report recommends steps to take to ensure that fishery management plans developed in the future are ecologically sound and fully consistent with the Acts the author examined [see title].

On page H-7, a list titled "Descriptive information for Marine Mammals in the U.S. Fishery Conservation Zone" presents the following information on *Balaena mysticetus*:

Distribution: Arctic, Chukchi, Bering, Beaufort Seas.
Councils: NP (North Pacific).
Food items: Copepods, amphipods.
Relative abundance: Endangered.
References: 3, 4, 13, 18 [listed on p. H-17, H-18].

WESTERN ARCTIC
DISTRIBUTION-Chukchi, Bering, Beaufort Seas; NUTRITION-food; POPULATION-abundance.

HAMPTON, N. E.

1967. Covering an oomiak for whaling. *Alaska Sportsman* 33(1):47-48.

Author describes preparation of ooguruk (bearded seal) skins and how they are sewn together and attached to the wooden frame of the Eskimo oomiak (boat) prior to the bowhead whaling season at Barrow, Alaska. The hides of five or six large ooguruk, or from seven to nine if they are smaller, are selected. The oomiaks around Barrow are usually about 20 feet long, although some are 30 feet long, and six feet wide across the center. "This year [1966] three beautifully covered oomiaks were brought back to the village of Barrow bearing the colorful whale flags of their proud owners, Harold Itta, Donald Nusinginya and Bert Okakok. Only when a whaling crew has successfully captured a whale may these flags be flown by the captain of the whaling crew."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch.

HANNA, G. DALLAS.

1920. Mammals of the St. Matthew Islands, Bering Sea. *J. Mammal.* 1 (3):118-122 .

Results of a 6-day survey in July 1916 for the Biological Survey of the Department of Agriculture with notes on 11 species, including the bowhead whale, *Balaena mysticetus*. "The bones of this species are exceedingly abundant on all beaches. A pair of mandibles 19 feet long were found in the center of the long north shore beach and vertebrae by the hundreds were observed; some were far back from the high tide mark, half buried in the tundra, and others showed fresh and white among the drift logs. Two skeletons lay bleaching on the south shore abreast of Pinnacle Island."

WESTERN ARCTIC
DISTRIBUTION-former, present; SKELETAL REMAINS-beachcast.

HANSEN, DONALD J.

1982. An oil sensitivity and vulnerability index on marine mammals occurring in Alaska. (Abstract). *Proc. Alaska Sci. Conf.* 33:41.

"Potential effects of oil spills on marine mammals were compared using 14 sensitivity factors and 7 vulnerability factors related to species morphology, physiology, behavior, trophic relations, population size, distribution, and reproductive rate. The sensitivity-vulnerability indices [sic] represent an effort to compare between marine mammal species the risks of individual and substantial population interaction (vulnerability) with oil spills and compare the significance of the interaction (sensitivity) in causing harm to individual animals and its significance to the population. The analysis indicates sea otter are at greatest risk of significant adverse impacts from oil spills occurring in Alaska waters. Fur seal were ranked most vulnerable to oil spill contact while bowhead whales were rated the most sensitive populations." (From author's abstract)

CIRCUMPOLAR
PATHOLOGY-pollution, petroleum.

HANSON, W. C., H. E. PALMER, and B. I. GRIFFIN.

1966. Radioactivity in northern Alaskan Eskimos and their foods, summer 1962. *In* Norman J. Wilimovsky and John N. Wolfe (eds.), *Environment of the Cape Thompson region, Alaska*, Chapt. 41, p. 1151-1164. U.S. Atomic Energy Comm., Washington, D.C.

As part of a study of radionuclide concentrations in arctic ecosystems in 1962, the authors discuss the food habits of Alaskan Eskimos. Table 2 shows whales [species undesignated but bowhead and belukha usually eaten] comprised 2 percent of the total diet of adult Eskimos at Kotzebue, less than 0.1 at coastal villages, 1.3 at Pt. Barrow, 1.5 at Little Diomedede, 3.4 at Pt. Hope, with a mean of 1.6 percent. Data from Table 3 shows average weekly food consumption, including whales, of adult Eskimos of various ethnic groups by season in grams and calories. Seal or whale oil was consumed by about 90% of the adult natives as a supplement to dried meat. Cesium-137 was not detected in several samples of whale flesh.

WESTERN ARCTIC
ANTHROPOLOGY; PATHOLOGY-pollution; WHALING-western Arctic, natives, utilization.

HARGRAVES, DARROLL.

1972. Eskimo food hunt. *Alaska* 38(10):36-37, 54-55.

The author, a school teacher in the village of Kivalina, accompanied local Eskimos on a one-day hunting and fishing trip. He described Oscar Swan's fishing trap as being "... covered with wire screen, while the funnel, or entrance, was made of baleen, the material found in the "sieve" of bowhead whales." (Photograph number 4, p. 37.)

WESTERN ARCTIC
WHALING-Chukchi Sea, native, utilization (baleen).

HARINGTON, C. R.

1966. Extralimital occurrences of walrus in the Canadian Arctic. *J. Mammal.* 47(3):506-513.

A gap exists between the grouped records of occurrences for walrus in the eastern and western Arctic. The core for this gap is the solid ice which remains throughout the year in Queen Maud Gulf, Victoria Strait, M'Clintock Channel, Viscount Melville Sound and M'Clure Strait. "White whales (*Delphinapterus leucas*), narwhals (*Monodon monoceros*) and bowhead whales (*Balaena mysticetus*) are also separated by this area." (p. 512)

EASTERN ARCTIC, WESTERN ARCTIC
DISTRIBUTION-factors limiting.

HARRISON, RICHARD J.

1969. Reproduction and reproductive organs. *In* Harald T. Andersen (ed.), *The biology of marine mammals*, Chapt. 8, p. 253-348. Academic Press, New York and London.

Literature review summarizes information about reproduction of marine mammals, including Greenland right whale. Mating occurs in early spring and the young are born in December after a 10-month gestation. The young are about 4 m long at birth and lactation lasts about a year.

CIRCUMPOLAR
REPRODUCTION-anatomy, embryology, mating and fertilization, gestation, lactation, parturition.

HARRISON, R. J. (ed.).

1977. *Functional anatomy of marine mammals*. Vol. 3. Academic Press, London, New York, San Francisco. 428 p.

Consists of papers by several authors on the anatomy of marine mammals, three of which include information on the bowhead. See W. M. A. DeSmet (p. 59-80), A.D.G. Dral (p. 81-134), and F. C. Fraser (p. 1-44).

CIRCUMPOLAR
MORPHOLOGY-anatomy.

HARRISON, RICHARD J., and JUDITH E. KING.

1965. Marine mammals. Hutchinson Univ. Library, London, Gt. Britain, 192 p.

Describes the appearances of marine mammals, their classification, distribution, and some aspects of their anatomical and physiological adaptations to life in the sea. *Balaena mysticetus*, once abundant, is thought to be increasing again in Hudson Bay and the Bering Sea. Included in its description is information that adults are large, often over 50 feet in length; the blubber is the thickest of almost all whales; more than 300 plates of baleen present on each side of the mouth, the longest (central) reaching 15 feet in the largest individuals, and over a ton of baleen can be obtained from a large animal (p. 22, 53-54.).

CIRCUMPOLAR

DISTRIBUTION-history; GROWTH-physical maturity; IDENTITY-taxonomy; MORPHOLOGY-measurements, structure; PHYSIOLOGY- integument, respiratory, cardiovascular, alimentary, excretory, hearing and sound production, nerve; POPULATION-abundance.

HARRY, GEORGE Y., JR.

1973a. Aboriginal whaling in the United States. National Marine Mammal Laboratory, Northwest and Alaska Fisheries Center, National Marine Fisheries service, NOAA, 7600 Sand Point Way N.E., Seattle, WA 98115. (Submitted to the Scientific Committee, International Whaling Commission, Cambridge, England, in June 1973 as document SC/25/23.) (Unpublished)

A brief historical review of bowhead whaling by commercial interests and coastal Eskimos in arctic and sub-arctic waters. Data are lacking on populations, but recent observations suggest that the Canadian bowhead stock is slowly recovering and the Bering Sea population is estimated to number between 1,000 and 3,000 animals. Alaskan Eskimos whaling for bowheads is discussed, including equipment used, seasons hunted, numbers of whales caught annually at Barrow, Point Hope and Wainwright since 1850, utilization of whale products, importance of bowheads to the Eskimos, and problems associated with the killing of this endangered species by natives. Also discusses the hunting of beluga and gray whales by Eskimos including annual catch data for the two species and their importance to the hunters for subsistence. Briefly acknowledges killing of bowheads and gray whales by the USSR, but little data is presented.

CIRCUMPOLAR

BEHAVIOR-migration; DISTRIBUTION-former and present; IDENTITY-description; MORPHOLOGY-measurements; POPULATION-abundance; WHALING-history, circumpolar, commercial, native, catch (bowhead, beluga, gray), utilization.

HARRY, GEORGE Y., JR.

1973b. Field notes on a trip to Alaska in April 1973. Unpubl. Rep., U.S. Dep. Commer., Natl. Oceanic Atmos. Admin., Natl. Mar. Fish. Serv., Northwest Alaska Fish. Cent., Natl. Mar. Mam. Lab., Seattle, WA, 91 p.

Author, Director of the Marine Mammal Laboratory (now the National Marine Mammal Laboratory), made a field trip to Alaska during April 16-27, 1973, with the primary purpose of collecting information on the subsistence hunt for bowhead whales by the Eskimos. The trip included visits to the whaling villages of Barrow and Point Hope where the author, accompanied by Dr. Floyd E. Durham, conducted interviews with several people that were recorded in notes and on tape. People in Kotzebue were also interviewed who provided information on whaling at Kivalina and Point Lay. The report contains much valuable information on bowhead whaling, both past and present, by Alaskan Eskimos.

WESTERN ARCTIC

POPULATION-mortality, whaling, struck and lost; WHALING-Bering, Chukchi and Beaufort Seas, history, commercial, native, catch, crews, gear, utilization.

HARRY, GEORGE Y., JR.

1982. Marine mammal research. *In* Rae R. Mitsuoka, Roger E. Pearson, Laura J. Rutledge, and Samuel Waterman (editors), *Fifty years of commitment: 1931-81, the Northwest and Alaska Fisheries Center*, p. 63-80. U.S. Dep. Commer., Natl. Oceanic Atmos. Admin., Nat'l. Mar. Fish. Serv., NOAA Tech. Memo. NMFS F/NWC-34.

An historical account up to the present of the U.S. government administration and management of the northern fur seal and other marine mammals and personnel involved in all activities, including events leading to establishment of the present day National Marine Mammal Laboratory. Research on bowhead whales began in 1973 and continues today (p. 74-75) .

WESTERN ARCTIC
REGULATION & CONSERVATION-management, research.

HARVEY, NANCY.

1978. John Denver film on Alaska seems sound, some drawbacks. *Tundra Times*, March 15, 15(11):10.

John Denver's "Alaska: The American Child," includes footage on the Eskimo hunt for bowhead whales including the endless waiting, the pursuit, the landing and butchering, and then the festival that follows. The whaling scenes at Point Hope were filmed two and one-half years ago.

WESTERN ARCTIC
WHALING-Bering and Chukchi Seas, native, catch, crews, film, gear, utilization.

HEALY, M. A.

1887. Report of the cruise of the revenue marine steamer *Corwin* in the Arctic Ocean in the year 1885. U.S. Gov. Print. Off., Washington, D.C., 102 p.

Account of annual cruise of the U.S. Revenue Cutter Service vessel to patrol the Bering and Chukchi Seas. "A large number of whales had been taken by the natives on the Siberian coast during the season, while on the Alaskan coast scarcely a whale had been seen." (p. 15.). "The whaling fleet during the past year consisted of forty-two vessels, thirty-three of which visited Bering Sea and Arctic Ocean. The catch of the season by vessels of the New Bedford fleet is one hundred and twenty-two bowhead and twenty-three right whales, and that of the San Francisco fleet is one hundred bowhead and twelve right whales. This makes a total catch (not including the *Amethyst*) [which had not yet arrived back in San Francisco] of two hundred and fifty-seven whales, which compares very favorably with the work of previous seasons, and is more evenly distributed than has heretofore been the case." (p. 19).

WESTERN ARCTIC
WHALING-western Arctic, commercial, native, gear, catch.

HEALY, M. A.

1889. Report of the cruise of the Revenue Marine Steamer *Corwin* in the Arctic Ocean in the year 1884. U.S. Gov. Print. Off., Washington, D.C., 128 p.

Describes (p. 24) the migration pattern of bowhead whales, keeping close to ice pack as they move up the Asian side in the Bering Sea and Strait, across to the American shore in the Arctic and then northward and eastward. Notes a whaling station had been established eight miles from Pt. Barrow, and mentions the need for a whaling relief station because numbers of whalers have been lost in the vicinity (33 vessels in 1871, 13 in 1876, one in 1882, one in 1883). Includes names of various whaling vessels seen (photos of some), photos of whaling station at Pt. Barrow and of a native house of whalebone.

WESTERN ARCTIC
BEHAVIOR-migration; DISTRIBUTION; WHALING-history, western Arctic, shore stations, photographs (stations, vessels).

HEIZER, ROBERT F.

1943. Aconite poison whaling in Asia and America an Aleutian transfer to the New World. *Smithson. Inst., Bur. Am. Ethnol. Bull.* 133, *Anthropol. Pap.* 24:415-468.

Discusses the use of aconite poison whaling by natives of the northern Bering Sea region that "...may add another item to the steadily mounting number of cultural elements and complexes which can be demonstrated to have entered the New World from Asia via the Aleutian Island chain." (p. 453). Contains information on whaling practices of the Bering Sea natives, residents of Japan and the Greenland Eskimo. Of particular interest is a discussion of Thiercelin (1866) and the experiments conducted by him using strychnine and curare as a means of hunting the large cetaceans.

WESTERN ARCTIC, EASTERN ARCTIC
BEHAVIOR-reaction to poison; IDENTITY-nomenclature; WHALING-western Arctic, eastern Arctic, Bering Sea, north Atlantic Ocean, commercial, native, gear, catch, drawings.

HEIZER, ROBERT F.

1944. Artifact transport by migratory animals and other means. *Am. Antiq.* 9(4):395-400.

A brief summary of the literature recounts transport of artifacts by whales [although species not specified, includes bowheads], seals, fish, and migrating land mammals. Figure 32 contains drawings of two Eskimo harpoon points recovered from the bodies of dead [bowhead] whales taken in the sea of Spitsbergen and in Davis' Strait [reported by Wm. Scoresby, 1820, v. 1:8; and O. T. Mason, 1902:264.] Author proposes that this specialized method of transmission of portable material culture forms, a process of "diffusion" which has been, until recently, little emphasized, might be called "thero-transportation," or "migratory animal artifact portation."

CIRCUMPOLAR
ARCHAEOLOGY-harpoons; FIELD & LABORATORY TECHNIQUES-museums; POPULATION-mortality, struck and lost; WHALING-circumpolar, commercial, native, gear.

HEIZER, ROBERT F.

1967. Early day whale hunting with poison. *Alaska Sportsman* 33(7):19-20.

Cites Thiercelin (1866) that on August 1, 1864, in the Okhotsk Sea, a polar whale (*Balaena mysticetus*) was struck by a bomb lance containing a poison and died within a few minutes of being wounded. "On July 2, 1865, at East Cape, Bering Sea, a polar whale already held with two ordinary line harpoons died ten minutes after being shot with a poison bomb lance. Three days later, in the same location, a polar whale received two poison bomb lances and died 18 minutes later in convulsions." Although tests indicated that poison bombs effectively killed various species of whales, the technique was never widely accepted by the whalers.

WESTERN ARCTIC

DISTRIBUTION-former; PATHOLOGY-poison; POPULATION-mortality (whaling); WHALING-western Arctic, Okhotsk and Bering Seas, commercial, catch, gear.

HEIZER, ROBERT F.

1968a. A bibliography of aboriginal whaling. *J. Soc. Bibliogr. Nat. Hist.* 4(Pt. 7):344-362.

Contains 233 references dealing with the techniques of hunting whales, rituals or myths about whales, and whale-hunting equipment used by primitive peoples. The term "primitive" as used here means "...preliterate, non-Europeanised peoples who hunted whales by methods developed or learned prior to the diffusion of commercial ship whaling which seems to have been devised by the Basques about A.D. 1100 through the stimulus of contacts with the Normans of the French Atlantic coast. The Eskimos of the Bering strait region have hunted whales for at least two thousand years. This is the oldest archaeologically documented whale-hunting, but whether these people were the originators of whale-hunting we do not know." Contains numerous references concerning bowhead whaling.

CIRCUMPOLAR

BIBLIOGRAPHY-whaling by primitive peoples.

HEIZER, ROBERT F.

1968b. Migratory animals as dispersal agents of cultural materials. *Science* 161:914-915.

Migratory animals that have been hunted by aboriginal people may survive attacks and the projectile weapons which remain embedded in their bodies may later be recovered by other hunters. The author cautions that "... such exotic artifacts can be mistakenly attributed to cultural contact between distant human groups unless archaeologists are aware of this special kind of diffusion process." (From author's abstract.)

CIRCUMPOLAR

ARCHAEOLOGY-artifacts; WHALING-western Arctic, commercial, native, gear.

HELLER, CHRISTINE A.

1966. Meat consumption at three northern Eskimo villages. *In* Norman J. Wilimovsky and John N. Wolfe (eds.), *Environment of the Cape Thompson region, Alaska*, Chapt. 37, p. 1109-1111. U.S. Atomic Energy Comm., Washington, D.C.

At Pt. Hope, Alaska, the major portion of meat protein eaten by Eskimos was from sea mammals, particularly seal, ugruk (bearded seal), and bowhead whale. On a year-round basis at the village level of living, average daily meat consumption per person at Pt. Hope was about 438 g, at Noatak approximately 429 g, and at Shungnak about 573 g. Fresh baleen whale meat has 25.8 g of protein for 100 g of meat, edible portion.

WESTERN ARCTIC

ANTHROPOLOGY; WHALING-western Arctic, natives, utilization.

HELMERICKS, CONSTANCE, and HARMON HELMERICKS.

1948. *Our summer with the Eskimos*. Little, Brown and Co., Boston, Mass., 239 p.

The authors traveled down the Colville River and along the Arctic coast in 1945. They observed (p. 206) that no whales were killed at Pt. Barrow in summer 1945 and that 4-6 are needed annually to support the more than 600 natives and their dogs. They also noted (p.208) that the extreme shallowness of water many miles off Beechey Point makes whaling impracticable there.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi and Beaufort Seas, native, catch, utilization.

HENDERSON, DAVID A.

1972. *Men & Whales at Scammon's Lagoon*. Dawson's Book Shop, Los Angeles, Calif., 313 p.

Detailed historical account of gray whaling which began as secondary to the capture of bowhead, right, and sperm whales in the Pacific Ocean. Contains comments on bowhead whaling, whaling grounds, and whaling vessel cruises, including numerous references and data sources.

WESTERN ARCTIC
DISTRIBUTION-former; WHALING-history, western Arctic, commercial, catch.

HERBERT, WALLY.

1976. *Eskimos*. Collins, Publ., Franklin Watts, Inc., Glasgow, London, Toronto, New York, 128 p.

General description of Eskimos and their culture, including the hunting of bowhead whales and other marine mammals. Contains photographs of a whaling umiak, Eskimos pulling a bowhead up on the ice for butchering, and the celebration marking the end of the whaling season.

WESTERN ARCTIC, EASTERN ARCTIC
WHALING-western Arctic, eastern Arctic, native, photographs.

HERMAN, PAMELA.

1978a. "There is little doubt that the subsistence life style of these Arctic communities is being severely threatened at this time. *Tundra Times*, Fairbanks, AK, May 31, 15(22):3.

A brief summary of a report on the effects of this year's quota on whale hunting upon communities on St. Lawrence Island and the arctic coast produced by [W.] Jack Peterson, sociologist at the University of Alaska-Anchorage for the Bureau of Indian Affairs. "Peterson and his assistants conducted extensive interviews of families in the whaling villages to determine how much whale meat the villagers usually eat and what alternative sources of animal protein exist to make up the deficit which will result from the 12 whale quota. This whaling season, only 9 whales were actually taken."

WESTERN ARCTIC
REGULATION & CONSERVATION-management; WHALING-western Arctic, native, catch, utilization.

HERMAN, PAMELA.

1978b. Whalers go to London. Tundra Times, Fairbanks, AK, June 14, 15(24):1.

Eight whalers and at least three attorneys for the whalers will attend a crucial meeting of the International Whaling Commission in London, England, during the last week of June. The Eskimos want to bring three points before the IWC: 1) Based on data collected during a whale count, they believe the IWC should simply do away with the quota; 2) the Alaska Eskimo Whaling Commission continues to object to the jurisdiction of the IWC over subsistence whaling and feels that it should be separated from regulation of commercial whaling; and 3) if it cannot be lifted before the fall hunt the AEWC believes the quota should be amended from 18 struck and 12 landed, to a minimum of 22 to 26 whales. This is based upon a count of 1,726 animals before June 1 and an estimate that the population numbers 2,264 whales.

WESTERN ARCTIC

POPULATION-abundance, recruitment; REGULATION & CONSERVATION-management, regulation; WHALING-western Arctic, native.

HERMAN, PAMELA.

1978c. Slope villages grow unhappy with Beaufort. Tundra Times, Fairbanks, AK, June 14, 15(24):6, 12.

Residents of North Slope villages oppose further oil development until protection is provided the endangered bowhead whale. Environmental organizations in Alaska have also objected to the proposed oil and gas lease sale in the Beaufort Sea, and have requested that the entire Beaufort Sea area be designated a National Marine Sanctuary. "Whales avoid noise. The bowhead whale migration route passes through the proposed Beaufort lease area. The area is one of their essential feeding grounds. Hunting is restricted in order to preserve this arguably endangered species."

WESTERN ARCTIC

BEHAVIOR-reaction to noise, migration; DISTRIBUTION-factors affecting, oil exploration; NUTRITION-feeding ground; WHALING-western Arctic, Beaufort Sea, native.

HERMAN, PAMELA.

1978d. Slope natives oppose arctic oil lease sale. Tundra Times, Fairbanks, AK, July 26, 15(30):1, 6, 12.

Eskimos and environmentalists presented a united front in Fairbanks, Alaska, against oil exploration at Point Thompson on Alaska's north coast at the first of four hearings on the State's proposed oil-lease sale. Among other concerns, some residents stated that "Marine mammals, particularly bowhead whales, use the offshore channels in the area and are so sensitive to noise and water pollution that hunters fear they would desert the area under development even without a catastrophic oil spill." Additionally, "At the Conference of Elders held in Barrow in May, older hunters told of changes in the migration routes and calving areas of bowhead whales following the onset of drilling activities in the Mackenzie River Delta north of Canada." Subsequent hearings will be held at Barrow, Nuiqsut, and Kaktovik.

WESTERN ARCTIC

BEHAVIOR-reaction to noise, migration; DISTRIBUTION-Beaufort Sea, factors affecting, calving areas changed, oil exploration; PATHOLOGY-pollution.

HESS, BILL.

1982. Whale counters watch rare bowhead calving. *Tundra Times*, June 9, 19(23):1, 6.

Observers counting migratory bowhead whales off Barrow, Alaska, apparently witnessed a rare bowhead calving. "Shortly afterward, the new whale assumes a slightly diagonal position across the larger whale's tail, which then swims off with the calf in tow." The International Whaling Commission for 1982 "...allowed Alaskan subsistence whale hunters 19 strikes this year, and of which a devastatingly low six have yielded whales." The National Marine Fisheries Service has estimated the bowhead population to be a minimum of 2,300 whales. As of May 29, whale counters had apparently counted 2,328 animals and, when the final figures have been tabulated, it is possible the total population will exceed the earlier estimate.

WESTERN ARCTIC
BEHAVIOR-maternal; FIELD & LABORATORY TECHNIQUES-census, counting stations; REGULATION & CONSERVATION-management, quota; POPULATION-abundance; REPRODUCTION-parturition; WHALING-Bering Sea, Chukchi Sea, native, catch.

HJORT, JOHAN, and JOHAN T. RUUD.

1929. Whaling and fishing in the North Atlantic. *Rapp. P.-V. Reun. Cons. Int. Explor. Mer* 56:1-123.

A discussion of problems of the fishing and whaling industries in the North Atlantic which are mainly connected with the distribution and habits of the species of fish and whales of economic importance that are found along the slope of the continental shelf. Chapter 1 is on the area west of Greenland, chapter 2 is on the area east of Greenland, and chapter 3 is a discussion of general conclusions which follow from a comparison of the two areas. Water currents and temperature, ice, plankton, fish and whales are briefly discussed in relation to one another. Bowhead whale distribution, catches, food and habitat are briefly discussed (p. 13-14, 75-76, 79, 82, 102). The authors cite Scoresby (1820) for much of the data on bowhead distribution, food and feeding.

EASTERN ARCTIC
BEHAVIOR-migration, relation to other species; DISTRIBUTION-former, factors; NUTRITION-food and feeding; WHALING-eastern Arctic, commercial, catch.

HOEK, W.

1978. Results of reconnaissance surveys, 1972-1976. *In* M. A. Fraker, D. E. Sergeant and W. Hoek. Bowhead and white whales in the southern Beaufort Sea, p. 97-101. *Beaufort Sea Proj., Dep. Fish. Environ., Sidney, B.C., Tech. Rep. 4.*

Dates and locations of bowhead and white whale observations, including strandings, are listed. Observations include various remarks such as numbers of whales seen, orientation, tags seen, calves, and lengths of individual animals.

WESTERN ARCTIC
BEHAVIOR-movements; DISTRIBUTION-sightings; MORPHOLOGY-measurements; POPULATION-mortality; REPRODUCTION-calves; SKELETAL REMAINS-beachcast.

HOHMAN, ELMO PAUL.

1928. *The American whaleman. A study of life and labor in the whaling industry.* Longmans, Green and Co., New York, 355 p.

General review of the whaling industry with emphasis on the economics of the business. Information on bowhead whales, whaling and its products is briefly mentioned sporadically in the text but greater emphasis is placed on right whaling.

EASTERN ARCTIC, WESTERN ARCTIC
BEHAVIOR-when hunted; DISTRIBUTION-history; IDENTITY-description; NUTRITION-food and feeding; WHALING-history, western Arctic, eastern Arctic, commercial, gear, catch, utilization, drawings.

HOHN, E. O.

1955. Birds and mammals observed on a cruise in Amundsen Gulf, N.W.T., July 29th-August 16th, 1953. *Can. Field-Nat.* 69(2):41-44.

Narrative of a journey made in 1953 on motor schooners *North Star* and *Reindeer* from Sach's Harbor on Banks Island to Tuktoyaktuk on the mainland. Extensive ice floes south and southeast of Banks Island forced them to make a roundabout journey lasting nearly three weeks as far east as Holman Island, and included stops at various points on Victoria Island and mainland shores of Amundsen Gulf. While traveling from Sach's Harbor to a position west of Cape Lampton, Banks Island, on 29 July, they passed two bowhead whales (*Balaena mysticetus*) traveling along the floe edge.

WESTERN ARCTIC
BEHAVIOR-swimming; DISTRIBUTION-sightings; eastern Beaufort Sea.

HOHN, E. OTTO.

1970. Field notes on mammals of the Chesterfield Inlet district of Keewatin. *Arctic* 23(1):49-51.

Notes on mammals observed during a visit to Chesterfield, Promise Island, Baker Lake, and Rankin Inlet in 1967. Bony remains of the bowhead whale, *Balaena mysticetus*, quite old, were seen at Cape Silumiut. The Eskimo name for this whale is arvik.

EASTERN ARCTIC
DISTRIBUTION-former; IDENTITY-nomenclature (Eskimo); SKELETAL REMAINS-beachcast.

HOLLENBECK, CLIFF.

1977. Agvik! Agvik! Hunting bowhead whales at Barrow in the centuries-old Eskimo fashion. *Alaskafest*, April, p. 20-25.

Author spent three weeks with a whaling crew on the ice at Barrow, Alaska, and briefly describes the capture, cutting-up and distribution of whale parts.

WESTERN ARCTIC
IDENTITY-nomenclature, Eskimo; WHALING-western Arctic, native, catch, crew, gear, utilization, photographs.

HOLLOWAY, C. W.

1970. Threatened vertebrates in northern circumpolar regions. *In* W. A. Fuller and P. G. Kevan (eds.), *Productivity and conservation in northern circumpolar lands*, p. 175-192. *Int. Union. Conserv. Nat. and Nat. Resour.*, Morges, Switz., Proc. of Conf., Edmonton, Alberta, Oct. 15-17, 1969, IUCN Publ. New Ser. No. 16.

This list of vertebrates whose survival is in danger includes the Greenland right whale, *B. mysticetus*, as seriously depleted, having been brought to the verge of extinction by whaling up to the end of the 19th Century. The species probably is increasing in the Bering-Chukchi- Beaufort Sea area and in eastern Canadian arctic. The former stock was estimated to be 1,000 whales. Subsistence whaling by aborigines is permitted, but the whale has been protected by whaling nations since 1946.

EASTERN ARCTIC, WESTERN ARCTIC
DISTRIBUTION; POPULATION-abundance; REGULATION & CONSERVATION-regulation.

HOLLOWAY, J. MICHAEL, M.D.

1978. Letter to Jerry Gilliland, Special Assistant to the Secretary, Department of Interior, Anchorage, Alaska. *Tundra Times*, March 29, 15(13):2,8.

The writer, a physician with the Public Health Service for five years in Alaska, expresses concern over a nutritional study in whaling villages to be done jointly by Interior, Public Health Service and the National Marine Fisheries Service. His criticism centers on a draft questionnaire (dated March 4, 1978) as developed by Jack Peterson of the University of Alaska that he considers to be quite meaningless in terms of medically valid nutritional data. The study is critical to the nutritional welfare of the natives since he believes "...that probably 75 percent of protein intake and significant amounts of iron, vitamins, and other nutrients still come from locally acquired foods", and because of the current crises involving caribou and bowhead whales.

WESTERN ARCTIC
ANTHROPOLOGY-Eskimos, nutrition; REGULATION & CONSERVATION-regulation; WHALING-western Arctic, native, utilization.

HOLMES, LEWIS.

1857. *The Arctic whaleman; or, winter in the Arctic Ocean: being a narrative of the wreck of the whale ship Citizen, of New Bedford, in the Arctic Ocean, Lat. 68½10'N, Long. 180½W., Sept. 25, 1852, commanded by Thomas Howes Norton, of Edgartown, and the subsequent sufferings of her officers and crew during nine months among the natives. Together with a brief history of whaling.* Wentworth and Company, Boston, 296 p.

Account of a whaling cruise to the Bering and Chukchi Seas; information on whales (species not stated) caught, including one dead whale found at sea 10 miles off Plover Bay and whales struck but lost; the loss of the ship on the Siberian coast near a native village about 250 miles west of East Cape; and the customs and activities of the natives as observed by the survivor's stay during a 9-month period there. Whaling by the natives is described (p. 117-118). In early spring of 1853 they traveled down the coast to East Cape (Uelen) to increase their prospects for a rescue. While at Uelen the natives found and salvaged a dead whale (species not stated) for food (p. 182). The second part of the book gives a general history and details on whaling and whale species, including only a brief account on the bowhead (p. 256).

WESTERN ARCTIC
POPULATION-mortality (catch, struck and lost), stranding; WHALING-western Arctic, Bering Sea, Chukchi Sea, commercial, native, gear, catch, utilization.

HOLMES, BOB.

1964. Englishman is amazed at Barrow's remoteness. *Tundra Times*, February 3, 2(9):8.

The objective of author's trip was to make a study of the Eskimo culture. He accompanied Al Hopson and crew on a walrus hunt [date not given -1963?] during which a large black whale surfaced and was fired upon by everybody. The whale either sank or swam away, possibly to die, because it was not seen again by the hunters. Since the crew was hunting walrus, it is doubtful that whaling guns were carried and the whale most likely was shot with rifles.

WESTERN ARCTIC
POPULATION-mortality, whaling, struck and lost; WHALING-Chukchi Sea, native, crews, gear.

HOOPER, C. L.

1881. Report of the cruise of the U.S. Revenue-Steamer *Corwin* in the Arctic Ocean, by Captain C. L. Hooper, U.S.R.M. November 1, 1880. U.S. Gov. Print. Off., Washington, D.C., 71 p. (Treasury Doc. No. 118.) (Also avail. in facsimile reprod., 1964, The Shorey Book Store, Seattle, WA 98104.)

Report on the cruise of the *Corwin* to the Arctic in 1880. Hooper noted that five whales had been taken by the Point Hope hunters since the whaling vessels were there last year, and that most of the bone had been sold to whalers early this June (p. 27). "During the afternoon of the 26th, we spoke several whalers, and had the satisfaction of seeing two of them, the steam-whaler "Mary and Helen," and the bark "Hunter," each take a whale; the latter an unusually large one, which, it was said, would yield one hundred and fifty barrels of oil. The present season has been one of the most remarkable on record, not only as regards the number of whales taken, but also as regards their size. They are said to average twenty per cent larger than usual. It is possible that there may be some connection between this and the fact that the whaling business on the Greenland coast was almost a failure last year, owing to the scarcity of whales. It is stated that only thirteen whales were taken by the entire Greenland fleet last year. I think the subject one worthy of investigation." (p. 41). A brief account of bowhead whaling, division of the whale products and their utilization is also presented. In a personal communication from Hooper to William Windom, June 14, 1881 (U.S. Revenue Cutter Service, Alaska File, R.G. 26, National Archives, Washington, D.C.) he noted that the natives on St. Lawrence Island had taken a whale during the spring season. (p. 98).

WESTERN ARCTIC, EASTERN ARCTIC

MORPHOLOGY-size; WHALING-western Arctic, eastern Arctic, commercial, native, catch, gear, utilization.

HOOPER, C. L.

1884. Report of the cruise of the U.S. revenue steamer *Thomas Corwin*, in the Arctic Ocean, 1881. Gov. Print. Off., Washington, D.C., 146 p. (U.S. Senate Exec. Doc. no. 204, 48th Congress, first session.)

Narrative of 1881 cruise to search for the *Jeanette* and two other whaling vessels which were lost in the Arctic ice in 1879. Contains observations on natives, coastal features, sea conditions, vegetation and wildlife. While attempting to approach Wrangel Island on August 2, they saw two bowheads in the vicinity of 70°15' N lat., 178°21' W long. (p. 54). A skeleton of a bowhead was found on a sandbar at the mouth of a river on the island (p. 67). Plate No. 3 (facing p. 106) shows a "Flint Spearhead, found in the blubber of a whale, taken near Herald Island by the bark HELEN MAR, in 1880."

WESTERN ARCTIC

DISTRIBUTION-sightings, skeleton; FIELD & LABORATORY TECHNIQUES-museum, artifact; SKELETAL REMAINS-beachcast; WHALING-western Arctic, commercial, native, utilization.

HOWE, JAMES, and MARTIN DISKIN.

1980. NOVA's "Umealit: The whale hunters" wins high praise. *Arct. Coastal Zone Manage. Newsl.* 27:8-10.

Discusses the making and public reaction to the NOVA film depicting an authentic Alaskan viewpoint on the current bowhead whaling controversy. States (p. 8) that three bowhead whales were taken in April 1979 at Point Hope.

WESTERN ARCTIC

WHALING-Chukchi Sea, native, catch, crews, film.

HOWELL, A. BRAZIER.

1930. Aquatic mammals: their adaptations to life in the water. Charles C. Thomas, Springfield, Ill., 338 p. (Reprinted in 1970 by Dover Publ., Inc., New York).

Discusses the comparative anatomy of aquatic mammals and their adaptations to the aquatic environment, based on analysis of studies by many investigators. Most descriptions apply to *Mysticeti* and *Balaena*, but states (p. 87)... "the plates [baleen] are of fine texture and may reach a length of more than 12 feet (bowhead), the ends folding upon themselves at the bottom of the oral cavity, but because of their excessive elasticity, they at once spring straight when the mouth is opened and pressure upon the blade tips is released." On p. 258 he quotes Kukenthal (1893) as making "...the remarkable statement that in *Balaena mysticetus* the metacarpus of digit I is not really a part of the pollex but represents a prepollex, in spite of the fact that in *Eubalaena* the same detail is provided with two phalanges."

CIRCUMPOLAR
MORPHOLOGY-structure.

HOYT, ERICH.

1981. The whale called killer. Elsevier-Dutton Publ. Co., Inc., New York, N.Y., 226 p.

Contains considerable information on the killer whale, *Orcinus orca*, including behavior, feeding habits, sleeping, mating, hearing and communication, and its interactions with man. Citing Tomilin (1957) and Bullen (1948) the author includes *Balaena mysticetus* among the prey of killer whales (p. 164).

WESTERN ARCTIC
PREDATORS & COMPETITORS-killer whale.

HUGHES, CHARLES C.

1965. "The Eskimos" from *The Peoples of Siberia*. Univ. Alaska, Fairbanks, Anthropol. Pap. 12(1):1-13. (Transl. of G. A. Menovshchikov, Eskimosy, In M. G. Levin and L. P. Potov (editors), *Narody Sibiri [The Peoples of Siberia]*, p. 934-949, Akad. Nauk. SSSR, Instit. Ethnogr., Moscow, 1956. In Russian.).

Describes the Siberian Eskimos of the Chukotski Peninsula from Bering Strait on the north to Zaliv Kresta [Cross Bay] on the west, as well as on Wrangell Island, with a listing of the most prominent settlements. Whaling was a significant part of these marine mammal hunters' lives. It remained an important aspect of their culture even after the decline of the whale population due to intensive hunting by the Americans when the Eskimos were forced to concentrate on walrus and seals for food. Also describes formation of hunting crews, rules for division of game, importance of modern weapons and trade. Discusses establishment of Soviet administration in the area in 1923, reconstruction of the economy, and the formation of organized hunting and trading.

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, Chukchi Sea, native, gear, crews, utilization.

HUGHES, CHARLES CAMPBELL and JANE MURPHY HUGHES.

1960. An Eskimo village in the modern world. Cornell Univ. Press, Univ. Cornell, Ithaca, N.Y., 419 p.

Ethnological study of Eskimos residing in village of Gambell on St. Lawrence Island during 1940-1955. Describes migration of bowhead whales and aspects of Eskimo whaling for these animals during the spring, including time hunted, equipment used, methods of capturing, catch, utilization of whale products, crews and expenses of fielding a crew. Gambell whalers caught five bowheads in 1940, an unspecified number in 1953, and two in May 1955, one of which was a 60-ton animal (p. 114, 139-140). Although the bowhead, *Balaena mysticetus*, has probably always been the species most hunted (p. 111), the only other type of whale regularly hunted is the gray or "summer" whale, *Rhachianectes glaucus* [*Eschrichtius robustus*] (p. 111). One gray was taken in 1953 and one in 1954 (p. 140.). Only occasionally is a gray whale killed in the summer (p. 129). Whaling apparently had been bad during 1940 to 1955 because, although five had been taken during the spring of 1955, a very unusual event, it was reported that "...for several years no whales have come near the island", [evidently because of adverse weather and ice conditions]. The number of crews whaling 1940-1955 was only reported once when 11 boats were out during 1955 (p. 82). Although the village of Savoonga was established in 1917, whaling was nonexistent there during the study period (p. 146).

WESTERN ARCTIC

BEHAVIOR-migration; WHALING-western Arctic, Bering Sea, native, crews, gear, catch, utilization.

HUNT, WILLIAM R.

1975. Arctic Passage; the turbulent history of the land and people of the Bering Sea 1697-1975. Charles Scribner's Sons, New York, 395 p.

Account of the Bering Sea frontier describing its exploration and the exploitation of its rich store of natural resources, including the bowhead whale. A brief account of this cetacean includes a physical description, its behavior when swimming, feeding and when attacked by man and killer whales. Whaling and the value of the fishery is chronicled through the destruction of much of the whaling fleet in 1865 by the *Shenandoah* in the Arctic and the sinking of stone-laden whaling vessels off Confederate ports in an effort to blockade the ports (p. 117-158). At Gambell in 1921, the Eskimos had 20 good whale boats, two motor boats, and numerous skin boats (p. 308).

WESTERN ARCTIC

BEHAVIOR-swimming, respiration, feeding, when attacked; IDENTITY-description; NUTRITION-feeding; POPULATION-mortality, whaling; PREDATORS & COMPETITORS-killer whale; WHALING-western Arctic, commercial, catch, utilization.

HUNT, WILLIAM R., and CLAUS-M. NASKE.

1979. A baseline study of historic ice conditions in the Beaufort Sea, Chukchi Sea, and Bering Strait. *In* Environmental Assessment of the Alaska continental Shelf, Final Reports of Principal Investigators, Vol. 1, p. 122-534. Outer Cont. Shelf Environ. Assess. Program, Boulder, Colo.

Authors examined records of navigation between 1872-1970 by seamen aboard whaling, trading, and government vessels that provided data and observations on natural weather phenomena. Information from logbooks of these vessels and particularly from shore observations of the Point Barrow, Alaska, station of the U.S. Revenue Cutter Service from 1891-1896, provide data on bowhead whale catches by several whaling vessels and shore-based whaling catches by two commercial companies based at Barrow and by native residents of the village. Catches of other species (gray whale, walrus, polar bear) are also noted.

WESTERN ARCTIC

BEHAVIOR-swimming, migration; DISTRIBUTION-history; MORPHOLOGY-measurements of baleen; MORTALITY-whaling (struck and lost); WHALING-history, Bering Strait, Chukchi Sea, Beaufort Sea, commercial, native, crews, shore stations, catch.

HUNT, WILLIAM R., CLAUS-M. NASKE and ANDREA R. C. HELMS.

1978. Bering Strait, Chukchi and Beaufort Seas: Historical ice movements, 1865-present. (Abstr.). Proc. Alaska Sci. Conf. 27, vol. 1:171-172; vol. 2:195-200.

Data on historical ice movements in the Bering Strait, Chukchi and Beaufort Seas were obtained from whaling logbooks, commercial vessel reports, and U.S. Coast Guard records. Additionally, marine mammal, shore ice and shore erosion observations are noted, including names of whaling vessels and dates when whales [bowheads] were sighted, captured, and struck and lost.

WESTERN ARCTIC
DISTRIBUTION-sightings; POPULATION-mortality, whaling (struck and lost); WHALING-western Arctic, commercial, catch.

HUNTER, JOHN.

1787. Observations on the structure and oeconomy of whales. Philos. Trans. Roy. Soc. London 77, Pt. 1:371-450; reprinted by G. Pilleri (ed.), 1981, Investigations on Cetacea, 12 (supplement).

Overview of general knowledge of cetacean anatomy at that time is described. Author states the *Balaena mysticetus*, or large (70 or 80 feet in length, p. 374) Whalebone Whale and others he names, were examined by him.

EASTERN ARCTIC
MORPHOLOGY-anatomy.

HUNTER, JOHN.

1981. Observations on the structure and oeconomy of whales. In G. Pilleri (editor), Investigations on cetacea, 12 (Suppl.). Brain Anat. Inst., Berne, Switzerland. Facsimile reprint of Philos. Trans. Roy. Soc. Lond., 1787, vol. 77, Part 1, p. 371-450, pls. 16-23.

A major study presenting a state of the art review on cetacean anatomy as known at that time by a distinguished medical surgeon who was recognized by England as the founder of scientific surgery. States that the *Balaena mysticetus*, or "large whalebone whale", which is 70 or 80 feet long, was believed to be the largest of the large whales (p. 374.). In describing whalebone, author states the head he examined was 19 feet long and that some plates of baleen are 14 or 15 feet long and 12 or 15 inches broad (p. 401.). The location of the skull he examined was not given, but at the time it probably was the Museum of the College of Surgeons, London.

EASTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-museum; IDENTITY-nomenclature; MORPHOLOGY-anatomy, measurements.

INTERNATIONAL WHALING COMMISSION.

1980. Report of the Workshop on Humane Killing Techniques for Whales. Int. Whaling Comm., Cambridge, England, Nov. 10-14, Processed Rep., 18 p. [Unpublished]

Review of current whaling methods and technology employed, followed by the physiology of killing and possible use of new methods and developments. The group believed that the methods used by aborigines to kill whales would likely result in slow deaths by bleeding. It recommends that improvements in the techniques used should be examined as a matter of urgency and suggests that this might best be done in the context of the IWC ad hoc Working Group on Management Principles for Subsistence Whaling to be held in July 1981.

CIRCUMPOLAR
REGULATION & CONSERVATION-management; WHALING-worldwide, commercial, native, gear.

IRRIGO, CLARENCE.

1963. Foreign fishing vessels, zookeeper but no whales, bears at Gambell. Tundra Times, June 17, 1(18):6.

"No whales were taken this spring. A boat struck one but lost it with ropes and sealskin floats. The bomb did not go off. Few whales were sighted. Weather was the main factor in not taking and hunting of whales. Weather always seems to be bad when whales are running."

WESTERN ARCTIC
POPULATION-abundance, sightings, mortality, whaling, struck and lost; WHALING-Bering Sea, native, catch, gear.

ITTA, BRENDA.

1979. Whale quota hits Eskimo food supply. Tundra Times, January 5, 16(1):3.

The quota on 1978 bowhead whaling has curtailed both the winter supply of food and the sharing of it within the community according to officials in Barrow. The shortage of whale meat is compounded by a shortage of caribou in the area. The International Whaling Commission ruled that only 12 whales could be taken during the year 1978. This was later revised to 14. The Eskimos limited the spring hunt to 10 whales and stopped whaling three weeks earlier than usual. However, the fall hunting was poor and not enough whales were taken to even meet the quota.

WESTERN ARCTIC
ANTHROPOLOGY-Eskimos, nutrition, culture; REGULATION & CONSERVATION-regulation; WHALING-Bering, Chukchi and Beaufort Seas, native, catch, utilization.

IVASHIN, M. V.

1974. Soviets participate in International Conference on Whaling. Rybn. Khoz. 1974(12):75-77. In Russian. (International Economic Relations Transl. on USSR Trade and Serv., JPRS 63869, No. 812. Jan. 14, 1975).

Report on the 26th session of the International Whaling Commission giving the world catch of cetaceans during 1973, including 37 Greenland and 178 Pacific gray whales caught by the local population of the north.

WESTERN ARCTIC
WHALING-western Arctic, natives, catch.

IVASHIN, M. V., and V. N. MINEEV.

1978. O sostoyanii zapasov serykh kitov (The state of the gray whale stock). Rybn. Khoz. 1978(3):15-17. In Russian. (Transl. by S. Pearson, Natl. Oceanic Atmos. Admin., Natl. Mar. Fish. Serv., Northwest and Alaska Fish. Center, Natl. Mar. Mammal Lab., Seattle, Wash.)

Although primarily a review of the condition of the gray whale stock of the North Pacific Ocean and Soviet Far Eastern waters, the article also mentions that Alaskan natives lose several times the number of bowhead whales that are taken. For example, in 1977 26 bowheads were taken, two were killed and lost while being towed, and 77 wounded with harpoons went out to sea and were lost. A table shows the catch of bowhead whales at the Soviet's Chukot Peninsula in 1948-1977 and notes the catches of fin and humpback whales during several years. In addition, the catch of bowhead whales there was: 1972-1, 1973-2, 1974-3, and 1975-2.

WESTERN ARCTIC
POPULATION-mortality, whaling (struck and lost); WHALING-western Arctic, natives, catch.

IVASHIN, M. V., L. A. POPOV, and A. S. TSAPKO.

1972. Morskije mlekopitayushchie (spravochnik) [Marine Mammals (handbook)]. Izd. "Pishch. Prom.-st", Moscow. 303 p. In Russian. (Transl., 1973, 244 p., by Transl. Bur., Dep. Sec. State Can., avail. Fish Res. Board Can., Arctic Biol. Sta., Ste. Anne de Bellevue, Quebec, Transl. Ser. 2783.)

The book describes marine mammals of the world from order to species. Part I covers the biology of Pinnipedia, Cetacea, and the sea otter. Part II is a review of hunting and processing of commercial species, principally in Russia. A very brief handbook-type description of the Greenland [bowhead] whale on p. 112 includes size, color, morphology, distribution, and habitat. The bowhead of the North Atlantic is covered on p. 146 and that of the North Pacific is on p. 164. The catch of bowhead whales by natives of the Chukot Peninsula (U.S.S.R.) is no more than 10 in the best years, and the annual catch by Alaskan natives in the region of Point Barrow is 5-8.

EASTERN ARCTIC, WESTERN ARCTIC
IDENTITY; MORPHOLOGY; DISTRIBUTION; WHALING-eastern Arctic, western Arctic, natives, catch.

JACKSON, SHELDON.

1894. [Third annual] Report on introduction of domesticated reindeer into Alaska. [U.S.] Gov. Print. Off., Washington, D.C., 187 p.

The third annual report by Sheldon Jackson, D.D., U.S. general agent of education in Alaska, to the Commissioner of Education, on the introduction of domesticated reindeer into Alaska from Siberia to provide the Eskimos with a source of food, clothing, and transportation because their natural food supply of bowhead whales and walrus had been greatly reduced by American whaling vessels, and dogs require large amounts of food.

In a report for the village of Cape Prince of Wales by R. M. Thornton and W. T. Lopp to Dr. S. Jackson (p. 127-129), they stated "It is a well known fact that the number of [bowhead] whales in these waters has been very much diminished by the energetic pursuit of American whalers, and that those which remain have become more wary, and are every year going off further and further from the haunts of men. The natives tell us that the whale was one of their chief sources of food in times past, and the large number of whalebones you see scattered about the village corroborates their testimony. But in the season of 1889 they secured only 3 small calves; in 1890, none; and in 1891, only 1, not much larger than a well grown beluga."

Walrus hunting during the past year was poor because the season virtually lasted only three days and only 109 were killed to provide the Eskimos with food and skins for their umiaks. There are 51 umiaks in the village and each umiak requires an average of at least 4 walrus hides to cover it.

Other game reported killed during the past year included 19 polar bears, 5 white foxes, 3 red foxes, 1 mink, and about 45 ptarmigan. Not a single Arctic bear has been seen for years.

WESTERN ARCTIC
BEHAVIOR-migration, swimming; POPULATION-abundance; SKELETON REMAINS-around village; WHALING-Bering Strait, native, catch, gear (boats), utilization.

JACKSON, SHELDON.

1895. [Fourth annual] Report on the introduction of domestic reindeer into Alaska, with maps and illustrations, 1894. [U.S.] 53d Congr., 3rd Sess., Sen. Ex. Doc. No. 92, Gov. Print. Off., Washington, D.C., 100 p.

Account of author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing and transportation for Alaskan Eskimos.

At Point Barrow there are two shore whaling stations in charge of white men (p. 16). "During the spring [1894] the Cape Smythe Whaling Company (Brower, Gordon, Liebes & Co.) took three large, one medium-sized, and some small whales, making 7,700 pounds of marketable bone. Mr. Kelly, of the Pacific Steam Whaling Company, secured 11,000 pounds of bone. The captain (M. A. Healy, U.S. Revenue Cutter *Bear*) took on board about 19,000 pounds of whalebone for the two companies, which he will take to Unalaska, from whence it can be shipped to San Francisco." (p. 48). A photograph facing page 82 shows a [bowhead] whale on the ice at Point Barrow.

On August 24, 1894, the *Bear* anchored off St. Lawrence Island where "Captain Warren and the Leary Brothers, who had spent the winter at the whaling station on the island were received on board the ship." (p. 51).

"At Point Hope is an Episcopal mission and school and two shore whaling stations." (p. 17).

On June 29, 1894, the *Bear* departed Plover Bay for St. Lawrence Island, but stopped at Eutoxia's village [no additional information given]. "Before reaching Eutoxia's village we passed seven or eight native boats filled with men. They had evidently sighted a whale." (p. 41).

Also contains information on whaling vessels.

WESTERN ARCTIC

POPULATION-mortality, whaling, catch; WHALING-Bering and Chukchi Seas, commercial, native, shore stations, crews, gear, catch, photograph, vessels.

JACKSON, SHELDON.

1896a. [Fifth annual] Report on introduction of domestic reindeer into Alaska, with maps and illustrations, 1895. [U.S.] 54th Congr., 1st. Sess., Sen. Doc. No. 111, Gov. Print. Off., Washington, D.C., 136 p.

Report of author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

On June 29, 1894, the *Bear* stopped off the Chukchi village of Indian Point and almost the entire population came onboard. Jackson reported that "Prominent among them was Koharri, the most influential native in that region. He has a little frame house, filled from floor to ceiling with tobacco, flour, and looking glasses, which he has obtained from the whalers, and from which he supplies the country for miles around. This man has been known to have as much as \$75,000 worth of whalebone in his storehouse at one time. He does a business of probably \$100,000 a year." (p. 33).

Last winter [1894-1895] three whalers spent the winter on St. Lawrence Island. (p. 96). Also contains information on whaling vessels encountered.

WESTERN ARCTIC

WHALING-Bering and Chukchi Seas, commercial, shore stations, native, vessels.

JACKSON, SHELDON.

1896b. The Arctic cruise of the United States Revenue Cutter "Bear". Natl. Geogr. Mag. 7(1):27-31.

Brief popular account of services rendered annually by the *Bear* in the western Arctic with details of the 1895 cruise. At Indian Point, Siberia, the principal native of the village is Koharri, a noted trader all along the coast. He has a little frame whale-house filled with trade goods obtained from the whalers, and he has been known to have as much as \$75,000 worth of whalebone in his storeroom at one time. Various stops made by the *Bear* during the entire cruise are noted, including information that on August 8 they caught up with the whaling fleet at anchor near Icy Cape, at the southern edge of the great Arctic ice pack, where they had been waiting 19 days for the ice to open. After the *Bear* lay there for 14 days longer waiting to get farther north, the captain gave up all expectation of getting to Barrow and sailed southward on August 22. Plate IV of the article titled "Scene at Point Barrow in April" is a photograph of a young bowhead whale pulled up on the ice for cutting up. No information is provided with the photograph or in the article as to when the whale was taken, but it probably was not landed in 1895, as the *Bear* did not reach Barrow that year because of the ice.

WESTERN ARCTIC

WHALING-western Arctic, commercial, native, catch, photograph, utilization.

JACKSON, SHELDON.

1897. [Sixth annual] Report on introduction of domestic reindeer into Alaska, with illustrations, 1896. [U.S.] Gov. Print. Off., Washington, D.C., 144 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

During his annual cruise aboard the U.S. Revenue Cutter *Bear*, Jackson reported on the heavy ice conditions encountered during the summer of 1896. He reported several boat loads of natives came out to the ship at South Head, St. Lawrence Bay, and to the north of the point (p. 22). Jackson also stated (p. 32) that the government had ordered the refuge station at Point Barrow closed and the building and supplies sold to the Pacific Steam Whaling Company. John W. Kelly, manager of the whaling station and who had been in the Arctic region for 11 years, boarded the *Bear* to return south. Some information on the behavior of bowhead whales during migration past Point Barrow and Point Hope is presented on pages 32 to 33, and 131. Also contains information on whaling vessels encountered.

WESTERN ARCTIC

BEHAVIOR-migration, responses to pursuit; WHALING-Chukchi Sea, commercial, native, shore stations, utilization, vessels.

JACKSON, SHELDON.

1898a. [Seventh annual] Report on introduction of domestic reindeer into Alaska, with illustrations, 1897. [U.S.] Congr., 2nd Sess., Sen. Doc. No. 30, Gov. Print. Off., Washington, D.C., 124 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

Jackson hired John W. Kelly, former manager of the Pacific Steam Whaling Company at Barrow, to establish a reindeer purchasing station in Siberia. The station was established at Port Lutke, St. Lawrence Bay, on July 13, 1897 (p. 91). Here 14 canoes and 210 natives were employed to unload their supplies for the station (p. 81.).

Also contains information on several whaling vessels active in the Arctic this season.

WESTERN ARCTIC

WHALING-Chukchi Sea, commercial, shore station, native, gear (vessels, umiaks).

JACKSON, SHELDON.

1898b. [Eighth annual] Report on introduction of domestic reindeer into Alaska, with maps and illustrations, 1898. [U.S.] 55th Congr., 3d Sess., Sen. Doc. No. 34, Gov. Print. Off., Washington, D.C., 149 p.

In addition to describing the on-going efforts by the author to obtain reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos, considerable information is also included relative to the government relief expedition for shipwrecked whalers at Point Barrow. Information reported includes fact that no whales were taken at Point Hope during the 1898 season (p. 85, 102); there are two whaling stations at Point Hope in charge of white men: the Liebes and Company, managed by Rustan Nelson and assistants Charles Sandbourne and George F. Tilden, and a second run by Captain Peter Bayne and Henry Koenig (commonly known as Cooper) (p. 100-101); some insight on whaling by St. Lawrence Island natives provided by missionary V. C. Gambell who was stationed there (p. 141-144); and also considerable information on whaling vessels active in the area during 1898.

WESTERN ARCTIC
WHALING-Bering and Chukchi Seas, commercial, shore stations, native, gear, techniques, catch, utilization.

JACKSON, SHELDON.

1900. Ninth annual report on introduction of domestic reindeer into Alaska, with maps and illustrations, 1899. [U.S.] Gov. Print. Off., Washington, D.C., 261 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

At Gambell, St. Lawrence Island, on November 9, 1898 the carcass of a whale [bowhead?] killed probably many months ago in the whaling season beached about five miles from the village. "Nearly decomposed as it was, the carcass was welcomed by the people as a great find." (p. 231). Ceremonies participated in by Chief Assoone and ten other heads of families, which took place in February, March and April, suggest that 11 crews actively whaled here during the spring of 1899. (p. 191, 210). The hunters struck but lost one whale on April 6; one was found dead in the ice and the bone secured; and a small bowhead, which Akulky had struck the day before and was nearly dead when found, was taken on May 10. Additionally, two whales floated ashore but the bone had been removed [no date given] (page 38, 243, 247). Some additional details on spring whaling is contained in a log of activities recorded by W. F. Doty, missionary teacher at Gambell from August 14, 1898 to July 12, 1899 (p. 224-256).

The catch of bowhead whales by Siberian Eskimos as of May 19 was reported for the following villages: Indian Point (1 whale), East Cape (1), South Head (1), St. Lawrence Bay (1), and Plover Bay (1). At Plover Bay there were at least five native crews whaling.

Also contains information on several whaling vessels active in the area in 1899, including statement that only four whales had been taken by the whaling fleet as of June 20 (p. 38).

WESTERN ARCTIC
POPULATION-mortality, whaling, struck and lost, strandings; WHALING-Bering Sea, commercial, native, catch, crews, gear, utilization.

JACKSON, SHELDON.

1901. Tenth annual report on introduction of domestic reindeer into Alaska, with maps and illustrations, 1900. [U.S.] Gov. Print. Off., Washington, D.C., 169 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

No whales were taken at Gambell during the spring whaling season of 1900 (p. 118). Four whales were sighted and chased on May 1, but without success (p. 127). Contains some information on whaling vessels active in the area during the year 1900.

WESTERN ARCTIC
WHALING-Bering Sea, commercial, native, catch.

JACKSON, SHELDON.

