

EXPLORATION AND RESOURCE UTILIZATION
IN NORTHWESTERN ARCTIC ALASKA BEFORE
1855

by

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FOREWORD

Field Studies

In June, 1959, I entered into a contract with the United States Atomic Energy Commission (Contract No. AT(04-3-315) to direct a programme of human geographical studies in Northwestern Arctic Alaska. These studies were part of the bio-environmental programme for Project Chariot. They were centred on the Eskimo village of Point Hope but included the villages of Noatak and Point Lay. Although the contract terminated on June 1st, 1961 I remained in arctic Alaska for an additional year of research.

During the summer of 1959 I undertook preliminary historical research at the Stefansson Collection, Dartmouth College, Hanover, New Hampshire. At the same time my field assistant, Mr. I. Thomas Stone conducted preliminary investigations in Kotzebue, Alaska. On August 27th, 1959 we joined forces at Kotzebue and moved to Point Hope on September 3rd. Mr. Stone completed his work with the research programme on September 28th. I resided at Point Hope until August 31st, 1962.

Field studies conducted during the three years of residence in arctic Alaska included numerous trips by dog team and boat throughout the region around Point Hope. Longer trips were made by dog team from Point Hope to Noatak in autumn, 1959, and by

skin boat from Noatak village to Kayruxtauvik Creek on the middle Noatak River, in summer, 1961. I was accompanied on the latter trip by Mr. H. Anthony Williamson who acted as field assistant for the human geographical programme from September 14th, 1960 to June 1st, 1961. Mr. Alan Cooke was field assistant from May 21st to September 20th, 1960. A number of other trips were made by light aircraft within the region from Point Hope to the upper Kukpowruk River and south to Kotzebue.

During the 24 months in which the human geographical programme for the Atomic Energy Commission was conducted, members of the programme travelled, for study purposes, about 1,700 miles by boat, 1,000 miles by air and 2,000 miles by dog sled. In the last year of field study, June, 1961 to September, 1962, several hundreds of miles were covered by boat and dog team.

Six printed reports were submitted to the Atomic Energy Commission by the human geographical studies programme (Foote, 1959), (1960a), (1960b); (Foote and Cooke, 1960); (Foote, 1961); (Foote and Williamson (1961)). These reports contain a total of 339 pages of text, 24 maps and seven diagrams. They may be obtained on inter-library loan from the Office of Technical Information, United States Atomic Energy Commission, Oak Ridge, Tennessee. In the reports the contemporary activity patterns of the Eskimos in Northwestern Arctic Alaska (Point Lay, Noatak and Point Hope) have been discussed.

In addition to active participation in contemporary Eskimo life, a secondary programme of historical studies was carried out. Over 200 Eskimo place names have been added to the map (Maps No. 25 and 26) and, for the first time, a student of human geography lived among the Noatak people for an extended period. For the first time, too, a historical study was conducted of the Naupaktomiut Eskimos of the lower Noatak River. Archaeological reconnaissance trips were made in the Point Hope region and along the lower and middle Noatak River. About 25 locations of archaeological importance were identified. A discussion of the region's recent history has been published (Ibid.) and an edited version is now in press (Foote and Williamson, 1965).

Library Research

After my return from Alaska in 1962 I conducted library research into published and unpublished materials related to the human geography of Northwestern Arctic Alaska at the following places:-

United States

University of Alaska Museum, College; The Stefansson Collection, Hanover, N.H.; Essex Institute, Salem, Mass.; Peabody Museum, Salem, Mass.; Free Public Library, New Bedford, Mass.; Old Dartmouth Historical Society, New Bedford, Mass.; Edgertown Historical Society, Edgertown, Mass.; Marine Historical Society, Mystic, Conn.; Providence Public Library, Providence, R.I.; Church Historical Society, Austin, Texas.

Canada

Arctic Institute of North America, Montreal;
Redpath Library, McGill University, Montreal,

Great Britain

Public Records Office, London; National Archives
Commission, London; National Manuscript Commission,
London; British Museum, London; Scott Polar Research
Institute, Cambridge.

Norway

Commander Christiansens Whaling Museum, Sandefjord.

Soviet Union

Arctic and Antarctic Museum, Leningrad; Arctic and
Antarctic Institute, Leningrad; Museum of Anthropology,
Leningrad; Museum of Ethnology, Leningrad; The Historical
Museum, Moscow.

In addition to this research I corresponded with the
following places :-

United States

C.L. Andrews Collection, Sitka, Alaska; Alaska
Historical Library and Museum, Juneau; Hawaiian and
Pacific Collection, University of Hawaii, Honolulu;
Library of Hawaii, State of Hawaii, Honolulu; The
Hawaiian Historical Society, Honolulu; The Bernice P.
Bishop Museum, Honolulu; State of Hawaii Public
Archives, Honolulu; Puget Sound Historical Society,
Seattle; Pacific Northwest Collection, University of
Washington, Seattle; Federal Records Center, Seattle;
California State Library, San Francisco; Huntington
Library, San Marino, Calif.; California Historical

Society, San Francisco; Maritime Museum, San Francisco; Bancroft Library, University of California, Berkeley; Pennsylvania Historical Society, Philadelphia; Carnegie Museum, Pittsburgh; The Mariners Museum, Newport News, Va.; National Archives and Records Service, Washington, D.C.; Department of the Navy, Washington, D.C.; The Smithsonian Institute, Washington, D.C.; The Library of Congress, Washington, D.C.; The New York Zoological Society, New York; Suffolk County Whaling Museum, Sag Harbour, N.Y.; Kendall Whaling Museum, Sharon, Mass.; Nantucket Historical Association, Nantucket, Mass.; Library of the Boston Athenaeum, Boston; New England Historic Genealogical Society, Boston; Museum of Comparative Zoology, Harvard University, Cambridge; Houghton Library, Harvard University, Cambridge.

Great Britain

National Maritime Museum, Greenwich, London; Royal Geographical Society, London; The Admiralty, London; The Royal Society, London; Hydrographic Department, London.

Other correspondence was also carried on with a number of persons interested in the history and geography of Northwestern Arctic Alaska.

ACKNOWLEDGEMENTS

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I wish also to thank the following persons, all of whom have contributed to this study. In Point Hope, Alaska, Jimmy Killigivuk, Tingook, Bob Tuckfield, David Frankson and Daniel Lisbourne; in Noatak, Alaska, Ezra Booth, Carl Luther, David Adams, Herbert Onalik, Edna Hunnicutt and Della Keats; in Hanover, New Hampshire, the late Dr. Vilhjalmur Stefansson and Mrs. Evelyn Stefansson Nef; in Austin, Texas, Dr. V. Nelle Bellamy; in Cambridge, England, Alan Cooke; and in London, England, Lieutenant Colonel M.E.S. Laws; and in Montreal, Miss Nora Corley and Mrs. Hilary V. Bignell. Particular appreciation is extended to Miss Susan Foster, who did the final typing. Mr. H. Anthony Williamson for his companionship on the Noatak River and helpful comments on the present manuscript, Miss Sheila K. MacBain who undertook the laborious job of editing the manuscript and finally Berit, my wife, who shared with me the fascination of arctic Alaskan life and the strains of preparation of this study.

Grateful acknowledgement is given to a McGill-Carnegie Arctic Scholarship for support of historical studies in Noatak,

Alaska. The United States Atomic Energy Commission deserves commendation for making possible the valuable work which was done under the bio-environmental studies programme for Project Chariot. Lastly, a large portion of this study would not have been possible without the financial support of the Conservation Foundation and the New York Zoological Society. I owe a special debt of gratitude to these two organizations.

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PREFACE

The following study intends to do two things. The first is to describe the extent and nature of geographical exploration in Northwestern Arctic Alaska before the year 1855. Most, but not all, of the sources of information on this period were located and inspected. I believe, however, that more historical documents exist, probably in private collections or little known archives which have not come to my attention. This is especially true for the voyages of Nicky Grey and John Meek, for the activities of Peter Dobell and his associates and for the important expeditions connected with the search for Sir John Franklin. It should be clearly understood that the historical research behind this study was most complete for the period up to 1855. There is a vast amount of historical data on the period after 1855. I have located many of the archives containing this latter information, examined some of the records and corresponded with numerous persons who own important private papers or manuscripts. This research, for example, has brought to light the Howard and Stoney papers, the manuscript written by James Allen, a contemporary of Charles Brower, and the diaries and letters of missionaries and whalers,

all of whom lived in arctic Alaska after 1885. To this must be added the documents relating to the history of whaling north of Bering Strait, a history which has never been written (Foote, 1964b). But to include these data in the present study would require a year or more of additional research. For this reason, and because events in Northwestern Arctic Alaska after 1855 properly belong to another era, I have chosen to prepare a second, companion study, which will deal with the region from 1855 to 1965.

The second part of the following study considers Eskimo resource utilization before 1855. This date was chosen because after that time the Eskimo hunting economy began to change as a result of contact with Europeans and Americans. The present study attempts to prove the truth of this statement. It seeks to establish a datum point from which changes in the Eskimo hunting economy can be measured.

To accomplish this, the second part of the study attempts to do two things. The first is to use historical information as a means of determining the composition and distribution of the Eskimo population. These same data are used to analyze the demography of three Eskimo groups which represent the major divisions of the traditional Eskimo hunting economy. They are

the Tigeragmiut of Point Hope who were a coastal people; the Naupaktomiut of the lower Noatak River who divided their time between the inland and coast; and the Noatagmiut, a group which spent most of each year in the central Brooks Range. The second is the attempt to determine the amount of wildlife the above mentioned groups might have used about 1850. In this case a theoretical harvest of animals and plants was constructed from a model based on the probable caloric needs of the people.

Credit must be given to those archaeologists who realized knowledge of the traditional Arctic Alaskan Eskimo aided in their interpretation of prehistoric evidence. The studies done by Froelich Rainey, Helge Larsen and J. Louis Giddings, Jr., on the traditional 19th century Eskimos are excellent. But they are incomplete. There is still a need for continued detailed research which will lead to answers about Eskimo life a century ago. Students who followed the above mentioned men have not filled this need. For the most part the anthropologists have neglected history. Charles Lucier (1958), for example, the first anthropologist to live for a short time with the Noatak River people, was apparently unaware what an important contribution to knowledge could be made by research into the history of the Noatagmiut and Naupaktomiut.

Until my studies of the Naupaktomiut and Noatagmiut in 1959-61, no one had visited the people in an attempt to record

their history (Foote and Williamson, 1961). Robert Spencer (1959) in his monograph on the north Alaska Eskimo gave little careful attention to written history, as he made no apparent effort to gather information from anything but easily available documents. Doris Saario, who conducted anthropological studies at Kivalina from 1929 to 1961 also gave little consideration to history. James Van Stone (1962b), in an excellent study of Point Hope, concentrated most of his work on the contemporary scene. The same is true of Frederick Milan's study of Wainwright (Milan, 1964). The result of all these studies is the paradoxical situation wherein we know a fair amount about the history of Northwestern Arctic Alaska before and after the 19th century but we know very little, in detail, about the 19th century itself. The following work is an attempt to contribute to our knowledge of this important historical period.

Within the past few years there has been a change in the type of human studies conducted in arctic Alaska. Some students have taken the advice of Margaret Lantis (1954) who, a decade ago, set the stage for a whole new era of scientific research. We have finally recognized the true value, indeed the necessity, of the ecological approach to human studies in the Arctic. And by so doing we have recognized the magnitude of the problems confronting us. The so-called "simple" Eskimo way of life

has become a complex of interacting factors ranging from solar radiation to kinship patterns.

At Point Barrow, Joseph Sonnenfeld (1957) has produced a searching analysis of changes in Eskimo life since the late 19th century. At Noatak, Edwin S. Hall, Jr., is presently undertaking a research programme aimed at using archaeological evidence as a basis for understanding the ecology of the mid-19th century Eskimos. This is a radical departure from most of the previous archaeological studies in the area because it is not primarily concerned with establishing a basic chronology of human occupancy in the region for the past thousand years, or the search for early man in North America. Finally, at Kivalina Ernest Burch is conducting a detailed investigation of kinship patterns combined with studies of the present and past Eskimo food gathering activities in an effort to understand an important, yet little known group, the Kivalingmiut.

DEDICATION

This work is dedicated to the memory of Vilhjalmur Stefansson. Like any man he was sometimes wrong. He, too, standardized errors. But, in the last analysis, his greatness overshadowed his faults. Stefansson understood and loved the north and perhaps for those reasons he was sometimes misunderstood and not loved. To me the following study has been an adventure into northern history and at least a faltering step in the direction of understanding the Eskimo hunter. Certainly Stefansson was one of the great northern historians and a true hunter.

P A R T O N E

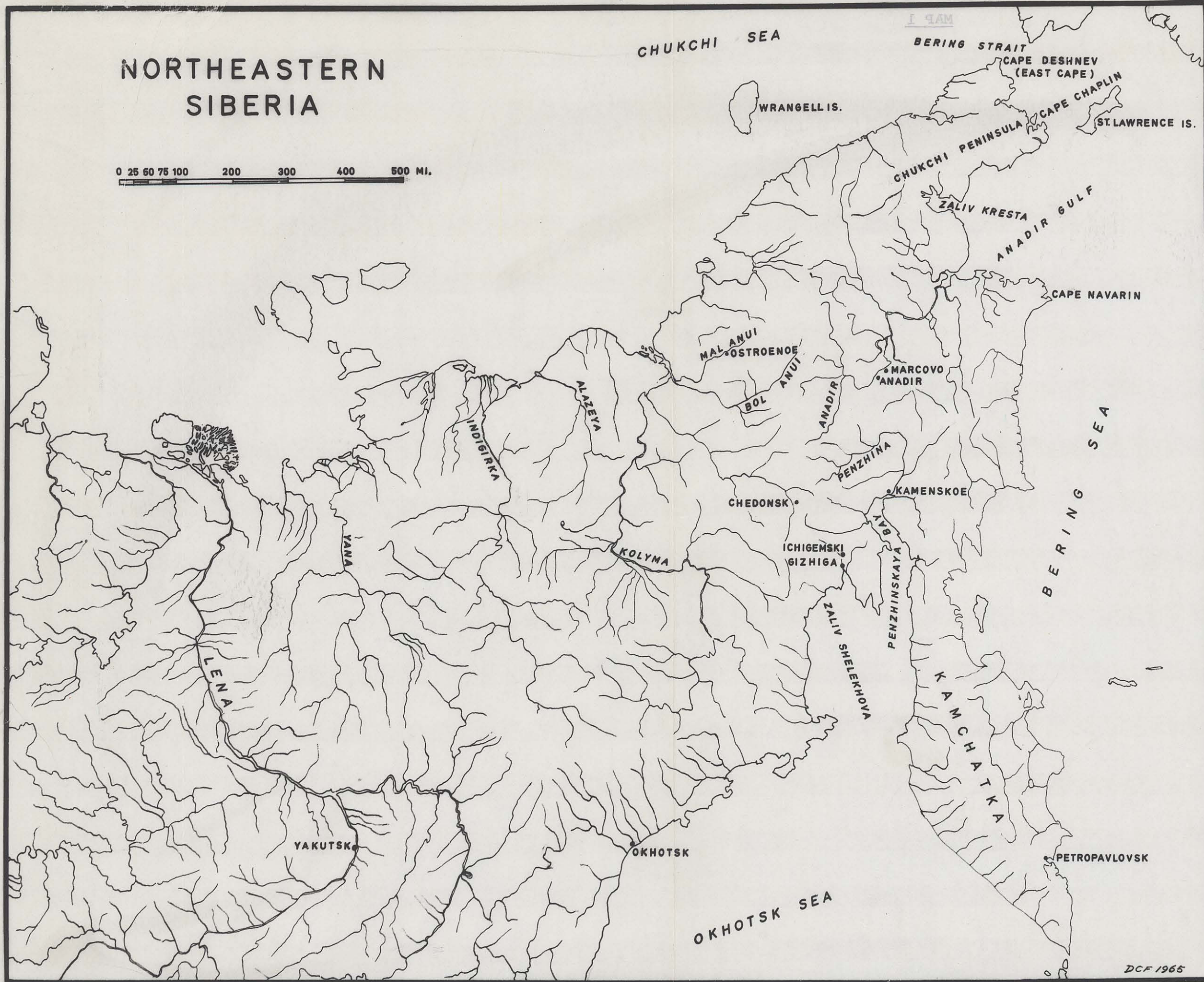
EXPLORATION IN NORTHWESTERN ARCTIC ALASKA

BEFORE 1855

MAP 1

NORTHEASTERN SIBERIA

0 25 50 75 100 200 300 400 500 MI.



CHAPTER 1

EASTERN APPROACHES

The history of geographical exploration in Northwestern Arctic Alaska began on a barren Siberian shore just east of the Kolyma River¹. There a group of Russian Cossacks watched apprehensively as Chukchi natives examined European trade goods spread out upon the sand. Because they were the first Russians to journey this far to the northeast, the Cossacks dared not approach the unknown inhabitants of the country. Instead, they waited until the native people exchanged trade offerings and departed. Left on the beach were large, heavy walrus tusks. The year was 1646 (Muller, 1761, 4).

Northwestern Arctic Alaska and the Chukchi Peninsula reflect each other's unique geographical position as the western extreme of the American land mass and the eastern extreme of Eurasia. Here, at Bering Strait, the two continents are only 46 miles apart. The strait has served as a bridge between east and west, as a boundary between north and south, as a gateway between the Atlantic and Pacific Oceans and as a wall between Russia and North America. The geographical exploration of, and historical events in, Northwestern Arctic Alaska cannot be understood without repeated consideration of these two obvious geographical facts; the region includes the western extremity of North America and the northeast coast of Bering Strait.

By 1630 Russians had reached the Lena River on their eastward push across Siberia. After an outpost was established at Yakutsk in 1632 the great northward swing of the Lena drew one segment of the Russian advance toward the Arctic Ocean. The Lena soon became the main route into northeastern Siberia. By 1636 boats were sailing from Yakutsk to the Arctic Ocean whence the Cossacks immediately ventured further east. The Yana, Indigirka, Alazeya and Kolyma were all discovered by these early explorers between 1636 and 1643 (Belov, 1956, 187). The Cossacks who stood on that lonely Arctic Ocean shore in 1646 were the first Russians to approach Northwestern Arctic Alaska from the west.

Simeon Deshnev, 1648.

Walrus ivory obtained during the first voyage east of the Kolyma in 1646 stimulated the Russians to further journeys. In June, 1647, the trader Fedot Alexeev and the Cossack Simeon Ivanof Deshnev sailed along the Arctic coast eastward from the Kolyma in four small boats. Stopped by sea ice in 1647 they repeated the voyage in 1648 with seven boats. Most of the party were lost possibly from attacks by hostile Chukchi natives or by shipwreck². Deshnev, however, reached the Anadir River after circumnavigating the Chukchi Peninsula³. The next year, 1649, he built an outpost on the Anadir some six miles above the

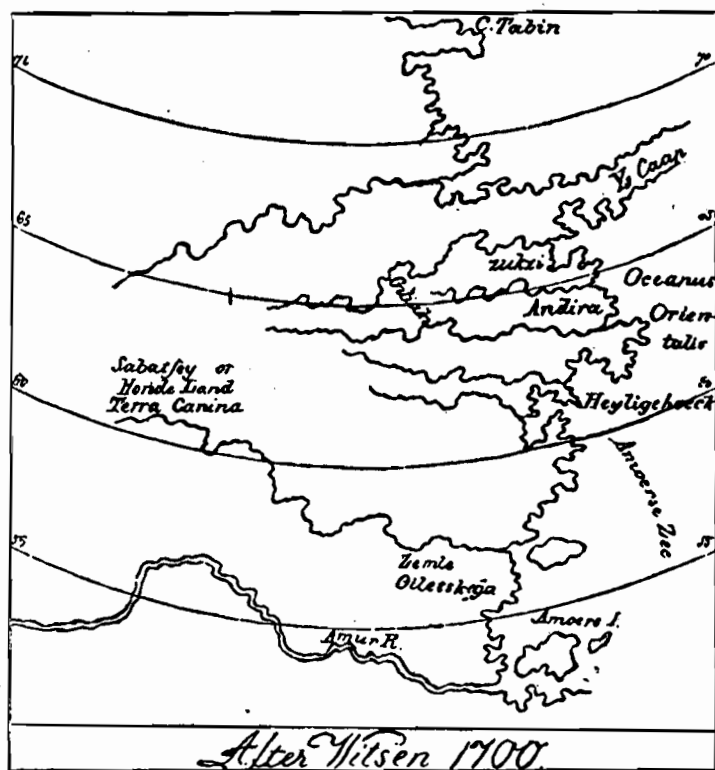
present village of Marcovo (Chard, 1960, 123). Other Cossacks, Motora and Michael Staduchin, linked the Anadir post to the Kolyma-Lena route by an overland journey in 1650 which took them up the Kolyma and Anui Rivers to the Anadir (Muller, 1761, 7). Deshnev, in the meantime, made several trips down the Anadir to hunt walrus at its mouth. He never retraced his route westward around the Chukchi Peninsula.

Knowledge of an overland route from the Kolyma to the Anadir was important because, by this means, the initial impetus for Russian expansion toward the northeast and Arctic Alaska was diverted toward the southeast and Kamchatka. In fact, more than 200 years were to pass before Deshnev's sea voyage was repeated⁴.

Early Russian Trading Routes and Posts

By 1675 the Russians had numerous small trading posts ringing the Chukchi Peninsula. Three stations were located on the Indigirka, one on the Alazeya, three on the Kolyma, one on the Anadir and one at Chedonsk (Golder, 1914, 28-29). There is no evidence that posts were built or maintained anywhere to the north or east of the Kolyma-Anadir overland route.

From their posts the Russians carried out a policy of commerce and forced tribute. Common trade goods were coloured glass beads, tobacco, kettles, and some iron implements such as lance points, knives and hatchets. Because the Chukchi remained



Ys CAAP IN PLACE OF THE RUSSIAN MAP-MAKERS
IMPASSABLE CAPE

*Reproduced through the courtesy of the American Antiquarian
Society*

Ys Caap in Place of the Russian Map-Makers Impassable
Cape (After Witsen, 1700) (Taken from Golder, 1914).

hostile it is doubtful whether the Russians willfully provided them with many weapons.

Just why these 17th century Russians did not continue an aggressive policy of exploration and conquest into the Chukchi Peninsula and Northwestern Arctic Alaska is not clear. It was probably a combination of circumstances. Extremely dangerous Chukchi natives discouraged the out-numbered Cossacks from building permanent settlements or from sending small exploration parties toward Bering Strait⁵. Sables, the most sought for fur product at the time, were scarce beyond the tree line which, essentially, followed the Kolyma-Bol Anui-Anadir line. In general, the early Russian pioneers confined themselves to the forested areas of northeastern Siberia. Finally, the idea of an impassible cape on the Chukchi north coast, east of the Kolyma, became firmly embedded in Siberian geographical lore⁶. Ys Caap, as illustrated on Witsen's map of 1700 (Map No. 2), or its equivalent, undoubtedly deterred many would-be adventurers from attempting a water route around the Chukchi Peninsula.

By the late 1600's the Russian frontier in northeastern Siberia had moved from the Anadir and western Okhotsk Sea coast to Penzhinskaya Bay and toward Kamchatka. As early as 1712 this new direction of interest led the Russians to seek trade routes less dangerous and arduous than the Lena-Kolyma-Anadir

passage (Golder, 1914, 105-106). In 1716 the Yakutsk-Okhotsk-Kamchatka route was accepted and soon became the principal trade connection for eastern Siberia. As a consequence the importance of the Anadir post began to decline. By 1740 the northern route was no longer in use (Krasheninnikov, 1764, 273). Shortly after 1759 Friedrich Plenisner reported that the Anadir fort was useless. He was then instructed to withdraw the Cossack garrison there, which he did in 1763 (Stejneger, 1936, 387).

In the same year a new fort was built at Ichigemski on the northern shore of Penzhinskaya Bay. Although this fort, and others at Kamenskoe and Gizhiga took over many of the activities previously carried on at the Anadir fort, the last named spot did not cease to be a trading centre of some significance⁷. In 1790 the Siberian merchant Alexander A. Baranof had a trade outlet at Anadir which the Chukchi plundered that same year (Tikhmenev, 1861, 38). In 1806 an inspector for the Russian American Company in Siberia noted that trade was still carried on at Anadir although it was unprofitable to do so (Ibid., 198). As late as 1821 the Anadir River was the site of an annual trading fair attended by Russian merchants and Chukchi natives (Wrangell, 1840, 115; Cochrane, 1824, 200). Despite this prolonged use of Anadir as a trade centre, Russian government officials resided at Ichigemski after 1763.

Vitus Bering, 1725-1729.

The gradual decrease in the importance of Anadir after 1716 did not mean the Russians lost interest in the unconquered and relatively unknown Chukchi Peninsula. Early in the 18th century Czar Peter the Great embarked on a policy of geographical exploration. In 1719 he sent men east to determine whether Asia and America were united. When this expedition failed to sail north and east from Kamchatka, Czar Peter organized a second party, sometimes called the Great Northern Expedition (Mirsky, 1948, 71). Captain Vitus Bering was put in command and ordered, in 1725, to sail from Kamchatka "along the shore which bears northerly and which (since its limits are unknown) seems to be a part of America. Determine where it joins with America, go to some settlement under European jurisdiction ..." (Golder, 1922, I, 11).

Bering sailed north reaching latitude $67^{\circ} 18'$, on August 16th, 1728. He was satisfied that Asia and America were separate continents (Map No. 4) although poor visibility prevented him from determining the exact outlines of any strait between the two land masses or the extent to which a peninsula might protrude from the Chukchi Peninsula's northern coast. While Bering's expedition was not completely successful it did represent the most northeastward exploration by Russians up to that time. The feat was not repeated by a fellow countryman

until Kotzebue crossed the 67th parallel in 1816.

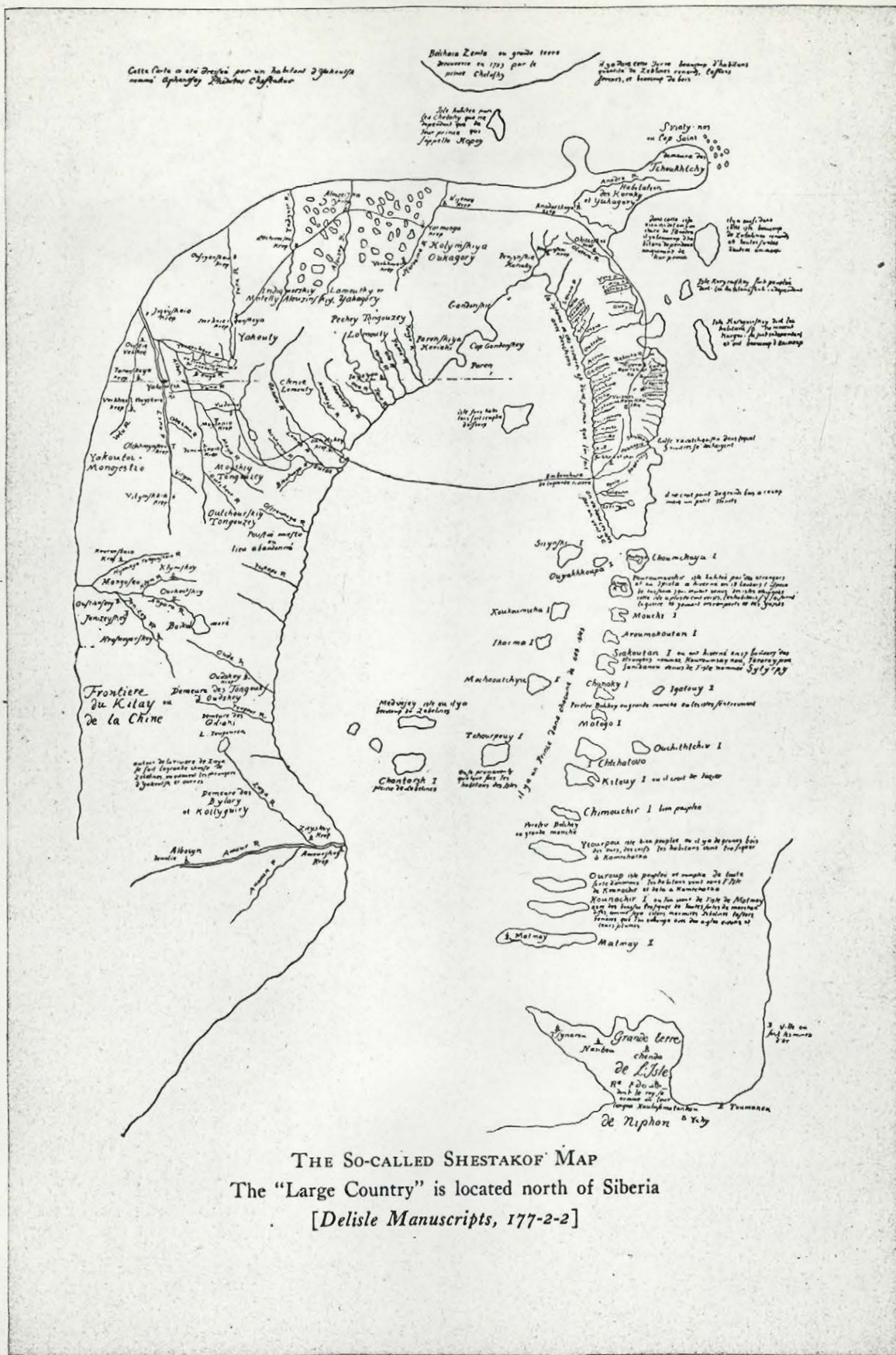
Afanase Shestakov, 1727-1730.

In March, 1727, even before Bering's expedition was finished, the government authorized a Cossack, Afanase F. Shestakov, to subdue the Chukchi people and search out new lands to the northeast (Golder, 1914, 153). To support his proposed venture Shestakov presented a map (Map No. 4) of an unusual shape but indicative of Russian knowledge of lands beyond the Chukchi Peninsula⁸.

Shestakov took over Bering's ships in 1729 at Okhotsk while Bering returned overland to St. Petersburg. Shestakov was killed by the Chukchi early in 1730 but two members of his expedition, Pavlutski and Gvozdev, successfully explored portions of northeastern Siberia and northwestern Alaska.

Dimitri Pavlutski, 1729-1731.

Captain Dimitri Pavlutski marched to the Anadir post on a mission similar to that of the Cossack Peter Popov who had gone down the Anadir River in 1711 in search of information about the Chukchi nation (Muller, 1761, 24-25). But unlike Popov, Pavlutski ventured north and east from the Anadir where he fought several military engagements with the natives in 1731. As a result of this campaign the Russians gained new knowledge of northeastern Siberia and some islands farther east.



Michael Gvozdev, 1729-1732.

Other members of the original Shestakov party sailed from Okhotsk to lower Kamchatka. In 1732, under the command of Michael Spiridonovich Gvozdev, they steered north to the Chukchi Peninsula. On August 21st, 1732 their ship apparently anchored just off the American coast opposite the Diomed Islands. Although none of Gvozdev's crew is known to have gone ashore, they may be considered the first Russians to reach the Alaskan mainland. But Gvozdev's discovery did not become immediately known to the government in European Russia. The map made by I. Fedorov and M.S. Gvozdev showing the discovery of 1732 was not printed until 1743 (Grekov, 1960, 53; Yefimov, 1964, maps 69 and 70).

Vitus Bering, 1733-1742.

While Pavlutski and Gvozdev were still in northeastern Siberia the Russian government commissioned Bering to return on a new voyage of discovery. The Second Kamchatka Expedition, as it has been called, was an ambitious plan to survey Russia's coastline from Archangel, on the White Sea, to Kamchatka and beyond. Of special interest was the shoreline east of the Kolyma because it was still not known whether an impassible promontory really existed in this region.

Bering's second expedition was unique in its time because it included personnel whose sole objective was the advancement of scientific knowledge. In this respect the expedition was the forerunner of modern scientific exploration in the Arctic. Scholars from the newly founded Imperial Academy of Sciences invited to take part were Gerhard Friedrich Muller, aged 27, Johann George Gmelin, aged 23, Georg Wilhelm Steller, also 23 and Stephen Petrovitch Krasheninnikov, aged 19.

From the moment advance parties left St. Petersburg early in 1733 the expedition was beset by delays which eventually prolonged some programmes for a decade. To the northeast Lieutenant Peter Lassenius sailed down the Lena in 1735 only to meet failure and finally death in his attempt to reach the Anadir River by sea. Dimitri Laptev took over this command but his efforts to push eastward around Baranov Cape proved fruitless. Laptev eventually travelled overland to the Anadir post by way of the Bol Anui and Angorka Rivers in 1741-42. His return trip the next year was by a similar route to the Kolyma⁹.

Meanwhile the scientists attached to the Second Kamchatka Expedition spent several years of study in the Yeniseisk-Irkutsk-Yakutsk region of eastern Siberia. Krasheninnikov was sent on to Kamchatka in 1737 but Muller and Gmelin, after a long sojourn in Yakutsk, began their slow return journey west¹⁰. It was during

his Yakutsk residence of 1736-37 that Muller uncovered the valuable reports by Deshnev describing his 17th century voyage around the Chukchi Peninsula. Until Muller's discovery the reports had lain forgotten in official archives (Muller, 1761, 2-3).

From these documents and other historical evidence about the Chukchi Peninsula and adjacent lands which he collected in eastern Siberia, notably in Yakutsk, Muller was convinced :-

"That there is a real Separation between the two Parts of the World, Asia and America; that it consists only in a narrow Streight; and that, within this Streight, one or more Islands are situated; by which the Passage from one of these Parts of the World to the other is facilitated" (Ibid., 27).

Muller believed his historical research showed conclusively that which Bering's first expedition had failed to prove; that America and northeastern Siberia approached very close to each other near the Chukchi Peninsula.

Georg Wilhelm Steller, travelling east to join the Kamchatka Expedition, met Muller and Gmelin at Yeniseisk in 1739. From January 20th to March 5th the three young men prepared for Steller's future studies in Kamchatka and the east. It is most probable that Muller told Steller of his Yakutsk research and his firm belief in the existence of a narrow strait between the Chukchi Peninsula and America (Stejneger, 1936, 156). Be this

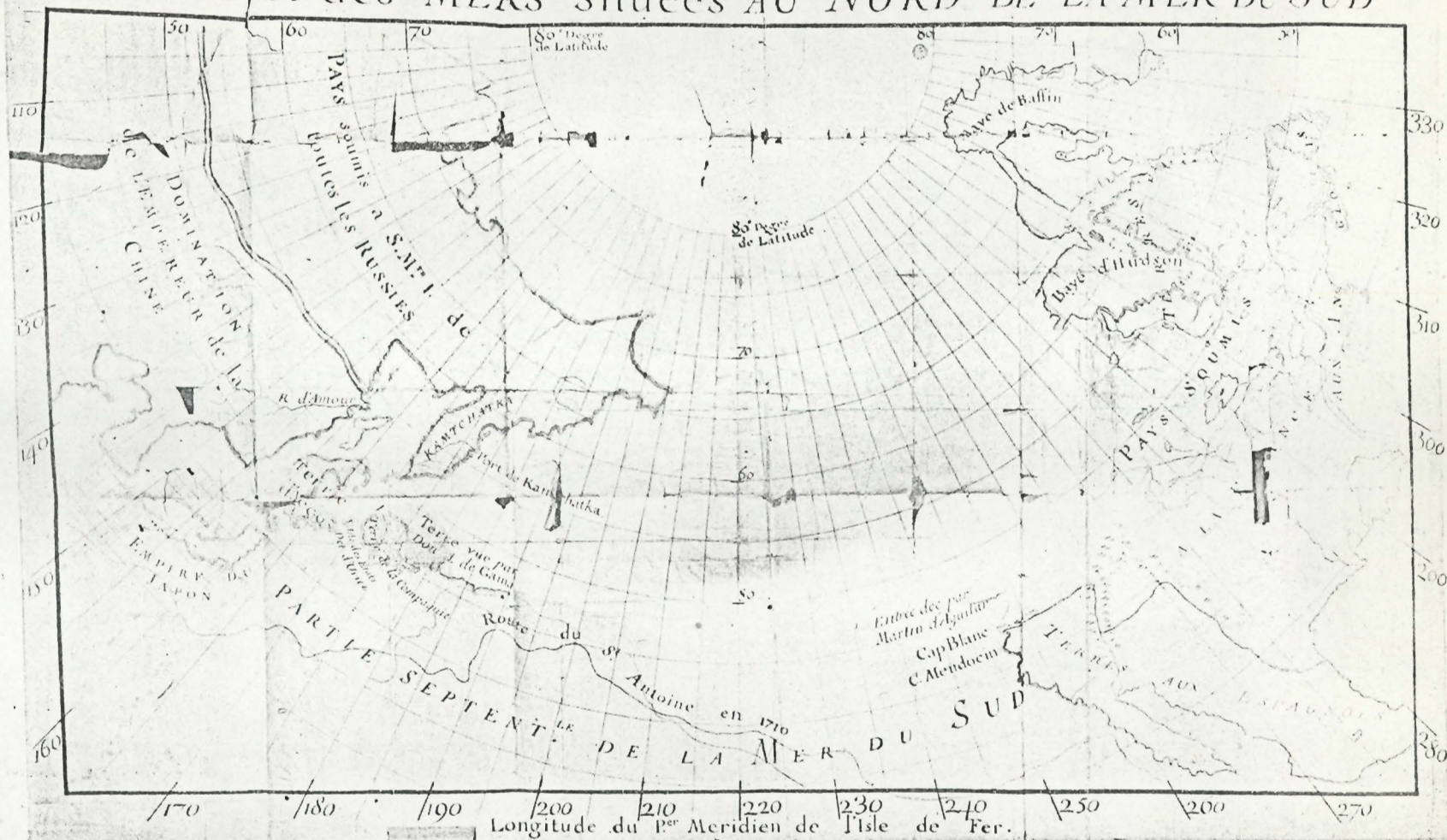
as it may, after his arrival in Kamchatka, in 1740, Steller began to assemble his own information on the Chukchi region and its relation to America¹¹.

In early spring, 1741, Captain Bering was at last ready to lead his own voyage of exploration toward America from Kamchatka. On the morning of May 4th Bering called his officers to a conference. Steller was among them. The question under consideration was which course should be steered toward America. Should they sail north and east, directly east or southeast?

The men were furnished with Delisle's map of 1732 (Map No. 5) which purported to represent "the true situation and distance of the eastern shores of Asia, known up to the present time, with that part of the continent of North America which is nearest to it" (Golder, 1914, 303). Although conservative this statement was true enough. But it did not, indeed it could not, include the newly acquired geographical knowledge obtained by Pavlutski, Gvozdev, Muller and Steller.

Of those present with Bering at that fateful meeting Steller was probably the only one with some knowledge of all the new reasons for believing there was a short, safe route to America via a narrow strait opposite the Chukchi Peninsula. Although Bering and his officers were not totally ignorant of this alternative route, they nevertheless discounted Steller's

CARTE DRESSÉE en 1731 Pour Servir a la recherche des TERRES et des MERS situées AU NORD DE LA MER DU SUD



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Photograph of a manuscript map prepared in 1731 at the request of the St. Petersburg Academy of Sciences by the French astronomer and geographer Joseph Nicolas Delisle, a member of the Academy, to show for Bering's impending expedition what was then known of the relation of eastern Asia to America (see footnote 148). The map is here reproduced for the first time, by permission of the Service Hydrographique de la Marine, Paris, in whose archives it is preserved in Portefeuille 172, Division 2, as Pièce 1. It measures 210 by 120 centimeters along the black-line border, exclusive of title, etc.

It was probably an exact copy of this map that Bering had with him on the voyage of 1741. Its conceptions had a dominating influence on his selection of a route, especially in the search for De Gama Land.

Manuscript Map, 1731, by Joseph Nicolas Delisle (Taken from
Colder, 1925).

arguments for a northward course (Golder, 1925, 98-99, 103-104). Moreover, an alternative plan to return to Kamchatka from America by way of a narrow northern strait was not undertaken. Had Steller's advice carried the day the history of Northwestern Arctic Alaska could have been much different. Bering Strait and not the Aleutian Islands might have been the gateway for Russian expansion into America. But on that May morning in 1741 Bering sailed southeast, and not northeast.

Survivors of Bering's last voyage arrived back in Kamchatka in 1742. They had discovered a ready source of sea otter and fox skins on the Aleutian and Commander Islands. This knowledge and the relative nearness of the islands provided the stimulus and means for subsequent Russian movement into North America. In the decades that followed, countless fur traders and adventurers sailed from Kamchatka to the newly discovered lands and their promise of wealth. Interest in the northeast declined as a result. Even the enthusiastic Steller, who planned a scientific trip to the Anadir and Kolyma in 1744, apparently gave up the idea upon learning of Laptev's successful 1741-42 traverse of the same region (Stejneger, 1936, 390, 407-409).

The state of Russian geographical knowledge of the Chukchi Peninsula and adjacent Northwestern Arctic Alaska, at this time, is clearly illustrated by the 1746 general map of the northern and eastern coasts of the Russian Empire (Yefimov, 1964, map 111)

and Muller's 1758 map (Maps Nos. 6 and 7). The northern coast of the Chukchi Peninsula was still unknown and encumbered by a mythical cape. On Muller's map the northwestern Alaskan coast was a reasonably good assumption based on native Chukchi reports and the observations of Bering and Gvozdev¹².

Nikolai Daurkin, 1763-1765.

For nearly two decades after the Second Kamchatka Expedition there was little or no Russian exploration toward the northeast. Activity began again in 1760 when Friedrich Plenisner went to the Anadir and Kolyma posts to learn more about the Chukchi and their land. His best source of information was a native Chukchi, Nikolai Daurkin, who after spending some years in close contact with the Russians returned to his homeland for a two year tour of inspection in 1763-65 (Coxe, 1787, 235). The substance of Daurkin's reports was summed up by Coxe as follows :-

"That Tschukotikoi-Nos is a very narrow peninsula; that the Tschutiki carry on a trade of barter with the inhabitants of America; that they employ six days in passing the strait which separates the two continents; that they direct their course from island to island; and that the distance from one to the other is so small, that they are able to pass every night on shore. More to the north he described the two continents as approaching still nearer to each other with only two small islands lying between them". (Ibid., 1787, 236-237).

From one of Daurkin's reports, published by Pallas in 1781 (in Masterson and Brower, 1948, 65-66) it is not wholly clear

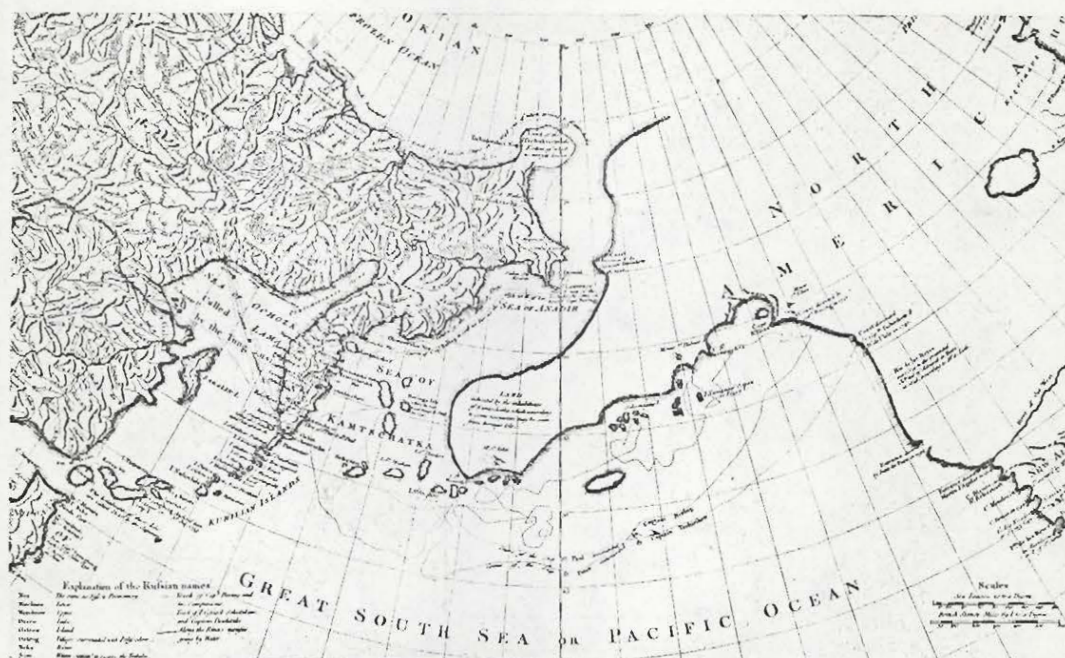
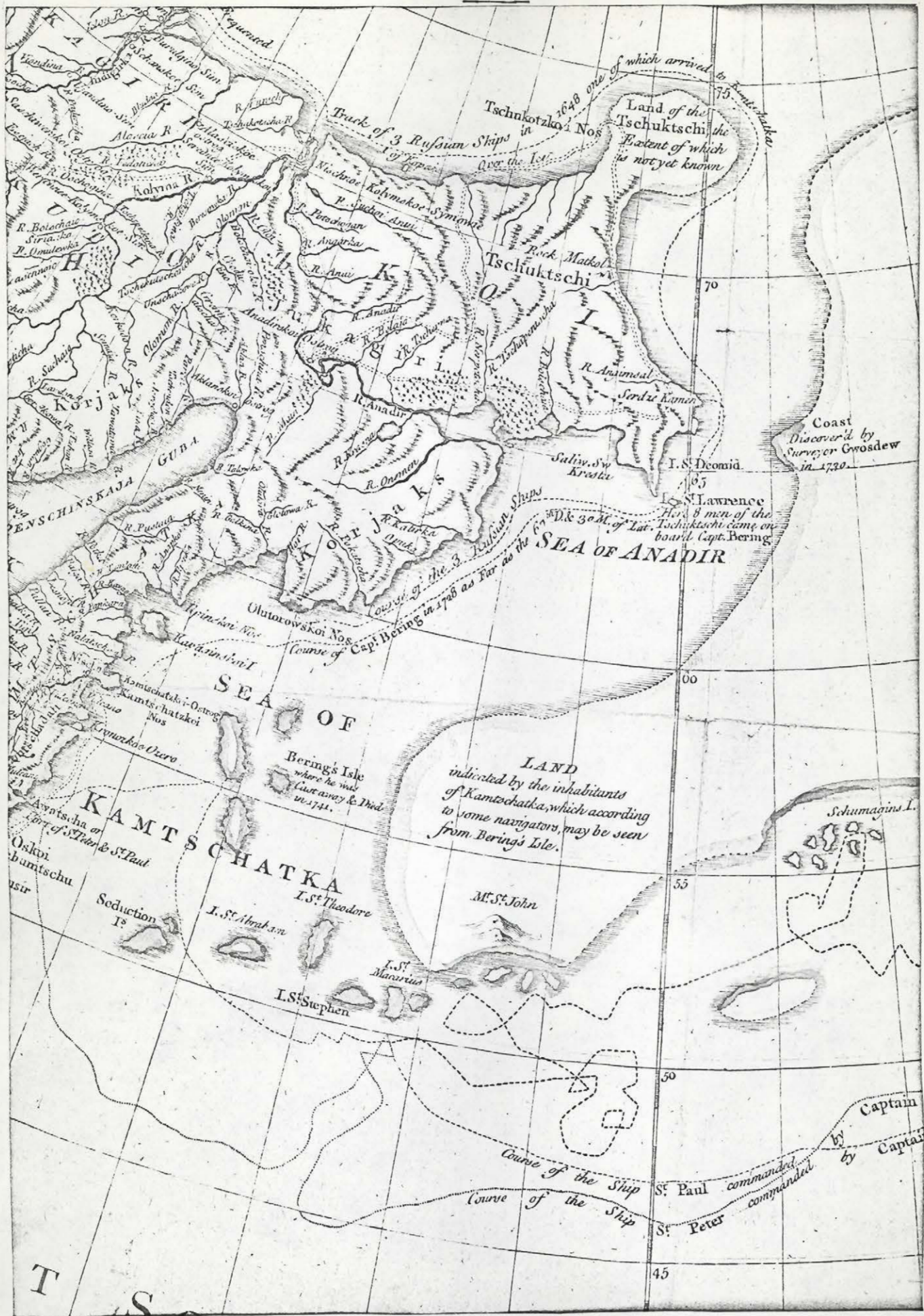


FIG. 14—Map of the North Pacific region by the St. Petersburg Academy of Sciences, 1758, incorporating the results of Bering's two expeditions and illustrating the conception of the time (reduced section from redraft in Jefferys' "Voyages from Asia to America," London, 1761, translated from G. F. Müller). According to this conception, which was also held by Steller, the mainland of North America extended close to Asia in the form of a wide projecting land mass.

The map also illustrates the conception of Chukchi Promontory as a great protuberance to the north of and beyond East Cape (see, above, footnote 11).

Map of the North Pacific, 1758 (Taken from Golder, 1925).



Detail Map of Bering Strait and Northwestern Arctic
Alaska, 1758 (Taken from Muller, 1761).

whether he reached the Diomed Islands during his 1763 to 1765 trip. Said Daurkin :-

"In October, when the ocean between the Chukchi Peninsula and the islands that lie opposite became covered with ice, I asked for a team of reindeer and a sledge; and in company with a Chukchi who (fortunately for me) believed that he was a relative of mine, I crossed to the first island, taking only seven or eight hours to go over the ice, though in summer a whole day is needed for rowing from this island to a second". (Pallas, 1781, Ibid., 65).

In the same report Daurkin obviously referred to America as located "across from the end of the Chukchi Peninsula" and "it is possible to row across from the Chukchi coast to the nearest coasts of this country in one day". One explanation of Daurkin's seemingly contradictory statements on the length of time needed to row across Bering Strait is that he did not visit Big Diomed Island by reindeer sled. Rather, he travelled to Arakamchechen or Ittigran Island, just north of Cape Chaplin. Or he sledged from headland to headland on the bay ice along the Chukchi coast. It is very improbable that newly formed moving sea ice would allow sled travel across Bering Strait in October or even November. In contrast, during these months one might expect smooth bay ice to form between the above named islands and the Chukchi mainland. Apparently Pallas himself did not believe Daurkin reached the Diomedes since he credits Ivan Kobelev, in 1779, as the "first who crossed from the Chukchi Peninsula to the

islands in the strait ... and who from the islands viewed the coasts of both continents". (Pallas, 1783, in Masterson and Brower, 1948, 96). In any event, as a result of his journey Daurkin prepared a detailed map, dated 1765, of the Chukchi Peninsula and the nearby coast of northwestern Arctic Alaska (Yefimov, 1964, maps 128 and 129). (Map No. 13).

Ivan Sind, 1765-1768.

During Plenisner's time two other Russian expeditions set out to investigate the northeast by sea. A Siberian merchant, Shalaurof, tried unsuccessfully in 1761-62 to sail eastward from the Kolyma to Bering Strait. On a second attempt in 1764 his party perished near Cape Schelagskoie (Wrangell, 1840, 356-7)¹³. A year later Lieutenant Ivan Sind sailed from Okhotsk on a journey of exploration. One cruise, in 1767, took him north through the Bering Sea to a landfall on the Alaskan mainland of western Norton Sound near Cape Rodney¹⁴. (Coxe, 1787, 223) (Map No. 8). But the great stimulus for renewed Russian interest in northeastern Siberia and northwestern Arctic Alaska came from a new, yet not unexpected direction, England.

James Cook, 1776-1779

On July 6th, 1776, the British Admiralty commissioned Captain James Cook to sail the sloops Discovery and Resolution in an attempt "to find out a Northern passage by sea from the

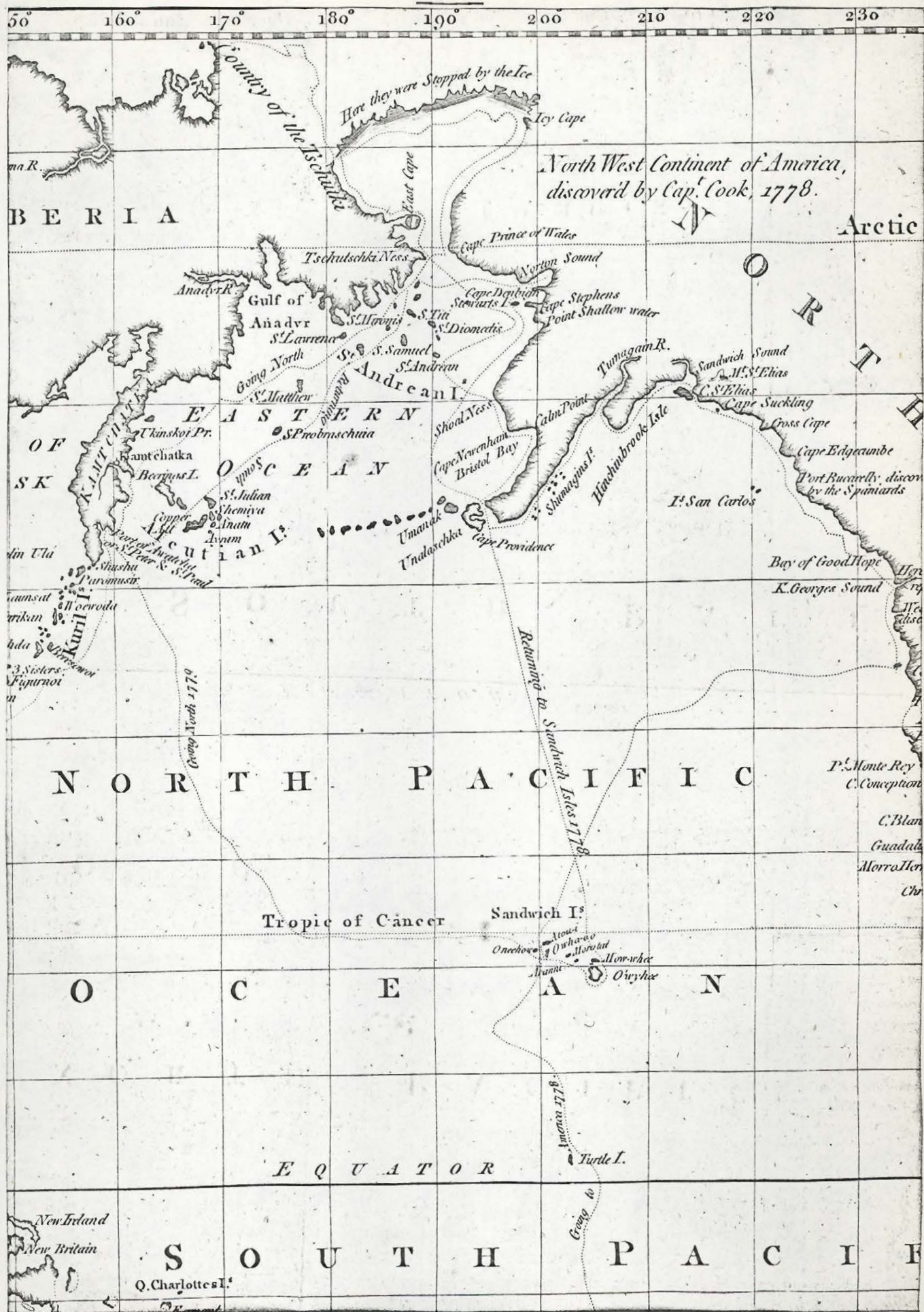


Chart of Sind's Voyage (Taken from Coxe, 1787).