1902. Eleventh annual report on introduction of domestic reindeer into Alaska, with maps and illustrations, 1901. [U.S.] 57th Congr., 1st Sess., Sen. Doc. No. 98, Gov. Print. Off., Washington, D.C., 218 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

Dr. P. H. J. Lerrigo, superintendent of the reindeer station at Gambell for the period July 1, 1900 to June 23, 1901, noted in his daily journal that on April 22, 1901 the whaleboats were launched and on April 23 ten whaleboats were hunting (p. 119). On May 9 Kowarra captured a whale (p. 120). On May 23 Kowarra took his second whale of the season, and Aguchky took one on May 26 (p. 121), giving the village a total of three whales for the season. Also contains some information on whaling vessels active in the area during 1901.

WESTERN ARCTIC
WHALING-Bering Sea, commercial, native, catch, crews.

JACKSON, SHELDON.

1903. Twelfth annual report on introduction of domestic reindeer into Alaska, with maps and illustrations, 1902. [U.S.] Gov. Print. Off., Washington, D.C., 144 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

Dr. Edgar O. Campbell, superintendent of the reindeer station at Gambell for the period Sept. 1, 1901 to June 10, 1902, failed to state in his reports whether or not any whales were taken there in the spring. He did mention, however, that "...Mr. Thomas Lopez, in charge of the whaling crew which spent the winter here. Mr. Lopez is known as John Thomas among whalers." (p. 74). Personnel at the commercial whaling station included at least two other people: Tom George, colored, a sort of first mate at the station, and Frank Dolberg (p. 85). On May 24 Tom George departed the village on the whaling vessel *Alexander*, on which he signed on as a boat steerer. (p. 85). Also contains some information on whaling vessels active in the area during 1902.

WESTERN ARCTIC
WHALING-Bering Sea, commercial, shore station, native, gear (vessel).

JACKSON, SHELDON.

1904. Thirteenth annual report on introduction of domestic reindeer into Alaska, with map and illustrations, 1903. [U.S.] 58th Congr., 2d Sess., Sen. Doc. No. 210, Gov. Print. Off., Washington, D.C., 192 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

The only items of interest regarding bowhead whaling in this report are as follows: Tokpuk, a reindeer herder at Barrow, has a frame house here and quite a number of natives trapping and whaling for him. In a few years he will be the big "umalik" in this district. Panigeo, also a herder, is his son. (p. 58). At Gambell, it was reported that "There being no whale caught here last year [presumably 1902], there was little material for the manufacture of liquor..." (p. 68). Also at Gambell, John Thomas Lopez, a whaler, overwintered here (p. 69). Contains some information on whaling vessels active in the area in 1903.

WESTERN ARCTIC
WHALING-Bering and Chukchi Seas, commercial, native, shore station, catch.

JACKSON, SHELDON.

1905. Fourteenth annual report on introduction of domestic reindeer into Alaska, with maps and illustrations, 1904. [U.S.] 58th Congr., 3d Sess., Sen. Doc No. 61, Gov. Print. Off., Washington, D.C., 137 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

Contains some information concerning bowhead whaling at two villages. At Gambell (p. 89), Dr. Campbell, the missionary there, was asked to weigh a bundle of whalebone for a native which he found to weigh 14 pounds [if a bowhead was taken there in 1904 he does not specifically state]. "They have a custom here that the man who gets a whale shall give grown people on the beach when the whale is landed one or more slabs of bone, the value of which may range from \$2.50 (for a small slab) to \$450 (being the market price of 10 large slabs of whalebone)." (p. 90). At Point Hope (p. 111-113) W. T. Lopp, Superintendent of reindeer and schools in northwest Alaska, arranged with Henry Konig, better known as "Cooper", to have materials for the new school building landed at the site selected near the whaling stations. He employed George Marlen, carpenter, A. J. Allen and Joseph Frairo as his assistants, to erect the building. [Presumably these men were whalers connected with the shore stations there].

WESTERN ARCTIC
WHALING-Bering and Chukchi Seas, commercial, shore stations, native, catch (baleen), trade.

JACKSON, SHELDON.

1906. Facts about Alaska: Its people, villages, missions, schools. Women's Board of Home Missions of the Presbyterian Church, New York, 58 p. (Orig. publ. 1903).

General information on Alaskan villages and people. "During the spring of this year (1901) the village of Wales fitted out, for hunting walrus, 16 umiaks (skin-covered boats), manned by 144 people. They secured 8 small whales [species not stated], 75 walrus were killed." (p. 55).

WESTERN ARCTIC
WHALING-western Arctic, Bering Strait, native, gear, catch, crews.

JACKSON, SHELDON.

1908. Sixteenth annual report on introduction of domestic reindeer into Alaska, 1906. [U.S.] 60th Congr., 1st Sess., Sen. Doc. No. 501, Gov. Print. Off., Washington, D.C., 93 p.

Describes author's continuing efforts to obtain domestic reindeer from Siberia to provide food, clothing, and transportation for Alaskan Eskimos.

Two comments by Rev. S. R. Spriggs, missionary at Barrow, provide interesting information on bowhead whaling at Barrow. To illustrate the trade value of certain items, Rev. Spriggs stated that "last fall a man sold a good canoe for a sack of sugar, sugar being a scarce commodity. The sugar originally cost about \$6 and a canoe costs \$50. Mr. Brower values their canoes at about \$75 each." (p. 53). Regarding whaling by the local Eskimos, Spriggs noted that "all natives but two are dependent on white men for rations or they work on capital and materials furnished by whites. The two mentioned that are free from debt are running whaling crews on their own credit."

WESTERN ARCTIC
WHALING-Chukchi Sea, native, crews, gear.

JACOBSON, PAT.

1977. Kodiak students observe ancient Eskimo whaling arts. *Tundra Times*, July 6, 14(27):6. Reprinted from the *Kadiak Times*. Also reprinted by *Alaska*, May 1978, 44(5):A30-A32.

School teacher Pat Jackson and five students were guests at Point Hope during the whaling season. One whale was taken "...a couple of days before we got there..." [the students arrived at Point Hope on May 3.] Five whaling crews were hosts for the visitors: Joe Tokshea [sic], Billy Weber, Elijah Rock, Henry Nashookpuk, and Herbert Kinnevak [sic].

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch, crews.

JARDINE, WILLIAM.

1837. The natural history of the ordinary Cetacea or whales. W. H. Lizars, Edinburgh (The Naturalist's Library, Mammalia, Vol. VI, On the ordinary Cetacea or whales). 264 p.

Covers the natural history of all Cetaceans, with a general section on comparative anatomy and chapters about 17 genera of whales. Chapter on the Greenland whale (p. 76-93) describes general knowledge about the species as taken from literature of other authors. Coverage includes general description, bones, hearing, swimming, breaching, respiration, diving, food and feeding, gestation, lactation, maturation, maternal behavior, distribution, and history of whaling and description of techniques in the eastern Arctic (N. Atlantic).

EASTERN ARCTIC
BEHAVIOR-swimming, diving, respiratory, breaching, hearing, maternal; DISTRIBUTION; MORPHOLOGY-anatomy; NUTRITION-food and feeding; REPRODUCTION-gestation, lactation, maturation; WHALING-eastern Arctic, commercial.

JARVIS, D. H.

1899. Report of First Lieut. D. H. Jarvis. *In* Report of the cruise of the U.S. revenue cutter *Bear* and the overland expedition for the relief of the whalers in the Arctic Ocean, from November 27, 1897, to September 13, 1898, p. 25-103. U.S. Gov. Print. Off., Washington, D.C. (Treas. Dep. Doc. 2101; also 56th Congr., 2d Sess., House Doc. 511).

Mentions that whaling commences at Point Barrow in mid-April, and very briefly describes how native whaling is conducted. The catch by both commercial whaling vessels and Eskimos at Barrow in the 1898 season was 42 whales. Photographs show Eskimos on the ice with whaleboats in April and June.

WESTERN ARCTIC

WHALING-history, western Arctic, commercial, natives, catch, crews, photographs.

JEFFREY, MICHAEL I., and PAM HERMAN.

1978. Eskimo whalers will ignore IWC. *Tundra Times*, July 5, 15(27):1, 3-4.

Disagreeing with a recommendation by the International Whaling Commission Technical Committee for a quota of 24 whales during 1979, the Alaska Eskimo Whaling Commission delegation walked out of the London meeting. So far this year 10 whales have been landed and five struck and lost. The whaling captains reported that in four of the five whales struck but lost, they believed that the whales escaped without serious injury as the bombs failed to explode.

WESTERN ARCTIC

POPULATION-mortality, whaling, struck but lost; REGULATION & CONSERVATION-management, quota; WHALING-Bering, Chukchi, and Beaufort Seas, native, catch, gear, utilization.

JENNESS, D.

1923. *The life of the Copper Eskimos*. King's Printer, Ottawa, 277 p. (Canadian Arctic Expedition 1913-18, Rep. v. 12: *The Copper Eskimos* (pt. A)).

The expedition established a base at Bernard harbor near Cape Krusenstern in August 1914, to study the Copper Eskimos of the area. A search of Banks Island revealed only one deserted village site of 30 houses at the head of the sand spit which forms Cape Kellett. The houses were built of sod around a framework of whale bones (p. 46). Whales are very common between the mainland and Banks Island, and they have always been hunted by the Cape Bathurst natives.

WESTERN ARCTIC

DISTRIBUTION-history; WHALING-western Arctic, Beaufort Sea, natives, utilization.

JENNESS, DIAMOND.

1957. Dawn in Arctic Alaska. Univ. Minn. Press, Minneapolis, 222 p.

Popular account, based on author's diary, of his first experiences with Alaskan Eskimos on the north coast between Barrow and Demarcation Point while a member of the Canadian Arctic expedition of 1913-1918 led by V. Stefansson (also known as the Stefansson or Stefansson-Anderson expedition). The carcasses of two whales beached near Cape Halkett provided them and their dogs with food and the necessary oil, as well as serving as an attraction for fur-bearers they trapped (p. 59, 83, 89-90). Jenness described the black whale skin (muktuk) as "...tasting like licorice with the consistency and springiness of pure rubber." In describing bowhead whaling the author [incorrectly] stated (p. 126) that "By 1914 the Alaskan Eskimos had completely abandoned whale hunting except at Point Barrow and Point Hope, where a few men still staked their fortunes on it, more from tradition than from real necessity." He reported the capture of one whale at the very beginning of the season at Barrow in the spring of 1914 (p. 127), but the lead closed and did not reopen until the whale migration had passed. The Eskimos at Barrow whaled for three or four weeks in the spring, and in good years they often captured three and even more whales.

WESTERN ARCTIC

POPULATION-mortality, strandings; WHALING-western Arctic, Chukchi Sea, Beaufort Sea, native, catch, utilization.

JENNESS, DIAMOND.

1962. Eskimo Administration: 1. Alaska. Arctic Inst. No. Am. Tech. Pap. No. 10, 64 p.

Examines U.S. educational, health, and economic programs and policies for Alaskan Eskimos from 1867 to 1960. By 1914 the fleets of commercial whalers were gone from the Arctic Ocean following a decline in numbers of whales and walrus. "Steel-manufacturers and fashion experts had promoted a change in women's "whalebone" corsets, which so depressed the value of baleen that by 1913 only one whaling vessel survived to enter the Arctic Ocean, where it was frozen in until the following summer. The Eskimos of Point Hope and Point Barrow, who in previous centuries had gained most of their livelihood from whaling, set up one shore station in the spring of 1914, but failed to capture a single whale [this contradicts the statement made in his book Dawn in Arctic Alaska (1957), where he reports (p. 126-127) that one whale was taken at Barrow]. Most of their hunters indeed had already abandoned whaling and were seeking a livelihood in another direction."

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, commercial, native, catch.

JENNESS, DIAMOND.

1964. Eskimo administration: II. Canada. Arctic Inst. No. Am. Tech. Pap. No. 14, 186 p.

Discusses the impact of the whaling industry on the Eskimos and their lifestyle. Commercial whaling in the eastern Arctic included both vessels and shore-stations and many Eskimos were hired to aid in the capture of whales. In the western Arctic commercial whaling in the Beaufort Sea (p. 13-14) began in 1888, and continued until about 1906 when the price of baleen dropped and the pursuit of the bowhead ceased to be profitable. In 1888 an estimated 2,000 Eskimos were inhabiting the coastline from the Alaska-Canada boundary to Baillie Island, and the impact of the whaling industry on their lifestyle is detailed. By the time bowhead whaling ceased and the whalers departed, the Eskimos no longer possessed their ancient skills for whaling and thus ceased to hunt the bowhead. The Eskimos then began to base their economy on hunting for white whales and fur-bearers. By 1930 the population of Eskimos in the area had fallen to about 200.

EASTERN & WESTERN ARCTIC

WHALING-eastern and western Arctic, commercial, native.

JENNESS, DIAMOND.

1965. Eskimo administration: III. Labrador. Arctic Inst. No. Am. Tech. Pap. No. 16. 94 p.

Discusses the Eskimos of Newfoundland and Labrador from 1771 to 1962. Basic to their existence was the seal, walrus, even whales, not the smaller species only but the mighty bowhead itself. "In the nineteenth century the whale fishery was important enough for the Moravians to send out on their mission vessel a skilled harpooner from Denmark. For a number of years the capture of from 3 to 5 whales, and the findings of several more dead, upon the coast is reported each season, but after 1830 there is very seldom any mention of their having been taken or found."

EASTERN ARCTIC

POPULATION-mortality, whaling, stranded; WHALING-eastern Arctic, commercial, native, catch, utilization.

JENNESS, DIAMOND.

1967. Eskimo administration: IV. Greenland. Arctic Inst. No. Am. Tech. Pap. No. 19, 176 p.

A major study of the administrative and economic history of Greenland from 1721 to 1964. Presents historical information on whaling off the coast of Greenland. Author cites Rink (1877, p. 129-130) as estimating around 1870 that "The animals killed (by the Greenlanders) amount to about 89,000 seals, 700 white whales and narwhals, 2 or 3 large whales, besides one or two carcasses of the same. Large whales such as the Greenland or right whale naturally carried far greater quantities of meat and oil than seals; but by 1870 those monsters, always comparatively scarce, had been so depleted on the eastern side of Davis Strait and Baffin Bay, that neither Greenlanders nor Europeans troubled to hunt them (Rink, 1877, p. 346)."

EASTERN ARCTIC

POPULATION-abundance, mortality, strandings; WHALING-eastern Arctic, history, commercial, native, catch.

JOHNSON, C. ALAN.

1961. Letters from our readers: Letter from C. Alan Johnson to the editor. Alaska Sportsman 27(12):3-4.

Author describes his part in the spring whale hunt at Point Hope when Allen Rock took a large whale last May. Although he had been on Roy Vincent's crew for a few days, he was not present when either crew struck whales. Four powered oomiaks towed the huge whale killed by Allen Rock to a point where [ice] conditions were better for cutting it up. He was with them six miles out on the ice one day, however, when the ice broke up and twelve crews had to run for the safety of the shore.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, catch, crews.

JOHNSON, DENNIS.

1977. Controls jeopardize prosperous whaling. Anchorage Times, Anchorage, AK., June 3, p. 1-2.

A bountiful kill of bowhead whales this spring is tainted by Eskimo concern that possible controls imposed on the hunt by the federal government could jeopardize future whaling. Citing the NMFS in Seattle author states that 26 whales ranging from 20 to 55 feet have been killed and retrieved this spring. Another whale was killed but lost, and an additional 73 whales were struck and lost. In Kivalina, a crew led by Clinton Swan took the village's second whale in a decade. It was reported that two whales were landed by Gambell and Savoonga crews on St. Lawrence Island. In Barrow, Simeon Patkopak, who has gotten a whale every year since 1968, so far hasn't killed a whale this spring. In 1975, Patkopak killed a 55-foot bowhead.

WESTERN ARCTIC

REGULATION & CONSERVATION-management; WHALING-western Arctic, native, crews, gear, catch, utilization.

JOHNSON, MARION FISCHER and WILLIAM F. GUSEY.

1982. The bowhead whale: Life history and issues. *Ecobalium* 11(4):1-9.

A review largely based upon recent literature describing the life history of the bowhead whale and issues concerning this endangered species of importance to the Eskimos, the U.S. Government, the International Whaling Commission, scientists, conservationists and the petroleum industry. The issues are the threat of extinction of the bowhead whale, Eskimo culture and subsistence, oil and gas exploration and exploitation, and international agreements.

CIRCUMPOLAR

BEHAVIOR-respiration, communication, diving, migration; DISTRIBUTION-present; MORPHOLOGY-measurements; NUTRITION-food, feeding; POPULATION-abundance; REGULATION & CONSERVATION-management, regulation; REPRODUCTION-gestation, mating; WHALING-circumpolar, history, commercial, native, catch, photographs, utilization.

JOHNSON, MURRAY L.

1974. Mammals. In C. A. Wright (ed.), *Biochemical and immunological taxonomy of animals*, Chapt. 1, p. 1-87. Academic Press, London.

Contains a collection of data provided by biochemistry and immunology with the purpose of showing application of these data to the science of taxonomy of mammals. Figure 4a-i (p. 34-42) shows the relative electrophoretic mobilities of major mammalian hemoglobins, including results from two specimens of *Balaena mysticetus* (p. 41)

WESTERN ARCTIC

IDENTITY-taxonomy; PHYSIOLOGY-blood.

JOHNSON, MURRAY L., CLIFFORD H. FISCUS, BURTON T. OSTENSON, and MYRON L. BARBOUR.

1966. Marine Mammals. In Norman J. Wilimovsky and John N. Wolfe (eds.), *Environment of the Cape Thompson region, Alaska*, Chapt. 33, p. 877-924. U.S. Atomic Energy Comm., Washington, D.C.

A study of marine mammals was made in the Cape Thompson, Alaska, area, primarily in the villages of Kivalina and Pt. Hope, in 1959-1961. The report includes data from literature, as well as observations by the authors, about various species, including bowhead whale. Discussed are distribution of bowhead, hunting areas and methods, utilization by Eskimos, migration time and patterns. A correlation of migratory patterns is found for time of appearance of bowhead and the arrival of certain sea birds. Only one whale was captured at Pt. Hope in 1959, four in 1960, and two in 1961. Total yearly kill in Alaskan waters probably never exceeds 30-40, including those killed and lost.

WESTERN ARCTIC

BEHAVIOR-migration in relation to other animals; DISTRIBUTION; NUTRITION-food; POPULATION; WHALING-western Arctic, natives, catch, gear, utilization.

JONES, J. KNOX, JR., DILFORD C. CARTER, HUGH H. GENOWAYS, ROBERT S. HOFFMANN, and DALE W. RICE.

1982. Revised checklist of North American mammals north of Mexico, 1982. *Occas. Pap. Mus. Tex. Tech Univ.* 80, 22 p.

Faunal checklist of all species of Recent mammals (a few of which now may be extinct) in North America and adjacent waters occurring to the north of Mexico as recognized in the published literature through March of 1982. *Balaena mysticetus* is listed on page 17.

EASTERN ARCTIC, WESTERN ARCTIC

IDENTITY-taxonomy.

JONES, WILLIAM B.

1927. *The argonauts of Siberia (the diary of a prospector)*. Dorrance & Co., Philadelphia, 165 p.

Popular account of prospecting and trading activities during 1902-1906, on Diomed Islands and the eastern part of Chukotsk Peninsula, containing information on life and activities of the Eskimos.

Author reports Eskimos landed two bowheads at John Howland Bay in 1902 (p. 151), one at Marcus Bay in 1903 (p. 157), and one at Little Diomed Island in 1905 (p. 29).

WESTERN ARCTIC
WHALING-western Arctic, native, catch.

JORDAN, RICHARD H.

1980. Preliminary results from archaeological investigations on Avayalik Island, extreme Northern Labrador. *Arctic* 33(3):607-627.

Report on archaeological investigations on Avayalik Island near the tip of the Labrador Peninsula concerning the Early to Middle Dorset period. Faunal analysis of nearly 1,700 mammalian remains indicates an extremely heavy reliance on walrus. Large whale remains are represented by only two bones and a number of large baleen strands and probably result from occasional scavenging of whale carcasses rather than active hunting. The author concludes there is not sufficient faunal or technological evidence to suggest that large whales such as the bowhead were actively hunted.

EASTERN ARCTIC
ARCHAEOLOGY; DISTRIBUTION-history; FIELD & LABORATORY TECHNIQUES-artifacts; WHALING-history, eastern Arctic, natives, utilization.

KAPEL, FINN OUTZEN.

1979. Exploitation of large whales in West Greenland in the Twentieth Century. *Rep. Int. Whaling Comm.* 29:197-214.

Briefly reviews history of exploitation of large whales in Greenland by Eskimos and European whaling activities. During the first decades of the 20th century the bowhead had become scarce and had completely lost its importance to the Greenlanders. "Rink (1877, p. 122) stated "During a long period it (the whale fishery) has averaged one 'fish' each season. In the 20th century only one or two catches of bowheads have been reported (p. 197)." One bowhead was reported seen at an offshore oil-drilling site in West Greenland (Mobil, 65°31'N, 54°45'W) during the period July 3-August 31, 1977 (p. 210).

EASTERN ARCTIC
DISTRIBUTION-at offshore oil-drilling site; WHALING-eastern Arctic, commercial, native, catch, utilization.

KAPLAN, SUSAN A.

1980. Neo-Eskimo occupations of the northern Labrador coast. *Arctic* 33(3):646-658.

Archaeological and historical information are examined in a discussion of changing subsistence practices and settlement patterns for Labrador Neo-Eskimos from the Thule period through the 19th century. (From author's abstract.)

EASTERN ARCTIC
ARCHAEOLOGY; WHALING-history, eastern Arctic, natives, utilization.

KASUYA, TOSHIO.

1972. The current state of the whale population and problems of management. Kogai Kenkyu (Pollution Studies), 2(2):17-25. (In Japanese, English translation available at Natl. Mar. Mam. Lab., Seattle, Washington 98115).

Briefly reviews the biology of whales and history of whaling, including status of population for the following large whales: right, polar, gray, humpback, blue, fin, sei, smaller sei and sperm. "Approximately 1,000 polar whales are said to be in the Arctic Circle on the Bering Sea side. Population recovery on the Atlantic side is not progressing. In Alaska, it is reported that several to some dozen polar whales are caught by Eskimos each year, and more than an equivalent number of whale carcasses are washed away. The necessity for urgent countermeasures was pointed out at the 23rd IWC meeting."

WESTERN ARCTIC
DISTRIBUTION-western Arctic; IDENTITY-common name; POPULATION-abundance, mortality; WHALING-western Arctic, natives, catch.

KAVEOLOOK, HAROLD.

1977. Kaktovik on Barter Island: A brief history of Kaktovik and its schools. Prepared for the Education Hearings, First Inuit Circumpolar Conference, June 13-17, Barrow, Alaska. 22 p. (Unpublished)

An ancient Eskimo village had existed at one time on Barter Island, and whale bones in the area indicated that the people were whalers. Tom Gordon moved from Barrow to Barter Island to establish a trading post there in 1919. "There was no whaling activity until 1964, when the first whale was caught. The whaling is restricted to fall time only. No whales ever were sighted in the spring by any hunter."

WESTERN ARCTIC
DISTRIBUTION-Beaufort Sea; WHALING-history, native, catch.

KAWAMURA, AKITO.

1980. A review of food of Balaenopterid whales. Sci. Rep. Whales Res. Inst. 32:155-197.

Briefly reviews the food of bowheads as previously presented by other authors. In the eastern Arctic, *Calanus finmarchicus* and euphausiids comprised the main diet of bowheads; in the western Arctic, *Thysanoessa raschii* made up 90.3% of the total volume of food consumed by two female bowheads caught near Point Barrow, Alaska. In the Franklin Bay region of the eastern Beaufort Sea, it has been suggested that the most probable food items consumed are *Calanus hyperboreus*, *Parathemisto libellula*, *Thysanoessa inermis* and *T. raschii*.

WESTERN ARCTIC, EASTERN ARCTIC
NUTRITION-food, feeding behavior.

KEENE, DONALD.

1981. Aerial survey consideration for the bowhead whales in the Beaufort Sea. (Abstr.) *In* Acoustical Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 67. Unpubl.rep. by Acoust. Soc. Am. [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

Survey strategies are suggested to obtain information on bowhead whales habitat in spite of ice coverage and reduced visibility. (From author's abstract.)

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-census, aerial.

KEIM, CHARLES J.

1969. *Aghvook, white Eskimo*. Univ. Alaska Press, College, Alaska, 313 p.

A biography of Otto Geist, an untrained archaeologist and ethnologist who collected and recorded his studies in Alaska for thirty years, by the author, a personal friend of Geist. During his studies on St. Lawrence Island, Geist lived and hunted with the Eskimos who bestowed upon him the name "aghvook" or "whale." Describes whaling for bowheads by the islanders, including methods, equipment, crews, catches, utilization, and ceremonies. In the spring of 1880, Ungalak caught a large whale, landing it in the vicinity of the second point from Gambell (p. 120). Otiyohok, the best hunter on the island, took a large whale in the spring of 1929 (p. 175.).

WESTERN ARCTIC

ARCHAEOLOGY-artifacts; WHALING-western Arctic, Bering Sea, native, crews, gear, catch, utilization, photographs.

KEIM, CHARLES J., and WILLIAM W. BACON III.

1963. *Weapons for the whale eaters*. *Alaska Sportsman* 29(11):24-25, 38.

Darting and shoulder guns, first introduced by Yankee whalers in the Arctic whaling industry over 100 hundred years ago, are still used today in the subsistence hunt for bowhead whales by Alaskan Eskimos. The present day supplier of these weapons and the bombs they fire is: R. W. Meininger, owner of the Naval Company, Doylestown, Pennsylvania.

WESTERN ARCTIC

WHALING-western Arctic, native, gear, photographs.

KEITHAHN, EDWARD L.

1963. *Eskimo adventure*. Superior Publ. Co., Seattle, WA., 170 p.

Author, a school teacher at Shishmaref, Alaska, from 1923-1925, learned that a whale had recently [1923?] drifted ashore, near the village and the baleen was sold in Nome for \$2,500. (p. 46) Skeletal whale bone was sometimes used to make runners for ice skates. (p. 65)

WESTERN ARCTIC

POPULATION-mortality, stranding; SKELETON REMAINS-utilization; WHALING-Chukchi Sea, native, catch (stranding), baleen.

KELLOGG, REMINGTON.

1931. *Whaling statistics for the Pacific coast of North America*. *J. Mammal.* 12(1):73-77.

The total number of whales landed commercially during the period 1919 to 1929 for the Pacific coast of North America is presented on an annual and geographical basis in one table. In 1923, two bowheads and one right whale were taken in the Alaskan area.

WESTERN ARCTIC

WHALING-western Arctic, commercial, catch.

KELLY, JOHN W.

1910. *Bowhead whaling*. *The Nome Daily Nugget*, Nome, Alaska, Sep. 23, 10(229):3.

Brief description of bowhead whaling in the Western Arctic by commercial sailing and steam vessels. Whales average 100 barrels of oil and 1,000 pounds of bone,. Larger bowheads that yielded 250 barrels of oil and 4,000 pounds of bone have been caught, but within the last 40 years only two of these have been taken, one in 1904 by the *Belvedere*, Captain Geo. F. Tilton, and the other in 1908 by the *Jeanette*, Captain Frank Long.

WESTERN ARCTIC

POPULATION-mortality, whaling; WHALING-Western Arctic, commercial, catch, gear, utilization, products (oil, baleen).

KENYON, KARL W.

1958. Walrus and other marine mammal studies at Little Diomede Island, Alaska, May 11 to June 14, 1958. U.S. Bur. Sport Fish & Wildl., typewritten report, 112 p., 18 figs. (Available from U.S. Dep. Commer., NOAA, NMFS, Natl. Mar. Mam. Lab., 7600 Sand Point Way N.E., Seattle, Wash. 98115). (Unpublished)

Describes hunting methods, effort, catch and utilization of marine mammals for subsistence by residents of Iglood, Little Diomede Island. Cetaceans are of minor importance for subsistence and comparatively few whales are taken; none were taken during the 1958 study period. The bowhead is more rarely taken (p. 82). A hand harpoon with an explosive tip or bomb was carried during boat hunting trips. On June 14, 1958 several "black" whales were reported seen at a distance.

WESTERN ARCTIC

BEHAVIOR-migration; IDENTITY-nomenclature, black whale; WHALING-western Arctic, native, gear, catch.

KILLITOKTI.

1963. From Ketchikan to Barrow (News items): Barrow, June 5. Alaska Sportsman 29(9):4. (From Fairbanks Daily News-Miner)

A whale taken yesterday, estimated to be 60 tons, is the biggest taken at Barrow for several years. William Leavitt's crew and Sam Taalak's crew each fired a bomb into it. This is the second whale this spring for Barrow. Neokok's crew took a little gray whale a couple of weeks ago.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, catch, crews.

KING, ANGELA.

1975. Whales and the whaling industry. Long Range Planning, The Friends of the Earth, London, 8(2):89-94.

Brief review of the history of whaling, including the politics of whaling in recent times. The 60 ft. Greenland Right (Bowhead) whales were particularly valuable for their whalebone, which was used for many kinds of fashionable clothing, such as bodices, bonnets and bustles. Each whale yielded about 1.5 tons of whale bone at 2240 pounds a ton and 25 tons of oil.

EASTERN ARCTIC

DISTRIBUTION-eastern Arctic; WHALING-history, utilization.

KINNEVEAUK, HERBERT.

1949-1976. [Personal record book.] Point Hope, Alaska. (Unpublished).

This resident of Point Hope, Alaska, annually recorded the names of whaling captains and dates that they killed bowhead whales during each year's spring whaling season from 1949 through 1976, when Mr. Kinneveauk generously permitted me to copy the entire record.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, catch, crews.

KLEINENBERG, S. E., and T. I. MAKAROVA (editors)

1955. Kitoboinyi promysel Sovetskogo Soyuza (The whaling industry of the Soviet Union). Izd. "Rybnogo Khozyaistva", Moscow. 118 p. In Russian. (Transl. by Israel Program Sci. Transl., 1968 avail. Natl. Mar. Fish. Serv., Office Int. Relations, Washington, D.C.)

Consists of chapters on commercial whaling by various authors. Very little specifically about the bowhead whale, but details the history of whaling and the modern whaling industry of the U.S.S.R., has a chapter about whale migrations and whaling in the Soviet Far East, and includes technological articles about whale flesh and oil. A table of Soviet whaling in the North Pacific, 1932-1954, lists catch of 8 Pacific right whales. See also Zenkovich (1955a, 1955b).

EASTERN ARCTIC, WESTERN ARCTIC
WHALING-history, eastern Arctic, western Arctic, commercial, catch.

KLENGENBERG, CHRISTIAN.

1932. Klengenbergs of the Arctic, an autobiography. Jonathan Cape, London, 360 p. Edited by Tom MacInnes.

Klengenbergs, a Dane who was originally named Christian Klengenbergs Jorgensen, was the first white trader in the Coronation Gulf-Victoria Island region. His report on finding blond and blue-eyed Eskimos on Victoria Island initiated Vilhjalmur Stefansson's interest in these people. Klengenbergs first arrived in the Arctic as a cook and steward on a trading vessel in 1893. He subsequently whaled for bowheads on whaling ships, tried "floor" whaling at Point Hope and Barrow, and turned to trading when the market for baleen failed. At Point Hope he caught three bowheads in 1894 and three in 1896 (p. 97-108, 137.). At Barrow he reported that six whales were taken during the spring of 1900 (p. 165-168.), remarked that there was almost a complete failure of "flaw" whaling there in the spring of 1902 (p. 175), and claimed that he did some profitable whaling there in 1904 but failed to state how many whales he took (p. 195.). Klengenbergs claimed that he began the practice of whaling at Barrow during the autumn in 1906 and that it had never been done before neither by whites nor Eskimos (p. 241.). [Note: Charles Brower also claims to have instituted autumn whaling at Barrow.]. Klengenbergs took two whales and three more were killed by the dozen other boats that went out that season (p. 242.).

WESTERN ARCTIC
BEHAVIOR-migration; NUTRITION-food, feeding; WHALING-western Arctic, Chukchi Sea, Beaufort Sea, commercial, native, shore-stations, crews, gear, catch, utilization, photographs.

KLIMA, MILAN.

1978. Comparison of early development of sternum and clavicle in striped dolphin and in humpback whale. Sci. Rep. Whales Res. Inst. 30:253-269.

The morphogenesis of the sternum and the clavicle in whales was studied for the first time. The mode of development of these structures shows considerable differences between the toothed whales (Odontoceti) and the whalebone whales (Mysticeti). The toothed whales are, in this case, similar to all other mammals but the whalebone whales differ in mode of development. The significance of these findings are discussed. At present nothing is known about the morphogenesis of the sternum in whales. Although a few cetacean embryos have been studied, all of them were too large to find out anything about the mode of the development of the sternum. Even the smallest of them, an embryo of *Balaena mysticetus* (p. 254) of about 10 cm length, studied by Eschricht and Reinhardt (1849), and an embryo of *Balaenoptera acutorostrata* of 10.5 cm studied by De Burlet (1917), had finished the morphogenesis of the sternum, that already had the typical form and location as is seen in adult animals.

CIRCUMPOLAR
FIELD & LABORATORY TECHNIQUES-museum; MORPHOLOGY-skeleton; REPRODUCTION-embryos.

KLINEBURGER, CHRIS.

1962. Trophy walrus. *Alaska Sportsman* 28:14-18.

During a hunt in late May for walrus north of St. Lawrence Island, "A large gray whale appeared, blew and dived not five hundred yards offshore. The Eskimos paid no attention, as they value only the bullhead or black whale." Author describes the preparation and use of split female walrus hides for covering the wooden frames of oomiaks.

WESTERN ARCTIC

IDENTITY-nomenclature; WHALING-western Arctic, Bering Sea, gear, utilization.

KLINOWSKA, M.

1980. A world review of the Cetacea. Prepared for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), *Nat. Conserv. Couns.*, London, 390 p.

A summary of the data on each species in support of the listing of all cetacea on the Appendices of the Convention. Each species account, including *Balaena mysticetus* (p. 1-11), presents data on taxonomy, biology, trade, protection status, information on similar species, comments from country of origin, additional remarks, and references. Also includes a map for each genus showing the world distribution of each species.

CIRCUMPOLAR

BEHAVIOR-interaction, maternal; DISTRIBUTION-circumpolar; GROWTH; IDENTITY-nomenclature, taxonomy; NUTRITION-food; POPULATION-abundance; REGULATION & CONSERVATION-regulation; REPRODUCTION-fecundity, lactation, maturation, periodicity; WHALING-eastern Arctic, western Arctic, native, catch, utilization.

KLINOWSKA, M., and E. GERSLUND.

1983. The cetacea of West Greenland – Progress report on stage 1 and proposal for stage 2. Anatomy Department, University of Cambridge, Cambridge, England CB2 3DY. (Submitted to the Scientific Committee, International Whaling Commission, Cambridge, England, in June 1983 as document SC/35/RP4.)

Four of the nine Daybooks of the Royal Greenland Trade for the northern area were read in full to obtain natural history and whaling information on bowhead whales. The Daybooks were for the year 1800-1801 at Godhavn, Arveprinsens Eiland, Ritenbenk, and Vester Eiland. The data extracted are related to the presentation of the same material by Eschricht and Reinhardt (1866). Much useful information is presented on the natural history of and whaling for bowheads, including whaling effort and animals struck and lost. Information is also presented on catches of white whales, narwhals, polar bears, various seals, and an unidentified animal reported only as kiksuk. A very useful compilation of terminology encountered in the Daybooks is listed and described in Table 12.

EASTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION-former; MORPHOLOGY-measurements; POPULATION-mortality (whaling); REPRODUCTION-parturition; WHALING-eastern Arctic, commercial, shore-stations, catch.

KOTANI, YOSHINOBU, and WILLIAM B. WORKMAN (editors).

1980. Alaska native culture and history. Senri Ethnol. Studies No.4, 321 p. Natl. Mus. Ethnol., Suita, Osaka, Japan. (Papers presented at the Second Internatl. Sym. August 1978, Osaka.)

Thirteen papers (including an introduction to the subject of the symposium) by Japanese and North American authors on ethnological studies of Alaskan natives. Three of the papers (M. Gamo, p. 157-167; E. S. Burch Jr., p. 253-304; and R. Worl, p. 305-320) contain pertinent information on bowhead whaling by Eskimos.

WESTERN ARCTIC
ETHNOLOGY-history; WHALING-western Arctic, history, native.

KOUTSKY, KATHRYN.

1981. Early days on Norton Sound and Bering Strait: an overview of historic sites in the BSNC Region. Vol. 2: the Wales area. Anthropol. and Historic Preserv. Coop. Park Studies Unit, Univ. Alaska, Fairbanks. Occas. pap. No. 29, 65 p., Append., Selected biblio., 29 p.

A brief history and listing (in 8 volumes) of the native historic sites in the Bering Strait and Norton Sound regions that summarizes information on settlements gathered from both memory culture and written documentation. The report is divided into eight volumes: Shishmaref, Wales, Port Clarence/Kauwerak, Nome/Fish River/ Golovin, Koyuk, Shaktoolik, Unalakleet, and St. Michael/Stebbins. Early day photographs and captions provide general information on bowhead whaling and the cutting up of the carcasses by the hunters at Wales, but no specific data on the number or dates of whales landed is provided.

WESTERN ARCTIC
WHALING-western Arctic, Bering strait, native, gear, catch, photographs.

KRAUS, SCOTT D.

1981. Preliminary notes on the occurrence of the north Atlantic right whale, *Eubalaena glacialis*, in the Bay of Fundy. Rep. Int. Whaling Comm. SC/33/PS-19:15 p. (Unpublished).

Information obtained on the north Atlantic right whale as a result of aerial and shipboard surveys to determine the distribution and abundance of cetaceans in the lower Bay of Fundy, Canada, and the Eastport, Maine, region. On page 8 he cites Davis and Koski (1980), as reporting birth rates as low as 2.2% from surveys of *B. mysticetus* in the eastern Canadian Arctic.

EASTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-census, aerial, vessel; POPULATION-abundance, size composition;
REPRODUCTION-fecundity.

KRISTOF, EMORY

1973. The last U.S. whale hunters. *Natl. Geogr. Mag.* 143(3):346-353 plus cover photograph.

Account of a whale hunt by Eskimos at Barrow, Alaska [no year given, presumably in spring 1972]. Describes the wait, pursuit, killing, and butchering of bowheads and the equipment used. Twenty-six crews took at least eight whales during the season, one of which was lost to the ice when only half butchered. The seventh whale of the season was 24 feet long. The author was a member of captain Wyman Panigeo's crew during 17 days of the season.

WESTERN ARCTIC
BEHAVIOR-when hunted; MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews, photographs.

KROGMAN, BRUCE.

1981a. Bowhead whale biological studies. (Abstr.) *In* Acoustical Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 59-60. Unpub. rep. by Acoust. Soc. Am. [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

"Methods of improving accuracy and precision of population estimates are discussed, particularly with respect to changing environmental conditions. Computer simulation of the effects of data loss is one example of precision ascribed to estimates." Also of interest are comparisons of field sound recordings of the bowhead whale, beluga, and bearded seal, and ambient noise levels of the ice covered Arctic seas and the more noisy, ice-free Pacific Ocean. (From author's abstract.)

EASTERN AND WESTERN ARCTIC
DISTRIBUTION-historical; FIELD & LABORATORY TECHNIQUES-acoustics; POPULATION-abundance; WHALING-commercial, eastern and western Arctic.

KROGMAN, BRUCE.

1981b. Acoustic censusing. (Abstr.) *In* Acoustic Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 67. Unpub. rep. by Acoust. Soc. Am., [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

An experiment was conducted during May 15-24, 1979, at Point Barrow, Alaska, using a passive sonar device off the ice edge to determine if migrating bowhead whales could be acoustically censused. "From this work it was demonstrated that (1) not all bowheads vocalize, as some whales were seen but not heard; (2) some whales passed by NMFS [National Marine Fisheries Service] observers and were not counted, as they were acoustically followed by the observers without having been seen." (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR-migration, acoustical; FIELD & LABORATORY TECHNIQUES-census, acoustics.

KULOWIYI, JOHN.

1963. Savoonga busy walrus hunting. *Tundra Times*, June 17, 1(18):6.

About 20 crews with skin boats hunted walrus at Savoonga and about 20 were shot from May 3-9. Gambell whalers lost two bowhead whales this spring.

WESTERN ARCTIC
POPULATION-mortality, whaling, struck and lost; WHALING-Bering Sea, native, catch, crews.

KUYT, ERNIE.

1974. Bowhead whales in the Beaufort Sea. *Blue Jay* 32(2):117-118.

During aerial surveys for sea ducks in May and June of 1972 and 1973, flights followed the major ice leads in the southern part of the Beaufort Sea. Two or three bowheads were seen on June 8, 1972 in deep water between Baillie Island and Banks Island (approx. 71°N., 127°W.). Between three and five bowheads together were sighted on September 13, 1973, halfway between Herschel Island and Roland Bay (approx. 69°30'N., 139°W.). "Inhabitants of Herschel Island told me earlier on September 13 that several bowheads had been in the area, one of which had torn up a seal net in Pauline Cove. The hunters indicated they intended to hunt bowhead and for that purpose some beluga hunting equipment had been modified. Other than whale hunting at Herschel Island, I know of no other bowhead hunting taking place in the Canadian Western Arctic." A stranded bowhead was found about 22 miles northeast of Tuktoyaktuk on August 27, 1973. Upon close examination the whale was found to be 54 feet in length with baleen 7 feet long at about two-thirds of the way toward the angle of the jaw. About 100 glaucous gulls were concentrated at the carcass but no mammal tracks were observed, indicative perhaps of a recent stranding.

WESTERN ARCTIC

DISTRIBUTION-sightings, E. Beaufort Sea; MORPHOLOGY-measurements; POPULATION-mortality, stranding, photographs; PREDATORS & COMPETITORS-scavengers, glaucous gulls.

KUZ'MIN, A. A., and A. A. BERZIN.

1975. Raspredelenie i sovremennoe sostoianie chislennosti gladkikh i serykh kitov v dal'nevostochnykh moriakh (Distribution and current numbers of right and gray whales in the Far-East Seas.) *In*: Papers of the All-Union Conference, Vladivostok, October 1975. Biologicheskie resursy morei dal'nego vostoka (Biological Resources of the Far-East Seas). Ichthyol. Comm. Min. Fish. USSR, Pac. Ocean Res. Inst. Fish. Oceanogr. [TINRO]. In Russian. (Transl. Aval. Natl. Mar. Fish. Serv., Off. Int. Fish., Lang. Serv. Branch, Washington, D.C., 2 p.).

In 1974 a cruise was conducted in the Okhotsk, Bering and Chukchi Seas from August to October in a joint American-Soviet research program on gray and right whales.

"During the searches, it was confirmed that in the Okhotsk Sea...the main concentrations of Greenland right whales were located near the Shantar Islands (Ul'banskii and Tugur Gulfs – 35 whales) and Pacific right whales further northeast than the Kashevarov Shoal (4-50 whales). Whales of various ages were found in the "Ul-banskii" and "Tugur" concentrations. The body dimensions of the young whales were half the length of the grown ones. Two young whales five to six meters long were found. These data from the cruise of the medium trawler *Vitiaz'* (Rovnin 1969) show that births of Greenland right whales, living in the Okhotsk Sea, occur from the beginning of May to the middle of July.

Right whales were found again on October 13 in the Bering Straits (two whales) and in the southern part of the Chukchi Sea (three whales). All the whales are found in areas with a surface salinity of less than 30 ‰."

WESTERN ARCTIC

DISTRIBUTION—Okhotsk, Bering and Chukchi Seas; FIELD & LABORATORY TECHNIQUES—census, vessel; POPULATION—abundance, size composition; REPRODUCTION—parturition.

LAEVASTU, TAIVO, and HERBERT A. LARKINS.

1981. Marine fisheries ecosystems. Its quantitative evaluation and management. Fishing News Books, Ltd., Farnham, England, 159 p.

A summary of research and ecosystem simulation accomplished at the Northwest and Alaska Fisheries Center during the last 4 years with the objective of producing a picture of the total marine ecosystem for the purpose of better management of the fisheries. The consumption of biota by marine mammals in the Bering Sea is presented in Chapter 12 (p. 109-116). Table 13 includes the information that the average weight of bowhead whales is 35 tons, 3,000 are estimated to be in the North Pacific, and maximum and minimum number of animals and months in the Bering Sea are 2,500 (3 months) and 200 (8).

WESTERN ARCTIC
NUTRITION-food; POPULATION-abundance; REGULATION & CONSERVATION-management.

LANTIS, MARGARET.

1938. The Alaskan whale cult and its affinities. *Am. Anthropol.* 40(3):438-464.

Ritual aspects of whale hunting in the western Arctic by Alaskan natives is described. Contains considerable information on practices associated with hunting bowhead whales. Citing Woolfe (in R. P. Porter, 1890, v. 8:141) a whale was caught at Point Hope in 1885 (p. 454).

WESTERN ARCTIC
WHALING-western Arctic, native, gear, catch.

LANTIS, MARGARET.

1940. Note on the Alaskan whale cult and its affinities. *Am. Anthropol.* (new series) 42(2):366-368.

Contains omissions from author's 1938 paper on this subject plus the addition of some new material. "North of the Aleutians, up the west coast of Alaska between the Alaska Peninsula and Seward Peninsula, the beluga was hunted in some places, but large whales were not hunted. On Nunivak Island, half-way up this stretch of coast, not even the beluga was regularly hunted by modern Eskimos, although they were glad whenever they could catch a small whale of any variety in their seal-nets." (p. 367)

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, native.

LARSEN, HELGE, and FROELICH RAINEY.

1948. Ipiutak and the Arctic whale hunting culture. *Am. Mus. Nat. Hist., Anthropol. Pap.* 42, 276 p.

Report on excavations at Point Hope, Alaska, for study of the Ipiutak culture. Concludes that Ipiutak is the oldest known Eskimo culture, dating to the first or second century A.D. Contains detailed description of the two types of Eskimo culture in northern Alaska; the Nunatarmut or inland Eskimos, and the Tikerarmut or Point Hope Eskimos (the Arctic whale hunting culture). Describes marine mammal hunting, including bowhead whaling (p. 27-30), at Point Hope. In 1940, the spring season was unusually advanced and the whales arrived nearly a month early. Nine crews succeeded in striking 13 whales, of which only 5 were landed. "The season of 1940 was considered very successful, although the native narratives record the killing of more whales during the last century. It is said that many generations ago bowhead whales passed Point Hope in the fall during their southward migration, as well as in the spring, and that at that time there were two whale hunting seasons each year. This situation exists at Point Barrow at the present time."

WESTERN ARCTIC

BEHAVIOR-migration; FIELD & LABORATORY TECHNIQUES-museums, artifacts; POPULATION-mortality, whaling; WHALING-western Arctic, Chukchi Sea, native, catch, crews, utilization.

LARSEN, THOR.

1976. Observations of animal life in Svalbard in 1974. *Norsk Polarinst. Arbok* 1974:211-220.

Observations on birds and mammals in Svalbard were collected from 21 expeditions and persons during 1974. "Parts of skin and blubber, two whalebones and a few bones from a stranded specimen (of *Balaena mysticetus*) were found on Mistakodden in August (D.B.). One baleen measured 3.40 metres, indicating that it must have been a big male." (p. 214.)

EASTERN ARCTIC

DISTRIBUTION-carcass; MORPHOLOGY-measurements (baleen); POPULATION-mortality, stranding.

LAWRENCE, MARY CHIPMAN (ed. by Stanton Garner).

1966. *The captain's best mate: the journal of Mary Chipman Lawrence on the whaler Addison 1856-1860.* Brown Univ. Press, Providence, Rhode Island, 311 p.

The journal is an account of seven whaling cruises made by the *Addison* during the period 1856-1860, including one (second) cruise to the Gulf of Alaska and Bristol Bay, and two (fourth and sixth) cruises to the Arctic Ocean. Daily entries made by Mary Lawrence, wife of Captain Samuel Lawrence, report whaling locations and events such as whale sightings, boat lowerings, strikes, losses, numbers of whales captured, and amounts of oil and baleen obtained. Numerous other vessels sighted and their catches to date were also recorded. Frequent accounts of the weather and sea conditions reveal difficulties encountered by whalers during the hunt for bowheads in the Arctic. Maps at the beginning of each cruise indicate the general course followed by the *Addison*.

Appendices provide information on the oil and baleen obtained during the voyage, crew list, list of slops and trade items carried on the vessel, list of identifiable members of the Lawrence and Chipman families mentioned in the journal, a glossary of whaling and nautical terms, and a glossary of obscure geographical terms. Notes provide additional relevant information for the purpose of placing this single whaling voyage in the larger context of the busy Pacific Ocean of the 1850s.

WESTERN ARCTIC

BEHAVIOR-behavior, migration; DISTRIBUTION-sightings; POPULATION-mortality, whaling, struck/lost, killed/lost; WHALING-western Arctic, commercial, history.

LEET, ROBERT EDWARD.

1974. American whalers in the western Arctic 1879-1914. M. A. Thesis, Univ. San Francisco, Calif. 141 p. (Unpublished.)

Historical review of commercial whaling for bowheads in the Bering, Okhotsk, Chukchi and Beaufort Seas based upon an extensive survey of the literature, including unpublished manuscripts, journals, logbooks, and various records in archives. Emphasis is placed upon describing the vessels and experiences of their seamen in the Arctic along with noteworthy events; scant information is provided on whaling effort and numbers of whales caught. The catch in 1892 for the *Grampus* and *Mary D. Hume*, after a 2 year voyage, was 38 whales whose bone sold for a half million dollars (p. 49.). Competition existed between vessels and shore based companies over catching whales which were becoming scarce during the 1890s. A. H. McGregor, captain of the *Karluk* in 1897, stated "In 1898 at Point Barrow alone they struck over 400 whales, only 25 of which were secured. In my time I have seen 14 ships with their boats lowered and all fast to whales and not one of them lost." William Macomber, captain of the *Thrasher*, supported McGregor saying the bowhead was gradually exterminated and the whaling stations were the culprits (p. 115.).

WESTERN ARCTIC

DISTRIBUTION-history; POPULATION-abundance, mortality (struck and lost); WHALING-western Arctic, Bering, Okhotsk, Chukchi, and Beaufort Seas, commercial, gear, shore stations, catch, utilization.

LENTFER , JACK W.

1972. Polar bear--sea ice relationships. In Stephen Herrero (editor), Bears -their biology and management, p. 165-171. Int. Union Conserv. Nature Nat. Resources, IUCN Publ. New Ser. 23 (Proc. 2nd Int. Conf. on Bear Res. and Manage., Univ. Calgary, Alberta, Can., Nov. 6-9, 1970).

Polar bear occurrence and patterns of movement discussed as related to occurrence and movements of the various types of sea ice, with emphasis on observations made off the west and north coast of Alaska. Several things attract polar bears to shore fast ice. One is beach carrion which includes carcasses of walrus *Odobenus rosmarus*, bowhead whales *Balaena mysticetus*, beluga whales *Delphinapterus leucas*, ringed seals *Pusa hispida* and bearded seals *Erignathus barbatus*. (page 168).

WESTERN ARCTIC

PREDATORS & COMPETITORS-polar bears (scavengers).

LENTFER, JACK W.

1980. Polar bear biology. Acoustical Soc. Amer., San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980. A report and recommendations, p. 61-62.

"Polar bears feed primarily on ringed seals, secondly on bearded seals. Hooded and harp seals are preyed upon in some locations, and walrus, bowhead, and seals are consumed in the form of carrion."

CIRCUMPOLAR

PREDATORS & COMPETITORS--scavenging.

LENTFER, JACK W.

1981. Polar bear biology. (Abstr.) *In* Acoustical Society of America. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 61-62. Unpub. rep. by Acoust. Soc. Am., [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

Review of knowledge about the biology and distribution of polar bears. "Polar bears feed primarily on ringed seals, secondly on bearded seals. Hooded and harp seals are preyed upon in some locations, and walrus, bowhead, and seals are consumed in the form of carrion."

WESTERN AND EASTERN ARCTIC
POPULATION-mortality (miscellaneous); PREDATORS & COMPETITION-scavenging.

LEUNG, YUK M.

1965. A collection of whale-lice (Cyamidae:Amphipoda). *Bull. South. Calif. Acad. Sci.* 64 (Pt.3):132-143.

An inventory of the collection housed at the Allan Hancock Foundation of the University of Southern California which consists of about 9000 specimens from all parts of the world. Specimen number CCE 4, *Cyamus ceti*, was collected from the bowhead whale, *Balaena mysticetus*, May 11, 1961 at Point Barrow, Alaska, by F. E. Durham. [p. 136].

WESTERN ARCTIC
PATHOLOGY-parasites.

LEUNG, YUK-MAAN.

1967. An illustrated key to the species of whale-lice (Amphipoda, Cyamidae), ectoparasites of cetacea, with a guide to the literature. *Crustaceana* 12 (Pt. 3):279-291.

Whale-lice (Amphipoda: Cyamidae) infest both whale-bone whales and toothed whales. The family is composed of five recognized genera with 16 species, excluding two unnamed species from *Berardius bairdii*. A table of cyamids and their hosts is included, which is based on the literature together with unpublished information. An illustrated key to the species is presented, as is a guide to the literature and a list of references. The bowhead whale, *Balaena mysticetus*, is host to the whale-louse *Cyamus ceti*. [p. 281]

GENERAL
PATHOLOGY-parasites.

LEUNG, YUK M.

1976. Life cycle of *Cyamus scammoni* (Amphipoda: Cyamidae), ectoparasite of gray whale, with a remark on the associated species. *Sci. Rep. Whales Res. Inst.* 28:153-160.

A study based on a series of *Cyamus scammoni* and the associated species, *C. ceti* and *C. kessleri*, collected from gray whales, *Eschrichtius robustus*. The whale-louse, ectoparasite of mysticetes and odontocetes, has been known ever since *Oniscus ceti* of the bowhead or Greenland whale was recorded by Linnaeus in 1758. Dr. F. E. Durham reported that he found *C. ceti* but neither *C. scammoni* nor *C. kessleri* on the bowhead.

WESTERN ARCTIC
PATHOLOGY-parasites.

LIBBEY, DAVID.

1981. Cultural resource site identification. *In* Cultural resources in the mid-Beaufort Sea region, a report for the North Slope Borough's coastal zone management plan, p. 2-28. Alaska Coastal Manage. Program, Anchorage, Alaska.

Author visited the mid-Beaufort Sea region in the company of a number of former residents and made on site determinations of house and ice cellar locations in places where signs of such structures no longer exist. The purpose was to bring the oral testimony previously given for The Traditional Land Use Inventory for the mid-Beaufort Sea, 1980 (TLUI, 1980) into much sharper perspective. Previous interviews that contained incidents of bowhead whales landed by former residents during the period 1921-1973 (TLUI, 1980) are repeated and related to the sites where they occurred.

WESTERN ARCTIC
ARCHAEOLOGY-artifacts; DISTRIBUTION-former and present; MORPHOLOGY-measurements; REPRODUCTION-calf; SKELETAL REMAINS; WHALING-history, western Arctic, Beaufort Sea, native, catch, photographs, utilization.

LILLJEBORG, W.

1866. Synopsis of the cretaceous mammalia of Scandinavia (Sweden and Norway). *In* W. H. Flower (ed.), Recent memoirs of the cetacea, p. 219-309. Roy. Soc., London.

Author journeyed to the Zoological Museums of Lund, Copenhagen, Christiania, and Bergen to investigate the collections of cetacean skeletons in order to prepare this monograph, a complete review of the cetaceans belonging to the Scandinavian Fauna. All available information on the systematics and morphology of *Balaena mysticetus* is reviewed (p. 302-308), drawing largely upon W. Scoresby's detailed description of the bowhead whale, its behavior, reproduction, food, and the whale-fishery for this species (p. 249, 251, 283, 294, 299, 300, and 302-308).

EASTERN ARCTIC
BEHAVIOR-respiration, diving, maternal; DISTRIBUTION-former; FIELD & LABORATORY TECHNIQUES-museums; IDENTITY-description, nomenclature, taxonomy; MORPHOLOGY-measurements, structure; NUTRITION-food; REPRODUCTION-mating, fetus, parturition, maturation; SKELETAL REMAINS; WHALING-history, eastern Arctic, commercial, catch.

LINDSAY, GEORGE E.

1957. Eskimo whaling at Point Barrow. *Zoonoos* 30(12):3-6.

An account of bowhead whaling by Eskimos at Point Barrow, Alaska, in the spring of 1953, with five photographs by the author. The pursuit, landing, and cutting-in of a bowhead that weighed 30 tons is described. One bomb from a darting gun that was thrown from the edge of the ice killed the whale. A second bomb was fired from a shoulder gun by another hunter but it missed the whale. In a good year, when the inshore leads open right, 20 whales can be taken by Barrow Eskimos. In 1953, so many whales were taken (number not stated) that even the hardy Eskimos could not have undergone all of the celebrations tradition demanded, so only three separate Nelekatuks were sponsored by groups of three or four crews.

WESTERN ARCTIC
WHALING-western Arctic, native, gear, catch, photographs, utilization.

LINDSAY, GEORGE E.

1967. Gray whales. *Pac. Discovery* 20(4):18-25.

Popular account describing the migration, hunting, and census taking of gray whales. "In the Arctic the gray whales became the prey of Eskimos, who used much the same techniques as the Indians, but in addition they also harpooned them from the ice when they came up in narrow leads to breathe. This continues today, although bowhead whales are more commonly taken, and an explosive bomb which kills the whale is fired from a shoulder gun. The whales are dragged up onto the ice, the whole village hauling on the ropes, and cut up and sledged back to land. I have seen this exciting hunt at Point Barrow, and participated in the nelakatuk ceremony which celebrates a successful season. Siberian Eskimos catch about 50 gray whales around Kamchatka each summer." Includes photograph of a bowhead being cut up on the ice by Eskimos at Point Barrow, Alaska.

WESTERN ARCTIC
WHALING-western Arctic, native, catch, photograph.

LINDSAY, GEORGE E.

1968. The Eskimo whalers of Point Barrow. *Pac. Discovery* 21(2):11-15.

An account of the capture of a 30-ton bowhead whale by Eskimos at Point Barrow, Alaska. Includes a brief review of traditional whaling methods compared with how it is now done in modern times. An Eskimo house 1,000 years old, which author and co-workers thawed and excavated at Birnirk, near Point Barrow, contained all of the kinds of Stone-Age whale implements which were used until the turn of this century. Author also provides a brief description of the bowhead or great polar whale and lists several products that were formerly made from the baleen. Author states that the numbers of bowheads are gradually increasing but it seems probable that in a few years Eskimo whaling will be another one of the lost arts.

WESTERN ARCTIC
IDENTITY-nomenclature, common name; MORPHOLOGY-size (estimate); POPULATION-abundance; WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch, photographs, utilization.

LIPTON, BARBARA.

1977. Yankee woman on an Arctic whaler, 1849. *Alaska J.* 7(1):50-55.

Account of a three-year whaling voyage by ship *Tiger*, commanded by William E. Brewster, which sailed from Stonington, Connecticut June 29, 1848. The ship whaled in the Bering and Chukchi Seas in 1849 and arrived home May 7, 1851. It was a successful voyage and they returned with 41 barrels of sperm oil; 2,629 barrels of whale oil; 21,000 pounds of whalebone; and had previously sent home 17,000 pounds of whalebone.

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, Chukchi Sea, commercial, catch, sketches.

LIVERSIDGE, DOUGLAS.