Pacific to the Atlantic Ocean" (Cook, 1784, I, xxxi). In addition, Cook was instructed to compile accurate geographical information about all areas he visited and to take possession of those lands not already discovered or visited by any other European power (Ibid. I, xxxiv).

The Resolution, commanded by Cook and the Discovery, under Captain Charles Clerke, arrived off the northwestern Alaskan coast at Cape Rodney in western Norton Sound on August 5th, 1778. From here the two vessels proceeded north, touched at the Chukchi Peninsula and then accurately surveyed the limits of Bering Strait from East Cape to Cape Prince of Wales. (Map No. 9).

Sailing northeast along the Alaskan coast on August 13th, Cook failed to observe a large sound about latitude 67 degrees north. Had he done so, it is certain the area would have been carefully investigated as a possible eastern route toward Hudson's Bay. On the 14th Cook sighted the northwestern Alaskan coast near the present village of Kivalina (Maps Nos. 10 and 18) which he called Point Mulgrave (Ibid. III, 454)¹⁵. Hampered by adverse weather and sea ice Cook continued north to 70° 41' latitude before pack ice forced him back to a landfall which he called Icy Cape, on August 18th. Still obstructed by ice and poor visibility Cook sailed south along the Alaskan shore for three days until he sighted and named Cape Lisburne (Ibid. III, 461)¹⁶. From here he directed the ships westward to explore the



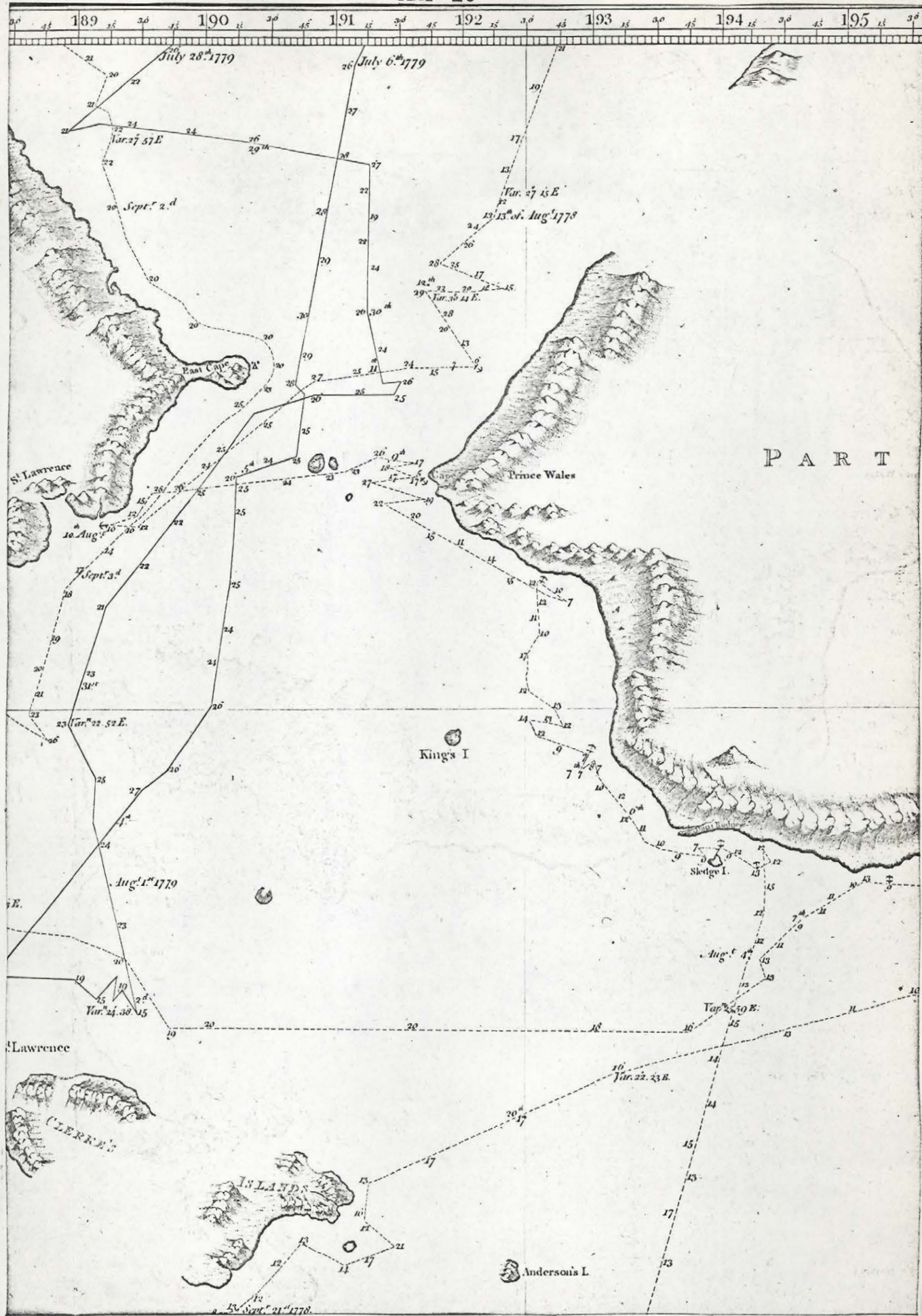


Chart of Bering Strait (Taken from Cook, 1784).

ice front and subsequently the northern Siberian coast. The Resolution and Discovery returned to Norton Sound early in September before they turned south for the Hawaiian Islands. The extended survey of Norton Sound by Cook was largely motivated by Ya. Ya. Von Staehlin's inaccurate map of 1774 (Map No.11). The English wished to prove conclusively that Von Staehlin's "Island of Alaska" did not exist¹⁷.

Cook's tragic death at the hands of some Hawaiian islanders that winter did not deter the expedition. It returned to Northwestern Arctic Alaska in early summer, 1779, commanded by Captain Clerke. But Clerke met with less success than Cook in penetrating the northern ice. By July 6th the ships had passed through Bering Strait and prepared to chart the Alaskan coast between latitudes 68 and 69 degrees; an area not observed the previous year. It is curious that Clerke, like Cook, made no apparent effort to trace the Alaskan shore between 66 and 67 degrees and thereby discover the entrance to Kotzebue Sound. Kotzebue (1821, I, 199) concluded that only ships steering near shore in five fathoms or less, would sight the sound's entrance. Cook and Clerke chose to weather the coast in about 17 to 19 fathoms.

South of Point Hope, a low spit which remained unseen, Clerke's vessels met impenetrable sea ice on July 7th. This was no doubt landfast ice and pack ice which accumulates along the south shore of Point Hope until early July. Then, for two

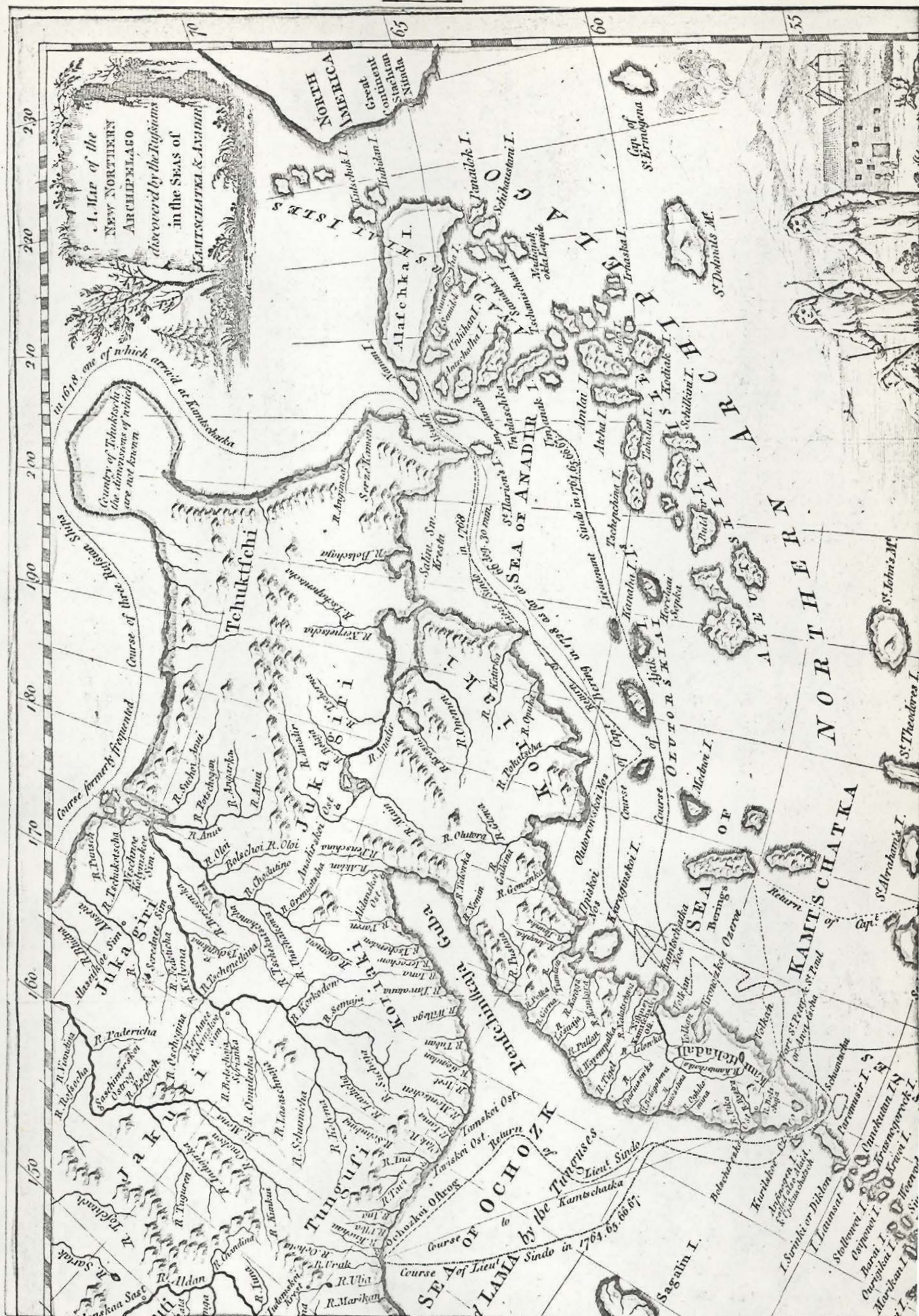


Chart of Sind's Voyage (Taken from von Staehlin, 1774)

weeks the Englishmen tried in vain to find a clear passage through unbroken pack ice which stretched westward from Icy Cape (King, in Cook, 1784, III, 245-254). Captain Clerke finally decided to send a party ashore in Arctic Alaska but ice off Cape Lisburne frustrated the attempt made on July 21st, 1779. After this the two sloops slowly worked their way south through Bering Strait and began the long trip home to England. Unfortunately the Arctic cruise of 1779 was hampered by the loss of Cook and poor health of Clerke who died at the age of 38 on August 22nd, 1779.

Cook's voyage through Bering Strait was a great accomplishment but only a limited success. The British showed skill and courage in their ability to navigate the unknown, dangerous Chukchi Sea. They were only stopped after a painstaking search for some pathway through the northern ice. The meticulous survey by the British seamen accurately determined the relation of America to Asia. And their repeated failures to proceed either northeast or northwest showed the improbability of an assured, ice-free route from the Pacific to the Atlantic through Bering Strait.

The absence of an energetic programme to land and lay claim to Northwestern Arctic Alaska for the British Crown stands in sharp contrast to the determined efforts made against the sea ice barrier. Arctic Alaska was, after all, a "land not

discovered or visited by any other European power". Strangely enough, the British went ashore only at points already known to the Russians; the Chukchi Peninsula and Cape Rodney. Lack of a sheltered anchorage, ignorance of how a native population might receive a shore party, occasional belts of sea ice along the shore, and the desire to push north as quickly as possible are all reasons why no British sailor set foot on Alaskan soil north of Bering Strait in 1778 or 1779. Had Cook or Clerke discovered Port Clarence or Kotzebue Sound there is little doubt that the ships would have anchored and sent men ashore.

As a result of Cook's discoveries most European scholars accepted Asia and America as separate continents. But this was not known absolutely. Burney (1819), who accompanied Cook in 1778-79, was one of those who retained the old idea that an impassable landmass located somewhere to the north joined Siberia to Alaska. To answer the question once and for all, precise maps were needed for the entire northern Chukchi Peninsula and the Alaskan coast northward from Icy Cape.

Notes on Chapter 1.

1. This study is concerned only with the history of geographical exploration in Northwestern Arctic Alaska since the 17th century. It makes no particular reference to possible European and Asiatic knowledge of the region which might have been gained from actual exploration or through contact along extended trade routes before the year 1646.

Whenever possible the spelling of Russian place names has been taken from current National Geographical Society maps. In the case of old names no longer in use the original name was converted from the Russian alphabet according to the phonetic system adopted by the American Geographical Society. The spelling of Russian proper names was taken from the standard reference works listed in the text, or when necessary, from the original Russian spelling using the American Geographical Society system mentioned above.

2. Muller (in Golder, 1914, Appendix A, 281) repeats the tale that some of the lost party eventually perished in Kamchatka. Sauer (1802, 258) cites Kobelef's story wherein the lost men reached Northwestern Alaska near Port Clarence. Here they built houses and survived for many

years. The myth of a lost Russian colony in northern Alaska persisted down to the mid-19th century.

3. For the complete text of Deshnev's report see Golder, 1914, 270-287. Golder is one of several scholars who doubt that Deshnev actually reached the Anadir by sailing around the Chukchi Peninsula.
4. Stejneger (1936, 99) incorrectly states that D. Laptev's survey, from 1736 to 1741, "demonstrated the existence of a continuous coast line from the White Sea to Bering Strait, and proved the possibility of a passage by water in favourable seasons". In fact, after several attempts to sail eastward from the Kolyma, Laptev, in 1741, travelled overland to the Anadir by way of the Bol Anui and Angorka Rivers. This is correctly stated by Stejneger (Ibid., 408-409).
5. In the 1670's there were only 14 Russians stationed at Jigansk, seven at Olenesk, 16 on the Yana, an equal number on the Indigirka, 10 on the Alazeya, 20 on the Kolyma and 16 on the Anadir (Gurvich, 1963, 85). About this time the native population of the Chukchi Peninsula was approximately 4,000 Eskimos and 2,000 Chukchi (Dolguikh, 1960, 576).

6. The reader is directed to Leo Bagrow's excellent discussion of the early cartography of northeastern Siberia and the "compulsory cape" or stone barrier eastward from the Kolyma (Bagrow, 1952, 83).
7. Pallas, in 1781, said the Anadir post was destroyed in 1763 (Masterson and Brower, 1948, 65).
8. I.B. Gomana published a map entitled "Kamchatka" in the "Grosser Atlas", 1725. Shestakov's map was printed in the same year. The Gomana map shows the "Nort See" north of the Chukchi Peninsula, a large island running north and south where Northwestern Alaska is located and two small islands between the Chukchi and Alaskan coast (Grekov, 1960, 27; Yefimov, 1964, map 58).
9. For a map of the exploration carried out by Lassenius and D. Laptev, see Grekov (1960, 98-99) and Yefimov (1964, map 88).
10. For maps of the travels by Muller and Gmelin see Grekov (1960, 135). Krasheninnikov's journeys are mapped by Grekov (1960, 143).
11. Golder (1925, II, 103) says that Steller's historical account of the Chukchi region was never published and no record was made of its arrival at the Imperial Academy.

Krasheninnikov was acquainted with Steller's work however, and he seems to have incorporated some of it in his own study of Kamchatka (1764).

12. In 1768 the English geographer Jefferys published a map titled "The Great Probability of a Northwest Passage". On this map northern Alaska was drawn according to Muller's 1758 map and information taken from older Japanese maps. (Thomkins and Moorehead, 1949, 66).
13. Until 1823, when Wrangell's party discovered positive remains, the fate of Shalaurof's expedition was unknown.
14. Von Staehlin (1774, 13-14) gave quite a different account of Sind's voyage than Coxe. Said Staehlin, "Lt. Syndo" sailed north from Kamchatka in 1765 and "by degrees discovered a whole Archipelago of islands of different sizes, which increased upon them the farther they went between the 56th and 67th degrees of north latitude; and they returned safe in the year 1767". Staehlin admitted (Ibid., 15-17) that he could not be responsible for the accuracy of geographical locations mentioned with respect to Sind's discoveries because the latter had no astronomer or qualified scientist on board his ship. Nevertheless, Staehlin published a map (Map No. 11) which shows a curious

conglomeration of islands northeast of Kamchatka. It also notes "Syndo's" return journey in 1768, not 1767 as Staehlin records in the text. This map, which has been called a "cartoon" was believed by Staehlin to be the best available at its time of publication. In 1767, however, F. Vertlugov made a map of Sind's voyage (Grekov, 1960, 195; Yefimov, 1964, map 138). But the exact nature of Sind's discoveries remains uncertain. Okun (1951, 10) stated unequivocally that "Sind sailed off far to the North, to latitude $64^{\circ} 50'$, but did not see the shore of America".

Other evidence suggests that in 1766 Sind sailed as far north as 67 degrees (Tompkins and Moorehead, 1949, 238-239). It is not clear whether Sind's voyage might have been related to a plan by Empress Catherine to complete the mapping of the northern and eastern coasts of Siberia. The official expedition under Krenitsyn and Levashev, in 1768-69, and sanctioned by Catherine, did not carry out the far northern exploration (Tompkins, 1955, 21).

15. Cook's description of Point Mulgrave as a lowland backed by higher hills could be true of any landfall from 67 to 68 degrees north. In 1816 Kotzebue located Cape Mulgrave further south than Cook's original landfall. Beechey, in 1826, located the Mulgrave Hills between the point

and cape named by Cook and Kotzebue. Baker (1902, 291) does not elaborate on the source name for the Mulgrave Hills but it is probably Constantine John Phipps, Lord Mulgrave.

16. Cook spelled the name Lisburne, not Lisburn or Lisbourne as it appears on some maps. The source name for the cape is apparently unknown (Baker, 1902, 267).
17. The idea of an island where the Seward Peninsula is now situated was resurrected in 1821-22 by Khramchenko and Etolin who believed Golovin Bay and Shishmaref Inlet were joined by a strait. A second large bay joined this strait from the southwest (Lazaref, 1950, map 320).

CHAPTER 2

THE UNKNOWN SHORES

During the late 18th century British exploration from the east and Russian from the west reached the great arc of the North Pacific. But Alaska, north of Bering Strait, remained unclaimed by either nation. It lay, a small strip of charted coast, isolated from the east and west by the unknown northern shores of the Chukchi Peninsula, and America west of the Mackenzie River. Like magnets these unexplored shores drew the two nations toward Northwestern Arctic Alaska. Perhaps here would be found the solution to the Northwest and the Northeast Passages.

Ivan Kobelef, 1779.

The results of Cook's last voyage were received in St. Petersburg with great interest. In fact, the Russians may have learned about the expedition in detail before the British Admiralty did because Cook's dispatches were sent overland from Petropavlovsk. It is, perhaps, no coincidence therefore that the Cossack Ivan Kobelef was sent to Bering Strait in 1779. Kobelef travelled overland from Ichigemski to East Cape and the Diomed Islands where, in late July, 1779, his Chukchi guides refused to allow him to continue into northwestern Alaska. (Pallas, 1783,

in Masterson and Brower, 1948, 94). Except for Kobelef's survey however, the Russian government neglected to capitalize on Cook's discoveries until autumn, 1784, when a party was dispatched to northeastern Siberia and northwestern Alaska. Lieutenant Joseph Billings, formerly astronomer's assistant on Cook's Arctic cruise of 1778-79, was selected as commander.

Joseph Billings, 1785-1792.

In many respects Billings' expedition was similar to the Second Kamchatka Expedition under Bering. By secret order Billings was directed by the Empress on "an expedition of discovery to the most eastern coasts and seas of Her Empire; for the exact determination of the longitude and latitude of the mouth of the river Kovima, and the situation of the great promontory of the Tshutski, as far as the East Cape; for forming an exact chart of the islands in the Eastern Ocean extending to the coast of America; in short for bringing to perfection the knowledge acquired under her glorious reign of the seas lying between the continent of Siberia and the opposite coast of America" (Sauer, 1802, Appendix V, 29)¹. Also like Bering's last journey, the large-scale operation under Billings was a prolonged affair plagued with delays, mismanagement of logistics, and outright dishonesty by local Siberian Russians and natives. Under these circumstances it is no surprise that nine years passed before the

expedition ended. The Second Kamchatka Expedition under Bering also lasted for nine years.

Billings left St. Petersburg on October 25th, 1785 and arrived in the port of Okhotsk on July 3rd, 1786. From there he travelled the long, difficult overland route to a trading post on the upper Kolyma River where he spent the winter. Late in May, 1787, his party sailed down the Kolyma and started eastward along the coast. But on July 25th Billings became convinced that further progress was futile. At this time several members of his party wished to continue east in small boats but Billings frustrated the plan (Ibid., 77-78). He turned back just east of Barannoi Kamen ($69^{\circ} 35' N$; $168^{\circ} 54' E$). He had failed in his first attempt to circumnavigate the Chukchi coast.

Not until mid-1789 was Billings prepared for a second trip north, the intervening two years having been devoted to various tasks in Yakutsk, Irkutsk and Okhotsk. In June the departure of the expedition from Okhotsk was marred by the loss of one ship, the Good Intent, on the first day. Despite this setback the men eventually reached Kamchatka where they remained until the following summer when Billings made accurate charts of the Aleutian Islands. Finally, on July 8th, 1791, he steered northward from Kamchatka toward Bering Strait (Map No. 12).



Bering Strait (Taken from Sauer, 1802).

Three weeks later, on July 28th, Billings reached Cape Rodney where he landed and met briefly with a few native Alaskans. His ship, Glory of Russia, then turned west to anchor off the Chukchi shore on August 4th. Here Billings transferred to 15 native skin boats belonging to a Chukchi party engaged to take him farther west. They departed on August 13th for a survey of the northern Chukchi coast while the ship returned to Kamchatka². But when Billings arrived at the Angarka River, near its confluence with the Bol Anui, on February 15th, 1792, he could only announce his failure to survey the northern coast. Instead of travelling along the coast, as Billings desired, the rebellious Chukchi left their boats just west of East Cape and continued on an inland course by reindeer sled. Neither by land nor by sea had Billings completely accomplished his northern mission³.

Grigory I. Shelikhov and the Russian American Company

Whereas the St. Petersburg government was sluggish in its attitude toward exploration and development in northwestern Alaska, a few Siberian merchants were not. One of these men was Grigory Ivanovich Shelikhov who began to trade in the northern Pacific in the late 1770's and had risen to prominence and wealth by the time of Billings' arrival in Alaska. Shelikhov was a shareholder in many fur gathering expeditions to the Aleutian Islands and American mainland. Together with another Siberian

trader, Golikov, he maintained permanent outposts in these parts of Alaska.

An energetic and imaginative entrepreneur, Shelikhov sought to expand his commerce southward to the Amur River and north-eastward to Arctic Alaska. On February 11th, 1790, he proposed an expedition "for the purpose of learning about the shores of the American continent that extends toward the North Pole ... in order to dispatch ships directly from the mouth of the Lena, Indigirka or Kolyma to the opposite American shores, for measuring the width at that point and for studying the routes in that part of the Arctic Sea and the Bering Strait" (Shelikhov, 11, Feb, 1790, in Okun, 1951, 31, nt. 13). Quite clearly Shelikhov wanted to establish a logical, direct route from the Lena River, and its already well developed communication links with European Russia and China, to America by way of Bering Strait.

This particular plan did not materialize. But Shelikhov refused to abandon his ideas for northward commercial expansion in Alaska. In 1794 he formed the North American Company, or Northern Company as it has been called (Ibid., 34); an enterprise designed to create permanent settlements in northern Alaska. In September, 1794, 70 men of the company were sent to Alaska and the next year 30 more men followed them. Their theoretical goal was the extension of Shelikhov's hunting claims northward from

Unalaska, in the Aleutian Islands to the Arctic Ocean. From here the company would explore a trade route around Northwestern Arctic Alaska to Baffin Bay (Tikhmenev, 1861, 55).

As with many of Shelikhov's farsighted proposals, there is no evidence that the North American Company succeeded, indeed even attempted, to reach Arctic Alaska⁴. Once again the Russians failed to explore and exploit northward beyond the Aleutian Islands.

Fierce competition raged between the Russian traders in Alaska as Shelikhov tried to anchor his commercial ventures firmly on American soil. At this crucial period, on July 20th, 1795, Shelikhov died in Irkutsk. And with him died many of the ambitious plans for development in America and the northern Pacific. But not all his plans were buried. In 1797 Shelikhov's heirs joined other Siberian merchants to create the United American Company. One of its first acts was to employ a former Russian government official, I.I. Banner, to lead an expedition to the Chukchi Peninsula in order to investigate possibilities for trade. From there Banner was to continue his survey across Bering Strait and along the American coast. For several vague reasons he never completed this voyage (Ibid., 85)⁵.

Nevertheless, one of Shelikhov's dreams was fulfilled after his death, the creation of a single, great commercial

company with a monopoly of American trade. Such a monopoly, he had argued, would end the ruthless, inefficient rivalry between small independent traders; it would establish organized and permanent settlements in the new lands; and it could act as an instrument of the Czarist government in future territorial expansion around the northern Pacific. Although Shelikhov did not live to see such a monopoly, his heirs were major shareholders in the Russian American Company which was officially sanctioned in the summer of 1799⁶.

It is significant that the imperial ukase, by which Czar Paul I granted the Russian American Company its monopoly, did not necessarily recognize Alaska, north of Bering Strait, as Russian territory. Section I of the ukase read :-

"By the right of discovery in past times, by Russian navigators of the north-eastern part of America, beginning from the 55th degree of north latitude and of the chain of islands extending from Kamchatka to the north of America, and southward to Japan, and by right of possession of the same by Russia, we most graciously permit the company to have the use of all hunting grounds and establishments from the above mentioned 55th degree to Bering Strait, and on the same also on the Aleutian, Kurile, and other islands situated in the north-eastern ocean." (Bancroft, 1886, 379-80)⁷.
/underlines added/

Section II of the ukase strongly suggests that Russia did not consider it held a clear title to Alaska north of Bering

Strait. This section authorized the company "to make new discoveries not only north of the 55th degree of north latitude, but farther to the south, and to occupy the new lands discovered ... if they have not been previously occupied by any other nation, or been dependent on another nation" (Ibid., 379-80). Thus, the mandate given the Russian American Company extended to the northwest coast of America south of 55 degrees and it was here that the company expended its energy. For the two decades after Billings' journey the Russians consolidated their position in southern Alaska but they did little or nothing in the northwestern Arctic.

As the Napoleonic war drew to a close the Russians again organized an expedition of discovery to Bering Strait and beyond. Sponsored by Count Nikolai Petrovitch Romanzoff, Chancellor of the Empire, the original plan was a two-pronged investigation of the Northwest Passage. In the east an American ship would be chartered to sail westward from Baffin Bay. Its counterpart, a Russian vessel, would travel eastward around northern Alaska. Romanzoff's final scheme was less ambitious. It called for a single Russian ship to explore northeastward through Bering Strait (Krusenstern, in Kotzebue, 1821, I, 8-9).

Otto von Kotzebue, 1815-1818.

At the recommendation of Admiral Krusenstern, Lieutenant Otto E. von Kotzebue was given command of the expedition ship

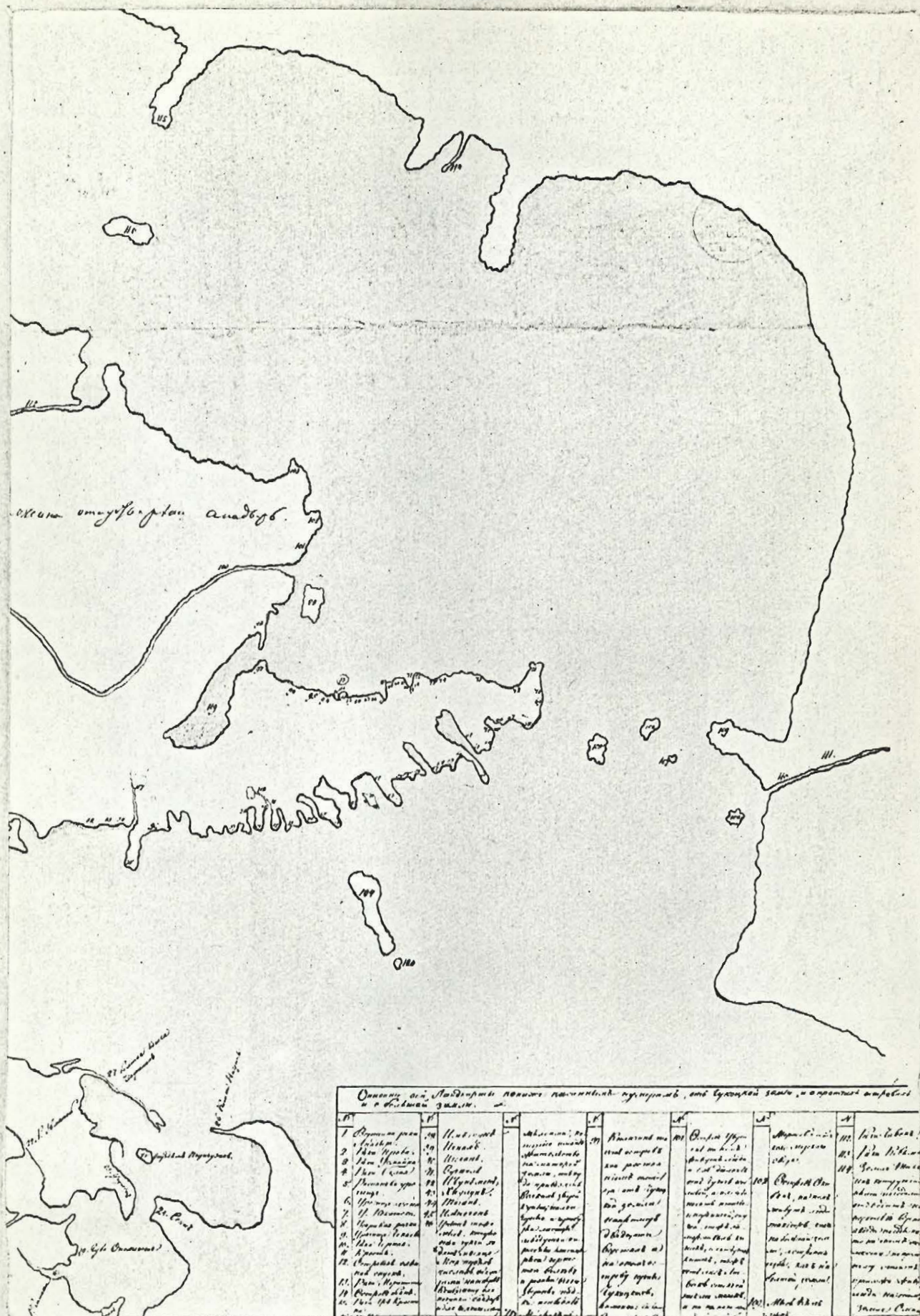
Rurick. It was an excellent craft of 180 tons displacement, built in Abo, Sweden (now Turku, Finland), outfitted with the latest navigation and scientific instruments and stocked with such modern equipment as tinned food and an unsinkable lifeboat developed by the English (Kotzebue, 1821, I, 16-19). Kotzebue was supported by a capable crew and officers who included Lieutenant G.S. Shishmaref, the mate V.S. Khramchenko, naturalist Adelbert von Chamisso, ship's surgeon Frederick Eschscholtz, M.D., and the painter Louis Choris (Van Stone, 1960).

On the morning of July 30th, 1815, Rurick stood out to sea from Kronstadt. She rounded Cape Horn in January and reached Avatscha Bay, Kamchatka, on June 19th, 1816⁸. From here Kotzebue sailed directly north to St. Lawrence Island, King Island and Cape Prince of Wales. Tacking only two miles off the Alaskan shore Kotzebue sighted and named Shishmaref Inlet on July 31st. The next day the Rurick turned into the entrance of a large sound at 66 degrees north; a sound not seen by Cook or Clerke.

Kotzebue was elated as he drew abreast of the sound. Later he wrote, "I cannot describe my feelings when I thought that I might be opposite the long-sought-for northwest passage, and that fate had destined me to be its discoverer" (Kotzebue, 1821, I, 46). From this expression of surprise and optimism on Kotzebue's part, it is evident that he was unaware of earlier descriptions which outlined the sound in some detail.

The early Cossacks at Anadir, Kolyma and Kamchatka might have known more about Northwestern Arctic Alaska and travelled farther than the St. Petersburg government realized or scholars have recorded. For example, Steller commented in 1741 that much geographical knowledge might not be forwarded from the far eastern outposts for two reasons: one, "the selfishness and perjury of the commanders", and two, "fear, because usually the one who in these remote places suggests anything new for the benefit of the Empire is compelled to carry it out himself and in place of (receiving) thanks, loses all his goods and property" (Golder, 1925, II, 98-99). It is therefore no surprise to learn that in 1821 Kamchatka residents considered Kotzebue the "rediscoverer" of the sound because "it has been known to the Russians more than one hundred years" (Cochrane, 1824, 262).

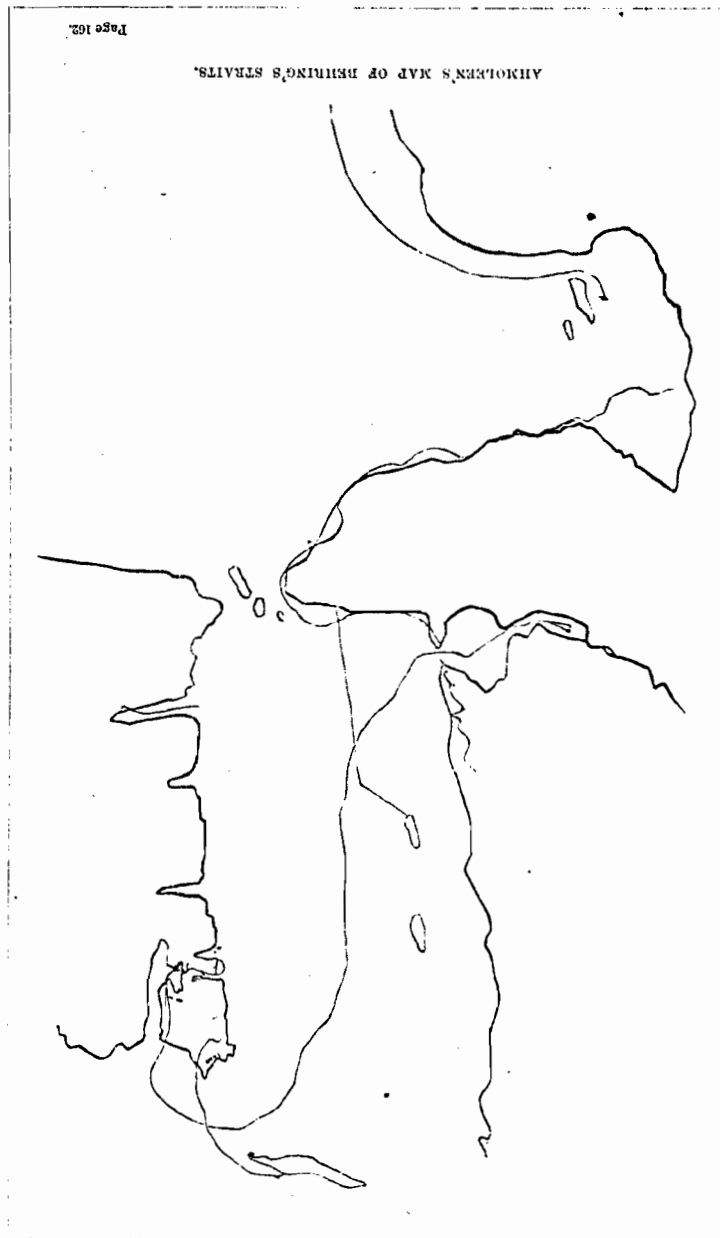
As early as 1765 (Map No. 13) and again in the 1770's maps of Northwestern Arctic Alaska were prepared by Daurkin (Yefimov, 1964, maps 128, 129, 130 and 131). Peter Simon Pallas, the Russian scholar, criticized the first of these maps because "America throws out a point toward the island Nymmin, east of the Kovyma (Kolyma), from which the reindeer cross on the ice to the Chukchi country. The northern continent he (Daurkin) calls Tikegan ..." (Pallas, 1781, in Masterson and Brower, 1948, 27). Pallas was dissatisfied with the second map because "the coast of America continues north around a wide bay and approaches Siberia near the Kovyma (Kolyma)" (Ibid.).



Daurkins' maps were not based on an actual survey. But Pallas, hampered by his own ignorance of the geography of Northwestern Arctic Alaska at this time, might have been too severe a critic. It is interesting to note that the coastline of Arctic Alaska does curve around a large bay, Kotzebue Sound, before it swings in a wide arch to the northwest. The Eskimo name for Point Hope, at the western extreme of this arch, is "Tigeraq" or "Tikeraq". This name, meaning index finger, closely approximates Daurkin's "Tikegan" or, for that matter, "Tuguten", the northern point on Pallas' own map of Arctic Alaska drawn in 1783 (Map No. 15).

It seems quite probable that the Chukchi natives provided Daurkin with all the geographical knowledge they possessed. To the north of Siberia they knew of islands and periodic reindeer migrations across the sea ice. To the northeast they knew of Kotzebue Sound and the coastline as far north as Point Hope. This is graphically portrayed by the map drawn in February, 1848, by Ahmoleen, a native of the Chukchi coast just south of St. Lawrence Bay (Hooper, 1853, 162). The map (Map No. 14) is confusing because it was published upside down. But properly oriented it clearly shows Kotzebue Sound and the Alaskan coast trending northwestward toward Point Hope. Under these circumstances it is easy to understand how the Chukchi, and Daurkin, linked the two widely separated fragments of geographical knowledge, the Alaskan coast northward to Point Hope and the

MAP 14



Ahmoleen's Map of 1848 (Taken from
Hooper, 1853).



Map of Bering Strait and Adjacent Coasts

Inset at bottom is labeled "Representation of the Southernmost Kuril Islands." From *Neue nordische Beyträge*, ed. Peter Simon Pallas, Vol. IV (1783).

islands north of the Chukchi Peninsula, to create a distorted idea of an Alaskan coastline which arched completely around to the Kolyma River.

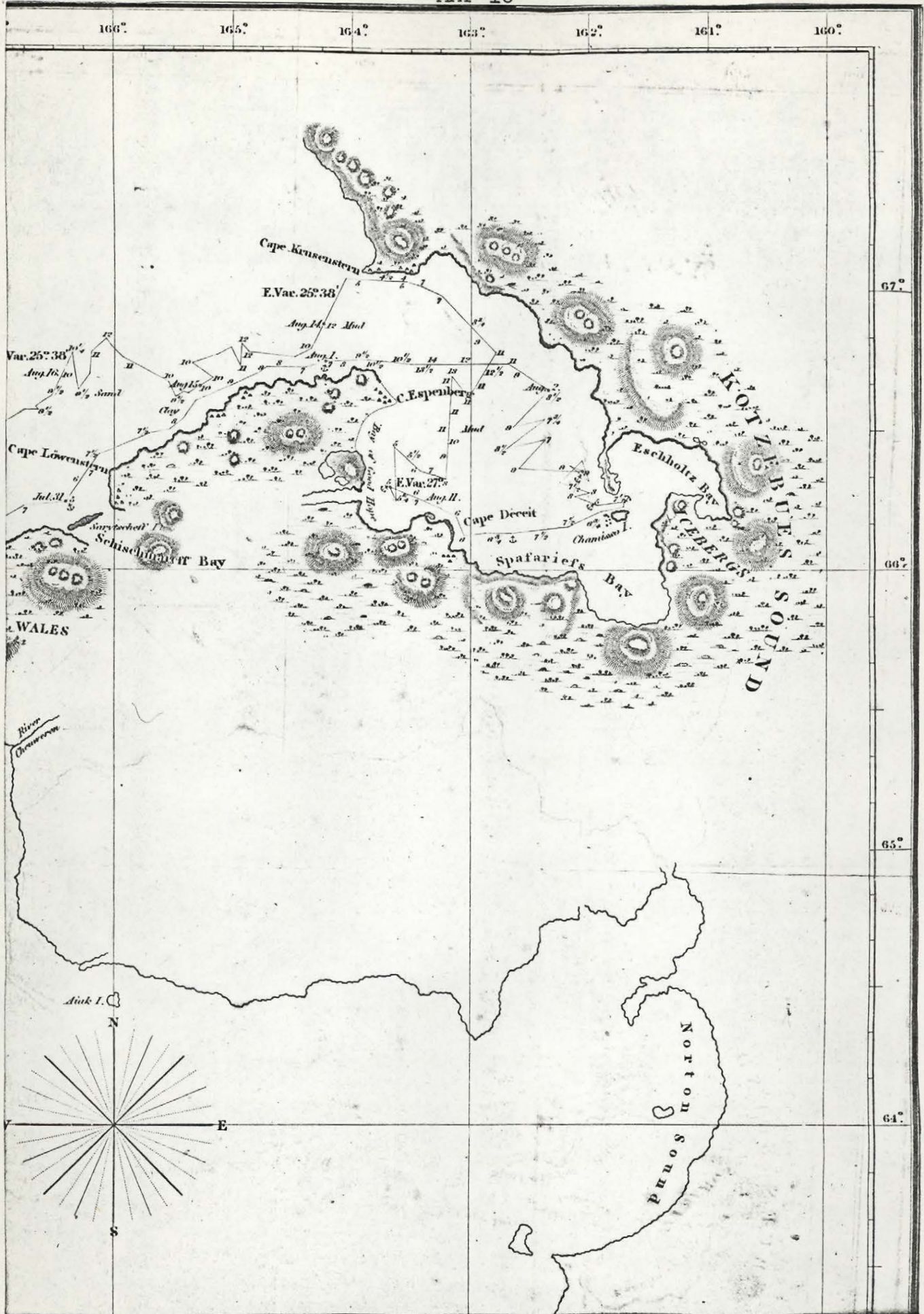
In 1783 Pallas combined the more accurate information gathered by Ivan Kobelef and James Cook to construct a remarkably good map of Northwestern Alaska (Map No. 15)⁹. Pallas guessed correctly that the large sound mentioned by Kobelef was situated south of Cook's Cape Mulgrave (Pallas, 1783, in Masterson and Brower, 1948, 95). But Pallas was not the only one to locate a large bay in Northwestern Arctic Alaska about this time. Unlike the official English geographers who steadfastly refused to recognize any other configuration of the Arctic Alaskan coast than that drawn by Cook, the historian Winterbotham published a map drawn by Russell in 1794 (Winterbotham, 1795, I, 156). This map erroneously placed a large embayment just south of Cape Lisburne, exactly where Point Hope is located. The mistake was probably due to James Burney's theory that driftwood and currents observed by Cook near Cape Lisburne were indicative of a large nearby river, probably the river described by Kobelef as being north of Bering Strait (Burney, 1819, 270).

It has already been mentioned that in 1796 Shelikhov published a map showing rivers in Northwestern Arctic Alaska (note 4). In 1793 he had issued a map which showed a large bay on the Alaskan coast about the same latitude as Kotzebue

Sound (Yefimov, 1964, map 182). Shelikhov's summary map of the northern Pacific and the Russian map of 1807 both indicate a large embayment in Alaska north of Bering Strait (Ibid., maps 184 and 185). Lastly, a Russian map of 1784, 1786 and 1787, titled "Karta predstavlyavschaya chast zamadnago Berega Ameriki" portrayed Kotzebue Sound in some detail.

Because the maps of Daurkin, Pallas, Kobelef, Shelikhov and Russell all show a large bay on the Alaskan coast north of Bering Strait, it must be concluded that Kotzebue "discovered" Kotzebue Sound only in the sense that he confirmed a fact which had been inferred by some explorers and geographers for decades before the Rurick arrived in Arctic Alaska.

Apparently Kotzebue was unaware of this geographical knowledge because he was elated by the idea that he had found a water route to the northeast and Baffin Bay. He was impatient to push eastward. But within a week Kotzebue's exploration to the east and southeast of the sound convinced him that no obvious deep water passage existed (Map No. 16). He remained optimistic nonetheless and when Rurick sailed south on August 14th, Kotzebue fully intended to return the next year to renew his eastward survey of the sound. In this he was frustrated. After a difficult journey north from the Hawaiian Islands in 1817, the Rurick encountered sea ice near St. Lawrence Island on July 11th. Discouraged by this last of several set backs,



Kotzebue Sound, 1816 (Taken from Kotzebue, 1821).

Kotzebue sailed for home. His voyage around the world finally ended at Kronstadt in 1818. In three years of exploration less than three weeks had been spent north of Bering Strait.

Kotzebue showed little of the fortitude and courage which marked the northern voyages of Cook and Clerke. Although he was well equipped and not endangered by sea ice or bad weather, Kotzebue made no effort to follow the coast northward from Kotzebue Sound even though he had ample time to do so, from mid-August to mid-September, 1816. In 1817 it was Kotzebue's physical illness rather than sea ice which prevented Rurick's bow from passing through Bering Strait a second time¹⁰.

Despite Kotzebue's lack of initiative, the brief visit of Rurick to Northwestern Arctic Alaska was important. Europeans had met the Arctic Alaskan Eskimos for the first time, a safe anchorage north of Bering Strait was charted and an accurate survey and erection of a mark allowed Russian territorial claims to the area. This, their first claim to land north of Bering Strait came nearly a century after Bering reached East Cape.

On several occasions Kotzebue's party met the Eskimos; at Shishmaref Inlet and at various spots along the shores of Kotzebue Sound. These encounters were without special incident, the Russians making every effort to establish friendly relations with the people. This was not unusual. Expeditions sent

expressly by the Russian government, such as those of Bering, Billings and Kotzebue, were instructed to treat the native population with kindness and understanding. In sharp contrast were the atrocities often committed by the Russian traders and freebooters in their attempts to extract tribute from the native people or force them into slave labour. Arctic Alaska never really suffered the scourge of the ruthless Cossack as did the Aleutian Islands and other parts of southern Alaska.

For their part, the Eskimos were well equipped with a variety of Russian trade goods. Kotzebue noted blue beads, long iron knives (some two feet in length), iron lance blades and copper and iron bracelets and rings. He was especially surprised to find the Eskimos around Kotzebue Sound acquainted with tobacco which they smoked in pipes, chewed and used as snuff. Unfortunately, Kotzebue did little more than jot down brief notes on these native people. But the fact that he had safely negotiated Bering Strait and found a protected harbour inhabited by a relatively large number of aboriginal people was soon to stimulate further European activity in Northwestern Arctic Alaska.

Notes on Chapter 2.

1. The present accepted English spellings of the words "Kovima" and "Tshutski" are Kolyma and Chukchi respectively.
2. Billings submitted a report entitled "Rough Journal and Remarks" for the period May 8th, 1791 to February 18th, 1792. It was deposited in the Archives of the Hydrographic Section, Ministry of Marine, Leningrad, No. 572 (Golder, 1917, 136).
3. Several authors (Bancroft, 1886, 297; Mirsky, 1948, 92) have criticized Billings for his failures. In his defence one must remember that Billings was at the mercy of Chukchi natives, a people who constantly opposed Russian advances for over a century. Their hostile attitude appears to have waned slowly after Cook's visit in 1778. Captain King (in Cook, 1784, 217-18) stated that on May 12th, 1779 the Chukchi proposed a truce with the Russians because kind treatment by Cook had resulted in a league of friendship with Europeans. In view of the lack of co-operation by the natives it is to Billings' credit that his map of the Chukchi Peninsula's northern coast was quite accurate (Yefimov, 1964, map 176).

4. A map prepared by the Shelikhov company in 1796 (Yefimov, 1964, map 181) does not show Northwestern Arctic Alaska in enough detail to allow speculation about a possible Arctic expedition. It does show a river system north of Bering Strait, however, which closely approximates the actual configuration of the lower Kobuk and Noatak Rivers.
5. Bancroft (1886, 416) says Banner was to settle the Bering Bay region but he gives no date for this venture.
6. There is disagreement on the exact date of this ukase and its terms. Tikhmenev (1861, 86) gives June 8th, 1799, Okun (1951, 44) says July 8th, 1799, and Bancroft (1886, 379) maintains it was August 11th, 1799.
7. There is disagreement on the exact contents of the ukase. Tikhmenev (1861, 87-88) published the full text of the ukase dated June 8th, 1799. Section II, paragraph 1, declared that the Russian America Company was "to have exclusive rights to the trade and establishments on the northwestern coast of America from 55 degrees north latitude to Bering Strait and farther." [underline added].
8. The dates as printed in Kotzebue (1821, I, 180-195) for June and July, 1816, are confused and must be used with

caution. Bancroft (1886, 503) points out that the English translation of Kotzebue's 1819 Berlin edition contains many errors. The degree to which the account by Choris (Van Stone, 1960) differs from that of Kotzebue (1821) is further support of Bancroft's observation.

9. A similar map illustrating Kobelef's geographical knowledge of northwestern Alaska was published in 1784 (Yefimov, 1964, map 174).
10. Count Romanzoff had ordered Kotzebue to proceed overland from Bering Strait to Icy Cape and further, following the Alaskan coast eastward in order to "ascertain whether a passage connecting both oceans can be found." Kotzebue was too ill to carry out this plan. (Romanzoff to Muraviev, in Tikhmenev, 1861, 333-34).

CHAPTER 3

THE BEAR, THE LION AND THE EAGLE

For several decades before Kotzebue visited northern Alaska, Russia and Great Britain had moved their frontiers of exploration and trade toward the northwestern coast of America, southward from the Gulf of Alaska. In this region Russia eventually tempered her policies to prevent any outbreak of hostilities which might jeopardize satisfactory diplomatic relations with Britain and the United States (Okun, 1951). The St. Petersburg government was acutely aware of any British move toward the northern Pacific. It also realized that the British advance, although traditionally from the south, could come from the north as well. Just a decade after James Cook opened the southern route Alexander Mackenzie descended the Mackenzie River to demonstrate the possibility of a northern route. The absence of subsequent British penetration in the north did not necessarily imply that Alaska, north and east of Bering Strait, would always be a no-man's land between the British trading companies established on the upper reaches of the Mackenzie River and the Russian American Company in south-central Alaska.

American Traders in the North Pacific, 1788-1818.

The discovery of Kotzebue Sound was extremely important to the Czarist government because it proved the existence of a safe anchorage north of Bering Strait and the geographical survey laid the basis for Russian sovereignty over the area. Whereas lack of a good harbour was one reason why Cook and Clerke did not risk landing a shore party, thus forfeiting a direct territorial claim to Arctic Alaska, it was now known that near Chamisso Island a ship was assured of protection in seven to nine fathoms of water.

Ironically, Kotzebue's discovery disturbed him. He feared that despite Russian title to the area his government would not capitalize on it. Rather, Russia would acquiesce to British expansion from the east. Said Kotzebue :-

"This sound must in time afford essential advantage to the trade in furs, as they are in abundance; we ourselves should have returned home with a rich cargo, if trade had been part of our plan. In my opinion, our government might establish several settlements on the coast of Bering's Straits to the north, like the English Hudson's Bay Company. It possesses colonies in the interior of the country, at a very little distance from the new-discovered sound, and will, without doubt, take advantage of trading there".
(Kotzebue, 1821, I, 238-39).

Although Kotzebue was the first Russian to make territorial claims in Northwestern Arctic Alaska he failed to explore and lay title as far as the northern limits of the 1778-79 British survey undertaken by Cook. Probably motivated by Kotzebue's

warning of possible westward movement by the Hudson's Bay Company or, as was increasingly evident, the northward movement of United States seamen, the Russian government dispatched M.N. Vasiliev and Glibb Semenovich Shishmaref to northwestern Alaska. The goal of the new Russian arctic expedition was announced publicly as a continued search for the Northwest or Northeast Passage through Bering Strait.

Russian fears that other foreign powers, especially Great Britain and the United States, might establish territorial rights in Northwestern Arctic Alaska were well founded. The British were already trading in the region which stretched from the Alexander Archipelago to the Mackenzie River. The Americans were also active.

Probably the first American to visit Northwestern Arctic Alaska was John Ledyard who sailed north with Cook in 1778-79. A decade later he was back in the same general area, arriving in Yakutsk in January, 1788, on his way to Bering Strait and northwestern Alaska. But Ledyard was accused of spying for the French government and deported from Siberia to St. Petersburg before he could reach Alaska (Sauer, 1802, 99-100).

In the same year, 1788, the Boston fur trading ships Lady Washington (Captain Robert Grey), and Columbia (Captain John Kendrick), visited the Queen Charlotte Islands. Grey sailed as far north as 55° 43' (Wagner, 1937, 209). After this date more

and more American vessels began to call along the coast, from California to the Gulf of Alaska; a region known to the early fur traders as the "Northwest Coast". For example, at least four United States trading ships were somewhat north of 52 degrees in 1792, the Hope, Margaret, Adventure and Columbia (Ibid., 209), Margaret, log 26th April, 1792; Tompkins, 1955, 33-39). Between 1785 and 1794 35 British and about 15 American ships are known to have visited the Northwest Coast. After this initial period United States activity increased significantly. From 1795 to 1804 at least nine British and 68 American ships traded along the coast (Howay, 1931, 118), from 1805 to 1814 three British and 43 American vessels were in the same area (Howay, 1932, 43), and from 1815 to 1819 the number of ships was four British and 54 American (Howay, 1933, 119).

Just when the first American ship reached the Bering Sea is not clear. Several traders called at Kodiak Island in summer, 1800, among them the Enterprise out of New York and the Eliza (Captain Rowen) (Bancroft, 1886, 389)¹. Alexander Baranof, manager of the Russian American Company in Alaska, traded with these Yankee ships and others. In 1803, a few American captains who visited Kodiak Island offered to establish regular trade relations with the Russian colonies in Alaska and on the northwest coast (Tikhmenev, 1861, 117). Baranof accepted the proposal and for the next two decades many United States ships worked in co-

operation with the Russians. After 1810 the wealthy fur trader, John Jacob Astor, also entered into business relations with the Russians (Howay, 1932, 45-46; Porter, 1931, I, 428-429). Apparently by at least the year 1804 a number of these American ships were in the habit of sailing as far north as the Pribilof Islands (Shiels, 1949, 69).

One example of this American commercial activity in the northern Pacific was Captain Joseph O'Cain who made his second voyage to Kodiak Island in 1803. In 1806, as master of the Eclipse, he sailed from Kodiak to Petropavlovsk via the Hawaiian Islands and Japan only to lose his ship in August, 1807, between Kamchatka and Kodiak (Bancroft, 1886, 478-479, Tikhmenev, 1861, 208; Howay, 1932, 57). Another Yankee skipper, Captain Benjamin Swift of the Derby, arrived at Kodiak from Canton, China, in 1807 (Ibid., 57; Tikhmenev, 1861, 209). John Jacob Astor's ship, Beaver, is known to have reached the Pribilof Islands in 1812 at the request of the Russians (Bancroft, 1886, 472). The Atahualpa (Captain James Bennett) touched at the Aleutian Islands in autumn, 1813, as did the Pedler (Captain George Clark) in the same year (Howay, 1932, 81, 85). The American merchantman Brutus called at Okhotsk in 1817 (Golder, 1917, 130). Between 1808 and 1812 at least two United States vessels exchanged goods in Kamchatka and Okhotsk (Bancroft, 1886, 481). In fact, so many New Englanders called in northern Pacific ports that the early

Russians in America referred to United States citizens as "Bostonians" or "Bostons" in contrast to the aboriginal people who were known as "Americans" (Tikhmenev, 1861, 39).

Peter Dobell, 1803-1829.

One New Englander influential in this early United States expansion toward and into Northwestern Arctic Alaska was a Bostonian, Peter Dobell². Dobell first visited China as a seaman in 1798. From 1803 to 1811 he resided in China, learned the language and became familiar with the network of trade routes from China to Siberia, Alaska and the Northwest Coast of America (Dobell, 1830; Morse, 1926, III, 8, 137, 145).

On September 25th, 1812, Dobell anchored his ship, the Sylph, at Petropavlovsk on his first visit to Kamchatka (Dobell, 1830, I, 5; Howay, 1932, 80). Apparently Dobell was an agent of John Jacob Astor who owned the Sylph (Ibid., 80). In any event, the ship sailed back to China leaving Dobell in Kamchatka. After several short journeys around Petropavlovsk, he departed from the port town on January 15th, 1813, on an overland trip which took him across Kamchatka, around the northern coast of the Okhotsk Sea and finally through Siberia to St. Petersburg.

Russell Farnham, 1813-1814.

The enterprising Dobell might not have been the only American travelling across Siberia at this time. If Bancroft's

story is true then Russell Farnham, also an employee of John Jacob Astor, was the first United States citizen to reach Bering Strait by land. According to Bancroft (1886, 473), Farnham, in 1813, travelled north from Novo Archangel (Old Sitka) on the southern Alaskan coast, to Bering Strait, crossed it in a small boat amid ice floes and eventually reached St. Petersburg by way of Siberia. Dobell, who made nearly the same trip in the same year, does not mention Farnham's name.

It would seem that Bancroft might have been misinformed about the exact dates and nature of Farnham's trip. Smith (1929, 185) states that Farnham sailed from the Northwest Coast to Kamchatka in spring, 1814. From here he crossed Siberia to Europe. Porter (1930, 227-228) says that Farnham was taken to Kamchatka in late spring, 1814, on the ship Forester (Captain William J. Pigot), and then crossed Russia to Europe.

Peter Dobell and William J. Pigot and Company

Apparently Dobell made a favourable impression on the authorities in St. Petersburg because by November, 1816 he was being considered for the post of Russian consul in Manila. In 1817 he received the appointment and was made responsible for trade between the Philippine Islands and Russian settlements in Kamchatka and America (Tikhmenev, 1861, 234; Golder, 1917, 16, 105).

It is not clear whether the Czarist government was aware of Dobell's connections with Astor. Be this as it may, Dobell soon joined forces with another Astor employee, Captain William J. Pigot (Howay, 1932, 82; 1934, 20), who resided in Kamchatka from 1815 to 1818. Dobell and Pigot proposed to the Russians that the Americans be granted a ten year concession to catch whales and fish in eastern Siberia and the Arctic, north of Bering Strait (Tikhmenev, 1861, 236-41). As early as 1817 Dobell, Pigot, the Russian American Company and various government ministries considered the question of foreign commerce in Kamchatka and eastern Siberia (Golder, 1917, 140). Two years later, when the Americans asked permission to hunt whales in eastern Siberia, the company had grown to be called Dobell, Pigot, Davis, Ebbets, Meek and Associates (Ibid., 140)³. In late 1819 or early 1820 Dobell and Associates were granted a concession by the St. Petersburg government (Kleinenberg and Markarov, 1955, 12)⁴.

Russian officials were not unanimous in their support of foreign investment and development of the rich Okhotsk, Bering Seas and Arctic Ocean whaling industry. The general administration of the Russian American Company objected to Dobell's proposal on the grounds that it was nothing but a pretext by which American traders could establish commercial relations in areas north of

the Aleutian Islands, especially around Bering Strait and the Arctic Ocean coasts (Tikhmenev, 1861, 236). Considering the degree to which Astor was involved in the Dobell-Pigot enterprise the Russian fears were apparently well-founded.

The Czar finally issued a compromise edict whereby Dobell and his associates were allowed to organize a whaling industry because it would contribute to the economic development of Russia's far east. But the foreigners were strictly forbidden to join merchant guilds in Okhotsk or Kamchatka, to conduct trade along the eastern Siberian coasts or to take up residence in these places (Ibid., 240). Apparently this edict did not meet with the approval of Dobell and Pigot because there is no record that their company actually undertook a whaling voyage after 1820. In 1819 and 1820 the situation had not yet changed for the worse, however, and the Americans were prepared to capitalize on their knowledge of the Western Arctic.

Dobell and his immediate business partners were not the only Americans with some knowledge of Arctic Alaska and its possible wealth of natural resources. Despite the Czar's edict several United States citizens were residents of eastern Siberia. Dobell, for example, remained intimately connected with Kamchatka until about 1829. He lived a total of five years in Petropavlovsk. During the same period, 1821, a fellow Bostonian, Mr. Gardner, was a resident of Okhotsk, acting as the agent of a retail trader.

Another American, Mr. Tallman, lived in Kamchatka (Cochrane, 1824, 183, 245). It is probable that these men formulated plans as to how American commercial interests might best benefit from relations with eastern Siberia and northwestern Alaska.

Yankee sea captains engaged in the Northwest Coast trade also acquired information about business opportunities in the far northern Pacific. A common port of call for many American traders was the Hawaiian Islands. Given the relatively large number of Americans acquainted with Alaska and eastern Siberia, it is highly probable that accounts of new waters and potential trading areas were exchanged by crews as they refitted or wintered in the tropical sun. In this way, several United States captains must have obtained extensive geographical knowledge of the Kamchatka coast, Sea of Okhotsk, Bering Sea and Bering Strait. And for Arctic Alaskan waters there was always Cook's complete report and charts published in 1784. When Kotzebue stopped at the Hawaiian Islands after his successful cruise through Bering Strait in 1816, he probably mentioned his discoveries to some American skipper. Or the Yankees learned the results from a talkative crew member or Russian inhabitants of Novo Archangel, Kodiak Island and Petropavlovsk. However this may be, the knowledge accumulated by sea captains and Americans residing in eastern Siberia certainly pointed to the fact that whales were abundant while Russian settlements were non-existent north of

the Aleutian Islands. It was a perfect vacuum to be filled by an adventurous trader. One such man was Captain Nicky Grey.

Nicky Grey, 1819.

Under constant pressure from Dobell and Pigot, Count Romanzoff finally commissioned Captain Nicky Grey to undertake an arctic voyage as part of the Dobell-Pigot enterprise (Lazaref, 1950, 214). At this time the Governor of Kamchatka, living in Petropavlovsk, was P.I. Rikord. He favoured the Dobell-Pigot plan to extend American whaling into the Arctic Ocean (Tikhmenev, 1861, 236). In 1819 Rikord apparently agreed to sanction the trip by Grey, in an American whale ship, through Bering Strait. In this way Grey became the first American sea captain to steer his ship through Bering Strait, the first whaler known to have entered the Western Arctic.

From some source, possibly Governor Rikord himself, Captain Grey obtained copies of Kotzebue's charts. With these he sailed north toward Kotzebue Sound. Off Shishmaref Inlet Grey anchored his ship and proceeded along the coast to Good Hope Bay in a ship's whale boat (Lazaref, 1950, 215). At this time he made additions and corrections to the charts made by Kotzebue for the coastal region from Shishmaref Inlet to Good Hope Bay (Belov, 1956, 453). All this information Grey presented to Governor Rikord in autumn, 1819. No record has come to light which shows Grey actually hunted whales during this voyage.

M.N. Vasiliev and G.S. Shishmaref, 1816-1822.

It is against this background of American activity in Northwestern Arctic Alaska that M.N. Vasiliev and G.S. Shishmaref prepared their departure for the same region. Shishmaref had been there in 1816 and 1817 with Kotzebue. Vasiliev, in command of the sloop Otkritie and Shishmaref, with the Blagonamerenni sailed from Kronstadt on July 3rd, 1819⁵. The scientific staff on Shishmaref's vessel were Dr. Stein and the astronomer Tarkanof (Baker, 1902, 50-1).

The two ships arrived at Petropavlovsk in May, 1820. Here they parted company with the understanding that they should meet at Kotzebue Sound later in the summer. Vasiliev surveyed the northern Asiatic coast while Shishmaref sailed for the Alaskan side of the Bering Sea. He steered along the Aleutian Island chain, including the Andreanof Islands, and arrived at Unalaska on June 4th, 1820. On the 20th of that month he stopped at Bogoslof Island, just northwest of Unalaska, and then continued north (Ibid., 50-1; Grewingk, 1850, 340). On July 27th, Vasiliev and Shishmaref met at Kotzebue Sound. Shishmaref, who had arrived at the sound on July 20th, conducted a survey of the Chamisso Island area while he waited for the Otkritie (Lazaref, 1950, 199-204). During their visit to Chamisso Island the two Russian captains found the wooden monument erected by the Rurick's crew in 1816. In August, 1826, when Captain Beechey stopped at the same spot

he found a monument inscribed with the words "Rurick, July 28th, 1816" and underneath, "Blaganomeeriony, 1820" (Beechey, 1831, I, 392).

The Pedler, Captain John Meek, 1820.

While still in the Bering Sea, at St. Lawrence Island, the Otkritie had encountered the American trading brig Pedler, commanded by Captain John Meek⁶. Much to the Russians' consternation the Pedler followed them into Kotzebue Sound arriving on July 28th. After an exchange of cannon salutes an American long boat pulled along side the Russian craft. In it were Captain Clark, a supernumerary on the Pedler and one of Dobell's partners in Manila, and Captain Meek. The latter stated he had come to Kotzebue Sound to trade long knives, firearms, gun powder and other items for furs (Lazaref, 1950, 214). It was obvious that the Yankees were determined to establish firm and formal trade relations with the local Eskimos and to obtain as much information as possible about Russian territorial claims, trade and travel routes in the region north of Bering Strait (Belov, 1956, 453).

After this first visit Shishmaref went on board the Pedler to examine copies of Grey's chart made the previous year. Although Grey had maintained he made important amendments to Kotzebue's original survey, it was Shishmaref's opinion that

the American had merely made a poor copy of Kotzebue's map. The young Russian captain doubted that Grey had really coasted along the inner shores of Kotzebue Sound at all (Lazaref, 1950, 215-16). Unfortunately no copies of Grey's map have been found so it is not possible to verify either the Russian or American view about their accuracy. It may be that Grey surveyed the coast just south of Cape Espenberg or Hotham Inlet and Selawick Lake, the latter two places being unknown to the Russians at this time.

Vasiliev and Shishmaref, 1820.

Although aware of the Americans' intent, Vasiliev and Shishmaref sailed their ships out of Kotzebue Sound on July 30th in order to continue their survey of the Chukchi Sea coasts. Not long after, on August 1st, the two ships became separated in the fog. Shishmaref worked his way north to Cape Lisburne where he encountered sea ice. Thinking that Vasiliev must be further south, he turned the Blagonamerenni back on August 3rd. But the Otkritie had found clear sailing along the coast and reached $71^{\circ} 06'$ north latitude before heavy ice stopped further progress. This latitude was more than one degree farther north than the exploration of Cook and Clerke. Vasiliev gained very little geographical knowledge of this northern coast, however, because dense fog often reduced visibility to a minimum.

When Vasiliev sailed north he failed to see Shishmaref who was headed in the opposite direction in the fog. On August 5th, Shishmaref discovered and surveyed a long peninsula jutting seaward just south of Cape Lisburne (Yefimov, 1964, map 189) (Map No. 17). Much to his surprise he found here two large Eskimo settlements containing a total of about 600 persons. The Blagonamerenni continued south but when Vasiliev was not spotted by August 9th the sloop swung north again. Finally, on the 12th, the two ships joined near Cape Lisburne (Lazaref, 1950, 218-19). From here they moved quickly south reaching St. Lawrence Bay on the Chukchi coast on August 19th. Their arctic survey for 1820 was complete after only three weeks of navigation north of Bering Strait.

The Russian American Company in Arctic Alaska

At his first opportunity, Vasiliev apparently made a complete report on the summer's survey and, above all, the encounter with the American trader. Governor Rikord certainly notified the Naval Ministry in St. Petersburg of the incident on November 23rd, 1820⁷ (Ibid., 389-90). This report, together with their knowledge of the Dobell-Pigot Company and Grey's 1819 voyage, must have been alarming news to the Russian American Company officials. They well realized the extent to which they had neglected Northwestern Arctic Alaska. Even Kotzebue, the first

Russian to chart the coast north of Bering Strait, was primarily on a voyage for discovery of the Northwest Passage. One reason why Governor Rikord had supported the idea of American whaling in northern waters was his practical assessment of a real situation; the Russians had neither the resources to start the industry nor the means to prevent it should the Americans choose to exploit the area without permission (Tikhmenev, 1861, 238). The general administration of the Russian American Company saw the truth in the first part of Rikord's argument and therefore it strove to nip the growth of foreign ventures in the bud. No rivals must be allowed to establish themselves in the virgin territory of Northwestern Arctic Alaska. After all, the nearest Russian settlement to Kotzebue Sound was at Unalaska, some 1,100 miles to the south.

Not only was the Russian American Company faced with the threat of American activity north of Bering Strait but, after 1818, it had to contend with a concerted effort by Great Britain to reach the Bering Sea from Baffin Bay. The outstanding voyage by Edward Parry in 1819-20 was proof enough that British ships might soon visit Northwestern Arctic Alaska.

The reaction of the company to these dangers was not unexpected. Hampered by limited resources and dedicated to a policy which focused on the exploitation of territory from the Aleutian Islands southward to California, the company

resorted to a policy of secrecy and bluff. Apparently the reasoning was that if foreigners remained ignorant of arctic Alaska or if they retreated before the threat of Russian military force, then the company could retain its rights in the northern region without the necessity of erecting trading posts and other symbols of occupation. This policy is reflected in the following letter written by the company's board of directors on March 15th, 1821 :-

"We know that Count Nicholas Petrovich Rumiantzev (Romanzoff) wishes you to send Mr. Khromchenko, fellow-traveller of Kotzebue, to follow the Rurick in exploration of the North. This patriotic desire is of course laudable but it is harmful to our Company; the narratives of Kotzebue stirred up the foreigners to undertake trips there, undoubtedly with the worst intentions. We wish, therefore, that all information about discoveries and descriptions of explorations be given to the Company only, and we request you, when sending someone North, to stress that the expedition is ordered by the Company and that all of it should be given to the Company. If the Company's interests are respected it will gladly assume the expenses of the rewards for successful explorations, as recommended by the Count.

(signed) Michael Buldakov
Venedict Kramer
Andrei Severin

N.B. It is essential that only the Company give information to outsiders about discoveries.

(signed) M. Buldakov". (Buldakov, 1821)

A policy of secret exploration in the Bering Strait area was not new. The Russian government even tried to withhold

vital information about Bering's second voyage (Tompkins and Moorehead, 1949, 60). For this reason, it can be assumed that some Russian journeys north of Bering Strait are unknown down to the present day. The noted Soviet historian M.S. Belov has commented on this possibility (Belov, 1956, 454).

Vasiliev and Shishmaref, 1821.

Vasiliev and Shishmaref renewed their exploration of northeastern Siberia and northwestern Alaska in the summer of 1821. Their two ships left Novo Archangel (Old Sitka) together but separated just north of the Aleutian Islands. Vasiliev held to the Alaskan coast while Shishmaref crossed the Bering Sea to Asia.

When Vasiliev passed through Bering Strait on August 7th sailing conditions were so good he was able to sight Icy Cape by August 13th. For the next week the Otkritie explored to the northeast but, again, heavy ice concentrations were met. Finding no passage, Vasiliev turned south on August 20th. Three days later he rendezvoused with the Blagonamerenni at Cape Deshnev.

Shishmaref was also returning south from an unsuccessful attempt to sail northwestward along the Chukchi Peninsula coast. After an initial start in ice-free water, the promise of a longer passage was shattered by an impenetrable ice pack. He was stopped at a spot on the Asiatic coast two degrees short of Cook's farthest westward progress of 1778.

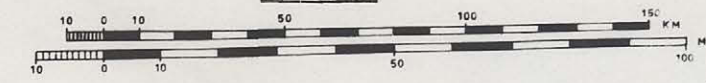
The two Russian sloops were at East Cape on August 25th, from where they made a quick passage to Petropavlovsk, arriving early in September. Again, Vasiliev and Shishmaref had spent just about three weeks, and no more, in exploration north of Bering Strait.

At Petropavlovsk the expedition ships hailed an American brig from Hawaii with Peter Dobell on board. Also in the town was an Englishman, John D. Cochrane. It was his opinion that had Vasiliev been prepared to overwinter in arctic Alaska and had the Russian known of Parry's 1819-20 success, Vasiliev would surely have been the first to complete the Northwest Passage (Cochrane, 1824, 262). As it was, a copy of Parry's new chart did not reach Petropavlovsk until a few days after Vasiliev's arrival in September, 1821 (Ibid., 262). This was a remarkable event because only a year had elapsed between the return of Parry to England and receipt of his chart in Kamchatka.

Vasiliev and Shishmaref left Kamchatka in November, 1821, called at Rio de Janiero and finally dropped anchor at Kronstadt on August 21st, 1822, just three years and a month after their original departure. Neither captain considered his achievement a complete success because no entrance had been found to the Northeast or Northwest Passage⁸. But the expedition had added to geographical knowledge and by so doing strengthened Russia's territorial rights in Northwestern Arctic Alaska.

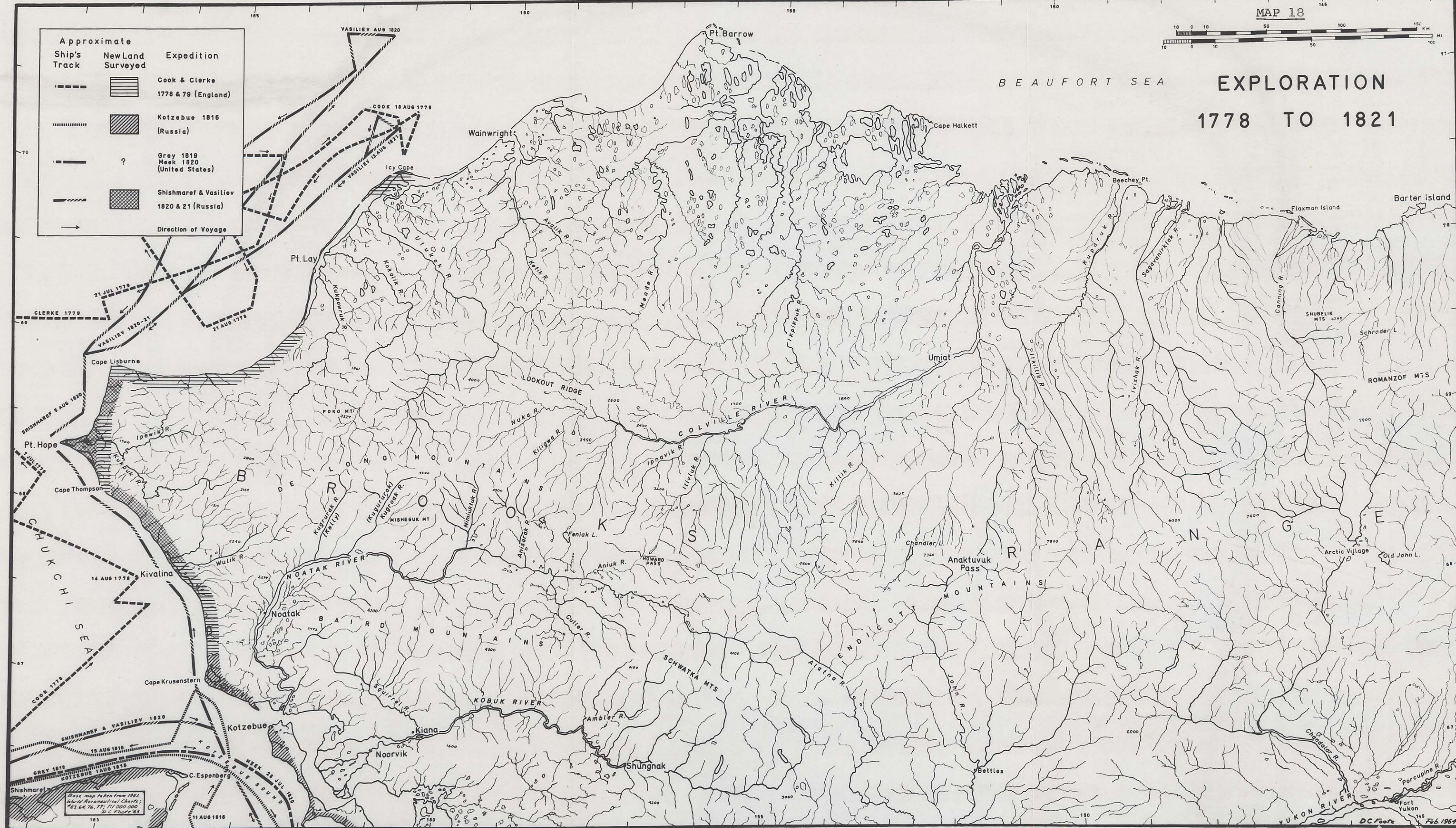
Russian Knowledge of Northwestern Arctic Alaska.

The 1821 Russian survey map of the Arctic Ocean (in Belov, 1956, 457) and the 1823 map of the northern Pacific Ocean and Nunivak Island (in Lazaref, 1950, 225), both of which incorporate the results of the Vasiliev-Shishmaref expedition, clearly indicate that Russian geographical knowledge of arctic Alaska extended to somewhat beyond Icy Cape. Their survey from Cape Krusenstern to the coast just east of Cape Lisburne added geographical observations not obtained by Cook, Clerke or Kotzebue. Strangely enough, Cape Krusenstern was shown as an island, in much the same manner as it appeared on the Pallas map of 1783 (Map No. 15), although the original chart made by Vasiliev and Shishmaref in 1820 and 1821 correctly shows the cape as a well-defined peninsula (Yefimov, 1964, map 188). Vasiliev, in 1821, named a high promontory south of Point Hope after Kamchatka's Governor Rikord. Shishmaref first located a low spit north of this cape in 1820, but Vasiliev, as first in command of the expedition, named it Cape Golovin in 1821 (Lazaref, 1950, 221). The coast east from Cape Lisburne to Cape Beaufort was also plotted by the 1820-21 Russian explorers. Otherwise no new geographical information was reported. The eastern shores of Kotzebue Sound and most of the coastline from Cape Beaufort to Icy Cape remained unknown because, in 1820 and 1821, Vasiliev had sailed some distance off shore between Cape Lisburne and Icy Cape. (Map No. 18).



EXPLORATION 1778 TO 1821

Ship's Track	New Land Surveyed	Expedition
-----	[Horizontal lines]	Cook & Clerke 1778 & 79 (England)
-----	[Diagonal lines]	Kotzebue 1816 (Russia)
-----	[Dotted]	Grey 1819 Meek 1820 (United States)
-----	[Cross-hatch]	Shishmaref & Vasiliev 1820 & 21 (Russia)
→ Direction of Voyage		



V.S. Khramchenko and A.K. Etolin, 1821-1822.

Even while Vasiliev and Shishmaref were north of Bering Strait in 1821, another Russian expedition was bound for northwestern Alaska. Sponsored by Count Romanzoff and supported by the Russian American Company, V.S. Khramchenko, a former mate with Kotzebue on Rurick, and A.K. Etolin, sailed north in the brig Golovin and schooner Baranof. Among other things, the party under Khramchenko surveyed as far north as Shishmaref Inlet. In 1821 and 1822 they charted Norton Sound, especially Golovin Bay. Originally Khramchenko named the bay after M.I. Muraviev, manager of the Russian American Company, but he changed the name at Muraviev's request (Tikhmenev, 1861, 331-32). At this time the Russian explorers believed that Golovin Bay was connected to Shishmaref Inlet and Port Clarence by two large inland waterways which split the western Seward Peninsula into two islands. The basis for this misconception might have been native reports of inland lakes and rivers which the Russians interpreted to be arms of the sea.

Very little detailed information has been published on the northern activities of Khramchenko and Etolin⁹. As previously mentioned, the policy of secrecy so strictly imposed after Kotzebue's trip was directed particularly toward activities in the unknown waters north of Bering Strait. Until further evidence is uncovered, one can only guess that other expeditions

might have passed through the strait during the sudden burst of Russian interest in northern Alaska between 1815 and 1825.

Count Romanzoff was not content to promote just the exploration of Khrumchenko and Etolin, Shishmaref and Vasiliev. He appreciated other significant facts about Russia's position in the far northern Pacific and Arctic Oceans. First, the feasibility of a Northwest or Northeast Passage to Europe through Bering Strait was unproven. Second, after nearly two centuries of conquest and exploration in northeastern Siberia, the Russians were still uncertain about the actual configuration of the northern Chukchi Peninsula. There remained an unknown area between the limits of Cook's survey toward the west and that of Billings toward the east. For this reason the long hypothesized peninsula linking Siberia and Northwestern Arctic Alaska had yet to be conclusively disproved. Should this land mass not exist then a sea passage along the northern coasts of Eurasia or North America was theoretically possible.

Ferdinand von Wrangell, 1820-1824.

Romanzoff therefore urged further geographical surveys in north-central and northeastern Siberia. In 1820 the Imperial Naval Department ordered Lieutenant (Baron) Ferdinand von Wrangell to undertake the latter programme; the exploration of the northern Chukchi Peninsula and a search across the

northern sea ice for an inhabited land reported by Chukchi natives. Wrangell was assisted in this work by Midshipman F.F. Matiuschin, Mate Kosmin, Dr. Kyber and two able seamen (Wrangell, 1840, cxxxv-cxxxvi).

Wrangell's party departed from St. Petersburg on May 23rd, 1820 and returned on August 15th, 1824 after completing a journey which will always remain an outstanding achievement in the history of polar exploration. Indeed, Wrangell's accomplishments were of such a calibre that he must be ranked as one of the first of the great modern explorers.

As a result of Wrangell's work, the northern coast of the Chukchi Peninsula was accurately mapped. The myth of a great promontory reaching out from northeastern Siberia was dispelled once and for all. Wrangell also attempted, without success, to cross the sea ice to an unknown yet inhabited land to the north or northeast of the Chukchi Peninsula. This land, repeatedly mentioned by the Chukchi natives, may not have been just Wrangell Island. It could have been Northwestern Arctic Alaska because the natives firmly maintained the existence of people there who hunted whales with slate spears (Ibid., cxxxvi, 340).

John Dundas Cochrane, 1821.

While Wrangell was engaged in exploration the British again appeared on the march toward Northwestern Arctic Alaska.

But this time they came in the strange form of one John Dundas Cochrane, a bearded English naval captain, often masquerading as a priest, who intended to cross Bering Strait on foot and proceed northwestward along the Alaskan coast. By sheer tenacity and some audacity, Cochrane reached a point just east of the Kolyma River early in 1821. Here further progress was halted by clever Chukchi natives who demanded about 5,000 pounds of tobacco to guide the Englishman to Bering Strait (Cochrane, 1824, 190). Frustrated by such sophisticated aborigines, Cochrane eventually wandered south to Okhotsk and Kamchatka, married a local belle in Petropavlovsk and returned to England.

Russian Expansion in North America

During the decade between Kotzebue's departure from St. Petersburg in 1815 and Wrangell's return in 1824, the Russian government had materially improved its position north of Bering Strait. The north Siberian coast had been mapped completely. In arctic Alaska, the Russians had acquired reasonably good geographical knowledge of the coast southward from Cape Lisburne. Their northern limit of exploration, as of 1825, was between 71 and 72 degrees north latitude but it did not include any inland area. Despite a concerted effort they had failed to reach Point Barrow and the Alaskan

coast eastward to the Mackenzie River. This area, from Icy Cape to the Mackenzie, remained one of the last unmapped shores of the North American mainland.

On July 8th, 1819, less than a week after Vasiliev and Shishmaref sailed from Kronstadt for northern Alaska, the original 20 year charter of the Russian American Company expired. The new charter, issued on September 14th, 1821, included important changes from that of 1799. The Russian government now realized that its territorial expansion southward along the Pacific coast of America encroached more and more on areas claimed by the United States and Great Britain. Therefore, a tentative Russian proposal to claim the Northwest Coast southward to latitude 45 degrees north was abandoned in favour of a boundary at 51 degrees north. This nonetheless extended the border four degrees of latitude farther south than did the 1799 boundary proclamation.

To further territorial acquisition, the Czarist government granted the Russian American Company any land which was "not occupied by other European nations, or by citizens of the United States of America and had not become their dependency" (Okun, 1951, 74). This last stipulation had its greatest meaning in northern Alaska, especially in the Arctic where no European or American had become established¹⁰.

But if adventurers like Captains Grey, Meek, Clark and Dobell were allowed to trade along the arctic Alaskan coast, the company might find itself embarrassed by United States "occupation" of a region unexplored and unsettled by Russia. Grey, it must be remembered, said he charted new lands, a traditional first step toward territorial claims. And Captain Meek had the audacity to bestow a symbolic medal on a Chukchi chief. The Russians, who had long used such gifts as tangible evidence of their territorial jurisdiction, were upset to find in 1821 a Chukchi native wearing three medals. The first, of gold, had been bestowed on his father by Lieutenant Billings. A second, of bronze, was a present from Governor Rikord. But the third, a cheap lead ornament common along the San Francisco water front, was the American memento given by Meek (Lazaref, 1950, 301).

In addition to these incipient Arctic claims, foreign traders on the Northwest Coast, especially Americans, had engaged in large-scale traffic on Russian American Company lands for some time. Because the Russians could not compete with the high prices offered by these smugglers bitter complaints streamed into St. Petersburg. In particular, the Americans were accused of trading guns, powder and shot to the natives.

It has been mentioned that in response to the Dobell-Pigot proposal the Czar prohibited all foreigners to trade or settle in eastern Siberia (page 52). To solve a similar problem of illegal commerce along the American coast, the Czarist government issued an ukase on September 4th, 1821. From Bering Strait to 50 degrees north latitude it forbade "all foreign vessels not only to put in at the shores and islands subject to Russia ... but to approach them within less than 100 Italian miles" (Okun, 1951, 82). It is important to note that by this ukase, Russia still considered Bering Strait as its northern frontier in America.

Outwardly the new policy of foreign trade restriction was a complete failure. It did not prevent the illegal visits of ships to isolated native encampments while it did cut off the Russian colonies which had become dependent upon goods supplied by American skippers. Furthermore, it brought immediate vigorous protests from the United States and Great Britain who joined against Russia's impudent declaration of territorial boundaries, especially on the sea. Paradoxically, the Imperial government was not anxious to implement fully the September 4th ukase. Instead, it began negotiations with London and Washington aimed at a formal settlement of the conflict. Privately it instructed Russian officials in America

to avoid occupation of lands under American influence and not to patrol coastal waters to the full limit of "100 Italian miles" (Ibid., 83).

The diplomatic negotiations were successful. On April 17th, 1824, Russia signed a treaty with the United States and on February 28th, 1825, concluded a similar pact with Great Britain. These twin documents defined the borders of Russian America; the southern limit of the Russian colonies was firmly set at 54° 40' north latitude. In addition, Russian title was recognized to the coastal region from Prince of Wales Island to Mount St. Elias and the vast, unexplored hinterland of northern and central Alaska from about 60 degrees north to the Arctic Ocean along the 141st meridian. In return the United States and Britain were given certain guarantees of free navigation in northern waters.

The treaties of 1824 and 1825 contained other provisions of importance to the future development of Northwestern Arctic Alaska. For a ten-year period United States and British ships were allowed to trade, fish and land "at such parts of the coast as shall not have been already occupied" by Russia. It was further noted that this "liberty of commerce shall not apply to the trade in spirituous liquors, in fire-arms, or other arms, gunpowder or other warlike stores" (Report International Bound. Comm., 1906, 202-05).

Although Russia had never explored the arctic coast beyond Icy Cape, had sent no parties to examine the Alaskan interior and had founded no settlements anywhere in the north, the Czarist government still obtained full territorial rights as far east as Demarcation Point¹¹. Even after the treaties with Britain and the United States, no Russian ever visited the extreme northeastern parts of the land granted in 1825¹². Under these circumstances it is surprising that Alaska's Arctic boundary remained unchanged from that date to the present. This does not mean the isolated, unknown border was not violated or that Russia's rights to eastern Alaska were not challenged. They were. Even before the 1825 treaty was signed the British Admiralty ordered an expedition to Northwestern Arctic Alaska; an action which was, in many ways, an open test of Russia's position in northern Alaska.

John Franklin and Frederick W. Beechey, 1825-1828.

Early in 1825 the British set down their plans to visit the unmapped northern coast of Alaska with a two-pronged programme of exploration¹³. Captain John Franklin, accompanied by Lieutenant George Back, was instructed to circumnavigate the Alaskan coast from the Mackenzie River to Kotzebue Sound during the summer of 1826. At the same time, Captain Frederick William Beechey, with the sloop Blossom, was commanded to sail for

Kotzebue Sound, there to meet Franklin in autumn, 1826. While the British were careful to announce that these two expeditions were devoted solely to scientific and geographical exploration (Beechey, 1831, I, xii), it must be remembered that to map and name unknown land was often a preliminary act to national territorial claims.

There appears to have been some confusion on the exact aims of the exploration programme in northern Alaska. The British Admiralty was unquestionably interested in the investigation of the north Alaskan coast from the Mackenzie delta to Bering Strait when it issued Franklin his orders on January 31st, 1825 (Franklin, 1828, xxv). These orders made no mention of the exploration of inland arctic Alaska. Only ten days after Franklin received his initial instructions, however, he agreed with Captain Beechey that the latter should attempt an overland crossing of arctic Alaska, from Kotzebue Sound to the northern coast, in order to intercept Franklin's party and spare them the long journey around the coastline (Beechey, 1831, I, xiv). Certainly Franklin could not survey the entire shoreline to Bering Strait should Beechey be successful in reaching the Arctic Ocean, east of Point Barrow, by an overland route. On the other hand, this amendment to the original orders of Beechey and Franklin, and signed by both

officers, could be construed to be an effective excuse for any British effort to explore interior, Northwestern Arctic Alaska as well as the coastal region.

Count Romanzoff never forgot his original plan of 1815 to send Kotzebue overland from Bering Strait to Icy Cape and further eastward along the Alaskan coast. When he learned that Captain Franklin was to follow the same coast westward from the Mackenzie River the Chancellor immediately proposed that a Russian party should explore the Alaskan coast northward from Bering Strait. In other words, the Russians would proceed in a direction opposite to the British. Romanzoff outlined this plan in a letter, written in 1824, to Muraviev, General Manager of the Russian American Company (Tikhmenev, 1861, 333-36).

But the Company was in a dilemma. Captain Vasiliev, upon his return from the 1820-21 expedition, advised the Russian government that future sea-borne parties could only proceed beyond Icy Cape with an extremely strong vessel, well stocked with two or three years' provisions. This type of investment was much more than the Company was willing to make. However, Vasiliev's recommendations strengthened Romanzoff's argument for an overland expedition which could operate independent of

ships north of Bering Strait. The idea seemed practical. Wrangell had just proven how effective such an exploration technique could be.

The Count nominated Khrumchenko as commander of the expedition with Etolin to be his aide. Both men had worked together in northern Alaska in 1821 and 1822. According to Romanzoff's plan the Russians would begin their survey in 1826, the same year Franklin expected to start westward from the Mackenzie. Thus, should the two parties meet, the glory of discovering an important segment of the Northwest Passage would be shared by Russia and Great Britain. Otherwise, said Romanzoff, Europe would be correct in its criticism of Russia for allowing other nations to explore and chart Russian seas and coasts.

Romanzoff donated 20,000 roubles toward the expedition and the Russian American Company voted an additional 10,000. But the Count died before Khrumchenko and Etolin could be fitted out. His heir, Sergi Petrovich Romanzoff, did not approve of spending money on the northern project. After some delay, when it was apparent the Russian expedition could not reach arctic Alaska in time to meet Franklin, the entire plan was abandoned (Ibid., 336). Russia had once again failed to explore Northwestern Arctic Alaska. Kotzebue's fear of eventual British expansion into a region left empty by Russian

hesitation and reluctance seemed to be justified.

Franklin and Back reached the Mackenzie River delta on July 7th, 1826, two weeks before Beechey sailed Blossom into Kotzebue Sound. For the next six weeks the two parties struggled in vain to make contact somewhere north of Icy Cape. By August 4th Franklin had moved his heavy, cumbersome boats no further than Barter Island. Despite the fact that hundreds of Eskimos sailed freely east and west along the coast, Franklin finally decided that continued westward progress was impracticable. On August 18th he turned back at Return Reef after traversing less than 350 miles in 41 days (Franklin, 1828, 166).

Beechey had more success than Franklin. When a small boat party dispatched from Blossom discovered that Kotzebue had failed to observe Hotham Inlet in 1816, Beechey immediately ordered that the north shore of Kotzebue Sound be charted¹⁴. At this time, July 27th, Beechey assessed the feasibility of sending an overland party north to meet Franklin. He decided against the plan because "we were unacquainted with the disposition of the (native) people, or with the country, further than that from its swampy nature it seemed to present almost insurmountable difficulties to the journey" (Beechey, 1831, I, 350). Millions of mosquitoes were another reason why the sailors preferred not to venture away from the insect-free offshore

waters (Beechey, 18th December, 1926: PRO Adm.1/1574,B/123). Thus ended the first European plan to explore the inland region of Northwestern Arctic Alaska.

Having completed the survey of Kotzebue Sound, Beechey sailed Blossom northward past Cape Krusenstern on July 31st. To ensure a careful reconnaissance, the ship's barge, commanded by Blossom's master Thomas Elson, cruised near shore in water too shallow for the large sloop. Both vessels stopped periodically to erect "signal" beacons and caches for Franklin.

It is not clear to what extent Beechey was cognizant of previous Russian exploration along this northern coast, particularly the work done by Vasiliev and Shishmaref in 1820 and 1821. Near Point Franklin, on August 15th, 1826, Beechey expressed surprise when the Eskimos showed none of the astonishment so characteristic of people confronted for the first time with Europeans and ships. Said Beechey, "we were not conscious of any other vessel having been upon the coast since Kotzebue's voyage, and he did not reach within two hundred miles of the residence of these people" (Beechey, 1831, I, 375). Was Beechey really ignorant of the Russian exploration which followed Kotzebue's trip?

On August 24th, 1826, Beechey found, as already mentioned on page 56, a wooden monument on Chamisso Island inscribed

with the words "Rurick, July 28th, 1816" and underneath, "Blaganome erinoy, 1820". With no apparent surprise Beechey remarked on this discovery, "the former was of course, cut by Kotzebue when he visited the island; and the latter, I suppose, by Captain von Basilief Schismareff, his lieutenant, who paid this island a second visit in 1820" (Ibid., 392). Although he confused the two Russian names, Beechey seems to have been aware of the Vasiliev-Shishmaref voyage.

Even though the British had no access to a written account of the Russian exploration, one would expect that some details had been passed on to the Blossom's officers and crew when the ship stopped at Petropavlovsk in June, 1826 and July, 1827. This is highly probable because Beechey stopped at Kamchatka first, to obtain information about the north, and second, to engage a native interpreter to accompany the proposed overland expedition northwestward from Kotzebue Sound (Beechey, 29th June, 1826, PRO Adm. 1/1574, B/122). Beechey himself quotes Captain John Cochrane on several occasions concerning Kamchatka and eastern Siberia. Having read Cochrane's book he could not have failed to note the former's remark that upon arrival in Petropavlovsk in September, 1821, he met the Vasiliev expedition which "had rounded Icy Cape about thirty miles beyond Captain Cook" (Cochrane, 1824, 262). Then, too, it is highly probable that Cochrane, a British naval officer, would have been interviewed

by the Admiralty about Russian settlements, naval strength and exploration in eastern Siberia and northwestern America. In this case, Cochrane would surely have mentioned the Vasiliev-Shishmaref attempt to open a Northwest or Northeast Passage through Bering Strait.

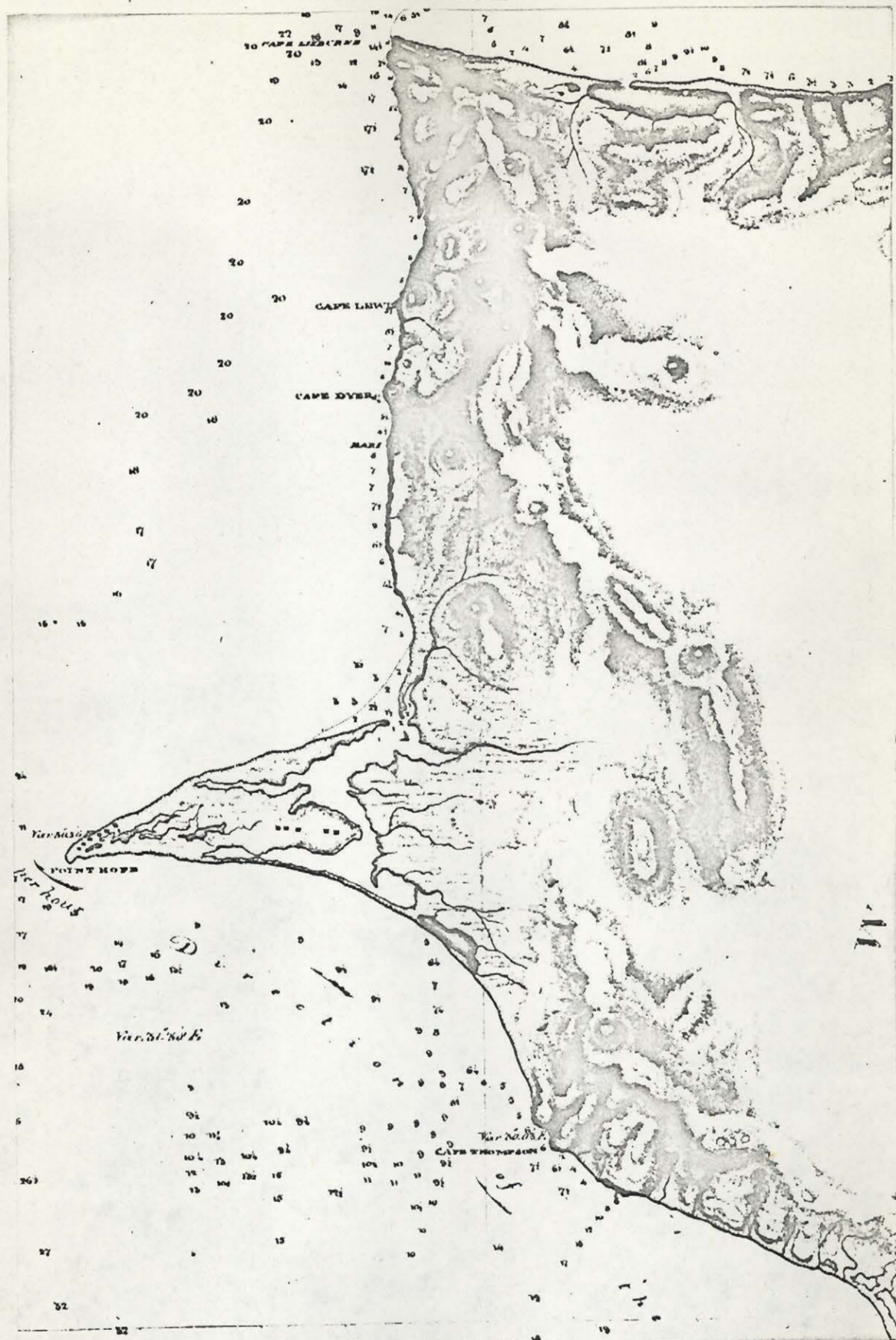
Another piece of evidence which indicates Beechey knew something of previous Russian exploration in Northwestern Arctic Alaska concerns place names. On August 2nd, 1826, Beechey sighted and named Cape Thompson, north of Cook's Cape Mulgrave and south of Cape Lisburne. In his written account of this, Beechey stated that a cape close to Cape Thompson "has been named Cape Ricord by the Russians" (Beechey, 1831, I, 359)¹⁵. If Beechey did not know about the Vasiliev-Shishmaref expedition before, or during his voyages in Northwestern Arctic Alaska, he certainly seems to have gained some knowledge of Russian geographical discoveries by the time he wrote the two volume work describing Blossom's cruise.

In the last analysis there appears to be no good reason why Beechey should overlook, indeed completely disregard Russia's contribution to geographical discovery in Northwestern Arctic Alaska unless it was selfishness or the result of an intentional political decision. In the latter case the British could claim that they had undertaken all original surveys from Kotzebue Sound to the Mackenzie River. The fact

that Beechey built numerous cairns and erected posts at every conspicuous landmark could be used as excellent proof of British territorial rights. It remains an interesting historical fact, that as a consequence of Beechey's ignorance or his refusal to recognize Russian discoveries, there are no Russian place names in present day Arctic Alaska except those given by Kotzebue in 1816. Almost all the names given by Cook and Beechey have survived.

During the first two weeks of August, 1826, Beechey and Elson continued north along the arctic Alaskan coast. On August 2nd, Beechey sighted and named Cape Thompson and Point Hope. As mentioned earlier, Vasiliev and Shishmaref had already mapped these landmarks and named them Cape Rikord and Cape Golovin, respectively. However, the Russians did not make as detailed a topographical survey of the coast as did Beechey and Elson (Map No. 19).

By August 15th Blossom had worked north to a spot just south of Point Franklin. Here Beechey decided to turn back for Kotzebue Sound. He ordered Thomas Elson, assisted by the ship's mate William Smyth, to take the barge further north along the open passage formed between the sea ice and the beach, the shore lead. With relatively little trouble Elson and Smyth continued north. On August 23rd they became the



Point Hope, 1826-27 (Taken from Beechey, 1831).

first Europeans known to have reached Point Barrow, the northwestern extremity of arctic Alaska. The British commemorated the event by naming all of Northwestern Arctic Alaska, north of Icy Cape, West Georgia.

Elson and Smyth stayed less than a day at Point Barrow before sailing south toward Kotzebue Sound. Here they rejoined Blossom on September 10th. Beechey in accordance with his orders to wait for Franklin, remained near Chamisso Island until the second week of October when the threat of winter ice finally forced him south through Bering Strait. This prolonged stay stands in sharp contrast to the previous expeditions north of Bering Strait which all quit the area before the end of August.

The Admiralty had foreseen the possibility that Franklin, unable to complete his journey in one season, might winter on Alaska's northern coast if conditions were suitable. In this event, he would arrive at Kotzebue Sound sometime in the summer of 1827. Beechey had been instructed to return north if the two parties had not made contact in 1826. Therefore, on August 5th, 1827, Blossom was again anchored off Chamisso Island, having spent the winter at San Francisco and the Hawaiian Islands.

Beechey, in late summer, 1826, had met several Eskimo parties near Chamisso Island. By drawing in the beach sand, one native group constructed an elaborate map of the coast from Kotzebue Sound to south of Cape Prince of Wales. A surprising feature of this map, other than its very high accuracy, was the delineation of a large embayment just south of Cape Prince of Wales. Until 1826 no European navigator had mapped the exact outline of this bay.

Captain Cook had not spotted the bay in 1778 probably because a long spit across its entrance (Cape Spencer) was interpreted as continuous coastline. Presumably Billings knew of the bay only from local native reports since Sauer said, "The bay formed by the two capes, Prince of Wales and Rodney, is named Imagru, the deepest part of which is the discharge of a considerable river called Ka-ooveren; near the source of which, the natives say, the country is well wooded" (Sauer, 1802, 258). Captain G.A. Sarytschew, a senior officer with the Billings expedition, showed Port Clarence quite correctly on his map of 1792 (Yefimov, 1964, map 177). Apparently the bay was known only from reports, not from an actual survey. One source undoubtedly was Daurkin's map which located a large inlet, called Kaeuveren, in the vicinity of Port Clarence (Ibid., map 89). Khramchenko's belief that

Golovin Bay was connected to Shishmaref Inlet and a bay just north of Cape Rodney probably arose from his misunderstanding of Eskimo descriptions of the river and lake system leading from Golovin Bay to Port Clarence and Grantly Harbour.

Quick to realize the importance of a safe harbour near Bering Strait, Beechey planned to undertake a survey at his first opportunity. It came on August 2nd, 1827, when Blossom dropped anchor off Cape Rodney. Here the barge was lowered and again placed under Thomas Elson's command. He received orders to examine the coast carefully from there to Kotzebue Sound, especially that area portrayed as a bay on the Eskimo sand map (Beechey, 1831, II, 252-53). When Elson joined the Blossom at Chamisso Island on August 11th he reported that a large inlet had been found which promised to be an excellent harbour.

In the same manner as 1826, Beechey took Blossom north from Kotzebue Sound while the ship's barge surveyed close inshore. The latter, under Lieutenant Edward Belcher, cleared the sound on August 14th. Beechey followed two days later with the sloop. On the 20th both vessels arrived off Icy Cape in thick weather and pack ice. Blossom, unable to proceed further north, came about and headed for Bering Strait. Belcher was left to continue his search toward Point Barrow alone.

Sailing south Beechey first visited Chamisso Island on August 25th, and then passed through Bering Strait. On the 31st, the ship tacked into the large bay discovered by Elson several weeks before. Beechey named this bay Port Clarence and a smaller, inner basin, Grantly Harbour after the Duke of Clarence and Lord Grantly, respectively (Ibid., 268). After a week of investigation here Blossom went back to Kotzebue Sound where she ran aground on September 9th. The sloop was quickly refloated and sailed on to Chamisso Island the following day. Lieutenant Belcher was already there. He had taken the barge only ten miles beyond Icy Cape before sea ice forced him back.

Belcher's return trip was marred by the unfortunate loss of the barge and several crew members in an unexpected storm that struck them while at anchor at Chamisso Island.

At this time a controversy arose between the British and some Eskimos because the latter did not help the drowning seamen under circumstances which Belcher, himself, termed hopeless. The crewmen were trapped in a raging sea while the Eskimos, Belcher and several sailors looked on helplessly from shore. An arrogant attitude on the part of both the Eskimos and Englishmen aggravated the situation. On September 29th the initial misunderstanding erupted into open warfare.

Three seamen were wounded by native arrows and one Eskimo died from a British musket ball. The latter was the first native reported killed by a European in Northwestern Arctic Alaska.