1963. The whale killers. Rand McNally & Co., Chicago, Ill., 192 p.

Brief, general account of whaling during the present and last century when whaling first became an industry. Disasters for the whaling fleet in the western Arctic recounted on pages 138 to 164, including destruction of vessels by the Confederate cruiser *Shenandoah*, and losses resulting from storms to ships trapped in the ice.

CIRCUMPOLAR
WHALING-western Arctic, Bering and Chukchi Seas, commercial, vessels.

LJUNGBLAD, DONALD.

1981. Bowhead aerial surveys. (Abstr.) *In* San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 68. Unpub. rep. by Acoust. Soc. Am., [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

Under aegis of the Bureau of Land Management (BLM), aerial surveys were conducted in and about a Beaufort Sea oil lease area on the North Slope of Alaska to learn what impact development here may have on endangered whales, "...specifically on the bowhead. The results of these surveys confirmed that the bowhead whale does pass near and, in one case, inside the oil lease area during the fall migration." (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR-migration; DISTRIBUTION-Beaufort Sea; FIELD & LABORATORY TECHNIQUES-census, aerial.

LOKEN, MARTY.

1977a. 1977--last year for bowhead-whale hunting? *Alaska* 43(9):11.

The number of bowhead whales taken by Alaskan Eskimos was insignificant before 1970 but climbed to an average of 29 per year from 1970 to 1975. The U.S. delegation to the IWC asked Eskimo leaders to reduce the harvest in 1976, but a record 48 whales were killed and another 35 were struck and lost. Killing techniques and crews are wasteful. As a result, the IWC approved a moratorium on bowhead killing in 1977. The moratorium will create problems for Eskimo culture.

WESTERN ARCTIC
POPULATION-mortality, whaling, struck and lost; REGULATIONS & CONSERVATION-management; WHALING-western Arctic, natives, catch.

LOKEN, MARTY.

1977b. Eskimos: "We will hunt the bowhead whale." *Alaska* 43(12):34-35.

Eskimos objected to the International Whaling Commission (IWC) global moratorium on bowhead whaling. Their efforts to challenge any moratorium included formation of the Alaska Eskimo Whaling Commission and threats to continue hunting regardless of restrictions. Events leading up to a meeting of the IWC in December 1977 to hear Eskimo arguments are recapitulated.

WESTERN ARCTIC
REGULATION & CONSERVATION-regulation, management; WHALING-western Arctic, natives, catch.

LOPEZ, BARRY.

1977. An Alaskan tragedy. *Harper's Mag.* 255(1528):30-33.

Describes acculturation of Alaskan Eskimos, particularly the residents of Barrow, during the 1970s and how their lifestyle, including hunting, has been affected. According to an unnamed source this writer reports that "...last year [1976] forty whaling crews may have wounded and lost as many as four whales for everyone they killed and brought in. In addition, many of the forty-eight killed were too large to get ashore and use efficiently, so that much of the meat-intended for food-was wasted."

WESTERN ARCTIC
POPULATION-mortality, whaling (struck and lost); WHALING-western Arctic, Chukchi Sea, Beaufort Sea, native, catch, crews, utilization.

LOPEZ, BARRY.

1982. A faint light on the Northern Edge. *North Am. Rev.*, March, p. 13-21.

Primarily a critical comparison of the Marine Mammal Protection Act of 1972 and the requirements for subsistence hunting for walrus and other animals by Eskimos. Author notes that the hunting of bowhead whales is more strictly monitored [than walrus hunting] by both the Alaska Eskimo Whaling Commission and federal representatives in accord with the provisions on an agreement between the U.S. and the International Whaling Commission. Baleen and bones of bowheads were observed and noted by the author.

WESTERN ARCTIC
REGULATION & CONSERVATION-management; SKELETAL REMAINS; WHALING-western Arctic, Bering Sea, native.

LORD-JENKINS, LINDA.

1981. Barrow celebrates whale catch with blanket toss. *Tundra Times*, June 24, 18(25):1,8-9.

Describes celebration by villagers following the capture of four whales by whaling crews during the spring at Barrow, Alaska. The successful crews were those of Roxie Oyagak, Ronald Coats, Al Hopson, Sr., and David Brower. This year, all villages took only 15 whales.

WESTERN ARCTIC
POPULATION-mortality, whaling; WHALING-Bering Sea, Chukchi Sea, native, catch, crews, photographs, utilization.

LORD-JENKINS, LINDA.

1982a. Brower opposes drilling until more research is done on effects. *Tundra Times*, January 13, 19(2):1, 6, 13.

North Slope Borough Mayor Eugene Brower and other officials of the Borough voice their concerns for the safety of the endangered bowhead whale if leases are granted for winter oil exploration drilling in the Beaufort Sea. States (incorrectly) that Kaktovik whalers caught and beached four whales during the [1981] fall season (p. 6).

WESTERN ARCTIC
BEHAVIOR-migration, mating; DISTRIBUTION-oil exploration effects; PATHOLOGY-pollution, oil products;
MORTALITY-whaling; WHALING-Beaufort Sea, native, catch.

LORD-JENKINS, LINDA.

1982b. Whalers, scientists, IWC to cooperate in census. *Tundra Times*, February 3, 19(5):1, 8, 13.

Account of the First Conference on the Biology of the Bowhead Whale sponsored by the Alaska Eskimo Whaling Commission and held during the last week of January in Anchorage, Alaska. During a discussion on the biology of the bowhead whale Arnold Brower, Sr., a long-time whaler of Barrow, stated "...that he and other whalers have observed bowheads traveling under "new ice", ice that is less than three-feet thick, and forcing the ice up so that the whales can get breathing space. Arnold Brower, Sr. and Jim Allen Aveoganna of Wainwright said the bowheads migrate in three schools - an early school which is not very large and contains small whales, the middle school which is the largest of the groups of whales, and the last school which is made up of large whales and calves." Brower also stated that the ability to distinguish between male and female bowheads "...is an art which is fast becoming lost with the passage of the older whalers. Brower said he can tell the difference and pointed to a few other whalers at the table who could but he said some of the younger whalers were unable to differentiate."

WESTERN ARCTIC
BEHAVIOR-migration, timing, patterns, segregated, ice breaking; FIELD & LABORATORY TECHNIQUES-field recognition, sex.

LORD-JENKINS, LINDA.

1982c. ICAS, AEWC clash on whaling authority. *Tundra Times*, April 21, 19(16):1,20.

Billie Neakok, president of the Inupiat Community of the Arctic Slope and Eugene Brower, chairman of the Alaska Eskimo Whaling Commission, disagree over which agency has jurisdiction over whaling matters. The last paragraph of the article states that the first whale of the season was taken April 19 at Savoonga, a 44-foot female.

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; REGULATION & CONSERVATION-regulation, Eskimo;
WHALING-Bering Sea, native, catch.

LOURIE, KAE S.

1982. The Eskimo Walrus Commission 1981-82 walrus data collection program. Processed rep., 233 p. Eskimo Walrus Comm., Nome, Alaska. (Available State of Alaska [Subsistence Div., Alaska Dep. Fish and Game, Juneau.]). [Unpublished]

Detailed report on the walrus hunt for five Alaskan communities: Mekoryuk, Gambell, Savoonga, Nome/King Islands, Wales and Little Diomed. Subjects discussed for each include 1981-82 summer, fall, and winter retrieved walrus harvests; spring 1982 harvest totals; sunk to retrieved harvest ratios; total estimated kill; hunting directions, distances, and trip hours; factors affecting hunting; hunting success rates; harvest distribution; and walrus utilization. The number of crews in each community and equipment used is detailed. Retrieved harvests of other marine mammals and birds includes two bowhead whales at Gambell and one at Savoonga (during the period April 16 - June 8), one gray whale at Wales (during the period June 7 - July 16), and one gray and one belukha at Little Diomed (during the period May 6 - June 24) (p. 227).

WESTERN ARCTIC
WHALING-Western Arctic, Bering Sea, Bering Strait, native, catch.

LOW, A. P.

1906. Report on the Dominion Government Expedition to Hudson Bay and the Arctic Islands on board the D.G.S. *Neptune*, 1903-1904. Canada, Gov. Print. Bur., Ottawa, Can., 355 p.

Narrative of an expedition to patrol Hudson and Baffin Bays and adjacent Arctic waters. Also presents a historical summary of explorations in the area, geographical descriptions, Eskimos and their manner of living, and geology. Chapter on whaling (p. 248-282) includes the history of whaling for Greenland whale in the area and discussion of whale distribution, food, description and morphology, baleen, swimming, blubber, respiratory behavior, whaling ships and techniques, and catch statistics. Lists other species of common and important whales, porpoises, seals, and walrus.

EASTERN ARCTIC
BEHAVIOR-swimming, respiratory; DISTRIBUTION; IDENTITY-description; MORPHOLOGY-measurements;
NUTRITION-food; WHALING-history, eastern Arctic, gear, catch.

LOWENSTEIN, TOM.

1981. Some aspects of sea ice subsistence hunting in Point Hope, Alaska. A report for the North Slope Borough's Coastal Zone Management Plan. North Slope Borough, Anchorage, Alaska. 83 p.

Continuously inhabited for over 1,000 years, Point Hope residents have developed patterns of sea and sea ice subsistence hunting that are based in antiquity but some have been modified by the use of modern equipment. Hunting practices are discussed according to four general periods: 1) The pre-contact period up to about 1880; 2) a transitional period from about 1900 to 1940-50; 3) the beginnings of super-change, roughly 1965 onwards; and 4) contemporary super-change, 1975-1980. Author provides interesting historical and present-day information on bowhead whaling methods and the importance of cultural practices associated with the hunt. Contains a map of the coastal area used by the hunters during various subsistence activities and gives names of locations (in English and Inupiat) frequented. A few catches of bowheads are mentioned but times taken are generalized. Bowheads migrate past Point Hope in three principle stages and Eskimo names for individuals comprising each are described, including the much sought after ingutuk.

WESTERN ARCTIC

BEHAVIOR-migration, relation other species; DISTRIBUTION-history; IDENTITY-nomenclature; WHALING-history, western Arctic, native, gear, catch, photographs, utilization.

LOWRY, LLOYD F.

1982. Documentation and assessment of marine mammal-fishery interactions in the Bering Sea. Trans. 47th North Am. Wildl. Conf., p. 300-311.

Discusses the nature and extent of interactions between marine mammals and fisheries as two major types: 1) Direct or operational, and 2) Indirect or biological. Conceptual assessments of probable interactions based upon available data resulted in six categories of species, with total rank values ranging from 13 (highest probability of significant interaction) to 8 (lowest probability of interaction). Using ranked values based on characteristics of feeding and population status, the bowhead whale ranked 8.

WESTERN ARCTIC

NUTRITION-food (Bering Sea); POPULATION-status.

LUBBOCK, BASIL.

1937. The Arctic whalers. Brown, Son & Ferguson, Ltd., Nautical Publ., Glasgow, Scotland, 483 p. (Reprinted 1955, 1968) .

Record of whaling by commercial vessels in eastern Arctic from early 17th century through early 20th century by season. Contains information on the Greenland whale, whaling fleets, beginning of shore-based whaling, and effects of these activities on the population.

EASTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION; MORPHOLOGY-measurements, structure; POPULATION-mortality; WHALING-history, eastern Arctic, gear, shore stations, catch.

LUSK, GERTRUDE.

1959. Lusk collection of Bernardi. Album, accession number 59-875, Alaska and Polar Regions Dep., Elmer E. Rasmuson Libr., Univ. Alaska, Fairbanks.

Album titled "Story of a whale hunt" contains pen sketches by Mrs. S. R. Bernardi and photographs with captions describing bowhead whaling by Eskimos at Wales, Alaska. No background information accompanied the album when Lusk donated it to the library in 1959, but it apparently was prepared by Mrs. S. R. Bernardi, who was a U.S. Government school teacher at Cape Prince of Wales at about 1902. [Also see Charles Bunnell collection of Bernardi, accession number 58-1026, Univ. Alaska, and S. R. Bernardi, Alaska 47(8):22-25 for additional information.]

WESTERN ARCTIC

WHALING-western Arctic, history, native, gear, catch, photographs and drawings.

LUTKEN, C. F.

1873. Bidrag til kundskab om arterne af slaegten *Cyamus* Latr. eller hvallusene (Contribution to the knowledge of the species of the genus *Cyamus* Latr. or whale lice). Kongelige Danske Videnskabernes Selskabs Skrifter Ser. 5, Naturv. Math. Afd. 10(3):231-284. (Transl. from Danish, Fish. Res. Board Can., Transl. Ser. 642, 1966).

A historical review and a proposed classification of the ectoparasites of the genus *Cyamus* found on cetaceans, including *Balaena mysticetus*. Due to confusion over whether the *Oniscus ceti* of Linne was truly the species living on the bowhead, the author proposed that in the future it be called *C. mysticeti* (p. 53). Drawings of parasites by the author in the publication are not included in the translation.

CIRCUMPOLAR

FIELD & LABORATORY TECHNIQUES-museums; IDENTITY-taxonomy; PATHOLOGY-parasites.

LUTKEN, C. F.

1893. Andet tillæg til "Bidrag til kundskab om arterne af slaegten *Cyamus* Latr. eller hvallusene" (Second appendix to "Contribution to the knowledge of the species of the genus *Cyamus* Latr., or whale lice.") Kongelige Danske Videnskabernes Selskabs Skrifter Ser. 6, 69(7):421-434. (Transl. from Danish, Fish. Res. Board Can., Transl. Ser. 565, 1965.)

Recognizing that the knowledge scientists had about the various species of cetaceans was often fragmentary and incomplete, the author suggests that further knowledge about their skin parasites might be useful in identifying whales. He states that "The cyamids occur only on certain whales...and the individual *Cyamus* species, as a rule if not always, are connected to definite whale genera and species." The author then attempts to separate and identify various species, mainly the baleen whales, using the available information on each, including descriptions by scientists and non-scientists, their distribution and migration, and ectoparasites found or reported found on their bodies. Includes various names by which the whales were commonly known in the 17th and 18th centuries.

CIRCUMPOLAR

DISTRIBUTION-former; FIELD & LABORATORY TECHNIQUES-museums; IDENTITY-nomenclature, taxonomy; PATHOLOGY-parasites.

MACGINITIE, G. E.

1955. Distribution and ecology of the marine invertebrates of Point Barrow, Alaska. *Smithson. Misc. Coll.* 128(9), 201 p. (Publ. 4221.)

Study conducted during 1948-1950 with a summary of previous investigations by scientists based at the Arctic Research Laboratory. Includes short notes on some fishes and mammals of the area. "The whales (mainly bowhead) are of first importance as a source of food for the Eskimos, several being taken in the spring of each year and the flesh stored underground in cellars, where it remains edible for three or four years. They feed on euphausiids ("krill" of the whalers) mysids, pteropods, and copepods of which there is an unlimited supply. To an Eskimo the most delectable food is whale muktuk, which consists of whale skin with about an inch of the underlying blubber. After freezing, the muktuk is cut into small squares and eaten raw. It has a nutty flavor and is really quite good. (p. 186).

WESTERN ARCTIC

NUTRITION-food; WHALING-western Arctic; Chukchi Sea, Beaufort Sea, native, catch, utilization.

MACINTOSH, N. A. [NEIL ALISON].

1946. The natural history of whalebone whales. *Biol. Rev.* 21(2):60-74. Reprinted in *Smithson. Inst. Annu. Rep.* 1946, Pub. No. 3871:235-264.

Paper describes the natural history of the *Mystacoeti*, or whalebone [baleen] whales, including *Balaenidae*, the right whales; *Balaenopteridae*, the rorquals; and *Rachianectidae*, the gray whale. Subjects discussed include: distribution and migration of the separate species; food; breeding, growth and age; populations and the effect of whaling industry; and future investigations. Regarding catches of *Balaena mysticetus*, "The International Whaling Statistics (1930, 1931) record that at Spitzbergen a specimen was taken in 1911, and that in the northeast Pacific two were taken in 1923 and 25 in 1924. According to Clarke (1944) it [the population] is increasing in the Beaufort Sea (Canadian Arctic) and schools are occasionally reported."

EASTERN ARCTIC, WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION-former and present; IDENTITY-description, taxonomy;

MORPHOLOGY-measurements; WHALING-eastern Arctic, western Arctic, commercial (and native?), catch.

MACINTOSH, N. A. [NEIL ALISON].

1965. The stocks of whales. Fishing News (Books) Ltd., London, 232 p.

A historical review of the whaling industry, with the main topic being the population dynamics of whales. Discusses the distribution, biology, whaling, and the management of whale stocks. Information on the bowhead (derived from the literature) includes classification, brief physical description, food, exploitation, whale oil and baleen uses in industry, and protection following near extermination. Author states that the bowhead, once plentiful, has remained a rare species though hardly molested in the last 50 years or more (p. 159), but recent sightings have been more frequent and there are some grounds for optimism (p. 164).

CIRCUMPOLAR

BEHAVIOR-migration; DISTRIBUTION-former, present; IDENTITY-description, taxonomy; MORPHOLOGY-measurements;

NUTRITION-food; POPULATION-abundance; REGULATION & CONSERVATION-regulation; WHALING-history, eastern Arctic, western Arctic, commercial, catch, utilization, drawing.

MAHER, WILLIAM J.

1960. Recent records of the California grey whale (*Eschrichtius glaucus*) along the north coast of Alaska. *Arctic* 13(4):257-265.

Discusses the migration, known summer range, and take of gray whales by Alaskan Eskimos from 1953-1959. Bowheads migrate along the lead and reach Barrow in mid-April. The gray whales move along the same route and reach Wainwright and Barrow the latter part of June and early July. By this time the shorefast ice is rotten and the Eskimos have ended their spring whaling for bowheads. Whaling vessels captured both bowhead and gray whales on the same voyages. Townsend (1928) plotted the positions of bowheads killed (5,114) by many vessels, but did not plot the gray whale catches (557). The shoulder and darting guns used by the Eskimos to take bowheads are not used to take grays, instead they use rifles.

WESTERN ARCTIC
BEHAVIOR-migration; WHALING-western Arctic, commercial, native, gear, catch.

MAHER, WILLIAM J. and NORMAN J. WILIMOVSKY.

1963. Annual catch of bowhead whales by Eskimos at Point Barrow, Alaska, 1928-1960. *J. Mammal.* 44(1):16-20.

The number of bowhead whales taken yearly from 1928 to 1960 is reported. Since 1954 the dates of capture and length of each whale is given; 88 percent were less than 40 feet long, therefore presumably sub-adult, and one was a recently born calf. (From author's abstract.)

WESTERN ARCTIC
BEHAVIOR-migration; MORPHOLOGY-measurements; POPULATION-calves; WHALING-western Arctic, Chukchi Sea, Beaufort Sea, native, catch.

MALM, A. W.

1883. Skelettdelar af hval, insamlade under expeditionen med *Vega* 1878-1880 (Whale bones collected during the Vega Expedition, 1878-1880). Svenska vetenskapsakademien. Handlingar. Bihang, 1883, 8(4), 114 p.

Fossil skeletons of 26 (including one new) species of whales found on the Chukotsk Peninsula and Bering Island. Includes *Balaena mysticetus* forma *pitlekajensis*, type locality, Pitlek, northeastern Siberia. (p. 37)

WESTERN ARCTIC
ARCHAEOLOGY-fossils; IDENTITY-taxonomy.

MANNING, T. H.

1943. Notes on the coastal district of the eastern Barren Grounds and Melville Peninsula from Igloolik to Cape Fullerton. *Can. Geogr. J.* 26(2):84-105.

Describes early explorations, physiography, ice conditions, and Eskimos of the area, including notes on mammals viewed in their relation to the Eskimo. "Greenland whales were once numerous at Repulse Bay and in Roes Welcome and Middleton (1743) records seeing a large number in Wager Inlet. Roes Welcome, during the last half of the nineteenth century, was a favourite haunt of the whalers, especially Americans, who often wintered at Fullerton Harbour and had a look-out station at Whale Point. They also hunted and occasionally wintered, at Repulse Bay. Some probably went well up the west side of Foxe Basin, certainly they visited Lyon Inlet, though I know of no record of whalers reaching Igloolik. One whale was killed and secured by the Eskimos at Lyon Inlet in 1940. As far as I know, the last one killed previous to that was a very small one in 1923 (Freuchen, 1935, p. 274). Richardson (1825, p. 336) says that "the Hudson's Bay Company once carried on the whale fishery in the Welcome, but not finding it profitable, they have abandoned it many years." This presumably refers to the last part of the eighteenth century, and may have resulted from the numbers of whales seen by the expeditions of Middleton, and of Moor and Smith." (p. 105).

EASTERN ARCTIC

DISTRIBUTION-former, sightings; WHALING-eastern Arctic, commercial, native, catch.

MANNING, T. H.

1956. Narrative of a second Defence Research Board expedition to Banks Island, with notes on the country and its history. *Arctic* 9 (1-2):3-77.

Describes archaeology, topographic and geological features of Banks Island, notes on birds and mammals, and documents exploration of the island from its discovery by Beechey and Parry in 1820 to work of the *Burton Island*, *Northwind* and *Labrador* in 1954. Visits by American whaling vessels to Banks Island (p. 23) are noted. "Whales were frequently taken between Nelson Head and Cape Kellett, and also, when ice permitted, on the west coast of Banks Island." Stefansson recorded Eskimo ruins at Cape Kellett but the village is eroding away and eight whalebone houses, including two above a cliff presumably where a good look-out could be kept for whales, were found and described. Figures 17-21 illustrate a selection of 348 artifacts (including numerous harpoon heads) obtained from the Thule houses excavated in 1952-53 (National Museum of Canada catalogue numbers 1 X-C6112 to 6120, 6195 to 6303, and OLRQI-1-244). Whalebone was commonly used for the larger objects.

WESTERN ARCTIC

ARCHAEOLOGY-artifacts; DISTRIBUTION-former; WHALING-western Arctic, eastern Beaufort Sea, commercial, native, gear, utilization.

MANNING, T. H. and A. H. MacPHERSON.

1958. The mammals of Banks Island. Arctic Inst. No. Am. Tech. Pap. No.2, 74 p.

Account of field observations made in 1951, 1952, and 1953, presenting taxonomic studies of the species observed. "The Eskimos who occupied Banks Island some 500 years ago undoubtedly hunted the Bowhead, the bones of which are plentiful in their house ruins on the south coast. At one group of houses about seven miles north of Nelson Head we saw four skulls built into the walls. On August 17, 1851 several [Bowhead] Whales were observed from the *Investigator* going westward between Prince of Wales Strait and Cape Lambton, and on September 19 two others were seen near Colquhoun Point also travelling westward (Armstrong, 1857, pp. 381, 443). Between 1888 and 1912, the Bowhead was hunted commercially in the southern Beaufort Sea and in the western entrance to Amundsen Gulf and its numbers severely reduced (Anderson, 1946, p. 91). During this period, according to Pedersen (1953), many whales were taken between Nelson Head and Cape Kellett, as well as on the west coast of Banks Island when ice conditions would permit. Anderson (1913, p. 498) says that in August whales usually seemed to be going south along the west side of Banks Island and west between Banks Island and Cape Parry, although they were often seen in Franklin Bay until September. Since the end of commercial whaling, Bowheads have probably become slightly more numerous. In 1914 Stefansson (1921, p. 285) found a carcass washed ashore ten to twelve miles southeast of Mary Sachs. On August 25, 1949 Porsild (1950) saw a large Bowhead in Amundsen Gulf while he was flying from De Salis Bay to Walker Bay. In 1951 three or four Bowheads were seen together from the *Cancolim* about 80 miles north-northwest of Tuktoyaktuk. The Banks Island Eskimos usually see a few at the floe near Sachs Harbour in late spring or early summer. In 1953 they saw three on July 4, two on July 19, and two off Cape Lambton on July 29 (Hohn, 1953)."

WESTERN ARCTIC

BEHAVIOR-migrating; DISTRIBUTION-history, sightings; POPULATION-abundance, mortality, stranding; WHALING-western Arctic, eastern Beaufort Sea, commercial, native, utilization.

MARGOLIS, L.

1954. List of the parasites recorded from sea mammals caught off the west coast of North America. J. Fish. Res. Board Can. 11(3):267-283.

A parasite-host and host-parasite list compiled from the literature up to July 15, 1953 with complete references of the ecto- and endo-parasites recorded from marine mammals of the North American west coast. *Balaena mysticetus* (p. 275, 278) is included as the host for *Cyamus ceti* Linnaeus, 1754; synonym *Cyamus mysticeti* (Lutken, 1870; Dall, 1872).

WESTERN ARCTIC

PATHOLOGY-parasites.

MARGOLIS, LEO.

1955. Notes on the morphology, taxonomy and synonymy of several species of whale-lice (Cyamidae: Amphipoda). J. Fish. Res. Board Can. 12(1):121-133.

Detailed examination of the genera comprising the Family Cyamidae. "Twenty-eight specimens (5 adults of each sex and 18 juveniles [of *Cyamus ceta*] were obtained from the Copenhagen Museum. They had been collected from the bowhead whale *Balaena mysticetus*, of the eastern Arctic during the years 1840 (?) to 1889 and had all been examined by C. F. Lutken. According to Lutken (1873) and Stephensen (1942) this species, the type of the genus *Cyamus*, occurs only on the bowhead whale, an inhabitant of Arctic regions only. Lutken reviewed the literature on this species and replaced Linne's trivial name, *ceti*, by *mysticeti* since *ceti* had been used for a variety of species. However, the original *ceti* was that species which is found on the bowhead whale and must remain as a valid name. Dall (1872) described this species, which he believed to be new, as *Cyamus mysticeti*. The host was the bowhead whale caught in the Bering Strait. Lutken (1887) found these specimens to be identical with his *mysticeti* (i.e., *ceti*) of the eastern Arctic."

CIRCUMPOLAR
PATHOLOGY-parasites.

MARGOLIS, L., and M. D. DAILEY.

1972. Revised annotated list of parasites from sea mammals caught off the west coast of North America. U.S. Dep. Commer., NOAA Tech. Rep., NMFS SSRF-647, 23 p.

Parasite-host and host-parasite lists, with supporting references, of the ecto- and endo-parasites recorded from marine mammals of the North American west coast are provided. The bowhead (*Balaena mysticetus*) and gray (*Eschrichtius gibbosus*) whales are listed as hosts of *Cyamus ceti* (p. 13).

WESTERN ARCTIC
PATHOLOGY-parasites.

MARGOLIS, LEO and GORDON C. PIKE.

1955. Some helminth parasites of Canadian Pacific whales. J. Fish. Res. Board Can. 12(1):97-120.

Helminth parasites recorded from cetaceans caught off the British Columbia coast are discussed, including notes on host and geographical distribution. "Ten mature specimens of *Lecithodesmus goliath* were collected from the bile ducts along the posterior margin of the liver of a fin whale, *Balaenoptera physalus*. This is the first Pacific record of *L. goliath* and the only report of a liver fluke in the fin whale. The parasite was previously known from *Balaenoptera acutorostrata*, *B. borealis* and *Balaena mysticetus* in northwestern European seas (p. 98)." "Specimens of a tapeworm cyst in the blubber of a sperm whale were first mentioned by Bennett (1837). He recorded finding numerous cysts of a species of *cysticercus* in the sperm whale, but failed to describe them. Diesing (1850), having misinterpreted Bennett's statement regarding the host, named the parasite *Cysticercus Balaena mysticeti* Bennett. Diesing (1863) later corrected his error and renamed the parasite *Cysticercus physeteris* Bennett." (p. 107).

EASTERN ARCTIC
PATHOLOGY-parasites.

MARKHAM, ALBERT HASTINGS.

1874. A whaling cruise to Baffin's Bay and the Gulf of Boothia. And an account of the rescue of the crew of the "Polaris". Sampson Low, Marston, Low, and Searle, London, 319 p. Second ed. publ. 1875, 307 p.

Journal of vessel *Arctic* on whaling cruise from Dundee, Scotland, to Baffin's Bay area, from May 3 to September 18, 1873. Gives detailed account of bowhead whaling and daily record of environmental conditions. On page 293 Appendix A provides details of bowheads captured including date, location, sex, length of whalebone, weight of whalebone, tons of oil, approximate value, and notes two of the females taken were accompanied by suckers (calves). Also taken were 19 narwhals, 20 seals, and 12 bears, one of which (a cub) was brought back alive. A total of 28 bowheads was captured (15 males and 13 females). The largest whale taken was a female with baleen 11 feet 9 inches long.

EASTERN ARCTIC

BEHAVIOR-when pursued, migration; DISTRIBUTION-former; MORPHOLOGY-measurements; POPULATION-mortality (struck and lost), calves; WHALING-eastern Arctic, commercial, gear, catch, utilization, drawings.

MARSH, MILLARD C. and JOHN N. COBB.

1908. The fisheries of Alaska in 1907. Rep. U.S. Comm. Fish., 1907, 64 p. (DOC. 632.)

Detailed annual reports and statistics on the fisheries by district in Alaska. "After an absence of over two years, nearly all of the Arctic Ocean whaling fleet, with headquarters in San Francisco, returned late in the fall with the biggest catch in years. The 8 vessels of the fleet caught about 82 whales, which, at the high prices prevailing for whalebone, will net the owners a handsome profit. Each vessel reported whales very abundant this year. As this fleet has its headquarters in California, nothing relating to it appears in the statistical tables of this report. This year the natives at whaling stations east of Point Barrow captured 9 whales, an exceedingly good catch. The products secured by the natives appear in the statistical tables." (p. 60-61). The table of products from Alaska shows 6,797 pounds of whalebone valued at \$32,585 from the Western district of Alaska (p. 10) and 18,880 pounds of whalebone valued at \$81,655 from Arctic Alaska (p. 12).

WESTERN ARCTIC

WHALING-western Arctic, commercial, native, catch.

MARSH, MILLARD C. and JOHN N. COBB.

1909. The fisheries of Alaska in 1908. Rep. U.S. Comm. Fish., 1908, 78 p. (Doc. 645.)

Detailed annual reports and statistics on the fisheries by district in Alaska. Baleen is also called finners, or gill bones, by commercial whalers. "A considerable quantity of whalebone is secured each season in the Arctic by shore parties of whites and natives, who kill the whales in the narrow channels between the ice. The whites save only the whalebone, but the natives eat the flesh in addition to saving the bone. This year over 53,000 pounds of whalebone came from these sources. The fleet whaling in the Arctic Ocean and having its headquarters in San Francisco was composed this year of 8 steamers and 2 sailing schooners. Several of the vessels wintered in the Arctic, the steamer *Karluk* some miles to the eastward of Point Barrow. The ice is reported to have been the worst in years, and owing to this the fleet did not deem it prudent to go to the eastward of the point, all of the whaling being done to the westward, where more open water was to be found. Before the fleet managed to get through Bering Strait into the Arctic the steamer *Wm. Bayliss* was wrecked and became a total loss in Anadir Bay, Siberia. The remaining seven steamers all returned to their home port in November, having secured 26 whales in all, which netted 39,500 pounds of whalebone. No reports have been received as yet as to the success of the schooners. The quantity brought back in 1907 was 114,500 pounds, but this represented two season's work (none of the data in this paragraph appears in the statistical tables of the report). Owing to the large stock of whalebone at present on hand and the very slight demand for it, the owners of the Arctic fleet are reported to have agreed not to send the fleet north in 1908 [sic, no doubt meant 1909], thus giving the holders of the goods a chance to dispose of the present surplus (p. 70-71)."

WESTERN ARCTIC
WHALING-western Arctic, commercial, native, catch, shore stations.

MARSH, MILLARD C. and JOHN N. COBB.

1910. The fisheries of Alaska in 1909. Rep. U.S. Comm. Fish., 1909, 58 p. (DOC. 730.)

Detailed annual reports and statistics on the fisheries by district in Alaska. "There are shore whaling stations along the Arctic shores of Alaska at Point Hope, Cape Lisburne, Icy Cape, and Point Barrow. There are but few white men at these stations, Eskimos composing the most part of the boat crews. Whales are hunted in the open leads in the ocean offshore from the stations. As a rule, only the bone is saved, although the natives use a considerable quantity of the blubber and meat as food. The bone shipped out is shown in the statistical tables (p. 10: 21,970 pounds of whalebone or baleen valued at \$82,042). The latest reports from these stations are that Point Barrow secured 11 whales and Point Hope 13 whales, a decrease of 12 from last year, while at Icy Cape, where 10 or 12 whales were killed in 1908, only 400 pounds of poor bone was secured this year. The fleet comprised the steamer *Herman* (290 tons), the steamer *Jeanette* (240 tons), the steamer *Karluk* (221 tons), which will spend the winter of 1909-10 in the North; and the schooner *Rosie H.* (69 tons), which spent the winter of 1908-9 in the North, and was still there when this report closed although an unconfirmed report had been received to the effect that she was ashore near Flaxman Island. The data relating to this fleet do not appear in the statistical tables of this report, as the headquarters are in San Francisco (p. 54)."

WESTERN ARCTIC
WHALING-western Arctic, commercial, native, catch, shore stations.

MARSH, MILLARD C. and JOHN N. COBB.

1911. The fisheries of Alaska in 1910. Rep. U.S. Comm. Fish. 1910, 72 p. (Doc. 746.).

Detailed annual reports and statistics on the fisheries by district in Alaska. "There are a number of shore whaling stations along the Arctic shores of Alaska, at Cape Smythe, Point Hope, and Point Barrow. At Cape Smythe there are about 19 boats whaling, at Point Hope about 22, and at Point Barrow about 36 boats. The crews average about 8 men to a boat and the darting gun is quite generally used. The season lasts about 2 months, and comprises a part of April, all of May, and a part of June. The bone shipped out from these stations appears in the statistical tables (p. 11: 2,334 pounds of whalebone or baleen valued at \$5,057).

Owing to the glut in the whalebone market, but few of the Arctic fleet operated this year. The fleet comprised the following: steamer *Herman* (229 net tons), steamer *Karluk* (247 net tons), brigantine *Jeanette* (217 net tons), schooner *Rosie H.* (69 net tons) which went north in 1908, gasoline schooner *Confianza* (84 net tons), and the schooner *Letitia* (233 net tons). The gasoline schooner *Olga* (43 net tons) sailed north in 1908 and was wrecked in the Arctic late in 1909, the news not coming out until this year. While whales were plentiful they were excessively shy and hard to approach. The fleet secured 27 whales, the *Karluk* alone taking 21, which however, represents two seasons' work on the part of the *Karluk*, she having spent the winter of 1909-10 in the north (p. 53)."

WESTERN ARCTIC

BEHAVIOR-when hunted, migration; POPULATION-abundance; WHALING-western Arctic, commercial, native, catch, crews, gear, shore stations.

MARSTON, MUKTUK [MARVIN R.].

1969. Men of the tundra: Eskimos at war. October House Inc., New York, 227 p.

An autobiography describing author's role in organizing the Territorial Guard in the western one-half of Alaska during World War II.

Upon visiting the village of Ikpek on or about December 31, 1942, he noted that a whale (species not stated) had been discovered frozen in the ice a few miles offshore and now everyone in the village had a plentiful supply of meat (p. 105, 141-2). Contains photographs (f.p. 104, number 22; f.p. 168, number 1-3) related to bowhead whaling at Point Hope, including statement that one crew took two whales, but no information on date of capture.

WESTERN ARCTIC

POPULATION-mortality, stranding; WHALING-Chukchi Sea, native, catch, crews, photographs, utilization.

MASON, OTIS TUFTON.

1900. Aboriginal American harpoons: a study in ethnic distribution and invention. U.S. Natl. Mus. Ann. Rep. 1900, p. 189-304.

Discussion of harpoons and their uses among aborigines of the world. Arctic harpoons are discussed on p. 236-303. "A broad, flat harpoon head (Cat. No. 34069, U.S.N.M.) of walrus ivory (tokang), taken from a large *Balaena mysticetus* caught in Cumberland Sound in 1878, is shown in fig. 57." [Drawing, p. 264; this specimen was collected by Ludwig Kumlein.]

EASTERN ARCTIC, WESTERN ARCTIC

ARCHAEOLOGY-artifacts; FIELD & LABORATORY TECHNIQUES-museums; WHALING-eastern Arctic, western Arctic, native, gear.

MATHIASSEN, THERKEL.

1928. Material culture of the Iglulik Eskimos. Gyldendal, Copenhagen. Rep. Fifth Thule Exped. 1921-24. v. 6., no. 1, 242 p.

Anthropological study of the Iglulik Eskimos of Canada, eastern Arctic. "Big whales are only hunted occasionally (p. 52). In the summer of 1922 two bowhead whales were caught, one at Repulse Bay and one at Ponds Inlet; these, however, were exceptional. There are no special weapons for whaling, the walrus and narwhal harpoons being used."

EASTERN ARCTIC
DISTRIBUTION; WHALING-eastern Arctic, native, gear, catch.

MAYOKOK, ROBERT.

1950. We caught a whale. *Alaska Sportsman* 16(7):10-13.

An account of a whale hunt at Wales, Alaska, when, as a youth, the author went out with his father's crew for the first time. Several crews whaled at Wales that year. A whale killed by another crew died after being struck with only one bomb. After the whale had been pulled up on the ice for butchering, the wind suddenly shifted to the south and the sea ice began drifting in. The lines attached to the whale broke and the breaking, grinding ice buried the whale completely and carried it away.

WESTERN ARCTIC
WHALING-western Arctic, Bering Strait, native, gear, crews, catch, photographs.

MAYOKOK, ROBERT.

1955. Troubles with civilization. *Alaska Sportsman* 21(9):16-20, 27-32.

This is the second of two chapters of "My life as an Eskimo" by the author. In 1923 he sailed north on the *Nanuk*, a trading and whaling vessel owned by Captain Petersen. The ship stopped at Point Hope and "...bought several hundred pounds of baleen, just taken out of the whale's mouth." After stopping at Herschel Island, they sailed for Wrangel Island to do some whaling but fled the area upon sighting a vessel the captain mistook for a Russian patrol boat.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, Beaufort Sea, commercial, native, catch.

MAYOKOK, ROBERT.

1970. Eskimo life. Nugget Press, Nome, 21 p. (Revised ed., orig. publ. 1951).

Brief description (p. 13-14) of Eskimo whaling for bowheads at Wales, Alaska.

WESTERN ARCTIC
WHALING-western Arctic, Bering Strait, native.

MAYOKOK, ROBERT.

1977. The Alaskan Eskimo. Nugget Press, Nome, 11 p. (Pamphlet) .

The author, a native of Wales, Alaska, briefly describes bowhead whaling as conducted by the hunters of his village. "By mid-April everything is ready...and before long the whales come, the smaller whale comes first, and it is this one the Eskimo wants."

WESTERN ARCTIC
BEHAVIOR-migration; WHALING-western Arctic, Bering Strait, native.

McCARTNEY, ALLEN P.

1979. Thule Eskimo culture: an anthropological retrospective. *Archaeolog. Surv. Can., Natl. Mus. of Man, Mercury Ser. Pap. No. 88*, 586 p.

Proceedings of a symposium on Thule archaeology and related studies held at the 10th annual meeting of the Canadian Archaeological Association in Ottawa during May, 1977, where 31 papers were presented. "These papers focus on the last thousand years of Neo-Eskimo cultural evolution in Alaska, Canada, and Greenland." (From author's abstract.)

EASTERN ARCTIC
ARCHAEOLOGY ; DISTRIBUTION; FIELD & LABORATORY TECHNIQUES-museums; POPULATION-mortality;
WHALING-eastern Arctic, native, gear, catch, utilization.

McCARTNEY, ALLEN P.

1980. The nature of Thule Eskimo whale use. *Arctic* 33(3):517-541.

"Archaeologists for the past half century have considered bowhead whaling to be an important and integral part of Thule Eskimo subsistence. This position has come into question recently. Arguments are set forth favoring the predominant archaeological view that bowheads were hunted and extensively used during the period A.D. 1000-1300 in much of the Canadian Arctic." (From author's abstract.)

The author states no other Canadian Arctic animal matches the bowhead's potential contribution to food, fuel, tool and weapon materials, household implements, transportation and shelter. Citing Banfield (1974) and Scoresby (1820), he states bowhead whales are slow swimmers at 2-4 knots, feed near the surface, often can be approached while sleeping on the surface, congregate in gangs of several hundred animals during migration, tend to be timid and thus more easily approached than other baleen whales, are remarkable floaters when killed, and have large mouth bones and sheets of baleen.

EASTERN ARCTIC
ARCHAEOLOGY; BEHAVIOR-migration, swimming; DISTRIBUTION-history; FIELD & LABORATORY
TECHNIQUES-artifacts; NUTRITION-feeding behavior; WHALING-history, eastern Arctic, natives, utilization.

McFARLAND, W. L., M. S. JACOBS, and P. J. MORGANE.

1979. Blood supply to the brain of the dolphin, *Tursiops truncatus*, with comparative observations on special aspects of the cerebrovascular supply of other vertebrates. *Neurosci. Biobehav. Rev.* 3 , Suppl. 1:1-93.

A comprehensive series of studies was made on the cerebral vascular supply of the dolphin and comparisons made to that of many other animals, aquatic, semi-aquatic and terrestrial. The extradural arterial internal ophthalmic rete, surrounding the optic nerve, was described in the bowhead whale (*Balaena mysticetus*) by Camper (1820) and by Knox (1838). (p 2.).

EASTERN ARCTIC
MORPHOLOGY-anatomy; PHYSIOLOGY-blood.

McGHEE, ROBERT.

1974. Beluga hunters. An archaeological reconstruction of the history and culture of the Mackenzie Delta Kittingaryumiut. Mem. Univ. Newfoundland, Newfoundland Soc. Econ. Studies No. 13, 124 p.

Account of archaeological work conducted during the summers of 1969 and 1970 at Kittigazuit. Contains review and description of 19th century Mackenzie Eskimo history and culture which, although admittedly sketchy and incomplete, is the first such description attempted and serves as a background for interpretation of archaeological evidence collected. Presents a historical review of the Eskimos, explorers and events of the region, including some information on bowhead whaling and catch by the local residents (e.g., Richardson, 1851; MacFarlane, 1908; Stefansson, 1919.).

WESTERN ARCTIC

DISTRIBUTION-historical; WHALING-western Arctic, Beaufort Sea, commercial, native, gear, catch.

MCKINLAY, WILLIAM LAIRD.

1976. *Karluk*: The great untold story of Arctic exploration. St. Martin's Press, Inc., New York, N.Y. 10010. 170 p.

A 20-year old whaling ship, the *Karluk* (the Aleutian word for fish) (p. 10-11), was purchased by V. Stefansson as the lead ship for his Arctic expedition of 1913-18; it soon became trapped in the ice near Point Barrow and drifted for months until it was crushed and sank on January 11, 1914 (p. 68) near Wrangel Island. The survivors made it to the island where they were rescued Sept. 7, 1914. The author reported a small island east of Wrangel Island was named Skeleton Island because of a whale skeleton there (p. 113) and also noted the finding of a whale skeleton with whalebone (p. 149), but no location was given.

WESTERN ARCTIC

SKELETAL REMAINS—Chukchi Sea, Wrangel Island; WHALING—gear, vessel.

McVAY, SCOTT.

1973. Stalking the Arctic whale. Am. Sci. 61(1):24-37.

Describes field trip to northwest coast of Alaska in 1971 to photograph and record vocalizations of bowheads during the spring migration. Reviews the literature and presents an excerpt from Aldrich (1889) describing the voice of this cetacean. Presents a description of the bowhead and other Arctic whales, observations of bowhead behavior and migration, the sighting of an albino bowhead, estimates of the size of the population, data on a few of the largest whales captured by Scoresby and Alaskan Eskimos, Eskimo whaling expenses, the utilization and value to the Eskimos of whale products, and reports that in May 1970 the Barrow whalers took 15 bowheads.

WESTERN ARCTIC

BEHAVIOR-migration, vocalization, relationship other species; IDENTITY-description, albino;

MORPHOLOGY-measurements; POPULATION-abundance, mortality, whaling; WHALING-western Arctic, Chukchi Sea, native, catch, crews, drawings and photographs, utilization.

MEAD, JAMES G.

1979. An analysis of cetacean strandings along the eastern coast the United States. *In* J. B. Geraci and D. J. St. Aubin, *Biology of marine mammals: insights through strandings*, p. 54-68. Report prepared for U.S. Mar. Mam. Comm., Washington, D.C., Rep. No. MMC-77/13. Also avail. Natl. Tech. Inf. Serv., Springfield, Va. 22161, as PB 293890.

A total of 1,078 records of stranded cetaceans from the Atlantic and Gulf coasts of the United States failed to record the stranding of a single *Balaena mysticetus* in the area.

EASTERN ARCTIC
DISTRIBUTION-history; POPULATION-mortality, strandings.

MEEK, ALEXANDER.

1918. The reproductive organs of cetacea. *J. Anat.* 52:186-210.

A 41 cm female fetus of the Greenland whale, presented to the Natural History Society of Newcastle in 1835 by T. R. Batsom and preserved in the Hancock Museum, was dissected and examined by Meek (p. 208). His report on the female organs is the first for this species according to Meek.

EASTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-museum; MORPHOLOGY-anatomy; REPRODUCTION-fetus.

MENAGER, FRANCIS M.

1962. *The kingdom of the seal*. Loyola Univ. Press, Loyola Univ., Chicago, Ill., 203 p.

Experiences of a Jesuit missionary among the Eskimos of western Alaska. In late May 1937, he flew to Little Diomed Island for a visit with Father Tom Cunningham, who had started his missionary work there in October 1936. Father Cunningham related to him that a few days earlier he had accompanied a crew of about a dozen men on a successful hunt for a huge black (arravok) whale. They pursued it in a 40-foot skinboat equipped with a four-inch harpoon gun on the prow. After killing the whale it was towed ashore for butchering. Siberian Eskimos from nearby Big Diomed Island were invited to participate in a feast of celebration that lasted for almost three days (p. 193-201.).

WESTERN ARCTIC
IDENTITY-nomenclature; WHALING-western Arctic, Bering Strait, native, crew, gear, catch, utilization.

MENOVSHCHIKOV, G. A.

1964. *The Eskimos*. *In* M. G. Levin and L. P. Potapov (editors), *The peoples of Siberia (Narody Sibiri)*, p. 836-850. Russian Acad. Sci., Moscow, 1956. English transl. from Russian by Scripta Technica, Inc., Univ. Chicago, Chicago, Ill.

Describes the sea mammal culture of the Asiatic Eskimos who call themselves Yugyt, Yupigyt ("people, real people"), which are related to the coastal Chukchi. "After the mass extermination of whales by American whalers during the second half of the 19th century, whale hunting had declined, although it was still very important to the coastal people. One whale supplied an entire village with meat and blubber for a whole year, and yielded a great deal of valuable salable goods (whale-barb, blubber)." (p. 839-840). With the acquisition of new firearms and whaleboats obtained in trade with the Americans, they now concentrated on hunting walrus and seal instead of the almost vanished whales. Illustrated with drawings and photographs of tools, weapons, and boats used for hunting, including a photograph (p. 844) of a young bowhead killed by hunters and being prepared for cutting up on the shore.

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, Chukchi Sea, native, crews, gear, catch, photograph, utilization.

MEYER, CHARLES R.

1976. Whaling and the art of scrimshaw. Henry Z. Walck, Inc., division of David McKay Co., Inc., New York, N.Y., 271 p.

A blending of encyclopedic reference book and tales of adventure, illustrated with photographs of whaling and the art of scrimshaw. Citing G. B. Goode (1887), "The whalebone workers of the United States recognize five varieties of bone: (1) Arctic, from the bowhead or Polar whale; this is the largest bone, and is used principally in the manufacture of whips and dress bone; (2) Northwest, which is the heaviest bone, and is used for whips and canes; (3) South Sea, which is fine and short, used for whips and dress bone; (4) Humpback, short and black, specially suitable for corsets; (5) Finback, short and coarse, used for corsets." (p. 78). "The records of an otherwise unidentified Captain G. B. Borden inform us that he once picked up a bowhead whale, whose death by (sic) [was] caused by "killers (most probably the orca, genus *Orcinus*, or killer whale), which he was able to take alongside, cut-in and boil-out in a total of 21 hours, securing 140 barrels of oil." (p. 131). "In [see page 301] the spring [actually summer, as vessels rarely arrived there before July] the Point Hope men sold the bone from five whales which they killed after the vessels left in 1879." (p. 174, 178).

WESTERN ARCTIC

PREDATORS & COMPETITORS-killer whale; WHALING-western Arctic; commercial, native, gear, catch, utilization, photographs.

MILAN, FREDERICK A.

1964. The acculturation of the contemporary Eskimo of Wainwright, Alaska. Univ. Alaska, Fairbanks, *Anthropol. Pap.* 11(2):1-108.

Results of a 10-week study in 1955 to evaluate the mode of life of the Eskimo residents of Wainwright, Alaska. Contains information on early day commercial and native whaling in the area, present day (1955) whaling by natives, and brief generalized natural histories (some inaccuracies) on marine mammals found there. Three crews hunted bowheads during the spring of 1955 when one whale was taken and one was struck but lost (p. 35). The season began 21 April and ended early in June (p. 30). Discussing the use of bowheads for food, the author states that whale meat is enjoyed by the Eskimos but is comparatively rare (p. 28). Many years whaling is carried on without success; in fact, in 1955 the first whale in three seasons was finally caught (p. 30).

WESTERN ARCTIC

POPULATION-mortality (whaling); WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch, utilization.

MILAN, FREDERICK A.

1968. The indomitable Eskimo: Master of a frozen world. *In* *Vanishing peoples of the earth*, p. 132-151. Natl. Geogr. Soc., Washington, D.C.

A brief description of Eskimo life in the Arctic based upon author's annual visits to Wainwright, Alaska, since 1955. Walrus and seal hunting, fishing and whaling are described. The Spring Whale Festival-Naluqataq-takes place only at the end of a successful season and the author attended his first one in Wainwright in June of 1955 after Weir Negovanna caught a bowhead whale that spring.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, crew, catch, photographs.

MILLER, RICHARD S.

1955. A survey of the mammals of Bylot Island, Northwest Territories. *Arctic* 8(3):167-176.

The 1954 Bylot Island expedition was organized to survey the flora and fauna, and to study certain ecological problems. Mammal species reported were actually observed by members of the expedition, or were identified by Eskimos, and include the Tununermiut names for each. The bowhead (Akbiik) whale, *Balaena mysticetus*, was intensively hunted by whalers in waters off the east coast of Bylot Island following Parry's voyage to Possession Bay in 1819. Now, seldom more than a few whales are seen each year off Button Point and only occasionally do they enter Pond Inlet and Navy Board Inlet. Whale skeletons are fairly numerous along the beaches of Pond Inlet, Eclipse Sound and Navy Board Inlet, and are sometimes found on raised beaches as much as 2 miles inland and 200 feet above the present shore. The Eskimos have no stories to account for these skeletons.

EASTERN ARCTIC
DISTRIBUTION-former, sightings; IDENTITY-nomenclature (Eskimo); POPULATION-abundance; SKELETAL
REMAINS-beachcast.

MINNER, J. LESTER.

1948. Muktuk. *Alaska Sportsman* 14(12):16-19.

Account of the capture of a bowhead whale about 75 feet long at Wainwright, Alaska, in 1946 [year of capture, not stated in article, was established by data provided by F. A. Milan, Univ. Alaska, Fairbanks, pers. commun., on April 19, 1977 to W. Marquette]. At least six crews were actively whaling at Wainwright this year.

WESTERN ARCTIC
MORPHOLOGY-length (estimated); WHALING-western Arctic, Chukchi Sea, native, catch, crews, photographs.

MINNER, J. LESTER.

1953. Old man of the ice floes. *Alaska Sportsman* 19(3):18-21, 38-39.

Brief popular account on the natural history of the walrus and techniques employed by the Eskimos to hunt this animal they call the old man of the ice floes. Author states that the killer whale, a dreaded enemy of the walrus, also "...will attach himself to the lip of a great bowhead whale many times his size and drown the monster."

WESTERN ARCTIC
PREDATORS & COMPETITORS-killer whales.

MINNER, J. LESTER.

1954. Old man of the ice floes. *Country Life*. August 5, 116:416-418.

Essentially the same article with the same title as published in 1953 in the *Alaska Sportsman* 19(3):18-21, 38-39, but with different photographs (walrus hunting).

WESTERN ARCTIC
PREDATORS & COMPETITORS-killer whales.

MITCHELL, E. D., and R. R. REEVES.

1980a. Overview of aboriginal and subsistence whale fisheries, and analysis of the Alaskan bowhead problem. Int. Whaling Comm. 32nd annual meeting, Cambridge, England. Document SC/32/PS-22. 28 p. [Unpublished]

An essay that attempts to: (1) describe the context in which the bowhead problem developed; (2) propose definitions of some key terms associated with all whaling; and (3) offer a set of scientifically and socially acceptable alternatives for subsistence that would at once reduce from present levels the biological risk of extinction to the bowhead, and allow for the preservation of a whaling tradition in Alaska. Recognizing that although the bowhead hunt should be stopped for biological reasons, it will probably continue because of subsistence and traditional cultural considerations, the authors maintain that it is both desirable and feasible that the take of bowheads be reduced and an alternative species such as the gray whale should be substituted to satisfy these requirements of the Alaskan Eskimos.

WESTERN ARCTIC
REGULATION & CONSERVATION-management; WHALING-western Arctic, history, native, catch, utilization.

MITCHELL, EDWARD, and RANDALL R. REEVES.

1980b. The Alaska bowhead problem: a commentary. *Arctic* 33(4):686-723.

Authors believe that continued hunting "... of bowhead whales (*Balaena mysticetus*) by Alaskan Eskimos constitutes a risk of unknown magnitude to this last concentrated remnant of a once abundant, widely distributed species ... We trace the origins of the bowhead problem, define the terms necessary for a rigorous discussion of "aboriginal" and "subsistence" whale fisheries, examine the biological, nutritional, and social dimensions of the Alaska whale hunt, and assess the relationship between the present-day whale hunting methods and traditional values ... If bowhead whaling is to be continued in order to satisfy "cultural needs," then we believe that only one bowhead whale at each village with a long tradition of whaling can be justified." (From author's abstract.)

WESTERN ARCTIC
DISTRIBUTION-former and present; POPULATION-abundance, age composition; REGULATION & CONSERVATION-regulation, management; WHALING-history, western Arctic, Bering, Chukchi, Beaufort Seas, U.S.S.R., native, shore stations, catch, photographs, utilization.

MITCHELL, EDWARD D. and RANDALL R. REEVES.

1982. Factors affecting abundance of bowhead whales *Balaena mysticetus* in the eastern Arctic of North America, 1915-1980. *Biol. Conserv.* 22:59-78.

Although commercial whaling for bowheads ended in this region about 1915, whaling by native people continued until recently and may have inhibited bowhead population increase. Natural mortality resulting from ice entrapment and predation by *Orcinus orca* can be documented. Table 1 contains all known attempts to kill and killings of bowheads from 1919-1976. The bowhead's apparent failure to recover in the eastern Arctic may be due to a combination of continued low-level hunting, habitat instability, and predation.

EASTERN ARCTIC
DISTRIBUTION-former and present; POPULATION-status, mortality; PREDATORS & COMPETITORS-*Orcinus orca*; WHALING-eastern Arctic, commercial, native, gear, catch, photographs.

MOGG, WILLIAM.

1964. The arctic wintering of HMS *Hecla* and *Fury* in Prince Regent Inlet, 1824-25. *Polar Rec.* 12(76):11-28.

Mogg served in the Royal Navy on arctic expeditions aboard *Hecla* in 1821-22 and *Fury* during 1824-25 in the search for a Northwest Passage. His journals noted they passed several whales [probably bowhead] on Sept. 13, 1824. During the period Sept. 22-24 he reported several whales were seen as they made for Prince Regent Inlet. After overwintering at Port Bowen, crews hauled two boats with harpoons, lines and provisions over ice, during the period July 1-5, 1825, to a station three miles from the ships to begin whaling. On July 13 a third whaleboat left for the whaling station at Port Jackson. The next morning one of the boats returned to report one whale [presumably bowhead] killed and the crew were cutting blubber for boiling down.

EASTERN ARCTIC
DISTRIBUTION-sightings; WHALING-eastern Arctic, commercial, catch, shore station.

MOHR, J. L.

1969. Marine biology. *Arctic* 22(3):265-282.

Discusses past research in marine biology carried out from the Naval Arctic Research Laboratory and suggests additional studies that would contribute to the state of the knowledge. Regarding plankton, there has been no sampling in the leads in April and May when bowhead whales are hunted while apparently feeding. F. E. Durham has some bowhead gut material indicating that they do feed (most whales apparently disgorge when harpooned), but almost nothing is known of the plankton which is their food (p. 266). Various aspects of the biology of bowhead whales are under study by Durham (p. 274), who has observed more than 30 butcherings during visits to whaling villages. Observations have been made on changes in Eskimo whaling that could make for retrieval of a significantly larger proportion of whales killed. Development of Eskimo ethics of conservation while introducing more effective whaling methods may be a significant benefit that biologists of the laboratory can bring (p. 279).

WESTERN ARCTIC
BEHAVIOR-when hunted; NUTRITION-food, feeding; MORPHOLOGY-structure; POPULATION-mortality, whaling;
REGULATION & CONSERVATION-conservation; Eskimos; WHALING-western Arctic, native, gear, catch.

MOORE, W. ROBERT.

1956. Alaska, the big land. *Natl. Geogr. Mag.* 109(6):776-807.

Popular account of author's visit to several Alaskan villages during 1955. "I just missed the end of Barrow's whaling season and was too late for nalukatuk, the feast dance to celebrate the catch of 17 large bowhead whales." (p. 793).

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch.

MORGAN, LAEL.

1973. "Ocean mammals are to us what the buffalo was to the Plains Indian." *Natl. Geogr.* 143(3):354-355.

With these words, David Stone, accompanied by dozens of other natives who traveled to Nome, Alaska, in May 1972 to testify at a U.S. Senate committee hearing on the Marine Mammal Protection Act, pleaded for the Eskimo's traditional rights to hunt the bowhead whale and other marine mammals. Dr. G. Carleton Ray stated "It looks very much as if the bowhead is increasing in numbers. The Eskimos certainly do not pose a danger to these animals." Point Hope produced 4,000 pounds of muktuk for sale at \$2 per pound to other Eskimo villages last season (1971) Stone testified. Morgan briefly relates her experience as a member of a whaling crew.

WESTERN ARCTIC
POPULATION-abundance; WHALING-western Arctic, native, catch, crews, utilization.

MORGAN, LAEL.

1974a. The villages are all alive and well, thank you. *Alaska* 40(8):33-39.

Contains information on Alaskan villages visited in 1974 by the author. Whalers at Kivalina took only one bowhead a year from 1970 to 1973 and last year (1973) they didn't get any, although one was killed but lost to the ice. Milton Swan, a long-time captain, reported "The first year I went out, 1958, there was only one skin boat in this village. Now there are five."

WESTERN ARCTIC
POPULATION-mortality, killed and lost; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

MORGAN, LAEL.

1974b. We got a whale! *Alaska* 40(9):33-38.

Account of bowhead whaling at Barrow, Alaska, during spring 1974. Author served as a cook for a brief period with Simeon Patkotak's crew, a captain who had gotten a whale every year since 1968 and last year had taken two. This year his crew killed a large whale that became trapped under the ice and was later recovered as a stinker. They also struck but lost a 30-foot female that was pursued and killed by Percy Nusunginya's crew two days later. Nusunginya's crew also recovered a 51-foot male stinker that they had killed but lost two days earlier.

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-mortality, struck and lost, killed but lost; WHALING-western Arctic, native, catch, crews, photographs.