For several practical reasons the British conducted themselves with extreme caution during the two seasons among the arctic Alaskan Eskimos. Uppermost in their minds was the fear that any animosity generated by Blossom's crew subsequently could result in an Eskimo attack on Franklin's small, almost defenseless party. Also, Eskimo co-operation was necessary to ensure a complete survey of the arctic coast. It was no accident that the "discovery" of Port Clarence came directly from a friendly exchange of information with the Eskimos.

Beechey apparently tried to prevent any disagreeable confrontations, especially the one which ended in murder. But once the act occurred he could not resist expression of a divided judgement. Said Beechey, "we were sorry to find our musketry had inflicted so severe a chastisement upon these people, but it was unavoidable, and richly deserved" (Ibid., 288). For their part, the Eskimos seem to have been ignorant of firearms.

On October 4th, 1827, fresh water lakes began to freeze around Kotzebue Sound. Beechey had to choose between a prolonged wait for Franklin, which would place Blossom in danger

should the sound suddenly freeze, and an immediate departure for the south. He decided on the latter alternative. Blossom left on October 6th and sailed directly for England where she arrived on October 12th, 1828.

The expeditions of Franklin and Beechey, though unsuccessful in completely fulfilling their primary objective of surveying the entire north Alaskan coastline, nevertheless established beyond reasonable doubt the main configuration of Northwestern Arctic Alaska. Only 200 miles of unmapped coast line remained between the limits of their exact surveys. In addition, both parties gathered information of importance to natural science, botany and zoology. Unfortunately, they were not able to make anything but casual remarks about the native people. As Beechey admitted, "I regret that we never had the opportunity of seeing the Esquimaux in pursuit of their game, or in any way actively employed, except in transporting their goods along the coast" (Ibid., 306-07). Nonetheless, a unique and valuable feature of the 1826 surveys was the fact that simultaneous observations were recorded for nearly all the arctic Alaskan coast from Bering Strait to Demarcation Point. Of no less importance is the fact that both expeditions published their accounts shortly after completion of the exploration work. One must say that Beechey and Franklin were the first to give us a good geographical description of the region north of Kotzebue Sound.

Notes on Chapter 3.

1. Howay (1934, 47) says the Enterprise was probably the first American ship to call at Kodiak Island. He places the date of her arrival as April 24th, 1801.

2. Dobell's name has also been spelled Dubell and Dobel. Parry (1946, 37) quotes a Russian source (Dobel, 1905) which gives Dobell's home as Pennsylvania. The Pennsylvania Historical Society has no record that supports this statement (Williams, October, 1964, pers. comm.). To date correspondence with various New England historical organizations and the National Archives has not provided any additional information on Dobell.

3. These men were probably Captains John Ebbets, John Meek and William H. Davis, all of whom were associated in some way with John Jacob Astor (Howay, 1934, 20; Porter, 1931). The relation between these captains, and Dobell and Pigot, and Astor is obscure. Porter (1931), in his well documented biography of Astor does not mention Dobell nor does he describe the attempt to begin an American whaling industry in northern Siberian and Alaskan waters.

4. The exact nature of this concession is not clear. Parry (1946, 37) says it was issued by Russian officials at Petropavlovsk but later revoked by the Czarist government in St. Petersburg.
5. The journal of the Otkritie, 1819 to 1822, was deposited in the Department of Internal Affairs, St. Petersburg, Archive No. 3472. Book Two deals with the northern Pacific cruise. The journal of the Blagonamerenni was deposited in the same department, Archive No. 3473. Books One and Two deal with the northern Pacific (Golder, 1917, 125).
6. The Pedler first appeared on the Northwest Coast in summer, 1811 under Captain George Clark. John Jacob Astor purchased the ship in early 1814 (Howay, 1932, 75, 85). On July 1st, 1820, Pedler left Hawaii under Captain W.J. Pigot bound for the Northwest Coast (Howay, 1934, 20; Porter, 1930 b, 504). Apparently Captain John Meek took over the command sometime during the early summer. It is also probable that the brig sailed direct from Hawaii to the Arctic. Otherwise it is difficult to see how the ship could sail from the Hawaiian Islands to Kotzebue Sound in just 28 days having first called at the Northwest Coast. Notes from the log book of the Pedler

for the period 1811 to 1814 are deposited with the Massachusetts Historical Society (Howay, 1933, 123; Porter, 1932, 311). Porter, who has written extensively on the dealings of John Jacob Astor, was apparently unaware of the arctic voyage of the Pedler in 1820.

7. From the available evidence it is not possible to determine whether or not the 1820 arctic voyage of the Pedler was officially sanctioned by the Russian government. Probably it was not. Rikord reported that the American captain was lost and only made the northern cruise by accident (Lazaref, 1950, 390). This seems to have been quite incorrect since Captain Meek had Grey's chart of 1819 on board the Pedler. Rikord, on the other hand, may have given the Americans unofficial permission to sail north. Certainly he should have been well acquainted with the Pedler since the ship called at Petropavlovsk several times, including a stop in September, 1820 (Porter, 1930 b, 504).

8. For maps of the routes taken by the Otkritie and Blagonamerenni in 1820-21, north of Bering Strait, (see Lazaref, 1950, 225). A detailed chart of Northwestern

Arctic Alaska, from Bering Strait to Cape Beaufort, was prepared as a result of the Vasiliev-Shishmaref expedition (Yefimov, 1964, map 188).

9. Grewingk (1850, 341) thought Khramchenko's journals were deposited with the Imperial Hydrographic Office in St. Petersburg. Bancroft (1886, 546) had access to the log books of this expedition kept in the Sitka archives. It is strange, therefore, that he records Khramchenko's voyage as having occurred in 1822 and 1823 instead of 1821 and 1822.
10. Okun (1951) in his history of the Russian American Company, seems to have overlooked this fact. Said Okun, "there was particularly no point in counting on vacant lands, and had the Company really been guided by these rules, it would have been deprived of the opportunity to occupy any of the territory settled by natives" (Okun, 1951, 74).
11. Actually the arctic portion of the boundary was a minor factor compared to Russian demands for protection of settlements located in the region from the Portland Canal to Mount St. Elias and the British counter-demands for unrestricted navigation rights in the northern Pacific (Balach, 1902, 14-15).

12. In 1823 Lieutenant Romanoff of the Russian navy submitted a plan to follow the Copper River inland, to travel north to the Arctic Ocean and then to journey east to Hudson Bay. The idea was not acted upon (Tikhmenev, 1861, 333).
13. In reality the British plan was a three-pronged offensive aimed at Bering Strait because Captain Edward Parry was ordered to sail from Baffin Bay to Northwestern Arctic Alaska where he would join forces with Franklin and Beechey. When Beechey arrived at Petropavlovsk in June, 1826, he received an Admiralty dispatch sent overland from London. It informed him that Parry had returned to England (Beechey, 29th June, 1826, PRO Adm. 1/1574, B/122). Parry's voyage therefore had no meaning in the Franklin-Beechey expedition of 1826-1827.
14. The Soviet atlas (Atlas Istorii, 1959, 55) incorrectly shows that Kotzebue discovered all of Kotzebue Sound and that M.N. Vasiliev was the first to survey the entire coast from Cape Krusenstern to Cape Lisburne.
15. The mention of Cape Rikord suggests that Beechey had knowledge of the 1821 or 1823 maps published by the Russians. But if he had the charts they were not used in

conning Blossom along the Northwestern Arctic Alaskan coast. For example, at first sighting the British sailors confused Cape Thompson with Cape Lisburne. This mistake was corrected when the new landmark was called "Bottle Peak" after a bottled message left there for Franklin (Blossom, log book, August 1st - 2nd, 1826, Royal Geographical Society, London). Later the cape was named after Deas Thomson, a Commissioner of the Royal Navy. On Beechey's original chart the name appeared as Cape Thompson; the spelling which is still used on all maps.

CHAPTER 4

THE MEETING OF EAST AND WEST

The Russian American Company's renewed charter of 1821, together with the boundary treaties of 1824 and 1825, left only one direction for unrestricted Russian expansion in America; North. But these treaties were not the only factors influencing the Russians at this time. For years their colonization pattern had been linked closely to the distribution and abundance of the sea otter. Probably one reason why Shelikhov's plan of 1794 to create permanent settlements in northern Alaska did not materialize was the fact that few sea otter pelts were available north of the Aleutian Islands. Twenty years later the situation had changed. It was obvious that the sea otter population along the Northwest Coast was steadily declining (Howay, 1933, 120). New sources of income and new trading regions had to be opened up. Now was the time for the Russian American Company to move north.

Russian Expansion into Northern Alaska, 1821-1838.

From 1821 to 1838 a series of Russian expeditions surveyed the Alaskan coast northward from Bristol Bay to Bering Strait. In 1829 Captain F.P. Litke, with the sloop Senyavin, carried

his exploration work as far north as St. Lawrence Bay on the west side of Bering Strait. Overland parties traversed parts of the Nushagak, Kuskowkwim and Yukon Rivers. Russian settlement advanced north to the Yukon River.

A conscious campaign to capture the northern fur trade was started in 1830 when the company dispatched Ensign A.K. Etolin toward Bering Strait in the brig Chichagov. Etolin visited Golovin Bay, Sledge Island (Asiak), King Island (Ukivok)¹, St. Lawrence Bay on the Chukchi coast, and finally St. Lawrence Island. A primary objective of this journey was the investigation of native trade routes leading to and from northwestern Alaska because the company planned to intercept goods moving from Alaska over Bering Strait to independent merchants in Siberia. Also, the threat of British competition from the east motivated the Russians to gather more geographical knowledge about northern Alaska.

Just when the first European trade goods were introduced into northwestern Alaska, via Bering Strait, is unknown². As noted earlier (Chapter 1, page 2), Russian trading posts were established on the Kolyma and Anadir Rivers in the late 1640's. Secondary posts were built at Ichigemski and Kamenskoe in the second half of the 18th century. The Anadir post was plundered in 1790, the Ichigemski post declined drastically from sickness

and famine after 1813 (Dobell, 1830, I, 159) and the Kamenskoe post seems to have been of minor importance after 1800 (Wrangell, 1840, 115). The most important trading centre for the Chukchi Peninsula about the mid-19th century was Ostroenoe located on the Mal Anui River, a tributary of the Kolyma. This centre seems to have come into prominence at the expense of an earlier trading site at the mouth of the Angarka River, a branch of the Bol Anui River (Ibid., 198-99).

The Founding of St. Michael and Nulato.

When Etolin returned from his 1830 expedition he recommended that a trading post be built near Stuart Island on the southern shore of Norton Sound. In 1833 Lieutenant Tebenkov, with the 300 ton ship Europa, was ordered to erect a fort at this spot, which he did. It was named Mikhaielovsk (St. Michael) (Tikhmenev, 1861, 345; Bancroft, 1886, 548). Prior to this the most strategic northern trading station of the Russian American Company was Fort Alexandrovsk, built about 1817 near the mouth of the Nushagak River. In 1831 the company started a post at the junction of the Kvigin and Kuskokwim Rivers and a year later another was built at the mouth of the Holitna River.

In 1839 a trade outlet was constructed at Nulato (Dariabin) on the lower Yukon. Together with a small trading outlet at

Unalakleet and the main fort at St. Michael, the three posts marked the northern-most extension of Russian settlement in Alaska³. It never progressed beyond these limits.

British Expansion into Northern Alaska.

The Russians were not the only ones moving north. Farther to the east the Northwest Company and, shortly afterwards the Hudson's Bay Company, followed Mackenzie's route down the Mackenzie River. The Northwest Company established Fort Good Hope in 1804, about 100 miles below its present river site. A second post was built near Fort Norman in 1810 and, in 1820, Fort of Forks was constructed at the present location of Fort Simpson (Bethune, 1937, 16-20). The Hudson's Bay Company took over the above named locations when the Northwest Company formed a union with the Bay in 1821. The Hudson's Bay Company continued the northward expansion toward Alaska when it founded Fort McPherson on the lower Peel River in 1840, a post, called Lapierre House, on the upper Porcupine River in 1842, and finally, in 1847, an important trade outlet at Fort Yukon. The last named post was well within Russian America, at the confluence of the Porcupine and Yukon Rivers.

Chukchi Traders.

Until the large fur companies began to establish northern posts the primary source of European goods reaching arctic

Alaska seems to have been the Kolyma River. Here, in late February or early March each year, a great trading fair was held at Ostroenoe, a small outpost of a few huts on the Mal Anui River about $68^{\circ} 10'$ north latitude and $164^{\circ} 10'$ east longitude. From as far away as Bering Strait the Chukchi natives came, their reindeer sleds piled with sealskin bags full of black, silver, red and white fox pelts, wolf, lynx, wolverine, reindeer, river otter, beaver, Alaskan marten, Alaskan bear, walrus rawhide thongs and walrus ivory. They were met by Russian merchants from Yakutsk. In 1821, for example, the Russian traders arrived with 125 pack horses loaded chiefly with tobacco, all kinds of iron and hardware, pots, pans, swords, scissors, needles, hatchets, knives, kettles⁴, bells, pipes, various coloured coral beads, spoons, spears and pieces of red and blue cotton (Cochrane, 1824, 198; Wrangell, 1840, 117). Wrangell, who attended the Ostroenoe fair in 1821, gave the following vivid account :-

"On the 11th of February the fair was opened by hoisting a flag over the gate of the Ostrog. At this signal the Tschutktschi advanced in order, fully armed with spears, bows and arrows, and ranged themselves, with their sledges and goods, in a semicircle in front of the fort, where the Russians, and the other tribes⁵, awaited the ringing bell, which was to give notice that the traffic might commence. The moment it sounded, it seemed as if an electric shock had run through the whole of the party in the fort. Old and young, men and women, all rushed forward in mad confusion towards the Tschuktschi; every one endeavoured to be first at the sledges, to obtain

the best, and to dispose of his own wares to the most advantage. The Russians were much the most eager of the whole; they might be seen dragging, with one hand, a heavy bag of tobacco, and having in the other a couple of kettles, whilst hatchets, knives, wooden and metal pipes, long strings of beads, etc., etc., were stuck round their girdles or thrown over the shoulders, as they ran from sledge to sledge proclaiming their wares, in a language which is a medley of Russian, Tschuktschi, and Yakuti.

The noise, the press, the confusion, would defy description. Some were thrown down by the throng in the deep snow and run over by their competitors; some lost cap and gloves in the fall, and not stopping to recover them, might be seen with bare heads and hands, in a temperature of -35 degrees, intent only on making up for lost time, by a double activity. The excessive eagerness of the Russians was exhibited in remarkable contrast with the composure and self-possession of the Tschuktschi, who stood quietly by their sledges, and made no reply to the torrent of words of their customers, until a proposal met their approbation, when the exchange was effected at once. It appeared to us that their calmness gave them a great advantage over the Russians. They had no scales, but judged the weight very correctly by the hand. The average value of the goods brought to this fair is said to be nearly 200,000 roubles; the fair lasts about three days, and, at its close, the various parties disperse." (Ibid., 117-18).

The Chukchi were very capable businessmen, the Russians seldom seem to have bettered them in trade. This was not true when cheap brandy or vodka was introduced into the bargain since, as Wrangell points out, some natives would "give the most beautiful fox skins, valued at 250 roubles, for a couple of bottles of bad brandy, which cost only a few roubles at Yakutsk" (Ibid., 116) (Wrangell, 1948, 157).

Russian, Chukchi and Eskimo Trading Goods.

But tobacco, not brandy, was the primary exchange item. The Chukchi tradesmen made a handsome profit on this commodity as the estimates of Wrangell and Cochrane illustrate. The former calculated that the Chukchi gave about 18 pounds of tobacco ($\frac{1}{2}$ pood) for furs in Alaska which they sold, in turn, to the Russians at Kolyma for 72 pounds (2 pood) of tobacco. The two pood of tobacco cost the Russian merchant about 160 roubles at Yakutsk compared to the 260 roubles for the value of furs received from the Chukchi. Neglecting transportation costs, which were high for the European traders who used horses under the severe arctic conditions rather than domesticated reindeer, as did the Chukchi, the Yakutsk merchants made a gross profit of 62 per cent and the Chukchi a profit of 300 per cent on the same lot of merchandise (Wrangell, 1840, 115-16).

Captain John Cochrane, who also attended the Ostroenoe fair in 1821, estimated the Russians' profit at nearly twice Wrangell's figure. According to Cochrane (1824, 199), the average 100 pound bag of tobacco worth 300 roubles, plus some iron work valued at 50 to 60 roubles, sold for the following prices at Ostroenoe :-

1	"park" of marten furs ⁶	90-100 roubles
15	red fox pelts	250-300 roubles
1	pair of native boots	-
1	"park" of reindeer skins	40- 50 roubles
TOTAL		<u>c.380-450 roubles</u>

Cochrane calculated that 400 bags of tobacco, worth 120,000 roubles in Ostroenoe, and 60,000 roubles' worth of other articles (hardware, beads, etc.) cost the Russian traders less than 60,000 roubles in Yakutsk. When the merchants returned to the lower Lena River with 180,000 roubles' worth of furs and ivory, and paid off their travel expenses, which were high, they earned a net profit of 120 per cent (Ibid., 198-99).

Cochrane and Wrangell observed that the Chukchi themselves had little to trade except walrus ivory, a few bear skins, reindeer parkas, white foxes and frozen reindeer meat. Said Cochrane :-

"The other articles of fur come from a nation on the American continent called the Kargaules, two of whom were at the fair. They bear more nearly the features of the Tschuktchi than those of the hideous-mouthed inhabitants of the islands in Bering Strait, although with a browner or more dirty colour. The furs brought and sent by them consist of many thousands of black, brown, blue, red and white foxes, martins, and martin parks, some beavers, river otters, bears, wolves, seadogs (sea otter) and sea-horse (walrus) skins; a few articles of warm clothing, and some ornaments carved of sea-horse teeth, representing the animals common among them" (Ibid., 198).

Kotzebue, in 1816, had been especially interested in how articles of Russian manufacture came into northwestern Alaska. Though hampered by a poor interpreter, he conferred with a Chukchi near East Cape who told him they obtained goods from the Kolyma River. Kotzebue was also informed that American natives travelled to the Kolyma, by boat, to obtain iron (Kotzebue, 1821, I, 259, 262). At least in part this last statement confirms Cochrane's observations of Americans who occasionally visited the Kolyma fair. However, these "Americans" might have been Siberian Eskimos.

Chukchi and Alaskan Eskimos.

That there are two different cultures on the Chukchi Peninsula, the nomadic, reindeer herding, inland Chukchi and sedentary, marine mammal-hunting Eskimos, has not been doubted by modern scholars⁷. But early observers were not always aware of a resident Eskimo population on the northeastern Chukchi Peninsula coast. As a result, their use of the word "Chukchi" people is often ambiguous. The "Americans" mentioned by Cochrane, and the Chukchi who spoke with Kotzebue, might have been Eskimos who lived in northeastern Siberia.

In contrast, the Alaskan Eskimos of the early 19th century were easily identified by their custom of wearing labrets in their lips. These were button-shaped ornaments made from various

materials such as ivory, graphite, soft stone, bone and antler. Deshnev, the first to describe this cultural idiosyncrasy, was also the first of the early explorers to confuse the Chukchi and Eskimo people. Said Deshnev, "over against the Isthmus are two islands in the Sea, upon which were seen People of the Tschukoschi Nation, thro' whose lips were run Pieces of Teeth of the Sea-Horse" (Muller, 1761, 6). Steller, too, was told that American natives were distinguished by ivory lip labrets (Golder, 1925, 103-04).

Native Trade Across Bering Strait.

During the first decades of the 19th century the Chukchi traders engaged in a regular cycle of travel and trade. In autumn the Chukchi left the Bering Strait and Arctic Ocean coast and slowly moved westward in search of reindeer pasture for their domesticated herds. Some trade was carried on at the secondary fairs of Anadir and Ichigemski by traders who migrated southwest (Wrangell, 1840, 115; Cochrane, 1824, 200; Erman, 1850, II, 283, 397). Cochrane states that demand for tobacco at Anadir and Ichigemski was so high that the price was twice that of Ostroenoe. For this reason the Chukchi who visited the Kolyma refused the Anadir-Ichigemski Chukchi traders permission to partake in the Ostroenoe fair lest they destroy the local market by inflating the price of tobacco (Cochrane, 1824, 200).

After trading on the Kolyma in late February or early March, the Chukchi departed for Bering Strait where they arrived in late May or June. Billings, who travelled overland with the Chukchi, left East Cape on August 25th, 1791 and reached the Angarka River on February 27th, 1792 (Sauer, 1802, 256, 283-84). In 1821 Wrangell calculated that the trip, Bering Strait to Kolyma, took five or six months (Wrangell, 1840, 115). Cochrane was told it took about three months for the return journey, from Ostroenoe to Bering Strait (Cochrane, 1824, 200). In 1849, Hooper (1853, 185) was informed by Chukchi natives at Plover Bay that a round trip to the Kolyma took six months, while to the Anadir it took only four months.

There is no doubt that trade relations across Bering Strait date far back into antiquity. One must not assume, however, that European trade goods immediately found their way into northwestern Alaska as soon as Russian posts were built on the Anadir and Kolyma. Among other things, it was not until the second half of the 18th century that Russian-Chukchi relations began to improve to a point where constant, relatively large-scale traffic could be carried on between the two groups. Nevertheless, it is known that the Chukchi had quite detailed knowledge of northwestern Alaska and that they carried some Russian trade goods to Bering Strait even while hostilities between Cossacks and natives were common. For example, on August 8th,

1728, Bering met some Chukchi off the northeastern coast of Siberia who said they knew of the Russians "through their relatives who go sometimes to the Kolyma on their deer sleds but never by water" (Golder, 1914, 143, 145). Two weeks later Bering again encountered Chukchi south of East Cape who had long been acquainted with Russians.

Something of the Chukchis' geographical knowledge of Northwestern Arctic Alaska can be seen in the various native reports given such early explorers as Daurkin and Kobelef. From the information gathered by Muller in 1736 it is also evident that the native Siberian people had an excellent idea of northwestern Alaska (Muller, 1761, 23-26)⁸. Even those statements of barefooted American natives with tails, which Muller dismissed as pure mythology, probably were based on fact. Sarytschew mentioned barefooted Eskimos at Cape Rodney in July, 1791 (Sarytschew, 1806, 45). Kotzebue, in 1816, saw bootless natives at Shishmaref Inlet and Kotzebue Sound (Kotzebue, 1821, I, 228). As for tails, Captain Beechey thought the story referred to talismen of fox tails or birds' wings so often hung from the parkas of the arctic Alaskan Eskimos (Beechey, 1831, I, 341). Or it might originate from a particular style of parka which had a long, tail-like flap hanging behind.

Steller, in 1741-42, obtained further information on the native trade across Bering Strait. Said Steller :-

"I know from quite reliable information that the Chukchis traded from the second Chukchi Island (the other Chukchi Island) with America and that, although for some years this commerce was interrupted because a misunderstanding arose, this trade is still carried on by the inhabitants of the islands; the principal articles are knives, axes, lances, and iron arrow points, which the Chukchi acquire at a very high price from the Russians at Anadyrsk and exchange with the Americans at many times higher price for sea otters, martens and foxes". (Golder, 1925, 98-99).

Sauer, who visited the Chukchi side of Bering Strait in August, 1791, said the natives around St. Lawrence Bay,

"had plenty of skins of foxes, martins, hares, and the musk-rat of America, whence, indeed, they obtain the greatest number of their furs, boats, and arms, in exchange for such articles as they get from Izshiginsk (Ichigemski) and from the wandering peddling traders about the estuary of the Kovima" (Sauer, 1802, 250-51).

Whereas there was long standing enmity between the Russians and Chukchi, there were also antagonisms between the Chukchi and Eskimos across Bering Strait. Although Steller maintained the "misunderstanding" which caused this conflict had been resolved, other writers give contrary evidence. Popov, in 1711, was informed that opposite the Chukchi Peninsula were a people with a different language, ivory in their cheeks and who had warred with the Chukchi as long as any native Chukchi could remember (Muller, 1761, 24-5). He also reported Alaskan

Eskimo prisoners among the Chukchi (Golder, 1914, 152). Chukchi natives told Daurkin in 1763-65 that the folk who lived in the "large country" opposite the Chukchi Peninsula were :-

"altogether different from them in manners and customs, speak a language of their own, and have long been at enmity with them, so that they alternately go to war against each other. They fight with lances and bows, and their arrows as well as their lances are tipped with quartz, which is very hard and which they treat with a vegetable poison" (Pallas, 1781, in Masterson and Brower, 1948, 66-7).

This statement is corroborated by Kobelef who learned from a Chukchi man in 1779 that he had crossed over the Diomed Islands to America five times in order to trade and wage war (Pallas, 1783, in Masterson and Brower, 1948, 94). Sauer (1802, 252), in 1791, mentioned Eskimo prisoners among the Chukchi. Sarytschew (1806, 40) in the same year, was told that the Chukchi often traversed Bering Strait to plunder and capture Alaskan Eskimos. When Kotzebue showed some Chukchi natives several drawings of Alaskan Eskimos, one of them said, "if I meet such a fellow with two bones (lip labrets) I shall pierce him through" (Kotzebue, 1821, I, 262). As late as 1848-49 Lieutenant Hooper remarked that the Chukchi had "some slight communication with the island of St. Lawrence, but enmity exists between its natives and themselves, and more than one proof was offered that they reduced to bondage any of those people, who,

on fishing or other excursions, were driven upon their coast" (Hooper, 1853, 210).

Just how trade could be managed under these circumstances of hostility between Chukchi and Alaskan natives was graphically told to Kotzebue by an Eskimo met at the entrance to Kotzebue Sound. As Kotzebue understood it,

"The stranger first comes, and lays some goods on the shore, and then retires; the American comes, looks at the things, puts as many skins near them as he thinks proper to give, and then also goes away. Upon this the stranger approaches, and examines what is offered him; if he is satisfied with it, he takes the skins, and leaves his goods instead; but, if not, then he lets all the things lie, retires a second time, and expects an addition from the buyer. In this manner the dealing seems to me to continue without speaking, and there is no doubt but the Tschukutskoi obtain here the skins for the Russian trade" (Kotzebue, 1821, I, 228)⁹.

The Chukchi were good traders but the Alaskan Eskimos were their equal. Even with Kotzebue's party, the first Europeans they had met face to face, the Eskimos proved themselves skillful businessmen. Complained Kotzebue, they had "learnt the common rule of trade, to show the worst goods first". Nothing less than the long iron knives would procure black fox skins from these Kotzebue Sound people.

From all this evidence it is clear that on the one hand aboriginal commercial traffic across Bering Strait was commonplace. On the other hand, it was not an unrestricted flow of trade. A series of communication blocks existed, between Russians and

Chukchi, Chukchi and Chukchi, and Chukchi and Alaskans which retarded the diffusion of material items into northwestern Alaska. But there were formal means by which the blocks were circumvented. Bering Strait trade apparently never was completely cut off.

Native Trade Routes in Northern Alaska.

The main trade route into northwestern Alaska crossed Bering Strait by way of the Diomed Islands. A secondary route ran to St. Lawrence Island and possibly farther to the Alaskan mainland. Daurkin's report, mentioned earlier (Chapter 1, page 13) may be interpreted as a description of the two routes. One crossed the Diomedes and the other passed over St. Lawrence Island to Sledge Island and Alaska.

The role of St. Lawrence Island in this Chukchi-Alaskan trade is not clear. St. Lawrence Islanders interviewed by Kotzebue in 1816 said they traded their furs with the Chukchi for tobacco, glass beads and iron (Kotzebue, 1821, II, 175). But the island was also the site of early, direct barter between Russians and Eskimos beginning in the late 18th century. Said Sarytschew (1806, 53), "The Tschukschens pass over to it (St. Lawrence Island) in their baidars, in order to exchange their baidars and large whale-bone with the Russians for various trifles". By the first decades of the 19th century this direct trade between Europeans and Chukchi occasionally took place

on the Siberian coast of Bering Strait. Cochrane was told in 1821 at Ostroenoe, that ships sometimes called at St. Lawrence Bay to barter with the Chukchi (Cochrane, 1824, 195).

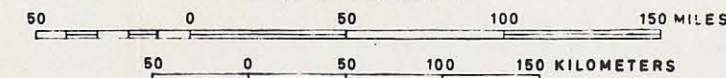
As already stated, the Chukchi themselves landed on Alaskan soil in connection with the aboriginal trade across Bering Strait. Kotzebue's description of trade concerned Chukchi natives who visited Kotzebue Sound. At Cape Rodney, in 1791, Billings' interpreter conversed with people whom he said were Chukchi, not Alaskans (Sauer, 1802, 245). According to ancient stories still told by the Eskimos of Point Hope the Siberian natives were known to have travelled as far north as Cape Lisburne. But it is doubtful that large numbers of Chukchi visited Alaska. More commonly the St. Lawrence Island and Diomedes Island people acted as middlemen. The Eskimos around Cape Prince of Wales also purchased Chukchi goods for resale in northwestern Alaska. The last-named two groups were in an especially strong position for trade because the Diomedes Island route was open in summer and winter. Popov, in 1711, was told the Chukchi could reach the Diomedes Islands either by reindeer sled or boat (Golder, 1914, 152). As late as 1854, dog teams crossed from Cape Prince of Wales to the Diomedes and East Cape (Trollope, BB 1854-55, 905).

After passing over the Diomed Islands to Alaska the main trade route branched in two. One arm lead to Kotzebue Sound and the northeast, the other to Cape Rodney, Norton Sound and the southeast (Map No. 20). The principal trading centre for Northwestern Arctic Alaska was at Sheshalik, a sandspit on the north shore of Kotzebue Sound opposite the entrance to Hotham Inlet. Each summer Eskimos from as far north as Point Hope journeyed south, those from the Seward Peninsula and Kotzebue Sound shores came north and, of most importance, those of the Noatak and Kobuk Rivers arrived from the northeast and southeast, respectively. Several Chukchi boats visited Sheshalik at this time (Simpson, 1875, 236).

From Sheshalik the Siberian goods were dispersed throughout Northwestern Arctic Alaska during the autumn and winter. Items obtained by the Tigaraqmiut of Point Hope in August could reach Point Barrow early the next year, perhaps in February or March (Ibid., 269). Goods taken by the Noatagmiut would be diffused among the Eskimos of the lower Noatak River in autumn. The same was true on the Kobuk River. But the most important secondary trade took place at a series of mid-winter festivals. The Noatagmiut met with Eskimos from the upper Utukok and Colville Rivers (Stoney, 1900, 39). The Kobuk River people met other inland Eskimos near the Anaktuvuk River in winter time (Rausch, 1951, 159). About mid-January a large trading feast was held

PRINCIPAL NATIVE TRADE ROUTES AND TRADE CENTERS ABOUT 1850

SCALE 1:2500 000



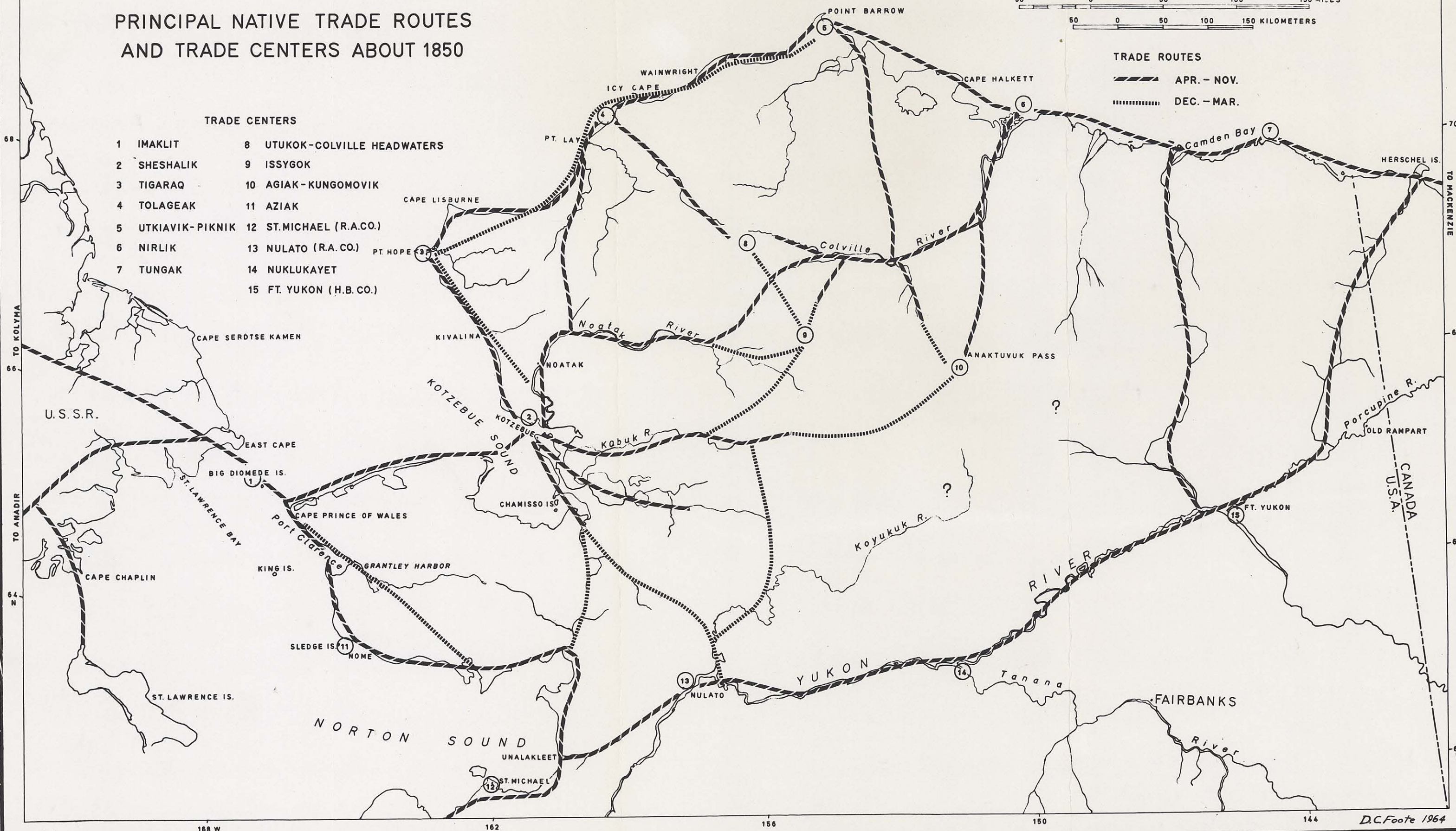
TRADE ROUTES

APR. - NOV.

DEC. - MAR.

TRADE CENTERS

- | | |
|-------------------|------------------------------|
| 1 IMAKLIT | 8 UTUKOK-COLVILLE HEADWATERS |
| 2 SHESHALIK | 9 ISSYGOK |
| 3 TIGARAQ | 10 AGIAK-KUNGOMOVIK |
| 4 TOLAGEAK | 11 AZIAK |
| 5 UTKIAVIK-PIKNIK | 12 ST. MICHAEL (R.A.CO.) |
| 6 NIRLIK | 13 NULATO (R.A.CO.) |
| 7 TUNGAK | 14 NUKLUKAYET |
| | 15 FT. YUKON (H.B.CO.) |



at the entrance to Hotham Inlet attended by Eskimos from as far away as Cape Lisburne (Pim: Journal, PRO Adm. 7/191). Messenger Feasts, an Eskimo social custom through which trade goods were exchanged, were held in winter between such Eskimo groups as the Tigaraqmiut of Point Hope and the Naupaktomiut of the lower Noatak River, the Naupaktomiut and Eskimos around the Squirrel River and between various Eskimo groups on the Kobuk River. At Cape Prince of Wales or near Port Clarence a mid-winter trading feast took place which could draw Eskimos from Kotzebue Sound in the north and the lower Yukon River in the south.

Siberian trade goods originally introduced into Northwestern Arctic Alaska at Sheshalik one year would continue to move farther afield during the following summer. Usually the people around Point Barrow and inland Eskimos met at a trade centre called Nirlik, at the mouth of the Colville River. The two groups also came together at Piknik, near Point Barrow. Some Point Barrow traders went farther east along Alaska's northern coast to Barter Island (Tungak) where they contacted Eskimos from the Mackenzie River delta region (Franklin, 1828, 175). Trade was commonly conducted here in late July or early August. By mid-August the northern Eskimos from the east, west and inland, began to return to their respective winter hunting grounds.

The southern branch of the trade route across Bering Strait extended from the shores of Norton Sound to the Yukon River.

Apparently this route included an important summer trade centre at Sledge Island. At some inland locations the goods changed hands from the Eskimos to the Athapaskan Indians of interior Alaska. The Indians also traded along the northern Alaskan coast between the Colville River and Herschel Island bringing items from Fort Yukon to the arctic Eskimos (Ibid., 130; Maguire, BB 1854-55, 909; Collinson, 1889, 320; Stefansson, 1951, 114; Murray, 1910, 78). Another offshoot of the Yukon River route went up the Koyukok River to the Kobuk River where Athapaskans and Eskimos exchanged goods (Zagoskin, 1847, 138). A third, alternative route, led from Kotzebue Sound southward along the Buckland River to the eastern shores of Norton Sound (Adams, BB 1852, 74).

A Russian article traded at Ostroenoe in February of one year could reach the mouth of the Mackenzie River nineteen months later, having passed through at least two trade centres, Sheshalik and Nirlik. A more probable route would be through three or four trade centres, the Diomed Islands or Cape Prince of Wales, Sheshalik, Point Barrow and Nirlik or Barter Island; or, Sheshalik, the upper Noatak River and Nirlik. The aboriginal commercial routes were so well established in the early 19th century that it would take only about three years for goods to move from St. Petersburg to the Mackenzie River delta¹⁰. A reasonable estimate of this northern trade, in the late 18th or

early 19th centuries, is summarized in Table 1. The primary routes and principal trading centres are shown on Map No. 20.

The speed of communications in northwestern Alaska could be remarkable. For example, a message given to some Koyukuk Indians on April 25th, 1854, by members of the Plover's crew near Point Berents at the Colville River mouth, reached Fort Yukon on June 27th. It returned to Point Brownlow near Camden Bay by July 20th, 1854 (Maguire, BB 1854-55, 909; Collinson, BB 1854-55, 949-51). This meant the message probably travelled 600 miles in less than three months. On another occasion a note written at Fort Yukon on June 9th, 1850 arrived at St. Michael on December 23rd of the same year (Adams, BB 1852, 74).

The Diffusion of Tobacco in Arctic Alaska.

Tobacco, as mentioned, was a primary unit of exchange. Just when the habit first penetrated Northwestern Arctic Alaska has not yet been determined. But in the 1740's Japanese traders were transporting leaf tobacco northward into the Kurile Islands. (Krasheninnikov, 1764, 43). The Orient may have been a source of tobacco before arrival of the Russians in eastern Siberia. By the 1740's, however, the Siberian natives were using a Chinese tobacco obtained from Russian merchants (Muller, 1761, 3). Apparently the Circassian leaf tobacco was preferred to European blends by the Siberians because the former was a stronger narcotic

TABLE ONE

RATE OF MOVEMENT OF NATIVE TRADE BETWEEN SIBERIA AND
NORTHWESTERN ARCTIC ALASKA IN THE EARLY 19th
CENTURY

<u>Place of Arrival</u>	<u>Primary Trading Group</u>	<u>Transport Means</u>	<u>Usual Date of Arrival</u>
<u>First Year</u>			
Anadir River	Chukchi	reindeer sled	Feb-Mar
Kamenskoe-Ichigemski	Chukchi	reindeer sled	Feb-Mar
Ostroenoe (Kolyma)	Chukchi	reindeer sled	Feb
East Cape-Diomedes	Chukchi and Alaskan Eskimos	skin boat	Jul-early Aug
Sheshalik	Chukchi and Alaskan Eskimos	skin boat	Aug
Lower Noatak River	Noatagmiut	skin boat	Sep
Point Hope	Tigaraqmiut	skin boat	Sep-Oct
<u>Second Year</u>			
Point Barrow	Nuwukmiut and Utkiavikmiut	dog team	Jan-Mar
Upper Colville, Utukok Rivers	Noatagmiut	dog team	Jan-Mar
Nirlik	Nuwukmiut Utkiavikmiut Noatagmiut	skin boat	Jul
Barter Island	Nuwukmiut Utkiavikmiut Mackenzie Delta Eskimos	skin boat	late Jul-early Aug
Mackenzie Delta	Eskimos	skin boat	Sep

Approximate time: 19 months

Approximate overland distance: 1,950 miles

Approximate distance along the sea coast: 2,050 miles

(Erman, 1850, 304). Among the Russian traders, leaf tobacco seems to have remained popular until after the 1850's. This was not true for the British naval ships. To economize on storage space, the "Cavendish" or flat, compressed slabs of tobacco, or "negro head", twisted sticks of tobacco, were introduced on British arctic ships after 1850 (Osborn, 1856, 67).

By the early 19th century the volume of tobacco moving from Siberia toward Bering Strait was considerable. Cochrane (1824, 198) believed that Chukchi traders took away about 40,000 pounds of tobacco from Ostroenoe in February, 1821. Despite this impressive weight, tobacco seems to have diffused into Northwestern Arctic Alaska at a relatively slow rate. Just south of the Yukon River delta in 1778, James Cook met natives who were not acquainted with smoking (Cook, 1784, 437, 478). The same author noted that coastal Eskimos at Cape Denbigh, on Norton Sound, knew the use of tobacco in 1778. From Kotzebue's experience in 1816 it can be assumed that tobacco had been in use around Kotzebue Sound for some time, probably dating back to at least the year of Cook's voyage. Further to the northeast, however, Alexander Mackenzie in 1789 did not find tobacco used or known among the natives of the lower Mackenzie River (Mackenzie, 1803, 136). As late as 1826 John Franklin encountered Eskimos near Herschel Island, just west of the Mackenzie delta, who knew of

tobacco but who were not fond of it (Franklin, 1828, 130). This also seems to have been the case in 1837 because Thomas Simpson, travelling along the Alaskan north coast, reported that Eskimos west of Tangent Point requested tobacco while those to the east did not (Simpson, 1843, 145). Before 1853, however, the habit had reached the Mackenzie delta (Collinson, 1889, 299). Tobacco was a common trade item on the upper Yukon and Porcupine Rivers by the late 1840's (Murray, 1910, 42, 49, 71).

Although tobacco is not a durable substance, tangible evidence of its use can be traced in the form of pipes, tobacco pouches, requests for it as a trade item and obvious signs that individuals knew the purpose of the plant even though they might not possess it at any particular moment. From the information which is available it must be concluded that the "tobacco frontier" in northwestern Alaska, until the 1840's, lay west of the Mackenzie River, probably near the headwaters of the Noatak and Kobuk Rivers and up the Yukon River to beyond the Koyukuk. Although the last-named region received tobacco from St. Michael and Nulato, trade goods from the Kolyma, to include tobacco, continued to reach the Yukon as late as the early 1840's (Zagoskin, 1847, 205).

The Diffusion of Russian Trade Goods in Arctic Alaska.

Metalware, glass beads and other durable goods of Russian manufacture spread further afield in America than did tobacco.

Blue beads, iron spear points and knives, and copper or iron bracelets, were common possessions of American natives met by Billings in 1791 and Kotzebue in 1816. On the lower Mackenzie River in 1789 Alexander Mackenzie did not mention objects of known Russian origin but the occurrence and high value of blue beads similar to those diffusing over Bering Strait is possible evidence that the articles had come from the west. This same degree of speculation must be applied to a two-edged, iron spear point hafted as a knife by Eskimos at Winter Island, on Melville Peninsula. Parry, who described the knife in 1821-22, thought it might have come from Hudson's Bay Company posts further south (Parry, 1824, 503-04), while Beechey and John Simpson concluded it probably came from a Siberian source (Beechey, 1831, II, 311; Simpson, 1875, 267). It is known, however, that before 1826 Russian iron knives and spear points had reached eastward along the arctic Canadian coast past the Mackenzie delta (Franklin, 1828, 130). A decade later Russian buttons and knives were reported from Fort Good Hope on the lower Mackenzie River (Simpson, 1843, 103)¹¹.

One possible reason for the seemingly slow diffusion of tobacco, Russian hardware and glass beads from Siberia toward the east might have been the high prices demanded by Russians and Chukchis alike. Despite the variety of communication blocks which could hamper trade, one would expect, after two centuries

of Russian trade from the Kolyma, that European goods would be found throughout Arctic North America. But if the estimates given by Wrangell and Cochrane are interpreted correctly, 72 pounds of tobacco would cost an Alaskan Eskimo at Sheshalik about 60 marten skins and 45 red fox pelts. That is, if 72 pounds of tobacco cost 20 marten skins and 15 red fox pelts at Ostroenoe (Cochrane, 1824, 194; Wrangell, 1840, 117), the Kotzebue Sound prices would be three times higher. Wrangell (Ibid., 89) gave the price of arctic foxes traded to Yakutsk merchants in 1821, as about three roubles per pelt. Since the Russians at Ostroenoe received 260 roubles worth of furs for 72 pounds of leaf tobacco one pound of tobacco was valued at about two white fox pelts. At Kotzebue Sound one pound of tobacco might have cost five or six white fox skins. These circumstances of trade were disadvantageous to the arctic Alaskan Eskimos because the most valuable furs, by Russian standards, the marten, beaver, land otter and sable, are all forest animals of the subarctic taiga, not of the treeless tundra. In addition the most prized sea animals, the sea otter and fur seal, do not inhabit arctic waters north of Bering Strait.

In contrast, articles of exchange commonly offered by the arctic Alaskan Eskimos, such as skins and oil from ringed and bearded seals, whale oil, walrus ivory, walrus skins and rawhide thongs, polar bear hides and caribou skins, do not appear to

have brought high prices from Russian merchants. Moreover, most of these items were directly available to the Chukchi on their own Siberian coast. The most valuable wares possessed by the arctic Eskimos probably were walrus ivory, the pelts of various coloured foxes (mostly white, black and red), and the skins of the wolverine, wolf, lynx, brown bear and polar bear. From the Siberian trader's point of view the most desirable furs came from the Alaskan coast southward toward the Yukon River and not from the northeast.

There were other important reasons why European goods moved relatively slowly across Bering Strait into Northwestern Arctic Alaska. One was the fact that trade there had its foundation on native products. The Chukchi offered such items as graphite and red ochre, substances which the arctic Eskimos used to decorate various implements, clothing and themselves. Also, Siberian reindeer skins, greatly admired in Alaska, fetched excellent prices in the form of seal and whale oil, rawhide thongs, various furs, the skin of the Greenland whale (muktuk), soapstone lamps from the central Canadian arctic and other types of country produce. A second reason was the natural prejudice and conservative attitude of Alaskan Eskimos which undoubtedly retarded the process by which European materials were taken into use. For example, a taboo against the use of iron in cutting whales and walrus was still in force along the

north Alaskan coast until the 1880's (Nelson, 1899, 145).

Lastly none of the European goods was of such a character that the arctic Alaskan Eskimos became wholly dependent upon their use. Bering Strait trade was largely a luxury trade, a commercial venture which could be eliminated without causing serious repercussions in the Eskimo economy or social life. But with time the Eskimo demand grew for such things as muskets, ammunition, kettles, knives, spear points, hatchets and metal needles. Table 2 gives some idea of the value placed on these goods during the period 1779 to 1854.

Of the various Russian manufactured products obtained by arctic Alaskan Eskimos it was the coloured beads which became a cultural symbol of wealth. The beads commanded prices far in excess of their real value. But, as suggested in Table 2, and by the statements of early European visitors, the Northwestern Arctic Alaskan Eskimos were capable traders who bartered on their own terms and only with, or for, items of their choice. Often no amount of hardware, tobacco or beads could make a man part with his lip labrets or a hunting weapon essential to his livelihood. For these reasons it seems probable that many of the tales now told on the Alaskan arctic coast, about the individual value of beads, have been exaggerated in their retelling through the years. Thus, Spencer was told at Point

TABLE TWO

COMPARATIVE EXCHANGE RATES FOR EUROPEAN AND ESKIMOS
TRADE GOODS, 1779 TO 1854

<u>Date</u>	<u>Place</u>	<u>European Item</u>	<u>Eskimo Item</u>	<u>Ref.</u>	<u>Page</u>
1779	Big Diomedes Is.	"several tobacco leaves"	c. 20 sable and marten skins	1	65-66
1791	Cape Rodney	single string of glass beads	1 kayak	2	46
1816	Kotzebue Sound	1 iron knife	1 black fox	3	48
1816	St. Lawrence Is.	buttons	200 waterproof parkas	3	41
1821	Ostroenoe	1 lb. tobacco	2 white foxes	4	89, 115-6
1821	Kotzebue Sound	1 lb. tobacco	5-6 white foxes	4	89, 115-6
1826	Peard Bay	2 hatchets	1 umiak	5	420
1827	Port Clarence	1 hatchet	1 grey fox	6	265
1827	Port Clarence	1 hatchet	1 land otter	6	265
1837	Barter Island	1 hatchet and 1 dagger	1 pair of lip labrets	7	119
1837	Point Tangent	1 hatchet and a "little" tobacco	1 umiak	7	166
1842	St. Michael	1/3 lb. small red and white beads	2 beavers	8	103
1842	St. Michael	1 hatchet	2 beavers	8	103
1842	St. Michael	1 knife	1 beaver	8	103
1842	St. Michael	2 lbs. tobacco	2 beavers	8	103

TABLE TWO - contd.

<u>Date</u>	<u>Place</u>	<u>European Item</u>	<u>Eskimo Item</u>	<u>Ref.</u>	<u>Page</u>
1846	Nulato	1 kettle	20 beavers	9	72
1847	Fort Yukon	1 musket	20 beavers	9	48
1847	Nulato	10 blue beads	1 beaver	9	71
1847	Fort Yukon	6-8 <u>Dentalium</u> shells	1 beaver	9	71
1847	Fort Yukon	6-8 <u>Dentalium</u> shells	3 marten skins	9	71
1847	Nulato	1 kettle	10 beavers	9	72
1847	Nulato	1 musket	10 beavers	9	72
1849	Plover Bay	1 musket	12 reindeer	10	
1849	Fort McPherson	1 musket	20 beavers	11	
1849	Fort McPherson	1 blanket	10 beavers	11	
1849	Fort McPherson	6 measures of gun powder	6 beavers	11	
1849	Fort McPherson	36 bullets	2 beavers	11	
1849	Fort McPherson	1 large belt	2 beavers	11	
1849	St. Lawrence Bay	6 ounces of tobacco	1 sled dog	12	120
1849	Kotzebue Sound	1 blue bead	1 fish (21 lbs. 33" long)	13	134
1849	Point Hope	1 string of beads and "some" tobacco	1 umiak	14	
1849	Wainwright	"small quantity" of tobacco	800 lbs. of caribou meat	15	

TABLE TWO - contd.

<u>Date</u>	<u>Place</u>	<u>European Item</u>	<u>Eskimo Item</u>	<u>Ref.</u>	<u>Page</u>
1849	Point Barrow	1 large butcher knife, 1 mirror, beads and tobacco	1 umiak 1 small umiak and paddles	12	226
1849	Point Barrow	2 knives and 1 lb. of tobacco	1 umiak	14	
1850	Diomedes Is.	1 pint rum	4 walrus tusks	16	74
1850	Point Hope	2 boxes matches	1 sable skin	16	75
1850	Jones Island	1 2" stick of tobacco	1 fish	17	109
1850	Jones Island	1 3" stick of tobacco	1 fish	18	74
1851	St. Michael	7 dollars (1 dollar = 4 shillings 2 d.)	1 wolverine	19	
1851	Unalakleet	5 lbs. tobacco	native guide to travel <u>c.</u> 400 miles	20	
1854	Seward Peninsula (inland)	"bunch" of blue beads and 8 "hands" tobacco	1 sled	21	929
1854	Seward Peninsula (inland)	1 double barrelled gun	1 native guide	21	929
1854	Seward Peninsula (inland)	10 "hands" tobacco and 1 shirt	1 sled	21	929
1854	Seward Peninsula (inland)	5 "hands" tobacco and "some" beads	1 sled dog	21	929
1854	Port Clarence	1 large knife	1 native guide	22	940

TABLE TWO - Contd.

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11. Hooper, BB, 1849-50, 6th September, 1849.
12. Hooper, 1853.
13. Seeman, 1853.
14. Martin, in Pullen, BB, 1849-50, 4th August, 1849.
15. Kellett, BB, 1849-50, 22nd November, 1849.
16. Collinson, 1889.
17. Armstrong, 1857.
18. Osborn, 1856.
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21. Hobson, BB, 1854-55.
22. Bouchier, BB, 1854-55.

Barrow in 1952-53 that in the 19th century one small blue bead was worth a wolverine or wolf skin (Spencer, 1959, 156). But when members of Herald's crew visited Kotzebue Sound in 1849, before the influx of whalers or traders could have destroyed the local market, one blue bead was worth only a fish (Seeman, 1853, 134).

For the native inhabitants of Northwestern Arctic Alaska Bering Strait continued to be a bridge to Siberia throughout the early 19th century. In 1849, as in 1749, the Chukchi journeyed to the Kolyma River where they traded furs and walrus ivory for a poor quality leaf tobacco, common beads (usually dull, opaque beads), knives and printed cotton material to cover native fur garments (Hooper, 1853, 186). But, at this time, Bering Strait acted as a wall, not a bridge, to the various Europeans active in the Bering Sea region. During the period of active, northward Russian migration in Alaska, 1828 to 1838, no nation breached this wall, Russia not excepted.

Peter Dease and Thomas Simpson, 1837.

Then, in 1836, the Hudson's Bay Company suddenly turned its attention to the unoccupied, still incompletely mapped northern coast of Alaska between Return Reef and Point Barrow. On July 2nd of that year Governor Sir George Simpson of the Hudson's Bay Company instructed Peter Warren Dease and Thomas

Simpson to follow the arctic coast westward from the Mackenzie River to Point Barrow (Simpson, 1843, 4).

At the same time, in St. Petersburg, Baron F. von Wrangell, just returned from Alaska as the former manager of the Russian American Company, proposed that a Russian expedition be sent to the same coast. He suggested that one umiak large enough to take 12 men, and five three-man bidarkas be used¹². The personnel would be the commander and his aide, a medical student, 13 Russians or men of mixed Russian-Aleut parentage (Creoles) and 10 Aleut hunters (Tikhmenev, 1861, 337).

Much like Count Romanzoff's plan to meet Franklin in 1826, Baron von Wrangell's 1836 proposal was not immediately translated into action by the Russians. And, as they had in 1826, the British forged ahead to explore arctic Alaska.

On July 9th, 1837, the party led by Dease and Simpson turned their boats westward from the Mackenzie River delta. They moved relatively quickly, reaching the westernmost point of Franklin's exploration, Return Reef, on July 23rd. Cape Simpson was sighted four days later. Hereafter the men encountered more and more sea ice until it stopped them just west of Cape Simpson on July 31st. Thomas Simpson then decided to proceed to Point Barrow on foot with five companions¹³. Dease and the remainder of the party waited near Cape Simpson.

Fortunately Simpson's group met some helpful Eskimos at Point Tangent who sold them an umiak which they sailed the last few miles to Point Barrow.

Simpson arrived at the point on August 4th, 1837. Here he made the startling declaration that "on reaching it (Point Barrow), and seeing the ocean spreading far and wide to the southwest, we unfurled our flag, and with three enthusiastic cheers took possession of our discoveries in his Majesty's name" (Simpson, 1843, 154). This was the first published territorial claim by a British subject to Northwestern Arctic Alaska in the 59 years since Captain James Cook carried the Union Jack through Bering Strait. The claim did have some substance because Simpson was the first European to set foot on Point Barrow. Thomas Elson and William Smyth, from the Blossom, had not left their boat when they anchored to an ice floe off the point ten years before. No Russian had ever seen Point Barrow.

Simpson was aware of the 1825 treaty which gave Russia a clear legal title to the coast traversed by the Englishmen. Perhaps his territorial claim was not meant for publication¹⁴. Nevertheless, it does verify what had been obvious to the Russians for several years, namely, the Hudson's Bay Company's determined push against Russia's eastern border in America.

First had come British inroads in the Alexander Archipelago and Sitkeen River. Then came the Dease-Simpson expedition in the Arctic. This was followed by establishment of Fort McPherson and Fort Yukon. The latter represented the farthest westward extension of Hudson's Bay Company posts into Russian territory.

Simpson remained at Point Barrow for only a few hours before he turned back to rejoin Dease. They met on August 6th and sailed quickly eastward to the Mackenzie without incident. In little over a month the expedition had completed the survey of Alaska's northern coast (Map No. 21). By so doing, they demonstrated that relatively easy communication with Alaska, westward from the Mackenzie River delta, could be undertaken in summer.

While Simpson and Dease were still in arctic Alaska, I.A. Kuprianoff, the new manager of the Russian colonies in America, decided to implement Wrangell's suggested northern expedition. But now the motivation was not geographical discovery as much as it was the investigation of the nature and extent of Hudson's Bay Company influence north of Bering Strait (Belov, 1956, 455). And such an investigation was long overdue. This would be the first time in 17 years that the Russian American Company had sent an exploration party toward Point Barrow.



EXPLORATION 1822 TO 1847

Ship's Track	New Land Surveyed	Expedition
—	[Stippled box]	Land surveyed before 1822
---	[Horizontal lines box]	Franklin & Back 1826 (England)
- - -	[Diagonal lines box]	Beechey 1826 & 27 (England)
- - -	[Cross-hatched box]	Simpson & Dease 1837 (England)
—	[Stippled box]	Kashevarof 1838 (Russia)
—	[Stippled box]	Wosnessensky 1843 (Russia)
—	[Stippled box]	Hudson's Bay Co. 1847 (England)
→		Direction of voyage



Base map taken from 1961
World Aeronautical Charts,
#63, 64, 76, 77, 1:1,000,000
D.C. Foote '63

Alexander Kashevarof, 1838.

The Revenue Officer Alexander F. Kashevarof was chosen to lead the expedition¹⁵. He was a Kodiak Islander of Russian-Aleut parentage, educated in St. Petersburg at the Russian American Company's expense. In autumn 1837, he received orders to proceed north the following summer. Not until his return to southern Alaska, after October, 1838, did he learn that Thomas Simpson had already completed a successful survey of the northern coast even before the Russian party had obtained its initial authorization from the colonial governor in 1837.

On July 5th at St. Michael Kashevarof's men boarded the 180-ton brig Polyfem, commanded by Captain Chernof. Ten days later the Russians spotted the first ice floes at 69 degrees north and consequently put in at Cape Lisburne. Here Kashevarof, with a 12-man umiak and five three-man bidarkas, started north toward Point Barrow. Bad weather and then sea ice slowed their progress along the shore so much that on July 27th, at Icy Cape, Kashevarof decided to leave the umiak, a medical aide and half his crew under the command of Kulishov (Kashevarof, 1879, 287). Just south of the cape this reserve party built a driftwood hut, surrounded it with a low stockade and settled down in apparent comfort until the northern detachment returned later in the summer.

In the meantime Kashevarof continued toward Point Barrow with the five bidarkas, his aid Malakov, the Eskimo interpreter Utuktak and ten Aleut paddlers. They eventually reached Point Barrow on August 5th, one year to the day after Thomas Simpson's visit from the west. From the point Kashevarof continued about 30 miles eastward before the threatened outbreak of hostilities, between Russians and Eskimos, forced the party to stop. They turned back to the west on August 6th (Kashevarof, 1840, 142). The explorers sailed quickly south, joined forces with the Icy Cape contingent on August 17th, crossed over the lagoon behind Point Hope on September 1st and finally reached Chamisso Island on September 10th. A week later the Polyfem, which had conducted a survey of Kotzebue Sound during the summer, arrived at the island to pick up Kashevarof's expedition. The ship reached Novo Archangel that autumn.

Kashevarof's reports of intended aggression by natives north of Point Franklin reveal an arctic Eskimo population more dangerous and threatening than that described by Franklin, Elson and Simpson. The editor of Sin Otechestva, in an introduction to Kashevarof's account of the 1838 trip, states that an outbreak of smallpox among natives east of Point Barrow turned them against the Russians (Ibid., 130). But Kashevarof makes no mention of this disease or that sickness of any kind angered the Eskimos. Assuming that smallpox was not the cause,

there are three plausible explanations for the Eskimos' behaviour. One is simple exaggeration on Kashevarof's part. Because the Russians were travelling relatively early in the season, they encountered great quantities of sea ice. Rather than admit discouragement because of these difficult ice conditions Kashevarof might have placed the blame for an early retreat south on warlike Eskimos.

A second explanation may be the composition of Kashevarof's crew. The men were either Creoles, of mixed Russian-Aleut birth, or pure-blooded Aleuts. An absence of Europeans, or more correctly said, the appearance of strange, aboriginal-like people, could have sparked Eskimo resistance.

Lastly, there was a growing resentment toward the Russians by Eskimos living near Bering Strait, particularly those who traded at Sledge Island (the so-called Asiagmute from Asiag Island). Angered by the Russians who upset the Bering Strait trading pattern when they built St. Michael, these Eskimos actually attacked the fort in 1836 with about 200 men (Zagoskin, 1847, 34). They were beaten off but ill feeling generated among the Bering Strait natives might have spread northward to include the Eskimos around Point Barrow. This does not explain why Kashevarof should receive a reasonably warm welcome by people south of Point Franklin, however.

Although Kashevarof's expedition did not reach the extreme eastern boundary of arctic Russian America, it did carry out a careful survey of the Northwestern Arctic Alaskan coast and its native settlements¹⁶. Kashevarof was the first European to name correctly most of the Eskimo groups from Kivalina to Point Barrow. And the expedition extended Russian geographical exploration to its farthest north and farthest east limits. No other Russian surpassed these limits until a century later, in 1937, when from August 20th to September 12th the Soviet icebreaker Krassin operated to the north and east of Point Barrow in connection with the trans-polar flights (Brower, MS 889-92).

Ironically Kashevarof believed himself to be the first European to visit the coast eastward from Point Barrow. Upon rounding the point from the west he expressed, in almost the same words used by Simpson looking west in 1837, the inner thrill of seeing an open ocean to the east (Kashevarof, 1840, 137). When he heard several accurate Eskimo reports of Europeans having been in the area Kashevarof interpreted them as references to a Russian party commanded by Semyen Lukin, who supposedly departed for the Arctic Ocean in 1836 (Ibid., 136). There is no evidence that Lukin's expedition passed north of Bering Strait. Undoubtedly the Europeans seen at Point Barrow were Thomas Simpson's party of 1837.

Kashevarof did not know of Simpson's exploration. He, therefore, gave Russian place names to several prominent geographical features on the northern Alaskan coast already named by the British. The first bay east of Point Barrow, in latitude $71^{\circ} 13'$ north and longitude $155^{\circ} 40'$ west, he named Prokofiev Bay after I.V. Prokofiev, Director of the Board of the Russian American Company. Simpson had named this same spot Dease Inlet. The cape at latitude $71^{\circ} 09'$ north, longitude $155^{\circ} 15'$ west, on the west side of Dease Inlet, Kashevarof named Cape Stepov in honour of M.C. Stepov, Lieutenant General and Inspector of the Corps of Navigators. At $71^{\circ} 08'$ north, $154^{\circ} 53'$ west, he named Cape Wrangell after Baron F. von Wrangell. This was the Point Tangent of Simpson. Kashevarof also named a bay, in this same area, after I.A. Kuprianoff, governor of the Russian American colonies (Ibid., 139). But the place names bestowed by Kashevarof, like those given by Vasiliev and Shishmaref, have not survived to appear on the modern maps of Northwestern Arctic Alaska¹⁷.

The Smallpox Epidemic of 1836-1838.

Northern exploration in Alaska by Russians in 1838 was not confined to Kashevarof's effort. In early spring the trader Malahoff travelled from St. Michael to the mouth of the Nulato River, a tributary of the lower Yukon. Later he was directed to build a trading post there; a task begun in

March, 1839 (Zagoskin, 1847, 126). It was also in summer, 1838, that the Creole Klimov, with a jolly boat from Polyfem explored Spafariev Bay and its river mouth (Zagoskin, 1956, 109).

There was tragic irony in exploration at this time. The most serious sickness to strike Alaska since the Russians arrived in 1741 was the smallpox epidemic of 1836-39. These were the very years that Kashevarof, Malahoff and Klimov made contact with hitherto isolated native people in northern Alaska.

The disease first appeared near the California boundary. By November, 1836, it had spread to Novo Archangel (Old Silka) where about 50 percent of the native population succumbed (Tikhmenev, 1861, 366). In an attempt to stem the epidemic, the Russians sent medical aid to the Aleutian Islands. One doctor sailed on Polyfem in 1838, the same ship which carried A.F. Kashevarof to arctic Alaska later that summer. It is quite possible that Polyfem was infected with smallpox because the disease broke out soon after the vessel's arrival at Unalaska (Bancroft, 1886, 560-61). Smallpox also struck the Nushagak, Kuskokwim and lower Yukon Rivers. When Malahoff revisited Nulato in March, 1839, he found the pestilence at its worst (Zagoskin, 1847, 209). At St. Michael the peak of the epidemic was probably passed in late summer, 1838 (Ibid., 126).

The native population in many parts of Alaska was severely reduced as a result of the epidemic. But the post at St. Michael did not close. Rather, its position was strengthened because after 1838 the Russian American Company realized that, to survive, the post had to be serviced by a regular communication system which included at least one supply ship each year. When circumstances allowed, this vessel also tried to visit St. Lawrence Island, the north shore of Norton Sound and Kotzebue Sound, in order to take advantage of the traditional large-scale summer trade by the Eskimos at these points. In 1841 the Okhotsk, a 174-ton ship owned by the company, failed to reach Kotzebue Sound because of sea ice. The next year conditions were apparently much the same. But in July, 1843 the Okhotsk succeeded in reaching the sound (Ibid., 20). A passenger on board the ship was J.G. Wosnessensky, curator of the St. Petersburg Zoological Museum (Grewingk, 1850, 75, 346)¹⁸.

Lieutenant L.A. Zagoskin, 1842.

About this time, 1842, Lieutenant L.A. Zagoskin was sent on an exploration mission to northwestern Alaska by the Russian American Company¹⁹. In keeping with the company's continued interest in trans-Bering Strait trade, Zagoskin was directed to visit Kotzebue Sound. While he went no further than the eastern shore of Norton Sound and the middle Koyukuk River, Zagoskin obtained enough information about

arctic Alaska to conclude that "for the benefit of our company and to make business more successful a new trading post and redoubt should be established in Kotzebue Sound" (Zagoskin, 1847, 6-7). To accomplish this, he recommended that 15 men, a prefabricated timber house, and enough flour, crackers, and salted and dried fish for a year, all be sent to Kotzebue Sound (Ibid., 21).

Needless to say, the Russian American Company responded no more to Zagoskin's suggestion of 1842 than it had to Kotzebue's similar proposal of 1816. The Kotzebue Sound post was never built. The last Russian effort to move the frontier of settlement into arctic Alaska ended with Zagoskin's unfulfilled plan for a new northern post.

Notes on Chapter 4.

1. Among other things, Etolin wrote a detailed report on King Island (Ukivok) (Belov, 1956, 455).
2. This study makes no particular reference to trade across Bering Strait before the arrival of Russians in eastern Siberia. The discovery of Greek coins, dated from 100 to 300 B.C., in interior Kamchatka, is an illustration of the antiquity of European trade in northeastern Asia (Stefansson, 1958, 25, 27).
3. The 1853 map drawn by Lieutenant Joseph Bernard of the Royal Navy located two additional Russian forts on the lower Yukon. One was at Yakokmoot (near Anvik) and the second at Haadenasker (near Russian Mission) (Map PRO Adm. 7/191). These posts were south of Nulato and St. Michael.
4. Cochrane (1824, 205) noted the Chukchi refused to buy copper kettles on the theory they were poisonous. Apparently only iron kettles were traded at Ostroenoe. Murray (1910, 72) said the Russian American Company traded iron kettles on the Yukon River until 1847 when they introduced copper kettles similar to those sold by the Hudson's Bay Company. Beechey (1831, II, 306) reported copper kettles at Point Barrow in 1826.

5. The Ostroenoe fair also drew natives for a 1,000 versts around the Kolyma. They were the Yakuts, Lamuti, Tungus, Tschuwanzi and Koraki (Wrangell, 1840, 116-17).
6. A "park" is a native jacket similar to the Eskimo anarak. If made of marten skins it contained about 20 skins. The word is commonly used today in Alaska as "parkie". Two reindeer skins or 60 to 80 muskrat or arctic ground squirrel skins would make a park.
7. This work does not discuss the exact geographical limits of each ethnic group inhabiting the Chukchi Peninsula. Dolgikh (1960, 576) has shown that in the 17th century there were about 4,000 Eskimos occupying a coastal area from Mys Schmidt to Zaliv Kresta. About 2,000 Chukchi were located in a narrow strip from the Pegtimel River to the Anadir Gulf, and in a small pocket between the Kolyma and Alazeya Rivers. In the 18th century the Chukchi people expanded their territory to the west and south to occupy lands extending from the middle Omolon River to the drainage basin of the Anadir (Gurvich, 1964).
8. It should be noted that the Chukchi name for the Americans opposite Bering Strait was Kykykmei (Muller, 1761, 23-26). The present day people of Cape Prince of Wales are called Kingingamute and those of Kotzebue Sound Kikitamute.

9. This description of a partial communication block helps to explain why the arctic Alaskan Eskimos might be familiar with European material goods but not with the European himself. With regard to tobacco, for example, a Point Hope Eskimo tale places the origin of the plant in Siberia, no indication is given that tobacco might have been introduced to Siberia by European traders.
10. It should be mentioned that Simpson (1875, 267) estimated it would take three years for a trade item to pass from the Chukchi to Mackenzie River natives. The first winter it would be with the Chukchi, the second winter with the inland arctic Alaskan Eskimos and the third winter with Eskimos residing around Demarcation Point.
11. By 1847 a wide variety of goods sold at the Russian American Company posts of St. Michael and Nulato were moving up the Yukon River and perhaps northward. The trade goods included such items as blankets, cloth, prints, kerchiefs, knives, iron and copper kettles, needles, white, red and several shades of blue beads, iron and copper wire for bracelets, powder horns, fire making steel, files, iron hoops, iron tobacco pipes, leaf

tobacco, snuff, arm bands, awls, rings, small brass coins, flat steel adz heads, gun powder, shot, muskets and Dentalium and Arenicola shells (Tikhmenev, 1863, II, 425) (Murray, 1910, 71-72).

12. The umiak or bidar is a native boat consisting of an open wooden frame covered with bearded seal or walrus skins. The bidarka is similar to a kayak. Those of the Aleutian Island region were built with one, two or three openings to carry a corresponding number of passengers.
13. Those men travelling to Point Barrow with Simpson were James M'Kay, Francois Felix, Pierre Morin, Hector Morrison and Peter Taylor (Simpson, 1843, 141).
14. Simpson was killed on June 13th or 14th, 1840. His memoirs were published posthumously by his brother, Alexander Simpson.
15. For a short biography of Kashevarof and a bibliography of his published works see: Lipshitz, (1952).
16. Grewingk (1850, 345) says the map and journal from Kashevarof's expedition are deposited in the archives of the Hydrographic Department, Naval Ministry, St. Petersburg.

17. Not even Baker (1906), in his excellent work on Alaskan place names, lists the names given by Kashevarof in 1838. It is unfortunate that these early Russian explorers themselves have not been honoured by appropriate place names in arctic Alaska. Only the names of some members of Kotzebue's expedition are commemorated, place names which they set down in 1816.

18. Grewingk (1850, 86, 89) mentions that Dr. Fischer and Kuprianoff visited Cape Lisburne and Cape Krusenstern but he gives no date. It might have been the same year as Kashevarof's trip because the Polyfem did spend the summer of 1838 in this general region. Otherwise the two men probably visited Northwestern Arctic Alaska sometime between 1838 and 1848. In 1843 Vosnessensky travelled from Novo Archangel to St. Michael, Shishmaref Inlet, St. Lawrence Bay, the Anadir Gulf and back to St. Michael and Novo Archangel. Apparently his scientific writings, which were accessible to Holmberg (1856, 283), contained few details on the native people of Northwestern Arctic Alaska because Holmberg makes practically no mention of the northern Eskimos.

19. For a map of Zagoskin's travels in northwestern Alaska, see: Zagoskin, 1956, 27. Among other things, Zagoskin prepared a detailed map of Alaska based upon his own observations and those of earlier British and Russian exploration parties. This map accurately delimits the extent of European geographical knowledge of arctic Alaska up to the year 1844 (Yefimov, 1964, map 192) (Zagoskin, 1956, inset map).

CHAPTER 5

WHALERS AND MEN-OF-WAR

The possibility that Russia would ever colonize and develop Northwestern Arctic Alaska declined with the approach of the mid-19th century. No Russian expedition of importance is known to have sailed north of Bering Strait after 1842. The British too, withdrew from northern Alaska but not before one last surge of activity, from 1848 to 1854, brought about by the Franklin search expeditions. (Map No. 22).

The Search for Sir John Franklin

In 1845 Sir John Franklin, with two ships Erebus and Terror, sailed through Baffin Bay in an attempt to make the Northwest Passage. Neither Franklin nor his ships were seen again. When no word of the expedition had reached the British Admiralty by late 1847, concern for the missing men motivated one of the largest and most prolonged searches in Arctic history. By way of Baffin Bay and Bering Strait a series of rescue parties penetrated the central North American Arctic.

Herald and Plover, 1848-49.

The first ship of the Bering Strait contingent, H.M.S. Plover, was selected on November 7th, 1847. Her commander

Thomas E.L. Moore received orders on December 13th to rendezvous with H.M.S. Herald in the north Pacific early the following spring. Plover left Plymouth, England on January 30th, 1848 while Herald (Captain Henry Kellett), sailed from Panama on May 9th¹. Unfortunately the two ships failed to meet that summer.

Kellett reached Petropavlovsk on August 7th, St. Michael on September 2nd, and Chamisso Island on the 14th. For the next two weeks Herald waited in Kotzebue Sound for Captain Moore. When Moore did not arrive Kellett finally took his ship southward through Bering Strait on October 2nd.

Plover, Winter of 1848-1849.

In the meantime the 226-ton brig Plover, a seaworthy but slow sailer, ploughed relentlessly across the Pacific. By August 23rd she had come no further than the Hawaiian Islands. Originally Moore was to winter his ship somewhere north of Kotzebue Sound (BB, 1849-50, 13th August 1848, 15-16) but when it became apparent that the 1848 sailing season was nearly over, he considered the alternative harbours of Petropavlovsk or Port Clarence (BB, 1849-50, 23rd August, 1848, 21). On October 15th Plover reached the Chukchi Peninsula coast. Ten days later Moore committed the ship to winter quarters in Emma Harbour, a part of Plover Bay on the Chukchi

coast. He did this only after he was satisfied that Kotzebue Sound was beyond his reach that year (Hooper, 1853, 21).

Plover thus became the first European ship known to have overwintered in the vicinity of Bering Strait.

The winter of 1848-49 passed without any special event for Plover's crew. Except for one long journey to East Cape in spring the British did little exploration on the Chukchi Peninsula. On May 21st the crew began cutting Plover free from the harbour ice. But it was not until June 15th that the ship could leave its moorings. Ice continued to delay the ship until July 1st when Moore finally cleared Port Providence bound for Kotzebue Sound.

Early American Whalers in the Northern Pacific

En route northward the British encountered an American whale ship, Tiger (Captain Brewster), outward bound from China². Uncertain as to when and how Herald might supply him, Moore purchased enough goods from the Tiger to support his crew for a few months (BB, 1849-50, 38; Simpson, MS, 1848-50).

No surprise was expressed by the British sailors when they hailed an American ship so far north. By 1849 it was well known in Russian America and along the Kamchatka coast that Yankee whalers were moving progressively north. In the summer of 1842 Captain Kadnikov, of the Russian American Company ship

Alexander, on his way to Okhotsk from Novo Archangel, hailed a United States whaler. To the Russian's consternation, the American captain said he had come north from the Hawaiian Islands with 30 other ships. Furthermore, he expected an additional 200 vessels to hunt along both sides of the western Alaskan Peninsula and adjoining Aleutian Islands that season. The American whaler said he had sailed the same waters in 1841 together with 50 other ships (Tikhmenev, 1863, 149).

The first European whalers had reached the Pacific Ocean more than 50 years before, in 1787 (Tønnessen, MS, 22). One of these ships was the Amelia, fitted out in London, commanded by Archelus Hammond and manned by an American crew from Nantucket. They killed the first sperm whale known to have been taken in the Pacific (Starbuck, 1878, 90). In 1791 six American whaling ships from Nantucket and one from New Bedford sailed for the newly discovered Pacific sperm whale fishery (Ibid., 90). By the early 1820's their hunting range had moved so far north that Japanese waters were a regular cruising ground. And, as mentioned (page 54), the first American whaler known to have passed through Bering Strait was Captain Nicky Grey in 1819.

From the time of Grey's initial voyage until the mid-1830's the extent of American whaling activity in the northern Pacific is obscure. Without giving his source of information, Parry (1946, 37) said "there is, however, evidence that individual

American whalers ventured into those Russian waters some time after Dobell's futile attempt to bring in his compatriots and before 1848." Howay (1933, 119) thought it possible that at least five whalers left east coast American ports between 1816 and 1819 bound for the Northwest Coast. Williams (1964, 346) said that, "the date of the first whaler entering the Bering Sea is not clear, it was soon after 1835, if not that year, and they were after the right whale." Nourse (1884, 117) states that in the autumn, 1853, the American ship Monongahela was lost on its 72nd passage through the Aleutian chain at 172 degrees west longitude. Philadelphia was the ship's home port before 1850 and New Bedford after that date (Starbuck, 1878, 468-469). If one assumes some time must be spent in port, the ship might first have entered the Bering Sea between 1805 and 1815. A check of the maritime records, port of Philadelphia, showed that the ship sailed to Liverpool in 1836, 1840 and 1847. There was no evidence that it sailed to the northwestern Pacific (Williams, 28th February, 1964). Because the source of Nourse's information is unknown it must be concluded that the Monongahela did not operate in the Bering Sea for 36 seasons.

Captain Barzillai T. Folger, in the Nantucket ship Ganges, is credited with the capture of the first right whale on the "Kadiak Grounds" in 1835 (Starbuck, 1878, 98). The Kadiak or

Kodiak Grounds were located at roughly 50° to 60° north and 160° west to 170° east longitude. Because they included Bristol Bay and the Aleutian Islands they were really an extension of the Northwest Coast Grounds. The latter encompassed the Gulf of Alaska or that area between 50° and 60° north, 130° to 160° west longitude. The Kodiak Grounds have been called the "Northwest Grounds"³.

Knowledge of a north Pacific whale fishery did not bring about its immediate exploitation by whalers. In 1836 two or three ships left the Chilean coast "between seasons" to explore the Northwest Coast. They found the area rich enough in whales but their pessimistic opinion was that constant, dense fogs would prevent successful whaling. In 1837 several more American ships of the Chilean coast whaling fleet tried the Northwest. They returned with an optimistic viewpoint (Cheever, 1850, 99). Nevertheless, so long as whaling remained good on the southern grounds few vessels went north. In 1839 only two ships comprised the north Pacific fleet (Clark, 1887, 19). After 1840 the southern fleet turned north apparently because the supply of whales along the Chilean coast was exhausted. By 1846 there were 292 ships in the Pacific Ocean north of 50 degrees (Ibid., 20, 84-85)⁴.

In 1843, less than a decade after Folger opened the Kadiak Grounds, the New Bedford ships Hercules (Captain Ricketson), and Janus (Captain Tucker), took the first bowhead whales (Balaena mysticetus) off the Kamchatka coast (Starbuck, 1878, 98). About the same time American whalers began to utilize the rich Okhotsk Sea fishery⁵. Finally, in 1848, the bark Superior from Sag Harbour (Captain Thomas B. Roys), and Ocmulgee of Vineyard Haven (Captain Fred Manter), passed through Bering Strait into the Arctic Ocean⁶. Within fifteen years the five major whaling grounds of the north Pacific had been visited by American whalers; the Northwest Coast, Kadiak, Okhotsk, Kamchatka Coast - Bering Sea and Arctic Ocean.

This sudden wave of northern whale hunting did not mean that the animals were "discovered" at this time. Quite the contrary. Large concentrations of whales had been noted in north Pacific waters for more than a century. Krasheninnikov (1764, 137) recorded great numbers of the animals in the Okhotsk Sea in the early 1740's. At the same time Steller noted that Chukchi coast natives caught so many whales that they did not bother to utilize dead, beached animals (Ibid., 139). Captain James Cook in 1778 observed whales were more numerous north of 60 degrees latitude than further south (Cook, 1784, II, 517). This fact probably led Thomas Pennant to state in

1785 that "whales abound" in the Arctic Ocean north of Bering Strait (Pennant, 1785, I, clix). And Sauer said of the Aleutian Island area in 1790 that "whales are in amazing numbers about the straits of the islands and in the vicinity of Kadiak" (Sauer, 1802, 181).

Penetration of the Arctic Ocean by American whalers in 1848 was a logical result of the fishery as it expanded northward in the 1840's. But the final impetus which pushed Captain Roys through the strait was probably Beechey's vivid description of whales in the Chukchi Sea. Between Cape Beaufort and Icy Cape Beechey observed "a great many black whales - more than I remember ever to have seen, even in Baffin's Bay" (Beechey, 1831, I, 379).

Captain Roys of the Superior was an adventurous whaler who had received permission of the ship's owners to cruise where he wished. Roys left Sag Harbour, New York on October 22nd, 1847 bound for the Northwest Coast grounds with the 275-ton bark. Unsuccessful in fishing the Japanese Sea during the late winter of 1848 he decided to investigate the arctic waters described by Beechey. Roys passed through Bering Strait with an empty ship in summer, 1848, and met with such success that he obtained a full cargo of 4,000 barrels of oil in about six weeks. Normally it took a whaler two or more seasons to

complete its load. The Superior reached Sag Harbour on May 31st, 1849. (Kellett, 22nd November, 1849; BB, 1849-50, 9; Starbuck, 1878, 450-51; Collinson, 1889, 132).

Before Roys arrived at his home port news of his exploratory voyage was common knowledge in Hawaii. Within a few months descriptions of the Arctic Ocean whaling ground had spread around the world. As a result, in 1849 at least 20 American whale ships planned to visit the Western Arctic. Roys himself was home less than three months before he took command of the Sheffield and sailed back to arctic Alaska. An added stimulus to whaling north of Bering Strait at this time was the British government's offer of £10,000 to anyone who rescued Sir John Franklin's party or aided materially toward its rescue (Miller, 19th May, 1849).

Primarily it was the bowhead whale which drew the Yankee ships north. In the eastern Arctic this same animal, the Greenland whale, had been the basis for a whale fishery since the 17th century. The Pacific whalers had not met the species before 1843 and therefore were pleasantly surprised to capture a whale which yielded a greater amount of oil and baleen than a right whale (Eubalaena glacialis) of an equivalent size. The Americans gave the newly found whale several names, "Bowhead", "Bamhead" and "Steeple Top", because it has a pronounced arch

of the forehead. A fundamental idiosyncrasy of the bowhead is its desire to remain in the proximity of sea ice. In the northern Pacific the whales are found in the Okhotsk Sea and from the northern Kamchatka coast to beyond Bering Strait.

Bowheads follow a regular migration pattern in the Western Arctic. During winter they feed along the southern edge of the sea ice in Bering Sea. As spring approaches the animals move north along the northeastern Siberian coast, west of St. Lawrence Island. The first whales pass through Bering Strait during late March and early April. They then swing eastward and follow the Alaskan coast past Point Hope to Point Barrow where they arrive in early or mid-April. From Point Barrow a majority of the whales continue eastward into the Beaufort Sea some time in May. Here they remain until August or early September. The southward autumn migration reaches Point Barrow in September and from there follows a path to the east of Herald and Wrangell Islands in September and October.

In the mid-19th century concentrations of right whales were found in Bristol Bay and along the Aleutian Islands. It is possible that the animal called the "Great Polar Whale" or "Polar Whale" by American whalers was a variety of right whale. If so, these right whales were seen in the Anadir Gulf and just north of East Cape.

This seasonal distribution of Greenland and right whales in the northern Bering Sea and Arctic Ocean determined the activities of the American whale ships. During the mid-winter months the Americans cruised the south and central Pacific primarily in search of sperm whales. About March, those vessels bound for the Bering Sea would turn north, often after a final call at the Hawaiian Islands. By the middle or end of May the fleet would begin to assemble just north of 60° off the Siberian coast⁷.

Working northward along the ice pack's edge in early June a whaling captain had several choices. He could quit the northern grounds in favour of Bristol Bay or the Gulf of Alaska and still have time for a reasonable hunting season. Usually this decision was taken by ships damaged by ice, by timid sailing masters - if one dares to call any American whaling captain timid - or by the occasional pessimist convinced that a good catch was not to be had in northern waters that year.

Normally the whaler did not leave the grounds in June but followed the sea ice north to between latitudes 62° and 64°. Here many ships hunted in the Anadir Gulf and the numerous bays along the northeastern Siberian coast. This Siberian bay whaling was a distinctive fishery; it was not

necessarily combined with that of the Arctic Ocean. Whales were plentiful in the Anadir region during the late 1840's and 1850's and a ship solely concerned with that fishery could remain between latitudes 62° and 64° from early June to September.

In close proximity to the Siberian coast the whalers soon met the native people themselves searching out whales in the bays and inlets. The Americans probably contacted Siberian natives in the mid-1840's since by 1849 and 1850 the whalers speak with familiarity of local place names and individual people.

For the most part it would seem that the foreign whalers were accepted with kindness and hospitality by the inhabitants of the Chukchi coast. Native Siberians are known to have rescued the crews of capsized whale boats and returned them safely to their ships (Majestic, log, 3rd August, 1850). Relatively large numbers of shipwrecked men, who overwintered on the northern Siberian coast, were well treated despite the obvious burden this placed on the indigenous people (Holmes, 1857, 55-83).

Initially the whalers feared the native Siberians and Alaskan coastal Eskimos. Soon after his first voyage north of Bering Strait Captain Roys urged that facilities be con-

structed in the Arctic to aid any seamen who might be stranded there. A further example of Roys' concern is illustrated by the fact that his second ship, the Sheffield, was armed with a large cannon, four swivel guns and 24 muskets, for a crew of 32 men, solely as a precaution against native attacks (Jones, 31st July, 1849). Although fear of the Siberian people was quickly dispelled the whalers remained very uncertain about the Eskimos in arctic Alaska north of Bering Strait. As late as the 1880's whalers looked on the arctic Alaskan Eskimos as a fierce, warlike people.

Whaling near and north of Bering Strait was often Hazardous. In 1851 alone at least 15 ships were crushed in the ice, driven ashore by storms or grounded on uncharted reefs and coasts. The first shipwreck on the arctic Alaskan coast appears to have taken place off Cape Lisburne at this time (Maguire, Journal, 19th July - 12th August, 1852; PRO Adm. 7/194). It was a fear of shipwreck and the prospect of a winter in the Arctic which made most whalemens seek the best relations possible with the local natives. The whalers realized that survival depended upon assistance from a friendly, aboriginal population.

The third, and for this study the most important alternative offered a whaling captain, was the exploitation of the Arctic Ocean north of Bering Strait. In this case a ship usually

cruised the Anadir Gulf - St. Lawrence Island region throughout June and most of July. The captains held close to the southern limit of pack ice and normally kept within sight of the Siberian coast.

Once through Bering Strait, in late July or early August, the whalers took advantage of a rich fishery just north of East Cape, between 66° and 68° north. Some ships sailed farther north following the retreating whales and ice. Just where and when a whaler moved was determined primarily by the location of whales. It cannot be said that fear of the Arctic Ocean kept all the ships near Bering Strait although most captains preferred to stay in the vicinity of other whalers as an added measure of safety. In any case during the early years of the fishery, whales were so abundant near East Cape in late July or early August that a captain did not need to proceed farther north.

It is important to note that the occurrence of whales along the Siberian coast naturally drew the American fleet westward. By the 1850's the whalers were far more familiar with the Chukchi coast and its inhabitants than they were with the people of Northwestern Arctic Alaska.

Not every summer was a successful whaling season in the Western Arctic. Apparently whales were scarce in the Chukchi

Sea, between East Cape and Cape Lisburne, in late July and August, 1853 (Maguire, 18th August, 1854; BB, 1854-55, 947). The following summer was again poor and only 45 ships were reported north of Bering Strait (Maguire, 31st October, 1854; BB, 1854-55, 913). But it was in 1854 that the Americans started a new hunting pattern. They began to work through the late summer sea ice to as far north as Point Barrow.

As mentioned, American whaling north of Bering Strait owed much to British explorers, such as Captains Cook and Beechey, and from the Franklin search vessels. In the summer of 1849 Lady Jane Franklin, wife of Sir John Franklin, supplied Mr. W.R. Jones with charts and information on the Western Arctic. Jones owned the whale ships Sheffield, Huntsville and Alice. He passed on these valuable data to the ships' captains before they departed for the Arctic in 1849 (Jones, 13th September 1849). In August, 1854, a British naval officer, Captain Maguire, gave some American whalers a chart of Point Barrow, details of a winter anchorage there and charts of the Arctic Ocean (Maguire, 31st October, 1854, BB, 1854-55, 914). In mid-August of the same year Captain Collinson of the H.M.S. Enterprise met five American whale ships south of Point Hope. On August 12th he spoke with the captains of the James Andrews and John. Said Collinson :-

"I strongly recommended him to push up to Point Barrow, the ice being remarkably open this season, and whales numerous. He thought the risk very great, and was doubtful, but I endeavoured to assure him that by leaving in the course of the first week of September he would be in time to avoid the gales at the commencement of winter" (Collinson, 1889, 328-29).

Although the American whale ship Saratoga had reached 73° 20' north on August 20th, 1850 and 71° 35' north, 161° 07' west on September 1st, 1851 (Saratoga, log book)⁸, it was not until 1854 that American whalers really began to cruise near Point Barrow.

In August, 1854, at least five whale ships took Collinson's advice and successfully hunted the waters off Point Barrow (Collinson, 1889, 331) (Maguire, 31st October, 1854; BB, 1854-55, 913) (Collinson, 14th September, 1854; BB, 1854-55, 952). That year Captain Charles L. Pope, of the New Bedford ship Rousseau, remained near Point Barrow until September 20th (Oakforde, 6th December, 1854).

Within six short years the American Arctic fleet had established a whaling ground which extended from Bering Strait to Point Barrow and westward to Herald Island; an extremely rich fishery whose exploitation was greatly accelerated by British geographical exploration from 1778 to 1854. In spite of the Americans' rapid expansion into the Western Arctic, however, another 35 years were to pass before they

fully utilized knowledge gained from the British by extending their whaling eastward into the Beaufort Sea.

Herald, Plover and Nancy Dawson, 1849.

As the American fleet of 1849 continued its search for whales in the Bering Strait region, the British rescue vessels pushed farther north in their efforts to find Franklin's party. Plover eventually reached Kotzebue Sound on July 14th, 1849. Kellett again sailed northward from Panama even though he was uncertain where Plover had spent the winter of 1848-49. By June 22nd Herald was in Petropavlovsk. Several days later she was joined there by the Nancy Dawson, a private yacht from the Royal Thames Yacht Club, commanded by Robert Sheddon, a former mate in the Royal Navy. Sheddon was also in search of Franklin (BB, 5th March, 1850; 22nd November, 1849).

The two ships continued north from Kamchatka together. Herald arrived at Chamisso Island on July 15th and the Nancy Dawson swung into the sound two days later. Here they met the Plover. All three British vessels then started north toward Point Barrow.

Pullen's Boat Trip to the Mackenzie River, 1849.

By the 25th the ships were off Wainwright where Captain Moore inspected the inlet as a possible winter anchorage for Plover. At this time Lieutenant W.J.L. Pullen, W.H. Hooper

and Henry Martin were dispatched to the Mackenzie River with four small boats. Followed by Sheddon's yacht, this party rounded Point Barrow on August 2nd, 1849. On that date the Nancy Dawson became the first large vessel to reach the point. Travelling as supercargo was an English woman, Emily by name, who has the singular distinction to be the first European female known to have reached Point Barrow (Simpson, MS, 1848-50).

On August 4th, Pullen's party sent Martin back to the west while Pullen and Hooper continued toward the Mackenzie delta with the ship's whale boats Louisa and Logan, one Eskimo umiak Supply and 12 seamen (Hooper, 1853, 231). The party reached Return Reef on August 13th, Herschel Island on the 22nd and the Mackenzie delta five days later. From here they went upstream to the Hudson Bay Company post at Fort McPherson.

With their arrival at the delta Pullen and Hooper became the first Europeans to complete a voyage from Bering Strait to the Mackenzie River. The ease and relative speed with which their mission was accomplished confirmed the feasibility of the route as illustrated by Thomas Simpson 12 years before. But Pullen's journey was notable for another reason. For the first time a gun was reported in the hands of an arctic Alaskan Eskimo.

Diffusion of Firearms in Arctic Alaska

For decades prior to 1850 Bering Strait had been the "firearm frontier". In fact, the history of guns among the Chukchi extends back to the early 18th century when natives stole weapons from the Russians (Golder, 1914, 157). The same pattern was true in Russian America. By early 1760 some Aleuts had learned to use firearms stolen from Russian hunters (Coxe, 1787, 114-115).

It had been standard Russian policy not to trade firearms or ammunition during the early days of Russian penetration into northeastern Siberia and America. Later Russian merchants did furnish some natives with weapons on the theory that arms would help the native people in their efforts to bring food and fur products to the Russian posts. A similar policy was followed by the Hudson's Bay Company with their "Post Indians".

By the early 19th century firearms had been widely distributed among many Siberian natives. Erman (1850, II, 329) reported that in 1829 all the Tungus hunters of the Aldan and Lena Rivers were armed with short-barrelled muskets purchased from the Russians. Kotzebue, in 1816, met a Chukchi at East Cape who possessed a musket purchased at the Kolyma River trade fair (Kotzebue, 1821, II, 229, 245, 259).

Even though the treaties of 1824 and 1825, between Russia and the United States and Great Britain, expressly

prohibited traffic in guns, powder and shot, the Russians continued to accuse the American traders of indiscriminate barter in firearms along the Northwest Coast. The first Russian complaint from the Arctic concerned Captain John Meek of the brig Pedler who was thought to be trading muskets and powder at Kotzebue Sound in 1820 (Lazaref, 1950, 214). In July, 1821, the Russians observed two natives at St. Lawrence Bay, Siberia, with muskets of British manufacture. The Russians admitted the firearms might have originated at the Kolyma fair just as well as from Captain Meek (Ibid., 303). Despite the claims against Meek there is no concrete evidence that the arctic Alaskan Eskimos obtained firearms in any significant numbers, if at all, before 1850.

Neither Billings in the west nor Mackenzie in the east recorded the native ownership of guns in the late 18th century (Sauer, 1802; Sarytschew, 1806; Mackenzie, 1803). Eskimos met by Kotzebue at Chamisso Island in 1816 did not appear acquainted with firearms at all (Kotzebue, 1821, II, 229). Although they did not own guns, Eskimos at the Mackenzie River delta in 1826 certainly knew the function of the weapons. They fled in panic when Franklin's party leveled muskets at them (Franklin, 1828, 106). In contrast, Beechey believed the Alaskan Eskimos to the west did not possess firearms or

know of their potential as of 1826 (Beechey, 1831, I, 360, 458). This general picture was little altered a decade later. Thomas Simpson observed no firearms on the northern Alaskan coast although he noted Eskimos there knew and respected the weapons as far west as Point Barrow (Simpson, 1843, 162). Kashevarof did not mention the use of native-owned firearms along the entire northwestern Arctic coast in 1838. In fact he said quite bluntly that Eskimos near Point Franklin had never even seen firearms (Kashevarof, 1879, 322). Alexander Hunter Murray believed guns were not found among the Indians of the upper Yukon until shortly before 1847 (Murray, 1910, 85).

Ironically, introduction of the first gun into arctic Alaska was accidental. Early in July, 1826, an Eskimo near the Mackenzie delta stole a pistol from Lieutenant Back. A month later the same expedition under Franklin unintentionally left a musket behind at their Barter Island campsite (Franklin, 1828, 102, 148). When Pullen and Hooper encountered the armed Eskimo on August 9th, 1849 they immediately assumed he had the gun lost by Franklin 22 years before (Hooper, 1853, 237). But four years later Captain Maguire of Plover had an opportunity to inspect this particular weapon. He found the inscription "Barnett, 1843", conclusive proof the gun had been traded recently from a Hudson's Bay Company post (Osborn, 1856,

appendix 390)⁹. Dr. John Simpson, also with Plover, agreed that Hudson's Bay guns and ammunition had diffused westward to Point Barrow by the late 1840's (Simpson, 1875, 235).

In the Kotzebue Sound - Seward Peninsula region and probably northward to Point Hope and inland on the Kobuk and Noatak Rivers, firearms were apparently not used until after 1850. But knowledge of the weapons had become so common by 1849 that Seemann wrote of the Kotzebue Sound Eskimos "they were latterly very anxious to obtain muskets and evidenced no fear in discharging them." (Seemann, 1853, II, 120). This was a radical change from Beechey's time when a Kotzebue Eskimo refused to fire a musket a second time because he was frightened (Beechey, 1831, I, 458).

The British seamen, like the Russians, were reluctant to trade guns. It was the Eskimo demand for firearms which caused the initial distribution of weapons in Northwestern Arctic Alaska. The British, in need of Eskimo goods and services, were forced to pay the price or go without. Thus W.R. Hobson, a non-commissioned officer in the Royal Navy, bartered the first gun to an Eskimo around Kotzebue Sound. The Eskimo demanded a double-barrelled musket in exchange for his services as a guide on February 19th, 1854 (BB, 1854-55, 929). Earlier the same native had borrowed the weapon to kill

his first caribou with a firearm. For his part Hobson followed a precedent set by Captain Moore who had traded one musket for 12 reindeer carcasses at Emma Harbour in March, 1849 (BB, 1849-50, 37).

In the mid-19th century firearms were introduced into Northwestern Arctic Alaska at an ever increasing rate from the Hudson's Bay posts of Fort McPherson, Lapierre House and Fort Yukon and possibly from the Russian American Company posts at St. Michael and Nulato or Russian trading ships near Bering Strait and Kotzebue Sound. The most valuable trade goods at Fort Yukon in 1847-48 were muskets and beads (Murray, 1910, 93). Alexander Hunter Murray, who built Fort Yukon, said he "could dispose of any quantity of guns" during the summer of 1848 if only the weapons were shipped to him (Ibid., 100).

At this time the Hudson's Bay Company sold one musket for the equivalent of 20 beaver skins (Ibid., 48) (BB, 1852, 148-186, 6th September, 1849) (Hooper, 1853, 272). The Russian American Company post at Nulato apparently traded muskets at prices which ranged from 10 to 20 beaver skins per gun (Murray, 1910, 72). The Russian weapons used percussion caps while the British muskets were flintlocks (Seemann, 1853, 143). It was Murray's belief that the Alaskan Indians much preferred the British guns to those of Russian manufacture (Murray, 1910, 72, 100).

Although the Hudson's Bay Company had been trading firearms on the Peel River and Porcupine since the early 1840's this fact does not appear to have come to the Russians' attention until April, 1849, when, much to the Russians' surprise, a party of Indians arrived at Nulato armed with British muskets. The natives said they had received the weapons from a group of whitemen stationed several days' journey up the Yukon (PRO Adm. 7/191) (BB, 1852, 74).

An illustration of the speed with which Hudson's Bay Company guns diffused into arctic Alaska was given by Captain Collinson. On July 2nd, 1854 he met 41 Eskimos near Camden Bay. They had three muskets for the entire party. One gun, dated 1850 (Collinson, 1889, 315) must have moved from an English manufacturer to the arctic Alaskan hunter in about three years. This would agree with the usual rate of transport of Hudson's Bay Company goods in 1850. In the first year the items arrived at York Factory from Great Britain. During the second year they were carried to Norway House. And in the third year they reached Fort McPherson on the Peel River (Murray, 1910, 93).

The same party of Eskimos met by Collinson on July 2nd, 1854 returned later that summer armed with 14 muskets. He was convinced the weapons came directly from Fort Yukon northward to the Arctic Coast (Collinson, 1889, 321). In the summer of 1853 two Point Barrow men had obtained muskets from the east

bringing the total number of guns in the village to four. All of the weapons originated with the Hudson's Bay Company (Maguire, 18th August, 1854; BB, 1854-55, 949). If one takes into consideration all the reports of Eskimo owned firearms, as of 1854, the number of muskets in Northwestern Arctic Alaska was probably no more than two dozen.

American whalers north of Bering Strait helped introduce muskets but the process of diffusion from this source was slow. The whalers were initially interested in whales. Trade with coastal natives was of secondary importance. Moreover, the arctic Alaskan Eskimos were relatively poor when it came to any trade goods sought by the early American whalers. It is not surprising, therefore, that the first muzzle loader appeared among the people at Cape Prince of Wales in 1861 (Thornton, 1931, 139), at Kivalina about 1870 (Burch, 1961), and at Point Hope between 1865 and 1870 (Driggs, 1905, 95). Apparently breach-loading rifles did not come into general use on the arctic Alaskan coast until after 1880 (Nelson, 1899, 164).

Herald, Plover and Nancy Dawson, Winter 1849-1850.

While Pullen and Hooper proceeded eastward the Herald and Plover continued their investigation of the northwest Alaskan coast and Chukchi Sea. Herald reached 72° 51' north on July 29th, 1849 before turning back to the northern Siberian shore.

Plover searched for potential winter quarters around Wainwright Inlet or elsewhere north of Kotzebue Sound. On a second northward traverse, in mid-August, Captain Kellett discovered Herald Shoals and Herald and Plover Islands (Seemann, 1853, 116; BB, 1849-50, 17). The two lands were claimed as British territory on August 17th, 1849.

At the same time Henry Martin's party and the Nancy Dawson worked their way south from Point Barrow. When it appeared that the larger boat might not clear the drift ice or it might run hard aground and be frozen in for the winter, the crew came near to mutiny. So tense was the situation that Sheddon appealed for help. On August 12th, off Refuge Inlet, Martin sent an armed guard on board the Nancy Dawson. In this manner the two groups travelled together until August 28th when they arrived at Kotzebue Sound (Nancy Dawson, log book, 26th July - 28th August, 1849; PRO Adm. 7/189).

By September 1st Herald joined Plover and Nancy Dawson at Choris Peninsula, near Chamisso Island. Captain Moore had decided to winter his ship here. Some crewmen erected a store house and observatory on shore while others explored the Buckland River. Lieutenant Maguire of Herald ascended this stream for 60 miles (BB, 1849-50, 21), the furthest inland journey north of Bering Strait made by a European to that date.

Once Plover was prepared for the winter, the two support ships hauled up anchor and quit Kotzebue Sound on September 29th. The Herald passed through Bering Strait on October 2nd with the Nancy Dawson close behind. Kellett's ship arrived at Mazatlan on November 14th after an uneventful voyage. Unfortunately, Robert Sheddon died at Mazatlan about this time and the Nancy Dawson sailed back to England without him.

Plover, Winter 1849-50.

When Kotzebue Sound finally froze on October 17th, 1849, Plover became the first European ship known to have wintered in Northwestern Arctic Alaska. Perhaps the British did not know they were the first Europeans to spend a winter in arctic Alaska. Perhaps they did not realize what important contributions their observations could make to history and science. Or perhaps, as military men assigned to a specific mission, they were not prepared, intellectually or psychologically, to perform duties other than those of sailors. Certainly the morale on board Plover was not good. Captain Moore considered himself "tricked" into being a guard ship for the other rescue vessels. His officers were melancholy over the fact that Plover was not actively engaged in exploration and the search for Franklin in the central Canadian Arctic (Moore, 19th September, 1850; BM, 35, 308 No. 3).

Whatever the reason it is an unfortunate fact that Plover spent the entire period, 1848 to 1854, between Bering Strait and Point Barrow without compiling a single, comprehensive account of events and conditions in the Western Arctic. The cruise of the Plover should rate an important place in arctic history but it does not. They left behind only a scattering of official correspondence, a few short journal extracts and one good, but woefully abbreviated, discussion of the western Eskimos by Dr. John Simpson (Simpson, 1875)¹⁰. Lieutenant Zagoskin, a lone Russian often travelling under conditions of extreme privation, gathered more information about a greater geographical area in two years than did all these British sailors in six years.

The winter of 1849-50 was spent in relative comfort by the Plover's crew although scurvy appeared before spring. Early in October the local Eskimos had bartered large quantities of fresh caribou meat, fish and berries but they were not sufficient to keep the crew in satisfactory health for the entire winter.

When sled travel was at last possible, exploration parties went several times north to Hotham Inlet and south to Spafarief Bay. In January, February and March, 1850, Captain Moore sent his officers to Hotham Inlet. During one

of these trips, in February, Henry Martin became the first European to visit the lower Noatak River (Moore, 19th September, 1850; BM, 35 308/3).

It was Moore's hope that some word of Franklin might be heard from the Eskimos around Hotham Inlet. He also hoped that the natives would guide a party from Plover inland to the northeast. In this Moore was disappointed. Not even the offer of tobacco and muskets could induce the Eskimos to travel inland during the winter (Moore, 17th July, 1850; PRO Adm. 7/191).

Although the British did not undertake any important winter exploration journeys to the north and northeast of Kotzebue Sound, they did complete two long trips to the south and east in spring, 1850. Lieutenant Bedford Pim, and his guide Paolo Oclagood, left Plover on March 10th and, travelling overland, reached St. Michael on April 6th. This was the first known crossing of the Seward Peninsula by a European. Pim returned to the ship on April 29th where his plans for further inland exploration to the east were not approved by Captain Moore (Seemann, 1853, 137-143). The second extended survey was led by Dr. John Simpson who parted from Plover on May 13th. Together with Mr. C.W. Stevenson, an interpreter and a seaman, Simpson took his dog team around Selawik Lake

and the Kobuk River delta. An early spring thaw forced the party back to the Choris Peninsula anchorage by May 25th (BB, 1852, 91-93). Simpson's survey was one of the few times that a Plover crewmember added new details to the geographical knowledge of Northwestern Arctic Alaska.

Herald and Plover, 1850.

A week before Dr. Simpson departed on his journey, Plover's crew chopped trenches in the sea ice between ship and shore. Sand was poured into these grooves in hopes that absorbed solar radiation would accelerate the melting process as the spring sun rose higher and warmer each day (Simpson journal, MS, 1848-50). But it was not until June 17th that Plover swung free at her anchor. Another month passed before Kotzebue Sound was clear of drift ice. On this date, July 16th, Herald reappeared in the sound. The next day both ships sailed toward Point Barrow.

North of Point Hope, on July 22nd, the two British men of war hailed the bark Prince Regent, a whaler out of Hobartown. At Wainwright, a day later, Captain Moore, the Plover's master Henry Martin, C.W. Stevenson, a female Eskimo interpreter and 11 seamen started for Point Barrow in the ship's launch. Herald, in the meantime, tried to sail further north but sea ice forced her back at 71° 19' north.

Captain Moore's party sailed easily to Point Barrow in four days, navigating through the ice-free water near shore. Eastward from the point their progress was hampered by high winds and waves. Nevertheless, Moore surveyed the same off-shore islands seen by Kashevarov in 1838. He named them the Plover Group and surprisingly "took possession of the group in the name of her Most Gracious Majesty Queen Victoria"

(Moore, Morning Herald, 27th January, 1851; PRO Adm. 7/191). After naming two large islands off Dease Inlet for Mr. Martin and Lieutenant Cooper, Moore turned back to the south. He passed Point Barrow on August 2nd and arrived at Wainwright three days later. Here bad weather and a high surf forced him to wait until August 9th before his party could row out to the Plover. During this forced encampment Mr. Martin sailed about 17 miles up the Kuk River.