MORGAN, LAEL.

1974c. A powerful spring in the Arctic. *Alaska* 40(10):33-39, 54-55.

Account of author's visit during spring 1974 to the villages of Nuiqsut, Wainwright, Point Hope, Anaktuvuk Pass and Kaktovik. At Wainwright, Rossman Peatoak had gotten the first and only whale of the year, a 53-foot animal. The ice moved in, however, and much of the whale meat was lost. Seven whales were taken at Point Hope this spring.

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, native, catch, crews, utilization.

MORGAN, LAEL.

1974d. And the land provides: Alaskan natives in a year of transition. Doubleday & Company, Inc., Garden City, New York, 325 p.

An account, based upon experiences gained while living among the natives of six Arctic villages for twelve months in 1972, of the transition of Alaskan natives from a subsistence to a money economy. At Point Hope she joined the crew of Bernard Nash for spring whaling which began on April 13 (p. 45-97). Author describes activities, weather and ice conditions during the time she was in the village, including information nearly a dozen crews were on the ice that year, bowheads struck but lost, and whales landed.

WESTERN ARCTIC

MORPHOLOGY-measurements; POPULATION-mortality, whaling, struck and lost; WHALING-western Arctic, Chukchi Sea, native, gear, catch, crews, photographs, utilization.

MORGAN, LAEL.

1975. Rock, the artist. *Alaska J.* 5(1):25-31.

Brief biography of Howard Rock from Point Hope, Alaska. Although his father, Sam Rock (Weyahok), and his brothers were famous whalers who all took bowhead whales, Howard never did. Instead, Howard became a famous Eskimo artist. Among his best known paintings were two about bowhead whaling, "Whale Hunt" and "Arctic Whale."

WESTERN ARCTIC

WHALING-western Arctic, native, crews, paintings.

MORGAN, LAEL.

1976. Eskimos stand cool under the big glass eye of fame. *Alaska* 42(1):46-48.

Describes events associated with making a children's film in northwest Alaska during the summer of 1975. Contains statement "The Point Hoppers had gotten only four small whales this season [spring 1975] as compared to seven or eight in good years." (p. 48).

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, catch.

MORGAN, LAEL.

1977a. A new look at subsistence whaling. *Alaska* 43(9):8-10.

Reviews kills of bowhead whales by Alaskan Eskimos in 1976-1977 and discusses some of the problems of changing social structures in relation to whaling. The Eskimos agree that more self-regulation in subsistence hunting is necessary, but they believe a better census of the whale population is required. Eleven whales were killed at Point Barrow during the fall of 1976, one of which was lost and four (or six) rotted in the process of being towed; 13 were taken in spring 1976. Thirty-four Eskimo crews hunted in Alaska waters in spring 1977. The spring harvest was 19 bowheads at Barrow, two at Point Hope (1976 was 12), Kivalina-one (1976-none), Gambell 2 (1976-1), Wainwright 2 (1976-3), Savoonga-none (1976-7). Total kill during spring and fall was 47 whales.

WESTERN ARCTIC

POPULATION-mortality, whaling, killed but lost; REGULATION & CONSERVATION-management; WHALING-western Arctic, native, catch, crews, utilization.

MORGAN, LAEL.

1977b. How to build a whale boat. *Alaska* 43(9):12.

Brief description on the construction of an Eskimo skin-covered boat for whaling. The skins of six large oogrucks (bearded seals) are used and, with care, the boat will last one hunting season. Skins can be rescued for a second year, but must be removed and treated before the second season.

WESTERN ARCTIC
WHALING-western Arctic, native, gear, photographs.

MORGAN, LAEL.

1977c. Gambell-a walrus economy. *Alaska* 43(10):22-25, 90.

Account of walrus hunting at Gambell, Alaska, in mid-May. Roger Silook reported seeing a fine bowhead whale, but he did not have hunting gear in his boat to take it. (p. 25).

WESTERN ARCTIC
BEHAVIOR-migration; DISTRIBUTION-sighting.

MORGAN, LAEL.

1977d. "Now everybody cares." *Tundra Times*, Dec. 28, 14(52):5.

Eskimo whaling for bowhead whales was a little understood subject at the Second Conference of the Biology of the Marine Mammal held at San Diego early in December. One speaker explained the marine mammal is the focal point of Circumpolar People, it is not just an abstract symbol of a cult. Although they are small in number, Eskimos are a majority of people occupying a vast area and feel they have a significant role to play in decisions that are made regarding whaling.

WESTERN ARCTIC
REGULATION & CONSERVATION-conservation; WHALING-western Arctic, native.

MORGAN, LAEL.

1978. Letters, notes and comments: (Letter to Craig Van Note in reply to questions about Eskimo's wasteful hunting of bowhead). *Alaska* 44(1)12-13.

The writer agrees that a bomb gun shown in a photograph was an inefficient device, but does not agree that Alaskan Eskimos are engaged in "massive kills" of bowhead whales, that the bowhead population is decreasing, or that the Eskimos are not conservative.

WESTERN ARCTIC
POPULATION-abundance & density; REGULATION & CONSERVATION-conservation; WHALING-western Arctic, natives, catch, gear.

MORGAN, LAEL.

1979. Let the Eskimos hunt. *Newsweek*, May 21, p. 19.

Brief account of traditional bowhead whaling by Alaskan Eskimos and their desire to continue taking more whales annually than allowed by the International Whaling Commission since 1978. The natives formed their own Alaska Eskimo Whaling Commission to champion their interests and pledged to limit their kill to no more than 2% of the known number of bowheads, which is estimated by a new census to be 2,264. This is well over the IWC quota, which was 12 bowheads landed for 1978 and 18 landed for 1979.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-census; POPULATION-abundance; REGULATION & CONSERVATION-management; WHALING-western Arctic, native, catch.

MORGAN, LAEL.

1981. The politics of whaling. *Alaska* 47(5):8-11.

Recounting of regulation difficulties between Alaskan Eskimos, U.S. government, and the International Whaling Commission since 1977. The main article is accompanied by two smaller items [apparently also prepared by L. Morgan] titled: "The whaling tradition" and "How good is our whaling research?"

WESTERN ARCTIC
POPULATION-abundance; REGULATION & CONSERVATION-legislation, management, regulation; WHALING-western Arctic, native, catch, utilization, photographs.

MORRISON, PETER.

1962. Body temperatures in some Australian mammals. III. Cetacea (Megaptera). *Biol. Bull.* 123(1):154-169.

A series of 250 body temperatures were made on 20 humpback whales, *Megaptera novaeangliae*, from the east coast of Australia. Table 7 on p. 165 contains data from Scoresby (1820) giving the blood temperature of bowhead as 38.8 C.

EASTERN ARCTIC
PHYSIOLOGY-blood.

MUKLUK TELEGRAPH.

1950a. Village news: Point Hope. *Mukluk Telegraph*, Kotzebue, Alaska, June 1, 1(1):1.

The people at Point Hope have caught only two whales to date.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch.

MUKLUK TELEGRAPH.

1950b. News of the villages: Point Hope. *Mukluk Telegraph*, June 15, 1(2):1.

"The annual Whale Dance or Nuligathuk was held Tuesday, Wednesday and Thursday. The captains of the successful whaling crews were Sam Rock and Peter Kugnrok."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews, catch.

MUKLUK TELEGRAPH.

1950c. News of the villages: Wales. *Mukluk Telegraph*, Kotzebue, Alaska, September 16, 1(7):1.

Hunters at the village of Wales have seven oomiaks (boats).

WESTERN ARCTIC
WHALING-western Arctic, native, gear, crews.

MUKLUK TELEGRAPH.

1950d. News of the villages: Gambell. Mukluk Telegraph, Kotzebue, Alaska, September 16, 1(7):2.

Charles Slwooko and John Apangalook reported that one bowhead whale was taken at Gambell in April.

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, native, catch.

MUKLUK TELEGRAPH.

1951a. News of the villages: Point Hope. Mukluk Telegraph, Kotzebue, Alaska, April 28, 2(3):3.

"We get only one whale so far. Patrick Attunganna is captain of successful whaling crew. They caught the whale last Saturday night. Other people in his crew are: Moses Milek, Roy Vincent, Joseph Toksuk, Henry Attunganna, Beatrice Vincent, Kitty Kewuavok, Raymond Holley, and Telia Attunganna."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

MUKLUK TELEGRAPH.

1951b. News from the villages: Point Hope. Mukluk Telegraph, Kotzebue, Alaska, June 9, 3(2):4.

Four whales were taken at Point Hope. The successful captains were Daniel Lisbourne, Patrick Attunganna, Lennie Lane, and Sam Rock. There will be a big celebration from June 11-13.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews, catch.

MUKLUK TELEGRAPH.

1951c. News from the villages: Point Lay. Mukluk Telegraph, Kotzebue, Alaska, June 9, 3(2):6.

"There are only 65 people in our village. Delicious news we had this month is which Warren and Edgar had brought from Point Hope last week some muktuk which we haven't tasted for long time, ever since our good friend Fred Forslund leave us, a great whaler in the beginning of the Point Lay situation."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crew.

MUKLUK TELEGRAPH.

1951d. News from the villages: Kivalina. Mukluk Telegraph, Kotzebue, Alaska, July 26, 3(3):10.

Gene Joiner landed his airplane at Kivalina and informed the residents that he had seen a whale [apparently a stranding]. "We ring the bell and everybody gather and get oomiats ready. Then we remember it is Sunday so we wait. Then we all move down to whale. It is five miles down beach. Joiner cut off part of flippers and take them. We are very happy for blubber part, our village has not had whale for more than 10 years."

WESTERN ARCTIC
POPULATION-mortality, stranding; WHALING-western Arctic, Chukchi Sea, native, utilization.

MULLER, JOHANNA.

1954. Observations on the orbital region of the skull of the Mystacoceti. Zool. Meded. 32(23):279-290.

Some features of the orbit of Mystacoceti and the variability and systematic importance of these peculiarities have been examined. In *Balaena mysticetus* (Fig. 3d, p. 286), "The external walls of the optic tube are formed anteriorly by the frontal, and mesially-posteriorly by a narrow rim of the frontal and by the alisphenoid. In shape the alisphenoid resembles an anvil: greatest diameter of the visible portion is about 36 cm, of which 20 cm constitute the length of the strong lateral processus, which extends laterally along the anterior border of the parietal (p. 287). On the basis of the shape and arrangement of the bones of the orbit, particularly that of the alisphenoid, it is possible to distinguish three definite species, namely *Balaena mysticetus*, *Balaena glacialis*, and *Balaena australis* (p. 288). Uniformity in the shape of the alisphenoid, within any one species, is so obvious that any specimen can be identified from this feature alone." (p. 289)

CIRCUMPOLAR
IDENTITY-classification; MORPHOLOGY-structure.

MUNGER, JAMES F.

1852. Two years in the Pacific and Arctic Oceans and China, being a journal of every day life on board ship, interesting information in regard to the inhabitants of different countries, and the exciting events peculiar to a whaling voyage. J. R. Howlett, Printer, Vernon (New York), 79 p. Reprinted in 1967 by Ye Galleon Press, Fairfield, Wash.

Journal of a whaling cruise on the ship *St. George* from September 3, 1850 to about April 13, 1852, when he shipped on board the *Annie Bucknam* for passage to New York. Describes whaling for bowhead (polar) whales in the Bering and Chukchi Seas, including brief discussion of whaling by Chukchi natives. A cow and a calf were captured on July 31, 1851 in the Chukchi Sea at lat 68°12'N, long 172°41'W (p. 33).

WESTERN ARCTIC
IDENTITY-nomenclature; REPRODUCTION-calf; WHALING-western Arctic, Bering Sea, Chukchi Sea, commercial, native, gear, catch, utilization.

MURDOCH, JOHN.

1885. Mammals. *In* P. H. Ray, Report of the International Polar Expedition to Point Barrow, Alaska, in response to the resolution of the House of Representatives of December 11, 1884. U.S. House Rep., 48th Congr., 2d Sess., Executive Doc. 44, Part 4, p. 92-103.

Information, much of it hearsay from the natives, on the mammals in the vicinity of Point Barrow, Alaska. Native whaling for the polar whale or bowhead (*A'k'bwuk*) is briefly described. About 20 umiaks, each carrying a crew of from 8 to 10 men, are fitted out for whaling from the two villages in the area. "Only three [whales] were killed in the two seasons we were there [1882 and 1883]. Capt. L. C. Owen, however, informs me that one season ten whales were taken by the boats of the two villages. The stripped carcass of a female which drifted ashore September 1, 1882, was found to contain a foetus about three feet long."

WESTERN ARCTIC

IDENTITY-common name, Eskimo; REPRODUCTION-fetus; WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch, utilization.

MURDOCH JOHN.

1891. Whale-catching at Point Barrow. *Pop. Sci. Mon.* 38:830-836.

The spring ice conditions and bowhead whaling by Eskimos at Barrow, Alaska, in 1882 are described. Information on the formation of crews including details of gear preparation and use of this equipment during the taking of whales are discussed. About eight or ten boats from each village make up the usual fleet. After a whale has been killed and towed to the ice-edge it is cut up and divided among the villagers, a long established custom, universal among the Eskimos, no matter who killed it; but at Barrow, the whalebone must be equally divided among all the boats that were in sight when the whale was killed.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, crews, catch, gear, utilization.

MURDOCH, JOHN.

1892. Ethnological results of the Point Barrow Expedition. *In* J. W. Powell, 9th Annu. Rep. Bur. Ethnology, 1887-1888. U.S. Gov't. Print. Off., 441 p.

An account of the Eskimos of Alaska including descriptions of their culture and natural resources of the region. Firearms first became available to the Eskimos when whalers began to go there in 1854 (p. 193). Bowhead whaling by the Eskimos in 1882 and 1883 is described. "Success in this appears to be variable. In 1882 only one small whale was secured, and in 1883 one full grown one, though several were struck and lost each season. The veteran whaling master, Capt. L. C. Owen, informs me that one season the boats of these two villages captured ten. The season of 1885 was very successful. The natives of the two villages are reported to have taken twenty-eight whales. Capt. E. E. Smith, however, informs me that only seven of these were full grown." (p. 276).

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, gear, catch, utilization.

MURIE, OLAUS J.

1936. Notes on the mammals of St. Lawrence Island, Alaska. *In* Otto William Geist and Froelich G. Rainey, Archaeological excavations at Kukulik, St. Lawrence Island, Alaska; preliminary report, p. 335-346. Univ. Alaska, Fairbanks, Univ. Alaska Misc. Publ. 2.

Bowheads furnish the "choicest hunting." Bowheads with 8-12 foot baleen are not uncommon, but the Eskimo tell of securing a whale which had 14-foot baleen. Skeletal material of this species is encountered in the Kukulik midden, although not as frequently as that of the finback whale.

WESTERN ARCTIC
ARCHAEOLOGY; MORPHOLOGY-measurements, baleen; WHALING-western Arctic, Bering Sea, gear, native, techniques, photographs and drawings (equipment), utilization.

MURIE, OLAUS J. and VICTOR B. SCHEFFER.

1959. Fauna of the Aleutian Islands and Alaska Peninsula with notes on invertebrates and fishes collected in the Aleutians, 1936-38. U.S. Dep. Interior, Fish and Wildl. Serv., No. Am. Fauna No. 61, 406 p.

A two part report based on a biological survey of most of the Aleutian Islands and the Alaska Peninsula in 1936 and 1938. Part 1 by O. J. Murie describes the geography and geology, climate, environment and biotic distribution, vegetation, birds and mammals. Information presented on the bowhead was as follows:

"*Balaena mysticetus*: Bowhead whale
Aleut (Umnak?):Ugamaxcax' (Jochelson)

Essentially, this is an Arctic whale that came into Bering Sea and visited the Kuril and Aleutian Islands, but it has become rare in the Aleutians. We obtained no certain records of it during our visits." (p. 333)

WESTERN ARCTIC
DISTRIBUTION-former, present; IDENTITY-nomenclature, Aleut.

MYERS, NORMAN.

1975. The whaling controversy. *Am. Sci.* 63(4):448-455.

Author discusses the controversy between conservationists who wish to stop whaling and the countries that continue to take whales for commercial purposes and suggests that communication between these parties may be the solution to the problem. Noting that stock figures are estimates only, derived from an uncertain data base, Table 1 gives the original stock for four species of right whales world-wide as 300,000 but present stocks of only 4,000 or fewer. Includes remarks that this stock was commercially extinct by 1900: now protected, recovering very slowly in some areas, hardly at all in others.

CIRCUMPOLAR
POPULATION-abundance; REGULATION & CONSERVATION-conservation; WHALING-history, eastern Arctic, western Arctic.

NAKASHIMA, LESLIE.

1977a. This is my town: Barrow. *Alaska* 43(7):54-56, 81-84.

Brief review of history and present Eskimo village of Barrow, Alaska, with discussion of present-day whaling for bowheads and its cultural importance. Mentions number of crews and cost to maintain, methods, gear and importance of subsistence foods to natives.

WESTERN ARCTIC
WHALING-western Arctic, native, crews, gear, utilization.

NAKASHIMA, LESLIE.

1977b. Fall whaling in Barrow. Alaska 43(9):97.

Bowhead whaling during the autumn at Barrow, Alaska, is described and compared with spring whaling. During the 1976 fall season eleven bowheads were caught. Unfortunately, much of the meat had spoiled from being in the water a long time, or was inedible because of the black powder from bombs.

WESTERN ARCTIC

BEHAVIOR-boat motors; WHALING-western Arctic, Beaufort Sea, native, gear, catch, photograph, utilization.

NASU, KEIJI.

1960. Oceanographic investigation in the Chukchii Sea during the summer of 1958. Sci. Rep. Whales Res. Inst. 15:143-157.

During the period August 16-20, 1958, nineteen stations were occupied in the southern Chukchi Sea to obtain oceanographic data. Additionally, sightings of large whales were recorded, and these included two right whales observed at approximately 68° 30' N lat. and 172° W long. (Fig. 11). Figure 11 also shows a sighting of two right whales northeast of St. Lawrence Island at about 63° 40' N lat. and 168° W long., but this is not mentioned in the text. The author fails to specify whether these sightings were of *Balaena glacialis* or *B. mysticetus*.

WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION-sightings, Chukchi Sea, Bering Sea; FIELD & LABORATORY TECHNIQUES-census, vessel.

NAVAL ARCTIC RESEARCH LABORATORY.

1967a. October 6 [First whale of the year is captured.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

[Note: The name of the laboratory was officially changed, effective September 1, 1967, to Naval Arctic Research Laboratory.]

"The first whale of the year was captured last night by Luther Leavitt and his crew. Should cause joy in the village as none were taken during the spring season. 38 feet long."

WESTERN ARCTIC

MORPHOLOGY-measurements; WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1967b. October 8 [Second whale taken is a large one.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Today the second whale of the season and of the year was beached after being captured and killed last night. This monster, 56 feet long, was taken by Al Hopson's crew with Joe Tukle, harpooner."

WESTERN ARCTIC

MORPHOLOGY-measurements; WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1967c. October 11 [Third whale taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"A third whale was taken today by the village men. This one by the crew of Benjamin Itta-it was the smallest so far-only 34 feet."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968a. May 1 [First spring whale taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The first whale of the spring season was taken today by Donald Nusinginya crew. Three were taken last fall, but none in the spring of 1967."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968b. May 2 [Second whale captured.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Ronald Coates' crew got the second whale of the season today."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968c. May 3 [Third whale captured, whaler injured.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"A third whale was taken today at Barrow. This one by Luther Leavitt's crew after a rather serious accident. A bomb exploded in the whale gun causing lacerations of the arms and legs of both Luther and his brother David Leavitt and severing David's femoral artery. The Wien flight today was held at the strip until David could be treated and brought ... from the hospital in the village. He was flown down to Anchorage to the native hospital there and surgery was performed."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968d. May 4 [Fourth whale of season landed, another was killed but lost.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Two more whales taken today, both by Harold Itta crew. However, the second one was blown away by the wind after only the flippers were removed."

WESTERN ARCTIC
POPULATION-mortality, whaling (killed/lost); WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968e. May 6 [Fifth whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Fifth whale taken today. Allen Kaleak's crew."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968f. May 7 [A sixth whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"A sixth whale was taken today. This one by Joash Tukle."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968g. May 8 [A seventh whale landed.]. U. S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The seventh whale of the season was taken today by Alfred Leavitt."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968h. May 9 [A fifty foot whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Nate Olemann took the eighth whale for the village today. About 50 feet. Most have been much smaller."

WESTERN ARCTIC
MORPHOLOGY-measurements (estimated length); WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968i. May 27 [A sixty foot whale taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Simeon Patkotak took a whale today-the ninth this year. About 60 feet. Ice closed in and sank it. Vincent Nageak got a beluga."

WESTERN ARCTIC
BEHAVIOR-relationship (beluga); MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968j. May 30 [Sixty foot whale recovered from under ice.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"After blowing a hole in the ice, Simeon Patkotak's whale was pulled up, butchered, and the meat and blubber were hauled in to the village by sled."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968k. June 14 [First Nalakatuk held today.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Nalakatuk held today in village for celebration of whales caught by crews of Harold Itta, Luther Leavitt, and Simeon Patkotak."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968l. June 17 [Second Nalakatuk held tonight.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Second Nalakatuk of the season tonight to celebrate whales caught by Nate Olemann, Joash Tukle, and Allen Kaleak."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968m. June 20 [Third Nalakatuk held.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Third Nalakatuk of season, sponsored by Alfred Leavitt's crew."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968n. June 21 [Fourth Nalakatuk held.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Fourth Nalakatuk in Barrow by boat crews of Donald Nusinginga and Ronald Coates."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968o. October 31 [Whaling crew fails to return.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“Search for Joash Tukle and three whose skin whaling boat failed to return after catching a whale.”

WESTERN ARCTIC
POPULATION-mortality, whaling (killed/lost); WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1968p. November 1 [Lost whaling crew located.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“Coast Guard C-130 #1452 arrived, departed on search for whalers, found whalers about 30 miles out at 048° from Barrow, and departed.”

WESTERN ARCTIC
WHALING-western Arctic, Beaufort Sea, native, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1969a. April 25 [Whaling season begins with capture of two whales.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“The whaling season has started. Two were taken today by the crews of Warren Matumeak and Thomas Panningoona. Both small, maybe 35 feet.”

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1969b. April 27 [Two more whales taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“Two more whales taken today by the crews of David Brower and Joe Panigeo. Small.”

WESTERN ARCTIC
MORPHOLOGY-measurements, estimated; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1969c. April 28 [Fifth whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“Bert Okakok’s crew got the fifth whale of the season.”

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1969d. May 2 [Sixth whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“Alfred Leavitt's crew took the sixth whale of the season today.”

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1969e. May 5 [Seventh whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“Tom Brower's crew took the seventh whale of the season.”

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970a. May 6 [First bowhead whale of the season landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“The first bowhead whale of the season was taken today by Wyman Panigeo' s crew. It was 24 feet long.”

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970b. May 8 [Two whales landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“Two whales were taken today. Allen Kaleak's crew took a 32 footer and Simeon Patkotak's was 22 feet.”

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970c. May 9 [Fourth whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

“The fourth whale was taken today -22 feet by Alfred Leavitt.”

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970d. May 10 [Two more whales taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Two more whales taken today. Numbers 5 and 6. 43 feet by Wyman Panigeo and 33'8" by Winfred Ahvakana."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970e. May 11 [Seventh whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The seventh whale taken today by Joe Sikvayugak's crew. 28-½'."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970f. May 12 [Eighth whale landed and a whaler injured.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Eighth whale taken today - 28 ½' by David Brower. At the whaling camp today NARL's Merle Solomon was injured by a bomb when it exploded lacerating his right leg and requiring numerous stitches. He will be off work several days."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970g. May 18 [One whale landed, another shot but lost.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The ninth whale of the season was taken today by Donald Nusunginya's crew. 33 ½'. Another was shot but lost."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-mortality, whaling (struck and lost); WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970h. May 19 [Two more whales taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The tenth and eleventh whales of the season were taken today by crews of Bert Okakok and Whitlam Adams. Both about 32 feet long."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970i. May 20 [Barrow's twelfth whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Barrow's twelfth whale was taken today by Harold Itta's crew. 26 feet."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970j. May 22 [A stinker whale recovered.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The thirteenth whale was butchered today. It was a 24' stinker, killed by Solomon/Leavitt's crew on May 18 and recovered today. (Merle Solomon/Alfred Leavitt)"

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-mortality, whaling, stinker; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970k. May 25 [Whale number 14, a stinker, landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The fourteenth whale, butchered today, was another stinker, shot earlier by Thomas Panningoona's crew, 28 feet."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-mortality, whaling, stinker; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970l. May 27 [Fifteenth whale of season landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The fifteenth whale of the season was taken today or yesterday by Joe Panigeo's crew."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970m. May 31 [Point Hope catch this spring is 8 whales.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"At Point Hope this spring 8 whales were taken. The largest was 42'4", taken by Billy Weber on May 4. The season lasted from April 22 to May 23."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970n. June 15 [First Nalakatuk held today.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The first Nalakatuk was held today by Wyman Panigeo."

WESTERN ARCTIC
WHALING-western Arctic, native, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1970o. June 22 [Last Nalakatuk of season held.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The season's last Nalakatuk was held in the Village."

WESTERN ARCTIC
WHALING-western Arctic, native.

NAVAL ARCTIC RESEARCH LABORATORY.

1971a. April 20 [Whaling season begins.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Whaling season has started here. Lots of camps on a lead about a mile out from the Village."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971b. May 4 [Wainwright: five whales struck but lost.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Whale season is starting to show results. In Wainwright five have been reported shot but all sank and were lost."

WESTERN ARCTIC
POPULATION-mortality, whaling, struck and lost; WHALING-western Arctic, Chukchi Sea, native.

NAVAL ARCTIC RESEARCH LABORATORY.

1971c. May 6 [First two whales of season taken at Barrow.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"First two whales of the season were taken today off Barrow. The first by Robert Aiken, a 29' female and the second by Alfred Leavitt, size and sex unknown."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971d. May 7 [Third whale of season landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"A third whale was taken today - a 27 foot male by Thomas Itta's crew."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971e. May 8 [A fourth whale taken but lost as crews flee ice break-up.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow Alaska, Naval Arctic Res. Lab. Log.

"A fourth whale was taken today, this one by Robert Aiken's crew, but was lost later when the ice began to break up. The crews in the area rapidly departed and no loss of life was reported tho some of their equipment had to be abandoned."

WESTERN ARCTIC
POPULATION-mortality, whaling, killed but lost; WHALING-western Arctic, Chukchi Sea, native, crews, gear.

NAVAL ARCTIC RESEARCH LABORATORY.

1971f. May 11 [Fifth whale taken is a stinker.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The fifth whale of the season taken today by Whitlam Adams was a stinker (40'-45') containing a bomb of Allen Kaleak's crew, and probably shot about May 5. It was caught in the ice and blasted out with explosives by Kenneth Toovak (NARL) who says that, tho' the muktuk will still be O.K., the meat is no good for human consumption and there aren't many dogs left in the Village to feed it to. He says it won't do for wolves as it gives them diarrhea. Wonder how they found that out."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-mortality, whaling, struck and lost, stinker; WHALING-western Arctic, Chukchi Sea, native, catch, crews, utilization.

NAVAL ARCTIC RESEARCH LABORATORY.

1971g. May 12 [Sixth bowhead of season landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Another bowhead taken today - the sixth. A male about 25' by Merle Solomon's crew."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971h. May 19 [Another bowhead landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Another bowhead taken today. A 24 ½' male by Alfred Leavitt's crew."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971i. May 21 [Two more bowheads taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Two more bowheads were taken today - the 8th and 9th this season. Roxy Oyagak got a 28 foot male and Joe Panigeo got a 25 foot whale, no sex given."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971j. May 24 [Tenth whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Luther Leavitt's crew took the 10th whale of the season today. It was a 25 footer."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971k. May 26 [Eleventh whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Simeon Patkotak's crew got the eleventh whale today. No information available."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971l. June 1 [A successful 1971 whaling season for three villages included capture of a cow-calf pair at Wainwright.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The Barrow whale harvest this spring was slightly smaller than last spring's take, 15 last spring and 11 this spring as noted in the log. At Wainwright Peter Tagrook took a 5'2" female and Steven Ungarook got her baby, a 14'8" female. The mother was said to have been shot on May 20 but was not taken till May 28, the same day as the little one. Information from Point Hope is sketchy, but indicates that there were five total. Two in April by Joseph Frankson and Amos Lane, and three in May - 2 by Semour Tuzroyluk and one by David Frankson. All bowheads."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex, mortality, whaling, struck and lost; REPRODUCTION-calf; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1971m. September 22 [First whale of the fall season taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The first whale of the fall season was taken today by Tom Brower's crew. It was a 30 foot male."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Beaufort Sea, native, catch, crew.

NAVAL ARCTIC RESEARCH LABORATORY.

1971n. September 26 [Second whale landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The second whale of the season was taken today by Thomas Napageak's crew - a big 52' male."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1972a. April 24 [Whaling camps on ice and ready to begin season.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Whaling camps are set up on the ice, but there is a strong wind which may move the ice out with them."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1972b. April 25 [First whale of spring season taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Nate Neakok took the first whale of the season today, 30' male."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1972c. May 21 [Successful whaling season continues.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Out at whale camps today the whalers are shooting lots of ducks.....The whale catch has been good this year. The whole list will be entered at the end of the season."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1972d. June 11 [Three villages have successful whaling season during spring of 1972.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"See next page for spring whale harvest. Last one of the season taken today after a gap of 3 weeks. Spring whale harvest for 1972:

	Name	Length	Sex	Date
1.	Nate Neakok	30'	M	4-26-72
2.	Arnold Brower, Sr.	30'	F	4-27-72
3.	Robert Aiken	30'	F	4-28-72
4.	Simeon Patkotak	35	F	4-28-72
5.	Thomas Panningoona	30'	F	4-28-72
6.	Allen Kaleak	small	M	5-3-72
7.	Alfred Leavitt	27 ½'	F	5-5-72
8.	Thomas Brower	46-47'	M	5-5-72

9.	Allen Kaleak	small	M	5-6-72
10.	Ralph Aveoganna	35'	F	5-6-72
11.	Harold Itta	25'-26'	M	5-7-72
12.	Thomas Brower	30'	M	5-11-72
13.	Percy Nusunginya	25'-30'	F	5-11-72
14.	Percy Nusunginya	51'	F	5-21-72
15.	Thomas Napageak	60'	?	6-11-72

All sizes approximate except #7 which was measured. Point Hope whalers took 14 - the largest 57' - and Wainwright got 2."

WESTERN ARCTIC

MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1972e. October 6 [First whale of autumn season taken.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Thomas Napageak took a 40' ± female whale last night."

WESTERN ARCTIC

MORPHOLOGY-measurements (estimated length); POPULATION-sex; WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1972f. October 7 [Second whale killed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Second whale of season taken by Thomas Brower. About 50 feet."

WESTERN ARCTIC

MORPHOLOGY-measurements (estimated length); WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1972g. October 13 [Stinker whale sighted from air.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"NARL flight. Stinker seen on this flight just north of the monument, 25-30 feet long."

WESTERN ARCTIC

MORPHOLOGY-measurements, estimated; POPULATION-mortality, whaling, struck/lost, stranding.

NAVAL ARCTIC RESEARCH LABORATORY.

1972h. 9 November [Summary of whales killed in autumn 1972.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The last whale camps came off the ice today. This is the reported harvest for the fall season:

1.	Thomas Napageak	M	35'	October 5
2.	Thomas Brower	M	40' ±	October 6
3.	Joash Tukle	F	20'	October 19
4.	Joe Panigeo	M	25-30'	October 21

WESTERN ARCTIC

MORPHOLOGY-measurements; POPULATION-sex; WHALING-western Arctic, Beaufort Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1973a. April 21 [Whales sighted off Point Lay.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"NARL flight to Wainwright and Point Lay and return. Aikins [pilot] reports seeing two whales, one very large, about 20 miles off Pt. Lay, a polar bear, a crippled fox, and a freshly killed seal about 18 miles out. The ice off Pt. Lay is breaking in leads perpendicular to the shoreline. Whales were seen in one of the leads.

McVay at Pt. Lay reports they have already seen 20 bowhead and filmed 14. They have seen at least 2 polar bear and about 40 beluga. Their project also includes underwater sound recordings of these mammals."

WESTERN ARCTIC
BEHAVIOR-migration, sightings, relationship other species; FIELD & LABORATORY TECHNIQUES-devices (acoustics), photography.

NAVAL ARCTIC RESEARCH LABORATORY.

1973b. April 25 [Whale census conducted.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Other flight out of Pt. Hope today was Geo. Harry (NMFS) who has been there with Durham, USC [University of Southern California], on a whale census project.

A phone call from Scott McVay (EDF [Environmental Defense Fund]) informed us that his group is filming at Cape Lisburne instead of Pt. Lay. The lead closed at Pt. Lay. They have obtained some good footage. Saw one large whale leap out of the water 7 times and managed to film 4 of the leaps."

WESTERN ARCTIC
BEHAVIOR-breaching, migration; FIELD & LABORATORY TECHNIQUES-census, aerial, photography.

NAVAL ARCTIC RESEARCH LABORATORY.

1973c. April 28 [Whaling season begins.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The whaling crews from Barrow started moving out on the ice last night. Bruce Ehranhof will be on Merle Solomon's crew this year. Both are NARL employees. Merle is a native Eskimo and has a crew every year."

WESTERN ARCTIC
WHALING-Western Arctic, Chukchi Sea, native, crews.

NAVAL ARCTIC RESEARCH LABORATORY

1973d. May 7 [Three whales taken-first of the season.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Three whales were taken today-the first of the season. William Kaleak's crew took a 27 foot male, Al Hopson's took a male, and Percy Nusunginya's a female. Sizes on the latter two are not yet available. A list will be entered in the log at the end of the season. Luther Leavitt's crew shot one but lost it."

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex, mortality (whaling, struck/lost); WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1973e. May 12 [Two more whales landed.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Two more whales taken today by Simeon Patkotak and Sam Taalok."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1973f. June 8 [Whaling season ends.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"The ocean ice is getting very soft with deep puddles on the surface. The whale camps closed up shop today and all came in."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1973g. June 22 [List of whales taken at Barrow this spring.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Season's first Nalakatuk today. Whales taken at Barrow this spring, as received from Dr. Floyd Durham (USC):

May 7	Mary Jane Kaleak	M	27'
May 7	Al Hopson	M	29' ±
May 7	Percy Nusinginga	F	31' ±
May 12	Sam Taalak	F	29' ±
May 12	David Brower	M	30' (Stinker, butchered May 16.)
May 13	Simeon Patkotak	M	25' ±
May 23	Ronald Coates	F	28'
May 24	Simeon Patkotak	F	29'
May 24	Arnold Brower	M	24' ±
May 24	Percy Nusinginga	M	24' ±
May 25	Thomas Itta	F	32' ±
May 26	Joe Panigeo	M	28' ±
May 27	Robert Brower	F	27' ±
June 6	Joe Panigeo	F	50'
June 6	Luther Leavitt	M	15' (calf)

At Wainwright:

May 19	Frederick Ahmaogak	F	25' ±
May 20	Rossmann Peetook	F	24' ±"

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-sex, calf; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

NAVAL ARCTIC RESEARCH LABORATORY.

1973h. June 25 [Second Nalakatuk held today.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Season's second Nalakatuk today."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native.

NAVAL ARCTIC RESEARCH LABORATORY.

1973i. June 26 [Third Nalakatuk held today.]. U.S. Dep. Navy, Naval Arctic Res. Lab., Barrow, Alaska, Naval Arctic Res. Lab. Log.

"Third and last Nalakatuk today."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native.

NAVAL ARCTIC RESEARCH LABORATORY STAFF.

1972. Eskimo whaling at Barrow, Alaska. Naval Arctic Res. Lab., Barrow, Alaska, Dec. 12, 24 p. (unpublished)

Contains information and data on bowhead and gray whaling by Eskimos at Barrow, Alaska, from 1961 through 1972. Information was obtained by means of a prepared questionnaire, interviews, and from the daily log maintained by the NARL. Also presents information on Eskimo whaling customs and practices, color patterns of bowheads, catches of narwhal and belukha, terms used by various villagers to describe bowhead whales and how bowheads are butchered and distributed to the captain and crew, and identifying marks Barrow captains use on their bombs to establish possession of captured whales. Compilation of the information in this report was instigated by Dr. Floyd Durham.

WESTERN ARCTIC
BEHAVIOR-when hunted, bowhead and grays, migration; IDENTITY-Eskimo description, nomenclature, coloration; MORPHOLOGY-measurements; POPULATION-sex; REGULATION & CONSERVATION-regulation by Eskimos; REPRODUCTION-fetus; WHALING-western Arctic, Chukchi Sea, Beaufort Sea, native, catch (also belukha, gray, narwhal), crews, gear, utilization.

NELSON, E. W.

1883. Birds of Bering Sea and the Arctic Ocean. *In* U.S. Revenue Cutter Service, 1883, Cruise of the Revenue-Steamer *Corwin* in Alaska and the N.W. Arctic Ocean in 1881, p. 55-118. Gov. Print. Off., Washington, D.C.

Observations made during cruise of the *Corwin* in 1881 in the Bering and Chukchi Seas during which several stops were made at villages in Alaska and Siberia, plus his observations made during a four year residence at St. Michaels, Alaska. In the species account for the Red Phalarope, *Phalaropus fulicarius* (p. 91), he states "To the whalers in this region they are known with the next species [the Northern Phalarope, *Lobipes hyperboreus*] as "bowhead birds", from their habit of feeding upon minute animaleulae which afford the right whale or bowhead its food. Hence a community of interests attracts these pigmies and the largest cetacean of the North to prey upon the same fare. A logical conclusion follows, based upon experience, by which the whalers predict the presence of whales wherever this elegant bird is to be found in great numbers."

WESTERN ARCTIC
BEHAVIOR-relationship (with other species: birds); NUTRITION-food; PREDATORS & COMPETITORS-birds; WHALING-western Arctic, commercial.

NELSON, EDWARD WILLIAM.

1899. The Eskimo about Bering Strait. U.S. Bur. Am. Ethnol., Eighteenth Ann. Rep. (in two parts), Part 1, p. 3-518. Govt. Print. Off., Washington, D.C. Reprinted 1983 by Smithson. Inst. Press, Washington, D.C.

First detailed ethnographic work on natives of the western Alaska regions. Contains information on Eskimo culture, including implements used for whaling, utilization of whale products, and the significance of bowhead whales in Eskimo's culture, religion and mythology. When author visited Point Barrow in 1881, it had become easy for the natives to obtain breech loading guns and ammunition from the whalers (p. 119). Numerous implements used for whaling were collected, described, and illustrated. It was reported that the natives at Plover Bay, Siberia, had a bomb gun which they had obtained from some whaler and they killed whales with it [also see Nelson and True, 1887:292.]. The people at Point Barrow were also reported to have used a whaling gun for some time (p. 165-166.).

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-museums, artifacts; WHALING-western Arctic, Bering Sea, Chukchi Sea, native, gear, utilization, illustrated.

NELSON, EDWARD W.

1918. Wild animals of North America. Natl. Geogr. Soc., Washington, D.C., p. 385-612.

Species accounts for the mammals of North America, including four whales: *Orcinus orca*, *Delphinapterus leucas*, *Physeter macrocephalus*, and *Balaena mysticetus*. Contains a general description of the bowhead, its distribution, food, reproduction, commercial and native whaling, and utilization of its baleen and oil in industry (p. 469).

CIRCUMPOLAR
BEHAVIOR-migration; DISTRIBUTION-present; IDENTITY-nomenclature; MORPHOLOGY-size; NUTRITION-food; POPULATION-abundance; REPRODUCTION-calves, lactation; WHALING-eastern Arctic, western Arctic, commercial, native, gear, drawing.

NELSON, E. W., and F. W. TRUE.

1887. Mammals of northern Alaska. *In* Edward W. Nelson, Report upon natural history collections made in Alaska between the years 1877 and 1881, edited by Henry W. Henshaw, Part 2, p. 227-293. Arctic Ser. Publ. 3, The Signal Serv., U.S. Army, Gov. Print. Off., Washington, D.C.

Account of the species and field-notes obtained during the author's explorations in Alaska. Describes in general terms the distribution of the bowhead (Eskimo = A-gho-vuk), its food, commercial and native whaling, and catch. Contains information that 10-12 years ago [ca. 1870?] some whaling vessels wintered in Plover Bay, Siberia, and the natives obtained and learned the use of bomb-guns. The next winter they secured several whales (p. 292). Author believed that bowheads passed from western to eastern Arctic and back. In support of this belief was the instance of a harpoon bearing an English stamp which was taken from a whale captured by the Eskimo in Kotzebue Sound in the fall of 1880. Nelson apparently obtained the harpoon and showed it to every whaling captain they met during the summer, "...and without exception, they were emphatic in the statement that no such iron was ever used by any vessel in this part of the Arctic Ocean, but it was a common pattern with the English whalers on the Greenland coast." "Another fact, which is in direct confirmation of the idea that whales pass from Bering Sea to the Greenland coast and back, is that a year when whales are scarce in the Greenland seas they are numerous about Bering Straits, and vice versa." (p. 292-293).

WESTERN ARCTIC, EASTERN ARCTIC
BEHAVIOR-migration; DISTRIBUTION-former; FIELD & LABORATORY TECHNIQUES-museums, artifact; IDENTITY-nomenclature; NUTRITION-food; WHALING-western Arctic, Bering Sea, Chukchi Sea, commercial, native, catch, gear.

NELSON, RICHARD K.

1965. North Alaskan Eskimo exploitation of the sea ice environment. Arctic Aeromedical Laboratory, Fort Wainwright, Alaska. (Copy at Naval Arctic Res. Lab., Barrow, Alaska.) (Unpublished manusc.)

Describes how Eskimos have learned to exploit sea ice in their subsistence hunt for marine mammals, birds and fish. The hunt for bowheads at three major whaling villages during the period 1964 to 1965 is described. Autumn whaling is done at Wainwright, Barrow, and Barter Island. During the autumn hunt of 1964 the Wainwright whalers were not successful, although a whale was struck with a bomb and lost. At Barrow in the autumn of 1964 there were ten whales taken, and three more were landed during the following spring. Two whales were taken in the spring of 1965 at Wainwright. At Point Hope there were eleven crews whaling during the spring of 1965.

WESTERN ARCTIC

ANTHROPOLOGY-Alaskan Eskimos; BEHAVIOR-migration, respiration; POPULATION-mortality, whaling, struck and lost; WHALING-western Arctic, Chukchi Sea, Beaufort Sea, native, catch, crews, gear, photographs, utilization.

NELSON, RICHARD K.

1969. Hunters of the northern ice. Univ. Chicago Press, Chicago, Ill., 429 p.

An excellent treatise, encyclopedic in content, on sea ice and how Eskimos have learned to utilize it for hunting and travel. The author lived and learned to hunt with the residents of Wainwright, Point Hope, and Barrow from 1964 to 1966. Contains information on how Eskimos hunt bowhead whales and some data on animals caught. At Barrow, 10 whales were taken in the autumn of 1964 and three were landed during spring 1965. At Wainwright, one whale was killed in the spring of 1966. In 1965 there were 11 crews whaling at Point Hope.

WESTERN ARCTIC

ANTHROPOLOGY-Alaskan Eskimos; BEHAVIOR-respiration, migration; IDENTITY-nomenclature; WHALING-western Arctic, Chukchi Sea, native, catch, crews, gear, photographs (boats), utilization.

NELSON, RICHARD K.

1981. Harvest of the sea: coastal subsistence in modern Wainwright. North Slope Borough Coastal Management Program, Barrow, Alaska. 126 p.

A summary account of the subsistence lifestyle and culture of Eskimos residing at Wainwright, Alaska, concentrating mainly on the present and past twenty years although frequent reference is made to earlier times. The annual cycle of subsistence and animals hunted is detailed, including considerable information on bowhead whales and whaling methods. The report is based on several periods of study carried out between 1964 and 1981 while the author resided in the village and participated actively in the full range of subsistence-related activities. Contains information about bowhead whales (primarily presenting the Eskimo viewpoint) and whaling, including specific information about various hunts, events, and catches. Unfortunately, the author chose to omit specific data on when they were taken and by which crew. Three photographs included in the text (p. 87, 94 and 96) also lack identifying information on whales caught. Report provides valuable insights on factors that have affected the intensity of bowhead whaling by Wainwright hunters since the 1960s. Also describes other summer whales encountered off Wainwright and reasons why Eskimos did or did not hunt them.

WESTERN ARCTIC

BEHAVIOR-diving, swimming, respiratory, maternal, pursued, interaction with boats, migration, patterns, timing, relationship with other species; FIELD & LABORATORY TECHNIQUES-field recognition of whale age and sex; IDENTITY-Eskimo names for different types of bowheads, ingutuk; POPULATION-mortality, struck and lost, number whales caught; REGULATION & CONSERVATION-management, regulation, effects on whaling; REPRODUCTION-parturition, a birth observed by an Eskimo; WHALING-native, history, crews, gear, catch, photographs, utilization, other whale species hunted (beluga, gray, minke?, finback?).

NEMOTO, TAKAHISA.

1959. Food of baleen whales with reference to whale movements. *Sci. Rep. Whales Res. Inst.* 14:149-290.

Discusses the feeding apparatus, food, time of feeding and associated whale movements using data and samples collected aboard vessels in the North Pacific and Antarctic waters. Lacking data on the Greenland whale for study, the author considers them synonymous with the right whale (p. 162), and cites statements by other authors (p. 211, 213-215) regarding food and feeding; for distribution in the Arctic Sea he cites Nikulin (1946) as stating 12 Greenland whales were observed from 1937 to 1943 (p. 227); and Townsend (1935) as reporting the locations of catches of Greenland whales during the 19th century in the shallower marginal waters of the Okhotsk, Bering, and Arctic Seas (p. 231).

WESTERN ARCTIC

DISTRIBUTIONS—Okhotsk, Bering, Chukchi, and Beaufort Seas; NUTRITION—food, feeding behavior; WHALING—Okhotsk, Bering, Chukchi and Beaufort Seas, commercial, history, catch.

NEMOTO, TAKAHISA.

1970. Feeding pattern of baleen whales in the ocean. *In*: Steele, J. H. (ed.), 1970, *Marine food chains*, p. 241-252. Univ. Calif. Press, Berkeley, Calif. Reprinted in 1972 in *Collected Reprints 1970*, vol. 9, contrib. No. 256, p. 370-381, *The Ocean Res. Inst.*, Univ. Tokyo, Nakano, Tokyo, Japan. Also reprinted in Cobb, J. Stanley and Marilyn M. Harlin (eds.), 1976, *Marine ecology: Selected readings*, p. 130-141. Univ. Park Press, Baltimore [Md.].

Describes feeding patterns of 11 baleen whales (including the Greenland right whale) belonging to three families and six genera. Subjects discussed are: Feeding apparatus, food species and selection of food, feeding types, diurnal and seasonal variations, grazing and predation, and food chains through baleen whales. The Greenland right whales, employing a skimming type of feeding, feed on copepods and amphipods (p. 135, 1976 reprint).

WESTERN ARCTIC

NUTRITION—food, feeding behavior.

NIENADELOOK, CHARLES.

1908. Interesting letter written by Eskimo. *The Nome Daily Nugget*, Nome Alaska, May 30, 8(129):3.

Letter from a resident on Little Diomed Island relating how a native from there, Mr. Adnalouk, attempted to walk across the ice to Wales, Alaska, but had to return because of open water. He became lost during a storm, on his return trip and after 15 days on the ice he emerged at Escape [presumably East Cape, U.S.S.R.]. It was reported that "Escape natives caught 12 whales last fall."

WESTERN ARCTIC

WHALING—Bering Strait, native, catch.

NIKULIN, P. G.

1946. O raspredelenii kitoobraznykh v moryakh, omyvayushchikh Chukotskiy Poluostrov (Distribution of cetaceans in seas surrounding the Chukchi Peninsula). Izv. Tikhookean. Nauchno-issled. Inst. Rybn. Khoz. Okeanogr. (TINRO) 22:255-257. In Russian. (Transl. By U. S. Naval Oceanogr. Off., Washington, D.C., 1969, 3 p.)

Whales were observed in coastal waters of the Chukchi Peninsula by the author (1937-1941) and by the captains of whaling vessels (1942-1943). Numbers of whales sighted, recorded only by month, year and location, include Greenland whales in July 1937, Bering Strait mys Serdtse-Kamen', 1; June 1938, Metkulen, Bering Strait, 6; July 1938, Metkulen, Bering Strait, 1; April 1939, Bering Strait, three; and May 1939, Bering Strait, 1. No sightings were reported for 1940-1943. The observations indicate that Greenland whales migrate north through Bering Strait during April-July during the period 1937-1939.

WESTERN ARCTIC

BEHAVIOR—migration, timing, relationship with other species; DISTRIBUTION—sightings, Bering and Chukchi Seas.

NISHIWAKI, MASAHARU.

1966. Distribution and migration of marine mammals in the North Pacific area. 11th Pac. Sci. Congr. Symp. No. 4, Aug. 24, 49 p.

Briefly reviews distribution and migration of marine mammals in the North Pacific area, including bowhead whales (p. 2, 14-16). Author suggests that all bowheads may not migrate north every year based upon information provided him by a Japanese whaling gunner with 50 years experience. The gunner, S. Izui, reported sighting more than 10 whales, all over 10m in length, south of St. Lawrence Island in 1954 [date and location not stated], and as a result of their discussion the author concluded they were bowheads. "But it was an unusual occurrence of the bowhead, because bowheads have not been seen by the crews of whaling or salmon and crab boats in the waters around the Alutian [sic] Islands in recent years." In 1960, 15 bowheads were caught by Eskimos at Point Barrow, but at Point Hope only a few are caught.

WESTERN ARCTIC

BEHAVIOR—migration, timing, pattern; DISTRIBUTION—Bering, Chukchi and Beaufort Seas, sightings; POPULATION—mortality, whaling, size; WHALING—Chukchi Sea, native catch.

NISHIWAKI, MASAHARU.

1972. General biology. In: S. H. Ridgway, Mammals of the sea, biology and medicine, Charles C. Thomas, Springfield, Ill. Chap. 1, p. 3-204.

Describes the taxonomic classification, morphology and general biology of marine mammals (except the sea otter, which is discussed in Chapter 2), including *Balaena mysticetus* (p. 9-10), also known as the great polar whale, Arctic right whale, and the bowhead.

CIRCUMPOLAR

DISTRIBUTION—Arctic Sea; IDENTITY—nomenclature; MORPHOLOGY—measurements, structure, coloration; POPULATION—abundance; REPRODUCTION—mating, parturition, drawing.

NISHIWAKI, MASAHARU.

1974. Status of marine mammals in the Bering Sea. *In*: D. W. Hood and E. J. Kelly (eds.), *Oceanography of the Bering Sea with emphasis on renewable resources*, Internatl. Sympo. for Bering Sea Study, Jan. 31-Feb. 4, 1972, Hakodate, Japan, Chap. 13, p. 279-281. Occas. Publ. No. 2, Inst. Mar. Sci., Univ. Alaska, Fairbanks.

In response to a question "what is the present status of the Greenland whale?," the author replied: "The Greenland right whale (*Balaena mysticetus*) is now hunted mainly by the Eskimos at the rate of perhaps 10 individuals per year typically, but annual catches sometimes number as high as 38 or 40 kills. One very young animal of unknown origin was found to have migrated as far as Osaka Bay [Japan]. It is possible that the Greenland whale population may be very slowly in the process of recovery, although unrestricted slaughter by the Eskimos may be a significant deterrent."

WESTERN ARCTIC
BEHAVIOR—migration, extra-limital; POPULATION—abundance, mortality, whaling; WHALING—Bering, Chukchi, Beaufort Seas, native, catch.

NISHIWAKI, MASAHARU.

1982. The mandible of bowhead in Kathmandu. *Sci. Rep. Whales Res. Inst.* 34: 49-57.

A pair of unidentified mandibular bones about 5 m in length were unexpectedly discovered by the author at the National Museum of Nepal, Kathmandu. Following comparison of these bones with a mandibular specimen of a bowhead whale in Taiji Whale Museum and those of Pacific right whales in Tokyo University of Fisheries and National Science Museum, Tokyo, it was concluded that the bones were those of *Balaena mysticetus* and the whale must have been about 16 m in body length. It is not known how the bones happened to be at the National Museum of Nepal.

CIRCUMPOLAR
FIELD & LABORATORY TECHNIQUES—museums, skeletal parts, photographs; MORPHOLOGY—measurements.

NISHIWAKI, MASAHARU, and TOSHIO KASUYA.

1970. A Greenland right whale caught at Osaka Bay. *Sci. Rep. Whales Res. Inst.* 22:45-62 + 6 plates.

Morphological study of a young male bowhead whale, 6.4m in length and estimated to be one year and six months of age, that was captured alive in a fishermen's net at Osaka Bay, Japan (33° 28' N) [135° E] on June 23, 1969. The animal was towed to the fishing port of Hamadera but died of undetermined causes 20 hours later. The authors observed a triangular scar on the upper left side of the body that they believed was caused by an Eskimo bomb lance, and three parallel lines of half headed scars that may have been caused by an outboard engine on the hunter's boat. The whale could not be examined internally because of decomposition. The skeleton is now on exhibit at the Taiji Whale Museum. An experienced whaleman who had come from Taiji to flense the animal called it "Isozemi," a rare kind of whale that he had seen once before on the beach of Taiji just after World War II, but it was smaller than the present one and had darker, shorter baleen plates.

WESTERN ARCTIC
BEHAVIOR—migration, extra-limital; DISTRIBUTION—specimens; FIELD & LABORATORY TECHNIQUES—specimen, museum, skeleton; MORPHOLOGY—measurements, skeleton; PATHOLOGY—injuries, scars, parasites; POPULATION—mortality, struck and lost; WHALING—Bering Sea, native, gear.

NOAA NEWS.

1979. Frank proposes worldwide commercial whaling ban. NOAA News (U.S. Dep. Commerce), June 29, 4(12):3.

U.S. Commissioner to the Int. Whaling Comm., Richard A. Frank, stated that the United States will propose and vigorously support an indefinite moratorium on all commercial whaling when the IWC meets in London, July 9-13. In addition, he stated that the U.S. will support a resolution which will allow the Alaskan Aleuts [sic] to undertake limited subsistence hunting of bowhead whales.

WESTERN ARCTIC
REGULATION & CONSERVATION-regulations, management; WHALING-western Arctic, native.

NOAA NEWS.

1980. Frank leads fight for whaling restrictions. NOAA News (U.S. Dep. Commerce), Aug. 25, 5(16):1-2.

Richard A. Frank, U.S. Commissioner to the IWC's 1980 meeting in Brighton, England, reported that the U.S. will be responsible for regulation of the subsistence hunt of bowheads by Alaskan Eskimos. The IWC agreed to set a 3-year quota of 45 landed or 65 struck, whichever comes first. The highest take in any year would be limited to 17 whales landed. The 3-year regulation period provides for partial domestic management and gives the United States substantial flexibility in protecting the bowhead, while accommodating cultural and subsistence needs of the Eskimo. He said the United States will start to allocate the quota over the 3-year period from 1981 to 1983, and to set other rules, such as whale sizes.

WESTERN ARCTIC
REGULATION & CONSERVATION-regulation, management; WHALING-western Arctic, native, catch.

NOBLE, DENNIS L. and TRUMAN R. STROBRIDGE.

1977. The Arctic adventures of the *Thetis*. Arctic 30(1):3-12.

Account of the vessel *Thetis* and its service with the U.S. Navy, the U.S. Revenue Cutter Service, and the U.S. Coast Guard on many voyages to the Arctic. On the 1906 Arctic cruise it took 3 weeks for the vessel to travel through ice from Cape Lisburne to Point Barrow. There, beset in the ice, were five whaling ships and 12 miles away and also stuck in the ice was the Norwegian exploring ship *Goja*. "Meanwhile, a sharp-eyed cutterman had spotted a dead whale nearby. The *Thetis* promptly steamed out to get the carcass as food for the natives and returned with it and grounded it off the village (Hamlet, 1906)." [Also see: Hottel, n.d.].

WESTERN ARCTIC
POPULATION-mortality; WHALING-western Arctic, Chukchi Sea, commercial, utilization.

NOBLE, DENNIS L. and TRUMAN R. STROBRIDGE.

1979. The *Thetis* in Alaskan waters. Alaska J. 9(1):51-57.

The *Thetis*, sister ship of the *Bear*, was one of several U.S. Revenue Cutter Service vessels that performed numerous services for Yankee whalers in the western Arctic. She served in Alaskan waters during the period from 1887 to June 3, 1916 when she was decommissioned and sold. In 1899 she joined the *Bear* in establishing a refuge station for whalers at Cape Smythe. Afterwards she sailed eastward as far as Herschel Island and there discovered a safe winter anchorage, which was named Pauline Cove for commander Stockton's wife. In 1906 the *Thetis* went to the aid of five whaling vessels stuck in the ice off Point Barrow.

WESTERN ARCTIC
WHALING-western Arctic, commercial (vessels).

NOME DAILY NEWS.

1900. Big catch of whales. Twenty-three [sic] lbs. bone at Barrow. Nome Daily News, Nome, Alaska, August 27, v. 1 (53):1.

“The revenue cutter *Bear* arrived at 10:20 last night from a trip north as far as Point Barrow. First Lieut. Bertholf, of the *Bear*, says that ... the whale catch has been good and 23,000 pounds of whalebone are now stored at Point Barrow.”

WESTERN ARCTIC
WHALING—Chukchi Sea, shore station, catch.

NOME NEWS.

1902a. Caught eight whales. The Nome News, Nome, Alaska, July 2, 4(42):1.

“The natives this season at Cape Prince of Wales caught eight whales. Last year they did not catch any. They were very lucky this year, and are correspondingly happy.”

WESTERN ARCTIC
WHALING—Bering Strait, native catch.

NOME NEWS.

1902b. He gouged the natives. How a trader took Siberians down line. Nome News, Nome, Alaska, July 8, 4(44):4.

Nome authorities are investigating the victimizing here of two Plover Bay natives by a trader. The principal trade items involved were, according to the trader, 160 pounds of whalebone valued at \$4 a pound for a total of \$640, and a Russian boat made of iron. The two natives stoutly claim they gave the trader 500 pounds of whalebone worth \$2,522, and the boat, badly dented, rust eaten and unseaworthy, was practically worthless.

WESTERN ARCTIC
WHALING—Bering Sea, native, catch, utilization.

NOME NEWS.

1903. News from the Cape. The Nome News, Nome, Alaska, May 19, 5(39):2.

Cape Prince of Wales, Alaska, May 4—“The first whale of the season was sighted on April 26. Bering Straits have been clear of ice for a week past.”

WESTERN ARCTIC
BEHAVIOR—migration, timing; DISTRIBUTION—Factors affecting, ice coverage.

NOME DAILY NUGGET.

1908a. Eskimo lost. Native taken out to sea on ice. The Nome Daily Nugget, Nome, Alaska, March 5, 8(55):1.

A native attempting to cross the ice between Little Diomed Island and the cape carrying mail and school papers disappeared. A Wales native then traveled to Little Diomed January 19 and returned February 22 with the first news from there since October. “At the Little Diomed they have shot 12 bear and got one dead whale with a 6-foot bone. It was a floater.”