Moore's claim to territory that was obviously Russian, does not appear to have been a calculated affront to the Czarist government. After all, the Russians had willingly aided the British search in numerous ways. Rather, the act was Moore's attempt to make some contribution to the great programme of arctic exploration then underway in conjunction with the Franklin search. During the five long years Moore spent with Plover the 1850 boat expedition to Point Barrow was his single significant effort at personal exploration. He had the

opportunity to do much more, to map vast areas of the arctic Alaskan interior and to compile abundant, invaluable data on the native populations, but he did not. In the history of arctic exploration he remains a very minor figure indeed.

Upon his return from Point Barrow Moore proposed that Plover winter at an anchorage he surveyed just east of the Barrow spit. Captain Kellett, Moore's senior commander, thought the summer season already too advanced for such a plan and the idea was abandoned (Moore, 14th August, 1850; PRO Adm. 7/191).

Enterprise and Investigator, 1850.

In an attempt to strengthen the Franklin search through Bering Strait the British Admiralty dispatched two additional vessels to the area in December, 1849. They were the 380-ton Enterprise¹¹ (Captain Richard Collinson), and the 340-ton Investigator (Captain Robert M'Clure) (Collinson, 1889, 34-35). Soon after the ships departed from England on January 20th, 1850, it became obvious that Collinson's craft had the advantage in speed. M'Clure eventually decided to overtake his consort by sailing from Honolulu directly north to Bering Strait instead of by the customary route along the Kamchatka coast. By this manoeuvre, the Investigator was able to heave-to off Cape Lisburne on July 28th, only 24 days out from

Hawaii. Unbeknown to M'Clure, this quick passage put him fully two weeks ahead of Collinson.

Near Cape Lisburne M'Clure learned from Plover's crew that Collinson had not been seen. Three days later, on July 31st, the Herald arrived with a similar message. It was then uncertain whether or not the Enterprise was further north. After waiting one more day M'Clure pressed on for the north and east. As his ship pulled away Captain Kellett signalled, "Had you better not wait forty-eight hours?", to which M'Clure answered, "Important duty. Cannot upon my own responsibility." (Osborn, 1856, 56). The Investigator passed Point Barrow on August 6th, the Colville River on the 10th and Flaxman Island a week later (Armstrong, 1857, 104-47). M'Clure thus became the first European to pilot a large sailing vessel around Point Barrow and along the north Alaskan coast. The Investigator eventually reached Banks Island where the ship became ice bound. Finally, on September 28th, 1853, the crew were returned to England by other British ships stationed in the eastern Canadian Arctic. For this reason M'Clure has been credited with the first completion of the Northwest Passage because he passed from Bering Strait to Davis Strait.

When the Investigator was well east of Point Barrow Collinson arrived at Bering Strait confident that his support ship would soon appear. He visited Cape Lisburne on August 13th,

failed to discover several messages placed there by the other search vessels, and pushed on to the north. A fortnight later the Enterprise reached 73° 23' north, a remarkably high latitude considering the usual concentrations of sea ice to the north and northwest of arctic Alaska. But the inevitable encounter with ice and the desire to contact M'Clure made Collinson return southward. Off Cape Prince of Wales on September 1st, he finally met Plover. As soon as Collinson realized that M'Clure had continued east in early August, he turned back toward Point Barrow. It was Collinson's contention that if the Investigator were trapped in pack ice, unable to clear the point, it would be now that help was needed. But it was too late in the season. By September 22nd the Enterprise, coated in frozen spray, could proceed no further than Icy Cape. Captain Collinson reluctantly sailed back to Port Clarence ignorant of M'Clure's whereabouts or condition.

Plover, Winter of 1850-51.

The Plover spent the last two weeks of August near East Cape in order to contact American whalers who might have news of Franklin. After a quick trip to Kotzebue Sound, where a cache was established, Moore took his ship to Grantly Harbour, the inner anchorage of Port Clarence, which was

Plover's winter berth in 1850-51. Until October 7th the Enterprise helped in preparation of the winter quarters.

In mid-September, before the Enterprise had reached Bering Strait, Lieutenant John James Bernard proposed that he investigate the possibility of an overland expedition up the Yukon River as previously suggested by Lieutenant Pim (Bernard, 20th September, 1850; PRO Adm. 7/191). Collinson agreed with the idea. Before the Enterprise left the Bering Sea Lieutenant Bernard, Assistant Surgeon Edward Adams and a seaman, Thomas Cousins, were landed at St. Michael. Their mission was to learn more about reports of Europeans seen to the northeast and to determine the feasibility of an overland, summer route from Norton Sound to the Arctic Ocean (Collinson, 12th October, 1850; SP, 248/355/2). The three men went ashore on October 12th.

At the same time Captain Moore continued with his preparations for the winter at Grantly Harbour. First he had a strong house built on shore where essential supplies could be stored. Then Plover was firmly secured. All this was completed by October 18th. Throughout November and December numerous Eskimos visited the ship to barter away some caribou meat and fish. Because Moore was uncertain about the natives' intentions it was not until December that he allowed his

officers to visit an Eskimo village on the north side of Port Clarence and a second village 10 miles up the Enowrook River. When the British did pay a visit their Eskimo hosts were so friendly that another sled party was sent to a village 60 miles up the Kogroopak River in search of fresh caribou meat. Unfortunately the animals were so scarce in mid-winter that not enough meat was obtained to prevent the outbreak of scurvy on board Plover. The sickness was cured by meat obtained in spring, 1851, when the caribou returned in large numbers.

Late in December, 1850, a letter arrived in St. Michael sent from Fort Yukon on June 9th by the Hudson's Bay Company factor Alexander H. Murray. It was his answer to Vasilief Maxemoff, manager of the Russian American Company post at Nulato (Darabin). Murray said he would gladly exchange communications if only his correspondent would write in French or English, not Russian (Adams, 10th July, 1851; BB, 1852, 74). On the basis of this letter Bernard correctly concluded that the Europeans previously reported in interior Alaska were probably Hudson's Bay employees working for Murray and not Sir John Franklin's party.

Bernard nevertheless went ahead with his plan to gather information on inland Alaska. On December 29th, 1850, he and Maxemoff started inland for Nulato with two sleds and 14 dogs. On the 16th of January, 1851, the men reached their destination. A

month later, however, enraged Koyukuk River Indians attacked Nulato and killed Bernard, Maxemoff and 54 Indians friendly to the Russians (Ibid., 75-76). Edward Adams, who heard Bernard was severely wounded, arrived at Nulato on March 13th, too late to do more than bury the British officer.

Meanwhile, in response to a letter written by Bernard in late December, Captain Moore sent Lieutenant Edward J.L. Cooper, 2nd mate Thomas Bouchier, two seamen, Thomas Brooks and George Croker, and two Eskimo guides to Unalakleet (Gariska). They left Plover on February 1st and arrived at Unalakleet on March 2nd. Cooper eventually joined Adams at St. Michael on March 28th after the latter returned from Nulato. Bouchier and Croker reported back aboard Plover on April 6th but Cooper and Brooks were so badly frost bitten that they were forced to remain in Unalakleet until summer.

Enterprise, Winter of 1850-51.

As the British seamen stationed in northwestern Alaska carried out their various duties during the winter of 1850-51, the Herald and Enterprise were not inactive. Captain Kellett was ordered back to England with Herald. Collinson, however, was anxious to push north in spring, 1851, so he spent the winter months in preparation for the second voyage beyond Bering Strait. En route south the Enterprise put in at Sitka

on November 2nd, 1850. Here Collinson was received with the utmost hospitality. The British were promised whole-hearted Russian support in the search for Franklin. Furthermore, the Russians informed Collinson fully on the location of Russian American Company posts and their activities in the northwest. This presentation produced evidence that the Yukon and Kivipak Rivers were one and the same (Collinson, 26th February, 1851; SP 248/356). At that time most British maps showed the Colville and upper Yukon Rivers as a single drainage system¹².

The generous reception given Collinson in Sitka was not unexpected. As early as 1847 the British government had informed several Russian diplomats of the planned Franklin search north of Bering Strait. They requested Russian aid and received it. Russian officials in Kamchatka were instructed to help in every way possible. For example, Captain Kellett, on April 25th, 1848, received copies of Admiral Litke's sailing directions for the northern Pacific and Bering Sea (Kellett, 25th April, 1848; PRO Adm. 7/189). These were invaluable documents since they contained much information unknown to the British before that date.

Captain Collinson eventually brought his ship to Hong Kong on February 16th, 1851 by way of the Hawaiian Islands. But his stay in the Asian port was relatively short. Two

months later the Enterprise was again headed north early enough to take advantage of a full sailing season beyond Bering Strait. By late May the warship was tacking among the American whaling fleet along the Bering Sea pack ice front. But despite his early start it was not until July 3rd that Collinson was able to join Plover at Port Clarence.

Plover, Enterprise and Daedalus, 1851.

As commander of the Bering Strait search parties, Captain Collinson decided that Moore should move his ship to Point Barrow for the winter of 1851-52 (Collinson, 26th February, 1851; SP, 248/356). But conditions on the Plover were far from satisfactory for such an assignment. Nearly half the crew had suffered from scurvy the previous winter. The ship was old and it was doubtful whether it could withstand the inevitable battle with sea ice near Point Barrow. Finally, Captain Moore was not happy with the thought of yet another winter in the Alaskan Arctic. He presented Collinson with an alternative plan. Moore proposed that during the winter a group of Aleutian Islanders, to be sent north by the Russians as a contribution to the British search, should guard a cache of Royal Navy stores at Port Clarence large enough to meet the needs of Franklin or other shipwrecked seamen. In the meantime Moore would take the Plover to Hong Kong for the winter

of 1851-52. But, should he be ordered to remain in the Arctic, Moore promised he would return to England in 1852 "promotion or no promotion" (Moore, 30th September, 1851; BM, 35 308/3).

Collinson and Moore finally decided that Plover should winter once more at Grantly Harbour. This arrangement did not prevent Moore from sailing south to St. Michael in mid-July, west to St. Lawrence Bay and north to 70° 30' in late August (Moore, 30th September, 1851; BB, 1852, 89-90). Here pack ice forced him to return to Port Clarence where he hove to on August 28th (Wellesley, 27th October, 1851; BB, 1852, 83) (Moore, 30th September, 1851; BM, 35 308/3).

Collinson in the meantime sailed directly to Point Barrow. He arrived there on July 26th. Bernard's murder apparently dissuaded Collinson from attempting an overland expedition to the northeast. When no trace of M^cClure or Franklin was found at Point Barrow the Enterprise turned eastward. On August 8th the ship was at the Mackenzie River delta from where it continued into the western Canadian Arctic not to return to Alaska for two years.

In support of the Bering Strait search parties and as resupply ship for Plover, the British Admiralty posted H.M.S. Daedalus (Captain George C. Wellesley) to the Western Arctic¹³.

Daedalus dropped anchor at Port Clarence on July 30th, 1851. Wellesley assisted Plover into winter quarters at Grantly Harbour on September 9th before he took Daedalus south on October 9th. The ship arrived at San Francisco on October 22nd, 1851 (Morning Chronicle, 16th December, 1851, PRO Adm. 7/191).

Diffusion of Alcohol into Arctic Alaska

At Emma Harbour in 1848-49 Plover's crew had not been afflicted with scurvy because they always managed to obtain sufficient fresh meat from the local people. In fact, the men's healthy appearance was a source of amazement to other British seamen who had wintered in the Tropics. In 1849-50 there were some scurvy cases on Plover but they were not severe or prolonged, and the sick had recovered before the summer sailing season began. Moore therefore attributed the lack of fresh meat and subsequent hardships of 1850-51 to changed conditions on the northwestern Alaskan coast, namely the increasing activity of American whale ships.

Moore found the native people around Grantly Harbour were "constantly drunk" in the autumn of 1851. They had received a liberal amount of liquor and tobacco from the whalers. An example of how this affected the trade relations between the Eskimos and Europeans was cited by Moore. Near

Plover Bay a native willingly traded five reindeer to the British in 1848-49. In 1851 the same man had obtained an entire case of tobacco from the whalers. As a result he would not barter away even a few pounds of fresh meat (Moore, 30th September, 1851; BM, 35 308/3). In an official report Moore said :-

"I am sorry to inform their Lordships that the whalers have been the means of doing the natives (along the coast on both sides of the straits) a vast deal of injury, by the introduction of a large quantity of spirits with which they have supplied them, and the barter has been so much cut up by the profuse and extravagant manner in which they have given them tobacco that I feel certain the supplies of venison, etc., which I have hitherto been able to procure for the crew will be most materially curtailed, besides which, we shall have to travel considerably further for what little we may procure" (Moore, 30th September, 1851; BB, 1852, 90-91).

This appraisal was supported by Captain Wellesley who remarked that the local Eskimos received a good many different articles through barter with the whalers (Wellesley, 27th October, 1851; BB, 1852, 84). It should be noted that neither officer mentioned firearms as a trade item. Before 1854 there is no written report of guns observed among the Eskimos from Port Clarence to near Point Barrow. The introduction of alcohol was another matter.

When Bering's men first met an Alaskan native in 1741 they offered him alcohol, which he found distasteful, and a pipeful of tobacco. When intoxicating liquors were unknown in northwestern Alaska they were being distilled in Kamchatka by Russians and natives alike (Krasheninnikov, 1764, 86, 195, 208). Certainly by the opening decades of the 19th century knowledge of alcohol and its use had spread to the Chukchi. It was distributed at the Kolyma trade fair to stimulate commerce (Wrangell, 1840, 89; Cochrane, 1824, 195). But until 1850 Bering Strait acted as an "alcohol frontier" between those aboriginal Siberian people acquainted with liquor and the people of Northwestern Arctic Alaska who were not.

This does not mean there were actual spiritous liquids in the possession of the Chukchi because the drink made available at the Kolyma, or other Siberian trade fairs, was quickly consumed on the spot. It does mean the knowledge and habit of drinking brandy and vodka had reached Bering Strait but not across it. For example, while Kotzebue noticed in 1816 that the Chukchi at East Cape liked brandy (1821, I, 246) he made no such observation among the Americans at Kotzebue Sound. Neither Beechey, Franklin, Thomas Simpson nor Kashevarov, from 1826 to 1838, remarked about the use or recognition of liquor in Northwestern Arctic Alaska. In fact, as late as 1850 Seemann wrote of the arctic Alaskan Eskimos :-

"Intoxicating liquors are fortunately unknown among the northern tribes, but in Norton Sound, from constant intercourse with Russian traders, a predilection for them appears to have been acquired" (1853, 55).

During the winter of 1848-49 members of Plover's crew noticed that the Chukchi owned no intoxicating drinks but they very much liked the English rum (Simpson, Journal, MS, 1848-51). Captain Collinson met various Eskimo groups between Port Clarence and Wainwright during the summer of 1850. But it was not until he touched the Diomed Islands that a native requested rum. Said Collinson, "this was the first instance that spirits had been enquired for, or even liked when offered." (1889, 329). Only four years later the "alcohol frontier" had moved onto the Northwestern Alaskan coast because Collinson encountered natives from Shishmaref Inlet or Kotzebue Sound who gave high priority to rum and brandy as trade items (Ibid., 329).

The treaties of 1824 and 1825 signed by Russia, the United States and Great Britain forbade the trade of "spiritous liquors" in areas not occupied by Russia. A further agreement to this effect was made on May 17th, 1842 between Sir George Simpson of the Hudson's Bay Company and Adolphus Etolin, Governor of Russian Alaska. This pact banned the sale of alcohol to natives living north of 50

degrees latitude (Bancroft, 1886, 559). But there was no effective law enforcement in northern Alaska. Not even a Russian corvette sent to Bering Strait in 1850 could prevent illegal trade.

Small Trading Ships near Bering Strait

Just how much trade might have been carried on around Bering Strait after the voyages of Grey and Meek in 1819 and 1820 is unknown. In 1849 reports reached St. Michael that as many as six Americans were trading to the north of the Russian post (BB, 1849-50, 16-18). American whalers were not the only ones who could be accused of introducing new goods into Northwestern Arctic Alaska at this time. There were also a number of small trading schooners which came north each summer. For example, in September, 1851, two schooners, the Eliza (Captain John Archer), and Rena (Captain John Simpson), visited Port Clarence (Wellesley, 27th October, 1851; BB, 1852, 84, 88). Another trader, George Levine, took his 135-ton schooner Koh-i-noor north from Hong Kong in 1853. Levine cruised along the Siberian coast to Kolyuchin Bay trading for skins and walrus ivory. He had such success that his investment was doubled in one season (Trollope, 11th September, 1853; BB, 1854, 155). From June 1st to 26th, 1854, the 93-ton schooner Pheil (Captain Corwin), out of Honolulu, collected about 4,000 pounds of walrus ivory, 3,000 pounds of baleen and

200 to 300 marten and sable skins from the region of Cape Rodney, St. Lawrence Island and Cape Chaplin (Trollope, 6th July, 1854; BB, 1854-55, 910; Hegarty, 1959, 48). The Pheil sailed into the Western Arctic in 1855, 1856, 1857, 1858 and 1867 (Ibid., 48).

Plover, Winter of 1851-52.

Despite the prospect of another difficult year caused, at least in part by the disruptive effects of whalers and traders, Plover's crew settled down for the winter 1851-52, at Port Clarence. Not unexpectedly, by early autumn it was evident that the local Eskimos were more reluctant to trade than ever. To make matters worse, Captain Moore learned that the caribou herds changed their winter feeding grounds, few animals were seen and little venison was brought to the ship as a trade item. Not until February did the deer appear near Grantly Harbour. Nearly two dozen were shot and the fresh meat undoubtedly checked the scurvy which had broken out on board.

Plover and Amphitrite, 1852.

No exploration was carried out by the Plover's officers and crew during the winter of 1851-52. On June 23rd, 1852 the ship was freed from the bay ice. A week later its supply ship, H.M.S. Amphitrite (Charles Frederick), arrived

at Port Clarence (Moore, 1st July, 1852, PRO Adm. 7/194). Frederick brought the news that Moore was promoted to captain and transferred back to England. Captain Rochfort Maguire had come out from Britain to take command of the Plover.

Maguire boarded Plover on July 1st, 1852 and in less than two weeks he had the ship ready for sea. He sailed through Bering Strait on July 12th but heavy sea ice stopped him four days later. After some deliberation, Maguire decided to travel by small boat from Icy Cape to Point Barrow. Together with Dr. John Simpson, Thomas A. Hull, Henry Martin and 12 enlisted men, he parted from Plover, on July 19th. As the party sailed toward shore a raging gale suddenly sprang up. Only after repeated attempts and some excellent seamanship, were they able to cross through the surf outside Wainwright Inlet into the calm waters beyond. Plover's crew watched the drama from a distance. When the two boats disappeared into the towering surf it was immediately assumed that Maguire's entire expedition had been lost or at least swamped and washed ashore in no fit condition for further exploration. Rightly or wrongly, Plover's remaining officers turned the vessel south to seek Amphitrite's aid in the search for those few survivors of Maguire's party who might still be alive.

But Maguire and his men were far from dead. First they spent a quiet day on shore drying out their gear. On July 21st they set sail and arrived at Point Barrow the next day with no trouble. Here the captain made a careful survey of the anchorage in Elson Bay first inspected by Moore in 1850. When the chart was completed the British sailed south on July 25th. Two days later they landed at Icy Cape, the place selected for their rendezvous with Plover. Here they waited. With each passing day Moore became increasingly worried because his ship did not arrive. Finally, on August 5th, he set out for Cape Lisburne where he met Amphitrite on August 12th. Six days later the missing party rejoined the somewhat embarrassed Plover crew at Port Clarence (Maguire, Journal, 19th July - 12th August, 1852; PRO Adm. 7/194). Abandonment of Maguire's expedition was the most serious error committed by any of the British warships in arctic Alaska.

Plover, Winter of 1852-53.

Once on board Plover Captain Maguire lost no time in turning the ship back toward Point Barrow. He left Port Clarence on August 21st and reached the point on September 3rd. Although the local Eskimos were not particularly friendly,

Maguire had the ship securely quartered in Elson Bay by September 30th.

During the autumn and spring of 1852 and 1853 survey parties were sent out from Plover. Dease Inlet, the Plover Islands and Tangent Point were charted in September and May. Captain Maguire, the ship's mate Mr. Gordon, two seamen and an Eskimo guide sledged about 55 miles southwest from Plover during the week of March 1st to 8th, 1853 (Maguire, in Osborn, 1856, 386-87). When this trip was completed Maguire set off on a long 25 day journey to the Colville River delta. This expedition returned to Plover on April 29th (Maguire, 21st August, 1853; BB, 1854, 161). Maguire found no winter habitations from Point Barrow to Return Reef and, according to native reports, the same condition existed for some distance to the east of Barter Island. This information agrees with that given to Kashevarof in 1838¹⁴.

While Plover remained frozen in through early July a party under Lieutenant C.E.H. Vernon and Mr. Gordon attempted to reach Cape Lisburne with two boats. Both craft were lost near Cape Smyth after a two-day journey but the crews returned to Point Barrow uninjured (Vernon journal; BB, 1854, 185-86). Vernon's objective had been to rendezvous with H.M.S. Amphitrite (Captain Frederick) and H.M.S. Rattlesnake

(Commander Henry Trollope)¹⁵. These two ships were support vessels for Plover in 1853.

Plover, Rattlesnake and Amphitrite, 1853-54.

Maguire finally freed Plover from her anchorage on August 7th, 1853, in time to meet Captain Frederick at Point Lay two days later (Frederick, 31st October, 1853; BB, 1854, 157). Despite the fact that a number of Maguire's crew suffered from scurvy it was decided that Plover should stay one more year at Point Barrow. This would be the ship's sixth consecutive winter in the Arctic.

Before he turned back to Point Barrow Maguire called at Port Clarence where he met Trollope on August 22nd. After a two day visit Plover went north while Rattlesnake, with the aid of Amphitrite, prepared for a winter anchorage at Port Clarence. The two ships, Plover and Rattlesnake, were stationed at these strategic posts because by autumn 1853 the primary purpose of the British effort in Northwestern Arctic Alaska was no longer the search for Franklin. It was to assist the crews of the Investigator and Enterprise who had sailed into the central Canadian Arctic in 1850 and 1851 respectively (BB, 1854, 149, 15th February, 1853). The death knell to the Franklin search by way of Bering Strait was sounded on January 20th, 1854. On that date the Admiralty announced in The London Gazette that if, by March 31st, 1854,

no evidence was received that Franklin's men were alive their names would be struck from the Admiralty list. Their next of kin would be paid all back wages.

Enterprise, 1853-54.

Captain Collinson, sailing toward Bering Strait with the Enterprise nearly reached Point Barrow in September, 1853. When he was unsuccessful in finding either Franklin or M'Clure in 1851 and 1852, Collinson turned back to the west. On September 9th the Enterprise was off Herschel Island. A week later further progress became doubtful because of winter ice. On the 29th Collinson finally gave up hope of sailing as far as Point Barrow or Bering Strait and prepared to winter at Camden Bay on the northern Alaskan coast. Thus, during the winter of 1853-54, Royal Navy ships were frozen in at three places in arctic Alaska, Port Clarence, Point Barrow and Camden Bay.

British Exploration, Winter 1853-54.

During the winter of 1853-54 the British sailors made several overland journeys. In January, 1854, Captain Trollope sledged to Cape Prince of Wales in the hope that he could continue his search for the missing ships across Bering Strait. He left the Rattlesnake on the 9th and returned on

27th having been told by local Eskimos that passage over the strait was not possible that year (Trollope, 6th July, 1854; BB, 1854-55, 905-07). A longer trip was made by the Rattlesnake's first mate William R. Hobson. He started for Chamisso Island on February 9th, 1854, arrived there on March 5th and returned to Port Clarence by March 27th (Hobson; BB, 1854-55, 925-26). When Hobson failed to appear at the ship in mid-March a relief party under Thomas Bouchier made a short patrol to the northeast of Rattlesnake. Departing on March 21st they met Hobson three days later and both groups arrived back at Port Clarence together (Bouchier, 28th March, 1854; BB, 1854-55, 940).

Further north Plover arrived at Point Barrow on September 8th, 1853. Within a week the ship was settled in for a second winter in the high Arctic (Maguire, 18th August, 1854; BB, 1854-55, 948). The only overland surveys from Plover were made from October 7th to 18th when Maguire sledged to Cape Halkett and back, and from early April to May 5th, 1854 when he sledged to Point Berens and back. On April 25th, at Point Berens, Maguire met four Indians whose warlike reputation and possession of four muskets (two more than carried by the British party) caused Maguire to return to Point Barrow. Before doing so he gave the Indians a printed notice that Plover was stationed at Point Barrow and instructed them to

pass it on to the eastern natives (Maguire, 18th August, 1854; BB, 1854-55, 909). The last journey from Plover was made by Lieutenant Vernon. As in the previous year, he travelled to Wainwright to assist any relief ships which might arrive from Bering Strait. Vernon's party left Point Barrow on May 31st and returned on June 15th.

Captain Collinson at Camden Bay also intended to explore eastward along the coast in autumn, 1853. But the sled expedition went only 35 miles before it turned back. Three exploring groups left the Enterprise on April 25th, 1854, but again they met with little success. One sledged straight north for three days before rough sea ice discouraged them. Collinson, himself, travelled as far as the first mountains of the Romanzov group. The longest trip from Camden Bay was made by Lieutenant Jago in July, 1854. On the second day of that month some eastern Eskimos delivered a message dated July 4th, 1853, stating that Plover was anchored at Point Barrow. Jago was immediately dispatched to make contact with Captain Maguire. He sailed from the Enterprise in a whale boat on July 10th and arrived at Point Barrow two weeks later. Unfortunately, Plover had departed just four days before (Collinson, 22nd August, 1854; BB, 1854-55, 943-48).

Captain Maguire did not realize that the Enterprise was wintering so near to Point Barrow. Before quitting winter

quarters, however, he had built on the point a driftwood and tarpaulin-covered hut to serve as a refuge should Collinson's men be in need. Once the hut was completed Plover sailed for the south on July 20th (Maguire, 18th August, 1854; BB, 1854-55, 910-12).

Plover, Enterprise, Rattlesnake and Trincomalee, 1854.

No sooner had Bering Strait begun to clear of ice than the H.M.S. Trincomalee (Captain Wallace Houston) tacked into Port Clarence (Houston, 20th September, 1854; BB, 1854-55, 901). Here he joined the Rattlesnake on June 25th, 1854. While Houston waited at Port Clarence Trollope took Rattlesnake to sea on July 15th, sailing first west and then as far north as Cape Smyth in early August (Trollope, 18th August, 1854; BB, 1854-55, 942). He failed to meet Plover because Maguire had moved south to Port Clarence, arriving there on August 1st. It was not until August 11th that Plover, Rattlesnake and Trincomalee all congregated at Port Clarence. It was then that Maguire and Trollope learned the good news that M'Clure and his men were safely returned to England. This meant that only the Enterprise was missing. Hope for Franklin was all but given up.

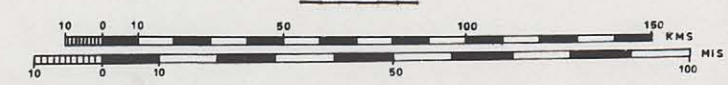
Because the exact location of Collinson was unknown Maguire headed north again on August 19th. If necessary, he had thought to winter for yet another year at Point Barrow. In the meanwhile the Enterprise had rounded Point Barrow on

August 8th, but a slow passage south prevented her from reaching Port Clarence until August 22nd. Collinson, as soon as he realized the Plover was searching to the north, sailed back to Point Barrow. Here he met Maguire on August 28th and the two ships came back to Port Clarence together (Collinson, 14th September, 1854; BB, 1854-55, 952). On September 16th the Enterprise and Plover sailed south from Port Clarence. They were the last British ships to vacate arctic Alaska. The Enterprise arrived in Hong Kong on November 9th, 1854 and Plover entered the port of San Francisco on October 27th. Thus ended the search for Sir John Franklin by way of Bering Strait. After September, 1854, Northwestern Arctic Alaska was left free to the American whalers and traders who sailed north in large numbers each summer.

Summary

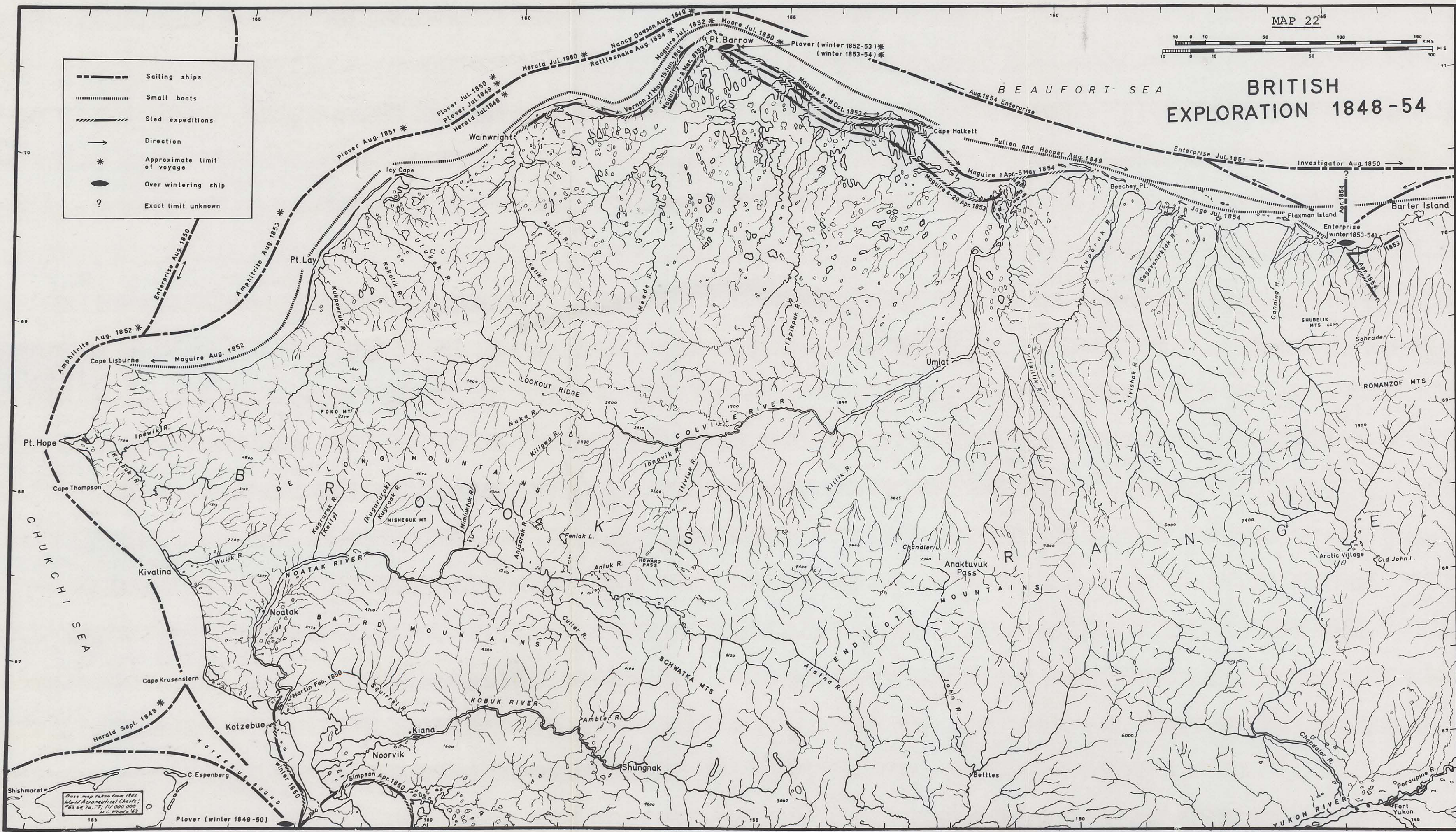
Departure of the last British ship in 1854 brought to a close the first phase of exploration in Northwestern Arctic Alaska. Although the Russians pioneered the approaches to Alaska, north of Bering Strait, and mapped important areas around Kotzebue Sound and Point Hope, most of the credit for exploration in arctic Alaska must go to the British. They were the first to chart the coastline beyond the strait, the first to reach Icy Cape and Point Barrow and the first to

explore the entire northern shore eastward to the Mackenzie River. The British seamen engaged in the search for Sir John Franklin, while they might have done more in the way of geographical exploration and scientific studies, nevertheless made worthwhile contributions to knowledge. They were the first to overwinter in arctic Alaska and the first to traverse new regions along the coast and inland, from the Seward Peninsula to Camden Bay. Of no less importance, is the fact that these Royal Navy seamen of the mid-19th century provided American sailing captains with information about Northwestern Arctic Alaska, information which proved to be invaluable in the subsequent history of arctic Alaska. The British never really reaped the profits of their exploration in Northwestern Arctic Alaska but they prepared a foundation upon which the United States was to build for over a century.



BRITISH EXPLORATION 1848-54

- Sailing ships
- Small boats
- //// Sled expeditions
- Direction
- * Approximate limit of voyage
- Over wintering ship
- ? Exact limit unknown



Base map taken from 1881
Nautical Aeronautical Charts
No. 63, 64, 76, 77, 111, 100, 000
D. C. Moore 1881

Notes on Chapter 5.

1. The log book of Plover for the period 1849-1853 is located in the Public Records Office, London. The log book for Herald for 1848-1851 is located in the Royal Geographical Society, London. Herald's log book for 1849-1850 is located in the Public Records Office, London.
2. The log book for Tiger is located in the Marine Historical Society, Mystic, Connecticut.
3. Clark (1887, 17) reports the best portion of the Northwest Grounds lay between 55° and 58° north and 140° to 152° west longitude. The best whaling season was from April to October. Cheever (1850, 104-105) defines the Northwest Grounds as located between 34° and 59° north and 130° west to 170° east longitude. The largest whales were found from 50° to 60° north and 145° to 180° west longitude. Elliott (1887, 71) said the area from Kodiak Island to Victoria, British Columbia was called the "Fairweather Ground". It supported a large whale fishery, 300 to 400 ships annually, from 1846 to 1851. Howay (1933, 122, 132) remarked that in the early

19th century American whalers called lower California north to 38° and from longitude 54° to 81° west, the "Northwest Coast". At one time the term could mean anywhere from Mexico to Bering Strait.

4. It should be noted that Clark lists the North Pacific fleet of 1841 as 20 vessels and that of 1842 as 29 ships. But as mentioned, testimony taken by Captain Kadnikov put the 1841 fleet at 50 or more and that of 1842 at over 200 (Tikhmenev, 1863, 149).
5. Scammon (1874, 60) thought the Okhotsk Sea hunting began between 1847 and 1849. Davis (1874, 389) states that Captain George A. Covill of the New Bedford ship Mount Vernon, killed the first bowhead whale in the Okhotsk Sea about 1846. Tikhmenev (1863, 148) mentions that ships seen in the Okhotsk Sea about 1842 were assumed to be American whalers. Williams (1964, 347) said the first bowhead was probably killed in the Okhotsk Sea in 1847-48, by the American ship Huntsville or French ship Asia.
6. Starbuck (1878, 98) states that only Superior passed through the strait in 1848. Bodfish (1936, 89) says Ocmulgee also cleared the strait in the same year. Native Chukchi reports suggest at least four ships passed through

Bering Strait in 1848. One was seen in August, two in September and one in October, all going south (Hooper, 1853, 108). These were probably Superior, Ocmulgee, Herald and a fourth, unknown vessel.

7. The description of the early American whale hunting in the Western Arctic is taken from Munger (1852), the References given in the text and from the following ships' log books:- Majestic 1849, 1850; Saratoga 1850, 1851; Cortes 1850; Washington 1851, 1852; Warren 1852; Benjamin Tucker 1852.
8. Starbuck (1878, 98-99) reports the Saratoga's position as 71° 41' N, 150° 40' W, on September 1st, 1851.
9. Osborn (1856, 73) says the weapon was dated 1840. Armstrong (1857, 109) also places the date at 1840.
10. A search of the National Maritime Museum, Greenwich; Public Records Office, London; Royal Geographical Society, London; Scott Polar Research Institute, Cambridge; Admiralty, London; The Royal Society, London; The Hydrographer's Office, London; The British Museum, London; The National Manuscript Commission, London; and The National Register of Archives, London, has failed to

uncover archives of any consequence related to Plover. Without doubt, there should be personal journals and letters relating to Plover and the other Franklin search vessels which operated in arctic Alaska. Like the unknown Collinson papers brought to light in 1964, it must be assumed that a number of these documents are still in the hands of private collectors.

11. The log book for the Enterprise, for 1850, is located in the Public Records Office, London.
12. Not all British maps made the error of combining the Yukon and Colville Rivers. Hooper (1853, endpiece) used a map drawn by Augustus Petermann which locates the Yukon, Porcupine and Colville Rivers correctly. Hooper might have received his information from the Hudson's Bay Company traders at Fort McPherson who should have known the relation of the Colville to the Yukon and Porcupine. Richardson's book on arctic exploration (1851) also contained an accurate map of the Yukon River. Bernard, who drew a map of the Yukon River (PRO Adm. 7/191) in December, 1850, incorrectly indicated its course split at Fort Yukon, one stream leading directly north to the Arctic Ocean, the other to Norton Sound.

13. The log book for Daedalus, for 1851, is located in the Public Records Office, London.
14. The discovery of presumably very old winter houses near Barter Island and elsewhere on the northern Alaskan coast presents an interesting problem. When and why was there a depopulation of the northern coast?
15. The journal for Rattlesnake, for the year 1852, is located in the National Maritime Museum, Greenwich. The log book for 1852 is located in the Public Records Office, London.

P A R T T W O

RESOURCE UTILIZATION IN NORTHWESTERN ARCTIC

ALASKA BEFORE 1855

CHAPTER 6

THE INNUIT

The year 1854 ended centuries of isolation for the Eskimos of Northwestern Arctic Alaska. From then on they came increasingly into contact with Europeans and Americans, representatives of a culture whose new ideas and technology brought about an irrevocable change in the native way of life. To understand the magnitude and importance of this change it is necessary to examine various aspects of Eskimo life as they existed before 1855, before the beginning of the so-called "period of culture contact". The following study is an attempt to establish the Eskimos' use of natural resources in the mid-19th century as a baseline against which change, in this aspect of Eskimo life, can be measured.

It is possible to estimate the amount of natural resources used if one has a reasonable idea of the composition and extent of the Eskimo population and its demand for food, clothing, transportation, fuel, and shelter. To understand the role of the Eskimo hunter within the environment, therefore, one must first know something about the population he supplied with the necessities of life.

Source Material for Population Statistics

Unfortunately there is little detailed information about the Eskimo population in Northwestern Arctic Alaska before 1855. The first official census was not taken until 1880 (Petroff, 1882). There are other sources of information, however, none of which are entirely satisfactory. First are the recorded observations of foreign visitors, from Cook in 1778 to the last British expedition of 1854. At no time did these parties take a systematic, complete census. A second source of data is the literature describing arctic Alaska during the period 1855 to 1886. In this case inference can be made about the earlier Eskimo population on the basis of accurate observations made one, two or three decades later. Lastly, the results of archaeological research provide some information about the mid-19th century Eskimo population. Although archaeologists have not investigated enough sites to reconstruct the exact distribution of Eskimos for a particular time span, the occurrence of abandoned winter houses, thought to have been occupied during the last century, are a useful indicator of the mid-19th century population. The following study is based on these three sources of information, together with personal field work conducted in Northwestern Arctic Alaska between 1959 and 1962.

European Influence in Arctic Alaska Before 1855.

The preceding chapters have shown that the amount of material goods imported into arctic Alaska, in the form of tobacco, iron, copper, guns, alcohol, cloth and the like, were not so great that they could make a significant change in the Eskimo way of life before 1855. Furthermore, direct contact between Eskimo and European was so infrequent that it is highly improbable that important new ideas were adopted by the aboriginal people. But the possibility that diseases were introduced is real and of paramount importance. This is particularly true of such exotic communicable diseases as syphilis, smallpox, measles, cholera and influenza.

Disease in Arctic Alaska Before 1855.

Most, if not all, Europeans and Americans moving into the north carried with them some form of disease. The result was often the outbreak of sickness among native people never before exposed to particular types of illnesses. In 1653, 1691, 1768 and 1774 there were smallpox epidemics in eastern Siberia (Gurvich, 1964, 3-4). There were others in Kamchatka in 1768 and 1799 (Sauer, 1802, 124, 307) (Tikhmenev, 1861, 96). Smallpox reached southern Alaska some time before 1786 because La Perouse found pock marked natives when he landed there in that year (Petroff, 1882, 44). The disease might have been carried from Kamchatka by Russian fur traders but, also, it might

conceivably have originated with the great epidemic which swept through southern Canada in the early 1780's (Mackenzie, 1803, 19-22). Venereal disease was introduced into Kamchatka in the 18th century (Krasheninnkov, 1764, 218). Syphilis was reported at Unalaska as early as 1778 (Petroff, 1882, 44) and it had reached the Kenai Peninsula by 1806 (Tikhmenev, 1861, 149). Despite this long history of contagious diseases in southern Alaska and Siberia it is improbable that they spread to Northwestern Arctic Alaska before the mid-19th century.

Restrictions to movement across Bering Strait hindered the spread of disease from Siberia to arctic Alaska. For well over a century after Deshnev and Staduchin opened trade with northeastern Siberia there was little contact between the Russians and Chukchi, whose animosity toward foreign domination did not begin to subside until Cook's voyage of 1778. The long travel times between a potential European disease source, on the Anadir or Kolyma, and northwestern Alaska increased the probability that an infected Siberian native would die before he could cross Bering Strait. But should he reach arctic Alaska, the antagonisms which existed between the Chukchi and Alaskans would further restrict the transmission of disease. Kotzebue's vivid description of Chukchi - Eskimo trade relations (page 107) explains one way in which the communication

of a sickness could be greatly reduced. In other words, all the factors mentioned in Chapter 4, which tended to restrict commerce between Siberia and Alaska via Bering Strait, also acted to prevent the spread of disease¹.

It seems more probable that the Eskimos could have been infected by the Europeans who actually visited Northwestern Arctic Alaska. For example, it was noted in Chapter 4 that the most serious outbreak of smallpox in Russian America occurred in 1838, the very year that Kashevarof undertook his expedition to arctic Alaska.

The Alaskan Smallpox Epidemic of 1838-39.

Lieutenant L.A. Zagoskin, on his travels to Nulato, the lower Koyukuk River and middle Yukon River in 1842-43, made frequent notes on the extent of the 1838-39 smallpox epidemic in these regions. From his description it would appear that pock marked natives and abandoned or under-populated villages were not found far inland from Nulato. For some reason the disease apparently did not follow an unrestricted path through northern Alaska. Probably several factors interacted to provide a measure of quarantine and to prevent the diffusion of smallpox along well established trade routes to arctic Alaska.

Zagoskin learned that during the epidemic "the natives were much afraid of any trade not only with Russians but even among

themselves" (Zagoskin, 1847, 126). Seriously ill people might have been deserted by their families and neighbours. Also, communication lines stretching inland and north from the Russian posts crossed ethnic "barriers" between the Eskimos around Norton Sound, the inland Athapaskan Indians and the northern Arctic Eskimos. These barriers could slow down or prevent an epidemic. Lastly, while the smallpox epidemic was still confined to the southernmost portions of Alaska in 1837, a major communication link with northern Alaska was broken. In that year the St. Lawrence Islanders and people around Bering Strait (Asiagmut) and the Seward Peninsula Eskimos (Maleygmur) stopped their annual visits to the St. Michael post (Ibid., 44). This event further reduced the possibility that a disease could be carried northward from eastern and southern Norton Sound. Zagoskin makes no reference to smallpox having infected the northern Eskimos.

It is possible, however, that the Polyfem and Kashevarof's exploring party were smallpox carriers. Because they visited among the Arctic Eskimos on several occasions one would expect the disease to have appeared from Kotzebue Sound to Point Barrow by autumn, 1838. It is surprising, therefore, that no evidence has been found which proves that the epidemic reached Northwestern Arctic Alaska. In a foreward to Kashevarof's report of the 1838 expedition, the editor of Sin Otechestva

said the Eskimos just east of Point Barrow "were embittered against the white men because of the appearance there of the smallpox disease" (Kashevarof, 1840, 130). But Kashevarof, in his own report, makes no mention of this sickness (Ibid.) (Kashevarof, 1879). Except for a spell of minor stomach disorders from drinking brackish water and complaints of fatigue, his crew were healthy. Had smallpox been present one would expect Kashevarof's Aleut hunters to have quickly contracted the malady because their resistance to the disease was usually lower than that of the Russians'.

Kashevarof's fear of the Arctic Eskimos lead him to avoid the native people. He was only in the Point Barrow area for a few days, too short a time for the incubation period of smallpox. But had the epidemic spread overland from the south before Kashevarof's arrival, or appeared after his departure, there should have been some lingering evidence of the event at many places between Norton Sound and Point Barrow. Such is not the case, however.

From 1848 to 1854 British naval vessels made 22 separate cruises north of Bering Strait. During the same period eight British ships overwintered between Bering Strait and Camden Bay. Land explorations by their crews included travels on the lower Yukon River to Nulato, several crossings of the Seward

Peninsula and Hotham Inlet area, and traverses to Selawick Lake, south of Point Barrow and along the northern Alaskan coast to the Colville River. Small boat expeditions visited the entire coast from Bering Strait to Demarcation Point. In all, the British probably saw several thousand Arctic Eskimos.

Despite this frequent contact, only a decade or so after the smallpox epidemic, none of the British seamen reported the sight of pock marked natives in arctic Alaska. It is difficult to believe, especially in the light of several detailed accounts of Eskimo health by British writers, that no one would remark on the existence of scarred people, large numbers of abandoned houses or mass graves, had they been encountered. Not even Dr. John Simpson, surgeon on board Plover in 1848-50 and 1852-54, referred to the after effects of smallpox in his lengthy description of the Arctic Alaskan Eskimos (Simpson, 1875). From this absence of comment it must be concluded that the smallpox epidemic which struck the lower Yukon River in 1838-39 did not spread beyond eastern Norton Sound or the mouth of the Koyukuk River².

The Occurrence of Venereal Disease, Measles and Influenza

As in the case of smallpox it seems unlikely that venereal disease had infected the Eskimos of Northwestern Arctic Alaska before 1855. Lieutenant Zagoskin said that syphilis, although

spreading north, had not reached the Kuskokwim-Yukon region in 1842-44 (Zagoskin, 1847, 59). In September, 1850, however, Captain Collinson saw an Eskimo at Point Hope with "leprosy" (Collinson, 1889, 75). But this is the only observation made by the numerous explorers in arctic Alaska which could be interpreted as a reference to a venereal illness. In the absence of additional descriptions or comments about the occurrence of venereal disease in arctic Alaska it can be assumed that few, if any, northern Eskimos suffered from this type of sickness.

An outbreak of measles swept through southern Alaska in 1848, from Sitka to Unalaska and the Alaskan Peninsula (Tikhmenev, 1863, 28), but neither this epidemic nor any other is mentioned by the many observers who travelled in Northwestern Arctic Alaska before 1855. Again, the absence of evidence strongly suggests that a measles epidemic was still unknown in arctic Alaska as of 1855.

Influenza, colds or other illnesses similar to pneumonia are a different matter. Apparently these ailments arrived among the Arctic Eskimos with the great influx of British naval personnel and American whalers after 1848. For example, in autumn, 1853, a crew member of the Rattlesnake died of lung congestion while a number of Eskimos were living on board the ship. Soon after, the natives left, perhaps carrying the

deadly sickness with them. In any event, when Hobson traversed the northern Seward Peninsula in spring, 1854, he found a significant number of Eskimos sick with an influenza-like disease. There had already been some deaths (Hobson, BB 1854-55, 926, 928, 931, 939). Another example was noted by Dr. John Simpson who said influenza had killed 40 Point Barrow inhabitants in 1851-52 (Simpson, 1875, 237). Other Point Barrow people had died in the years just before Plover wintered there in 1852.

Summary of Disease in Arctic Alaska Before 1855.

Although it is possible that smallpox could have spread to Northwestern Arctic Alaska in 1838, and by so doing perhaps destroyed one half of the native population, there is no evidence that it did. Descriptions based on contact with numerous Arctic Eskimos from 1848 to 1854 make no mention of any obvious after effects of a severe, widespread, smallpox epidemic. Likewise, there is no indication that they had venereal diseases or measles before 1855. But influenza, the common cold, pneumonia or another type of respiratory disease had invaded the population from the Seward Peninsula to Point Barrow by 1854. From Dr. John Simpson's remarks it can be calculated that just over 10 percent of Point Barrow's population died from an influenza-like sickness in 1851-52. But the accumulated historical evidence dealing with Northwestern Arctic Alaska for the period 1778 to 1854 does not indicate that the

Eskimo population had suffered a catastrophic decrease because of smallpox, venereal disease, measles, influenza or other exotic communicable sicknesses. For this reason it is assumed that the Eskimo population living in arctic Alaska before 1855 represents, in its composition and numbers, an aboriginal population not seriously affected by contact with Europeans or Americans.

The Eskimo Nuclear Family

A nuclear family is composed of an adult male and female and their children. Based on the assumption mentioned above it can be said that Eskimo families living in arctic Alaska before 1855 were "average" families; their size and composition had not been changed by contact with Europeans and Americans.

Some idea of the mid-19th century nuclear family is given by two independent observers who visited northwestern Alaska. Lieutenant Zagoskin wrote of his 1842-44 investigations around Norton Sound that "... the native (Eskimo) women of the seashore have small families. I never saw one of them with four or more children but only one or two" (Zagoskin, 1847, 56-7). This report is supported by Dr. John Simpson who said of the Arctic Alaskan Eskimos, "For one woman to have borne seven children is a rare case, and for five to live to maturity still more rare ... a couple is seldom met with more than three

(children) of a family, though inquiry may elicit the information that one or several 'sleep on the earth'" (Simpson, 1875, 254)³.

From these two statements it can be concluded that the average nuclear family of coastal Eskimos in northwestern Alaska numbered from three to five individuals, two parents and from one to three children⁴.

Ratio of Male to Female and Adult to Child

The best statistics on the male to female ratio among the Arctic Alaskan Eskimos are given by Dr. John Simpson. He found, in a study of 309 persons at Point Barrow in 1852-53, that the ratio of male to female was eight to seven (8:7) or 53.4 percent male to 46.6 percent female (Ibid., 237, 253).

To establish a more exact idea of the average Eskimo family's composition in the early 1850's I extracted statistical information about families described in documents written between 1778 and 1854. These data are presented in Table 3. The table includes only those Eskimo family units for which quantitative information was given by the original observer. To restrict the observations to a relatively uniform ethnographic and geographic region, population information has been taken from the area bounded by Herschel Island in the northeast and the northwestern coast of Norton Sound in the south.

TABLE 3

ESKIMO FAMILY UNITS OBSERVED IN ARCTIC ALASKA, 1779 to 1854

<u>Year</u>	<u>Place</u>	<u>Family Type and Composition</u>	<u>Adult Child %</u>	<u>Male Female %</u>	<u>Ref.</u> ^x	<u>Page</u>
1779	Big Diomedes Island	Summer Families				
		203 males				
		<u>195</u> females		51/49	47	94
		<u>398</u> Total				
1779	Little Diomedes Island	Summer Families				
		85 males				
		<u>79</u> females		52/48	47	94
		<u>164</u> Total				
1816	Kotzebue Sound	Summer Family				
		1. 1 male <u>c.</u> 40 years				
		2. 1 female (wife)				
		3. 1 male <u>c.</u> 16 years of 1-2			11	226
		4. 1 child of 1-2 ⁺				
		5. <u>1</u> child of 1-2 ⁺				
		<u>5</u> Total	60/40	60/40 ⁺		

x - see Appendix A

TABLE 3 - contd.

<u>Year</u>	<u>Place</u>	<u>Family Type and Composition</u>	<u>Adult Child %</u>	<u>Male Female %</u>	<u>Ref.</u>	<u>Page</u>
1826	Cape Beaufort	Summer Family				
		1. 1 male (father)				
		2. 1 female <u>c.</u> 23 years (mother)				
		3. 1 baby (sucking) of 1-2				
		4. 1 baby (sucking) of 1-2 ⁺				
		5. 1 male (young man) ⁺⁺			1	383
		6. 1 male (young man) ⁺⁺				
		7. 1 female <u>c.</u> 11 years				
		8. 1 female				
		9. <u>1</u> female, very old				
		<u>9</u> Total	66.5/33.5	44.5/55.5 ⁺		
1826	Kotzebue Sound	Summer Family				
		1. 1 male (father)				
		2. 1 female (mother)				
		3. 1 male (grown) of 1-2			1	405
		4. 1 female <u>c.</u> 10 years of 1-2				
		5. <u>1</u> female <u>c.</u> 13 years of 1-2				
		<u>5</u> Total	60/40	40/60		
1827	Port Clarence	Summer Family				
		1. 1 male (father)				
		2. 1 female (mother)			2	266
		3. <u>1</u> female of 1-2				
		<u>3</u> Total	66.5/33.5	33.5/66.5		

TABLE 3 - contd.

<u>Year</u>	<u>Place</u>	<u>Family Type and Composition</u>	<u>Adult Child %</u>	<u>Male Female %</u>	<u>Ref.</u>	<u>Page</u>
1838	Point Franklin	Travelling Party				
		12 males (adult)				
		<u>6</u> females (adult)			58	296
		<u>18</u> Total		66.8/33.2		
1838	Refuge Inlet	Summer Camp				
		14 males (adult)				
		8 females (adult)			58	297
		<u>3</u> children				
		<u>25</u> Total	88/22			
1849	East of Pt. Barrow	Summer Families (3 or 4)				
		7 males (adult)				
		9 females (adult)				
		5 females (child)			56	214
		3 males (child)				
		<u>24</u> Total	66.8/33.2	41.6/58.4		
1851	North side Norton Sound	Winter Family				
		1. 1 male				
		2. 1 female			7	214
		3. <u>1</u> child of 1-2				
		<u>3</u> Total	66.5/33.5			

TABLE 3 - contd.

<u>Year</u>	<u>Place</u>	<u>Family Type and Composition</u>	<u>Adult Child %</u>	<u>Male Female %</u>	<u>Ref.</u>	<u>Page</u>
1852	Point Barrow	Winter Family				
		1. 1 male				
		2. 1 female				
		3. 1 child of 1-2 ⁺			50	383
		4. <u>1</u> child of 1-2 ⁺				
		<u>4</u> Total	50/50	50/50 ⁺		
1852	Point Barrow	Winter Families (<u>c</u> .3)				
		1. 1 male				
		2. 1 female wife of 1				
		3. 1 female wife of 1				
		4. 1 male (young man)				
		5. 1 male (young man)				
		6. 1 male (young man)			50	376
		7. 1 male (young man)				
		8. 1 male (young man)				
		9. 1 male (young man?)				
		10. 1 female				
		11. 1 female				
		12. 1 child of 10 ⁺				
		13. <u>1</u> child of 11 ⁺				
		<u>13</u> Total		63.5/36.5 ⁺		

TABLE 3 - contd.

<u>Year</u>	<u>Place</u>	<u>Family Type and Composition</u>	<u>Adult Child %</u>	<u>Male Female %</u>	<u>Ref.</u>	<u>Page</u>
1853	Point Barrow	Winter Families				
		166 males			35	237
		<u>143</u> females				
		<u>309</u> Total		53.7/46.3		
1854	Cape Prince of Wales	Winter Family				
		1. 1 male				
		2. 1 female			8	905,
		3. <u>1</u> female c. 6-7 years of 1-2				911
		<u>3</u> Total	66.5/33.5	33.5/66.5		
1854	Cape Prince of Wales	Winter Family				
		1. 1 male				
		2. 1 female wife of 1				
		3. 1 female wife of 1			8	906
		4. 1 male 3 years of 1-2				
		5. <u>1</u> child of 1-2 ⁺				
		<u>5</u> Total	60/40	40/60		
1854	Cape Prince of Wales	Winter Family				
		1. 1 male				
		2. 1 female wife of 1				
		3. 1 female wife of 1			8	906
		4. 1 child of 1-2 ⁺				
		5. <u>1</u> child of 1-2 ⁺				
		<u>5</u> Total	60/40	40/60		

TABLE 3 - contd.

<u>Year</u>	<u>Place</u>	<u>Family Type and Composition</u>	<u>Adult Child %</u>	<u>Male Female %</u>	<u>Ref.</u>	<u>Page</u>
1854	Kotzebue Sound	Winter Family				
		1. 1 male (adult)				
		2. 1 female (adult)				
		3. 1 female (adult)			15	932
		4. 1 female (adult)				
		5. 1 child				
		6. 1 child				
		7. <u>1</u> child				
		<u>7</u> Total	57/43			
1854	Kotzebue Sound	Winter Family				
		1. 1 male (adult)				
		2. 1 male (adult)				
		3. 1 male (adult)				
		4. 1 male (adult)				
		5. 1 female (adult)			15	936
		6. 1 female (adult)				
		7. 1 female (adult)				
		8. 1 female (adult)				
		9. 1 child ⁺				
		10. <u>1</u> child ⁺				
		<u>10</u> Total	80/20	50/50		

+ - assumption that one child is male, one is female

++ - age interpreted from use of lip labrets

In some cases the original author did not give complete information on the sex and age composition of a family unit. The following assumptions were, therefore, used in order to obtain these required facts. An adult male is considered anyone capable of undertaking such activities as use of a kayak, to hunt alone for big game such as seal, walrus, whales, caribou and bears, or to be armed with hunting gear designed for big game. It is also assumed that the adult male would wear relatively large lip labrets. Adult women are those who have children, undertake strenuous household chores, wear the large, loose parka or who have facial tatoos. In most cases the separation between adult and child probably refers to age groups above and below the 14 to 16 year level.

Several generalizations can be deduced from Table 3. First, where the nuclear family can be identified it is, in general, small, composed of three to five individuals. This tends to confirm the observations of Zagoskin and Simpson. Second, the ratio of adult to child in the sample families varies from two to one (2:1) to three to two (3:2). The consistency of these ratios throughout the sample is remarkable. Third, the male to female ratio is less clear, it is quite variable. In general, the statistics show about five females for every four males; just the reverse of Simpson's findings at Point Barrow. The sample, however, is strongly biased by

three families who practised polygamy, a cultural trait not common in arctic Alaska (Simpson, 1875, 254). In contrast, the samples provided by Simpson (309 persons) and Kobelef (562 persons) are by far the largest and must be given proportional consideration. For the purpose of this study, therefore, it is assumed that the ratio of male to female, among the Arctic Alaskan Eskimos of the mid-19th century, was 13 to 12 (13:12) or 52 percent male to 48 percent female. It is also assumed that the ratio of adult to child was 13 to seven (13:7) or 65 percent adults to 35 percent children. Lastly, it is assumed that the average number of adult men per nuclear family was one, and per household between one and two.

The Eskimo Household

Although the small, nuclear family could live and travel as a distinct unit, it was more common for close relatives to live together as a household. For example, that old people were not infrequent family members is suggested by several visitors to arctic Alaska in the 19th century (Beechey, 1831, I, 383, 393-403) (Ibid., II, 266) (Franklin, 1828, 115-118, 129) (Simpson, 1875, 245, 249).

In order to estimate the average size of the Eskimo household I have assembled information on the number of persons reported in summer tents, winter houses and travelling skin

boats (umiaks), during the period 1778 to 1854. These data, presented in Tables 4, 5 and 6, are taken from observations made within the region bounded by Herschel Island and the north shore of Norton Sound. Reports from occasions which obviously were not normal were not utilized. Several observers encountered umiaks filled only with armed males; the women and children were absent. These cases probably represent war parties, they do not represent an average Eskimo household. When a winter house was divided into separate family living quarters with a common entrance tunnel, each family unit was counted as a separate household.

Tables 4, 5 and 6, show a remarkably close agreement between the average number of persons found in summer tents (7.20), winter houses (6.92) and travelling umiaks (6.99). The average of these 326 household units containing 2,276 individuals is 6.98 persons per household. For the purpose of this study it is assumed that the typical Arctic Alaskan Eskimo household contained seven persons. It should be pointed out that this figure is derived almost solely from observations of coastal Eskimos. Those Eskimos who lived inland during the winter months might have had households of a different size than those calculated above.

TABLE 4

AVERAGE NUMBER OF PERSONS IN SUMMER TENTS

<u>Year</u>	<u>Place</u>	<u>Total No.Tents</u>	<u>Total No.Persons</u>	<u>Average No.Persons Per Tent</u>	<u>Ref.^x</u>	<u>Page</u>
1816	Kotzebue Sound	1	5	5.0	12	226
1826	Chamisso Island	5	25	5.0	1	398
1826	Kay Point	1	2	2.0	42	126
1826	West of the Mackenzie Delta	3	27	9.0	42	126
1826	Port Clarence	1	3	3.0	2	266
1838	Cape Sabine	1	7	7.0	58	278
1838	Cape Lisburne	1	10	10.0	58	336
1849	Elephant Point	22	150	6.8	5	119
1849	Cape Smyth	4	50	12.5	34	219
1849	Point Berens	13	100	7.7	34	237
1849	Humphrey Point	4	24	6.0	34	255
Total		56	403			

Average number of persons per tent = 7.20

x - see Appendix A

TABLE 5

AVERAGE NUMBER OF PERSONS IN WINTER HUTS

<u>Year</u>	<u>Place</u>	<u>Total No. Winter Huts</u>	<u>Total No. Persons</u>	<u>Average No. Persons Per Hut</u>	<u>Ref.</u> ^x	<u>Page</u>
1838	Cape Krusenstern	2	10	5.0	58	353
1852	Point Barrow	1	12	12.0	50	376
1853	Point Barrow	54	309	5.7	35	237
1854	Point Barrow	48	286	5.9	35	237-8
1854	Cape Smyth	40	c.215	5.4	35	237-8
1854	Cape Prince of Wales	50	c.450	9.0	8	915
1854	Hungiowret (Seward Pen.)	2	30	15.0	15	927
1854	Nookeirowelek (Seward Pen.)	2	15	7.5	15	927
1854	Obell (Seward Pen.)	3	50	16.7	15	928
1854	Poeloclowreue (Seward Pen.)	1	25	25.0	15	929
1854	Kippellik (Kotzebue Sound)	1	7	7.0	15	932
1854	Kipliktok (Seward Pen.)	1	10	10.0	15	936
	Total	205	1,419			

Average number of persons per winter hut = 6.92

x - see Appendix A

TABLE 6

AVERAGE NUMBER OF PERSONS IN TRAVELLING SKIN BOATS (UMIAKS)

<u>Year</u>	<u>Place</u>	<u>Total No. Umiaks</u>	<u>Total No. Persons</u>	<u>Average No. Persons Per Umiak</u>	<u>Ref.^x</u>	<u>Page</u>
1791	Cape Rodney	1	9	9.0	49	243
1816	Cape Deception	1	8	8.0	11	53
1826	Cape Lisburne	1	11	11.0	1	439
1826	Icy Cape	4	60	15.0	1	418
1826	St. Lawrence Island	4	32	8.0	1	331
1826	Cape Beaufort	1	9	9.0	1	383
1826	Chamisso Island	1	5	5.0	1	405
1826	Chamisso Island	1	9	9.0	1	405
1827	Choris Pen.	3	24	8.0	2	279-80
1838	Sea Horse Island	2	25	12.5	45	135
1838	Wainwright	1	7	7.0	58	290
1850	Cape York	1	7	7.0	4	73
1850	Point Belcher	1	12	12.0	54	
1850	Jones Island	1	12	12.0	38	72
1853	Point Barrow	c.28	150	5.4	50	399
1854	Point Barrow	14	74	5.3	35	264
Total		65	454			

Average number of persons per umiak = 6.99

x - see Appendix A

Summary of the Eskimo Population Composition

The foregoing statistics lead to the following conclusions about the mid-19th century Eskimo population of Northwestern Arctic Alaska :-

- (a) The average Eskimo nuclear family contained from three to five persons, two adults and one to three children.
- (b) The average Eskimo household contained seven persons.
- (c) The ratio of adult to child, in the family or household, was 13 to 7 (13:7) or 65 percent to 35 percent.
- (d) The ratio of male to female, in the family or household, was 13 to 12 (13:12) or 52 percent to 48 percent.
- (e) The ratio of adult male to adult female, in the family or household, was probably one to one (1:1) or 50 percent to 50 percent.
- (f) The average number of adult males in the nuclear family was one.
- (g) The average number of adult males in the household was between one and two.

Test of Assumptions

Fortunately the literature on northwestern Alaska provides a few examples against which the above assumptions can be tested. At Cape Smyth, in 1826, 19 adult men were met living in eight tents (Beechey, 1831, I, 426). According to the above assumptions, eight tents should shelter 56 persons of which 36 are adults. These, in turn, would be divided into 19 males and 17 females. The computed figure of 18.8 adult males agrees surprisingly well with the known observation. Franklin, in 1826, at Herschel Island, saw a party of 20 or 21 people probably containing six men (Franklin, 1828, 129). The computed figure for 21 persons would be 7.2 adult men. Near Barter Island in 1837, Thomas Simpson met 20 men and 40 women and children (Simpson, 1843, 118). The calculated figure for this group is 20.3 grown men.

In 1854, at Camden Bay, Captain Collinson recorded two umiaks and 16 kayaks with a total of 41 persons (Collinson, 1889, 315-17). It can be assumed that each kayak held one adult man, for a total of 16 men. The computed figure would be 14 men for a group of 41 persons. These examples are summarized in the following table.

TABLE 7

COMPARISON OF ACTUAL AND THEORETICAL ESKIMO POPULATIONS

<u>Example</u>	<u>Known No. Men</u>	<u>Computed No. Men</u>	<u>Difference</u>	<u>Percent of Error</u>
1.	19	18.8	-0.2	-01.0
2.	<u>c.</u> 6	7.2	+1.2	+20.0
3.	20	20.3	+0.3	+01.5
4.	<u>c.</u> 16	14.0	-2.0	-12.5

Previous Estimates of the Arctic Alaskan Population

The first estimates of the Eskimo population of northwestern Alaska were made before Europeans ever visited the area or met the people. In 1711 Peter Popov concluded from Chukchi reports that the natives living opposite Bering Strait numbered twice or three times the Chukchi, or about 7,000 to 10,000 persons (Muller, 1761, 24-6). Kotzebue, on the basis of his observations between Cape Prince of Wales and Shishmaref Inlet in 1816, said that "the numerous habitations that so thickly cover this coast, indicate an abundant population" (Kotzebue, 1821, I, London, 42). Kotzebue's opinion substantiates the general viewpoint held by many Russians in the late 18th and early 19th centuries, namely that Northwestern Arctic Alaska supported a relatively large native population.

The first estimate of this Eskimo population by an observer who actually visited a significant portion of the Arctic coast was made by Captain Beechey in October, 1827.

Said Beechey :-

"These people inhabit the north-west coast of America from 60° 34' N. to 71° 24' N, and are a nation of fishermen dwelling upon or near the sea shore, from which they derive almost exclusively their subsistence. They construct yourts or winter residences upon those parts of the shore which are adapted to their convenience, or jutting points of land, but always upon low ground. They form themselves into communities, which seldom exceed a hundred persons; though in some few instances they have amounted to upwards of two hundred. Between the above-mentioned limits we noticed nineteen of these villages, some of which were very small, and consisted of only a few huts, and others appeared to have been deserted a long time; but allowing them all to be inhabited in the winter, the whole population, I should think, including Kow-ee-rock (a village at Port Clarence), would not amount to more than 2,500 persons. I do not pretend to say that this estimate is accurate, as from the manner in which the people are dispersed along the coast in the summer, it is quite impossible that it should be so; but it may serve to show that the tribe is not very numerous" (Beechey, 1831, II, 299-300).

Beechey clearly qualifies his assessment in the last sentence, he merely guessed the population of coastal, sedentary Eskimos and not the inland natives the existence of which he considered improbable (Ibid., 300). Apparently he did not include figures for any people living to the east of Point Barrow⁵.

The next attempt to enumerate the Arctic Eskimos was made by Kashevarof. Although he described the Eskimo settlements seen along the Alaskan coast from Kotzebue Sound to Tangent Point, many of his observations were general since they did not include exact numbers of people encountered. Zagoskin, in 1842, had access to Kashevarof's expedition report and map. He also interviewed Kashevarof's Eskimo interpreter Utuktak and other natives who knew something of the northern coast. From Cape Prince of Wales to Point Barrow Zagoskin listed 12 large Eskimo villages, four small communities and three of doubtful size. Zagoskin's census is set down in Table 8.

Soon after Zagoskin's travels were ended, the Franklin Search expeditions arrived in Northwestern Arctic Alaska. Unfortunately the British did not compile a careful census of the native population during the seven years that their ships patrolled north of Bering Strait, although Dr. John Simpson made a detailed census of the Point Barrow area. Apart from this he offered only a rough estimate that the population living between the Colville River and "the deepest angle of Norton Sound", including the inland river, "does not, from all we can learn, exceed 2,500 souls and is probably little more than 2,000" (Simpson, 1875, 237). This figure of 2,500 was accepted by Seeman, a contemporary of Simpson's (Seeman, 1853, 49).

TABLE 8

A GENERAL CENSUS OF ARCTIC ALASKA COMPILED BY L.A. ZAGOSKIN+

<u>Eskimo Village Name</u>	<u>Location and Size</u>
1. <u>Kaviyagmut</u>	Deep inside Koviak Bay (Port Clarence). Large settlement.
2. <u>Ukivokmut</u>	On Ukivok Island (King Island). Large settlement.
3. <u>Nihtagmut</u>	At Cape Prince of Wales. Summer camp of the <u>Imaklitgmut</u> .
4. <u>Imaklitgmut</u>	On Big Diomedes Island. Summer camp for the <u>Taphakgmut</u> .
5. <u>Taphakgmut</u>	In the middle of Cape Prince of Wales, between the cape and Shishmaref Inlet. One of the largest settlements in northern Alaska.
6. <u>Kubok</u>	On the Kubok River, south side of Kotzebue Sound. Small settlement.
7. <u>Kualugmut</u>	At Spafarief Bay, on the Spafarief River. South side of Kotzebue Sound. Large settlement.
8. <u>Kanikgmut</u>	On the Kanik River (Buckland River). Large settlement.
9. <u>Chilivik</u>	On the Chilivik River (Selawik River). Large settlement.
10. <u>Kubok</u>	On the Kubok River (Kobuk River). Small settlement.
11. <u>Kikihtaguk</u>	North side of Choris Peninsula (Kotzebue). Large settlement.
12. <u>Kivualinagmut</u>	On the Kivualina River (Kivalina River). Quite large settlement.

+ adapted from Zagoskin (1956, 108-10).

TABLE 8 - contd.

<u>Eskimo Village Name</u>	<u>Location and Size</u>
13. <u>Ttikigakq</u>	Close to Cape Lisburne (Point Hope). Large settlement.
14. <u>Utukakgmüt</u>	On Utukak River (Utukok River). Summer camp at 70 degrees north.
15. <u>Kayakshigvik</u>	On the north side of Icy Cape. Large settlement.
16. <u>Kilyamigtagvik</u>	At 70° 33' N., south of Wainwright. Small settlement.
17. <u>Kuik or Atinikq</u>	Near Cape Belcher. Small settlement.
18. <u>Kakmalikq</u>	Just south of Refuge Inlet. Large settlement.
19. <u>Utkeagvik</u>	At Cape Smyth. Large settlement.
20. <u>Nuqumut</u>	On eastern side of Point Barrow. Large settlement.

Both estimates repeat the impression gained by Beechey in 1826.

Not until the summer of 1880 was there a concerted effort to make an official census of the Arctic Alaskan Eskimo population. While this census represents obvious guesswork about the size of some groups, in most cases the reported figures are based on actual counts (Petroff, 1882, v). Additional, exact information for a number of Arctic villages was recorded between 1881 and 1886. Comparison of these data with the 1880 figures shows the latter census was satisfactory⁷. The 1880 census reported the total number of Eskimos from the Colville River to Cape Prince of Wales, but not including the northern side of Norton Sound, Little Diomedé and St. Lawrence Islands, as 3,054 (Ibid., 4).

It has already been mentioned that after 1848 the Arctic Eskimo population began a slow decline from influenza-type infections. After three decades of contact with American whalers and traders it seems reasonable to suppose that additional diseases and perhaps periodic starvation caused the population to decrease even further. Certainly several late 19th century observers thought that deaths had outnumbered births for some time (Thornton, 1931) (Woolfe, in Porter, 1893) (Driggs, Church Register). Evidence from Point Barrow shows a population decrease of about 50 percent for the period 1852 to

1882 (Simpson, 1875, 237) (Ray, 1885, 38). So the fact that Petroff reported from 20 to 40 percent more people in arctic Alaska in 1880 than were thought to be there in 1826-27 and 1848-54 strongly suggests that the earlier estimates were too low.

Lack of accurate population statistics before 1880 has led several students of arctic Alaska to speculate further about the mid-19th century Eskimo population. Dall, in 1877, published a rough estimate of 1,500 persons in arctic Alaska but his information does not appear to have been based on direct observations (Dall, 1877, 23). The best estimate is generally considered to be that made by Rainey (1941, 10) who believed that about 10,000 people inhabited arctic Alaska in 1850. More recently a work by Swanton (1952) has been applied to a demographic study of Alaska by Rogers and Cooley (1962, 17). They calculated, for northwestern Alaska from the Colville River south to the Yukon and including the Seward Peninsula and the east coast of Norton Sound, that the 1740 Eskimo population amounted to about 28,000 persons and the 1840 population about 12,000. Other recent studies of Northwestern Arctic Alaska by Larsen and Rainey (1948, 25, 31), Giddings (1952 and 1956), Spencer (1959, 21) and Ricciardelli (1953) have furnished information, useful in estimating the mid-19th century population, especially for particular places or Eskimo groups.

Identification of Eskimo Groups in Arctic Alaska

In order to determine the number of Eskimos living in a given area it is necessary to sub-divide the population according to geographical groupings. Kashevarof was the first to successfully classify the arctic Alaskan Eskimos on the basis of group names used by the people themselves. The village list presented in Table 8, by Zagoskin, was similar to Kashevarof's original study which gave each native settlement the name of a geographical feature, usually a river basin. Zagoskin also named the Seward Peninsula Eskimos "Maleigmut", meaning people of the blanket huts (Zagoskin, 1847, 84). This was a collective term used by the natives of southern Norton Sound for their northern neighbours. Holmberg (1856, 286) accepted the word "Malaeigmjuten" but applied it to all the Eskimos north of the Unalakleet River. John Simpson called the people inhabiting Northwestern Arctic Alaska, from Norton Sound to the Colville River, the "Western Eskimo" (Simpson, 1875, 233). Within this region he recorded the principal Eskimo groups, each named after a particular geographical area. Dall (1877, 10-12) simply divided arctic Alaska into six "tribes" named after the six major streams located north of Kotzebue Sound. Petroff (1882, map) combined Russian and English sources to divide the Seward Peninsula Eskimos into

three groups, the "Kaviagmute" in the south, the "Kingigmute" to the west, and the "Mahlemute" to as far north as Kotzebue Sound and Cape Krusenstern. The far northern people he called the "Arctic Coast tribes" and the inland Eskimos the "Nunatagmutes" and "Kopagmutes". Nelson modified this regional breakdown by extending the "Malemut" Eskimos to Point Hope. People north of the point he called the "Point Barrow Eskimo" (Nelson, 1899, 22-23). Kelly discarded the word Malemut and named each regional grouping of Eskimos after a major geographical feature, commonly a river (Wells and Kelley, 1890, 6). Stefansson (1957, 117) considered the term Malemut a corruption of the word "Malligmiut" meaning "the people of the place where the waves are high". He located this Eskimo group at the Yukon River delta. Zagoskin, one of the first to use the word Malemut for the Arctic Eskimos, also located an Eskimo group, the Magmut, at the Yukon River mouth (Zagoskin, 1956, 395). Instead of using a single, collective term for the Arctic people, Stefansson differentiated between groups according to the geographical region they inhabited (Stefansson, 1951, 528). Other students, such as Rausch (1951) and Milan (1958), have noted the local names for Eskimo groups which were not particularly well known, in this case the Nunamiut people around Anaktuvuk Pass and the Wainwright Eskimos, respectively.

Although no two authors need to be expected to agree on the spelling of Eskimo group names in arctic Alaska, there is

general agreement on the location of these groups. The term Malemut is a different matter. There are those who believe the word has no meaning at all, those who think it refers only to a breed of Alaskan sled dogs⁸, and those who consider it an appropriate collective name for the Arctic Eskimos. Because the word has no meaning today to the Eskimos from Kotzebue Sound to Point Hope, the designation Malemut is not used in this study. Instead, the various groups of Eskimos living in arctic Alaska have been given local names according to the geographical region they inhabit during most of the year, from November to May. These groups are listed in Table 9 and on Map No. 23.

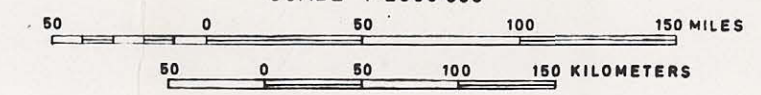
General Seasonal Eskimo Migration Patterns

The various Eskimo groups in arctic Alaska followed regular patterns of seasonal movement from one hunting or trading site to another. Some bands wintered inland along the major rivers, the Colville, Utukok, Kukpowruk, Kivalina-Wulik, Noatak, Kobuk and Selawik. Other groups lived on the coast. There were probably no winter residences on the coast from Point Barrow to Barter Island in the mid-19th century.

Early each summer most of the inland people moved to the principal trading centres of Nirlik, Tologeak and

PRINCIPAL ESKIMO GROUPS IN NORTHERN ALASKA

SCALE 1:2500 000



MAP 23

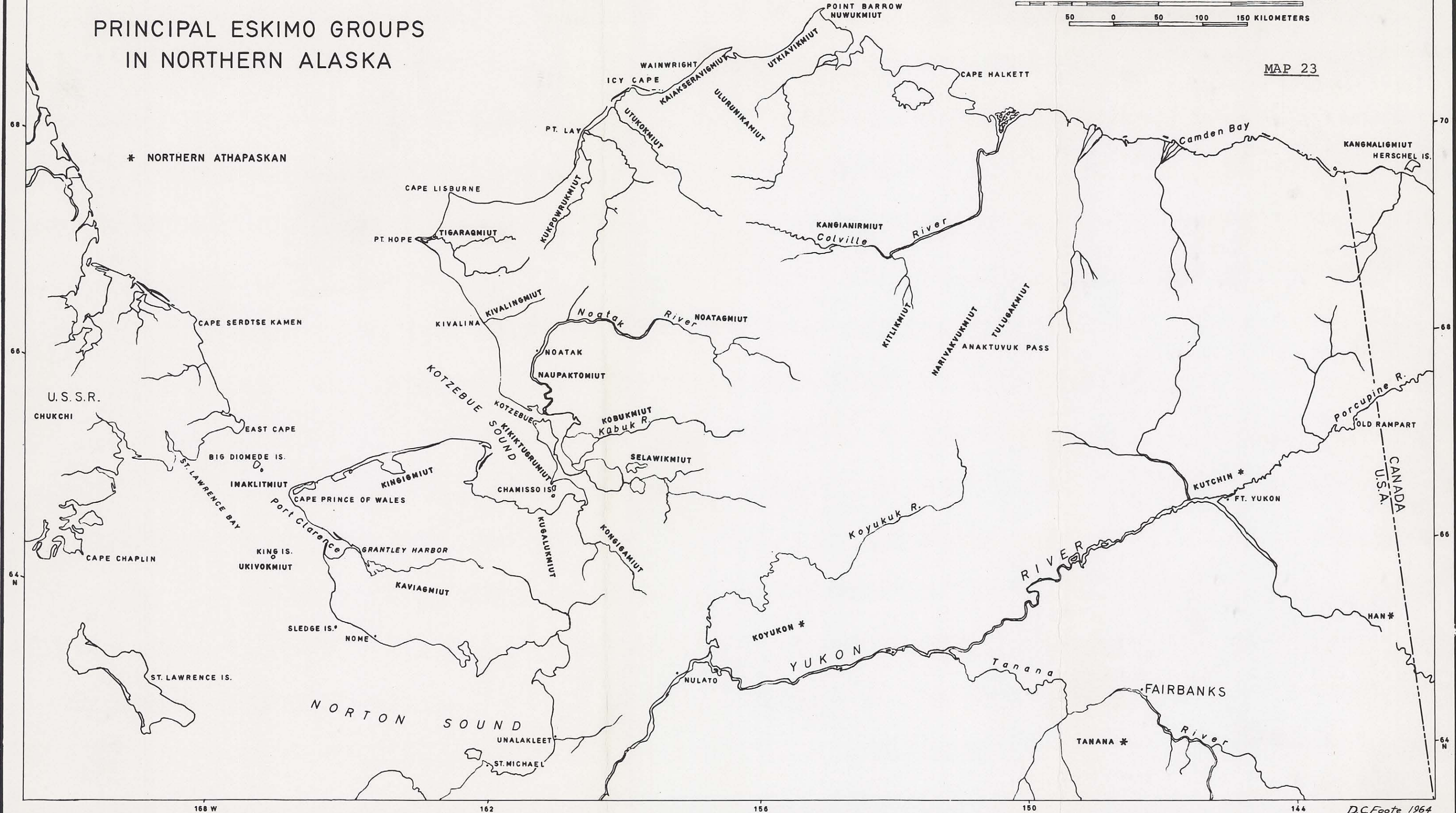


TABLE 9

ESKIMO GROUPS IN ARCTIC ALASKA

<u>Eskimo Group</u>	<u>Location</u>
1. <u>Kaviagmiut</u>	Northwest shore of Norton Sound to Port Clarence.
2. <u>Kingigmiut</u>	Western Seward Peninsula from Port Clarence to Cape Espenberg.
3. <u>Ukivokmiut</u>	King Island.
4. <u>Imaklitmiut</u>	Diomed Islands.
5. <u>Deering</u>	South shore of Kotzebue Sound from Cape Espenberg to Deering.
6. <u>Kugalukmiut</u>	Spafarief Bay and Spafarief River.
7. <u>Kongigamiut</u>	Buckland River.
8. <u>Selawikmiut</u>	Selawik Lake and Selawik River.
9. <u>Kobukmiut</u>	Kobuk River.
10. <u>Kikitugrumiut</u>	From Choris Peninsula to Hotham Inlet.
11. <u>Naupaktomiut</u>	Lower Noatak River.
12. <u>Noatagmiut</u>	Upper Noatak River.
13. <u>Kivalingmiut</u>	Kivalina and Wulik Rivers.
14. <u>Tigaragmiut</u>	Cape Thompson to Pitmegea River.
15. <u>Kukpowrukmiut</u>	Kukpowruk River.
16. <u>Utukokmiut</u>	Utukok River.
17. <u>Kaiakseravigmiut</u>	From Icy Cape to Point Franklin.
18. <u>Ulurunikamiut</u>	Kuk River.

TABLE 9 - contd.

<u>Eskimo Group</u>	<u>Location</u>
19. <u>Utkiavikmiut</u>	Cape Smyth.
20. <u>Nuwukmiut</u>	Point Barrow.
21. <u>Kangianirmiut</u>	Upper Colville River.
22. <u>Kitlikmiut</u>	Killik River.
23. <u>Narivakvukmiut</u>	Chandler River.
24. <u>Tulugakmiut</u>	Anaktuvuk River.

Sheshalik at the mouths of the Colville, Utukok and Noatak rivers, respectively. Here they met the coastal Eskimos. Families who spent the winter months on the coast, from Point Franklin to Point Barrow usually went eastward to trade at Nirlik and Barter Island. Those who lived on the coast near Point Hope travelled north to Tologeak or south to Sheshalik. Cape Prince of Wales and Shishmaref Inlet residents sailed to Sheshalik or southward to Port Clarence or farther. In autumn, before fresh water bodies began to freeze, the various groups returned to their winter homes.

This seasonal population distribution and movement means, for example, that Eskimos met at Sheshalik might have come from as far away as the Chukchi Peninsula and the central Brooks Range. In order to isolate each Eskimo group and obtain some idea of its seasonal migration pattern, I have compiled statistics from written documents for the period 1778 to 1854. Each record of Eskimos seen in arctic Alaska was tabulated according to date, place and number of people. When the observer gave only general information, such as the number of tents or umiaks seen, a population figure was computed using the assumptions described earlier. Thus, should an explorer report five tents it is assumed these represented five households, each with seven persons, or a total of 35 people. Although some references were so general that no

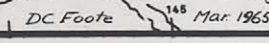
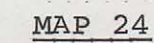
population figure could be calculated, the mere mention of people confirmed the seasonal occupance of certain places. Sometimes the relative size of a group, large or small, was given. All these data are presented in Appendix A.

As an added measure of population distribution and density, information on abandoned winter house sites, thought to have been occupied about 1850, and readily available reports of Eskimos seen during the years 1855 to 1886, have also been listed in Appendix A. Their approximate location is shown on Map 24. Research on the latter data source is not as complete as that done on documents referring to events before 1855. In nearly all cases the observations from 1778 to 1886 refer to Eskimos encountered along the coast; there is little information from inland areas.

The Coastal Eskimo Population

Once the population statistics were assembled it became clear that the distribution of Eskimos along the coast could be subdivided according to relatively few locations and two seasons, winter and summer. These subdivisions are shown in Appendix A and Map No. 24. The winter population of coastal Eskimos was calculated on the basis of the number of winter houses recorded between Cape Prince of Wales and Point Tangent (Appendix A). A reasonable estimate of these houses is presented in Table 10.

About 1850



The probable number of winter coastal inhabitants, 3,060 as recorded in Table 10, agrees quite well with the number of Eskimos possibly seen by members of the three 19th century expeditions which visited the entire arctic Alaskan coast, from Cape Prince of Wales to Demarcation Point. Based on the data given in Appendix A, it can be argued that Beechey and Franklin, in 1826-27, probably encountered about 2,220 Eskimos, Simpson and Kashevarof, in 1837-38, might have seen 1,971 people, and the British naval expeditions of 1849-50, possibly saw 2,859 Eskimos.

The Inland Eskimo Population

It is difficult to estimate the total number of Eskimos who spent the winter inland from the coast because so little information is available in the way of recorded observations and dated archaeological sites. First hand observations from interior Northwestern Arctic Alaska were not made until the period 1881 to 1886 (Ray, 1885), (Stoney, 1900), (Howard, MS), (Brower, MS), (McLenegan, in Healy, 1887), (Cantwell, in Healy, 1889).

Fortunately, since many inland people spent the summer along the coast their numbers, at least in part, were recorded by exploration parties travelling by boat. It is known that inland people gathered at particular summer hunting

TABLE 10

PROBABLE COASTAL POPULATION OF ARCTIC ALASKA ABOUT 1850
AS DETERMINED FROM WINTER HOUSES

<u>Place</u>	<u>Approximate Number of Winter Houses Thought to be Occupied in 1850</u>	<u>Probable Population</u>
Cape Prince of Wales	60	420
Shishmaref	?	?
Cape Espenberg	20	140
Spafarief Bay	2	14
Kotzebue	?	?
Cape Krusenstern to Hotham Inlet	8	56
Kivalina	30	210
Point Hope	122	854
Akalowlik	3	21
Imnarruk	2	14
Cape Dyer	2	14
Keelyiktangyawk	2	14
Ukingyek	4	28
Wevok	1	7
Katziegalie	8	56
Kukpowruk	27	189
Akeonik	16	112

TABLE 10 - contd.

<u>Place</u>	<u>Approximate Number of Winter Houses Thought to be Occupied in 1850</u>	<u>Probable Population</u>
Mitliktavik	12	84
Kilimantavi	12	84
Wainwright	6	42
Point Belcher	14	98
Atanik	?	?
Pingasagrook	?	?
Walakpa	?	?
Utkiavik	40	280
Point Barrow	54	309
Point Tangent	2	14
	<hr/>	<hr/>
	TOTAL	3,060
	<hr/>	<hr/>

sites. Some of these sites, together with an approximate population figure calculated from data given in Appendix A, have been listed in Table 11 as follows :-

TABLE 11

ESTIMATED NUMBER OF INLAND ARCTIC ALASKAN ESKIMOS AT
PARTICULAR SUMMER COASTAL SITES ABOUT THE YEAR 1850

<u>Summer Camp Site</u>	<u>Inland Eskimo Group</u>	<u>Probable Summer Coastal Population</u>
Elephant Point	Kongigamiut	150
Sheshalik	Kobukmiut, Noatagmiut and others	1,400
Killeegmaek	Naupaktomiut	90
Tolageak	Utukokmiut and others	210
Wainwright	Ulurunikamiut	130
Oliktok	Noatagmiut, Kangianirmiut and others	400
	TOTAL	2,380

Total Population of Arctic Alaska

These data on the coastal and inland Eskimo groups provide a general picture of the mid-19th century population, a population probably numbering in excess of 5,000 persons. If all the Eskimo groups in arctic Alaska are taken into consideration Rainey's estimate (1941) of 10,000 persons in the mid-19th

century, is quite reasonable. In order to examine the resource utilization of particular Eskimo groups, however, it is necessary to attempt a more detailed analysis of the Eskimo population living at particular places. For the purpose of this study three groups have been chosen, the Tigeragmiut living around Point Hope, the Naupaktomiut of the lower Noatak River valley and the Noatagmiut of the upper Noatak River basin.

The Tigeragmiut Population About 1850.

From Appendix A it can be seen that the ruins of 177 winter houses have been reported from Point Hope and the area nearby. It is not known whether all these sites were occupied in the mid-19th century, but the house-type (Western Thule), the observations of 19th century explorers tabulated in Appendix A and information gathered from Eskimos presently living at Point Hope all suggest that a majority of the ruins were abandoned after 1850. An added problem associated with the ruins is the fact that some families maintained two winter houses, one inland or along the northern coast, and a second at Point Hope itself. To obtain some approximation of the Tigeragmiut population, therefore, I have assumed, that a total of 122 houses were occupied in about 1850. It is further assumed that a total of 55 houses, located from Akalowlik to Cape Lisburne and along the Kukpuk

River, were occupied during autumn and mid-winter. If this were so, then only 67 houses at Point Hope itself would be in use from about late September to March. From what is known of the former Tigeragmiut annual hunting cycle one would expect all the people to gather at the main village during the Bowhead whale hunt, from April to June. In summer the Tigeragmiut would disperse. I assume that a total of 32 households would live along the coast from Cape Thompson to Cape Lisburne, a figure which is in keeping with evidence presented in Appendix A. Perhaps 20 households would live inland on the Kukpuk River drainage and 20 other households would hunt along the coast north of Cape Lisburne or trade at Tolageak. Other trading parties, perhaps 20 households, would visit Sheshalik or the coast south of Cape Thompson. Lastly, it is assumed that at least 11 households hunted inland to the northeast of Point Hope travelling as far as the upper Kukpowruk River, and another 11 households journeyed inland to the southeast of Point Hope. A very few people, perhaps eight households, would spend the summer at the village of Point Hope itself. Table 12 represents the possible seasonal distribution of the Tigeragmiut at about 1850, based on the assumption of 122 households, a reasonable interpretation of the evidence in Appendix A and information received from Point Hope residents.

TABLE 12

THE ESTIMATED TIGARAGMIUT POPULATION AND THEIR POSSIBLE SEASONAL DISTRIBUTION ABOUT 1850.

<u>Place</u>	<u>September-March⁺</u>		<u>July-September</u>	
	<u>winter pop.</u>	<u>no. huts</u>	<u>summer pop.</u>	<u>no. tents</u>
Tigaraq	469	67	56	8
Cape Thompson	-	-	70	10
Kukpuk River	287	41	140	20
Akalowlik	28	4	42	6
Imnarruk	14	2	14	2
Kaypalauk	14	2	14	2
Keelyiktangyawk	14	2	14	2
Ukingyek	28	4	28	4
Cape Lisburne	-	-	42	6
North coast Cape Lisburne to Tolageak	-	-	140	20
Inland North Coast	-	-	77	11
Inland South Coast	-	-	77	11
Sheshalik	-	-	140	20
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	854	122	854	122
	<hr/>	<hr/>	<hr/>	<hr/>

⁺ From March to July most of the Tigaragmiut gathered near Tigaraq for the annual Greenland whale and spring seal hunting.

The Naupaktomiut Population About 1850.

The number of mid-19th century Naupaktomiut is difficult to estimate because the group spent nearly half the year inland. There are no accurate reports of their total population. It is known that each year a majority of the Naupaktomiut left the lower Noatak River valley in late winter and moved to the sea coast between Aneekarnat and Killeegmaek. After the sea ice had gone but before the autumn storms began, perhaps in late July or early August, the coastal dwellers sailed along the shore to Sheshalik, stopped briefly to trade and then moved up the Noatak River for the autumn salmon fishery. Although a detailed archaeological investigation of the lower Noatak River has not been completed, field studies in the area and interviews with the present inhabitants of Noatak village suggest that mid-19th century Naupaktomiut families were living in four general areas⁹, around Akveextrak and the lower river, at Naupaktosugruk and the present village of Noatak, from Noatak village to the Kugrurak River and from here to Kayruxtavik on the middle Noatak River. I assume that each of the four areas supported a mid-19th century population of about seven households. Thus, it is estimated that the Naupaktomiut numbered about 196 persons living in 28 households. Although Appendix A suggests that no more than 90 or so people were observed along the coast near Killeegmaek,

a site which was traditionally occupied by the Naupaktomiut, the date of the observations, late August, has been interpreted to mean that some families had already moved south and east to Sheshalik or the Noatak River. For this reason I assume that the coastal summer population of Naupaktomiut might have been about 140 people divided between 20 households. The summer inland population, fishing on the lower river, but more probably hunting inland in the mountains, would have been 56 Eskimos living in eight households. This possible Naupaktomiut population and its seasonal distribution is presented in Table

The Noatagmiut Population About 1850.

The last Eskimo group to be discussed in detail, the Noatagmiut, present several special problems. First and foremost, there is relatively little archaeological evidence which might aid in reconstructing the exact mid-19th century population (Irving, 1954) (Solecki, 1950) (Solecki, 1951). The most important single contribution has been made by William Irving who found at least 92 late prehistoric house ruins within a radius of about 20 miles of Itivlik Lake and about 24 house ruins near Desperation Lake (68° 8' N, 158° 45' W) (Irving, 1962, 76-81). In addition, Eskimos now living in Noatak village, some of the last people to inhabit the upper

Noatak River drainage, have described abandoned house sites for such places as Okak Bend, Feniak and Desperation Lakes, Aniuk, and Kaluachack. Stoney and Howard (Stoney, 1900), (Howard, MS) also found Noatagmiut living at several winter villages, for example, Sutkollauk, Nimyuk, Issygok and Tooloouk in 1885-86, sites which are now deserted. The second problem is the lack of first hand observations of Eskimos in the upper Noatak River basin. The first Europeans to visit the upper river were McLenegan and Nelson in the summer of 1885. The first winter visit by Europeans was undertaken by Stoney and Howard in 1885-86. The third problem is that the Noatagmiut dispersed over a wide area in summer. Some travelled to Piknik near Point Barrow, others traded at Nirlik at the mouth of the Colville River and then moved on to hunt at Oliktok, an unknown number remained inland all summer long and the remainder, apparently the majority of the entire group, sailed down the Noatak River to hunt and trade at Sheshalik. Fortunately, the size of the Noatagmiut population can be estimated from the summer distribution of people at the four places mentioned above, Piknik to Point Barrow, Nirlik to Oliktok, the inland Brooks Range and Sheshalik.

From the statistics presented in Appendix A it would seem reasonable to suppose that the mid-19th century population at Sheshalik could average about 1,400 people living in 200 tents. Two pieces of information help to separate the

Noatagmiut from other Eskimo groups resident at Sheshalik. First, and of most importance, is the fact that the Noatagmiut were the first Eskimos to reach Sheshalik each spring, as soon as the lower Noatak River was free of ice. This means that the great majority of Eskimos reported at Sheshalik in July might have been Noatagmiut. Appendix A suggests that this population could number from 600 to 800 persons. By August the Sheshalik population would swell to as many as 2,000 people. The second important fact is the Noatagmiut's traditional use of a conical tent covered with caribou skins. The Naupaktomiut used a dome-shaped summer house, as did the Kobuk River Eskimos (Giddings, 1956, 6). Apparently individual Eskimo groups did not camp together at Sheshalik; each occupied a particular section of the sand spit. Nelson (1899, 231) reported more than 150 conical tents at Sheshalik in mid-July, 1881, a figure which might represent a Noatagmiut population of over 1,000. In the present study, however, a conservative estimate of the mid-19th century Noatagmiut at Sheshalik has been made in an effort to approximate the number of people reported in the area from early to mid-July. I consider a figure of 80 households, containing 560 people, a reasonable estimate. As for the number of Noatagmiut who might visit Nirlik, the best source is Howard (MS) who mentions that about 30 Noatagmiut households travelled to Nirlik or Piknik

to Point Barrow in spring, 1886. Taking into consideration the possible population decline in Noatagmiut from 1850 to 1886, and the readjustment of Eskimo trading patterns, which resulted in more and more inland people travelling to coastal sites where they could obtain goods bartered by the whalers, I assume that at least 30 Noatagmiut households moved north each summer in the mid-19th century. Of these, 20 families might have visited Nirlik and Oliktok and perhaps 10 journeyed northwest to Piknik and Point Barrow. The number of Noatagmiut who spent the summer hunting and fishing throughout the Brooks Range is unknown. I assume that less than 20 percent of the total population, about 25 households, did not travel to the seacoast in any given summer period. The possible summer distribution of Noatagmiut is presented in Table 14.

Summary

A search of written records concerned with Northwestern Arctic Alaska before 1855, and a review of readily accessible documents for the period 1855 to 1886 and of information on archaeological sites, have provided data sufficient for a satisfactory estimate of the size of the mid-19th century Arctic Alaskan Eskimo household and the sex and approximate age composition of the population. Statistics compiled from the same sources provide the basis for a reasonable but not completely accurate set of assumptions which can be used

TABLE 13

THE ESTIMATED NAUPAKTOMIUT POPULATION AND THEIR POSSIBLE
SEASONAL DISTRIBUTION ABOUT 1850

<u>Place</u>	<u>August-March</u>		<u>March-August</u>	
	<u>winter pop.</u>	<u>no. huts</u>	<u>summer pop.</u>	<u>no. tents</u>
Akveextrak and lower Noatak River	49	7	-	-
Naupaktosugruk	49	7	-	-
Noatak River to Kugrurak River	49	7	-	-
Noatak River from Kugrurak River to Kayruxtavik	49	7	56	8
Coast Aneekarnat to Killeegmaek	-	-	140	20
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	196	28	196	28
	<hr/>	<hr/>	<hr/>	<hr/>

TABLE 14

THE ESTIMATED NOATAGMIUT POPULATION AND THEIR POSSIBLE
SEASONAL DISTRIBUTION ABOUT 1850

<u>Place</u>	<u>September-May</u>		<u>June-August</u>	
	<u>winter pop.</u>	<u>no. huts</u>	<u>summer pop.</u>	<u>no. tents</u>
Sheshalik	-	-	560	80
Nirlik	-	-	140	20
Piknik-Barrow	-	-	70	10
Inland	945	135	175	25
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	945	135	945	135
	<hr/>	<hr/>	<hr/>	<hr/>

to determine the number of Eskimos living in particular locations. These assumptions have been applied in a detailed population study of three Eskimo groups, the Tigeragmiut, the Naupaktomiut and Noatagmiut. The results of the study are summarized in Table 15.

TABLE 15

POSSIBLE POPULATION COMPOSITION OF THE TIGERAGMIUT, NAUPAKTOMIUT AND NOATAGMIUT ABOUT 1850.

<u>Eskimo Group</u>	<u>Total Pop.</u>	<u>Number of Households</u>	<u>Adult Males</u>	<u>Adult Females</u>	<u>Children under 16 years</u>
Tigaragmiut	854	122	289	266	299
Naupaktomiut	196	28	66	61	69
Noatagmiut	945	135	319	295	331

Notes on Chapter 6.

1. It is possible that smallpox and other diseases could have reached Northwestern Arctic Alaska by way of the Mackenzie River and the northern Alaskan coast. There is no evidence, however, that the great plague of 1780 or the smallpox outbreak in 1836 reached arctic Alaska by this route. Neither Mackenzie, in 1789 nor Simpson in 1837 mentioned signs of the epidemic on the lower river.
2. This viewpoint agrees with an independent historical study of the Seward Peninsula by Mrs. Dorothy Jean Ray who stated that the smallpox epidemic of 1836-39 "did not reach much farther north than Unalakleet" (pers. comm. 22nd April, 1964). Professor Robert A. McKennan, in an independent study of the Tanana River region said he had "been able to find no evidence of the spread of the early smallpox epidemic up the Yukon" (pers. comm. 19th October, 1964). Mr. Howard Rock, editor of the Eskimo-Indian newspaper Tundra Times, wrote a series of articles on an epidemic which struck Point Hope some time in the 19th century (Rock, 1964, 4). Mr. Rock has fictionalized the story, which is about his grandmother's grandmother, and he does not know which disease caused the epidemic (Rock, pers. comm. 22nd January, 1965).

3. Lt. Ray's statement (Ray, 1885, 44) on the average Eskimo family size at Point Barrow is a direct paraphrase of Simpson's earlier study.
4. This figure agrees remarkably well with Hallowell's estimate of two parents and two or three children in the average Algonkian hunting family (Hallowell, 1949). Gjessing (1955, 88) came to a similar conclusion for Samisk families. Rogers (1963, 23) presented evidence which showed the average family sizes of Mistassini Indians as about 5.2 persons in 1823 and 5.6 people in 1829.
5. Although Beechey saw 19 villages, neither his published work nor a search of archives in Great Britain has revealed information on the exact location of all these places. Apparently, any special report which may have been submitted to the Admiralty containing these data has been lost. Private journals and diaries belonging to Beechey have not been located but may still exist in a personal collection somewhere in England.
6. For the most part references to Zagoskin have been taken from the manuscript translation by Antoinette Hotovitsky. This translation is often incomplete so, whenever possible, the Hotovitsky manuscript has been

checked against Zagoskin's original work as published in the 1956 Moscow edition.

7. Some scholars have been critical of the 1880 census results for parts of southern Alaska on the ground that Petroff, the government agent responsible, often guessed at figures without first-hand knowledge. Petroff did not himself undertake the Arctic census, it was delegated to officers of the Revenue Cutter Corwin. The Arctic census though incomplete, does not seem to be the result of unsubstantiated guesswork. Observations by Lieutenant Ray, Charles Brower, and others, from 1881 to 1886, confirm its accuracy in many places.
8. The term "Malemut husky" for arctic Alaskan sled dogs probably originated with the Americans who visited Alaska around the time of the Nome gold rush. It is a curious combination of words because the name "huskie" was the common British sailors' name for an Eskimo. This, in turn, seems to be a corruption of "Eski" or "Heskimo" as a typical Cockney might say it.
9. I carried out personal interviews in the present village of Noatak between autumn 1959 and late summer 1961. During the summer of 1961, H.A. Williamson and

the author completed an archaeological reconnaissance of the middle Noatak River, from Noatak village to Kayruxtavik Creek. As a result of both studies the general history, seasonal cycle of hunting and approximate population distribution of the Naupaktomiut were established (Foote and Williamson, 1961) (Ibid., 1965). Recently Edwin S. Hall, Jr., of Yale University has started a detailed archaeological study of several sites on the middle and low Noatak River. At Akveextrak he has found as many as 30 house ruins (pers. comm. 20th February, 1965).

CHAPTER 7

FAT OF THE LAND

Wildlife was the most important resource utilized by the mid-19th century Tigeragmiut, Naupaktomiut and Noatagmiut. Materials such as, coal, oil shale, iron pyrite, jade, red, white and blue clay, chert and flint, slate, graphite, wood and various types of rock all played significant roles in Eskimo life. Nevertheless the amount of these resources used were small in comparison with the game killed each year and consequently the following discussion deals only with the utilization of wildlife.

To understand the food gathering economy of the three Eskimo groups mentioned above it is necessary to know the relationship between the seasonal hunting cycle of each group and the utilization of specific animals and plants. Consideration must then be given to the products derived from each species and the Eskimo demand for them. It should then be possible to estimate with reasonable accuracy the quantity of wildlife consumed by the Tigeragmiut, Naupaktomiut and Noatagmiut at the time.

Seasonal Hunting Patterns of the Tigeragmiut, Naupaktomiut and Noatagmiut

The annual pattern of movement of the Tigeragmiut, Naupaktomiut and Noatagmiut has been mentioned briefly in Chapter 6. Rainey (1947) has described 19th century Tigeragmiut life in some detail. A study of the mid-century hunting patterns of all the three Eskimo groups has also been published (Foote and Williamson, 1961) (Ibid., 1965). Furthermore, accounts of Eskimo life in northern Alaska in the late 1800's have been written by Murdoch (1884, (1891a), (1892), (1893), (1898); Ray (1885); Nelson (1899); Stoney (1900); (Howard (MS); Brower (MS), Giddings (1956), (1961) and others. The present study merely summarizes the seasonal hunting patterns of the Tigeragmiut, Naupaktomiut and Noatagmiut and the principal species of animals and plants utilized in Tables 16, 17 and 18. These tables do not list all possible food sources. The Eskimos used a wide variety of foods such as sea slugs, seaweed, warble fly larvae, caribou feces, gull eggs, crayfish, ling, suckers, sculpin, loons, sandhill cranes, gulls, muskrat, wolverine, porcupine and others. It can be said that only the raven and killer whale were not hunted. Nevertheless the species mentioned in the above tables represent the animals and plants most important in the food gathering economy at the time.