WESTERN ARCTIC
POPULATION—mortality, floating at sea; WHALING—Bering Strait, native, utilization.

NOME DAILY NUGGET.

1908b. Several natives burned to death near Point Hope. The Nome Daily Nugget, Nome, Alaska, March 12, 8(61):1.

Accompanying news of February 4, 1908, that an igloo at Jabbertown burned to the ground killing five people, was information that "Captain Thompson of the schooner *Silver Wave*, and Mr. Knutson of Kotzebue, were here as guests of Jim Allen's whaling station."

WESTERN ARCTIC
WHALING—Chukchi Sea, commercial, shore station.

NOME DAILY NUGGET.

1908c. *Bowhead* brings bone. The Nome Daily Nugget, Nome, Alaska, June 22, 8(148):1.

"The whaler *Bowhead* arrived yesterday afternoon with 1,435 pounds of whalebone, 300 pounds of ivory and 15 polar bear skins. Captain Tilton reports that he was within one and one-half miles of the whaler *Bayliss* when the latter went down."

WESTERN ARCTIC
POPULATION—mortality, whaling; WHALING—Bering and Chukchi Seas, commercial, vessel, catch, baleen.

NOME DAILY NUGGET.

1908d. Two whalers at Teller. The Nome Daily Nugget, Nome, Alaska, June 26, 8(152):1.

"The *Corwin* reports that the whalers *Jeannette* and *Thrasher* are now in Port Clarence Bay. The *Jeannette* had two polar bears and \$20,000 worth of whalebone, which the *Corwin* brought to Nome.

WESTERN ARCTIC
POPULATION—mortality, whaling, captured; WHALING—commercial, catch, baleen.

NOME DAILY NUGGET.

1908e. *Jeannette* gets biggest whale on record. The Nome Daily Nugget, Nome, Alaska, June 29, 8(154):4.

"The whaler *Jeannette*, Captain Long, caught during the present season what many believe to be the largest whale on record. The head bones of the great brute...weighted 3,500 pounds. She has 12 foot 8 inch bone."

WESTERN ARCTIC
MORPHOLOGY—measurements, baleen, length, weight; POPULATION—mortality, whaling, captured; WHALING—Western Arctic, commercial, vessel, catch.

NOME DAILY NUGGET.

1908f. Native beach combers strike rich pay. The Nome Daily Nugget, Nome, Alaska, July 15, 8(168):1.

A large whale with baleen worth several thousand dollars washed up on the beach near Teller a few days ago.

WESTERN ARCTIC
POPULATION—mortality, stranding.

NOME DAILY NUGGET.

1908g. Polar bear attacks ship. The Nome Daily Nugget, Nome, Alaska, July 27, 8(178):1.

A large polar bear, attempting to climb a board the schooner *Sophia Johnson*, was shot and killed by Captain Baber when the vessel was within 20 miles of Nome. The trader was returning from Anadir [U.S.S.R.] and brought back a variety of cargo items, including 100 pounds of whalebone.

WESTERN ARCTIC
POPULATION—mortality; WHALING—Bering Sea, native, catch, baleen.

NOME DAILY NUGGET.

1908h. Brought gold and whalebone. The Nome Daily Nugget, Nome, Alaska, Aug. 3, 8(184):1.

“The steamer *Corwin*, which arrived in the roadstead yesterday, brought down a large quantity of whalebone from Point Blossom and a small quantity of gold dust from Candle Creek.”

WESTERN ARCTIC
POPULATION—mortality; WHALING—Chukchi Sea, commercial, native, catch, baleen.

NOME DAILY NUGGET.

1908i. Schooner encounters ice in Arctic Ocean. The Nome Daily Nugget, Nome, Alaska, Aug. 14, 8(194):1.

The schooner *Sophia Johnson* arrived this morning from Cape Serge and East Cape, Siberia, with a valuable trade cargo that included one 1,000 pounds of whalebone.

WESTERN ARCTIC
POPULATION—mortality; WHALING—Chukchi Sea, commercial, native, catch, baleen.

NOME DAILY NUGGET.

1908j. Has eleven polar bear skins. The Nome Daily Nugget, Nome, Alaska, Aug. 28, 8(206):4.

“The trading schooner *Sophia Johnson*, Captain Thomas P. Quinn, arrived last evening from Siberia with 100 pounds of whalebone, 600 pounds of ivory, 450 hair seal skins, 38 martin, 40 pair of native boots and eleven polar bear skins.”

WESTERN ARCTIC
POPULATION—mortality; WHALING—Bering Sea, Chukchi Sea, native, catch, baleen.

NOME DAILY NUGGET.

1910a. Hard luck story from the Diomedes. The Nome Daily Nugget, Nome, Alaska, July 7, 10(160):3.

This spring the Diomedes Islanders shot twice and killed a large bowhead that sank and eluded them. After four days an East Cape native found the whale and claimed it, keeping all of the valuable baleen except for one slab given each Diomedes that assisted him. The baleen was worth over \$10,000.

WESTERN ARCTIC
POPULATION—mortality, whaling; WHALING—Bering Strait, native, gear, catch.

NOME DAILY NUGGET.

1910b. Thrilling record of events in Arctic. The Nome Daily Nugget, Nome, Alaska, Aug. 20, 10(199):4,3.

Mr. And Mrs. C. W. Hawkesworth, school teachers from Barrow, now on their way south, stated that the natives there captured 16 whales this spring. "One rich native who has four crews working for him captured five out of the 16."

WESTERN ARCTIC
POPULATION—mortality, whaling; WHALING—Chukchi Sea, native, catch, crews.

NOME DAILY NUGGET.

1910c. Adrift 43 days on an ice pack in Arctic Ocean. The Nome Daily Nugget, Nome, Alaska, Sep. 2, 10(210):4.

J. Hadley, employed by H. Liebes and Company whaling station at Barrow, Alaska, killed a whale on April 23 but had to abandon the baleen after a storm set them adrift on the pack ice for 43 days.

WESTERN ARCTIC
POPULATION—mortality, whaling; WHALING—Chukchi Sea, commercial, catch, crews, shore station.

NOME DAILY NUGGET.

1910d. *Hazel* is sold for \$2,200. The Nome Daily Nugget, Nome, Alaska, Oct. 3, 10(239):4.

A Plover Bay, Siberia, native who owns a trading post purchased the *Hazel* for use in his business. The new owner, Charles Newvhakhah, is known to have \$3,000 worth of whalebone stored at his trading post.

WESTERN ARCTIC
POPULATION—mortality, whaling; WHALING—Bering Sea, native, products (baleen).

NOME DAILY NUGGET.

1911a. Interesting item gleaned from local custom report. The Nome Daily Nugget, Nome, Alaska, Jan. 20, 11(31):3.

Among articles reported by the local custom office for the year 1910 was 60,465 pounds of whalebone valued at \$158,532.

WESTERN ARCTIC
POPULATION—mortality, whaling; WHALING—Bering Sea, Chukchi Sea, Beaufort Sea, commercial, native, utilization, products (baleen).

NOME DAILY NUGGET.

1911b. Native chief brings news from Diomedes. The Nome Daily Nugget, Nome, Alaska, April 4, 11(84):3.

Okboak, the native chief of Cape Prince of Wales, arrived in Nome with the news that "Hawks, the white school teacher on the Diomedes, is very sick, according to report, and is not expected to live until spring." He also reported that but one whale was captured at East Cape last fall.

WESTERN ARCTIC
POPULATION—mortality, whaling; WHALING—Bering Strait, native, catch, crew.

NOME DAILY NUGGET.

1911c. Eskimos are prosperous up towards Point Barrow. The Nome Daily Nugget, Nome, Alaska, August 18, 11(206):1.

Captain Ballinger of the revenue cutter *Bear* reported "The catch of whale so far this season is one at Point Barrow, two at Icy Cape, with a dead one that floated in there and a small whale at Point Hope."

WESTERN ARCTIC
POPULATION—mortality, whaling, stinker; WHALING—Chukchi Sea, native, catch.

NOME DAILY NUGGET.

1911d. Extracts from log schooner *Redfield*. The Nome Daily Nugget, Nome, August 25, 11(212):4.

The schooner *Redfield*, commanded by James McKenna, stopped at Cape Prince of Wales on August 19, 1911, to deliver freight. Dr. Thompson came aboard and he and the captain arranged for 30 natives and 3 canoes to land the cargo. A storm came up that night; the *Redfield* was blown ashore and wrecked.

WESTERN ARCTIC
WHALING—Bering Strait, natives, gear.

NOME DAILY NUGGET.

1912a. Whale fishing almost dead. The Nome Daily Nugget, Nome, Alaska, September 13, 12(240):1.

"While 24,900 pounds of whale bone came here last year, according to the reports in the local customs office, the amount to come this year will be practically nothing. The value of last year's bone was \$64,772. The price now is about one dollar per pound and this accounts for the fact that so few ships are engaged this year in the waters north of this place."

WESTERN ARCTIC
WHALING—Chukchi and Beaufort Seas, commercial, catch, baleen, value.

NOME DAILY NUGGET.

1912b. Brings 400 fox skins. The Nome Daily Nugget, Nome, Alaska, Sep. 17, 12(243):4.

Paul Davidovisc, who runs a trading station at Icy Cape and also is the mail carrier from Point Barrow, reports that nine whales have been caught at Point Hope and thirteen at Point Barrow.

WESTERN ARCTIC
WHALING—Chukchi and Beaufort Seas, commercial, native, catch.

NOME DAILY NUGGET.

1912c. Thousands of pounds whale bone held. The Nome Daily Nugget, Nome, Alaska, September 18, 12(244):1.

“Probably 30,000 pounds of whale bone found around this coast is being held by its owners because of the fall in its price, according to Dr. H. R. Marsh who has arrived here from Point Barrow.

Whaling up there is now practically suspended and only two whaling vessels are in the seas north of here this year.

Dr. Marsh has been the missionary at Point Barrow since 1897, and is now leaving the country...”

WESTERN ARCTIC
WHALING—Chukchi and Beaufort Seas, commercial, catch, baleen, vessels.

NOME DAILY NUGGET.

1913. Bohannon off for journey. The Nome Daily Nugget, Nome, Alaska, January 20, 13(40):4.

“W. L. Bohannon, manager in Alaska for the Bering Sea Company left this morning for a three months’ trip to the far north to look after the interests of his company’s whaling and trading stations. These stations are located at Kivalina, Point Hope, Icy Cape and Point Barrow.”

WESTERN ARCTIC
WHALING—Chukchi and Beaufort Seas, commercial, shore stations.

NORMAN, J. R., and F. C. FRASER.

1949. Giant fishes, whales and dolphins. Putnam, London, 376 p.

Chapter IX, written by F. C. Fraser, covers right whales, with the Greenland right whale (*Balaena mysticetus*) discussed on p. 205-211. Almost all the details were taken from Scoresby (1820). Discussed are measurements, description, distribution, food, reproduction, whaling, gear, and utilization. In addition, differences between the Greenland right whale and the black right whale (*B. glacialis*, *B. australis*, etc.) are noted.

EASTERN ARCTIC
DISTRIBUTION; IDENTITY-description; MORPHOLOGY-measurements; NUTRITION-food; REPRODUCTION-gestation; WHALING-history, eastern Arctic, commercial, gear, utilization, drawings (whales).

NORTH, DICK.

1978. The lost patrol. Alaska Northwest Publ. Co., Anchorage, Alaska, 138 p.

Account of a Royal North-west Mounted police patrol that perished while traversing the wilderness between Fort McPherson and Dawson City, Yukon Territory, Canada. Contains historical information on the use of Herschel Island by American whaling ships beginning in 1889 and continuing through December 1910. Notes visits to the island by various whaling ships, including some data on bowheads captured.

WESTERN ARCTIC
WHALING-history, western Arctic, eastern Beaufort Sea, commercial, catch.

NORTH, FRANK.

1940. I was their talisman. *Alaska Sportsman* 6(10):18-20, 22.

Describes spring whaling at Barrow by Eskimos (year not given). In the latter part of April 10 crews in all went out on the ice to whale. Author served as a crew member on a crew that took three whales that spring. No fewer than 17 whales were landed during the season and at least two large whales escaped after being shot by hunters.

WESTERN ARCTIC

BEHAVIOR-migration; MORPHOLOGY-measurements; POPULATION-mortality, struck and lost; WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch, photographs, utilization.

NORTHERN LIGHTS.

1961. [News item.] *Northern Lights* [School newspaper, Point Hope, Alaska, April or May], 1(8)[7]. Copy in: U.S. Dep. Inter., Bur. Indian Affairs, Juneau Area Off., Ed. Proj., RG 75, Box 298, Fed. Archives, Seattle, WA

"On April 14th, they start going down whaling. Some crews catch some belugas. David Frankson's crew got the first beluga April 19th."

WESTERN ARCTIC

BEHAVIOR-migration, timing, relationship with other species; WHALING-Chukchi Sea, native, crews.

NUSUNGINYA, DONALD.

1945. Whales once again. *Arctic Cub*. Barrow, Alaska. Reprinted by *Ukpiagvik's*, April 18, 2(29):15, as Remember When --.

"On April fourteenth a whale was seen by a man who was out hunting seals.

At first he was not sure, but finally it came to the open water where he could see it plainly---."

WESTERN ARCTIC

BEHAVIOR-migration, timing.

OKAKOK, GUY.

1960. Guy Okakok. *Alaska Sportsman* 26(8):23.

Okakok requests pilots not to fly along the lead because noise from the aircraft scares the whales.

WESTERN ARCTIC

BEHAVIOR-reaction to aircraft noise.

OKAKOK, GUY.

1961a. The Bush Circuit (News items): Barrow. *Alaska Sportsman* 27(7):20.

On April 10 a hunter named Aungaksanna saw the first whale of the season. Author reported whalers were ready to go out on the ice on April 12 but that the lead had not opened as yet.

WESTERN ARCTIC

BEHAVIOR-migration; WHALING-western Arctic, Chukchi Sea, native.

OKAKOK, GUY.

1961b. The Bush Circuit (News items): Barrow. *Alaska Sportsman* 27(8):34.

Author reported that on May 11 Vincent Nageak took a whale and Joe Sikvaungak's crew fired three bombs but did not take a whale. On May 12 Ned Nusunginya's crew caught an ingutok-a small whale. On May 22 two bombs were fired by the Donald Nusunginya crew but the whale either sank or went under the ice.

WESTERN ARCTIC

IDENTITY-nomenclature; POPULATION-mortality, struck but lost; WHALING-western Arctic, Chukchi Sea, native, crews, catch, gear.

OKAKOK, GUY.

1961c. The Bush Circuit (News items): Barrow. *Alaska Sportsman* 27(9):32.

All but one or two crews stopped whaling at Barrow on June 8. Only two whales were taken this spring, one by Vincent Nageak and the other by Ned Nusunginya. Two whales are not enough to distribute to all the people at Barrow.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, native, crews, catch, utilization.

OKAKOK, GUY.

1962. The Bush Circuit (News items): Point Barrow. *Alaska Sportsman* 28(8):37-38.

Bruce Nukapigak reported that one of their crew members shot a whale but the bomb misfired and the animal disappeared. About eleven boats were chasing whales when a warning call from shore [regarding unsafe ice conditions] prompted all hunters to seek safety ashore.

WESTERN ARCTIC

POPULATION-mortality, struck and lost; WHALING-western Arctic, Chukchi Sea, native, crews, gear.

OKAKOK, GUY.

1963a. Letters, notes and comments: Barrow. *Alaska Sportsman* 29(8):4. (From *Tundra Times*)

Barrow whalers met and established regulations for registering their whaling gear, division of whales landed, and conduct of people during butchering of whales.

WESTERN ARCTIC

REGULATION & CONSERVATION-native; WHALING-western Arctic, Chukchi Sea, native, gear, utilization.

OKAKOK, GUY.

1963b. Barrow News: Whaling regulations made; adult education booms. *Tundra Times*, May 6, 1(15):8.

The whale hunters of Barrow had a meeting to decide the whaling regulations for the hunt this spring. It was decided that each umiak owner would register his identification mark with the city council and place his mark on his whaling gear, especially on bombs and darting guns. It was also decided how the captured whales will be divided up among the crews and villagers. Finally, it was also decided they would urge pilots not to fly up or down the leads in front of the crews but stay landward of the crews so as not to frighten the whales away.

WESTERN ARCTIC

BEHAVIOR-migrating, swimming, reaction to aircraft; REGULATION & CONSERVATION-native; WHALING-Chukchi Sea, native, crews, gear, utilization.

OKAKOK, GUY.

1963c. Barrow has no crops, needs ducks. Tundra Times, June 3, 1(17):3.

Article expresses opinion that Eskimos need ducks for subsistence and therefore they should not be restricted by United States government regulations to the contrary. Author states "The people will need the ducks now because whalers didn't get whales this spring."

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch.

OKAKOK, GUY.

1963e. Guest Arctic survival article: Whaling means drama, tradition, and daring to coastal Eskimos. Tundra Times, August 19, 1(22):4.

Author describes the traditional spring hunt for bowhead whales at Barrow, including the preparations, the watch, the chase, the capture of a whale and the celebration that follows.

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch, crews, gear.

OKAKOK, GUY.

1964a. Bear hunters are active at Barrow. Tundra Times, May 4, 2(15):7.

"Barrow whalers are out now,...six canoes are out, four or five more getting ready to shove out. But each canoe won't be able to handle average crew...about seven or eight men. The reason is, a lot of them are working. According to Nick Nageak,...he said if he could only have four or five men with him, that is enough."

WESTERN ARCTIC
WHALING-Chukchi Sea, native, crews.

OKAKOK, GUY.

1964b. Joash Tuklee's crew kills first whale at farthest north point. Tundra Times, June 8, 2(17):8.

At Barrow, Joash Tuklee's crew shot a whale on May 12. "Two men will go up to Canada and show the hunters there how to handle the whaling gear. These men probably will be leaving in July or August. We do not know where they will be stationed, probably in Bailey Island where whales comes through this island. Their names are Luther Leavitt and Abraham Kippi...an harpooner."

WESTERN ARCTIC
WHALING-Chukchi Sea, Beaufort Sea, native, catch, crews, gear

OKAKOK, GUY.

1964c. Open water late in coming to farthest north region. Tundra Times, June 22, 2(18):3.

"The whalers said last week that there is no water nearby or nowhere. Boats are out yet and standby... Its kind of strange this spring..."

"I was young, about six years of age, when our Arctic ice remained solid like it is now... And around in July, after the inshore [ice] left, whales start coming through the leads. Then hunters began to chase them whales with their canoes. They caught whales that month to push them along through winter."

WESTERN ARCTIC
BEHAVIOR-migration, delayed, ice; WHALING-Chukchi Sea, native, catch, crews, utilization.

OKAKOK, GUY.

1972. Barrow correspondent reports five whales caught at Barrow. Tundra Times, November 1, 9(43):5.

Whalers at Barrow took five whales during October, 1972. The first one was taken by Thomas Napageak, the second by Stanley Brower, the third by Joash Tuklee, the fourth by Joseph Panigeo, and the fifth by Edward Nukapigak.

WESTERN ARCTIC
WHALING-western Arctic, native, crews, catch.

OKAKOK, GUY.

1973a. Our Barrow correspondent hears new village gets whale. Tundra Times, October 3, 10(40):7.

“And yesterday Mr. Max Adams, Eskimo residence of Barrow, said that Thomas Napageak caught a whale. This means that this whale can last them all winter long as the group there in new village [of Nuiqsut] are less than 100.”

WESTERN ARCTIC
POPULATION-mortality, whaling, catch; WHALING-Beaufort Sea, native, catch, crews, utilization.

OKAKOK, GUY.

1973b. Struck whale throws Kaktukvik whaling crew into water. Tundra Times, October 10, 10(41):4.

Three whales were caught at Kaktukvik this fall by Archie Brower (2) and Herman Aisanna. Aisanna's whale was reported to be larger than the two caught by Brower. Herman's boat was overturned by the whale after it was struck but nearby crews rescued all of the hunters.

WESTERN ARCTIC
POPULATION-mortality, whaling, catch; WHALING-Beaufort Sea, native, catch, crews.

OKAKOK, GUY.

1973c. ‘Singpiration’ at Barrow village - people from Kotzebue, Point Hope to share program. Tundra Times, November 7, 10(45):9.

Billy P. Solomon of Barrow caught a whale, his first one. Three whales were caught at Kaktukvik this fall and they will have a celebration this coming week.

WESTERN ARCTIC
POPULATION-mortality, whaling, catch; WHALING-Beaufort Sea, native, catch, crews.

OKAKOK, GUY.

1974a. Barrow news. Tundra Times, May 15, 11(20):7.

“Heard that two whales were caught by Pt. Hope whalers. Lost the other and save part of the other whale, which is Mr. Weber's whale. Sorry to hear it, but couldn't do no ways, when the ice is piling and crushing. That happens lots of time even in Barrow.”

WESTERN ARCTIC
POPULATION-mortality, whaling, killed but lost; WHALING-Chukchi Sea, native, catch, crews.

OKAKOK, GUY.

1974b. Barrow news. Tundra Times, May 22, 11(21):10.

Reports that at Barrow whales were taken by Roxy Oyagok on April 30 and Robert Aiken on May 4. Two other crews each struck but lost a whale during that same week.

WESTERN ARCTIC
POPULATION-mortality, whaling, catch, struck and lost; WHALING-Chukchi Sea, native, catch, crews.

OKAKOK, GUY.

1974c. Barrow news. Tundra Times, July 10, 11(28):8.

Following the end of whaling at Barrow the first Nalukatak was held in Browerville on Tuesday. The last Nalukatak will be held in the Barrow area on Friday by three successful captains: Robert Aiken, Roxy Oyagak and Simeon Patkotak.

WESTERN ARCTIC
POPULATION-mortality, whaling; WHALING-Chukchi Sea native, catch, crews. '

OKAKOK, GUY.

1974d. At Alyeska camps -Eskimo group finds friends. Tundra Times, October 2, 11(40):11.

States that two whales were taken so far this autumn at Barter Island. The first, a medium sized whale, was caught by Herman Rexford and Isaac Ahkootchook. The second whale was captured by Archie Brower.

WESTERN ARCTIC
POPULATION-mortality, whaling; WHALING-Beaufort Sea, native, catch, crews.

OKAKOK, GUY.

1975a. Smoke arouses man. Bowhead whales go by. Tundra Times, April 30, 12(18):6.

"Heard yesterday that the whales are passing by now and two first canoes went out to the lead. Mr. Harry K. Brower and Mr. William K. Kaleak, both are Eskimos, real residence of Barrow. There are others yet who will go out soon."

WESTERN ARCTIC
BEHAVIOR-migration, timing; WHALING-Chukchi Sea, native, crews.

OKAKOK, GUY.

1975b. Barrow News: Don't Know How Many. Tundra Times, Fairbanks, AK, April 23, 12(17):3.

"Season for whaling is now in again this spring. Canoe owners in Barrow are now getting ready to go out for whaling. The owners used to replace the canoe cover every year, but they are shortage of oogrooks. They said the ice is not as rough as it was last year 1974. This year is even better. But they do not know how many canoes will be going out. Used to be over 20 canoes each year."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, crews, gear.

OKAKOK, Guy.

1975c. Barrow News: First Whale. Tundra Times, Fairbanks, AK, May 21, 12(21):3.

Two whales were recently taken at Barrow, a small one by Joash Ivik Tuklee and one by Ben Kakeanak. The portions of whales most preferred by old people are the heart and kidney.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews, utilization.

OKAKOK, GUY.

1975d. Barrow News: Fairbanks. Tundra Times, Fairbanks, AK, May 28, 12(22):7.

Six bowhead whales have been taken to date by Barrow whalers. The first was taken by Joash Ivik Tuklee, the second by Ben Itta, the third by Harry K. Brower, the fourth by Alfred U. Leavitt, the fifth by Arnold Brower, and the sixth by Simeon Patkutak. Vincent Nageak reported that the whale taken by S. Patkutak was a big one. He also stated that the ice where the whaling camps are located is nice and smooth and the lead is only one mile out from shore. The article concludes with a description of the Nalukatuk, a feast that always follows a successful whaling season.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, catch, crews, utilization.

OKHTOKIYUK, CALEB.

1978. Writer tells of whaling at fifteen. Tundra Times, Oct. 25, 15(43):10. Orig. publ. Spring 1973 in THEATA Mag., Univ. Alaska, Fairbanks.

Author gives first-hand description of bowhead whaling at Gambell, Alaska. A bowhead was struck but lost because the harpoon broke due to a defective weld.

WESTERN ARCTIC
BEHAVIOR-swimming, under pursuit; POPULATION-mortality, whaling, struck and lost; WHALING-Bering Sea, native, crews, gear.

OMURA, HIDEO.

1971. A comparison of the size of vertebrae among some species of the baleen whales with special reference to whale movements. Sci. Rep. Whales Res. Inst. 23:61-69.

Lengths of skull and vertebrae in seven species of baleen whales are compared. Since the Greenland right and gray whale specimens were very small and young, (presumed ages about 1.36 and between 1 and 2 years, respectively), these two are treated separately from the other species. The young Greenland right whale was caught at Osaka Bay, Japan, and was 6.4 m in length.

WESTERN ARCTIC
DISTRIBUTION-extralimital; MORPHOLOGY-structure; POPULATION-size (young), mortality.

OSBORNE, ALICE, and GEORGE OSBORNE.

1963. When it's whaling time at Barrow. *Alaska Sportsman* 29(11):25-29.

A photographic report of the butchering and celebration (Nalukatak) following a successful whale hunt at Barrow, Alaska. One of the largest whales taken at Barrow in recent years, a 49-foot long female, was taken on May 28, 1963 by William Leavitt's crew. His crew struck the whale first but a second crew finished the job. The cow had a calf with her when she was killed but it soon left the area. One village elder remarked that it had been so long since a large whale was taken that the crews had forgotten how to handle it. The head should be removed first, he said, then the body could be lifted onto the ice.

WESTERN ARCTIC

MORPHOLOGY-measurements; POPULATION-sex; REPRODUCTION-calf; WHALING-western Arctic, Chukchi Sea, native, crews, catch, gear, photographs, utilization.

OSTERMANN, H. [B. S.]

1952. The Alaskan Eskimos as described in the posthumous notes of Dr. Knud Rasmussen. *Rep. Fifth Thule Exped. 1921-24*, vol. 10, No.3. [In Danish.] (Transl. by W. E. Calvert, 292 p., avail. AMS Press, N.Y.)

Dr. Rasmussen, after spending three years in northern Canada, went across northern Alaska in 1924. His observations include describing Alaskan Eskimo whaling techniques and customs, and some catches in 1924. At Barrow (p. 22), three whales had been caught when he arrived on May 23, and two more were taken a few days later. As of June 5th, no whales had been taken at Wainwright, but one had been captured at Icy Cape by June 8th. (p. 27.) At Point Lay Rasmussen reported a resident named Torina owned a new whaleboat which had cost him \$1,000 the previous summer, as well as a skin boat and two jolly boats. (p. 44) Point Hope whalers caught 15 whales this year, and it was noted that they used sledges of baleen called unigssat to transport whale meat. (p. 47, 121.) The author stated that a Charles Jensen, an authorized Danish whaler, lived at Cape Thompson on his visit there on July 31. (p. 50) [Jensen operated a commercial whaling station here?]

WESTERN ARCTIC

ARCHAEOLOGY; BEHAVIOR-swimming, when pursued; ETHNOLOGY; POPULATION-mortality, whaling; WHALING-Chukchi Sea, commercial, shore station, native, catch, crews, utilization.

OVIOK, MORRIS.

1982. Village Report: Point Hope. *Tundra Times*, June 9, 19(23):10.

[Wainwright] –“Fred Ahmoagak's crew landed Wainwright's first whale of the spring for the second year in a row. The whale was 63 feet long. Whalers were still on the ice as of the third week of May hoping to land their second whale and complete their quota.”

WESTERN ARCTIC

MORPHOLOGY-measurements; REGULATION & CONSERVATION-management, quota; WHALING-Chukchi Sea, native, catch, crews.

PACIFIC COMMERCIAL ADVERTISER.

1872. (News item). *Pac. Commer. Advert.*, November 23.

[It was reported that four bowhead whales were taken by the whalers at Icy Cape, Alaska, during 1872. Copy seen by J. R. Bockstoce.]

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, commercial, native, catch.

PACIFIC FISHERMAN.

1914a. Deep sea whaling. Pac. Fisherman Yearbook 12(1):81.

Owing to the continued low prices received for oil and bone, the whaling fleet in 1913 comprised but three vessels-the S.S. *Gayhead*, S.S. *Belvedere*, and power schooner *Elvira* - and of these the *Gayhead* sperm whaled and the latter two outfitted mainly for trading in the Arctic. The *Elvira* became frozen in the ice near Pt. Barrow and was destroyed. All crewmen escaped and found refuge aboard the *Belvedere*, which was frozen in nearby. Neither vessel secured any whales.

"The various shore stations in Arctic Alaska met with almost total failure this year, but 4 whales being secured, and all of these were killed by Takput, a native of Point Barrow. These whales yielded about 2,000 pounds of bone."

WESTERN ARCTIC
WHALING-western Arctic, commercial, native, catch, crews.

PACIFIC FISHERMAN.

1914b. Oil and fertilizer: Arctic whalers return; San Francisco whaler has good season. Pac. Fisherman 12(12):24.

"H. Liebes & Co's whaler *Jeanette* arrived from the Arctic Oct. 4 with 2,400 pounds of whalebone, 2,000 fox skins and 4,500 hair seal skins. Since Nov. 1 two whalers have returned from the Arctic grounds. The S.S. *Herman*, Capt. C. T. Pederson, arrived at San Francisco on Nov. 6 and reported having taken six whales. On Nov. 3 the S.S. *Belvedere*, Capt. S. F. Cottle, arrived at Seattle, after having spent a year and a half in the Arctic and reported a catch of five whales. Both steamers went north primarily for trading purposes."

WESTERN ARCTIC
WHALING-western Arctic, commercial, catch.

PACIFIC FISHERMAN.

1915a. Whaler *Belvedere* reaches Nome. Pac. Fisherman 13(10):31.

"The wooden steam whaler *Belvedere*, which left Seattle March 17 last on an expedition to Siberian waters to hunt walrus, polar bears and whales and which, as already reported, lost four of her crew from a capsized boat early last June, arrived at Nome, Alaska, from the north on Sept. 25. She narrowly escaped being crushed in the Arctic ice, which all reports agree is usually heavy for this season of the year."

WESTERN ARCTIC
WHALING-western Arctic, commercial.

PACIFIC FISHERMAN.

1915b. Whaling: Deep sea whaling. Pac. Fisherman Yearbook, p. 108.

During 1914, four vessels visited the Arctic mainly for trading purposes, but incidentally caught 22 whales, the *Jeanette* obtaining 3, the *Herman* 6, the *Polar Bear* 8, and the *Belvedere* 5 whales. The bone amounted to 32,894-½ pounds.

WESTERN ARCTIC
WHALING-western Arctic, commercial, catch.

PACIFIC FISHERMAN.

1920. Oil and fertilizer: whaler brings valuable cargo. *Pac. Fisherman* 18(12):54.

Cargo valued at more than \$200,000 was brought to San Francisco by the *Herman*, one of a fleet of whalers operated by H. Liebes and Co., furriers, November 9. Whale oil, salt fish and whalebone and furs comprised the cargo. In the whaling expedition there was but one mishap. A giant bowhead, harpooned by members of a boat in charge of 16-year-old Theodore Pederson, showed fight and upset the boat, throwing the hunters into the water. A rescue party saved all lives.

WESTERN ARCTIC
BEHAVIOR-when struck; WHALING-western Arctic, commercial, catch.

PACKARD, WINTHROP.

1903. The young ice whalers. Houghton, Mifflin and Co., Boston and New York, 397 p.

Popular account for youths of whaling for bowheads in the Bering and Chukchi Seas onboard the bark *Bowhead*, including description of how hunted, whale's normal behavior and its reactions to pursuit. *Orca* attacks on humpback and bowhead whales are recorded (p. 44, 109). During spring migration the bowheads pass coastal villages in three waves (p. 196), and hunting by Eskimos is described. States that previous to 1885 "...a small black whale was taken in the Bering and Arctic Seas which was easily killed and yielded good blubber but the whalebone was small (p. 197). Also gone were the old 100-ton gray-backs which were monster bowheads."

WESTERN ARCTIC
BEHAVIOR-respiratory, swimming, migration; IDENTITY-name; MORPHOLOGY; NUTRITION-food; PREDATORS & COMPETITORS-killer whales; WHALING-western Arctic, Bering Sea, Chukchi Sea, commercial, native, gear, catch, utilization.

PALMER, L. J.

1941. Animal and plant resources of Alaska. U.S. Fish. Wildl. Serv., Fish. Leaflet 176, 12 p.

Under early American occupation, whaling in Alaskan waters, particularly in the Arctic, reached enormous proportions because whale oil and whalebone were in great demand. Supply of whales became greatly depleted and the bowhead was nearly eliminated. Former and present administration of wildlife in Alaska is discussed.

WESTERN ARCTIC
REGULATION & CONSERVATION-state and federal; WHALING-western Arctic, Alaskan waters.

PARKER, T. JEFFERY and WILLIAM A. HASWELL (revised by C. FORSTER-COOPER).

1949. A text book of zoology. Volume 2, 6th edition. Macmillan and Co., Ltd., London, 758 p.

"The mystacoeti or "Whalebone" whales appeared later in time, the modern families not being known until the close of the Miocene, and the sub-order has none of the primitive characters shown by many of the Toothed whales. All teeth have been entirely lost except for a non-functional set in the embryo, and their place has been taken by the characteristic whalebone; the mandibular rami are strongly arched and are not united by a symphysis; the sternum has become reduced to a single bone, and the ribs articulate with the vertebrae by the tuberculum only. The skull is symmetrical and the external nasal opening is double.

The group is classified in three families: The Cetotheriidae, a Miocene evolution in which the compression of the skull had not proceeded as far as in the later forms; the Balaenopteridae ("Fin whales", e.g., *Balaena mysticetus*, the Greenland Whale; *Neobalaena marginata*, the "Pigmy Whale"; and the Balaenopteridae (*Balaenoptera*, the "Rorquals"; *Megaptera*, the "Humpback"; *Rachianectes*, the "Grey Whale," etc.).

In the Whalebone Whales only one pair of ribs articulates with the sternum, and none articulates with the body of the vertebra, but only with the transverse processes." (p. 583-585). Figure 539 shows section through middle line of united cervical vertebrae of *Balaena mysticetus*.

CIRCUMPOLAR
IDENTITY-classification; MORPHOLOGY-anatomy.

PATTEN, DONALD R.

1978. The great whales, their status and future. In John R. Schmidhauser and George O. Totten III (eds.), The whaling issue in U.S.-Japan relations, Chapt. 15, p. 229-256. Westview Press, Boulder, Colo.

A brief review of the history of whaling and the present status of the great whale populations is examined individually. The bowhead, *Balaena mysticetus*, was originally distributed circumpolar in the Arctic, with three or four distinct stocks that totaled 10,000; estimates of the current total population range from the high hundreds to 4,000. The western Arctic stock is estimated to be from the high hundreds to perhaps 1,000-2,000, and the stock is thought to be increasing. Bowheads in the Canadian Arctic, estimated to be in the low hundreds, may be recovering slightly as evidenced by increased sightings in recent years. Bowhead populations in the European and Asiatic Arctic sectors are thought to be very low, if they have not been extirpated. Although now protected from commercial exploitation, they are still hunted by Eskimos in the western Arctic where the annual kill has increased significantly in recent years.

CIRCUMPOLAR
POPULATION-abundance; WHALING-history, western Arctic, eastern Arctic, commercial, native, catch.

PATTY, STANTON H.

1965. Eskimo whale hunt. Seattle Times, Seattle, Wash., May 30, p. 1, 29; May 31, p. 1; June 1, p. 4; June 2, p. 10; June 3, p. 14; June 4, p. 4; June 6, p. 37.

Stanton H. Patty, staff reporter, spent a week with the Eskimos on the ice of the Chukchi Sea near the village of Point Hope and he wrote a day-by-day report of bowhead whaling activities observed while hunting with Amos Lane's crew. The open lead was 4 miles out from the shore and at least four crews were whaling. The first whale of the season, a 30-footer, was taken by John Oktollik and a second one, a 45-footer, was taken by Patrick Attunganna. Additionally, one whale was struck but lost by Andrew Frankson's crew. It was struck with a darting gun and harpoon. The first bomb fired and exploded inside the whale but a second bomb misfired and the whale escaped.

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-mortality, whaling, struck and lost; WHALING-western Arctic, Chukchi Sea, native, crews, gear, catch, photographs.

PEACOCK, JAMES.

1971. Eskimo whale hunt. *Alaska* 37(11):33-35.

Brief description of Eskimo hunt for bowhead whales with photographs showing gear used, boat with victory flag, pulling dead whale up on ice and cutting up the carcass. No specific data is given on the small bowhead landed.

WESTERN ARCTIC
 WHALING-western Arctic, native, gear, catch, photographs, utilization.

PEDERSEN, THEODORE.

1944. Call all hands. *Alaska Sportsman* 10(4):12-13, 26-30.

As a youth not yet in his teens the author signed on in 1916 as cabin boy on the *Herman*, an Arctic whaling and trading vessel. He served on the vessel for five years and believed that their final whaling cruise (in 1921) was the last such voyage in the western Arctic. Author describes the bowhead whale, its migration, vision, hearing, and its behavior when swimming, breathing and feeding. Whaling equipment and techniques used to pursue, kill and cut up whales and processing of their products aboard ship are described in detail.

WESTERN ARCTIC
 BEHAVIOR-respiration, diving, hearing, vision, migration; IDENTITY-description; MORPHOLOGY-measurements;
 NUTRITION-food and feeding; WHALING-western Arctic, Chukchi Sea, commercial, catch, photographs, utilization.

PERRY, SANDY (Compiler).

1977. A history of the Alaskan native as published in the headlines of the Nome Nugget from 1901 to 1976. Compiled for the Carrie M. McLain Memorial Museum and the Kegoyah Kozga Library. Alaska Div. State Libr. and Mus., Juneau, AK., 55 p.

Contains the headlines published in the Nome Nugget newspaper from 1901 to 1976 which use the word "native" or "Eskimo". Several headlines provide information and dates concerning whaling and the capture of whales at various coastal villages of Alaska.

WESTERN ARCTIC
 WHALING-western Alaska, whaling, native, catch.

PETERSON, N. MERLE.

1978. Ecology of the Canadian Arctic Archipelago: selected references. Arctic Land Use Research Program, Dep. Indian and Northern Affairs, Ottawa. Vol. 5, p. 1791-2277.

Detailed annotations on the main findings of publications on the ecology of the Canadian Arctic Archipelago with the information indexed by subject categories and by geographic coordinates. Contains index for volumes one through five.

WESTERN ARCTIC, EASTERN ARCTIC
 BIBLIOGRAPHY-Arctic ecology.

PETERSON, N. MERLE.

1980a. Ecology of the Canadian Arctic Archipelago: selected references. Indian and Northern Affairs Canada, Ottawa. Volume 6, p. 2278-2732.

Detailed annotations on the main findings of unpublished reports between 1948 and 1979 on the ecology of the Canadian Arctic Archipelago with information indexed by subject categories and by geographic coordinates.

WESTERN ARCTIC, EASTERN ARCTIC
BIBLIOGRAPHY-Arctic ecology.

PETERSON, N. MERLE.

1980b. Ecology of the Canadian Arctic Archipelago: selected references. Indian and Northern Affairs Canada, Ottawa. Volume 7, p. 2733-3181.

Detailed annotations on the main findings of publications between 1961 and 1978 on the ecology of the Canadian Arctic Archipelago with information indexed by subject categories and by geographic coordinates. Contains index for volumes six and seven.

WESTERN ARCTIC, EASTERN ARCTIC
BIBLIOGRAPHY-Arctic ecology.

PETERSON, N. MERLE.

1980c. Ecology of the Canadian Archipelago: selected references. Indian and Northern Affairs Canada, Ottawa. Volume 8, p. 3182-3665.

Detailed annotations on the main findings of publications between 1965 and 1979 on the ecology of the Canadian Arctic Archipelago with information indexed by subject categories and geographical coordinates. Contains index for volumes six through eight.

WESTERN ARCTIC, EASTERN ARCTIC
BIBLIOGRAPHY-Arctic ecology.

PETERSON, N. MERLE.

1981. Ecology of the Canadian Arctic Archipelago: selected references. Indian and Northern Affairs Canada, Ottawa. Volume 9, p. 3666-4143.

Detailed annotations on the main findings of publications between 1965 and 1980 on the ecology of the Canadian Arctic Archipelago with information indexed by subject categories and by geographic coordinates. Contains index for volumes six through nine.

WESTERN ARCTIC, EASTERN ARCTIC
BIBLIOGRAPHY-Arctic ecology.

PETROFF, IVAN.

1884. Report on the population, industries, and resources of Alaska. *In* U.S. Census, 10th census (1880), vol. 8, 189 p. Reprinted in 1900 with minor changes and without maps or plates in: *Compilation of narratives of explorations in Alaska*, p. 55-281, U.S. Congr. Sen. Comm. Mil. Aff., Sen. Rep. 1023. Gov. Print. Off., Washington, D.C.

Contains information concerning commercial and native whaling for bowhead whales at that time. Natives living in the villages of Cape Prince of Wales and the Diomedes are active hunters and whalers; between Point Hope and Point Barrow the Eskimos depend upon reindeer, seal, and walrus for their subsistence; and from Point Barrow eastward the inhabitants are expert whalers. Whales are found in all sections of the Arctic, the bowhead is the most common; the California gray and the fin-back are much more rare, in fact, they are seen only occasionally here and there; and the white whale, or grampus (beluga), although confined to no particular section of the Arctic, is more numerous near streams. The total number of Eskimos living in the Arctic is given as 3,094 (p. 2-4). In a historical sketch of Alaska, the author reports "Some of the whalers learned that in 1841 fifty ships from New Bedford and Boston had been in the vicinity (Bering Sea), and that they had succeeded in capturing from ten to fifteen whales each." Russian efforts to keep American whalers out of the area and off the Aleutian Islands, where they landed to tryout blubber, were largely unsuccessful. Efforts by the Russian-American Company, together with some ship-owners in Finland, to enter the whaling industry was short-lived; three ships were built and outfitted for whaling during 1851-1854 and caught some whales. The cruise of the *Suomi* in the Okhotsk Sea in 1852-53 resulted in a catch of 1,500 barrels of oil and 21,400 pounds of whalebone valued at 88,000 rubles; the *Turko*, whaling in the Okhotsk and Bering Sea during 1852-53, had a catch of only 150 barrels of oil and 650 pounds of whalebone; the *Aian* (and a few more ships built soon after) were outfitted but sold as soon as they returned from their whaling voyages (p. 117-118). Ethnological notes on the Eskimo are presented in pages 124-146.

WESTERN ARCTIC

ETHNOLOGY; WHALING-western Arctic, commercial, native, catch, gear, utilization.

PETROFF, IVAN.

1898. Report on the population, industries, and resources of Alaska. *In* David Starr Jordan, *Seal and salmon fisheries and general resources of Alaska*, (4 vols.) vol. 4, p. 167-450. Gov. Print. Off., Washington, D.C. (From the report in the 10th census [1884].).

Essentially the same as the author's original report in 1884, except for additional data on the American whaling fleet for 1880. "The vessels engaged in the business on the Alaskan Coast in 1880 were 36 sailing craft and 4 steamers. Their catch consisted of 35,000 pounds of whalebone, 15,000 pounds of ivory, and 21,000 barrels of oil. The value of the bone alone was \$850,000; that of the oil \$280,000, while the ivory brought \$9,000, making a total of \$1,139,000, or an average of \$28,475 per vessel -certainly a remarkable showing of the profits accruing from this industry." (p. 279).

WESTERN ARCTIC

WHALING-western Arctic, commercial, catch.

PETTYJOHN [F. S.]

1974. And one volunteered. *Alaskana* 4 (3):1-4.

Quoting from Fred Tilton's diary author recounts Tilton's heroic feat when in 1897-1898 he traveled overland from Barrow, Alaska, to southern Alaska and by boat to San Francisco, California, to deliver news of the disaster that the whaling fleet was frozen in near Barrow and all seamen aboard were stranded there. Article includes the names and approximate locations of some commercial shore-based whaling stations in and near Point Hope, Alaska, providing significant information on that industry.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, commercial, shore stations.

PIDGIN, CHARLES F., and BERT FESLER.

1891. Fish and Fisheries.--Marine mammalia. *Census Bull.* 123, 18 p. U.S. Dep. Interior, Census Office, Washington, D.C.

Report lists whaling vessels and shore stations, home ports, whaling grounds, and products from all whales landed in 1889. Whale products from 121 bowheads are reported. Although right (13.98%) and bowhead (15.51%) whales were but 29.49% of the total number of whales caught, they yielded 70% of the total value of whale products.

WESTERN ARCTIC
DISTRIBUTION-whaling grounds; WHALING-western and eastern Arctic, commercial, catch, products, shore stations.

PILLERI, G. and L. ARVY.

1981. The precursors in cetology from Guillaume Rondelet to John Anderson. *In* G. Pilleri (ed.), *Investigations on Cetacea*, 12, 258 p. *Brain Anat. Inst.*, Berne, Switzerland.

Contains 41 brief biographies of past European scientists (1507-1900) instrumental in the development of cetological research. Each bibliography includes portraits of the scientists, extracts and figures from their work, and a number of unpublished or unusual documents. An extensive bibliography lists the principal works for each scientist and source material for preparing the biographies. Contains several references to studies made on *Balaena mysticetus*, including subject matter, titles of publications and authors.

CIRCUMPOLAR
BIBLIOGRAPHY.

PIVORUNAS, AUGUST.

1979. The feeding mechanisms of baleen whales. *Am. Sci.* 67(4):432-440.

Account describing the baleen or whalebone whales, their feeding apparatus, food and feeding methods, and the evolution of a scheme of general classification for these cetaceans. Contains several drawings and two photographs illustrating the feeding apparatus, and 38 references on source material for the article.

CIRCUMPOLAR
IDENTITY-classification; MORPHOLOGY-structure, mouth; NUTRITION-food, feeding behavior.

POINT HOPE NEWS.

1967. (Title unknown.) Point Hope News, June.

Citing F. E. Durham (1979:14), this village newspaper reported "The whaling crews wouldn't take any chance losing the whale [an 8 m (26-foot)] whale...and all the [6] bombs exploded."

WESTERN ARCTIC
MORPHOLOGY-measurements; WHALING-Chukchi Sea, native, catch, crews, gear.

POOLE, DOROTHY COTTLE.

1971. Vineyard whalemens in the Arctic. Dukes Cty. Intell. 13(1):1-25.

Brief account of bowhead whaling vessel activities in the western Arctic and whale catches by a few of the ships and shore stations. A letter dated August 19, 1889 from G. B. Borden, who was in charge of the Refuge Station at Barrow, to Frederick Swift, an agent in New Bedford, contained information on shore-based whaling in the Arctic. On July 26 a man called Joe [Tuckfield] left Barrow in an open boat for the Mackenzie River. On the 9th inst. [August] he returned with information of a great number of whales there. He struck several but saved only one head. Borden also reported that "On the way up in the *Bear* we were several days at Point Hope. The natives there had taken eleven, mostly small, whales. Mr. Baine 7, mostly large. Arriving here we found the natives had taken twenty-two, mostly small. The Ina's gang three, and Mr. Leavitt trader for the P.S.W. Co. [Pacific Steam Whaling Company] also three, all six quite large, while the Co's whaling gang got their time quarreling over the whales they were going to kill."

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, Beaufort Sea, commercial, native, shore stations, catch, photographs.

POOLE, DOROTHY COTTLE.

1978. Vineyard sampler. Dukes Cty. Hist. Soc., Edgartown, Mass. 153 p.

Selected topics that illustrate events, places, and experiences of the residents of Martha's Vineyard for the past 350 years. Several bowhead whalers resided here and some of their experiences in the arctic are recounted. Contains some information on whaling vessels and catches.

WESTERN ARCTIC
WHALING-western Arctic, commercial, Okhotsk Sea, Bering Sea, Chukchi Sea, Beaufort Sea, catch, photographs.

POOR, HENRY VARNUM.

1945. An artist sees Alaska. Viking Press, New York, N.Y., 279 p.

The author accompanied Marston on the Schooner *Ada* for a tour of Alaskan villages from Nome to Barrow during the summer of 1943. Upon approaching Wainwright on July 26 the author noted "...three or four big and little boats came-out to meet them. Here was Jim Allen, captain of the Guard." (p. 258). Upon visiting Barrow about July 28-29, Poor stated that "There was now an acute meat shortage as the weather had been continually bad that the skin boats had not been able to go out for whale or walrus when they had passed with the spring breakup of the ice." (p. 270).

WESTERN ARCTIC
WHALING-Chukchi Sea, native, gear, catch, related information.

PORSILD, A. E.

1945. Mammals of the Mackenzie Delta. *Can. Field-Nat.* 59(1):4-22.

Notes on mammals, including seals and whales, based largely on field notes made during author's residence in the area from April 1927 to February 1928, and from October 1931 to October 1935. Author's complete entry for the bowhead whale on p. 21 is as follows:

"*Balaena mysticetus* Linnaeus;

BOWHEAD OR GREENLAND WHALE;

Eskimo: *Aqveq*.

The bowhead whale was formerly of great importance when the high prices commanded by whale "bone" brought large fleets of whaling ships to the Beaufort Sea. The last whaling ships, according to Anderson (1913), visited the region in 1912.

"During my residence in the Mackenzie delta, bowhead whales were occasionally reported seen from Herschel Island and from schooners travelling east along the Arctic coast. But since these schooners rarely venture far out to sea and because the whales are now of no importance to present day Eskimo, little is known of the present status of this interesting species."

WESTERN ARCTIC

DISTRIBUTION-eastern Beaufort Sea; IDENTITY-nomenclature, Eskimo; WHALING-western Arctic, eastern Beaufort Sea, commercial, native, utilization.

PORSILD, A. E.

1950. A biological exploration of Banks and Victoria Islands. *Arctic* 3(1):45-54. (Reprinted from the *Arctic Circular* 3 (1950):2-9.).

Account of aerial and ground surveys of the islands in 1949 with general descriptions of the terrain, plants, animals and weather. The summer of 1949 was late and the break-up occurred almost 3 weeks later than normal. When flying across Amundsen Gulf on August 25, they saw a large bowhead whale. [According to Manning and MacPherson, 1958, this sighting was made on a flight from DeSalis Bay to Walker Bay].

WESTERN ARCTIC

DISTRIBUTION-sighting.

POULTER, THOMAS C.

1966. Recording the underwater signals of seals in the Arctic. Stanford Res. Inst., Menlo Park, Calif., Final Rep. on Phase II, Subcontract ONR-371, March 22 - May 6, 1966, prepared for Arctic Inst. North Am., p. I-8 to I-18. [Unpublished]

Recorded sounds included those made by a bowhead whale as it was hit by an explosive projectile of Eskimo whalers, and subsequent signals. See Poulter (1968) for analysis of signals.

WESTERN ARCTIC

BEHAVIOR-vocalization; FIELD & LABORATORY TECHNIQUES-acoustic devices; POPULATION-mortality, whaling, struck and lost; WHALING-western Arctic, Chukchi Sea, native, gear.

POULTER L. THOMAS C.

1968. Marine mammals. *In* Thomas A. Sebeok (ed.), *Animal communication*, Chapt. 17, p. 405-465. Indiana Univ. Press, Bloomington, Ind.

Echolocation and communication signals of the genus *Balaena* consist of clicks, pulses, and moans in many combinations. The author made more than 70,000 feet of magnetic tape recordings of bowhead whales on their migration past Pt. Barrow during March, April, and May of 1966. One recording was made at the same time Eskimo whalers shot a bowhead whale. Frequency range of the sonagram used to record bowhead signals was 20 to 20,000 Hz, and number of sonagrams are shown in a figure. Signals start at any frequency from less than 50 to nearly 1,000 Hz. Loud, lowest frequency signals had very loud series of narrow-frequency-range clicks (about six per second) associated with them, with a frequency above that of the main signal.

WESTERN ARCTIC

BEHAVIOR-vocalization; FIELD & LABORATORY TECHNIQUES- acoustic devices; WHALING-western Arctic, natives, gear.

POWERS, ALFRED.

1965. *Animals of the Arctic in action and adventure*. David McKay Co., New York, 272 p.

Contains sketches of the arctic and its animals, including whaling for bowheads. Descriptive information on the bowhead is mainly taken from William Scoresby.

WESTERN ARCTIC

IDENTITY-description; WHALING-western Arctic, commercial.

PREBLE, EDWARD A.

1908. *A biological investigation of the Athabaska-Mackenzie region*. U.S. Dep. Agric., Bur. Biol. Survey, No. Am. Fauna No. 27, 574 p.

The results of surveys made for the U.S. Biological Survey, April-August 1901 and May 1903-August 1904. Contains information on previous explorations of the region, physical geography and climatology, and mammals, birds, reptiles and batrachians, fishes, and trees and shrubs found there. Contains a brief discussion of the Greenland whale including its distribution in the straits of the large islands to the eastward and in the eastern Beaufort Sea, and the commercial whaling fleet that overwintered in the area. The greatest catch of bowhead whales in the Arctic was made in 1893 (citing Russell, 1898), when the *Narwhal* took 64, the *Balaena* 62, and others from 9 to 40 each. In a letter that Sgt. F. J. Fitzgerald of the Northwest Mounted Police on Herschel Island sent to the author, he stated that the largest catch of bowhead was made about 1897, when one vessel took 69 whales and two others of the fleet took over 60 each. In 1904 the *Narwhal* departed Herschel Island with the products of 18 whales taken during the three preceding seasons, and during that year the largest take by one vessel was 9 captured by the *Jeanette*. MacFarlane (1905) was cited as stating "...that each season the Eskimo who frequented Fort Anderson usually succeeded in killing one large whale, though seldom more." (p. 126-127)

WESTERN ARCTIC

DISTRIBUTION-former; WHALING-western Arctic, eastern Beaufort Sea, commercial, native, catch.

PREBLE, EDWARD A. and W. L. McATEE.

1923. A biological survey of the Pribilof Islands, Alaska. Part 1: Birds and mammals. U.S. Dep. Agric., Bur. Biol. Survey, No. Am. Fauna No. 46, 128 p.

A two-part report on the natural history of the Pribilof Islands; part 2 is on insects. Accounts of cetaceans in the area are limited primarily to strandings on the islands. Regarding *Balaena mysticetus* the authors report as follows:

“In a number of instances whales have drifted ashore on the Pribilofs, and in some cases they have been identified. St. Paul has apparently received the larger share, a natural result of its longer and more easily observed coast line. Hahn collected notes from the St. Paul Island log detailing some of these occurrences. On January 1, 1890, a large right whale was discovered at East Landing, St. Paul. The head was gone; the body was more than 60 feet long. Another carcass came ashore at Zoltoi, near the village, on August 31 of the same year. From the same source Hahn learned that other whales (species not stated) were stranded as follows: October 18, 1886, a whale 56 feet long, bearing a harpoon, drifted into English Bay. Others were recorded as coming ashore on September 13, 1892; March 27, 1903; and August 9, 1906.

Dr. Frederick W. True, himself a student of this group, examined the bones of a number of individuals of this species, and made measurements of the right mandible of one found on the beach north of Lukanin (1899, p. 352). He mentions also a bowhead whale which came ashore on St. George in 1889, from which the natives secured about 1,500 pounds of whalebone. The remains of others found by True near East Landing and at Zoltoi were probably those of individuals above mentioned, records of which were found by Hahn.

Scammon says (1874, p. 68): “The last seen of them in high latitudes, by whalers, is on their return from the Arctic Ocean, when they are found in the vicinity of St. Paul’s Island, Behring Sea, in the month of October, and these are usually very large.”

WESTERN ARCTIC

DISTRIBUTION-former; MORPHOLOGY-measurements; POPULATION-mortality, strandings, whaling, struck and lost; SKELETAL REMAINS-beachcast, utilization (baleen).

PRICE, EMMETT W.

1932. The trematode parasites of marine mammals. Proc. U.S. Natl. Mus. 81:1-68.

First comprehensive paper on the trematodes of marine mammals. *Lecithodesmus goliath*, from liver of *Balaena mysticetus* is described (p. 12). Parasite was originally named *Distomum goliath* by van Beneden (1858).

EASTERN ARCTIC

PATHOLOGY-parasites.

PURVES, P. E.

1955. The wax plug in the external auditory meatus of the Mysticeti. Discovery Rep. 27:293-302.

Author states (p. 295) that T. Buchanan (1828) discovered in the meatus of *Balaena mysticetus* an “unctuous cerumen of a greyish blue colour.”

EASTERN ARCTIC

MORPHOLOGY-wax ear plug.

RABOT, CHARLES.

1914. The whale fisheries of the world. *Smithson. Inst. Ann. Rep.* 1913, p. 481-489. (Transl. from *La Nature*, Paris, Sept. 14, 1912.)

Contains a review of the world commercial whale stock, noting a revival of the whale fishery after a long period of decadence. The Arctic right or Greenland whale has become very rare and is not regularly hunted except in Davis and Lancaster Straits, in Hudson Bay, and on the northwest coast of North America about Point Barrow. In 1910 the vessels from Dundee took only 17 whales, and in 1908 and 1909 about 15. No statistics are available on the fishery on the northwest coast of America where the whales appear more numerous, but data now on hand indicate that the results in 1909 and 1910 were excellent. In 1910, one vessel took 15 whales and a second reported a cargo of whalebone worth \$130,000. In 1911 a Greenland whale was taken off the northwest point of Spitsbergen, in 80° N lat.

CIRCUMPOLAR

DISTRIBUTION-present; IDENTITY-nomenclature; POPULATION-abundance; WHALING-eastern and western Arctic, commercial, catch.

RAINEY, FROELICH.

1940. Eskimo method of capturing bowhead whales. *J. Mammal.* 21(3):362.

The author, living at Tigara (Point Hope, Alaska) since January 1940, joined the bowhead whaling crew of Unigluk as a paddler during the spring hunt. In a letter dated April 19, he stated they had been chasing whales for seven days now. "We have killed three [most of one was lost due to moving ice]. There are scores of them, all bowhead, the number is simply unbelievable. We have seen at least 20 every day." In accidents with weapons, one Eskimo was injured and died when a bomb exploded in the barrel of his shoulder gun; another was injured in the leg in a similar accident; and later two darting guns exploded but hurt no one.

WESTERN ARCTIC

BEHAVIOR-migration; POPULATION-abundance, mortality, whaling (killed but lost); WHALING-western Arctic, Chukchi Sea, native, catch, crews, gear.

RAINEY, FROELICH G.

1947. The whale hunters of Tigara. *Am. Mus. Nat. Hist., Anthropol. Pap.* 41, Pt. 2, p. 229-283.

Account of the Tigara people at Point Hope, Alaska, describing the social structure of the village, and the day to day life of the Eskimos including hunting, trapping, fishing, ceremonies, games and trading journeys. The author visited the village for a few months yearly while working as an archaeologist, then in 1940 he and his wife resided there for the better part of the year to obtain a more thorough knowledge of their culture, past and present. He served as a member of a whaling crew and received some tons of whale meat in payment. Contains detailed information on the boat captain, or umelik, and customs associated with bowhead whaling. The 10 to 15 crews from the Tigara village are scattered for 2 or 3 miles along the edge of the water, on the south shore, as far as 1 or 2 miles out from land. Practices followed when hunting, killing and dividing whales is described. The ingutuk (young ones) are preferred by the Eskimo. The village elders reported that sometimes as many as 15 to 18 whales were killed during spring seasons of the past. "These were so numerous that hunters pursued only the young ones (ingutuk) and merely threw ice at the older and larger whales to drive them away. Today, three or four whales taken in the same period represent a very successful season." (p. 261). "Many generations ago, it is said, bowhead whales also passed by the Point in the fall, when they migrated southward. At that time there were two whale hunting seasons each year, as at Point Barrow during the present time." (p. 263).

WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION-former; IDENTITY-nomenclature; WHALING-western Arctic, Chukchi Sea, commercial (shore-station), native, catch, crews, utilization.

RASMUSSEN, KNUD.

1952. The Alaskan Eskimos as described in the posthumous notes of Dr. Knud Rasmussen, by H. Ostermann. Edited after the latter's death with the assistance of E. Holtved. Translated from the Danish by W. E. Calvert. Rep. Fifth Thule Exped. 1921-24, v. 10, no. 3, 292 p. Gyldendal, Copenhagen. Reprinted 1976 by AMS Press, Inc., New York.

Rasmussen's visits in 1924 to Alaskan Eskimo villages at Point Barrow, Wainwright, Icy Cape, Point Lay, Point Hope, Kotzebue, Nome, Little Diomed and King Island, and at East Cape (Uelen, also known as Whalen) on the Chukotsk Peninsula, U.S.S.R. Notes on customs, hunting activities, etc. described for each settlement visited, including information on whaling for bowheads. As many as 22 whales might be taken in a single spring season at Point Barrow (p. 21). During spring 1924 three whales had been caught when Rasmussen arrived (in May) at Point Barrow, and two more a few days later (p. 22). No bowheads were landed at Wainwright this spring, but one was taken at Icy Cape (p. 27), apparently none were landed at Point Lay (p. 44), and 15 were taken at Point Hope (p. 47). At Point Lay one wealthy Eskimo owned a new whaleboat which had cost him \$1,000 the previous summer (p. 44).

WESTERN ARCTIC

ANTHROPOLOGY-Alaska, Chukchi; WHALING-western Arctic; Bering Sea, Chukchi Sea, native, gear, catch, utilization.

RAY, DOROTHY JEAN.

1982. Reflections in ivory. *In* William W. Fitzhugh and Susan A. Kaplan, *Inua: spirit world of the Bering Sea Eskimos*, p. 255-267. Natl. Mus. Nat. Hist., Smithsonian Inst. Press, Washington, D.C.

Engravings of representational subjects on ivory, bone and other substances, an art form of unknown origins (p. 256), was practiced mainly by Eskimos living north of Norton Sound in Alaska. Author reviews history of engraved pictography and comments on the subjects depicted. "Kotzebue Sound" drill bows -- originated elsewhere on the basis of subject matter, for both walrus and black whale hunting figure prominently on many of the bows, yet Kotzebue Sound people hunted neither the walrus nor the black whale. Men living around Bering Strait and the Arctic coast of northern Alaska often record the numbers of animals they have caught by carving images of them in ivory. The animals may appear as splayed pelts, whale flukes, and caribou." (p. 258). The engravings provide a wealth of information about Bering Strait life of the 19th century as they depict animals, hunting scenes showing methods and equipment used, even everyday and festival activities of villagers. Changes in Eskimo life that were created by the white man are also brought out in subtle ways in the engravings.

WESTERN ARCTIC

ETHNOLOGY-pictographs; IDENTITY-nomenclature; WHALING-western Arctic, native, gear, catch.

RAY, P. H.

1885. Narrative. *In* Report of the International Polar Expedition to Point Barrow, Alaska, in response to the resolution of the House of Representatives of December 11, 1884, Part 2, p. 19-34. 1885. Gov. Print. Office, Washington, D.C.

The International Polar Expedition, 1882-1883, sailed from San Francisco July 18, 1881, on the schooner *Golden Fleece*, and arrived at Cape Smythe on September 8. A scientific station was maintained eleven and a half miles southwest of Point Barrow from September 12, 1881 until their departure August 27, 1883 for San Francisco. The natives reported seeing whales passing to the northeast on April 23, 1882, and they were seen passing in the same direction every day from that time on until June 15; that seemed to end their migration as no more of them were sighted until August 15, when they were seen going to the southwest along the edge of the pack ice (p. 24). "On June 9 the natives succeeded in killing a large whale, the first they had taken since we had been on the coast."

WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION-sightings; WHALING-western Arctic, commercial, native, catch.

RAY, P. H.

1885. Ethnographic sketch of the natives of Point Barrow. *In* Report of the International Polar Expedition to Point Barrow, Alaska, in response to the resolution of the House of Representatives of December 11, 1884, Part 3, p. 35-87. 1885. Gov. Print. Office, Washington, D.C.

Observations on Eskimos resident in the vicinity of Point Barrow during the author's visit there from September 12, 1881 to August 27, 1883, including whaling for bowheads. "...the great number of whales taken off the coast by the American whaling fleet during the last twenty years has nearly exterminated that valuable animal. That they are decreasing in numbers is well known among the whalers, and the fact that Dr. Simpson reports that during the time the *Plover* was at Point Barrow there were twenty-four whales taken by the natives, while only two were taken during our stay, one of which was a calf (p. 45). In the spring of 1883, when they (the natives) came to prepare their boats for whaling, they decided after many grave debates that the bad luck of the previous year was owing entirely to their having equipped their boats with white man's gear, of which they had abundance, obtained from wrecked whalers; so it was decided that they would go back to the implements of their fathers, and the old ivory and stone harpoon and lance heads were brought forth and repaired, and that they took one whale was attributed entirely to this change; the fact that the whale was killed by a shot from a bomb gun we loaned them to the contrary notwithstanding." (p. 48).

WESTERN ARCTIC

POPULATION-size, calf; WHALING-western Arctic, Chukchi Sea, native, gear, catch.

REARDEN, JIM.

1975a. Alaska's commercial salmon fisheries: Their history and status in brief. Part one of six - Introduction to the fisheries. *Alaska* 41(2):18-21, 51.

In addition to the salmon industry, the exploitation of whales, sea otter and the Pacific fur seal have also been a major economic element in the history of Alaska. Yankee whalers first visited the Pacific-Alaskan coast about 1835, and soon after the hunt extended into the Bering Sea. In 1848 the whaler *Superior* made an enormous catch in the Alaskan Arctic. By 1852, 278 American vessels were whaling along Alaska's coast, and in 1855, 154 American whalers passed through the Bering Strait. When petroleum largely replaced whale oil whaling declined, and by 1902 there were but eight vessels left in the Alaskan whaling industry.

WESTERN ARCTIC

WHALING-western Arctic, commercial, history.

REARDEN, JIM.

1975b. Whales and Alaska. *Alaska* 41(2):28-29, 32, 58.

Brief popular account of whaling by natives and commercial whalers in Alaskan waters from historical times to the present including methods used, value of products, decline of whaling by 1913, and current whaling catches of several species by various nations with some biological information on each. Recent actions of the International Whaling Commission to manage and regulate whaling are recounted. Eskimos in some coastal villages still depend upon bowhead and beluga whales for food (photograph of a dead bowhead on the ice).

WESTERN ARCTIC

BEHAVIOR-respiration, diving, migration; REGULATION & CONSERVATION-management, regulation; WHALING-western Arctic, history, commercial, native, catch, photograph, utilization.

REARDEN, JIM.

1981. Alaska mammals. *Alaska Geogr.* 8(2):104-105.

Brief general description of bowhead whales with notes on Alaskan Eskimo whaling and early commercial whaling. Article accompanied by photograph of a pair of copulating bowheads near Point Barrow and a drawing of an adult.

WESTERN ARCTIC

BEHAVIOR-swimming, diving, migration, icebreaking; FIELD & LABORATORY TECHNIQUES-coloration; IDENTITY-description; MORPHOLOGY-structure; NUTRITION-food; POPULATION-abundance, calf size; REPRODUCTION-mating; WHALING-western Arctic, commercial, native.

REEVES, RANDALL R. and EDWARD MITCHELL.

1981. White whale hunting in Cumberland Sound. *Beaver, Outfit* 312(3):42-49.

When bowhead whales became difficult to find in the eastern Arctic during the 1840s, the commercial whalers hunted the white whale as a popular 'filler' to make whaling voyages pay. Bowhead whaling in the Cumberland Sound region is briefly summarized and a photograph (E. J. Peck Papers, Anglican Church Archives) shows a bowhead being cut up at Blacklead Island, about 1904.

EASTERN ARCTIC

WHALING-eastern Arctic, commercial, catch, photograph.

REMMERT, HERMANN .

1980. Arctic animal ecology. Springer-Verlag, Berlin Heidelberg, Germany, 250 p.

A summary of ecological and physiological research in the Arctic--mostly on Spitsbergen. A brief review of conditions in the Antarctic is included to demonstrate the vast differences between the two polar regions.

Citing Van den Brink, 1957 (no additional information given on publication), a table is presented on page 96 giving the following reproduction information on the Greenland right whale: mating period: VII-VIII; gestation period: 9-10 month; time of birth: III-IV; annual number of litters: 1; size of litter: 1-2; young independent after: 1-3/4 year; sexual maturity at (in years): 2; and duration of life (in years): 30-40?

EASTERN ARCTIC

GROWTH-age; REPRODUCTION-gestation, mating period, maturation, parturition, periodicity.

RENNICK, PENNY.

1978. Alaska's whales: Graceful giants of the deep. *Alaska* 44(11):37-41.

Contains brief comments about whales found in the north Pacific and Alaskan waters. Bowheads follow a spring migration pattern that takes them close to the Bering and Chukchi seacoasts toward the Beaufort Sea, a major feeding ground, where they feed on euphausiids and other forms of krill. Although belugas can sometimes be seen with bowheads, they do not follow the same migration pattern.

WESTERN ARCTIC
BEHAVIOR-migration, relationship; NUTRITION-food.

RICE, DALE W.

1963. Pacific coast whaling and whale research. *Trans. 28th No. Am. Wildl. Conf.*, p. 327-335.

Active whaling operations presently are "...conducted from three commercial whaling stations on the Pacific coast; and by Eskimos of the Alaskan villages of Barrow, Point Hope, and Wainwright, who use aboriginal methods to take bowhead whales (*Balaena mysticetus*) and gray whales (*Eschrichtius gibbosus*) (p. 327)." Noting that "The United States, along with most whaling nations, is a party to the 1946 International Convention for the Regulation of Whaling..., certain species -the gray, right, and bowhead whales -are completely protected from commercial whaling." (p. 328-329).

WESTERN ARCTIC
REGULATION & CONSERVATION-regulation; WHALING-western Arctic, native.

RICE, DALE W.

1964. Eskimo whaling in arctic Alaska. *U.S. Fish. Wildl. Serv., Bur. Commer. Fish., Mar. Mammal Biol. Lab., Seattle, Wash., Apr. 15, 1964. 23 p.* (Available Natl. Mar. Mammal Lab., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way N.E., Seattle, WA 98115.) (Unpublished).

Reviews Eskimo whaling, principally for bowheads (but also for gray whales), in the Arctic Ocean from literature and from personal observations in 1961 and 1962 at Pt. Hope and Pt. Barrow. Discusses Eskimo nomenclature, population abundance, distribution, migration, history of Arctic whaling, and present-day Eskimo whaling.

WESTERN ARCTIC
BEHAVIOR-migration, ice-breaking; DISTRIBUTION-western Arctic; IDENTITY-nomenclature (Eskimo); POPULATION-abundance, mortality (struck-and-lost); WHALING-western Arctic, native, commercial, catch, crews, gear.

RICE, DALE W.

1967. Cetaceans. *In* Sydney Anderson and J. Knox Jones, Jr. (eds.), *Recent mammals of the world: a synopsis of families*, Chapt. 15, p. 291-324. Ronald Press Co., New York.

The author has prepared a brief synopsis of both cetaceans in general and of each family. Specific information about bowhead whales is limited, but references are furnished for additional literature.

CIRCUMPOLAR
BEHAVIOR-migration, icebreaking; DISTRIBUTION-circumpolar; IDENTITY-description, taxonomy; MORPHOLOGY-anatomy, measurements; NUTRITION-food; PATHOLOGY; PREDATORS & COMPETITORS; REPRODUCTION-gestation, lactation, parturition, periodicity; WHALING-western Arctic, native, gear.

RICE, DALE W.

1974. Whales and whale research in the eastern North Pacific. *In* William E. Schevill (ed.), *The whale problem: a status report*, Chapt. 6, p. 170-195. Harvard Univ. Press, Cambridge, Mass.

Briefly reviews 11 species of whales (including bowhead), history of whaling for them, and summarizes status of their populations in the eastern North Pacific Ocean. Gives a brief discussion of distribution, migration, and describes research that has been done, or is in progress, by the U.S. Bureau of Commercial Fisheries or the National Marine Fisheries Service on each species.

WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION; POPULATION-abundance and density, mortality; WHALING-history, western Arctic, catch, natives.

RICE, DALE W.

1977. A list of the marine mammals of the world. U.S. Dep. Commer., NOAA Tech. Rep. NMFS SSRF-711, 15 p.

A total of 116 species of Recent marine mammals are listed, including the geographic distribution of each. (From author's abstract).

"Order Mysticeti (p.6-7), Family Balaenidae, Genus Balaena Linnaeus, 1758, *Balaena mysticetus* Linnaeus, 1758 (bowhead whale; Arctic right whale).

Arctic waters. There are four geographically isolated populations: 1) From Spitzbergen west to east Greenland; 2) in Davis Strait, Baffin Bay, James Bay [sic], and adjacent waters; 3) in the Bering, Chukchi, and Beaufort seas; and 4) in the Okhotsk Sea. The Alaskan Eskimo recognize two kinds: the larger "kairalik" or true bowhead, and the smaller "ingotok" (known as the "poggy" to the 19th century American whalers). I believe that the ingotok is most likely a young bowhead."

CIRCUMPOLAR

DISTRIBUTION-world; IDENTITY-nomenclature, taxonomy.

RICE, DALE W. and VICTOR B. SCHEFFER.

1968. A list of the marine mammals of the world. U.S. Dep. Int., U.S. Fish Wildl. Serv., Spec. Sci. Rep. Fish. 579, 16 p.

"Listed are 117 species of Recent marine mammals, including fresh-water species of the predominantly marine groups. The numbers of species are: Order Carnivora (1), Order Pinnipedia (33), Order Sirenia (5), Order Mysticeti (10), and Order Odontoceti (68). The geographical distribution of each species is shown. The systematic status of little-known species is discussed." (From author's abstract).

"Order Mysticeti (p. 6), Family Balaenidae, Genus Balaena, Linnaeus, 1758, *Balaena mysticetus* Linnaeus, 1758 (bowhead whale), Arctic waters. There are four geographically isolated populations: (1) From Spitzbergen west to east Greenland; (2) in Davis Strait, Baffin Bay, James Bay [sic], and adjacent waters; (3) in the Bering, Chukchi, and Beaufort Seas; and (4) in the Okhotsk Sea. The Alaskan Eskimo recognize two kinds: the larger "kairalik" or true bowhead, and the smaller "ingotok" (known as the "poggy" to the 19th-century American whalers). We believe that the ingotok is most likely a young bowhead; the taxonomy of these whales is being studied by Floyd Durham of the University of Southern California."

CIRCUMPOLAR

DISTRIBUTION-world; IDENTITY-nomenclature, taxonomy.

RICE, DALE W. and ALLEN A. WOLMAN.

1971. The life history and ecology of the gray whale (*Eschrichtius robustus*). Am. Soc. Mammal., Spec. Publ. No. 3, 142 p.

Report of a study from 1959 through February 1970 to collect basic data on all aspects of the life history and ecology of the gray whale. Regarding growth of grays, they found no appreciable changes in body proportions from one year to physical maturity, a conclusion contrary to the findings for other species, including bowhead whales (page 50). Discussing parasites (p. 105) "*Cyamus ceti* Linnaeus, 1758, was originally described from the bowhead whale from the Atlantic sector of the Arctic Ocean." On the subject of aboriginal whaling the authors state (p. 120-121): "Whaling is still regularly practiced by the Eskimos of the villages of Barrow, Wainwright, and Point Hope on the Arctic coast of Alaska. In this area catch is mostly bowhead whales. From 1954 through 1959, only nine gray whales were killed at Barrow and one at Wainwright (Maher, 1960). The natives of the village of Gambell on St. Lawrence Island (Francis H. Fay, personal communication) and the villages of Sireniki, Imituk, Chaplino, Naukan, Uelen, and Enurmino on the Chukotskiy Peninsula (Tomilin, 1957, Treshchev, 1966a) also still hunt whales. The catch in these areas is almost entirely gray whales. One hundred fourteen were killed in 1965 and 53 in 1966 off the Chukotskiy Peninsula (Zimushko, 1969a)."

WESTERN ARCTIC

GROWTH-to physical maturity; PATHOLOGY-parasites; WHALING-western Arctic, native, catch (bowhead, gray).

RICHARDS, EVA ALVEY.

1949. Arctic mood, a narrative of Arctic adventures. Caxton Printers, Ltd., Caldwell, Idaho, 282 p.

The author's experiences while teaching at Wainwright, Alaska, 1924-1926. Description of life and hunting activities throughout the year in an Eskimo village. During spring whaling in 1925, four crews captured two bowhead whales. One whale, a large female that measured [apparently on the body curvature] 20.42 m, contained a fetus 5.18 m long (p. 203). Author visited Barrow and reported 19 bowheads had been landed there as of June 15, 1925.

WESTERN ARCTIC

MORPHOLOGY-measurements; REPRODUCTION-fetus; WHALING-western Arctic, Chukchi Sea, native, catch, crews, photograph.

RICHARDSON, JEFFREY R.

1978. Inupiat take bowheads under quota; three villages take limit, Barrow over by one. Tundra Times, May 10, 15(19):1, 6, 12.

Describes Eskimos first ever hunt for bowhead whales under a total quota of 12 whales imposed by the International Whaling Commission because of concern over survival of the species. The catch by village was Gambell (1), Savoonga (1), Point Hope (2), Wainwright(1), and Barrow (4). Barrow hunters exceeded their 3-whale quota by one, explaining that two of the whales were of a different species than the bowhead. The dispute was resolved as an unintentional violation with no prosecution involved, and Jacob Adams, Chairman of the Alaska Eskimo Whaling Commission, issued a plea for all hunters to leave the ice, and all but one crew came to shore. The Wainwright whale, a 53-foot female taken by Felton Segevan's crew, was discovered to contain a fetus two feet in length. It was only the fourth bowhead fetus to be recovered [in Alaska] by scientists.

WESTERN ARCTIC

FIELD & LABORATORY TECHNIQUES-specimen; IDENTITY-nomenclature, Eskimo, ingutuk; MORPHOLOGY-measurements; POPULATION-sex; REGULATION & CONSERVATION-regulation; REPRODUCTION-fetus; WHALING-western Arctic, native, catch, crews, photographs, utilization.

ROCK, ALLEN.

1961a. The Bush Circuit (News items): Point Hope. Alaska Sportsman 27(6):20.

On March 16, 1961 hunters at Point Hope were getting ready for whaling. The author and his wife will begin covering their boat frame with ogrook skins tomorrow. It takes five ogrook skins to cover a whaling boat.

WESTERN ARCTIC
WHALING-western Arctic, Chukchi Sea, native, gear.

ROCK, ALLEN.

1961b. The Bush Circuit (News items): Point Hope. Alaska Sportsman 27(7):20.

On the morning of April 17 two crews, Rock's and Daniel Lisbourne's, went out on the ice following a report that whales were sighted last night. As of April 24 no whales had yet been struck by Point Hope whalers.

WESTERN ARCTIC
BEHAVIOR-migration; WHALING-western Arctic, Chukchi Sea, native, crews.

ROCK, ALLEN.

1961c. The Bush Circuit (News items): Point Hope. Alaska Sportsman 27(10):42.

Brief account of spring whaling at Point Hope, Alaska. The first whale, a small one about 30 feet long, was caught by Daniel Lisburne on May 13. Author caught his first whale as captain of his crew on May 24. It was about 59 feet in length, the longest baleen measured 10'6", and each jawbone measured 19 feet long. When Rock struck his whale he was unaware that it was accompanied by a calf. It was later determined that the calf had been struck but lost by Roy Vincent's crew, who would not have shot it had he known the calf was accompanied by its mother. [The calf was later recovered as a stinker-see MacLean et al., 1971, p. 28, 56.]

WESTERN ARCTIC
MORPHOLOGY-measurements; POPULATION-mortality, whaling, struck and lost; REPRODUCTION-calf; WHALING-western Arctic, Chukchi Sea, native, catch, crews, photographs.

ROCK, HOWARD.

1962a. Arctic survival: Hair seal - the big little animal. Tundra Times, October 1, 1(1):4.
Reprinted by Tundra Times, January 2, 1973 [sic, 1974], and October 18, 1978,
42:19.

Describes how seal skin is prepared by the Eskimos to make clothing, rawhide lines, and floats for whaling. The floats slow the harpooned whale and mark its position for the hunters. When the whale is dead, several seal skin floats are attached to it to keep the animal from sinking.

WESTERN ARCTIC
WHALING-native, gear.

ROCK, HOWARD.

1962b. Why Eskimos opposed AEC's Project Chariot. (The first of a two-part series.)
Tundra Times, October 15, 1(2):9.

Article states reasons why Eskimos oppose the selection by the Atomic Energy Commission of the Cape Thompson area for a deep-sea harbor to be excavated by use of a nuclear explosion.

"This past season of April and May, Point Hope got 6 bowheads. The known poundage of muktuk sold at 95 cents a pound was 5,500. Nome ordered 4,000 pounds and Barrow 1,500 pounds. Nome asked an additional 1,200 pounds but was refused because Point Hope people wanted the rest for food during the coming winter. Noatak, Kivalina and Kotzebue probably obtained large amounts of muktuk, but the estimate is not available."

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch, utilization.

ROCK, HOWARD.

1962c. Arctic survival: Bags, boats, raincoats, window panes - all made from bearded Oogruk. Tundra Times, November 1, 1(3):11. Reprinted by Tundra Times, January 9, 1974, 11(2):3,6.

The oogruk, the great bearded seal, weighs up to well over a thousand pounds, is an animal of great importance to the Eskimos. Some products provided by this animal in the past and today include food, storage and nursing bags, window panes, raincoats, mukluk soles, rawhide thongs and boat or umiak covers. Six ooguruk skins are required for a 24-foot long umiak. The author states that whale hunting would have been almost impossible without this important animal.

WESTERN ARCTIC
WHALING-native, gear.

ROCK, HOWARD.

1962d. Arctic survival: Inaccurate textbooks create igloo myth in Alaska. Tundra Times, November 19, 1(4):4. Reprinted by Tundra Times, January 23, 1974, 11(4):7; and Feb. 22, 1984, 21(8):1,3, 5.

Canadian Eskimos live in snow igloos but Alaskan Eskimos never have, instead they have utilized the sod igloo, a permanent type home. Whale ribs, jawbones and shoulder blades were utilized for building sod houses or igloos and for making tools.

WESTERN ARCTIC
WHALING-Chukchi Sea, native, utilization, houses, tools.

ROCK, HOWARD.

1963a. Arctic survival: Whaling required extensive preparations, great precision. Tundra Times, March 18, 1(12):6. Reprinted by Tundra Times, March 27, 1974, 11(13):10-11; and April 18, 1984, 21(16):3,19.

Describes preparations for spring bowhead whaling by the Eskimo hunters, especially the care taken in the sewing of oogruk skins, six required to cover a 24-foot long umiak, and how this cover is attached to the boat frame. The prize of the hunt is the bowhead whale. "This monstrous marine animal has been taken up to 65 to 70 tons, perhaps even larger. The baleen on the large ones caught has measured up to 15 feet and jawbones up to 21 feet."

WESTERN ARCTIC
MORPHOLOGY-measurements, baleen, jawbones, estimated weight; WHALING-native, gear.

ROCK, HOWARD.

1963b. Arctic survival: The giant whale caused Eskimo helmsman to steer umiak in the air. *Tundra Times*, April 1, 1(13):4. Reprinted by *Tundra Times*, April 3, 1974, 11(14):10.

Author describes incident when his father's crew struck a large whale and their umiak was nearly pulled under water when the harpoon rope snagged on the bow; fortunately, at the last instant the bow broke freeing the snag and the boat. The whale was eventually killed and five crews towed it in. The whale was one of the largest ever taken in the history of Point Hope; its baleen was measured and the longest of them was found to be 12-½ feet in length. Other whales were also taken that season at Point Hope, but the year and number of whales caught was not given.

WESTERN ARCTIC
MORPHOLOGY-measurements, baleen; WHALING-Chukchi Sea, native, catch, crews, gear.

ROCK, HOWARD.

1963c. Arctic survival: Drama, suspense, action in hunt for giant bowhead whale. *Tundra Times*, April 15, 1(14):4. Reprinted by *Tundra Times*, April 10, 1974, 11(15):8.

Author, a native of Point Hope, provides a detailed description of the traditional hunt for bowhead whales at Point Hope. After a whale has been sighted within range of the crew, the umiak, a skin boat that is usually 24 feet long, is guided by the helmsman to a position behind and as close as possible to the swimming whale. "The umiak must be kept out of the line of vision of the whale. (Its line of vision is about 45 degrees angle backwards in relation to its forward and backward position.)" A bomb aimed at the juncture of the skull and spine will kill the whale instantly. The skin boats (four in this case) tow the dead whale to the shore-fast ice where it is pulled out of the water and cut up by the four participating crews. This operation takes two days and nights if the whale is larger than average size. At Point Hope the water leads generally open a mile to five miles out from shore and all portions of the whale are transported to shore before the whale could be lost to moving ice. This whaling community has been known to take 14 whales in one season.

WESTERN ARCTIC
BEHAVIOR-migration, timing, reactions when pursued by boats, when shot; WHALING-Chukchi Sea, native, catch, crews, gear, photographs, utilization.

ROCK, HOWARD.

1963d. Arctic survival: Whaling season's over, now comes the great celebration, Kaqruq. *Tundra Times*, June 3, 1(17):4. Reprinted by *Tundra Times*, May 1, 1974, 11(18):8.

When a whaling village has had a successful season and one or more whales have been taken, a celebration or Kaqruq is given in the form of a feast at which the successful captain(s) hand out pieces of the whale flukes to villagers and visitors. While the feast continues, the crews of the whalers assemble the walrus skin nalukatuk, the tossing skin, and everyone, children and adults, may take their turn at being tossed, the entire event being accompanied by elderly men chanting whaling songs. Due to adverse whaling conditions caused by heavy gales and south winds closing the leads, Point Hope whalers had only a moderately successful season. A total of three whales, all about 30 feet in length, were taken this spring.

WESTERN ARCTIC
ANTHROPOLOGY-Alaskan Eskimos, customs; MORPHOLOGY-measurements, estimated length; WHALING-Chukchi Sea, native, catch, crews, gear, utilization.

ROCK, HOWARD.

1963e. Arctic survival: Hunter danced after big whale kill; thoughts of parents. *Tundra Times*, November 4, 2(3):4. Reprinted by *Tundra Times*, June 24, 1985, 22(77):8,9.

During spring whaling at Point Hope in 1961, two bowheads were taken. The first was taken by Daniel Lisbourne (date not given) and was estimated to be a 30-ton whale. The second was taken by Kakairnok, the author's brother, on May 24 at about 2 a.m. The latter whale was estimated to weigh 60 tons, the jawbones each measured 19 feet in length, and the longest baleen measured 10-½ feet long. The celebration (Kaqrük) was held at the end of the season on June 8-10, at which time Peter Koonooyak announced his retirement as a whaling captain, and Kakairnok danced to celebrate the capture of his first whale as captain of his own crew, and to the memory of his departed parents.

WESTERN ARCTIC

MORPHOLOGY-measurements, baleen, jawbones, estimated weight of whale; WHALING-Chukchi Sea, native, catch, crews, gear, utilization.

ROCK, HOWARD.

1963f. Arctic survival: Whale hunt ended in tragedy; boys were saved by clothing. *Tundra Times*, December 2, 2(5):4. Reprinted by *Tundra Times*, July 17, 1974, 11(29):9.

Author recounts time when his father Weyahok, around 13 years of age, was first invited to go whaling on his father's (Kakairok) crew. After striking a large whale, their skinboat was flipped into the air by the whale's flukes and demolished. Weyahok and two other youths made it to the safety of the ice-edge, but his father and three other adults perished. Almost immediately after the tragedy, Chief Attungowruk invited Weyahok to join his crew and gave him a share of a whale he had taken earlier. Attungowruk took another whale that season just two days after Weyahok joined his crew. [Attungowruk was killed in February 1889, so this event must have occurred prior to that year.]

WESTERN ARCTIC

WHALING-Chukchi Sea, native, catch, crew, gear, utilization.

[ROCK, HOWARD.]

1964a. Important milestones. *Tundra Times*, February 3, 2(9):2.

Although this article is unauthored, it is obviously by the editor, Howard Rock, who, in a reminiscent mood, writes about several childhood events. One such event was "Going whaling for the first time at twelve years of age with father [Weyahok -Sam Rock] and his crew and being told to paddle just so, so as not to alert the whale because it had keen hearing. Experiencing the great excitement of a chase and seeing his father strike a whale and feeling the bow of the umiak bump the great black body...".

WESTERN ARCTIC

BEHAVIOR-hearing; WHALING-Chukchi Sea, native, crews, strike.

ROCK, HOWARD.

1964b. Arctic survival: Samaroona – ‘Sage of Tigara’ - master storyteller. *Tundra Times*, March 2, 2(11):4. Reprinted by *Tundra Times*, August 28, 1974, 11(35):9-10.

Samaroona was revered by Point Hope villagers “...for his storytelling ability” and because “He was one of the greatest hunters the village had ever known.” He was an average-sized man with a permanent limp. “Even under the handicap, Samaroona’s endurance was tremendous. His ability to take seals, oogruk, walrus, foxes, wolverines, wolves, polar bears, and the great bowhead whales stood out among his fellow hunters. He was a great link to the past through his fabulous knowledge of legends.” [Although the author does not mention it, a hunter of such stature presumably had a whaling crew.]

WESTERN ARCTIC
WHALING-Chukchi Sea, native, crews.

ROCK, HOWARD.

1964c. Arctic survival: Chief Attungowruk was loved, then hated at Tigara. *Tundra Times*, a three-part series published April 6, 2(13):4; April 20, 2(14):4; and August 3, 2(21):4.

Attungowruk, chief of the Eskimo village of Tigara (Point Hope) during the 1880s, was one of the greatest whalers the ancient settlement had ever had. He attained considerable prestige among Eskimos and whites alike because of his strength and endurance, whaling skill, generosity, sense of fairness, and his concern for the welfare of his people. For example, one spring [year not given], after his crew had expended considerable time and effort to kill and begin cutting up a large whale with much valuable baleen, they found a marked harpoon head in the carcass indicating Akniachak’s crew had first struck this whale. Attungowruk promptly turned the whale over to Akniachak instead of keeping it for himself. He also was as fair when dealing with the hundreds of outsiders that came to the area for commercial shore-whaling.

Attungowruk apparently anticipated problems with the new-comers and refused to allow them to settle in his village, although several eventually married local women. His firm stand caused Jabbertown, a small settlement five miles to the south of Point Hope, to be built where it was. Because of the numerous languages spoken there, it was appropriately named Jabbertown. Furthermore, the chief established a boundary line on ice and water between the two settlements to protect his people’s traditional whaling ground from the outsiders.

With the influx of commercial whalers, came the liquor and Attungowruk became a dangerous drunk. The chief murdered four people, including the first of his eight wives. Finally, Attungowruk himself was murdered one early June night in 1889, an event instigated by the chief’s youngest wife out of fear for her own life. A photograph of Attungowruk’s grave is included.

WESTERN ARCTIC
POPULATION-mortality, whaling; REGULATION & CONSERVATION-regulation, native; WHALING-Chukchi Sea, commercial, native, catch, crews, gear, photograph, utilization.

ROCK, HOWARD.

1968. 90 tons of whale. *Alaskan Sportsman* 34(8):6-9.

Account of bowhead whaling at Point Hope, Alaska, during spring 1968. The first whale of the season, a small one, was taken by Joe Frankson on April 21. Two more whales were caught within one hour on April 23. The first one, about 30 feet long, was taken by John Oktollik. The second animal, about 35 feet long, was taken by the author's brother Allen. It was noted that all three captains were Qaqrnaqtuuqs, one of two whaling societies in the village. Qaqmaqtuuq is the northern faction of the whaling societies while Ungasaqsikaaq is the southern faction. The societies are friendly whaling rivals and each has its ancient celebration grounds about a quarter mile distant from north to west.

WESTERN ARCTIC

MORPHOLOGY-measurements; WHALING-western Arctic, Chukchi Sea, native, catch, crews, photographs.

ROCK, HOWARD.

1975. Arctic survival: Her foot caught in blubber, Aunt Mumangeena slides into water. *Tundra Times*, February 12, 12(7):10-11. Originally pub. August 23, 1965; 2().

When the author was 10 years of age Kunungnowruk and his crew caught a large whale at Point Hope [since Howard Rock was born in August 1911 (F. Durdik, *Tundra Times*, October 24, 1988; 26:8-9.) the year probably was 1922]. Howard's father Weyahok [Sam Rock] also had a crew whaling that year.

WESTERN ARCTIC

POPULATION-mortality, whaling, catch; WHALING-Chukchi Sea, native, catch, crews.

RODAHL, KAARE.

1963. *The last of the few*. Harper & Row, New York, 208 p.

Author recounts experiences while conducting physiological studies of Eskimos at Kaktovik, Anaktuvuk Pass, Kotzebue, St. Lawrence Island, and the Pribilof Islands during 1950- 1951. At Sevuokok (Gambell) it was noted that over 50 umiaks were by the shore and that these people hunt bowhead whales, walrus, and seals for food. It was Tingmiak who shot the whale this summer. It was killed by a single bomb from a whale gun. [The species was not stated but the use of a whale gun and bomb suggests that it was a bowhead since rifles are normally used on other species.] Bowhead whaling at Gambell is described, including gear used, the striking of whales, and their swimming behavior after being struck (p. 166-167). The author noted that "Earlier they used to kill at least five of these whales a year; now they are less plentiful and the entire whaling fleet seldom brings in more than three." (p. 67-68).

WESTERN ARCTIC

BEHAVIOR-swimming when struck; WHALING-Bering Sea, natives, catch, crews, gear, utilization.

ROSS, W. GILLIES.

1979. *The annual catch of Greenland (bowhead) whales in waters north of Canada 1719-1915: a preliminary compilation*. *Arctic* 32(2):91-121.

Author presents annual data on the catch of *Balaena mysticetus* for Davis Strait, Hudson bay, and the Beaufort Sea using logbooks, journals, and manuscript annual summaries of Dutch, British, and other sources before 1915. More than 29,000 whales were secured but if gaps in coverage and the mortality of wounded and escaped animals are considered, the total kill during this time may have exceeded 38,000. This reconstruction is considered preliminary. (From author's abstract.)

EASTERN ARCTIC, WESTERN ARCTIC

POPULATION-mortality, whaling, struck and lost; WHALING-eastern Arctic, western Arctic, Beaufort Sea, commercial, catch.

ROWLEY, GRAHAM .

1974. Research laboratory at Igloodik, NWT, Canada. *Polar Rec.* 17(106):56-57.

Igloodik, on Foxe Basin, is the site of a new arctic research laboratory that should be in operation in late 1974. Both historically and geographically, Igloodik, in Turton Bay, is at the center of the Eskimo population. The Greenland whale, *Balaena mysticetus*, is occasionally reported in the area.

EASTERN ARCTIC
DISTRIBUTION-sightings.

ROZANOV, M. P.

1931. Harvest of marine animals on the Chukchii Peninsula. *Sovetskii Sever (Soviet North)*, 1931, No. 6:44-59. (Transl. from Russian by B. A. and F. H. Fay, 1984.). [Arctic Bibliography no. 14937. *Promysel morskogo zveria na Chukotskom poluostrove (Sealing on the Chukotsk Peninsula.)*].

Contains information obtained by observations and a series of interrogations about the biology, harvest, and stocks of marine mammals (primarily seals and walrus) along the Chukotka coast from Naukan to Providence Bay. Describes the boats used by the natives, skin baidaras and American whaleboats, and the use of imported American rifles for taking animals. Regarding whales, the author states (p. 6 of transl) "The Chukchi and Eskimos harvest almost no cetaceans. In 1929, on the whole coast of Chukotka, one whale was killed at Naukan. In 1930 no whales were taken anywhere. Belukhas are taken anywhere. Belukhas are taken by shooting only in Naukan. There in 1929, they took 9 belukhas; in 1930, they took 42. At the time of our voyage, we saw belukhas only in the Anadyr estuary and nowhere else along the coast of Chukotka."

"We saw many whales. On August 12, 1930, during entrance into Lawrence Bay at Cape Nunyagmo, our steamship was surrounded by a herd of several tens of whales. Their blows were seen to the whole horizon. Many whales were seen also in Mechigmen Bay. Along the shore everywhere we saw remnants of the recent, intensive American whaling. Skulls and ribs of whales lay in the encampments of the whalers. On Mechigmen spit stands a quite complete house of American whalers, covered by canvas and tarpaper. In the length of the whole abandoned establishment, there is a can of kerosene, a barrel of whale blubber, utensils, instruments, furniture, etc."

WESTERN ARCTIC
SKELETAL REMAINS-beachcast, whaling; WHALING-western Arctic, Bering Sea, commercial, native, gear, catch (possibly bowhead).

RUMOHR, HENRY C.

1953. Driftwood. *Alaska Sportsman* 19(7):8-15, 53-58.

Account of author's immigration with his father to the United States from northern Europe in 1870 and his difficult life as a youth. Early in February 1888 he departed San Francisco as a sailor on a whaling vessel [name not given] for the South Seas and the Arctic Ocean. They arrived at Point Barrow on August 3 [1889?] and soon afterwards sailed for the bowhead's feeding grounds off Herschel Island. Author describes equipment and technique used to hunt bowheads. Their ship caught six whales during about one month's time. Thirteen whalers then became trapped by the ice, which held them fast for 21 days. After a brief stay at Point Barrow the ship returned to San Francisco.

WESTERN ARCTIC
BEHAVIOR-when pursued, hearing; MORPHOLOGY-measurements (baleen); NUTRITION-food and feeding; PREDATORS & COMPETITORS-scavenging by polar bears; WHALING-western Arctic, E. Beaufort Sea, commercial, gear, catch, utilization.

RUSSELL, FRANK.

1898. Explorations in the far North, being the report of an expedition under the auspices of the University of Iowa during the years 1892, '93, and '94. The Univ. [Iowa, Iowa City.], 290 p.

Account of author's experiences during a journey to Fort Rae, his base near the Great Slave Lake where he lived for a time with Indians, then down the Mackenzie River to Herschel Island in the summer of 1894, where he boarded the whaling vessel *Jeanette* bound for San Francisco. The *Jeanette* had spent the summer whaling for bowheads in the eastern Beaufort Sea but only had taken one. Sailing west they reached Point Barrow on September 10. "Here two whaling companies have stations located at Cape Smythe, 12 miles southwest of the point. During the summer of '94 the whalers had been unusually successful and had taken twenty-one thousand pounds of whalebone (p 152). On the return trip to home they pursued whales near Herald Island, where one school of over 100 animals was seen and one more was captured (p. 153-154). They arrived at East Cape on October 10, where three oomiaks full of natives came out to visit the ship. On October 11 they arrived at Cape Tchaplín (Indian Point as it is known among whalers), where they spent the day trading with natives for whalebone (p. 155). The *Jeanette* arrived back in San Francisco on October 27, 1894. Author also relates some whaling experiences of the *Jeanette* and other vessels and catches made by them in 1893.

WESTERN ARCTIC

BEHAVIOR-migration (schooling); DISTRIBUTION-sightings; POPULATION-mortality (strandings); WHALING-western Arctic, commercial, native, shore stations, crews, gear, catch, utilization.

RYDER, JOHN A.

1885. On the development of the mammary glands and genitalia of the cetacea. Bull. U.S. Fish. Comm. 5(28):135-142.

Based upon an examination of an adult *Phocoena communis* which contained a fetus about a foot long, sections of the first trace of the mammary gland in a very young female fetus of the blackfish, *Globiocephalus melas*, about two inches long, and from available literature, the author concludes that there is but little difference between the structure of the mammary organs of the *Denticete* and the *Mysticete*. He remarked that "Wyman [1848-51.], in examining an embryo of the great right whale, *Balaena mysticetus*, found it difficult to discriminate the sex of it externally, although six inches in length. In the series of embryos in my possession there does not seem to be any difficulty of this sort..." (p. 140.).

CIRCUMPOLAR

MORPHOLOGY-anatomy (mammary glands, genitalia), embryos.

SAARIO, DORIS J., and BRINA KESSEL.

1966. Human ecological investigations at Kivalina. In Norman J. Wilimovsky and John N. Wolfe (eds.), Environment of the Cape Thompson region, Alaska, Chapt. 35, p. 969-1039. U.S. Atomic Energy Comm., Washington, D.C.

The human ecology of the village of Kivalina (pop. 150) was studied from August 1959 to May 1961. Animals important in subsistence include the bowhead whale. Many Kivalina people travel to Point Hope to work as members of whaling crews. In 1960 whaling was instituted at Kivalina when Dr. M. Johnson sent a darting gun and some bombs to the village. Although five bowheads were seen in the spring of 1960, none were taken. Four whales had been killed at Point Hope and about 2,300 lb. of bowhead were brought to Kivalina. In 1961, no whaling occurred at Kivalina.

WESTERN ARCTIC

ANTHROPOLOGY-human ecology; WHALING-western Arctic, natives, catch, gear, utilization (food).

SABO III, GEORGE, and JOHN D. JACOBS.

1980. Aspects of Thule Culture adaptations in Southern Baffin Island. *Arctic* 33 (3):487-504.

“An archaeological sequence of Neo-Eskimo occupations, based upon excavations of eight Thule winter houses near Lake Harbour, Baffin Island, is outlined. A rescheduling of procurement systems, coupled with a shift in the emphasis of fall/winter settlement options, is seen in response to climatic/ecological changes, commencing after A.D. 1250, which affected the accessibility of bowhead whales, ringed seal, and caribou.” (From author’s abstract.)

Along the south coastal waters of Baffin Island species important to Inuit subsistence that are hunted are four species of seals, walrus, beluga, and (at least in the past) bowhead whales. The hunting of bowheads during the Classical Thule Phase is indicated by considerable amounts of baleen in addition to whale bones, and it is likely that the bowhead provided an important food source. The amount of whale bone and baleen decline substantially during the Developed Thule Phase, indicating a reduction or possibly a cessation of whaling, probably due to effects of a colder period.

EASTERN ARCTIC
ARCHAEOLOGY; DISTRIBUTION-history; FIELD & LABORATORY TECHNIQUES-artifacts; WHALING-history, eastern Arctic, natives, utilization.

SANDERSON, IVAN T.

1955. *Living mammals of the world*. Hanover House, Garden City, New York, 303 p.

Living mammals of the world are briefly described. The bowhead, Greenland, or Arctic right whale, discovered by the Basques about the turn of the 15th and 16th centuries, was grossly exploited until almost wiped out in the mid-19th century. At that time, a new stock of these whales was discovered in the North Pacific and was similarly eliminated by the Yankee whaling fleets working out of San Francisco. This animal is larger than the black right whale, yields more oil, and has the largest baleen plates measuring over 13 feet in length. “Bowheads are Arctic animals and always stay near the ice-front, following it north in summer. They are even vaster in girth than the black rights and their heads, which have a pronounced bump on top, comprises more than a third of the total animal. There is a distinct “neck”, unlike the black right, and the tail is much slimmer. In color they are usually black, with a white chin and often a white band around the tail just in front of the flukes. They used to breed in late spring in the Davis Straits and the Sea of Okhotsk but they are now very rare animals.” (p. 212).

CIRCUMPOLAR
DISTRIBUTION-history; FIELD & LABORATORY TECHNIQUES-field recognition, coloration; IDENTITY-description, names; MORPHOLOGY-measurements; POPULATION-mortality; REPRODUCTION-mating. WHALING-history, general, commercial, utilization.

SANDERSON, IVAN T.

1956. *Follow the whale*. Little, Brown and Co., Boston, Toronto, 423 p.

Reviews the history of whaling with some general information on the natural history of whales. The Basques travelled toward Greenland waters where they met the bowhead, Greenland, or Arctic right whale (*Balaena mysticetus*), which they were definitely catching by 1500 A.D. and called it the sardako baleak. Normally from 45 to 60 feet in length, an unusually large one 70 feet long was caught off Spitsbergen in 1900. Its baleen was over 15 feet long (p. 161). "The bowhead of the North Pacific is somewhat different and has been given the name of *Balaena sieboldii*. In summer it is in the Siberian, Wrangel, and Beaufort Seas (see map page 255), and in winter migrates through Bering Strait to the Bering Sea and south through the Kuriles to the Sea of Okhotsk. It used to be very numerous in the latter sea, where the young, called "poggies", were born. The single calf is 14 to 16 feet long at birth and stays with its mother for a year." (p. 164). It feeds on a pteropod known as *Clio borealis*.

CIRCUMPOLAR

BEHAVIOR-swimming, breathing, migration; DISTRIBUTION-history; IDENTITY-nomenclature, description; MORPHOLOGY-measurements; NUTRITION-food; POPULATION-size, calf; REPRODUCTION-parturition; WHALING-general, commercial, utilization.

SAN FRANCISCO CHRONICLE.

1889. (News item). San Fran. Chron., September 30.

[It was reported that 28 bowhead whales were taken by the whalers at Barrow, Alaska, during 1889. Copy seen by J. R. Bockstoce.]

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, commercial, native, catch.

SAN FRANCISCO CHRONICLE.

1890a. (News item). San Fran. Chron., September 17.

[It was reported that no bowhead whales were taken by the whalers at Point Belcher, Alaska, in 1890. Copy seen by J. R. Bockstoce.]

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, commercial, native, catch.

SAN FRANCISCO CHRONICLE.

1890b. (News item). San Fran. Chron., September 19.

[It was reported that 5 bowhead whales were taken by the whalers at Barrow, Alaska, during 1890. Copy seen by J. R. Bockstoce.]

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, commercial, native, catch.

SAVINI, MICHAEL J.

1974. Report on international and national legislation for the conservation of marine mammals. Part 1. International legislation. FAO Fish. Circ. 326, 80 p.

A compilation of background information on the nature and application of existing international and national legislation regarding marine mammals, including *Balaena mysticetus*.

EASTERN ARCTIC, WESTERN ARCTIC

REGULATION & CONSERVATION-legislation.

SCAMMON, CHARLES M.

1869. On the cetaceans of the western coast of North America. Proc. Acad. Nat. Sci. Phila., 1869: 13-63. Edited by Edward D. Cope.

A two-part account of the cetaceans of the western coast of North America. Part 1 by E. D. Cope is a systematic synopsis with a few species included from other sources to provide descriptions of some species from the Atlantic coast. Part 2 by C. M. Scammon contains his personal observations on the natural history of west coast cetaceans and the elephant seal made by him during a whaling and sealing voyage in 1852. Describes in detail commercial whaling for bowheads in the Bering and Okhotsk Seas. Also discusses natural history of the bowhead, including their distribution, behavior, identity (he believed two species of bowheads existed, p. 35), morphology, ice-breaking, populations, and reproduction. This paper is important because it records observations on the western Arctic population of bowheads before whaling severely reduced their number.

WESTERN ARCTIC

BEHAVIOR-migration, when hunted, icebreaking; DISTRIBUTION-former; IDENTITY-description, nomenclature, taxonomy; MORPHOLOGY-measurements, structure; REPRODUCTION-calves, lactation, parturition; WHALING-history, western Arctic, commercial, catch.

SCAMMON, CHARLES M.

1874. The marine mammals of the north-western coast of North America, described and illustrated: together with an account of the American-whale-fishery. John H. Carmany and Company, San Francisco. Reprinted 1968, Dover Publications, Inc., New York, 319 p. Facsimile edition 1969, Manessier Publishing Co., Box 5517, Riverside, California 92507, 319 p. + v p., Scammon charts of the whaling lagoons & Baja California.

Captain Charles M. Scammon, a nineteenth century scientist and whaleman, describes 24 species of cetacea, including the bowhead (p. 52-65). Describes two methods of bowhead whaling: (1) From small open boats that are able to navigate between the ice and shore before the ships are able to, in which case whales are beached for flensing and blubber is rafted in the water until ship's arrival; (2) from ships as their base, small boats are launched when whales are sighted and carcasses towed back to ships for flensing. This classic publication is valuable because it reports natural history observations on the pre-exploited population of bowheads, including insightful presumptions regarding reproduction, feeding grounds, and trans-Arctic movements.

WESTERN ARCTIC

BEHAVIOR-diving, hearing, ice-breaking, migration; DISTRIBUTION-former, whaling grounds; FIELD & LABORATORY TECHNIQUES-field recognition; GROWTH; IDENTITY-description, nomenclature, poggy, bunchbacks, ice-breakers; MORPHOLOGY-measurements; NUTRITION-food, feeding; PATHOLOGY-parasites; POPULATION-former abundance; REPRODUCTION-calves; WHALING-Bering, Chukchi, Beaufort Seas, commercial, gear, methods

SCHEFFER, VICTOR B.

1942. A list of the marine mammals of the west coast of North America. Murrelet 23(2):42-47.

A systematic list of marine mammals found in the coastal waters from the Panama Canal to Attu Island and Bering Strait. "The arrangement of families is according to Simpson (1931) and the arrangement of genera according to Kellogg (1928) or Miller (1924)." The bowhead whale, *Balaena mysticetus* Linnaeus, 1758, family Balaenidae is on p. 46.

WESTERN ARCTIC

IDENTITY-taxonomy.

SCHLEDERMANN, PETER.

1976a. Thule Culture communal houses in Labrador. *Arctic* 29(1):27-37.

European whalers should, perhaps, be regarded as merely incidental to the development of the Thule Culture communal house, since large communal dwellings in the Arctic predate that culture. Whale bones and baleen were used in the construction of houses. The Thule culture communal house development roughly coincided with the period of prolonged cooling of the Neo-Boreal, approximately 1505-1850 A.D., with an intensified period between 1600-1730. The Baffin Bay was still open for ships in 1616 when Baffin discovered it, but when the ice began to advance southwards it was closed and in the years 1616-1718 very few whaling ships visited Davis Strait. Under those circumstances the Eskimos could probably no longer depend on the availability of whales. The author has carried out studies to show that there was a serious decline in the amount of whaling (baleen whales) during the Neo-Boreal period which affected the Thule culture settlement patterns, and upset the subsistence base of the Eskimos.

EASTERN ARCTIC
ARCHAEOLOGY; DISTRIBUTION-history, factors limiting; FIELD & LABORATORY TECHNIQUES-artifacts;
WHALING-history, eastern Arctic, commercial, natives, gear, utilization.

SCHLEDERMANN, P.

1976b. The effect of climatic/ecological changes on the style of Thule Culture winter dwellings. *Arctic Alpine Res.* 8(1):37-47.

This paper discusses the combined influence of climatic changes and faunal distribution on the style of Thule Culture winter dwellings through time and space, with major geographical emphasis placed on the central and eastern Canadian Arctic. The following generalized climatic periods are presented:

“Period I-A.D. 800 to 1200, warming to warmer than present with good availability of bowhead whales.

Period II-A.D. 1200 to 1550, cooling (close to present?). Whaling decreased – concentration of baleen in midden decreases abruptly about A.D. 1600.

Period III-AD. 1550 to 1850, cooling to colder than present, increasing sea ice creating difficult whale hunting conditions.”

The response to environmental changes by a few key animals, including the bowhead whale, is discussed. During warmer climatic periods with decreasing summer pack-ice cover the summer habitat of the bowhead was greatly expanded. A climatic cooling with increasing amounts of drift ice would have forced them to seek other summer feeding grounds, thus decreasing the availability of these large animals to the Eskimos. The availability and utilization of bowheads for food and shelter influenced the location and types of houses built by the Eskimos.

EASTERN ARCTIC
ARCHAEOLOGY; DISTRIBUTION-history, climate; FIELD & LABORATORY TECHNIQUES-artifacts; WHALING-eastern Arctic, native, utilization.

SCHLEDERMANN, PETER.

1977. An archaeological survey of Bache Peninsula, Ellesmere Island. *Arctic* 30(4):243-245.

During the early part of August 1977, a survey of archaeological sites was carried out in the Bache Peninsula region on the east coast of Ellesmere Island, N.W.T., Canada. A total of 110 sod/stone and whalebone winter houses was located on ten Thule culture sites. The sites contained a large amount of whalebone (bowhead), suggesting an excellent habitat for the large whales during a particular time period.

EASTERN ARCTIC
ARCHAEOLOGICAL-skeletal bones.

SCHMIDHAUSER, JOHN R. and GEORGE D. TOTTON III (eds.).

1978. The whaling issue in U.S.-Japan relations. Westview Press, Boulder, Colo., 275 p.

The controversy over whaling and its effect on U.S.-Japan relations were examined at a conference held in Tokyo in 1977 by a group of eminent U.S. and Japanese scholars. This book, the result of that conference, explores the history of the whaling controversy, whaling as a resource, the status of whaling in international law, and the policy alternatives confronting Japan, the U.S., and the relevant international organizations. In chapter 15 (p. 229-256) the status of the great whales, including *Balaena mysticetus* (p. 233-234), is reviewed by D. R. Patten.

WESTERN ARCTIC, EASTERN ARCTIC
POPULATION-abundance; REGULATION & CONSERVATION-regulation, management; WHALING-western Arctic, native, catch.

SCHMITT, FREDERICK P.

1975. The whale's tale as told with postage stamps. Picton Publishing, Citadel Works, Bath Road, Chippenham, Wilts, Great Britain, 69 p.

Contains descriptions and reproductions of stamps that feature whales and whaling, including information on their origin and nationality together with biological factors such as types of whales, their food, habits and distribution. Also contains a concise history of whaling up to the factory ships in use today. A brief description of the bowhead whale and whaling is given on page 9.

WESTERN ARCTIC
BEHAVIOR; IDENTITY; NUTRITION; WHALING-western Arctic, commercial, utilization.

SCHULERT, ARTHUR R.

1962. Strontium-90 in Alaska. *Science* 136(3510):146-148.

Strontium-90 concentrations were determined in a variety of foods used by the native population, including beluga, bowhead, polar bear, seal and walrus.

WESTERN ARCTIC
PATHOLOGY-pollution; WHALING-utilization.

SCHULTE, H. von W., and M. de FOREST SMITH.

1918. The external characters, skeletal muscles, and peripheral nerves of *Kogia breviceps* (Blainville). *Bull. Am. Mus. Nat. Hist.* 38, Art. 2:7-72.

Anatomical description of a male fetus of *Kogia breviceps* taken from a large female which stranded at Long Beach, Long Island, the skeleton of which is preserved in the American Museum of Natural History, No. 36595. "The presence of antibranchial muscles was first recorded in a cetacean by Flower in 1865. Since then they have been recognized and described in *Balaenoptera*, *Megaptera*, *Balaena*, *Platanista*, *Mesoplodon*, *Hyperoodon*, and *Globicephalus*." (References for each description are given at bottom p. 27, including Struthers, J., 1877 for *Balaena mysticetus*).

EASTERN ARCTIC
MORPHOLOGY-muscles, comparative anatomy.

SCORESBY, William, Jr.

1820. An account of the Arctic regions with a history and description of the northern whale-fishery. A. Constable & Co., Edinburgh. In two vols. Vol. 1, 551 p. plus 82 p. Append.; Vol. 2, 574 p., 22 pl. (Reprinted, 1969, by David and Charles Reprints, Redwood Press Ltd., Trowbridge, Engl.).

This comprehensive review of whaling and natural history in the early 19th century is considered a classic. Describes the geography of the Atlantic Arctic, ocean and ice conditions, plant and animal life, history of the whale fisheries, and contemporary whaling and whale processing. Considerable details about the Greenland whale *Balaena mysticetus*, are given in volume one (p. 449-478), including physical and anatomical descriptions, senses, swimming and diving behavior, sex ratios, predation, and distribution. Whaling and utilization of whales is discussed in volume two.

EASTERN ARCTIC

BEHAVIOR-swimming, diving, respiratory, maternal; DISTRIBUTION; GROWTH; MORPHOLOGY; NUTRITION-food, feeding behavior; PHYSIOLOGY-integument, receptors, respiratory; POPULATION-sex ratios; PREDATORS & COMPETITORS; REPRODUCTION-anatomy, mating, gestation, parturition, lactation, maturation; WHALING-history, eastern Arctic, gear, natives, utilization, photographs and drawings.

SCORESBY, WILLIAM, Jr.

1823. Journal of a voyage to the northern whale-fishery; including researches and discoveries on the eastern coast of West Greenland, made in the summer of 1822, in the ship *Baffin* of Liverpool. Archibald Constable and Co., Edinburgh, Scotland, 472 p.

An account of a cruise in the Greenland Sea in 1822, including descriptions of ice conditions, physical features of Greenland's east coast, weather and ocean currents, whales and whaling, lists of plants and animals, and excerpts from journals of other whalers. Biological description of a young, 19-foot suckling *Balaena mysticetus* gives details of size, morphology, muscles, brain, heart, throat, and blowhole and its anatomy. Additional details are presented about food, breathing behavior, structure of the blowhole to allow diving, migration, and distribution in Davys [Davis?] Sound of bowheads in general.

EASTERN ARCTIC

DISTRIBUTION; BEHAVIOR-respiratory; MORPHOLOGY; NUTRITION-food; PHYSIOLOGY-respiratory, metabolism and diving; REPRODUCTION-anatomy, calf; WHALING-eastern Arctic, history, gear.

SCORESBY, William Jr. ,

1981. The 1806 Log Book concerning the arctic voyage of Captain William Scoresby, kept by William Scoresby, Junior. Facsimilie Publ. by Caedmon of Whitby, by arrangement with the Whitby Literary and Philosophical Society, Whitby, England. (Unnumbered pages).

Daily log of the fourth voyage of the ship *Resolution* from Whitby towards Greenland in 1806. The catch for the cruise was 24 Greenland whales, 2 seals, 2 sea horses, 2 bears and 1 unicorn. The cargo produced 216 tons of oil. Although only whales with baleen six feet or over in length were considered "pay fish", 10 of the 24 whales taken by Scoresby on this voyage contained baleen less than six feet long. The whale taken on May 30 was a big female accompanied by a sucker but they let the young calf go.

EASTERN ARCTIC

DISTRIBUTION-former; MORPHOLOGY-baleen measurements; POPULATION-mortality; REPRODUCTION-calf; WHALING-history, eastern Arctic, commercial, catch.

SEAMAN, GLENN.

1977. Agvik! Alaska Today 5:68.

Brief popular account of bowhead whaling by Eskimo residents of Point Hope, Alaska. One photograph shows two bowheads (one with three large, white scars on right side) pulled up on the ice and ready to be cut up.

WESTERN ARCTIC

IDENTITY-nomenclature, Eskimo; PATHOLOGY-injury, scars; WHALING-western Arctic, Chukchi Sea, native, catch photographs.

SEATTLE POST-INTELLIGENCER.

1978a. Bowhead killed. Seattle-Post Intelligencer, Seattle, Wash., April 18.

“A bowhead whale more than 40 feet long has been taken by a whaling crew of the village of Savoonga, Alaska, and is the first whale taken of the 1978 season. Under a quota set by the International Whaling Commission, Alaska’s Eskimo whalers are limited to a harvest of 12 of the endangered whales or 18 whales struck, whichever comes first.”

WESTERN ARCTIC

BEHAVIOR-migration, timing; MORPHOLOGY-estimated length; POPULATION-mortality, whaling; REGULATION & CONSERVATION-management, quota; WHALING-Bering Sea, native, catch.

SEATTLE POST-INTELLIGENCER.

1978b. Whaling charges. Seattle-Post Intelligencer, Seattle, Wash., May 6.

“National Marine Fisheries Service officials have charged that Eskimos in Barrow, Alaska, have taken four Bowhead whales, one more than their quota. The whalers, however, deny that they violated their quota. The whalers have defied an order to stop whaling, but fisheries agents have not formally intervened.”

WESTERN ARCTIC

BEHAVIOR-migration, timing; POPULATION-mortality, whaling; REGULATION & CONSERVATION-management, quota; WHALING-Chukchi Sea, native, catch.

SEATTLE TIMES.

1946. Year’s first whale caught off Barrow. Seattle Times, Seattle, Wash., May 3.

“Point Barrow, Alaska, May 3. – The first whale of the year was caught yesterday by Otis Takpuk.... The mammal was one of four in a school, the first sighted this season.”

WESTERN ARCTIC

BEHAVIOR-migration; POPULATION-mortality, whaling; WHALING-Chukchi Sea, native, catch, crews.

SEATTLE TIMES.

1978a. Eskimos butcher hunt’s first whale. Seattle Times, Seattle, Wash., April 18.

Eskimo whalers from the St. Lawrence Island village of Savoonga caught the first bowhead whale killed in this year’s spring hunt. The 40-foot-long animal was taken with one strike on Sunday and fills the village quota for one whale.

WESTERN ARCTIC

BEHAVIOR-migration, timing; MORPHOLOGY-measurement; POPULATION-mortality, whaling; WHALING-Bering Sea, native, catch.

SEATTLE TIMES.

1978b. Photograph. Seattle Times, Seattle, Wash., June 15, p. A7.

(Photograph caption). "Whale landed. Residents of the Alaska whaling village of Wainwright, about 175 miles southwest of Barrow, pitched in to pull ashore a bowhead whale which was taken during the spring harvest.-A.P. photo."

WESTERN ARCTIC
BEHAVIOR; WHALING--Chukchi Sea, native, catch, photograph.

SELKREGG, LIDIA L.

1975. Alaska regional profiles: Arctic region. Arctic Environ. Info. and Data Center, Univ. Alaska, Anchorage, 218 p.

Briefly summarizes the natural and man-made environmental aspects of the state, including the importance of subsistence for its people, including Eskimo dependence upon marine animals. Discusses bowhead whaling by the Eskimos (p. 151-161), and contains photographs of: (1) A bowhead whale on the ice, p. 149; (2) A dead bowhead floating in the water between two boats, p. 152; and (3) A wooden whale boat and crew with two flags flying on the boat's mast, p. 156. Also contains an extensive bibliography arranged by major subjects.

WESTERN ARCTIC
BEHAVIOR-migration; DISTRIBUTION-former and present; WHALING-Bering and Chukchi Seas, history, commercial, native, catch (unidentified), photographs, utilization.

SEYMOUR, ALLYN H.

1966. Radiological analyses of marine organisms. *In* Norman J. Wilimovsky and John N. Wolfe (eds.), Environment of the Cape Thompson region, Alaska, Chapt. 40, p. 1141-1149. U.S. Atomic Energy Comm., Washington, D.C.

The radionuclide content of Chukchi Sea organisms collected from 1959 to 1962 was determined to establish a reference point for samples expected to be collected after a proposed nuclear bomb test, Project Chariot. Samples collected from two bowhead whales taken at Point Hope (muscle, liver, blubber and muktuk, and bone or skeleton) were tested and values obtained for Strontium-90 and calcium.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-radionuclides; PATHOLOGY-pollution; WHALING-western Arctic, Chukchi Sea, native, catch.

SHAFTER, RICHARD A.

1942. Caught in the Arctic. Alaska Sportsman, 8(12):16-18, 20-23.

Historical account of the whaling disaster of 1871 when 39 ships became trapped by ice between Icy Cape and Point Belcher and 33 of them were destroyed. Contains notes on techniques used in whaling for bowheads in the Arctic Ocean.

WESTERN ARCTIC
WHALING-western Arctic, Bering and Chukchi Seas, commercial, gear, catches, drawings.

SHEPELEVA, V. K.

1973. Adaptation of seals to life in the Arctic. *In* K. K. Chapskii and V. E. Sokolov (eds.), *Morfologiia i ekologiia morskikh mlekopitaiushchikh*, edited by V. E. Sokolov, 1971, and *Prisposobleiniie tiulenei k obitaniiu v Arktike*, by V. K. Shepeleva, edited by K. K. Chapskii, 1971 (Morphology and ecology of marine mammals; seals, dolphins, porpoises.), p. 1-58. (Transl. from Russian by H. Mills, *Isr. Program Sci. Transl.*, 1973, 232 p., as IPST cat. no. 22056). John Wiley & Sons, N.Y.

Discusses the physiological adaptation of seals to life in the Arctic. In the section on "The fat cover as a heat-insulating layer," Table 9 presents the following data for bowhead whales: thickness of fat cover (cm) 20-50. weight (kg) of pelt with blubber, 25,000-30,000. Ten references as published sources for the data in the table are included in the caption without any indication of which species each applies to.

CIRCUMPOLAR
MORPHOLOGY-structure.

SHULTS, LARRY M.

1979. *Ogmogaster antarcticus* Johnston, 1931 (Trematoda: Notocotylidae) from the bowhead whale, *Balaena mysticetus* L., at Barrow, Alaska. *Can. J. Zool.* 57:1347-1348.

A specimen of the trematode *Ogmogaster antarcticus* Johnston, 1931 was found in a bowhead whale [specimen number 77B5] captured at Barrow, Alaska, extending the known geographic distribution of this helminth some 5,000 km by sea north of British Columbia, Canada. This find represents a new host record. (From author's abstract.)

WESTERN ARCTIC
PATHOLOGY-parasites; WHALING-western Arctic, Chukchi Sea, native, catch.

SIMPSON, GEORGE GAYLORD.

1945. The principles of classification and a classification of mammals. *Bull. Am. Mus. Nat. Hist.* 85:1-350.

A working classification of mammals prefaced with a discussion on the principles of taxonomy. The entry for bowheads is as follows: Order Cetacea (p. 100), Suborder Mysticeti (p. 104), Fam. Balaenidae, "*Balaena* Linnaeus, 1758. L[Lower]-U[Upper] Plioc[ene]; Eu.[rope] R.[ecent]; Arctic. Greenland right whale, bowhead." (p. 105).

CIRCUMPOLAR
IDENTITY-nomenclature, taxonomy.

SKIPTON, R. KENNEDY.

1973. Peoples of Alaska. *In*: Edward Evans-Pritchard (editor) *Peoples of the earth: The Arctic*, v-16, p. 18-37. Danbury Press, Div. Grolier Enterprises, Inc., [London].

A generalized description of Alaska and its people. Bowhead whaling by the Eskimos is described only in captions for eight photographs on the capture and cutting up of these animals. None of the photographs are accompanied by information on the date or location of these kills. Picture credits are, however, given at the beginning of the volume.

WESTERN ARCTIC
POPULATION-mortality, whaling; WHALING-western Arctic, native, catch, gear, photographs (unidentified).

SLEPTSOV, M. M.

1955a. Kitoobraznye dal'nevostochnykh morei (Cetaceans of Far Eastern seas). Izdanie vtoroe (2nd ed.). Minist. Rybn. Khoz. Okeanogr., Vladivostok. 161 p. In Russian. First ed. pub. 1952. (Transl., 1979, by S. Pearson, NOAA, Natl. Mar. Fish. Serv., Natl. Mar. Mammal Lab., Seattle, Wash.)

Covers various species of whales of the area. The bowhead whale is discussed on p. 118-120, principally from review of literature. Briefly describes the whale, morphology, general and seasonal distribution, growth, migration, food, reproduction, longevity, and present limitation of hunting to native peoples.

WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION; GROWTH; IDENTITY; MORPHOLOGY; NUTRITION-food; POPULATION-longevity; REPRODUCTION-calf size; WHALING-western Arctic, natives.

SLEPTSOV, M. M.

1955b. Biologiya i promysel kitov dal'nevostochnykh morei (Biology of whales and the whaling fishery in Far Eastern Seas). Pishchepromizdat, Moscow. 63 p. In Russian. (Transl. by W. E. Ricker of Table of Contents and Conclusions only, 6 p., avail. Fish. Res. Board Canada, Transl. Ser. 118.)

Discusses biology of whale species occurring in the far eastern seas and the northwestern part of the Pacific Ocean. "The stocks of the balaenid or right whales, in spite of continuing protection from whaling, are increasing very slowly. The Greenland whale at this time occurs rarely and in small numbers in the northern part of the Bering and Chukotsk Seas."

WESTERN ARCTIC

DISTRIBUTION-Bering and Chukotsk Seas; POPULATION-Abundance.

SLEPTSOV, M. M.

1961a. O kolebanii chislennosti kitov v Chukotskom more v raznyye gody (Fluctuations in the numbers of whales of the Chukchi Sea in various years). Akad. Nauk SSSR, Tr. Inst. Morfol. Zhivotn. 34:54-64. In Russian. (Transl. by M. Slessers, 1970, 16p., U.S. Naval Oceanogr. Off., Washington, D. C., Transl. 478.)

Discusses the summer and autumn distribution of various whales in the Chukchi Sea, stating that their distribution is dependent upon ice and food conditions. Reviews various reports from literature of evidence of long distance migrations of bowheads harpooned in European waters and later found in the western Arctic with harpoons in their bodies. In some years bowheads suffer mass mortality from being caught in heavy pack ice in gulfs of the Chukchi Peninsula. Observations from shore stations of all species of whales in the Chukchi Sea by P. G. Nikulin in 1937-1943 disclosed one bowhead in 1937; none in 1938; four in 1939; none in 1940-1943. In observations from vessels in the Chukchi Sea and Bering Strait in 1939 and 1948, Sleptsov did not sight a single bowhead, although other species were recorded.

WESTERN ARCTIC

DISTRIBUTION-migration, factors affecting; FIELD & LABORATORY TECHNIQUES-census, shore stations, vessel; NUTRITION-food and feeding; PATHOLOGY-injuries, harpoons found in bodies; POPULATION-abundance, mortality, natural, ice entrapment; WHALING-circumpolar, commercial, gear, catch.

SLEPTSOV, M. M.

- 1961b. Raiony nagula kitov v Beringovom more (Feeding areas of whales in the Bering Sea). Akad. Nauk SSSR, Tr. Inst. Morfol. Zhivotn. 34:65-78. In Russian. (Condensed transl. by D. E. Bevan and O. A. Mathisen, 1962, Univ. Wash., Seattle, College of Fish., Fish. Res. Inst. Circ. 162, Notes from Soviet Fisheries Journals No. 4, p. 10-11. Page 74 transl. 1984 by Sherry Pearson, NOAA, NMFS, Natl. Mar. Mammal Lab., Seattle, WA).

Lists whale species found in the Bering Sea, noting that only the beluga and the Greenland whale remain there during winter, the others remain there five to six months from spring to autumn. The whales are distributed where the highest concentrations of plankton biomass are found. Six to ten Greenland whales are taken annually in the Bering Strait region by natives using hand harpoons.

WESTERN ARCTIC

BEHAVIOR—migration; DISTRIBUTION—Bering Sea; NUTRITION—food; WHALING—Bering Strait, natives, catch, gear.

SLEPTSOV, M. M.

- 1961c. Raspredelenie kormorykh polei i kitoobraznykh v Okhotskom more (Distribution of feeding grounds and cetaceans in the Sea of Okhotsk). Akad. Nauk SSSR, Tr. Inst. Morfol. Zhivotn. 34:79-92. In Russian. (Transl. by M. Slessers, 1970, 12 p., U.S. Naval Oceanogr. Off., Washington, D.C., Transl. 479.)

Discusses correlation of food and cetacean distribution in the Okhotsk Sea. The Greenland [bowhead] whale was important commercially but became rare in the 1900's. "At the present time this whale has not been observed in the Sea of Okhotsk, but it may enter the Sea of Okhotsk when heavy ice covered [sic] the Bering Sea. The number of whales that spend the winter in the Sea of Okhotsk is not yet known."

WESTERN ARCTIC

DISTRIBUTION—Bering Sea, Okhotsk Sea; POPULATION—abundance.

SLEPTSOV, M. M.

- 1961d. Usloviya sushche stvovaniya kitoobraznykh v zonakh smesheniya Kholodnogo (Kurilo-Kamchatskogo) i teplogo (Kuroshio) techenii [Living conditions of cetaceans in zones where cold (Kurile-Kamchatka) and warm (Kuroshio) waters mix]. Akad. Nauk SSSR, Tr. Inst. Morfol. Zhivotn. 34:111-135. In Russian. (Transl. by M. Slessers, 1970 (p. 111-121 not transl.) 18 p. U.S. Naval Oceanogr. Off., Washington, D.C., Transl. 481.)

Discusses distribution of water masses, fish, plankton and cetaceans in the Bering, Chukchi and Okhotsk Seas. "The following baleen whales were observed [in past years] in the Kurile region: *B. mysticetus* The Greenland whale (*B. mysticetus*) was widely known in the N.W. Pacific during 18th and 19th centuries, when it was hunted from the Sea of Okhotsk to the Chukchi Sea. By the end of the 19th century the population of this species decreased; greater numbers remained in the Arctic Basin from where some individuals migrate in some years to the southern part of the Bering Sea. The *Aleut* expedition did not obtain a single Greenland whale in this area." (p. 126).

WESTERN ARCTIC

DISTRIBUTION—Bering, Chukchi and Okhotsk Seas; POPULATION—abundance, sightings.

SLWOOKO, GRACE.

1973. Gambell News -- Vacation time in the village. Tundra Times, August 8, 10(32):9.

"...Some (people) putting new hide covering on the boats. There are over 20 walrus hide boats (at Gambell)."

WESTERN ARCTIC
WHALING-Bering Sea, native, gear, boats.

SLWOOKO, GRACE.

1975. Near Gambell - spring whales arrive. Tundra Times, May 7, 12(19):9.

"On April 23, three whales have been lost. First it was Willard Kaningok's that lost one, next was Alex Oozeva's boat and the third and most sure of was Daniel Iyakitan's when the boats all were ready to bring it home, it sunk."

WESTERN ARCTIC
POPULATION-mortality, whaling, struck and lost; WHALING-Bering Sea, native, catch (killed but lost), crews, utilization.

SLWOOKO, GRACE.

1977. Gambell news notes. Tundra Times, June 8, 14(23):3.

"There have been lots of walrus hunting here last week after two whales have been killed. They were caught by Aningayous' boat and Ozeva's."

WESTERN ARCTIC
WHALING-Bering Sea, native, catch, crews.

SLWOOKO, H. VERNON.

1977. Whale hunting by skin boat. Alaska 43(9):12.

Eskimo hunter from Gambell, Alaska, describes whale hunting techniques and customs in a brief article.

WESTERN ARCTIC
WHALING-western Arctic, gear, natives.

SMITH, N. LEIGHTON.

1937. Eskimos hunt whale ceremoniously. Alaska Sportsman 3(10):16-18.

Detailed account of bowhead whaling as conducted by the Eskimos living at Gambell (Sevookuk) on St. Lawrence Island. Author describes ceremonies traditionally followed by an Eskimo captain and his family that engages in whaling for bowheads, including placing of whaleskin from a whale caught by the captain the previous spring [presumably in 1936] and other required items in a container to ferment until needed for the moon worship which takes place in February, March, and April. The pursuit, capture, and cutting up of a whale by Gambell hunters [in 1937?] is described.

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, native, catch, photographs.

SOKOLOV, W. [V.E.]

1962. Adaptations of the mammalian skin to the aquatic mode of life. *Nature* (Lond.) 195(4840):464-466.

Describes the physiology and structure of the integument of amphibian mammals. "The subcutaneous blubber of Pinnipedia and Cetacea contains a vast number of non-saturated fatty acids (fats with a high iodine number) which provide a low temperature of the fat setting." Table 2 (p. 466) gives data for seven species; statistics given for *Balaena mysticetus* are: Iodine number of 69-144, and temperature of the fat setting in °C. is +7 to +9.5.

CIRCUMPOLAR
PHYSIOLOGY—integument.

SONNENFELD, JOSEPH.

1956. Changes in subsistence among Barrow Eskimo. Unpubl. rep., 589 p. Arctic Institute of North America, Proj. No. ONR-140. (Copy in Naval Arctic Research Laboratory library, Barrow, AK 99723.)

Historical review of changes in the annual subsistence cycle of Alaskan Eskimos in the Barrow and Wainwright areas and effects of outside influences on their culture. Author resided at Barrow from mid-May to mid-September 1954, and personal observations during this period are supplemented by information provided by residents. Includes considerable information on commercial and native hunting for bowhead whales and other species, and an extensive bibliography. The catch of bowheads by shore-based hunters is presented on pages i, 222, 225, 226, 233, 267, 268, 274, 277, 278 (a table of catch figures compiled for the author by David Brower giving the catch by season at Barrow from 1928 through 1954), and 286.

WESTERN ARCTIC
ANTHROPOLOGY—Alaskan Eskimos; POPULATION—mortality, whaling, struck and lost; WHALING—history, Chukchi and Beaufort Seas, commercial, native catch, gear, utilization.

SONNENFELD, JOSEPH.

1960. Changes in an Eskimo hunting technology, an introduction to implement geography. *Ann. Assoc. Am. Geogr.* 50:172-186.

Describes changes in traditional and introduced weapons technology for hunting whales, walrus and seals by Alaskan Eskimos in the Barrow area. Catch of bowhead whales by natives at Barrow by year (not by season) is given (p. 176-178) for the years 1852-53, 1882-83, 1885, and 1928-1954 ("David Brower compiled the data for the period 1928-1954 from family records." P. 178.)

WESTERN ARCTIC
ANTHROPOLOGY—Alaskan Eskimos; POPULATION—mortality, whaling, struck and lost; WHALING—history, Chukchi and Beaufort Seas, commercial, native catch, gear, utilization.

SPENCER, ROBERT F.

1959. The north Alaskan Eskimo: a study in ecology and society. *Smithson. Instit., Bur. Am. Ethnol. Bull.* 171, 490 p. Reprinted 1976 by Dover Pubs., Inc., New York, N.Y.

Ethnographic studies of north Alaskan Eskimos carried on in the summer and early autumn of both 1952 and 1953, primarily at Barrow. Describes bowhead whaling during spring and autumn seasons, stating that in 1926 whales were taken at Barrow early in August, but in 1952 there was a total failure of whaling in both seasons, as was the autumn of 1951 (p. 26-27, 368-369, 372).

WESTERN ARCTIC
ANTHROPOLOGY—Alaskan Eskimos, culture; IDENTITY—nomenclature, Eskimo, ingutuk; POPULATION—mortality, whaling, catch, killed but lost; WHALING—Chukchi Sea, Beaufort Sea, native, crews, catch, gear, records, photographs, utilization.

SQUIRE, INA L.

1964. A bibliography of cetacea: Literature published between 1949 and 1963. U.S. Naval Ord. Test Sta., China Lake, Calif. NAVWEPS Rep. 8645, NOTS Tech. Publ. 3686, 120 p.

A compilation of references on cetacea published in books, journals, and reports produced by organizations, including phonograph records. To assist investigators pursuing specialized aspects of research, it has been assembled in the following categories: anatomy and physiology, animal ecology, behavior, bioacoustics and communications, biochemistry, locomotion, morphology, occurrence and migration, pathology and parasitology, reproduction, strandings, taxonomy and evolution, and whaling and its products. Also includes an index of authors and a list of journals and their abbreviations. Several publications include information on *Balaena mysticetus*.

CIRCUMPOLAR
BIBLIOGRAPHY-cetaceans.

STAPLETON, ROB.

1979. Waiting for the whales, Barrow, Alaska. Tundra Times, April 18, 16(16):12-13.

Five photographs without captions depicting the silent watch by Eskimo hunters along open leads in the ice for northward migrating bowhead whales during the spring. Stapleton is on the staff of the Anchorage Daily News.

WESTERN ARCTIC
WHALING-native, gear, photographs.

STEFANSSON, VILHJALMUR.

1926. My life with the Eskimo. Macmillan Co., New York, 538 p. (first ed., 1913, reprinted 1921, 1926).

Narrative of the Stefansson-Anderson Arctic Expedition of the American Museum of Natural History, 1908-1912, which travelled north on the Athabasca, Slave, and Mackenzie Rivers, west to Pt. Barrow, Alaska, and Herschel Island, as far east as Coronation Gulf. Describes the geography of the region, life on the expedition, Eskimo life and customs, and natural history. Mentions the history of whaling in the area, whaling ships encountered, Eskimo whaling season and techniques at Pt. Barrow, legends and taboos about bowheads, and catch of six whales by Eskimos at Pt. Barrow in 1912. Whale bones were found as far east as Langton Bay [in Franklin Bay]. [See R. M. Anderson, 1926, for details of natural history collections.]

WESTERN ARCTIC
ARCHAEOLOGY; DISTRIBUTION; WHALING-history, western Arctic, Beaufort Sea, natives, catch, utilization, photographs.

STEFANSSON, VILHJALMUR.

1943. *The friendly Arctic; the story of five years in polar regions.* Macmillan Co., New York, 812 p. (1st ed., 1921, 784 p.).

Narrative of an expedition led by the author and sponsored by the Canadian government in 1913-1918, starting from Nome, Alaska in 1913 and travelling to areas in the Beaufort Sea. Describes adventures, life of Eskimos, plants and animals, food, living conditions and other details. Includes various notes about whales and whaling--whales noted passing by, use of whale carcass to feed dogs more than a year, killing a 60-70 foot bowhead for dog food, whale catches of past years, whaling vessels wintering in ice, bones of bowhead and *ingutok* found along coast of Victoria Island. Notes that Eskimos and whaling captains think *ingutok* is a separate species, but Stefansson believed it was a young bowhead.

WESTERN ARCTIC

BEHAVIOR-migration; DISTRIBUTION; IDENTITY-races or subspecies; MORPHOLOGY-measurements; WHALING-history, western Arctic, gear (boats), natives, catch, utilization.

STEFANSSON, VILHJALMUR.

1945. *Arctic manual.* Macmillan Co., New York, 556 p.

Trade edition of a work first published by the U.S. Army Air Corps in 1940. The 1945 edition has a special introduction, an additional section on "The building of snow camps," and an index. Chapter 5 on animal life cites the Encyclopaedia Britannica to describe (on p. 105-107) the Greenland whale, *Balaena mysticetus*: "Head enormous, one-third the total length; rostrum greatly arched, providing room for exceptionally long baleen, up to 15 feet. Arctic, circumpolar, and formerly abundant off Spitsbergen, both sides of Greenland and the North Pacific to Beaufort Sea, but reduced by whaling to the verge of extinction." This is one of the largest sea mammals, reaching a length of from 50 to 60 feet. American whalers call it the bowhead. According to Scoresby, in the waters around Spitsbergen no fewer than 57,500 Greenland whales were killed by whalers in this region between 1669 and 1775 (p. 105). The industry spread east beyond Barrow when there was a first wintering of an American whaler at Herschel Island in 1889. Other wintering places were farther east, chiefly the Baillie Islands off Cape Bathurst and Langton Bay in the southeast corner of Franklin Bay. Only the bone (baleen) was taken, which ran a maximum of a little over 2,000 pounds per whale, with the average probably around 1,000 pounds. R. M. Anderson reported that the largest catches of the entire history of Yankee whaling east of Barrow were 69 whales by the *Narwhal* in 1893-95; 67 whales by the *Balaena* in 1893-95; and 64 by the *Beluga* in 1893-95 (p. 106). Commercial whaling ceased abruptly about 1906 for three reasons: Women's corsets ceased being fashionable; buggy whips ceased being used; and a substitute was invented, called featherbone. In prehistoric times the taking of the bowhead by primitive hunters seems to have been extensive. In the New World whaling was carried on as far northeast as Cape Kellett, Banks Island, and perhaps nearly 200 miles east of Cape Parry on the mainland. A small whale, which may be a different species or a young bowhead, was favored as a food animal because of its taste. This whale is a scientific problem as yet, and is therefore known only by its Eskimo name, *ingutok* or *inyutok*. The usual Eskimo and local white view is that they are a small species. Some believe, however, that they are yearling and 2-year-old bowheads.

EASTERN AND WESTERN ARCTIC

DISTRIBUTION-former; IDENTITY-*ingutok* or *inyutok*; MORPHOLOGY-measurements; POPULATION-abundance; WHALING-eastern Arctic, western Arctic, commercial, native, catch, utilization.

STEFANSSON, VILHJALMUR.

1946. Not by bread alone. Macmillan Co., New York, 339 p.

Discourse on author's beliefs regarding arctic diet based on his studies and experiences with Eskimos, and of opinions of other explorers and some physiologists. Includes information on Eskimo and Indian hunting, fishing and diet. "In the whales, from the huge bowhead that may be seventy-five feet long to the beluga, or white whale, that is no bigger than a walrus, the liking (by Eskimos) is strong for only one part, the skin. It is so removed from the beast that half an inch of blubber still clings to the inside of the hide. This is the renowned maktak, which has been a favorite with many whites who, unlike me, have not taken to other delicacies of the Eskimos. In Charlie Brower's famous station at Barrow...the hospitality has always been famous. A special part of it is that the guest is served a spiced pickle..., maktak done up by a secret recipe brought there, or devised, by Brower's colleague Fred Hopson (p. 34). My own description of the taste of the fresh blubber of the bowhead whale, and of the other whales with which I am familiar, is that it reminds of fresh cow's cream, with a barely perceptible suggestion of walnut flavor (p. 121)."

WESTERN ARCTIC
MORPHOLOGY-measurement; WHALING-western Arctic, native, utilization.

STETSON, MARGUERITE.

1977. What good is a whale? Tundra Times, December 28, 14(52):4.

A nutritionist describes the important nutrients found in the flesh and muktuk of bowhead whales and their importance to Eskimos.

WESTERN ARCTIC
WHALING-Bering, Chukchi and Beaufort Seas, native, utilization, food.

STEVENS, ROBERT W.

1976. Season of the whale. Arctic in Colour 5(1):3-5, 7.

Account of whaling for bowheads by Eskimo hunters of Gambell, St. Lawrence Island, Alaska (in 1974). One whale was taken in late April and a second was captured in early May. The latter whale was dispatched with four bombs. Length of the whale was not given but the baleen was stated to be 10 feet long. There are 11 boat crews at Gambell, but some boat captains have more than one boat. Whaling gear used by the hunters is described. Author states Gambell normally takes 2-3 whales per year.

WESTERN ARCTIC
BEHAVIOR-breathing, diving; MORPHOLOGY-baleen length; WHALING-western Arctic, Bering Sea, natives, catch, crews, gear, photographs.

STEWART, ETHEL.

1979. Kutchin trade prior to 1840. Beaver 310:54-58.

Long before Western Europeans set foot in America, there was a well established trade among the people west of the Mackenzie River: between the Kutchin Indians of the Peel River area and Eskimos on the shores of the Arctic Sea; between Kutchin and the Na-Dene of the Pacific Coast; between the Kutchin, via Eskimo middlemen, and the people of Northeast Siberia. The extent of the Russian traffic with Northwest America may be judged from the figures of their trade published in H. H. Bancroft's History of Alaska 1730-1885: whalebone 1745-1803 (977), 1821-1842 (138,000) [value of amounts in parenthesis not given.]

WESTERN ARCTIC
WHALING-western Arctic, native, catch, utilization.

STOCKTON, CHARLES H.

1890. The Arctic cruise of the U.S.S. *Thetis* in the summer and autumn of 1889. *Natl. Geogr. Mag.* 2(3):171-198.

The U.S.S. *Thetis* was assigned to patrol the Bering Sea and Arctic Ocean during the summer of 1889 to oversee commercial and whaling interests of the United States, and to assist in the establishment and erection of a house of refuge at Point Barrow. Numerous whaling vessels and their commanders in the Arctic Ocean are named, and experiences while sailing the area and visiting various villages are detailed, including descriptions of the Eskimos, especially those living at Point Hope.

WESTERN ARCTIC
WHALING-western Arctic, commercial, vessels, shore-stations.

STRICKLAND, DANIEL.

1978. Of Eskimos, ivory & progress. *Defenders* 53(3):146-151.

"The walrus, principally, has enabled the people of St. Lawrence Island to build their culture; the walrus has been life's blood here for hundreds of rugged years. Bowhead whales, hair seals, and sea birds are also hunted by the people of St. Lawrence's two villages, Gambell and Savoonga, but theirs is essentially a walrus economy."

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, native.

STRICKLAND, DAN.

1981. The Eskimo vs. the walrus vs. the government. *Nat. Hist.* 90(2):48-52, 57.

Account of walrus hunting by the Eskimos of Little Diomedede Island in 1977-78. Ivory from walrus and baleen from bowhead whales are only two of a wide variety of items the Eskimos use for trade goods. An old Eskimo resident stated "When I was young the village was quiet all the time and the whales and walrus would come very close to shore. Now we have snowmobiles, generators, six-wheelers---too much noise. The game never comes close anymore." (p. 51).

WESTERN ARCTIC
BEHAVIOR-reaction to noise, red color; WHALING-western Arctic, Bering and Chukchi Seas, native, utilization.

SYLVESTER, BOB.

1980. Old bomb found in bowhead. *Arct. Coastal Zone Manage. Newsl.* 30:11.

A 51-foot female bowhead whale caught by Gambell whalers on May 4, 1980, was found to have sustained two wounds from strikes in previous seasons. Remains of a bomb were found encapsulated in scar tissue dorsal to the eye. A second wound, one probably caused by a harpoon, was about one foot long and located two to three feet dorsal to the bomb wound. A National Marine Fisheries Service biologist, Katherine Hazard, was present at the butchering of the whale and stated the cetacean had recently been pregnant but no fetus was found. This incident is important as it shows that some individuals do survive strikes by whalers.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-specimens, wounds, bomb fragment; MORPHOLOGY-measurements; PATHOLOGY-injuries, scars; POPULATION-sex, mortality, whaling, struck and lost; REPRODUCTION-fecundity; WHALING-Bering Sea, catch, gear, photographs.

TABER, RICHARD D.

1958. Eskimo hunters: 1. Whales. *Pac. Discovery* 11(3):18-21.

Bowhead whaling at Wainwright, Alaska, by Eskimos is briefly described. Whaling begins in April with the northward migration of bowheads past the village. The hunters travel out to the offshore lead, usually 8 to 10 miles out from shore, to make a 24-hour watch for whales at a location where whales might rise to breathe. "The Eskimos believe that whales follow one another along some underwater path and rise to breathe at the same points along the route." It costs the captain about \$200-300 dollars to keep a crew of 8 or 10 men for a month. In the spring of 1956, the whalers of Wainwright took two whales.

WESTERN ARCTIC

BEHAVIOR-migration, breathing; WHALING-western Arctic, Chukchi Sea, native, gear, catch, photographs.

THIERCELIN, M. L.

1866. Action des sels solubles de strychnine, associes au curare, sur les gros cetaces. *C. R. Seances Acad. Sci.* 63:924-927. Paris.

"The whales, in actual experiments performed by Thiercelin (described below), were inoculated with 0.005 gram per kilogram of body weight. Cartridges were made, each containing 30 grams of toxic mixture, one being sufficient to kill a whale of 60,000 kilograms or less, and two would be enough to kill the largest whales of the Arctic. Each cartridge was inserted in the powder of an ordinary explosive projective known as a bomb lance. Shipping on a whaling cruise to make actual experiments, Thiercelin shot ten whales (1 roqual, 2 killer, 2 gray, 3 polar, and 2 unspecified whales), all of which died within 18 minutes. Details of each killing, including dates, approximate locations, area of whale struck, whales' reaction to the poison and length of time to death are given." [Article not seen, information from R. F. Heizer (1943:456-458; and 1967:19-20.)]

WESTERN ARCTIC, EASTERN ARCTIC

BEHAVIOR-reaction to poison; IDENTITY-nomenclature; WHALING-western Arctic; eastern Arctic, Bering Sea, North Atlantic Ocean, commercial, gear, catch, drawings.

THOMAS, THEODORE K.

1962. Four whales for Tigara. *Alaska Sportsman* 28(5):8-10, 40-41.

Account of bowhead whaling by Eskimos at Point Hope, Alaska, as observed by W. A. Thomas, Episcopal missionary at the village, and authored by his son. The lead opened and the first whale of the season was sighted on April 10, 1924. By May 1, 14 crews were on the ice but no whales had been taken. On May 4, however, 4 whales were killed within 12 hours. One of the whales was retrieved from under the ice as a stinker, a feat that required three days. Baleen obtained from the latter whale measured 10 feet 6 inches in length and weighed 2,100 pounds.

WESTERN ARCTIC

BEHAVIOR-migration; MORPHOLOGY-measurements, baleen; WHALING-western Arctic, Chukchi Sea, native, catch, crews, gear, photographs.

THOMPSON, BETTY LOU.

1980. "We have a whale!" *Alaska* 46(6):A15-A16.

Describes the activities and customs observed by a captain and crew members [at Barrow] prior to the beginning of the whaling season and after they have captured a bowhead whale. It costs approximately \$2,000 to outfit one crew of eight for the season. Includes a drawing indicating how parts of the whale carcass are divided up. Also contains photograph of Billy Neakok's crew, the last holdouts on the ice during the Barrow whale hunt in the spring of 1978.

WESTERN ARCTIC

WHALING-Chukchi Sea, native, crews, catch, gear, drawing and photograph, utilization.

THOMPSON, R. W.

1908. Diomedes gone dry. (Letter of May 18, 1908, to the Nome Daily Nugget.) The Nome Daily Nugget, Nome, Alaska, May 30, 8(129):1.

In a letter from R. W. Thompson, government teacher on Little Diomedede Island, he stated "Several bears were caught [there], also one whale a few days ago. Big Diomedede caught a whale this spring as well, and harpooned two more who broke the rope and made their escape."

WESTERN ARCTIC

BEHAVIOR—migration, timing; POPULATION—mortality, whaling, struck and lost, catch; WHALING—Bering Strait, native, catch

TIKHMENEV, P. A.

1861-63. Istoricheskoe obozrenie obrazovaniya Rossiisko-Amerikanskoi kompanii i deistvii eya do nastoyashchago vremeni (A historical survey of the formation and activities of the Russian-American Company until the present time). St. Petersburg. In 2 vols. (Translated and edited by Richard A. Pierce and Alton S. Donnelly under title: A history of the Russian-American Company, publ. by Univ. Washington Press, Seattle, Wash. 1978, 522 p.)

The Russian-American Co. considered whaling essential to obtain food for local inhabitants. Whale hunters were to be paid 10-20 rubles per whale, depending on size. From 1821 to 1842, baleen exported from Kamchatka and Alaska amounted to more than 124,390 lb. (56,424 kg). Company attempts to bring in foreigners to instruct local personnel in whaling failed because Aleuts preferred old ways. Whaling by foreigners in Russian waters caused problems, and the Russian-American Whaling Company, formed in 1850, was not successful. Bowhead whaling by foreigners developed in the Okhotsk Sea in the 1850s; an average of 100 foreign vessels whaled there in the period 1853-1863.

WESTERN ARCTIC

WHALING—western Arctic, history, commercial, natives, catch, photographs, drawings.

TILLMAN, MICHAEL F., JEFFREY M. BREIWICK and DOUGLAS G. CHAPMAN.

1983. Reanalysis of historical whaling data for the Western Arctic bowhead whale population. *In* Tillman, Michael F. and Gregory P. Donovan, (Editors), Historical whaling records, p. 143-146. Rep. Int. Whaling Comm., Spec. Issue 5, Paper SC/32/PS6.

A reanalysis of the initial population of bowhead whales in the Western Arctic using the estimation procedures of Allen (1966, modified DeLury method) and Breiwick *et al.* (1980, iterative model). It was concluded that "These two procedures would thus seem to provide a reasonable basis for estimating initial population size, and a likely range of estimates of initial abundance might be 10,000-20,000 bowhead whales, as contrasted with the 20,000-40,000 range of Bockstoce and Botkin." [1983].

WESTERN ARCTIC

POPULATION—initial abundance, calculated.

TILTON, GEORGE FRED.

1927. "Cap'n George Fred" Himself. Doubleday, Doran and Co., Inc., New York, N.Y. Reprinted 1969 by Dukes County Historical Society, Edgartown, Mass. 02539. 295 p.

Author spent most of his life at sea on merchant and whaling vessels; includes names of various ships that hunted bowheads in the western Arctic, numbers of whales caught, killed and lost and struck but lost. He identified a shore-whaling station at Barrow and four in the vicinity of Point Hope and described respiration, feeding, and swimming behavior of bowhead whales, including reactions when hunted and after being struck. When fleet was stranded in Arctic near Point Barrow during 1897-1898, Tilton volunteered to go south overland and by sea to San Francisco for help. In the vicinity of Cape Lisburne, about 18 miles from Point Hope he found the carcass of a whale that had been set adrift by whalers and obtained food for his party.

WESTERN ARCTIC

BEHAVIOR—respiration, swimming, when hunted, migration; **DISTRIBUTION**—sightings, whaling grounds; **MORPHOLOGY**—structure, yield of oil, baleen; **NUTRITION**—food, feeding; **POPULATION**—mortality, whaling, numbers captured, killed and lost, struck and lost; **WHALING**—Bering, Chukchi and Beaufort Seas, commercial, gear, shore stations, catch, products, photographs, utilization.

TOBIN, LEW.

1979. From Ketchikan to Barrow (News items): A meeting of elders. *Alaska* 45(8):12-13.

Elders from 15 mainland villages and 2 St. Lawrence Island villages met in Nome May 10-12, 1979, for the first elders conference in modern history on the Seward Peninsula. The purpose of the meeting was to preserve the knowledge about Eskimo life that the elders had obtained during their lifetime. "One man from Gambell told how he was a striker, or harpooner, most of the time and how in 30 years he had gotten seven whales. He knew of only one man who had done better: in his father's time a man had taken nine whales. He also told me how to tell male bowheads from females (males have white stripes on the baleen, females don't), and young from old whales (older whales have permanent curls in their flukes, a sort of cetacean arthritis)."

WESTERN ARCTIC

FIELD & LABORATORY TECHNIQUES—field recognition; **WHALING**—western Arctic, Bering Sea, native, catch.

TOMILIN, A. G.

1948. O vozrastnoi i individual'noi izmenchivosti sheinogo otdela pozvonochnika grenlandskogo kita (*Balaena mysticetus* L.) (Variations in the cervical vertebrae of the Greenland whale according to age and individual). *Byulleten' Moskovskoe Obshchestvo Ispytatelei Prirody, Otdel Biologii*, 53(4):39-47. In Russian. [Not seen, citation and annotation from N. S. Romanov, 1959:285-286 (No. 3262)].

"Description of skeletal bones in the anatomical section of the Moscow State University Zoological Museum, collected on Wrangel Island in 1938. See also: No. 1880, 1881, 1923."

WESTERN ARCTIC

DISTRIBUTION—skeleton specimens; **MORPHOLOGY**—structure, cervical vertebrae; **SKELETON REMAINS**—Wrangel Island, beachcast.

TOMILIN, A. G.

1954. Prispobitelyne tipy otriada Kitoobraznykh (K voprosu ob ekologicheskoi klassifikatsii kitoobraznykh). [Adaptive types in the Order Cetacea (The problem of an ecological classification of cetacea)] Zool. Zh. 33(3):677-692. In Russian. (Transl. 1957, 13 p. Fish. Res. Board Canada, Nanaimo, B.C., Transl. Ser. No. 95.)

"Recent cetacea can be classified according to their morphological and biological characteristics, into two basic ecological groups: (1) whalebone whales (*Mysticeti*), and (2) prehensors (*Odontoceti*). Among the whalebone whales, three adaptive types can be distinguished: (a) microplanktophagi, (b) macroplanktophagi, and (c) sarcophagi." *B. mysticetus* (Table 1) is classified as microphagi.

WESTERN ARCTIC

IDENTITY—taxonomy, classification; MORPHOLOGY—structure; NUTRITION—food and feeding.

TOMILIN, A. G.

1955. O povedenii i zvukovoi signalizatsii kitoobraznykh (On the behavior and sonic signaling of whales). Akad. Nauk USSR, Tr. Inst. Okeanol. 18:28-47. In Russian. (Transl. by Miss A. De-Vreeze and D. E. Sergeant, Fish. Res. Board Canada, Arctic Unit, Montreal 18, P.Q., Transl. Ser. 377.)

Discusses peculiarities of behavior in cetacea in connection with defense, obtaining food, reproduction, and a gregarious lifestyle through acoustic communication. As for Greenland [bowhead] whales, "According to O. V. Lindholm (1888) the Greenland whale (*Balaena mysticetus*) hears the slightest noise at a distance of one mile and reacts even when another is wounded by a harpoon twenty miles from it. The sensitivity of this whale is well known to inhabitants of the Chukot Peninsula, who try not to make any scaring movements when hunting or any sharp noises, maintaining maximum care when approaching animals. According to I. Lepekhin's (1805) observations, a Greenland whale's exhalation can be heard for a mile."

WESTERN ARCTIC

BEHAVIOR—acoustics, communication, reactions; NUTRITION—food and feeding; PATHOLOGY—injuries, wounds; REPRODUCTION—mating; WHALING—Bering and Chukchi Seas, commercial, native, gear.

TOMILIN, A. G.

1957. Kitoobraznye (Cetacea). Zveri SSSR i prilozhashchikh stran (Mammals of the U.S.S.R. and adjacent countries), Vol. 9, Izd. Akad. Nauk SSSR, Moscow-Leningrad. 756 p. In Russian. (Transl. by Israel Program Sci. Transl., 1967, 717 p., available U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA., as TT-65-50086.)

Detailed monograph of 23 species based on review of literature and the author's observations. Coverage of bowhead includes: nomenclature, external appearance and skeleton, geographical distribution and migrations, biology, and whaling industry and its products. Information is comprehensive and encyclopedic.

EASTERN ARCTIC, WESTERN ARCTIC

BEHAVIOR—diving, migration, respiratory, swimming; DISTRIBUTION; IDENTITY—nomenclature, taxonomy; MORPHOLOGY—measurements, structure; NUTRITION—food; PATHOLOGY—diseases, parasites; PREDATORS & COMPETITORS; REGULATION & CONSERVATION; REPRODUCTION—mating & fertilization, gestation, lactation, parturition; WHALING—history, eastern Arctic, western Arctic, catch, gear, natives, utilization (food, houses, gear, fuel, illumination, implements, manufacturers products).

TOMILIN, A. G.

1962. Kitoobraznye fauny morei SSSR (Cetacean fauna of the seas of U.S.S.R.). Akad. Nauk SSSR, Zool. Inst., Opredeliteli po Faune SSSR 79. 212 p. In Russian.

Scientific handbook, arranged in taxonomic order, of cetaceans of waters of the U.S.S.R. The Greenland (Polar) whale, *Balaena mysticetus*, is reviewed on p. 79-81. Briefly reviews nomenclature, morphology, distribution, biology, respiratory behavior, swimming speed, food, gestation and time of birth, age, parasites, locations of whaling areas, and average yield of oil and baleen per whale.

EASTERN ARCTIC, WESTERN ARCTIC
 BEHAVIOR-swimming, respiratory; DISTRIBUTION; GROWTH-age; IDENTITY-nomenclature; MORPHOLOGY;
 NUTRITION-food; PATHOLOGY-parasites; POPULATION-age; REPRODUCTION-gestation, parturition; WHALING-eastern Arctic, western Arctic, utilization.

TOMILIN, A. G.

1965. Istoriya slepogo kashalota (The history of the blind sperm whale). Izd. "Nauka", Moscow, 191 p. In Russian. (Transl. by Foreign Tech. Div., Wright-Patterson Air Force Base, Ohio, 1966, 208 p. avail. U.S. Dep. Commer., Natl. Bur. Stand., Inst. Applied Tech., Clearinghouse for Fed. Sci. Tech. Info., as AD-650-803 (1967)).

Discusses cetacean history and mythology, biology, distribution, captivity, and predation by killer whales. Information concerning Greenland [bowhead] whales includes harpoons found in captured and stranded whales (p. 6, 40), the Eskimo myth that bowheads use ice to aid in giving birth to young (p. 22), these animals can communicate over great distances (p. 111), and that they can produce breathing holes in ice by using their massive backs (p. 194).

WESTERN ARCTIC
 BEHAVIOR-communication, migration, maternal; DISTRIBUTION-evidence (harpoons); NUTRITION-food, feeding;
 PATHOLOGY-injuries, harpoons; POPULATION-mortality, whaling, struck and lost; PREDATORS & COMPETITORS-killer whales; REPRODUCTION-parturition; WHALING-circumpolar, commercial, native, gear.

TOOYAK, ANDREW.

1963. Pt. Hope gets many belugas. Tundra Times, May 6, 1(15):4.

"The first white whale, or beluga, was caught by Antonio Weber's whaling crew on April 20, second by Allen Rock's crew, third by Lauri Kingik's. Allen's crew caught two more and Kingik's crew got another. The last one caught was by Amos Lane's crew. I saw one black bowhead whale on Sunday, April 20th. Andrew Frankson's crew chased it but it was little too far away when he tried to strike it. His harpoon fell short."

WESTERN ARCTIC
 BEHAVIOR-migration, interaction with belukha; WHALING-Chukchi Sea, native, crews.

TORNFELT, EVERT E.

1981. Bering Sea cultural resources. U.S. Dep. Int., Bur. Land Manage., Alaska Outer Continental Shelf Office, Anchorage. Tech. Pap. No. 2, 21 p., append. A, 2 p., append. B, 21 p., append. C, 19 p.

This document was prepared to provide basic policy, guidance, and a brief summary of human development in the Bering Sea region where oil and gas lease sales 57, 70, 75, and 83 are expected to take place. Subjects discussed include Bering Sea cultural resource management, human settlement in the Bering Sea region, locations of past people and culture, marine archaeology, and descriptions of cultural indicators. Table IV-1 lists significant shipwrecks in the Arctic (mostly in the Chukchi Sea) from 1868 to 1888, most of which were bowhead whaling vessels.

WESTERN ARCTIC
 ARCHAEOLOGY-marine; ETHNOLOGY-Bering Sea region; WHALING-western Arctic, history, commercial, native, vessels.

TORNFELT, EVERT E.

1982. Cultural resources of the Chukchi and Beaufort Seas, shelf and shore. U.S. Dep. Int., Bur. Land Manage., Alaska Outer Continental Shelf Office, Anchorage. Tech. Pap. No. 6, 8 p., append. A, 9 p.

A concise consolidation of information about prior human development and cultural resources in the Chukchi and Beaufort Seas region, which are the sites of several proposed oil and gas lease offerings in the next five years. Table 1 presents National Register sites in the region, and Table 2 is a list of ship wrecks in the region for the period 1851 to 1913, with information on year of loss, location where lost, and the value of hull and cargo (information is taken from C. L. Andrews, 1916.). Appendix A is an excerpt from "Beaufort Sea Cultural Resource Study" by Dixon, Sharma and Stoker, 1978.

WESTERN ARCTIC
ARCHAEOLOGY-cultural sites; ETHNOLOGY-Eskimos, culture and subsistence; WHALING-western Arctic, commercial, gear (vessels).

TOWNSEND, C. H.

1935. The distribution of certain whales as shown by logbook records of American whaleships. *Zoologica* (N.Y.) 19, 50 p.

Author examined hundreds of logbooks of American whaleships whaling in the western Arctic and plotted the positions of 5,114 bowhead catches in the Bering, Chukchi and Beaufort Seas from 1848 to 1919. Townsend's data for the months of June through October indicated that these whales were captured over a much wider range than they apparently occupy at present. This information suggests that pre-exploitation sub-groups of the bowhead population may have been eliminated by the whalers.

WESTERN ARCTIC
DISTRIBUTION-former; POPULATION-abundance, sub-groups; WHALING-Bering, Chukchi, Beaufort Seas, commercial, catch.

TROUOSSART, EDOUARD L.

- 1897-1899. *Catalogus mammalium tam viventium quam fossilium*. Tomus (volume) 1, p. 1-664; Tomus 2, p. 665-1469. Nova editio (prima completa). R. Friedlander und Sohn, Berlin.

Classification catalogue of mammals, including *Balaena mysticetus* (p. 1091, 1092).

CIRCUMPOLAR
IDENTITY-classification.

TROUOSSART, EDOUARD L.

- 1904-1905. *Catalogus mammalium tam viventium quam fossilium*. *Quinquennale supplementum* (1899-1904). Fascicular (parts) 1 and 2, p. 1-546 (1904); 3 and 4, p. 547-929 (1905). R. Friedlander & Sohn, Berlin.

Classification catalogue of mammals, including *Balaena mysticetus* (p. 787). A supplement to the 1904-1905 edition.

CIRCUMPOLAR
IDENTITY-classification.

TRUE, FREDERICK W.

1884. H. Catalogue of the aquatic mammals exhibited by the United States National Museum. U.S. Bur. Fish. [Great Internatl. Fish. Exhibit, London, 1883: catalogues], Doc. 74, 22 p.

Brief account of the fur seal fishery, sirenians and cetaceans, together with an annotated list of the aquatic mammals of North America and a catalogue of specimens exhibited at London. In a brief discussion of the economic value of cetaceans, author states *Balaena mysticetus* attains a length of 45 to 58 feet and yields from 75 to 200 barrels of oil and from 500 to about 3,000 pounds of whalebone (p. 9).

CIRCUMPOLAR
GROWTH-maximum length; WHALING-eastern Arctic, western Arctic, utilization.

TRUE, FREDERICK W.

1885. Suggestions to the keepers of the U.S. life-saving stations, light-houses, and light-ships, and to other observers, relative to the best means of collecting and preserving specimens of whales and porpoises. U.S. Comm. Fish and Fish. Pt. 11, Rep. Comm. 1883, append. F, art. 39:1157-1181.

A guide to the identification of cetaceans with suggestions on the collection of samples and types of information to record for each, along with instructions on the preparation and shipping of collections to the Smithsonian Institution in Washington, D.C. *Balaena mysticetus* is included in a key to identification of specimens along with a drawing of the species in Figure 32, which notes a length of 60 feet.

CIRCUMPOLAR
IDENTITY-nomenclature, taxonomy.

TRUE, FREDERICK W.

1899. Mammals of the Pribilof Islands [part 3, p. 345-354]. *In* The fur seals and fur-seal islands of the North Pacific Ocean.... U.S. Treasury Department, 1898-99.

Bones of the bowhead are numerous about the Pribilof Islands, particularly at Northeast Point. Author measured and described a right mandible found on the beach north of Lukanunan that had a total length (straight) of 18 feet 8 inches. A left mandible, presumably of the same individual, lay nearby, but was much weathered. "The bones on the beaches are from dead whales which wash up from time to time in winter. One stranded on St. George in 1889, and about 1,500 pounds of whalebone, according to Mr. Palmer, were obtained from it by the natives, who received \$1 a pound from the company. Another came ashore the same year near East Landing, on St. Paul. The mass of cervical vertebrae and a number of ribs were still there in 1895. I also found a portion of a skull imbedded in Zoltoi Sands, which may have been of the same individual." (p. 352)

WESTERN ARCTIC
DISTRIBUTION-carcasses, Bering Sea; MORPHOLOGY-measurements; SKELETAL REMAINS-beachcast, strandings; WHALING-Bering Sea, native, catch, utilization.

TRUE, FREDERICK W.

1904. The whalebone whales of the western North Atlantic compared with those occurring in European waters with some observations on the species of the North Pacific. *Smithson. Contrib. Know.* 33 (1414), 332 p., 50 plates. (Reprinted 1983.)

Contains a historical review of information on baleen whales in the Atlantic and Pacific Oceans, including descriptions of species, nomenclature, anatomical notes, measurements and a bibliography of significant European and American works on cetaceans. Although the bowhead was specifically omitted due to a lack of new material, numerous references are made to *Balaena mysticetus*, including common names applied to the species and its distribution. The author concludes that the Grand Bay whales discussed by Baffin in 1616 (p. 10), in Thomas Edge's voyages of 1610-1622 (p. 11-12), and DeCrevecoeur in 1782 (p. 43) were bowheads. Citing True's account of DeCrevecoeur's statement: "The river St. Lawrence whale which is the only one I am well acquainted with, is seventy-five feet long, sixteen deep, twelve in the length of its bone (which commonly weighs 3000 lb.), twenty in the breadth of their tails, and produces 180 barrels of oil."

EASTERN ARCTIC, WESTERN ARCTIC
DISTRIBUTION-eastern Arctic; IDENTITY-nomenclature; MORPHOLOGY-measurements; WHALING-eastern Arctic, western Arctic, commercial, catch.

TUCKFIELD, CHARLIE.

1962. Plane hunters get polar bears; native hunters get none. *Tundra Times*, October 1, 1(1):6.

Hunting for polar bears by non-native hunters using aircraft flying out over the ice from Point Hope is increasing annually and the activity is causing the bears to avoid area around the Eskimo village.

"There were six whales killed this spring; the first one by Amos Lane. On 29th of April three were killed, one each by Tony Webber, Hubert Kinnaveak, and Allen Rock. It sure was work that day.

And a week later two more were killed again on the same day, one by Tony Webber and one by Roy Vincent. It sure was another labor day. Most all ice cellars are pretty well supplied with muktuk now. Four thousand pounds of muktuk have been sold to Nome, and 1,200 pounds to Barrow. It was good to have a little money."

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch, crews, utilization.

TUNDRA TIMES.

1963a. Bowhead whale. *Tundra Times*, May 6, 1(15):1.

"The first bowhead whale of the season was taken at Point Hope on April 29. Nicholas Hank's crew got the small whale, about 30 feet in length."

WESTERN ARCTIC
MORPHOLOGY-measurements, length; WHALING-Chukchi Sea, native, catch, crews.

TUNDRA TIMES.

1963b. Pt. Hope gets 3 bowhead whales. *Tundra Times*, May 20, 1(16):3.

"POINT HOPE, May 11 - Four [sic] bowhead whales have been taken to date. The first one was killed on April 29 by Nicholas Hank's crew. Three [sic] more have been taken since then; one by Mark Kinnaveak's crew and Laurie Kingik's crew killed one."

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch, crews.

TUNDRA TIMES.

1963c. (Title unknown). Tundra Times, June 3, 1(17):4.

Three whales, each about 30 feet long, were taken at Point Hope this year. (seen by Dale W. Rice.)

WESTERN ARCTIC

MORPHOLOGY-measurements, body length (estimated?); POPULATION-mortality, whaling; WHALING-Chukchi Sea, native, catch.

TUNDRA TIMES.

1963d. Photograph. Tundra Times, August 5, 1(21):8.

Caption: "The Kaqruq or whaling celebration grounds - At Point Hope the flags are seen through the arch of two huge whale jawbones, each 19 feet in length. The 60-foot whale, from which they came, was caught by Allen Rock of Point Hope, in May 1961. In the background are two other sets of jawbones. Four sets of bone tripods, three of which can be seen, are used to tie the nalukatuk tightly to insure safety to the performers and to stabilize the pull on all sides. These are the grounds where great feasts, nalukatuk (blanket toss), and celebration dances are held after each successful whaling season. The whole population of Point Hope gathers here for the occasions. - Tundra Times Photo by Andrew Tooyak."

WESTERN ARCTIC

MORPHOLOGY-measurements, jawbones, total length; WHALING-Chukchi Sea, native, catch, crews, photograph.

TUNDRA TIMES.

1963e. Whale hunter and wife make visit to Tundra Times. Tundra Times, November 4, 2(3):8.

"...Paul Matumeak, 59, of Barrow, ...is a veteran whale hunter. He has taken 12 bowhead whales during his career, four of which he took as captain of his own crew. He lost his umiak in the recent Barrow storm [October 3, 1963]. He is not sure whether he will go whaling when the spring season comes around. Paul is a home movie enthusiast and has several films of life in Barrow [including]...films of whaling..."

WESTERN ARCTIC

WHALING-Chukchi Sea, native, catch, crews, gear, film.

TUNDRA TIMES.

1963f. Photograph. Tundra Times, December 2, 2(5):7.

Caption: "Thanksgiving feast - Sam Taalak, newly elected president of the Barrow City Council is shown cutting whale muktuk in his home just prior to Thanksgiving. Taalak's whaling crew killed a big bowhead whale off Pt. Barrow this fall, and as the crew's sponsor it was his job to distribute muktuk to all the villagers for Thanksgiving. - Tundra Times Photo."

WESTERN ARCTIC

WHALING-Beaufort Sea, native, catch, crew, utilization.

TUNDRA TIMES.

1964a. Pt. Hope men take 1st whale. Tundra Times, May 18, 2(16):6.

"A bowhead whale was taken by Amos Lane's crew May 8. A few belugas have been taken by other crews. Three bowhead whales were taken at Point Hope last year."

WESTERN ARCTIC

WHALING-Chukchi Sea, native, catch, crews.

TUNDRA TIMES.

1964b. Amos Lane's crew takes 60 Ft. bowhead whale near Pt. Hope. Tundra Times, June 8, 2(17):3.

"May 20: There has been no whaling for ten days now due to bad weather. Three years ago a big whale was taken on May 24, so there is still hope for better whaling for this year. Amos Lane got the only whale this year, but it was 60 feet long, the largest taken in recent years.

Fred Machetanz, the artist, has been in Point Barrow [sic] for 18 days. He was on Seymour Tuzroyluke's whaling crew and helped take the big whale."

WESTERN ARCTIC
MORPHOLOGY-measurements, total length; WHALING-Chukchi Sea, native, catch, crews.

TUNDRA TIMES.

1964c. Photograph. Tundra Times, June 22, 2(18):2.

Caption: "Chanters of the Nulukatuk - while nalukatuk, blanket toss, is being performed, Jakey Lane, Jimmy Killigvuk, and Herbert Kinneaveak [of Point Hope] chant accompaniment of whaling songs. This is an ancient custom done throughout the performance om [sic] the nalukatuk. - Photo by Don C. Foote"

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch, crews, utilization.

TUNDRA TIMES.

1970. 8 whales at Pt. Hope, at Barrow 11. Tundra Times, Fairbanks, AK, June 3, 7(22):7.

"Eight whales have been caught at Point Hope this season. Last word from Barrow has it that eleven were caught at the Top o' the World big Eskimo village.

Mrs. Dorcas Rock of Point Hope said that the whaling celebration has been tentatively set for June 7-10. The celebration is the greatest event of the year at the village.

Billy Webber of Point Hope has the rare distinction this year of having caught three whales this season.

Two whaling captains, Joseph Frankson and Amos Lane, each caught two whales. Allen Rock made up the eighth whale with his single catch this year. He caught two last year.

The weights of the whales are not known at this time but if each weighs at 30 tons, the village catch amounted to about 240 tons. At the same rate, Barrow should have around 330 tons."

WESTERN ARCTIC
MORPHOLOGY-estimated length, weight; WHALING-western Arctic, Chukchi Sea, native, catch, crews.

TUNDRA TIMES.

1971. (Title unknown.) Tundra Times, June 1, 8.

Citing F. E. Durham (1979:22), an article in the Tundra Times stated "At that evening [April 19, 1971] Killigvuk's crew shot a whale with a shoulder gun and lost it...Billy Weber's crew harpooned with darting gun and lost it...and Elijah Rock's crew harpooned with darting gun, but bomb did not go off and [they] lost it."

WESTERN ARCTIC
POPULATION-mortality, whaling, struck and lost; WHALING-Chukchi Sea, native, crews, gear.

TUNDRA TIMES.

1973. NOAA: Bowhead whale research will continue. Tundra Times, Fairbanks, AK, June 20, 10(25):1,6.

Dr. Robert M. White, Administrator of the Commerce Department's National Oceanic and Atmospheric Administration announced the signing of a contract with Dr. Floyd Durham, University of California, to ensure continuation of ongoing research on bowhead whales. Personnel from NOAA's National Marine Fisheries Service are working with Dr. Durham this year to assure a smooth transition when he retires from this phase of his work later this year. During the past 10 years Dr. Durham has studied the biology of the bowhead whale including reproduction, food habits, and size, in addition to gathering data on the number of whales taken by the Eskimos. Data obtained by Dr. Durham have been made available to the Federal Government and to the International Whaling Commission.

WESTERN ARCTIC

MORPHOLOGY-measurements; NUTRITION-food and feeding; REPRODUCTION; WHALING-western Arctic, native, catch.

TUNDRA TIMES.

1974. Buckley may observe whaling at Pt. Hope village. Tundra Times, May 8, 11(19):1.

Senator James Buckley, R-New York, is expected to be in the village of Point Hope this month to observe whaling. "Three Point Hope whaling captains and their crews have gotten whales so far this month, and they are: Joe Frankson, Billy Weber and Amos Lane. Two whales have been caught at the village of Barrow."

WESTERN ARCTIC

POPULATION-mortality, whaling, catch; WHALING-Chukchi Sea, native, catch, crews.

TUNDRA TIMES.

1975. Two bowhead whales caught at Point Hope. Tundra Times, April 30, 12 (18):9.

Reports that "Hubert Koonuk of Point Hope is the first man in his village to catch a bowhead whale in this season of whaling. The whale was caught last Wednesday at 3:00 p.m. (Point Hope time).

And last Saturday, Seymour Tuzroyluke caught another and the two whales caught there so far assures Point Hope the big whaling festival to be held early in June commemorating the events.

Whales have been sighted at Barrow and some whaling crews have already gone out..."

WESTERN ARCTIC

BEHAVIOR-migration, timing; POPULATION-mortality, whaling; WHALING-Chukchi Sea, native, catch, crews.

TUNDRA TIMES.

1977a. Repairman enjoys Kivalina. Tundra Times, January 5, 14(1):6. From the Village Voice.

Doug Frank, an employee of AVEC [Alaska Village Electric Cooperative] Operations and Maintenance, just returned from Kivalina where he spent the past month overhauling several units. "The people of Kivalina have completed making an Oogruk skin boat," said Doug. "They haven't had one for several years." "Now they hope to go whaling."

WESTERN ARCTIC

WHALING-Chukchi Sea, native, gear.

TUNDRA TIMES.

1977b. Eskimos are hunting whales from Barrow to Gambell. *Tundra Times*, May 11, 14(19):1, 6.

As of May 10 a total of 12 bowhead whales had been landed at four Alaskan villages: Gambell (1, April 22); Kivalina (1, Victor Swam [sic], May 9); Point Hope (1, Billy Webber, May 2 or 3); and Barrow (9). The successful crews at Barrow were: Burton Rexford, May 2, 37 feet in length; Harry Brower, May 3, 29 feet; Joash Tukle, May 3; David Brower, Benjamin Itta and Jacob Adams, on May 5; Raymond Kalayauk and Roxy Oyagak, on May 8; and an unconfirmed report that Arnold Brower's crew recovered a whale on May 10 which they had previously killed.

WESTERN ARCTIC
MORPHOLOGY-measurements, body; POPULATION-mortality, whaling, killed and lost, stinker; WHALING-Bering and Chukchi Seas, native, catch, crews.

TUNDRA TIMES.

1977c. Sharing the whale. *Tundra Times*, October 12, 14(41):1, 12.

Two bowhead whales were taken by crews from Kaktovik, Alaska. The first whale, taken September 29 by Nolan Solomon's crew, was 55 feet long; the second, taken by Herman Aishanna's crew on October 2, was 22 feet long. A box of muktuk was flown to Anaktuvuk Pass to be shared with the inland Inupiat.

WESTERN ARCTIC
MORPHOLOGY-measurements, body length; WHALING-Beaufort Sea, native, catch, crews, utilization.

TUNDRA TIMES.

1977d. Wanted: good bowhead whale info. Why the IWC went wrong in Tokyo. *Tundra Times*, December 28, 14(52):1, 4.

Article describes disappointment of Alaskan Eskimos with a whaling quota imposed upon them by the International Whaling Commission and the general lack of knowledge by many people about bowhead whales and the annual subsistence hunt. Eskimo viewpoints expressed include an observed increase in numbers of whales, an increase in annual harvests in recent years due to favorable conditions resulting in increasing numbers of crews dispersed over a larger area accompanied by a better recovery of "stinkers", the taking of females with calves is not a problem because they customarily travel together in a third run which usually occurs when the ice is becoming rotten and whaling stops, and because of Eskimo concern for the bowhead whale they desire to participate in a management program and will finance at least a part of planned scientific research on the species.

WESTERN ARCTIC
BEHAVIOR-migration, segregated timing; POPULATION-abundance (observed), mortality, whaling, stinkers; REGULATIONS & CONSERVATION-management, quotas; WHALING-Bering, Chukchi and Beaufort Seas, native, catch, crews, utilization.

TUNDRA TIMES.

1978a. Anthropologists endorse local game control. *Tundra Times*, March 22, 15(12):3.

At an Alaska Anthropological Association Convention held last weekend in Anchorage, the group endorsed local game control following a panel discussion, under the direction of moderator Rosita Worl, to address the critical issues of land use and subsistence by Alaska natives. Two members of the panel were Roger Silook, a member of the Alaska Eskimo Whaling Commission from Gambell, and David Frankson from Point Hope. Frankson was a whaling captain for nearly 40 years, from 1929 to 1967, and during that time his crew only captured 9 or 10 whales.

WESTERN ARCTIC
ANTHROPOLOGY-Eskimos, Alaska, culture; REGULATION & CONSERVATION-conservation; WHALING-Bering, Chukchi and Beaufort Seas, native, catch, crews, utilization.

TUNDRA TIMES.

1978b. U.S. may enforce bowhead quota. Tundra Times, July 12, 15(28):1, 12.

"The United States probably will not take advantage of its legal right to object to the new whaling quota set by the International Whaling Commission in London last month, says Richard Frank, administrator of the National Oceanic and Atmospheric Administration, and the U.S. Commissioner on the IWC." The new quota for 1979 is 18 whales landed or 27 struck.

Jacob Adams, Chairman of the Alaska Eskimo Whaling Commission, told Frank that he could not condone such a restriction on the hunters he represents and that the AEWC will set its own quota and regulate the hunt themselves, based on actual needs of the Eskimo people, but not to exceed 2 percent of the best estimate of the population of the bowhead herd. The 2 percent figure was supported by the United States at the London meeting without success.

Ten whales were taken so far this year; the total quota for 1978 is now 14. Fifteen whales have been struck out of an allowable 18.

WESTERN ARCTIC

POPULATION-mortality, whaling, struck and lost; REGULATIONS & CONSERVATION-regulation; WHALING-Bering, Chukchi and Beaufort Seas, native, catch, utilization.

TUNDRA TIMES.

1979a. Five whales taken. Tundra Times, May 9, 16(19):12.

To date only five whales were reported taken by Eskimo whalers, one at Gambell and four at Point Hope where John Oktolik took the fifth whale of his career as a whaling captain. Crews at Point Hope reported record numbers of whales migrating northward.

WESTERN ARCTIC

POPULATION-abundance (observed), mortality, whaling catch; WHALING-Bering and Chukchi Seas, native, catch, crews.

TUNDRA TIMES.

1979b. Whales arrive, -- finally. Tundra Times, May 23, 16(21):1.

At Barrow the William Kaleak crew landed a 27 foot bowhead whale on Wednesday, the first whale of the season for the village. A photograph shows the whale being cut up on the ice. Late Thursday night another bowhead was struck near Monument, 12 miles west of Barrow.

WESTERN ARCTIC

POPULATION-mortality, whaling; WHALING-Chukchi Sea, native, catch, crews, photograph.

TUNDRA TIMES.

1979c. Old ways still valuable. Tundra Times, May 30, 16(22):1, 5.

Retired whaling captain Vincent Nageak, 76, of Barrow, Alaska, still advises others on his whaling techniques. He was only 12 or 13 years old when he was allowed to take his first shot with the big brass gun. The first whale he shot sank and got away. His old equipment is now being used by the Robert Aiken crew.

WESTERN ARCTIC

POPULATION-mortality, whaling, struck and lost; WHALING-Chukchi Sea, native, crews, gear.

TUNDRA TIMES.

1981. Whalers, U.S. reach agreement. *Tundra Times*, April 1, 18(13):1.

“Last week the Alaska Eskimo Whaling Commission signed two agreements with the U.S. Government that in essence returned control of the bowhead whale hunt to the Eskimos and provided for a cooperative agreement between the whaling commission and the National Oceanic and Atmospheric Administration,...one that outlines the commission's bowhead management plan and the other to aid NOAA in monitoring the hunt.”

The AEWC management plan sets a limit of 32 whale strikes and no more than 17 whales landed during 1981. Village quotas are: Barrow, 10; Point Hope, 5; Wainwright, 4; Savoonga, Gambell and Kaktovik, 3 apiece; Kivalina, 2; and Nuiqsut and Wales, one apiece. The commission will also assess penalties for infractions of their regulations. Duration of the agreements is two years.

WESTERN ARCTIC
REGULATION & CONSERVATION-management, quotas, regulation, agreements; WHALING-Bering Sea, Chukchi Sea, Beaufort Sea

TUNDRA TIMES.

1982a. Whalers, U.S. reach quota accord. *Tundra Times*, March 3, 19(9):1, 16.

According to an agreement arrived at between the U.S. Government and the Alaska Eskimo Whaling Commission, bowhead whalers will be allowed 19 strikes this year. The strikes allowed each village are: Barrow (5), Point Hope (3), Savoonga (2), Gambell (2), Wainwright (2), Kaktovik (2), Wales (1), Kivalina (1) and Nuiqsut (1). “The quotas were established using figures from last year's hunt and IWC quotas. Last year, whalers took 17 whales of the 28 they struck. The IWC in 1980 set a quota of up to 65 whales landed in 1981, 1982 and 1983, which means that the captains can strike 37 and land 28 for the remaining two years of the IWC quota.” Also, “...captains will attempt to limit their strikes to sexually immature whales of less than 39 feet in length and will be forbidden from taking bowhead calves or adults accompanied by calves. Captains will be fined for each whale taken after the limit of 19 strikes is taken but the AEWC will pay the fine instead of the whaling captains.”

WESTERN ARCTIC
REGULATION & CONSERVATION-management, quotas, regulation, Eskimo.

TUNDRA TIMES.

1982b. Editorial: Dispute shouldn't divide Inupiat. *Tundra Times*, May 12, 19(19):8.

Editorial comments on a serious disagreement of whaling authority that has erupted between the whaling captains of the Alaska Eskimo Whaling Commission, and the Inupiat Community of the Arctic Slope, the tribal government. The first group has decided to abide by the [IWC] quota, the latter has decided against that agreement. The disagreement has been fueled by the fact that no bowheads were taken by Barrow whalers this spring season.

WESTERN ARCTIC
REGULATION & CONSERVATION-management, quotas, regulation, Eskimo; WHALING-Chukchi Sea, native, catch.

TUSAAYUGAAT INUIT ILISAGVIANNIN.

1980. Nalukataq. Tusaayugaat Inuit Ilisagviannin, 1(5):6-7. Inuit Univ. of the Arctic, Barrow, Alaska.

“This spring, Lawrence “Savik” Ahmaogak, Ralph “Amakak” Ahveoganna, Arnold “Aanualuk” Brower, Sr., Harry “Kupaaq” Brower, Sr., Ben “Alivrun” Itta, Marchie Nageak, Percy “Kunannauraq” Nusunginya, Simeon “Nasuk” Patkotak, and Patsy Tukle captured whales. The crews split into three groups for three different days of “blanket toss”, one of which was an official Inuit Ilisagviat holiday.”

WESTERN ARCTIC
WHALING-Chukchi Sea, native, catch, crews.

UNGUDRUK, IRVING.

1978. Whaling festivals. *Tundra Times*, April 26, 15(17):1, 7.

An editor's note at beginning of the article states the St. Lawrence Island villages of Savoonga and Gambell have each landed one whale so far this season. Author describes nalukatak, the whaler's celebration of a successful season. Three successful captains placed their umiats end to end, tipped on their sides as windbreaks for the people, and the captains' flags were raised on poles next to the boats. However, the year of celebration and names of the captains have been omitted.

WESTERN ARCTIC
WHALING-Bering Sea, native, catch, crews, gear.

U.S. NAVY CINCPACFLT INTELLIGENCE.

1952. Whale intelligence. U.S. Navy CinCPacFlt Intelligence, Fleet Intelligence Center Pacific, San Francisco, CA., 10 p. Bibliography, 12 charts.

Purpose of article is to provide U.S. Navy personnel with information to assist them in distinguishing whale sightings from vessels. Brief general descriptions on the life histories and behavior characteristics of each species of large whale in the Pacific. Figures apparently taken from Townsend, 1935, show the monthly distribution for each species.

WESTERN ARCTIC
BEHAVIOR-general; DISTRIBUTION-monthly, Okhotsk, Bering, Chukchi, Beaufort Seas; FIELD & LABORATORY TECHNIQUES-field recognition.

U.S. NAVY CINCPACFLT INTELLIGENCE.

1961. Submarine or Whale? U.S. Navy CinCPacFlt Intelligence, Fleet Intelligence Center Pacific, San Francisco, California, 17 p. appendix I-10, II-3, III-2, IV-3, 12 charts, bibliography, supplementary notes. This publication cancels and supersedes CINCPACFLT Whale Intelligence of January 1952. It has been prepared for wide distribution as an aid in the identification of whales, having as a goal the reduction of reported false submarine sightings.

Brief general life histories and behavior characteristics of all whales, dolphins and porpoises which might be found in Pacific waters. Characteristics of submarines and whales are compared, and every conceivable contact similarity and difference is discussed, appropriately illustrated with annotated photographs of submarines and whales from various altitudes and in various "maneuvers." Whale distribution charts are provided to aid in determining the probability of a whale sighting by month of the year.

WESTERN ARCTIC
BEHAVIOR-general, migration; DISTRIBUTION-monthly, Okhotsk, Bering, Chukchi, Beaufort Seas; FIELD & LABORATORY TECHNIQUES-field recognition.

U.S. REVENUE CUTTER SERVICE.

1899. Report of the cruise of the U.S. revenue cutter *Bear* and the overland expedition for the relief of the whalers in the Arctic Ocean, from November 27, 1897, to September 13, 1898. U.S. Gov. Print. Office, Washington, D.C. (Treas. Dep. Doc. 2101; also 56th Cong., 2nd Sess., House Doc. 511). 144 p., Map.

The revenue cutter *Bear*, under command of Capt. Francis Tuttle, was sent to rescue crews of eight whaling vessels caught in the ice near Pt. Barrow in 1897. Reports by various individuals describe their adventures including brief mention of whaling stations, names of whaling vessels and catch of bowheads. (See Bertholf 1899; Jarvis 1899).

WESTERN ARCTIC
WHALING-western Arctic, shore stations, history, gear (vessels), catch.

VAN NOTE, CRAIG.

1978. Letters, notes and comments: (Letter to Lael Morgan, and testimony before U.S. Commerce Department, September 8, 1977, about bowhead whale issue). *Alaska* 44(1):12.

The letter and testimony by the author questions wasteful bowhead hunting by Alaskan Eskimos. He presents estimates of the bowhead population and requests support for a zero quota in 1978 as set by the International Whaling Commission.

WESTERN ARCTIC
POPULATION-abundance & density, recruitment, mortality (struck & lost); REGULATION & CONSERVATION-regulation, conservation, management; WHALING-western Arctic, natives, gear.

VAN STONE, JAMES W. (editor).

1957. The autobiography of an Alaskan Eskimo. *Arctic* 10(4):195-210.

Recollections of Attungoruk (L. K.) son of Chief Attungoruk's daughter, who was born at Point Hope, Alaska, on March 16, 1928, describing his childhood, adolescent and adult years and the hunting cycles followed to obtain food. In his introduction to the autobiography, Van Stone briefly reviews the importance of bowhead whaling to the village residents livelihood from pre-contact days with the white man to the present. Van Stone resided at Point Hope from September 1955 until August 1956, during which time he encouraged L.K. to write out the story of his life.

WESTERN ARCTIC
WHALING-western Arctic, native, commercial, utilization.

VAN STONE, JAMES W.

1958. Commercial whaling in the Arctic Ocean. *Pac. Northwest Quart.* 49(1):1-10.

Description of American bowhead whaling industry in the Bering, Chukchi and Beaufort Seas from 1848-1916. Includes statistics on baleen and oil production; as a general average for the fleet, the yield of baleen was 15 to 20 pounds to the barrel of oil and the average whale yielded 100 barrels of oil. Shore whaling began at Barrow in 1884, at Point Hope in 1887, and by the winter of 1897-98 thirteen such stations, owned and operated by white men, were strung out at intervals along the coast between Point Hope and Cape Seppings. Commercial whaling for bowheads declined substantially by 1908, although in 1910 there still were shore whaling stations at Point Hope, Cape Lisburne, Icy Cape, and Point Barrow. Shore whaling ended in 1915 and 1916 was the last year that whaling ships went to the Arctic.

WESTERN ARCTIC
WHALING-western Arctic, Bering Sea, Chukchi Sea, Beaufort Sea, commercial, shore stations, catch, utilization.

VAN STONE, JAMES W. and WENDELL H. OSWALT.

1962. Three Eskimo communities. Univ. Alaska, Fairbanks, Antropol. Pap. 9(1):17-56.

Acculturation studies were conducted at Napaskiak and Point Hope, Alaska, during 1955-1956, and at Eskimo Point, Hudson Bay, Canada, in 1959. The annual food cycle hunt at Point Hope is described including a concise account of bowhead whaling during the spring. The appearance of belugas (white whales), which usually arrive before the bowheads, is a signal for the beginning of the hunt off the south side of the peninsula. Early in June most of the bowheads have passed Point Hope and the crews return to shore.

WESTERN ARCTIC

BEHAVIOR-migration; WHALING-western Arctic, Chukchi Sea, native, gear, utilization.

VAN VALIN, WILLIAM B.

1941. Eskimoland speaks. The Caxton Printers, Ltd., Caldwell, Idaho, 242 p.

Popular description of Eskimo life from author's observations near Nome, Pt. Barrow, and at Wainwright, Alaska, where he served as a teacher in the early 1900s. Includes detailed observations of Eskimo whaling methods and gear, techniques to approach bowhead to avoid discovery, whales captured, cutting up whales and their use for food.

WESTERN ARCTIC

BEHAVIOR-when hunted; WHALING-western Arctic, native, catch, crews, gear, photographs, utilization.

VASIL'CHUK, YU. K., and A. V. YABLOKOV.

1981. Grenlandski kit v Obskoi Guba (A Greenland whale in Obskaya Guba). Priroda 3:116. In Russian. (Transl. by S. Pearson, U.S. Dep. Commer., NOAA, Natl. Mar. Fish. Serv., Natl. Mar. Mammal Lab., 7600 Sand Point Way N.E., Seattle, WA 98115).

In 1980, the carcass of a stranded bowhead whale was found in Obskaya Guba, near the village Seyakha on the Yamal Peninsula. Measurements indicated a fluke width of about 4m and a total body length of approximately 12 m. From an examination of the remains it was concluded that the animal died not more than 20 years ago. Since the animal was found 400 m within Obskaya Guba, it appears that it died in the bay itself and not in the open basin of the Kara Sea. Mentions three bowhead strandings found in the vicinity that were previously reported by Tomilin (1957). The authors state that "The fact of finding the remains of a juvenile bowhead whale in Obskaya Bay is extremely interesting in the sense that it verifies the existence and possible beginning of an increase of numbers of this (Spitsbergen) population."

EASTERN ARCTIC

DISTRIBUTION-stranding, Kara Sea; MORPHOLOGY-measurements; POPULATION-mortality, stranding; SKELETAL REMAINS-beachcast.

VERRILL, A. HYATT.

1923. The real story of the whaler; whaling, past and present. D. Appleton and Co., New York, 295 p.

Reviews the history of whaling; describes the whalers' lives and adventures, vessels, equipment, and whaling methods. Drawings of whales include bowhead and right whales. General, limited description of bowhead distribution, food, behavior under chase. Notes the first bowhead was taken in the North Pacific by the *Janus* off the coast of Kamchatka in 1843, and the *Superior* took the first whale in the Arctic after passing Bering Strait in 1844 (sic).

WESTERN ARCTIC

BEHAVIOR-when chased; DISTRIBUTION; NUTRITION-food; WHALING-history, western Arctic, commercial, gear, utilization, photographs and drawings.

VIBE, CHRISTIAN.

1970. The Arctic ecosystem influenced by fluctuations in sun-spots and drift-ice movements. *In* W. A. Fuller and P. G. Kevan (eds.), *Productivity and conservation in northern circumpolar lands*, p. 115-120. Int. Union. Conserv. Nat. and Nat. Resour., Morges, Switz., Proc. of Conf., Edmonton, Alberta, 15-17 Oct. 1969, IUCN Publ. New Ser. No. 16.

Relating drift-ice conditions and sun-spots to the Arctic ecosystem, the author believes mild winters restrict plankton production and cause fluctuations in the numbers of mammals, including Greenland whales. He describes various periods in the 18th and 19th centuries when disappearance of drift-ice and decreased plankton production caused decreases in the populations of the whales in areas of the Atlantic Ocean.

EASTERN ARCTIC

DISTRIBUTION-factors limiting and changing; NUTRITION-food; POPULATION-abundance; WHALING-history, eastern Arctic, commercial.

VINCENT, LEON S.

1944. The whale didn't get away. *Alaska Sportsman* 10(8):16-17, 26-28. (One of a series of articles titled *The top of the world*: 10(5):10-11, 35-36; 10(6):12-13, 31-33; 10(7):16-17, 23-26; 10(9):16-17, 25-26.)

Author describes his experience as a member one day of Bert Panigeo's crew at Barrow, Alaska, in about 1928. Equipment used consisted of a wood-plank boat with a sail, a shoulder gun, two darting guns, bombs, harpoons, lines and two seal-skin floats. They struck a large whale with two bombs and it was dead before the first of 12 other boats arrived on the scene to assist in the kill. Panigeo's boat led a procession of seven boats in towing the whale to their camp on the ice.

WESTERN ARCTIC

BEHAVIOR-swimming, when pursued; IDENTITY-nomenclature; WHALING-western Arctic, Chukchi Sea, native, catch, crews, gear, photographs.

VINCENT, LEON S.

1959. *King of the Arctic*. *Alaska Sportsman* 25(9):8-11, 40, 42; 25(10):12-13, 40-42; 25(11):18-21, 40-43; 25(12):14-17, 32-33.

Author spent three years [1927-1930] in Barrow, Alaska, as the school principal. During that time he became good friends of Charles D. Brower, known as "King of the Arctic." All four parts of this series about Brower and his life at Barrow contain some references to whaling but part three describes his arrival in Alaska, when he decided to make his home there, the beginning, evolution and ending of his bowhead whaling business and interesting aspects of his life as a community leader.

WESTERN ARCTIC

WHALING-western Arctic, Chukchi Sea, commercial shore station, native, gear, catch, photographs.

VON ELLING, ROSEMARY.

1965. *Culture change in six Alaskan Eskimo communities*. M. A. Thesis, Wash. State Univ., [Pullman], 140 p. (Unpublished).

This study, drawn entirely from the literature; examines the acculturation trends in six Eskimo communities: Kaktovik, Barrow, Wainwright, Point Hope, Gambell, and Napaskiak. Contains some general information on bowhead whaling by the natives. Citing Milan (1964), author states (p. 91-92) that there were three whaling crews at Wainwright in 1955 and one whale was caught.

WESTERN ARCTIC

ANTHROPOLOGY; WHALING-western Arctic, native, catch, crews.

WARD, JOHN G.

1979. Bird and mammal surveys in the Cape Parry Area, Northwest Territories, June-August 1979. Rep. by LGL Ltd., Edmonton, Alberta, for Dome Petroleum Ltd., Calgary, Alberta, 40 p. (unpublished).

Several aerial and ground surveys were conducted in the Cape Parry area to provide site-specific information needed to evaluate potential impacts on wildlife of two proposed fuel staging areas (Summers Harbor and Wise Bay) for deep-draft icebreakers. Although both bowhead and white whales were expected to occur in the area, none were sighted during the surveys.

WESTERN ARCTIC
DISTRIBUTION-eastern Beaufort Sea, sightings; FIELD & LABORATORY TECHNIQUES-census, aerial.

WARNER, IRIS.

1973. Herschel Island: Canada's valuable flyspeck. *Alaska J.* 3(3):130-143.

A detailed history of Herschel Island in the eastern Beaufort Sea, which was used as a wintering-over station by American whalers hunting the bowhead whale. Author reviews bowhead whaling in the Bering, Chukchi and Beaufort Seas and gives some information on natural history of the species. The first whaling vessel to reach Herschel Island was the steam bark *Grampus* in 1888. Joe Tuckfield was provided supplies by Charles Brower and sent on the *Grampus* to Herschel Island. He was to winter-over and attempt shore whaling for bowheads the next spring as Eskimos from the area had informed Brower about numerous whales present there each summer. He captured one whale. Following Tuckfield's return to Barrow the summer of 1889 with information of many whales in the area, the whaling fleet began working the area that same year.

WESTERN ARCTIC
BEHAVIOR-swimming; DISTRIBUTION-history; IDENTITY-description; MORPHOLOGY-measurements; WHALING-western Arctic, Bering, Chukchi and Beaufort Seas, commercial, catch, photographs & drawings.

WARNER, IRIS.

1976. Herschel Island; Canada's valuable flyspeck. *Alaska* 42(11):43-45, 80-81.

Briefly reviews historical importance of Herschel Island. Contains information on use of the island by American whalers searching for bowhead whales in the eastern Beaufort Sea.

WESTERN ARCTIC
DISTRIBUTION; WHALING-western Arctic, Beaufort Sea, commercial.

WATSON, D. G., W. C. HANSON, J. J. DAVIS, and W. H. RICKARD.

1966. Radionuclides in terrestrial and freshwater biota. In Norman J. Wilimovsky and John N. Wolfe (eds.), *Environment of the Cape Thompson region, Alaska*, Chapt. 42, p. 1165-1200. U.S. Atomic Energy Comm., Washington, D.C.

The kinds, amounts, and distribution of radionuclides originating from worldwide fallout were studied in the biota of the Project Charriot (proposed nuclear explosion) site near Cape Thompson, Alaska, from 1959 through 1962. Analysis of a bowhead whale muscle sample (p. 1186) from Pt. Hope, April 1962, gave a ¹³⁷Cs reading of 0.036 micromicrocuries per g of standard dry weight and a total gamma emitter rating of 0.036. No data were obtained for other gamma emitters and for ⁹⁰Sr in muscle, fat, or skin and fat.

WESTERN ARCTIC
FIELD & LABORATORY TECHNIQUES-experimental techniques; PATHOLOGY-pollution; WHALING-western Arctic, Chukchi Sea, native, catch.

WENTWORTH, CYNTHIA.

1978. Battle for the Beaufort Sea: Natives document subsistence use in the Pt. Thomson oil lease area. *Arct. Coastal Zone Manage. Newsl.* 14:1-7.

Author interviewed active subsistence hunters of Kaktovik, Alaska and prepared land use maps to show patterns of subsistence use extending from the Canadian border to the Sagavanirktok River, and south into the Brooks Range. A brief paragraph on the bowhead whale states: "One resource specialist interviewed said that he shot a whale at Flaxman Island, sometime before 1930. He remembers that the bone was eleven feet long."

WESTERN ARCTIC
MORPHOLOGY-measurements, baleen; POPULATION-mortality, whaling, catch; WHALING-Beaufort Sea, native, catch, utilization.

WENZEL, GEORGE W.

1981. Clyde Inuit adaptation and ecology: the organization of subsistence. *Natl. Mus. Canada, Can. Ethnol. Serv. Pap.* 77, 163 p.

This monograph examines the position of Inuit (Eskimo) subsistence activities in the Clyde River region on Baffin Island, which are perceived not simply in terms of isolated actions, but as a process encompassing a broad range of societal components. Although Greenland whales, *aqyiq*, (*Balaena mysticetus*), occasion the region, the Inuit report none seen in the last ten years (p. 55). An elderly Inuk in Clyde (Iqalukuak, 1972, pers. comm.) noted he had seen a bowhead killed but, when pressed, stated that this occurred in Cumberland Sound in the 1930s (p. 59).

EASTERN ARCTIC
DISTRIBUTION-present; IDENTITY-nomenclature (Eskimo); WHALING-eastern Arctic, native, catch.

WEST, ELLSWORTH LUCE (as told to Eleanor Ransom Mayhew).

1965. Captain's papers; a log of whaling and other sea experiences. *Barre Publ.*, Barre, Mass., 172 p.

Popular style narrative and journal of the author's adventures in whaling and sailing in the North Pacific Ocean, particularly in the Bering and Chukchi Seas. Includes descriptions of shipboard life, whaling gear, bowhead and other whale sightings, and catches in various years (principally 1892-1896). Gives brief descriptions of bowheads, their feeding and swimming behavior, breathing, and baleen and its value. Catches by vessels with which the author was involved were: 1887(?)=4; 1890=6; 1892=5; 1893=saw 3 took 1; 1893-94--number seen, took 6; 1895=saw 6, took 1; 1896=8. Only 5 bowheads were taken in 1895 by the northern fleet of 13 steam whalers and 1 bark. One large bowhead in 1893 yielded 2,700 lb. of baleen and 130 barrels of oil.

WESTERN ARCTIC
BEHAVIOR-respiration, swimming; IDENTITY-description; MORPHOLOGY-baleen; NUTRITION-feeding; WHALING-history, western Arctic (Bering Sea, Chukchi Sea, Beaufort Sea), gear, catch, utilization, photographs (vessels).

WEST, FREDERICK HADLEIGH.

1966. Archaeology of Ogotoruk Creek. *In* Norman J. Wilimovsky and John N. Wolfe (eds.), *Environment of the Cape Thompson region, Alaska*, Chapt. 34, p. 927-967. U.S. Atomic Energy Comm., Washington, D.C.

Ogotoruk presents a picture of late prehistoric Eskimo culture leading without important break into modern times. Ogotoruk has been an important area for the hunting economy of Tigara and Kivalina. Three sites were investigated, and artifacts recovered that were associated with whaling and utilization of whale products are listed and described, many represented in photographs.

WESTERN ARCTIC
ARCHAEOLOGY-artifacts; WHALING-history, western Arctic, native, gear, utilization.

WHITING, EMMA MAYHEW and HENRY BEETLE HOUGH.

1953. Whaling wives. Houghton Mifflin Co., Boston, 293 p.

Contains considerable information on the people and families of Martha's Vineyard centered about accounts of whaling vessels, voyages, and the whaling industry of that community: The sources of most of the information were logbooks, journals, letters, diaries and fragmentary annals preserved in old records covering the period from 1790s to 1914. Includes accounts of whaling in the western Arctic, including the Okhotsk Sea.

WESTERN ARCTIC
WHALING-western Arctic, commercial, catch.

WHITTAKER, C. E.

1937. Arctic Eskimo. Seeley, Service & Co. Ltd. London, 260 p.

Account of the daily life of Eskimos of the Mackenzie River and Coronation Gulf regions by a missionary who served there from 1895 through the early 1900s. Describes the impact of American whalers on the Eskimos of Herschel Island and vicinity during the period when they first arrived there in 1889 through about 1907 when the value of whalebone plummeted.

WESTERN ARCTIC
WHALING-western Arctic, Beaufort Sea, commercial.

WOOLFE, HENRY D.

1893. The seventh or Arctic district. *In* Robert P. Porter, Report on population and resources of Alaska at the eleventh census: 1890, p. 129-152. Gov. Print Office., Wash., D.C.

Author presents a general but comprehensive description of the geography of the Arctic district and the lifestyle of its residents gained through personal experience over a ten-year period beginning in 1884. He describes one superstitious incident at Point Hope in 1885 that was followed by the taking of a big whale the next day. (p. 141) "The whale fishery from the ice floe is carried out identically at Point Hope and Point Barrow...", (p. 146) and "About 8 or 10 boats from each village make up the usual fleet." (p. 147). Also includes a detailed account of Eskimo whaling for bowhead whales describing timing of the migration, gear used and method employed to capture the whales. (p. 146-49)

WESTERN ARCTIC
ANTHROPOLOGY-culture; BEHAVIOR-migration, timing; WHALING-Chukchi Sea, native, catch, crews, utilization.

WORL, ROSITA.

1978. The bowhead whaling ban. *Tundra Times*, Special Subsistence Issue, January, p. 6-7.

Author criticizes the evidence that the International Whaling Commission relied upon to make the decision to ban bowhead whaling by Alaskan Eskimos beginning in 1978. The Eskimos formed the Alaska Eskimo Whaling Commission in August 1977 and sent representatives to Tokyo, Japan, for the December meeting of the IWC. At that meeting, the IWC allowed for a whale harvest quota of 12 whales or 18 struck during 1978. Article reviews the importance of the bowhead whale to the Eskimo and describes how "...the contemporary Eskimo whaling complex exemplifies the successful adaptation between a subsistence and monetary economy. As a contemporary subsistence culture, it is dependent on access to a cash supply to purchase the technological equipment... an initial minimum investment of \$6,500 is required to support a whaling crew."

WESTERN ARCTIC
ANTHROPOLOGY-Alaskan Eskimos, culture; POPULATION-mortality whaling, struck and lost; REGULATION & CONSERVATION-regulation; WHALING-Bering, Chukchi and Beaufort Seas, crews, gear, photographs, utilization.

WORL, ROSITA.

1980. The North Slope Inupiat whaling complex. *In* Y. Kotani and W.B. Workman (eds.), *Alaska Native culture and history*, *Senri Ethnol. Studies* No. 4, p. 305-320. *Natl. Mus. Ethnol.*, Suita, Osaka, Japan.

An effort to describe and analyze the complexities of the contemporary Inupiat socio-economic organization for bowhead whaling, the interrelationships between subsistence and capital economy, and the customary laws which regulate ownership and distribution patterns of the whale. Bowhead whale migrations and environmental factors affecting the hunt are discussed. Based on personal experience and field research in Alaska from 1975 to 1977.

WESTERN ARCTIC
BEHAVIOR-migration; WHALING-western Arctic, native, gear, utilization.

WORL, ROSITA.

1981. Subsistence and culture. (Abstr.) *In* *Acoustical Society of America*. 1981. San Diego workshop on the interaction between man-made noise and vibration and Arctic marine wildlife, February 25-29, 1980, p. 62. Unpub. rep. by Acoust. Soc. Am., [Washington, D.C.], for Alaska Eskimo Whaling Comm., Barrow, AK 99723.

Discusses the importance of the bowhead whale to Alaskan Eskimos for subsistence and cultural purposes and how the bowhead whale issue... "exemplifies the need for scientists and policy makers to adopt multi- and interdisciplinary approaches in investigative research in the development of management regimes."

WESTERN ARCTIC
REGULATION & CONSERVATION-management; WHALING-native, Bering, Chukchi and Beaufort Seas, utilization.

WYMAN [JEFFRIES].

1848. (no title). *Proc. Boston Soc. Nat. Hist.* 3(1848-1851):355.

"Dr. Wyman exhibited an embryo, six inches long, of the Greenland whale, *Balaena mysticetus*, which presented some remarkable differences from the adult animal. Instead of the long flukes and central depression seen in the adult, the tail of the embryo was rounded, as in the tail of Manatus; there was also a vertical crest above and below the tail. The genital organs, in external appearance male, proved to be female on the internal examination; in the early stages of the foetus it is impossible to distinguish them externally. The thymus body was remarkably large, extending down between the lungs and heart, then underneath the latter, and with its fellow of the other side almost enveloping this organ." No information was given on the origin of the embryo.

CIRCUMPOLAR
MORPHOLOGY-measurements, anatomy; REPRODUCTION-fetus.

YOUNGMAN, PHILLIP M.

1975. *Mammals of the Yukon Territory*. *Natl. Mus. Can.*, *Pub. Zool.* 10, 192 p.

Subject discussed in article includes a history of mammalogy in the Yukon, environmental influences, a checklist of the mammals, accounts of species and type localities of Yukon mammals. The species account consists mainly of brief history of American whaling in the Beaufort Sea with a note that Eskimos formerly hunted the bowhead along the Yukon coast and utilized the products for food, fuel, house frames and implements. Records of occurrence and references are listed.

WESTERN ARCTIC
DISTRIBUTION-specimens; IDENTITY-taxonomy; WHALING-western Arctic, eastern Beaufort Sea, commercial, native, utilization.

ZENKOVICH, B. A.

1934. Kitoboinyi promysel v Kamchatskom i Beringovom moryakh (sezon 1933 goda). (The whaling industry in Kamchatka and Bering Seas (1933 season). Rybn. Khoz. Dal'nego Vostoka, No: 1-2: 113-118. In Russian. (Transl. by Lydia Hutchison, Univ. Calif. San Diego, La Jolla, Calif.)

A general account of Russian whaling activities in the area during 1933. Speaking about the natives at Lavrenty Bay the author states "...let me mention that up to ten specimens of Greenland whales are killed annually on the coast from Providence Bay to Cape Dezhnev (Uelen village). One can find hand-harpoons with grenades (used to kill whales) in the larangas (or skin-tents) of the following villages: Sireniki, Naukan, Dezhnev and Uelen."

WESTERN ARCTIC

WHALING-western Arctic, Bering and Chukchi Seas, native, catch, gear.

ZENKOVICH, B. A.

1954. Vokrug sveta za kitami; Ekspeditsiya kitoboinoi flotilii "Aleut". (Around the world after whales; Expedition of the whaling fleet "Aleut"). 2nd ed., revised and enlarged. Gos. Izd. Geograf. Lit., Moscow. 407 p. In Russian. (1st ed., 1936, Izd. "Molodaya Gvardiya", Leningrad, 190 p.). (Transl., 523 p, by Lydia A. Hutchison, Univ. Calif., San Diego.)

Popular account of whaling around the world, including the author's observations on a voyage in 1932-33 from Leningrad, through the Atlantic and the Panama Canal, and in the Pacific Ocean, Okhotsk, Bering, and Chukchi Seas on the whaler *Aleut*. Describes bowhead whales, their behavior, migration, utilization by natives and commercial whalers, reproduction, and some data on catches. Of particular interest is chapter 17 on the smooth or right whales and chapter 19 on whaling which presents a history of whaling in European and Far Eastern waters, with emphasis on development of the Russian whaling industry in the Far East.

EASTERN ARCTIC, WESTERN ARCTIC

BEHAVIOR-swimming, diving, reactions, respiratory, migration; DISTRIBUTION; IDENTITY-description, nomenclature; NUTRITION-food; POPULATION-abundance, mortality; REPRODUCTION-calves, Eskimo beliefs; WHALING-history, eastern Arctic, western Arctic, commercial, native, catch, gear, utilization.

ZENKOVICH, B. A.

- 1955a. Kratkaya istoriya kitoboinogo promysla i sovremennoe ego sostoyanie v SSSR (A brief history of whaling in prerevolutionary Russia and an account of present-day whaling in the U.S.S.R). In S. E. Kleinenberg and T. I. Makarova (eds.), Kitoboinyi promysel Sovetskogo Soyuza (The whaling industry of the Soviet Union), Chapt. 1, p. 5-23. Izd. "Rybnogo Khozyaistva", Moscow. In Russian. (Transl. by Israel Program Sci. Transl., 1968, avail. Natl. Mar. Fish. Serv., Office Int. Relations, Washington, D.C.)

The author contributed three parts to chapter 1: Kitoboinyi promysel na russkom Severe (Whaling in the Russian North), p. 5-11; Kitoboinyi promysel na Dal'nem Vostoke (Whaling in the Russian Far East), p. 11-19; and promysel v Dal'nevostochnykh vodakh (Whaling in the Far East), p. 19-23. Presents a brief history of the whaling industry of the Russian north and status of the contemporary whaling industry of the U.S.S.R. A table of Soviet whaling in the North Pacific, 1932-1954, lists catch of 8 Pacific right whales.

EASTERN ARCTIC, WESTERN ARCTIC

BEHAVIOR-migration; IDENTITY-description, .nomenclature, subspecies; WHALING-history, eastern arctic, western Arctic, commercial, native, catch.

ZENKOVICH, B. A.

1955b. O migratsiyakh kitov; promyslovye raiony v dal'nevostochnykh vodakh (The migrations of whales; whale fishing in the waters of the Soviet Far East). In S. E. Kleinenberg and T. I. Makarova (eds.), *Kitoboynyi promysel Sovetskogo Soyuza* (The whaling industry of the Soviet Union), Chapt. 3, p. 51-68. Izd. "Rybnogo Khozyaistva", Moscow. In Russian. (Transl. by Israel Program Sci. Transl., 1968, avail. Natl. Mar. Fish. Serv., Office Int. Relations, Washington, D.C.)

Mentions that bowhead whales in Far Eastern waters have not been studied and are encountered only rarely. Some primitive whaling of bowhead is conducted by natives of the Soviet coast of Bering Strait and Chukchi Sea. Author notes he captured two varieties of right whale, known as "poggi", in the Okhotsk Sea and that these were similar to neither the Pacific right whale nor the polar whale (bowhead).

WESTERN ARCTIC

DISTRIBUTION; IDENTITY-races or subspecies; WHALING-western Arctic, commercial, natives, catch.

ZHIRNOV, L. V., A. A. VINOKUROV , and V. A. BYCHKOV.

1975. Redkie mlekopitayushchie, ptitsy, i ikh okhrana v SSSR (Rare mammals, birds, and their protection in the U.S.S.R.). Ministry of Agriculture, Moscow, 82 p. In Russian. (Translation of Chapt. 3, *Morskije mlekopitayushchie* (marine mammals), p. 27-38, plus accompanying references by Francis H. Fay, Univ. Alaska, Fairbanks, 1977, 17 p.).

Describes status of rare and vanishing species, including six species of great whales. There are three stocks of bowhead whales: Bering-Chukchi, Spitsbergen, and West Greenland. Spitsbergen is the smallest stock, Bering-Chukchi is largest stock. Annual harvest was about 1,000 whales in 16th and 17th centuries, but now only the native population of Chukotka takes a few each year. The bowhead is close to extinction, its recovery has been slow, and local conservation measures in Bering Strait region consist of prohibition of whaling.

EASTERN ARCTIC, WESTERN ARCTIC

POPULATION-abundance and density; REGULATION & CONSERVATION; WHALING-western Arctic, commercial, native, catch.

ZHIRNOV, L. V., A. A. VINOKUROV, and V. A. BYCHKOV.

1978. Redkie i ischezayushchie zivotnye SSSR: mlekopitayushchie i ptitsy (Rare and endangered animals of the U.S.S.R., mammals and birds). Izd. "Lesnaya Promyshlennost," Moscow, 303 p. In Russian.

General handbook review, with bowhead whale discussed on p. 45-47. Includes a brief description of the bowhead whale, review of distribution, reproduction, food, and history of whaling in the eastern and western Arctic. Discusses the development of protective regulations, beginning with the International Conference on Regulation of Whaling in 1931. Other regulatory acts were provided in 1946, 1949, 1955, and 1960 in the U.S.S.R. At present only the native people, the Chukchis and Eskimos, are allowed to catch bowheads in Soviet and Alaskan waters. Traditionally the annual catch by Soviet natives is about 10 and in Alaska 30-40 individuals, which cannot essentially effect its future fate.

EASTERN ARCTIC, WESTERN ARCTIC

DISTRIBUTION; IDENTITY-description; NUTRITION-food; REGULATION & CONSERVATION-management; WHALING-eastern and western Arctic, history, natives, catch, photographs and drawings.

ZIMUSHKO, V. V.

1969. Nekotorye dannye po biologii serogo kita (Some data on the biology of the gray whale). *In* V. A. Arsen'ev, B. A. Zenkovich, and K. K. Chapskii (eds.), *Morskie mlekopitayushchie* (Marine mammals), p. 93-97. Izd. Nauka, Moscow. In Russian. (Transl. by Leda V. Sagen, College Fish., Univ. Washington, Seattle, Wash.).

The total harvest of baleen whales by the Collective Communes of Chukotka USSR, in 1965 and 1966, was 99% gray whales. Fin and bowhead whales were rarely taken.

WESTERN ARCTIC
WHALING-western Arctic, commercial, catch.

Index

- ANTHROPOLOGY** · 79, 82, 121, 133, 134, 144, 151, 156, 161, 166, 239, 269, 277, 282, 295, 311, 317, 320
- ARCHAEOLOGY** · 5, 42, 65, 66, 71, 74, 80, 86, 107, 108, 129, 132, 136, 143, 149, 155, 156, 178, 191, 199, 200, 205, 207, 221, 256, 283, 286, 296, 304, 305, 319
- BEHAVIOR** · 2, 3, 4, 6, 10, 13, 15, 16, 17, 18, 20, 23, 26, 34, 35, 38, 39, 41, 44, 45, 46, 50, 52, 54, 55, 59, 62, 64, 68, 69, 70, 71, 72, 73, 74, 77, 78, 79, 80, 82, 84, 85, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 101, 103, 104, 105, 106, 108, 109, 110, 111, 113, 115, 116, 117, 118, 119, 121, 122, 124, 127, 130, 132, 133, 134, 135, 136, 137, 139, 140, 141, 142, 146, 147, 148, 153, 155, 158, 159, 160, 164, 167, 169, 173, 177, 181, 182, 183, 185, 188, 191, 193, 194, 195, 196, 198, 199, 201, 203, 205, 206, 207, 208, 213, 216, 222, 224, 235, 237, 238, 239, 241, 242, 244, 250, 251, 252, 254, 255, 256, 258, 260, 265, 266, 268, 270, 271, 272, 273, 275, 277, 278, 280, 281, 282, 284, 285, 287, 288, 289, 290, 292, 293, 297, 298, 299, 300, 301, 302, 303, 304, 310, 311, 314, 316, 317, 318, 319, 320, 321, 322
- BIBLIOGRAPHY** · 4, 36, 78, 145, 147, 156, 260, 261, 263, 296
- DISTRIBUTION** · 1, 2, 3, 4, 5, 6, 7, 10, 16, 18, 19, 22, 23, 25, 26, 34, 35, 36, 39, 40, 41, 42, 43, 46, 47, 65, 66, 68, 70, 72, 74, 77, 78, 79, 80, 82, 84, 85, 86, 88, 89, 90, 92, 93, 96, 97, 98, 99, 103, 105, 108, 109, 110, 111, 112, 113, 115, 118, 119, 121, 129, 130, 131, 133, 134, 136, 137, 140, 141, 142, 143, 144, 147, 148, 149, 150, 151, 152, 153, 155, 156, 157, 158, 159, 160, 162, 164, 165, 167, 173, 174, 177, 178, 179, 181, 183, 185, 186, 188, 189, 191, 193, 194, 195, 196, 197, 198, 200, 201, 203, 206, 207, 208, 209, 211, 212, 213, 216, 221, 222, 238, 241, 242, 244, 249, 255, 263, 265, 266, 267, 268, 270, 272, 273, 281, 282, 283, 284, 285, 286, 288, 290, 292, 293, 296, 297, 302, 303, 304, 305, 306, 307, 314, 316, 317, 318, 319, 321, 322, 323
- ETHNOLOGY** · 31, 138, 184, 256, 262, 269, 304, 305
- FIELD & LABORATORY TECHNIQUES** · 2, 3, 4, 5, 9, 13, 14, 16, 19, 22, 26, 32, 33, 37, 38, 43, 46, 64, 65, 83, 88, 99, 101, 105, 106, 110, 111, 116, 117, 118, 119, 121, 130, 131, 132, 133, 136, 137, 138, 140, 146, 147, 148, 149, 155, 159, 162, 165, 178, 179, 182, 184, 185, 186, 188, 191, 193, 194, 197, 205, 207, 209, 216, 222, 235, 238, 239, 242, 265, 266, 271, 274, 283, 285, 286, 290, 292, 299, 302, 314, 318
- GROWTH** · 66, 90, 103, 115, 119, 122, 139, 153, 183, 271, 274, 285, 288, 292, 304, 306
- IDENTITY** · 4, 6, 13, 14, 19, 33, 34, 36, 37, 40, 45, 55, 64, 65, 67, 71, 72, 73, 74, 77, 86, 88, 90, 92, 93, 96, 103, 114, 115, 118, 119, 128, 133, 134, 148, 149, 153, 155, 159, 160, 164, 165, 167, 177, 179, 181, 183, 191, 192, 195, 196, 197, 198, 199, 208, 209, 211, 219, 220, 221, 237, 238, 239, 241, 249, 251, 258, 259, 260, 263, 265, 266, 268, 269, 271, 272, 273, 274, 283, 284, 285, 287, 289, 291, 292, 295, 297, 300, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 315, 316, 317, 318, 319, 321, 322, 323
- MORPHOLOGY** · 1, 2, 3, 4, 5, 6, 22, 26, 29, 31, 33, 34, 35, 36, 38, 39, 40, 41, 42, 44, 47, 49, 55, 57, 62, 67, 68, 69, 72, 73, 74, 75, 76, 78, 84, 85, 86, 88, 90, 91, 92, 93, 96, 98, 99, 100, 101, 102, 103, 105, 110, 114, 115, 117, 118, 119, 120, 121, 122, 127, 128, 131, 132, 133, 136, 139, 140, 142, 144, 146, 148, 149, 152, 153, 159, 162, 163, 164, 165, 167, 173, 177, 182, 183, 185, 186, 188, 191, 192, 195, 196, 198, 199, 203, 207, 208, 209, 211, 213, 214, 215, 219, 221, 222, 223, 224, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 241, 242, 245, 249, 250, 255, 256, 258, 259, 260, 263, 264, 267, 271, 272, 274, 275, 276, 277, 278, 280, 281, 282, 283, 284, 285, 287, 288, 289, 291, 292, 297, 298, 299, 300, 302, 303, 304, 306, 307, 308, 309, 310, 311, 316, 318, 319, 321
- NUTRITION** · 2, 3, 6, 33, 35, 36, 46, 66, 67, 69, 72, 73, 84, 86, 88, 90, 92, 94, 98, 105, 110, 112, 113, 115, 117, 118, 119, 120, 136, 137, 140, 141, 142, 148, 149, 150, 158, 159, 164, 173, 177, 179, 182, 183, 187, 191, 195, 196, 198, 207, 213, 237, 238, 240, 249, 258, 260, 263, 271, 272, 281, 284, 285, 287, 288, 292, 293, 302, 303, 304, 310, 316, 317, 319, 322, 323
- PATHOLOGY** · 33, 34, 39, 46, 55, 66, 67, 68, 72, 73, 77, 88, 94, 97, 111, 114, 117, 118, 119, 122, 144, 151, 156, 158, 190, 194, 197, 201, 202, 242, 267, 272, 274, 285, 287, 289, 290, 291, 292, 299, 303, 304, 318
- PHYSIOLOGY** · 33, 38, 67, 69, 73, 88, 116, 119, 131, 139, 140, 145, 153, 177, 207, 217, 288, 295
- POPULATION** · 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 14, 16, 18, 22, 23, 24, 25, 26, 27, 32, 33, 34, 36, 37, 38, 42, 43, 45, 46, 48, 49, 50, 51, 52, 55, 56, 57, 59, 60, 61, 66, 69, 70, 71, 72, 74, 75, 77, 79, 80, 81, 83, 84, 85, 88, 89, 90, 91, 92, 93, 96, 99, 100, 101, 103, 105, 107, 108, 109, 113, 117, 118, 119, 121, 122, 123, 124, 125, 127, 128, 129, 130, 131, 132, 133, 134, 136, 137, 138, 139, 140, 141, 142, 143, 144, 147, 150, 153, 155, 156, 158, 159, 160, 161, 164, 165, 166, 167, 168, 170, 174, 175, 176, 177, 179, 180, 183, 184, 185, 186, 187, 188, 189, 190, 192, 193, 194, 195, 196, 198, 199, 201, 203, 205, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 219, 221, 223, 226, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 241, 242, 243, 244, 245, 246, 247, 248, 250, 251, 253, 254, 255, 256, 259, 265, 267, 268, 270, 271, 272, 273, 274, 275, 279, 280, 282, 283, 284, 285, 287, 288, 289, 291, 292, 293, 294, 295, 297, 299, 301, 302, 304, 305, 308, 309, 310, 311, 312, 315, 316, 317, 319, 320, 322, 323
- PREDATORS & COMPETITORS** · 57, 69, 92, 94, 98, 105, 107, 108, 109, 117, 118, 121, 140, 141, 142, 163, 164, 186, 189, 210, 211, 212, 237, 258, 272, 281, 288, 303, 304
- REGULATION & CONSERVATION** · 1, 2, 5, 6, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 36, 37, 38, 42, 43, 44, 45, 46, 47, 66, 70, 81, 83, 89, 100, 101, 103, 112, 113, 117, 120, 127, 128, 130, 132, 144, 154, 157, 158, 159, 160, 161, 165, 166, 174, 176,

177, 183, 187, 193, 194, 195, 198, 212, 213, 215, 216,
217, 221, 237, 239, 243, 251, 256, 258, 271, 272, 274,
279, 284, 287, 289, 303, 311, 313, 315, 320, 321, 323

REPRODUCTION · 2, 5, 6, 10, 13, 25, 33, 34, 35, 36,
38, 45, 47, 67, 72, 85, 86, 88, 89, 90, 98, 105, 108,
109, 113, 115, 117, 118, 119, 120, 121, 122, 127, 133,
136, 139, 140, 141, 147, 149, 152, 159, 173, 177, 182,
183, 184, 186, 191, 209, 219, 220, 232, 237, 238, 239,
241, 249, 256, 271, 272, 274, 275, 283, 284, 285, 288,
292, 299, 303, 304, 310, 321, 322

SKELETAL REMAINS · 5, 32, 65, 92, 137, 149, 151,
159, 160, 162, 191, 194, 208, 211, 267, 281, 306, 316

WHALING · 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28,
29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,
43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56,
57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 68, 69, 70, 71,
72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85,
86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 98, 99, 100,

101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 112,
113, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124,
125, 126, 127, 128, 129, 131, 132, 133, 134, 135, 136,
137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147,
148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158,
159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169,
170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180,
181, 182, 183, 184, 185, 187, 188, 189, 191, 192, 193,
194, 195, 196, 197, 198, 199, 200, 201, 203, 204, 205,
206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216,
217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227,
228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238,
239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249,
250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260,
262, 263, 264, 265, 266, 268, 269, 270, 271, 272, 273,
274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284,
285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295,
296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306,
307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317,
318, 319, 320, 321, 322, 323, 324

RECENT TECHNICAL MEMORANDUMS

Copies of this and other NOAA Technical Memorandums are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22167 (web site: www.ntis.gov). Paper and microfiche copies vary in price.

AFSC-

- 126 HONKALEHTO, T., W. PATTON, S. DE BLOIS, and N. WILLIAMSON. 2002. Echo integration-trawl survey results for walleye pollock (*Theragra chalcogramma*) on the Bering Sea shelf and slope during summer 2000, 66 p. NTIS number pending.
- 125 HONKALEHTO, T., N. WILLIAMSON, and S. DE BLOIS. 2002. Echo integration-trawl survey results for walleye pollock (*Theragra chalcogramma*) on the Bering Sea shelf and slope during summer 1999, 77 p. NTIS number pending.
- 124 ANGLISS, R. P., D. P. DEMASTER, and A. L. LOPEZ. 2001. Alaska marine mammal stock assessments, 2001, 203 p. NTIS number pending.
- 123 ROBSON, B. W. (editor). 2001. Fur seal investigations, 1999, 52 p. NTIS No. PB2002-100418.
- 122 SEASE, J. L., W. P. TAYLOR, T. R. LOUGHLIN, and K. W. PITCHER. 2001. Aerial and land-based surveys of Steller sea lions (*Eumetopias jubatus*) in Alaska, June and July 1999 and 2000, 52 p. NTIS No. PB2001-107277.
- 121 BRITT, L. L., and M. H. MARTIN. 2001. Data report: 1999 Gulf of Alaska bottom trawl survey, 249 p. NTIS No. PB2001-105324
- 120 LAUTH, R. R. 2001. The 2000 Pacific west coast upper continental slope trawl survey of groundfish resources off Washington, Oregon, and California: Estimates of distribution, abundance, and length composition, 284 p. NTIS No. PB2001-105327.
- 119 FERRERO, R. C., HILL, D. P. DEMASTER, P. S. HILL, M. M. MUTO, and A. L. LOPEZ. 2000. Alaska marine mammal stock assessments, 2000, 191p. NTIS No. PB2001-102015.
- 118 WILSON, C. D., M. A. GUTTORMSEN, K. COOKE, M. W. SAUNDERS, and R. KIESER. 2000. Echo integration-trawl survey of Pacific hake, *Merluccius productus*, off the Pacific coast of the United States and Canada during July-August, 1998, 103 p. NTIS No. PB2000-108482.
- 117 ORR, J. W., M. A. BROWN, and D. C. BAKER. 2000. Guide to rockfishes (Scorpaenidae) of the genera *Sebastes*, *Sebastolobus*, and *Adelosebastes* of the northeast Pacific Ocean, second edition, 47 p. NTIS No. PB2001-100757.
- 116 WION, D. A., and R. A. MCCONNAUGHEY (editors). 2000. Mobile fishing gear effects on benthic habitats: A bibliography, 163 p. NTIS No. PB2000-108106.
- 115 LAUTH, R. R. 2000. The 1999 Pacific west coast upper continental slope trawl survey of groundfish resources off Washington, Oregon, and California: Estimates of distribution, abundance, and length composition, 287 p. NTIS No. PB2000-106004.
- 114 SHAW, F. R., M. E. WILKINS, K. L. WEINBERG, M. ZIMMERMANN, and R. R. LAUTH. 2000. The 1998 Pacific west coast bottom trawl survey of groundfish resources: Estimates of distribution, abundance, and length and age composition, 138 p. + Appendices. NTIS No. PB2000-105410.
- 113 ROBSON, B. W. (editor). 2000. Fur seal investigations, 1998, 101 p. NTIS No. PB2000-104258.
- 112 YANG, M-S., and M. W. NELSON. 2000. Food habits of the commercially important groundfishes in the Gulf of Alaska in 1990, 1993, and 1996, 174 p. NTIS No. PB2000-103403.