Products derived from Particular Species of Wildlife

Products derived from wild animals and plants supplied

TABLE 16

SUMMARY OF THE TIGERAGMIUT ANNUAL FOOD GATHERING CYCLE
ABOUT 1850

<u>Season</u>	<u>General Hunting Area</u>	<u>Principal Wildlife Species Utilized</u>
<u>Summer:</u> (late June - early July to late August - early September)	<u>Coast:</u> from Tolageak to Sheshalik. <u>Inland:</u> to headwaters of Kukpuk and Kukpowruk Rivers.	Caribou Squirrel Marmot White Whale Harbour Seal Whitefish Grayling Trout Salmon Murre Ducks Ptarmigan Berries
<u>Autumn:</u> (late August - early September to late October - early November)	<u>Coast:</u> Cape Sabine to Kivalina. <u>Inland:</u> Lower and upper Kukpuk River.	Caribou Squirrel Harbour Seal Bearded Seal Walrus Polar Cod Grayling Trout Salmon Ptarmigan Ducks Snowy Owl
<u>Winter:</u> (late October - early November to March)	<u>Coast:</u> Cape Lisburne to Cape Thompson. <u>Inland:</u> Lower and middle Kukpuk River.	Caribou Ringed Seal Polar Bear Arctic Fox Polar Cod
<u>Spring:</u> (April to late June - early July)	<u>Coast:</u> Cape Lisburne to Cape Thompson. <u>Inland:</u> Lower and middle Kukpuk River.	Caribou Bowhead Whale White Whale Ringed Seal Bearded Seal Harbour Seal Walrus Polar Cod Murre Ducks

TABLE 17

SUMMARY OF THE NAUPAKTOMIUT ANNUAL FOOD GATHERING CYCLE
ABOUT 1850

<u>Season</u>	<u>General Hunting Area</u>	<u>Principal Wildlife Species Utilized</u>
<u>Summer:</u> (July to August)	<u>Coast:</u> Ohkaleeksout-Killeegmaek to Sheshalik. <u>Inland:</u> Lower and middle Noatak River.	Caribou Mt. Sheep Squirrel Marmot White Whale Harbour Seal Whitefish Grayling Salmon Trout Ducks Ptarmigan Berries
<u>Autumn:</u> (August to October)	<u>Coast:</u> Sheshalik. <u>Inland:</u> Lower and middle Noatak River.	Caribou Grizzly Bear Whitefish Grayling Salmon Trout Ptarmigan Berries Sourdock Leaves Masu
<u>Winter:</u> (November to February)	<u>Coasts:</u> not utilized <u>Inland:</u> Lower Noatak River.	Caribou Rabbit Fox Trout Ptarmigan
<u>Spring:</u> (February to July)	<u>Coast:</u> Ohkaleeksout to Killeegmaek. <u>Inland:</u> Lower and middle Noatak River.	Caribou Hare Ringed Seal Bearded Seal Walrus Polar Cod Trout Ducks Ptarmigan Willow Leaves

TABLE 18

SUMMARY OF THE NOATAGMIUT ANNUAL FOOD GATHERING CYCLE
ABOUT 1850

<u>Season</u>	<u>General Hunting Area</u>	<u>Principal Wildlife Species Utilized</u>
<u>Summer:</u> (June to August)	<u>Coast:</u> Sheshalik, Nirlik-Oliktok, Piknik-Pt. Barrow. <u>Inland:</u> Upper Noatak River basin.	Caribou Squirrel Marmot Mt. Sheep White Whale Ringed Seal Bearded Seal Harbour Seal Whitefish Grayling Trout Salmon Ducks Ptarmigan Berries
<u>Autumn:</u> (September to October)	<u>Coast:</u> not utilized <u>Inland:</u> Noatak River basin, middle Colville River.	Caribou Mt. Sheep Grizzly Bear Whitefish Grayling Trout Salmon Ptarmigan Berries Sourdock Masu
<u>Winter:</u> (November to April)	<u>Coast:</u> not utilized <u>Inland:</u> Upper Noatak River basin.	Caribou Mt. Sheep Grayling Whitefish Trout Ptarmigan
<u>Spring:</u> (May to June)	<u>Coast:</u> Sheshalik. <u>Inland:</u> Noatak, middle and lower Colville and Ikpikpuk Rivers.	Caribou Mt. Sheep Grayling Whitefish Trout Ptarmigan

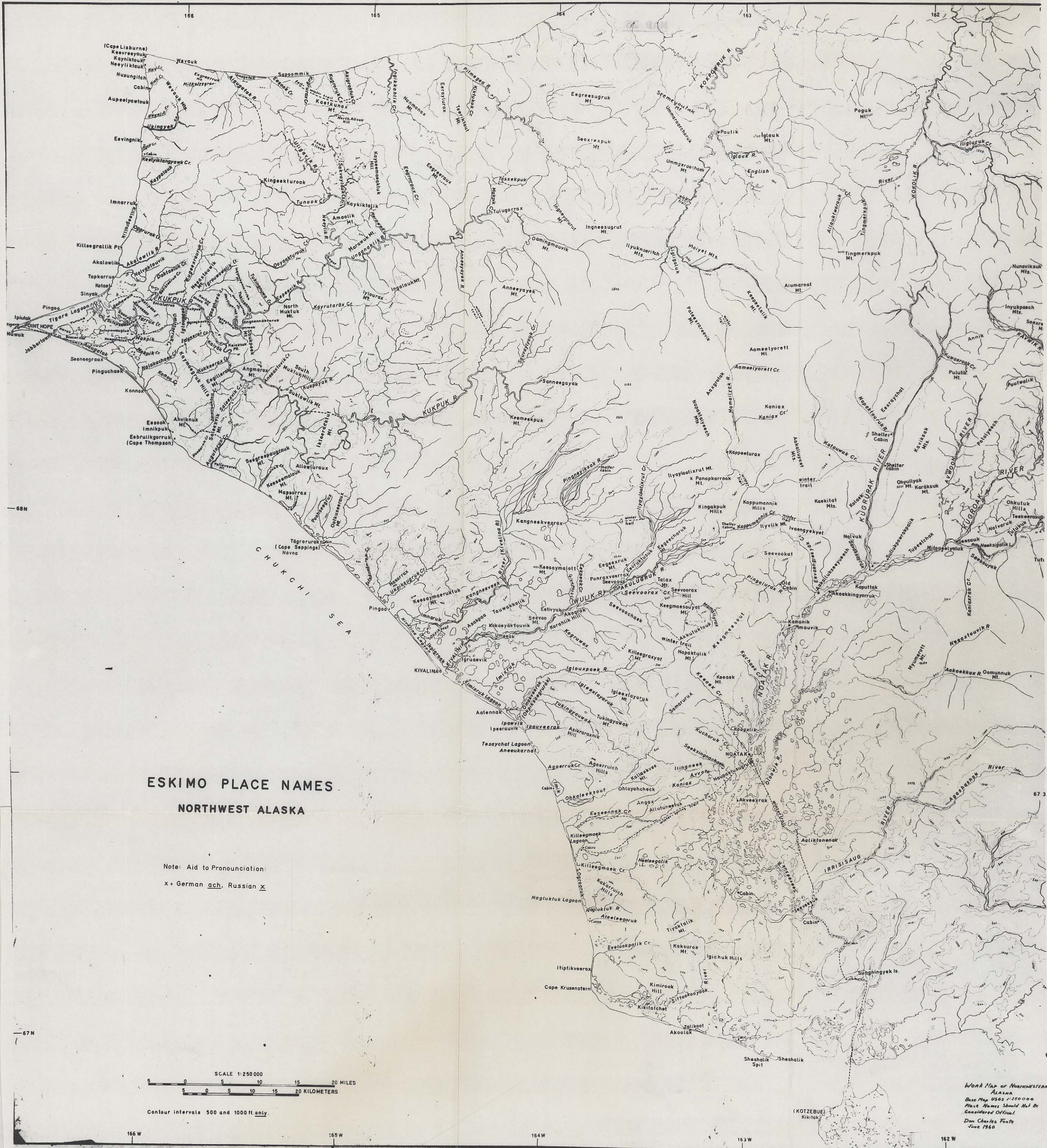


ESKIMO PLACE NAMES
NORTHWEST ALASKA

Note: Aid to Pronunciation
x = German and Russian

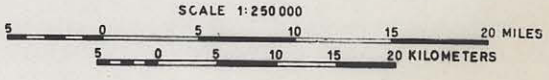


Notes:
1. This map is based on the latest available information.
2. The names are given in the original form, without regard to spelling or pronunciation.
3. The names are given in the original form, without regard to spelling or pronunciation.
4. The names are given in the original form, without regard to spelling or pronunciation.



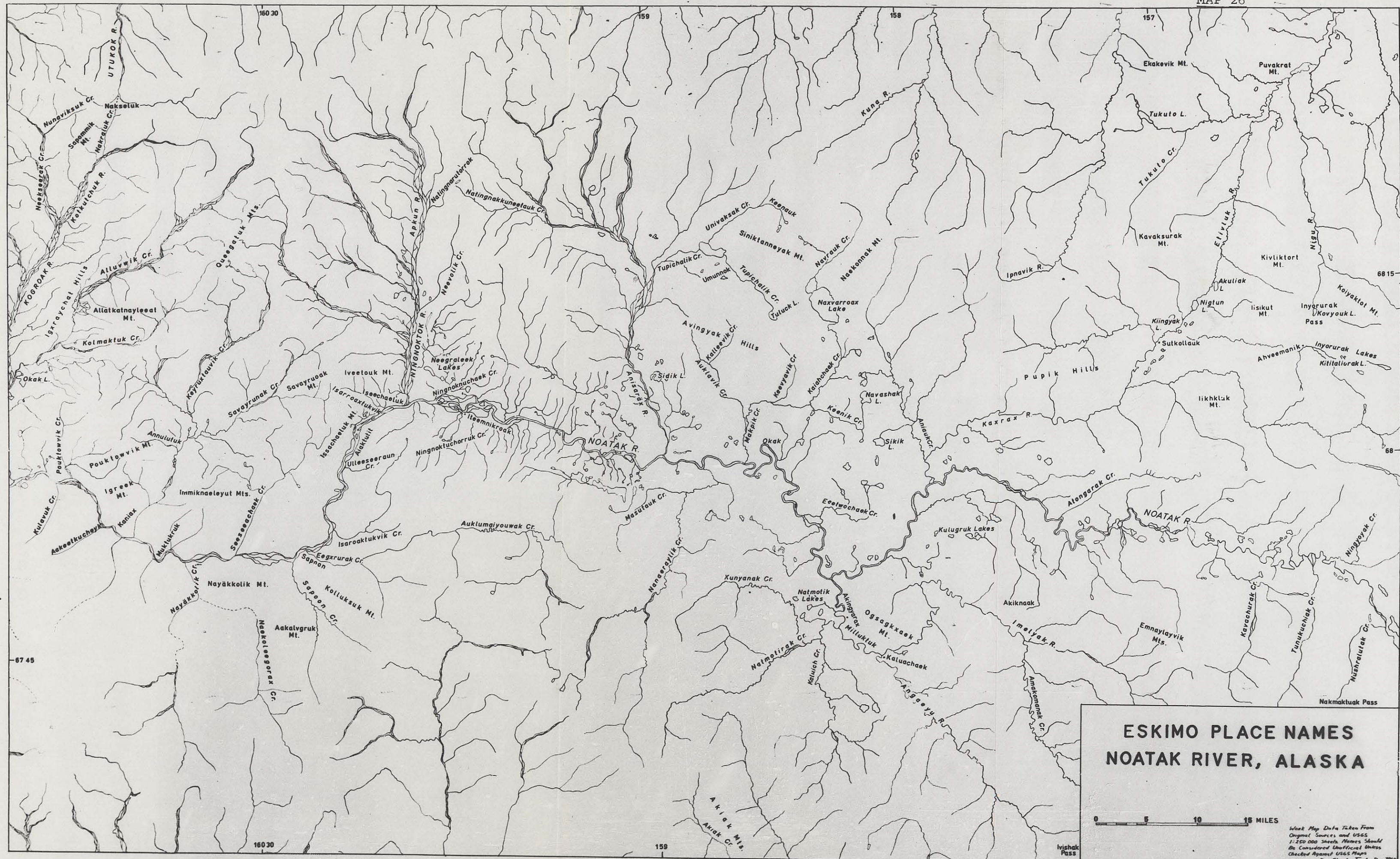
ESKIMO PLACE NAMES
NORTHWEST ALASKA

Note: Aid to Pronunciation:
x = German ach, Russian x



Contour intervals 500 and 1000 ft. only.

Work Map of Northwestern
Alaska
Base Map USGS 1:250,000
Place Names Should Not Be
Considered Official
Don Charles Feste
June 1960



most of the material needs of the mid-19th century Arctic Eskimos. All articles of clothing were made from animals, especially from caribou and various species of seals. Fuel was almost always obtained from stands of spruce, birch, poplar, alder and willow, driftwood, marine mammal and fish oils, or caribou and bear fat. Several different types of shelters were constructed from a wooden frame covered with skins or turf. Relatively permanent winter houses were often built of logs, turf and bowhead whale bones. Boats and sleds were also made from renewable resources. The former had a wooden frame usually covered with seal or caribou skins. The latter were built from wood, held together with sealskin lashing and often shod with whale bone. Dog harness and traces were made of raw hide.

Although some animals were killed primarily to obtain a particular material (e.g., caribou fawns used for skin under-clothing), most animals were hunted because of their food value. Skin, bone, antler, horn, ivory and other non-edible parts were regarded as useful by-products. There was a conscious effort, however, to combine the search for food with the proper species and season which would yield a maximum amount of by-products. For example, caribou taken in late summer and early autumn gave the best skins for clothing, and a reasonably good supply of fat. Consideration is given below to Eskimo

use of wildlife primarily as a food, and only secondarily as a source of raw materials.

The Food Value of Particular Species of Wildlife

The basic food value of various animals and plants can be calculated from the average amount of edible protein, carbohydrate and fat in each species. This calculation, converted to calories (kilocalories), is not a complete expression of the nutrient value of a food since it does not include such important elements as calcium, phosphorus and iron, and vitamins A and C, thiamine, riboflavin and niacin. The three food constituents, protein, carbohydrate and fat, are the primary sources of energy, however, and thus provide the best general measure of food value.

Precise determination of the caloric value of various animals and plants is difficult because the amount of edible products can vary with the age, sex and season of utilization of each species. There may also be a significant difference between similar individuals of the same species captured in different locations. Be this as it may, studies of Eskimo foods and the biology of arctic animals and plants furnish enough information for a general statement about the average caloric value of each species.

To calculate the caloric value it is first necessary to determine the average live adult weight of each species. This has been obtained from the literature cited in Appendix B, and from my own observations made in the area between 1959 and 1962¹. It is not strictly accurate to use "average weight" because Eskimos often hunt selectively according to season and species. For example, caribou does are preferred to bucks in autumn because meat of the latter tastes strong during the rut. The young of many species are killed simply because they are easier to capture than adults. The same is often true for females accompanied by young. Seasonal migrations of particular age and sex groups of a species can lead to selective killing. In the case of ringed seals along the arctic Alaskan coast mature animals are usually present from November to late January while immature animals appear in February and again in late May and June. A detailed study of Eskimo hunting should take into account all such variables, since they can result in a difference in hunting returns from the same species according to season, age, sex and location of kill. However, such detail would be of doubtful value to the following discussion because we can only estimate number, distribution and habits of the Eskimos.

In addition to the live weight of a species it is necessary to calculate the edible portion. This must be done with the Eskimo's milieu in mind. Generally, food does not go to waste. Once it has been procured by the Eskimo hunter it enters, one way or another, into the economy. The so-called waste products are usually eaten by the dogs. The efficiency of the system is exemplified by the fact that even human excrement is a traditional Eskimo dog food. Krogh and Krogh (1915, 28) found that from seven to ten percent of the Eskimo's daily meat diet was lost in the feces, i.e., an average of 350 calories per person. Theoretically, this means that a family of seven could support one dog on human excrement alone. In addition an Eskimo dog will often eat its own droppings, sometimes two or three times in succession. This is not necessarily a sign of starvation but appears to be related to the dog's habit of eating whole meat. Those animals which swallow large pieces without tearing and chewing are usually the first to eat their own feces. Animals fed a high calcium diet of bone after an absence of calcium for some weeks also tend to eat their own excrement. In general, Eskimo dogs will eat all portions of animals familiar to them, bones and all. Given enough time the animals will consume even the largest caribou leg bones or bearded seal vertebrae.

In contrast, the Eskimo dog, like man, will only accept a certain amount of fat. Once that limit is reached even a starving dog is apparently incapable of eating more. In the following discussion the edible portion of each food species has been calculated from the references listed in Appendix B, on the assumption that the "edible" may apply to either dogs or humans.

Average caloric values were computed on the basis of the protein, carbohydrate and fat content of the edible portion. The percentage of each constituent in native foods was taken from data published by Berry, et al., (1959) and Mann, et al., (1962). However, the percentages can vary from one individual of a species to another. The conversion to calories was made on the general assumption that one gram of protein or carbohydrate yields about four calories of food energy and one gram of fat about eight calories. The data on live animal weight, the amount of edible parts and their caloric values are presented in Appendix B. The caloric values are summarized in Table 19. The animals and plants listed have been selected because they represent the principal Eskimo food sources and because there is adequate information on their chemical composition.

Average Caloric Needs for People and Dogs

The Eskimos of Northwestern Arctic Alaska subsisted on a nearly all meat diet supplemented with such plants as berries,

TABLE 19

AVERAGE CALORIC CONTENT OF SOME ANIMALS AND PLANTS USED BY
ARCTIC ALASKAN ESKIMOS IN 1850

<u>Species</u>	<u>10⁴ Cal. from fat</u>	<u>10⁴ Cal. from protein and carbohydrate</u>	<u>Total 10⁴ Calories</u>
<u>Marine Mammals</u>			
Bowhead whale	8,716.8	1,373.2	10,090.0
Walrus	87.3	59.9	147.2
Polar bear	107.6	19.1	126.7
White whale	90.8	27.4	118.2
Bearded seal	58.5	9.9	68.4
Harbour seal	23.3	4.3	27.6
Ringed seal	11.7	2.3	14.0
<u>Land Mammals</u>			
Grizzly bear	27.2	12.8	40.0
Caribou	8.7	6.9	15.6
Dall sheep	?	4.0	4.0+
Hoary marmot	?	<u>c.</u> 0.2	<u>c.</u> 0.2+
Varying hare	?	<u>c.</u> 0.04	<u>c.</u> 0.04
Arctic ground squirrel	?	0.04	0.04
<u>Birds</u>			<u>Total Calories</u>
Common eider			1,395.0
Thick-billed murre			1,100.0
Willow ptarmigan			718.0
Murre egg			<u>c.</u> 160.0

TABLE 19 - contd.

<u>Species</u>	<u>Total Calories Per Pound</u>
<u>Fishes</u>	
Whitefish (several species)	515.6
Grayling	476.0
Trout (several species)	497.6
Polar cod	472.0
Salmon (several species)	453.6
<u>Plants</u>	
Willow leaves	618.8
Blueberries	272.4
Sourdock	263.6

sourdock, masu (Polygonum bistortum), willow leaves and seaweed. The amount of meat an adult Eskimo could consume each day has been estimated by several authors. Rink, using data taken from west Greenland in 1851-55, thought the daily meat consumption could be as high as 8.8 pounds per adult. His statistics show an average daily intake of 5.1 pounds of meat and fish for each adult (Krogh and Krogh, 1915, 13-14). Rink's maximum daily intake of meat agrees quite well with Smith (1902, 116) who said 30 Point Barrow Eskimos in 1881-82 ate an average of 8.2 pounds of caribou and fish per day. Heinbecker (1928, 463) said that the average adult Eskimo studied at Cape Dorset, in 1927, could eat from four to eight pounds of meat per day. Stefansson (1923, 141) lived with Eskimos near the Mackenzie River delta in 1908 who ate about five pounds of fish each per day. Spencer (1959, 142) believed that even present day adult arctic Alaskan Eskimos could eat as much as seven to eight pounds of meat daily. My own field studies showed that Point Hope Eskimos consumed from four to five pounds of meat per day when living on a nearly whole meat diet. This usually occurred during extended caribou hunts in late autumn and early spring, while fishing in autumn on the Kukpuk River and occasionally at the spring whaling camps. So it is reasonable to suppose that adult Alaskan Eskimos in 1850 ate, on the average, about six pounds of meat per day.

The percentage of daily caloric needs supplied by protein, fat and carbohydrate in the diet of an adult Eskimo eating only, or nearly only, native foods is shown in Table 20. It can be seen that fat provided about 40 percent of the calories and protein and carbohydrate about 60 percent. The data from Alaska, however, suggest that about 35 percent of the daily caloric needs were supplied by fat and 65 percent by protein and carbohydrate. In the present study the Alaskan figures have been used as an approximation of the Eskimo diet eaten by all age groups at all seasons in the mid-19th century. A more detailed study should take into consideration such factors as seasonal diet changes and different eating habits of various age and sex groups. Unfortunately, there is insufficient information on the Tigeragmiut, Naupaktomiut and Noatagmiut of 1850 to permit such a careful analysis.

The daily caloric consumption and the amounts of protein, fat and carbohydrate used by adult Eskimos eating only, or nearly only, native foods are presented in Table 21. Rodahl (1960, 51-52) found that adult Eskimos in northern Alaska used about 3,100 calories per day, while Abs (1959, 10) has given the average caloric consumption for adults living in the Arctic as about 3,000 calories per day. MacHattie, et al., (1961, 25) found an Eskimo at Anaktuvuk Pass eating 95 percent

TABLE 20

PERCENTAGE OF CALORIES PROVIDED BY PROTEIN, FAT AND CARBOHYDRATE
TO ADULT ESKIMOS EATING PREDOMINATELY NATIVE FOODS

<u>Author</u>	<u>Year of Study</u>	<u>Place</u>	<u>Percent of Total Calories</u>		
			<u>Protein</u>	<u>Fat</u>	<u>Carbohy.</u>
Krogh & Krogh, 1915	1851-55	W. Greenland	48.3	46.5	5.2
Høygaard, 1941	1936-37	SE. Greenland	43.0	54.0	3.0
Høygaard, 1941	1936-37	SW. Greenland	46.0	50.0	4.0
MacHattie, et al., 1961	1960	Alaska Tundra	25.0	70.0	5.0
Scott & Heller, 1962	1960-61	Alaska Tundra	66.0	33.0	1.0
Scott & Heller, 1962	1960-61	Alaska Tundra	67.0	32.0	1.0
Scott & Heller, 1962	1960-61	Alaska Forest	69.0	30.0	1.0
Scott & Heller, 1962	1960-61	Alaska Forest	47.0	52.0	1.0
Scott & Heller, 1962	1960-61	Alaska Coast	56.0	43.0	1.0
Scott & Heller, 1962	1960-61	Alaska Coast	50.0	50.0	1.0+
Scott & Heller, 1962	1960-61	Alaska Coast	57.0	42.0	1.0
Scott & Heller, 1962	1960-61	Alaska Coast	64.0	35.0	1.0
Scott & Heller, 1962	1960-61	Alaska Coast	68.0	32.0	1.0+
Rabinowitch & Smith, 1936	1935	E. Canadian Arctic	44.7	48.7	6.5
Stefansson, 1957 (b)	?	Eskimo meat diet	c.20.0	80.0	?

+ As reported.

TABLE 21

DAILY CALORIC CONSUMPTION AND AMOUNTS OF PROTEIN, FAT AND CARBOHYDRATE USED BY ADULT ESKIMOS EATING PREDOMINATELY NATIVE FOODS

<u>Author</u>	<u>Year of Study</u>	<u>Place</u>	<u>Total Cal.</u>	<u>Total Protein</u>	<u>Grams of Fat</u>	<u>Carbohy.</u>
Krogh & Krogh, 1915	1851-55	W.Greenland	c.2,400	280	135	30.0
Høygaard, 1941	1936-37	SE.Greenland	2,800	299	169	22.0
Høygaard, 1941	1936-37	SW.Greenland	2,800	319	154	35.0
Rabinowitch & Smith, 1936	1935	E.Canadian Arctic	2,460	275	150	40.0
Scott & Heller, 1962	1960-61	Alaska Tundra	2,200	359	79	1.0
Scott & Heller, 1962	1960-61	Alaska Tundra	3,000	496	104	2.0
Scott & Heller, 1962	1960-61	Alaska Forest	2,800	467	90	8.0
Scott & Heller, 1962	1960-61	Alaska Forest	2,700	316	156	5.0
Scott & Heller, 1962	1960-61	Alaska Coast	3,000	411	143	2.0
Scott & Heller, 1962	1960-61	Alaska Coast	2,600	316	141	2.0
Scott & Heller, 1962	1960-61	Alaska Coast	2,800	390	127	5.0
Scott & Heller, 1962	1960-61	Alaska Coast	2,600	398	99	4.0
Scott & Heller, 1962	1960-61	Alaska Coast	2,900	374	145	8.0

meat diet consumed about 3,000 calories each day. On the basis of these studies I have assumed that the average adult male Eskimo in 1850 consumed 3,000 calories per day, the adult female 2,500 calories and children, up to 16 years of age, 2,000 calories.

The caloric needs of a sled dog vary with the animal's size and the work that is demanded. Dogs presently used in Northwestern Arctic Alaska weigh about 60 to 80 pounds. In general the huskies owned by the Noatak River people are larger than those used at Point Hope. Although the work load of the animals varies from season to season the mid-19th century Eskimos used their dogs the year around. In winter they pulled sleds and in summer they were used to pull boats or sleds and carry packs. Cameron (1938, 182) has shown how these two factors, size and work load, modify the number of calories needed by Arctic dogs. His findings are presented in Table 22, as follows :-

TABLE 22

DAILY CALORIC NEEDS OF SLED DOGS

<u>Weight of Dog</u> <u>Pounds</u>	<u>Total Calories Needed For</u>		
	<u>No Work</u>	<u>Moderate Work</u>	<u>Heavy Work</u>
44	1,300	1,700	2,100
60	1,600	2,100	2,700
79	1,800	2,500	3,100
88	2,100	2,800	3,500
99	2,300	3,000	3,800
110	2,400	3,200	4,100 to 5,000

Durrer and Hannon (1961, 3) have shown that Alaskan huskies also vary their caloric consumption with the seasons. In a controlled experiment of non-working dogs they found that a 66 pound sled dog used about 2,350 calories per day in winter and about 1,470 calories per day in summer.

The actual weight of food eaten by a sled dog depends upon the type of food offered and attitude of the dog's owner. The animal's appetite is not a good measure of his food needs since, like most carnivores, he is accustomed to feeding at irregular intervals. Most Eskimos prefer to keep their dogs underfed rather than overfed, because they work

better. Cameron (1938, 183) felt that a diet of seven pounds of whitefish per day was adequate for a working sled dog. Dogs used by the Falkland Islands Dependencies Survey were fed about 3.5 pounds of seal meat and fat per day (Taylor, 1958, 431-32). Stefansson (1923, 141) records that Eskimo dogs near the Mackenzie River delta in 1908 ate from two to three pounds of fish each day. My own studies at Point Hope indicated that dogs were fed, on the average, two pounds of meat and one quarter pound of fat per day. They probably received from 1,800 to 2,000 calories, 50 percent from fat and 50 percent from protein. Additional studies undertaken by H.A. Williamson and myself at Noatak showed that Eskimo dogs living on fish ate, on the average, about 4.5 pounds each day. In this case chum salmon was the principal food, with occasional addition of small amounts of marine mammal oil. This diet probably contained about 2,000 calories.

In view of these data it is assumed that the average Eskimo dog in 1850 consumed 1,800 calories per day throughout the year. When fed on marine mammal products, 50 percent of the calories came from fat. Dogs fed caribou meat or fish received about 10 percent of their daily caloric needs from fat. It should be noted that this figure represents the average caloric intake for the year. Any detailed study of

the caloric intake of dogs would need to take into consideration factors mentioned earlier, namely, the animals' size, work load, season of work and type of diet.

Number of Dogs Used by the Tigeragmiut, Naupaktomiut and Noatagmiut about 1850.

The number of dogs owned by a typical Eskimo household in Northwestern Arctic Alaska in about 1850 is difficult to establish because so few facts have been recorded. All indications point, however, to relatively small teams. Beechey (1831, I, 398) met two Eskimo households near Chamisso Island in 1826 with five dogs each. Kashevarof (1879, 347) mentions a Tigeragmiut household with four dogs in 1838. Simpson (1875, 264) remarked that some Point Barrow families did not own any dogs in the mid-19th century. Trollope (BB, 1854-55, 916) said the average team around Port Clarence in 1854 had four dogs. Rainey (1947, 254) was told that dogs were considered to be much more valuable a century ago than they are today. Stoney (1900, 46) noted about four dogs per sled for a group of Kobuk Eskimos he met in the mid-1880's. In the same region Cantwell (1889, 85) said the average team had five dogs in 1884. Giddings (1961, 144) was told that the late 19th century Kobuk Eskimos owned only one or two working dogs. At Sheshalik in 1884 Cantwell saw about 1,400 people with 300 to 400 dogs (Cantwell, 1889, 72). This might have amounted to an average of two dogs per household. At Cape Prince of Wales, about 1891, Thornton (1941, 165) recorded less than four dogs per team.

Murdoch (1892, 358) said that at Point Barrow in 1881 ten dogs were considered a very large team which few men could afford. Spencer (1959, 137) was told that inland Eskimos, living to the southeast of Point Barrow in the late 19th century, considered the owner of four dogs a wealthy man. My own historical studies among the older present-day residents of Point Hope and Noatak confirmed such reports of small dog teams.

The older Eskimos said that in the latter part of the 19th century the Tigeragmiut had three to five dogs per team and rarely six, the Naupaktomiut from two to four dogs per team and the Noatagmiut from six to eight dogs. On the basis of this evidence I have assumed that the Tigeragmiut of 1850 had an average of three dogs per household and the Naupaktomiut and Noatagmiut an average of four dogs for each household².

It should be remembered that the number of dogs could fluctuate greatly, falling during periods of food shortage or epidemics. In 1854, for example, Hobson (Journal, BB, 1854-55) reported many dogs dying on the Seward Peninsula. In spring, 1902, Driggs (23rd May, 1902, CHS, January, 1902 - August, 1903) said the Point Hope dog population declined from over 200 to 32 because of disease. A similar epidemic struck Point Hope and Noatak in spring, 1960.

Annual Caloric Needs of the Tigeragmiut, Naupaktomiut and Noatagmiut about 1850.

The annual caloric requirements of the Tigeragmiut, Naupaktomiut and Noatagmiut in the mid-19th century can be calculated from the population statistics given in Chapter 6, and from the information presented above. These calculations are tabulated in Appendix C and summarized in Table 23 below :-

TABLE 23

TOTAL ANNUAL CALORIC NEEDS OF THE TIGERAGMIUT, NAUPAKTOMIUT AND NOATAGMIUT ABOUT 1850

Eskimo Group	Total Pop.	Total Dogs	10 ⁶ Cal.		10 ⁶ Cal. Total
			Total Calories Needed From Protein and Carboh.	Fat	
Tigeragmiut	854	366	625.6	392.1	1,017.7
Naupaktomiut	196	112	167.0	84.8	251.8
Noatagmiut	945	540	877.2	387.6	1,264.8
TOTAL	1,995	1,018	1,669.8	864.5	2,534.3

Seasonal Caloric Needs and Diet of the Tigeragmiut,
Naupaktomiut and Noatagmiut about 1850.

It has been shown in Chapter 6 that the Tigeragmiut, Naupaktomiut and Noatagmiut usually lived in specific regions at different seasons while they utilized particular animals and plants. The principal seasonal foods used by the three groups are listed in Table 19. In order to obtain a more detailed, albeit still general, idea of the Eskimos' food needs the seasonal caloric requirements have been computed for each group. These calculations, based on the possible seasonal population distributions shown in Tables 12, 13 and 14, are listed in Appendix C.

The seasonal diet of the mid-19th century Eskimos in Northwestern Arctic Alaska was not recorded in detail by any of the early European and American explorers³. Unfortunately, published results of archaeological investigations in the region provide only a general picture of Eskimo foods and their seasonal variations. No studies have been made at pre-historic sites occupied for a single season, in order to establish the peoples' diet. Nor am I aware of research on human and dog feces found in arctic Alaskan archaeological sites which would shed light on the Eskimo diet. Lastly, few archaeological studies have included a detailed accounting of animal bones, their number, species, age, sex and probable season of kill, in order to measure the Eskimo diet.

The following discussion is based on my field research of the present Eskimo diet, the seasonal kill of wildlife at Point Hope and Noatak from 1959 to 1962, interviews with the older members of the two villages and the literature cited in the text. The seasonal diets, presented in Tables 24, 25 and 26, have been derived from the Eskimo caloric needs for protein and carbohydrate. These are considered a reasonable approximation of the average, gross diet which might be eaten in a year when there was no shortage of food supplies and the Eskimos were able to harvest adequate amounts of animals and plants. The caloric requirements for fat are discussed under a separate heading later in this chapter.

The above mentioned tables should be looked upon as models of possible seasonal diets for several reasons. First, as already stated, there is a lack of detailed knowledge about arctic Alaskan Eskimo diets in historical documents and archaeological studies. Second, the tables include only those foods for which there were data on protein, carbohydrate and fat contents. This has resulted in a concentration on the larger animal species and mostly widely used plants to the exclusion of numerous other foods. Third, and perhaps most important, the Eskimo diet depended upon the availability of

TABLE 24

POSSIBLE SEASONAL DIET OF THE TIGERAGMIUT ABOUT 1850
BASED ON THE CALORIC NEEDS FOR PROTEIN AND CARBOHYDRATE

<u>Winter</u>		<u>Summer</u>	
<u>% Caloric</u>	<u>Species</u>	<u>% Caloric</u>	<u>Species</u>
35	Bowhead Whale	40	Caribou
25	Ringed Seal	15	Whitefish and Grayling
15	Bearded Seal	15	White Whale
10	Walrus	10	Salmon and Trout
08	Caribou	05	Bowhead Whale (preserved)
02	White Whale	05	Harbour Seal
02	Polar Bear	02	Murre
01	Whitefish and Grayling	01	Murre Eggs
01	Polar Cod	01	Grizzly Bear
01	Ducks	01	Marmot
		01	Squirrel
		01	Ducks
		01	Ptarmigan
		01	Berries
		01	Polar Cod
<hr/>		<hr/>	
100		100	
<hr/>		<hr/>	

TABLE 25

POSSIBLE SEASONAL DIET OF THE NAUPAKTOMIUT ABOUT 1850 BASED ON THE CALORIC NEEDS FOR PROTEIN AND CARBOHYDRATE

<u>Winter Inland</u>		<u>Summer Coast</u>		<u>Summer Inland</u>	
<u>% Caloric</u>	<u>Species</u>	<u>% Caloric</u>	<u>Species</u>	<u>% Caloric</u>	<u>Species</u>
<u>Needs</u>		<u>Needs</u>		<u>Needs</u>	
60	Salmon	25	Bearded Seal	60	Caribou
30	Caribou	20	Whitefish and Grayling	20	Whitefish and Grayling
06	Trout	20	Salmon and Trout	10	Salmon and Trout
01	Berries	15	Ringed Seal	05	Marmots
01	Sourdock	05	Harbour Seal	02	Grizzly Bear
01	Ptarmigan	05	White Whale	01	Ducks
0.5	Mt. Sheep	05	Caribou	01	Willow Leaves
0.5	Varying Hare	02	Walrus	01	Berries
		02	Ducks		
		01	Willow Leaves		
<u>100</u>		<u>100</u>		<u>100</u>	

TABLE 26

POSSIBLE SEASONAL DIET OF THE NOATAGMIUT IN 1850 BASED ON THE CALORIC NEEDS FOR PROTEIN AND CARBOHYDRATE

<u>Winter Inland</u>		<u>Summer Sheshalik</u>		<u>Summer Nirlik</u>		<u>Summer Inland</u>	
<u>% Caloric</u>	<u>Species</u>	<u>% Caloric</u>	<u>Species</u>	<u>% Caloric</u>	<u>Species</u>	<u>% Caloric</u>	<u>Species</u>
<u>Needs</u>		<u>Needs</u>		<u>Needs</u>		<u>Needs</u>	
90	Caribou	50	White Whale	50	Caribou	70	Caribou
06	Whitefish and Grayling	25	Salmon and Trout	25	Whitefish and Grayling	20	Whitefish and Grayling
01	Mt. Sheep	15	Bearded Seal	10	Harbour Seal	05	Mt. Sheep
01	Grizzly Bear	05	Harbour Seal	05	Bearded Seal	02	Grizzly Bear
01	Ptarmigan	02	Caribou	05	White Whale	02	Marmot
01	Berries	02	Ducks	02	Marmots	01	Sourdock
		01	Willow Leaves	02	Ducks		
				01	Willow Leaves		
100		100		100		100	

food sources and favourable environmental circumstances which allowed a harvest. To what extent these conditions were met each year in the mid-19th century is unknown.

Possible Annual Kill of Wildlife by the Tigeragmiut,
Naupaktomiut and Noatagmiut in 1850.

Sufficient data have been given above to permit an estimate of the amount of wildlife seasonally harvested by the Tigeragmiut, Naupaktomiut and Noatagmiut. The methodology used to arrive at this estimate is illustrated by the following example. It has been shown in Appendix C that the Noatagmiut required a total of 575.4×10^6 calories from protein and carbohydrate during the 240 days spent in the upper Noatak River drainage in winter. If caribou supplied 90 percent of these caloric needs this would amount to 517.6×10^6 calories. Since the caribou, as presented in this study, yields 6.9×10^4 calories per animal, (Table 19), the total kill, in winter, would be 7,501.4 caribou. This same reasoning has been used to prepare Tables 27, 28 and 29 which show the possible annual kill of wildlife by the Tigeragmiut, Naupaktomiut and Noatagmiut. The figures, in 10^6 calories, have been rounded off to the first decimal point and thus, in total, they may differ somewhat from the total annual caloric needs as presented in Table 23. As noted later in this chapter, by meeting the annual caloric needs for protein and carbohydrate the Eskimo hunter also satisfied his caloric demands for fat as a food.

TABLE 27

POSSIBLE ANNUAL KILL OF WILDLIFE BY THE TIGERAGMIUT IN 1850

<u>Species</u>	<u>Coast</u> <u>Winter-Spring</u>	<u>Inland-Coast</u> <u>Summer-Autumn</u>	<u>Total</u>
Caribou	477	1,242	1,719
Grizzly Bear		16	16
Squirrel		5,250	5,250
Marmot		1,050	1,050
Bowhead Whale	10.5	0.88	11
White Whale	30	117	147
Walrus	69		69
Bearded Seal	623		623
Harbour Seal		249	249
Ringed Seal	4,469		4,469
Polar Bear	43		43
Whitefish and Grayling	8,200	64,200	72,400 lbs.
Salmon and Trout		45,050	45,050 lbs.
Polar Cod	8,686	4,400	13,086 lbs.
Ducks	2,930	1,500	4,430
Murre		3,909	3,909
Ptarmigan		2,920	2,920
Murre Eggs		13,120	13,120
Berries		7,720	7,720 lbs.

TABLE 28

POSSIBLE ANNUAL KILL OF WILDLIFE BY THE NAUPAKTOMIUT IN 1850

<u>Species</u>	<u>Inland</u> <u>Winter</u>	<u>Coast</u> <u>Summer</u>	<u>Inland</u>	<u>Total</u>	
Caribou	393	39	224	656	
Grizzly Bear			4	4	
Mt. Sheep	10			10	
Marmot			650	650	
Varying Hare	1,000			1,000	
White Whale		10		10	
Walrus		2		2	
Bearded Seal		138		138	
Ringed Seal		356		356	
Harbour Seal		63		63	
Whitefish and Grayling		21,800	10,400	32,200	lbs.
Salmon	119,300			119,300	lbs.
Trout	10,840			10,840	lbs.
Salmon and Trout		22,000	5,400	27,400	lbs.
Ducks		780	143	1,193	
Ptarmigan	1,250			1,250	
Berries	3,300		735	4,035	lbs.
Sourdock	3,420			3,420	lbs.
Willow Leaves		807	323	1,130	lbs.

TABLE 29

POSSIBLE ANNUAL KILL OF WILDLIFE BY THE NOATAGMIUT IN 1850

<u>Species</u>	<u>Inland</u>		<u>Sheshalik Summer</u>	<u>Nirlik- Barrow Summer</u>	<u>Total</u>
	<u>Winter</u>	<u>Summer</u>			
Caribou	7,501	562	57	481	8,601
Mt. Sheep	144	70			214
Grizzly Bear	45	8			53
Marmot		550		650	1,200
White Whale			272	12	284
Bearded Seal			226	33	259
Harbour Seal			174	153	327
Whitefish and Grayling	69,000	22,000		32,800	123,800 lbs
Salmon and Trout			78,700		78,700 lbs
Ducks			2,150	930	3,080
Ptarmigan	8,008				8,008
Berries	21,139				21,139 lbs
Sourdock		1,894			1,894 lbs
Willow Leaves			2,423	969	3,392 lbs

TABLE 30

POSSIBLE ANNUAL KILL OF WILDLIFE BY EACH TIGERAGMIUT HOUSEHOLD
IN 1850

<u>Species</u>	<u>Coast</u> <u>Winter-Spring</u>	<u>Inland-Coast</u> <u>Summer-Autumn</u>	
Caribou	3.9	10.1	
Grizzly Bear		0.13	
Squirrel		43.0	
Marmot		8.6	
Bowhead Whale	0.09	0.01	
White Whale	0.24	0.96	
Walrus	0.56		
Bearded Seal	5.1		
Harbour Seal		2.0	
Ringed Seal	36.6		
Polar Bear	0.35		
Whitefish and Grayling	67.2	526.0	lbs.
Salmon and Trout		369.2	lbs.
Polar Cod	71.2	36.0	lbs.
Ducks	24.0	12.2	
Murre		32.0	
Ptarmigan		23.9	
Murre Eggs		107.5	
Berries		63.3	lbs.

TABLE 31

POSSIBLE ANNUAL KILL OF WILDLIFE BY EACH NAUPAKTOMIUT HOUSEHOLD
IN 1850

<u>Species</u>	<u>Inland Winter</u>	<u>Coast</u>	<u>Inland Summer</u>	
Caribou	14.0	1.9	15.5	
Grizzly Bear			0.5	
Mt. Sheep	0.35			
Marmot			81.0	
Varying Hare	35.7			
White Whale		0.5		
Walrus		0.09		
Bearded Seal		6.9		
Ringed Seal		17.8		
Harbour Seal		3.1		
Whitefish and Grayling		1,090.0	1,300.0	lbs.
Salmon	4,260.0			lbs.
Trout	387.1			lbs.
Salmon and Trout		1,100.0	675.0	lbs.
Ducks		39.0	17.8	
Ptarmigan	44.6			
Berries	117.8		91.8	lbs.
Sourdock	122.1			lbs.
Willow Leaves		40.3	40.3	lbs.

TABLE 32

POSSIBLE ANNUAL KILL OF WILDLIFE BY EACH NOATAGMIUT HOUSEHOLD
IN 1850

<u>Species</u>	<u>Inland</u>		<u>Sheshalik</u> <u>Summer</u>	<u>Nirlik-</u> <u>Barrow</u> <u>Summer</u>	
	<u>Winter</u>	<u>Summer</u>			
Caribou	55.6	22.4	0.71	16.0	
Mt. Sheep	1.1	2.8			
Grizzly Bear	0.33	0.34			
Marmot		22.0		21.6	
White Whale			3.4	0.4	
Bearded Seal			2.8	1.1	
Harbour Seal			2.2	5.1	
Whitefish and Grayling	511.1	880.0		1,093.3	(lbs)
Salmon and Trout			983.7		(lbs)
Ducks			26.8	31.0	
Ptarmigan	59.3				
Berries	156.6				(lbs)
Sourdock		75.7			(lbs)
Willow Leaves			30.1	32.3	(lbs)

The possible annual kill of wildlife for the three Eskimo groups under consideration has been further tabulated according to the seasonal food harvest for each household. These data are summarized in Tables 30, 31 and 32. The individual kill by Eskimo hunters can be obtained if one assumes the number of adult male hunters in each household was one or two.

Comparison of Reported and Theoretical Kill of Wildlife

The degree to which the theoretical kill of wildlife, as computed from caloric demands and returns, agrees with actual conditions, can be tested against first-hand observations. For the most part, however, these observations were made in the 20th century and thus introduce possible errors attributable to changes in technology, social values and in the biological environment. To minimize these errors an effort has been made to select examples of modern Eskimo food gathering which have apparently undergone little or no change in the past century.

An annual Noatagmiut kill of 8,601 caribou divided by 135 households would give an average take of 64 animals per household. This agrees quite well with Skarland's belief (Solecki, 1951, 489) that an inland Eskimo household of six persons required about 70 caribou per year. Apparently

Skarland did not take into consideration seasonal migration to the coast where other food sources would be utilized. Uhl (1962, 5) notes that the average Samisk family of northern Scandinavia needs ten reindeer per person every year. There is no reference to the fact that the Samer used marine mammals or other animals and plants as much as the mid-19th century Noatagmiut did. It would seem, therefore, that an average annual kill of 64 caribou is in reasonable agreement with previous estimates⁴.

A second check of the theoretical kill can be made from the average Noatagmiut needs for winter clothing and household articles. It can be seen in Table 33 below that the average household of seven persons would need from 57.0 to 65.5 caribou skins each year. The theoretical kill of 64 animals per household meets this requirement.

Lastly, the theoretical kill can be checked in terms of its importance to the biology of the caribou. It has been mentioned earlier that I have not taken into consideration the consequences of selective hunting by the mid-19th century Eskimos. Nevertheless, a general statement can be made in terms of the total number of caribou killed each year. At present there are from 175,000 to 200,000 caribou in arctic Alaska (Skoog, 1963, 8). It seems reasonable to suppose that

TABLE 33

PROBABLE ANNUAL USE OF CARIBOU, RINGED AND BEARDED SEAL SKINS FOR
HOUSEHOLD NEEDS IN 1850

<u>Species and Use</u>	<u>Number of Skins per Household</u>			
	<u>2 men</u>	<u>2 women</u>	<u>2 child</u>	<u>1 baby</u>
<u>Caribou: Noatagmiut Household</u>				
Inner and outer parka	10.0	10.0	2.0-4.0	1.0
Inner and outer pants	9.0	8.0	2.0-4.0	1.0
Two pairs of socks	2.5	2.5	0.5-1.0	0.5
Two pairs of boots (leg skins)	<u>32.0</u>	<u>32.0</u>	<u>16.0</u>	<u>8.0</u>
Total skins	<u>21.5</u>	<u>20.5</u>	<u>4.5-9.0</u>	<u>2.5</u>
Total for household	49.0 to 53.5 skins			
Other household uses (tent, boat, bedding etc.)	<u>8.0</u> to <u>12.0</u> skins			
Total all uses	<u>57.0</u> to <u>65.5</u> skins			
<u>Bearded Seal: Tigeragmiut Household</u>				
Boot soles	1.0	0.5	0.5	0.25
Raw hide thongs	1.0	-	-	-
Boat skins (umiak skins)	<u>3.0</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total skins	<u>5.0</u>	<u>0.5</u>	<u>0.5</u>	<u>0.25</u>
Total all uses	<u>6.25</u> skins			
<u>Ringed Seal: Tigeragmiut Household</u>				
Kayak	6.0	-	-	-
Water boots	2.0	2.0	1.0	-
Dress boots	2.0	1.0	1.0	-
Other boots	1.0	1.0	-	0.5
Pants	3.0	3.0	-	-
Seal rope, bags (pokes), etc.	<u>10.0</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total skins	<u>24.0</u>	<u>7.0</u>	<u>2.0</u>	<u>0.5</u>
Total all uses	<u>33.5</u> skins			

at least the same number of caribou inhabited the region in the mid-19th century and that about 100,000 of the animals were seasonally available to the Tigeragmiut, Naupaktomiut and Noatagmiut. From data given by Lent (1960, 40-41) and Skoog (1963, 5), it is possible to set the number of caribou cows at about 42 percent of the herd and the percent of cows with calves about 56. This would mean an annual calf production of 23,520 animals. The total theoretical kill of caribou, by the three Eskimo groups is less than one half this number⁵. Although the theoretical kill suggests that Eskimo hunting was not biologically detrimental it does not make allowance for hunting by other contemporary Eskimo groups in Northwestern Arctic Alaska or the degree to which past caribou productivity rates, wolf and bear predation, disease and range conditions might have limited the number of calves reaching maturity. On the other hand, a total herd of 200,000 caribou might have an annual calf production of 47,000, possibly enough animals to supply the needs of the coastal and inland Eskimo populations.

In the case of bowhead whales killed by the Tigeragmiut the theoretical figure of 11 animals per year compares favourably with Simpson's report (1875,263) that the Point Barrow Eskimos took 17 whales in 1852, and seven in the following

year. Rainey (1947, 261) was told that the Tigeragmiut took from 15 to 18 whales each year. Murdoch (1898, 728) thought a kill of 10 to 12 bowhead whales represented a good season at Point Barrow in 1881. Rice (1964, 5) has estimated the mid-19th century bowhead whale population at about 5,000 with an annual productivity rate of somewhat less than 200 animals. Under these circumstances, a kill of 11 whales per year would not be of great biological importance.

The number of fish caught by the three groups appears to be in conformity with present fishing methods which have remained unchanged since the mid-19th century. A Tigeragmiut considers 71.2 pounds of polar cod adequate return for two or three days fishing by one person. Observations made at Point Hope in 1959 on river fishing with unbarbed Eskimo hooks showed an average take of 12.8 pounds of fish/day/adult (Foote, 1960a, 4). A catch of 526.0 pounds of grayling and whitefish by a Tigeragmiut household could be made by one adult in about 41 days. (In practice several adults and children from each household would do the fishing). The average chum salmon on the lower Noatak River weighs about ten pounds. This means that an annual catch of 4,260 pounds of salmon by a Naupaktomiut household could be met with the capture of 426 fish. One sweep of a relatively small net

often brings in more than this amount during favourable conditions in autumn. My own observations in the area suggest that the theoretical kills of fish listed in Table 34 fall well within the present productivity of fish in the region and are compatible with the efficiency of mid-19th century Eskimo fishing methods and equipment.

The present Eskimo fish catch along the lower Noatak River is far greater than the theoretical figures presented here. So it can be assumed that even if the mid-19th century fishing exceeded the theoretical kill it would not have been biologically detrimental to the existing fish populations.

Available information suggests that the theoretical number of seals taken by the three groups is reasonable. The Tigeragmiut, for example, used seal nets. Murdoch (1898, 725) notes that the village of Cape Smyth could net as many as 100 seals in a single night. Brower (MS) said that an Eskimo could get from 80 to 100 migrating spring seals in a single netting. In any event, on a per-hunter basis the overall kill for all three groups is quite modest. Compared with the data presented in Table 33, it would seem that the theoretical kill met the annual needs for seal skins used in clothing, boat covers and other household purposes.

TABLE 34

POSSIBLE ANNUAL KILL OF WILDLIFE BY THE TIGERAGMIUT,
NAUPAKTOMIUT AND NOATAGMIUT ABOUT 1850

<u>Species</u>	<u>Tigeragmiut</u>	<u>Naupaktomiut</u>	<u>Noatagmiut</u>	<u>Total</u>	
Caribou	1,719	656	8,601	10,976	
Grizzly Bear	16	4	54	74	
Mt. Sheep		10	214	224	
Marmot	1,050	650	1,200	2,900	
Squirrel	5,250	-	-	5,250	
Varying Hare	-	1,000	-	1,000	
Bowhead Whale	11	-	-	11	
White Whale	147	10	284	441	
Walrus	69	2	-	71	
Polar Bear	43	-	-	43	
Bearded Seal	623	138	259	1,020	
Harbour Seal	249	63	327	639	
Ringed Seal	4,469	356	-	4,825	
Ducks	4,430	1,193	3,080	8,703	
Murres	3,909	-	-	3,909	
Ptarmigan	2,920	1,250	8,008	12,178	
Murre Eggs	13,120	-	-	13,120	
Whitefish and Grayling	72,400	32,200	123,800	228,400	lbs.
Salmon and Trout	45,050	157,540	78,700	281,290	lbs.
Polar Cod	13,086	-	-	13,086	lbs.
Willow Leaves	-	1,130	3,392	4,522	lbs.
Berries	7,720	4,035	21,139	32,894	lbs.
Sourdock	-	3,420	1,894	5,314	lbs.

Point Hope Eskimos still gather murre eggs in much the same way the Tigeragmiut did in 1850. A modern hunter can easily obtain several hundred eggs in less than a day. Should the Eskimos arrive at the murre colonies at the preferred time, early in the egg laying period, any eggs stolen would probably be replaced by new ones (Swartz, 1964, 32). Thus egg gathering by the Tigeragmiut apparently had no biological effect on the great murre colonies of Cape Lisburne and Cape Thompson.

Lastly, in the case of plant-gathering, observations at Noatak showed that a single woman, using traditional methods, can collect about 30 pounds of blueberries a day (Foote and Cooke, 1960c, 42). Under these circumstances the maximum theoretical harvest of berries, 156.6 pounds for a Noatagmiut household, represents three days work by one adult.

Annual Caloric Needs for Fat as a Food

The preceeding discussion has been based on the Eskimos' caloric needs for protein and carbohydrate. In meeting these requirements, however, all three groups would also obtain adequate supplies of fat used as a food. It can be seen, for example, that the kill of 11 bowhead whales would provide the Tigeragmiut with 959.2×10^6 calories. This exceeds their total annual caloric demand of 392.1×10^6 calories from fat as a food. The

surplus blubber and fat was used for fuel and for trading with other Eskimos. The Naupaktomiut could meet their yearly fat needs with the catch of 138 bearded seals and 63 harbour seals. The Noatagmiut, if they killed caribou whose total live weight was ten percent fat, could satisfy their annual fat requirements from caribou alone. Otherwise, the capture of 272 white whales, 226 bearded seals and 174 harbour seals would give enough food calories from fat for the entire band for a year.

Summary

The mid-19th century Eskimos of Northwestern Arctic Alaska lived as part of an ecological complex of animals and plants. Their utilization of this wildlife has not been documented in detail by either Europeans or Americans who visited the region before 1855 or by students who have studied the history and pre-history of arctic Alaska. This lack of information can be overcome by construction of a theoretical model of Eskimo resource utilization built from knowledge of the human population composition, seasonal diets, caloric demands and the nutritional value of animals and plants.

The accuracy of the model depends upon the degree to which detailed attention is given to important variables in the Eskimo diet, the food consumption of dogs and the caloric value of wildlife species according to their age, sex and season of

capture. To this must be added careful consideration of Eskimo food preparation methods, the efficiency of food gathering techniques and the question of selective hunting by species and season. Lastly, thought must be given to the total physiological needs of the Eskimos for all food nutrients, not solely protein, fat and carbohydrate. Unfortunately, factual data on the mid-19th century Tigeragmiut, Naupaktomiut and Noatagmiut remain too fragmentary to warrant anything but a general analysis of the points mentioned above.

A comparison between the theoretical kill of wildlife, as presented in this study, and actual observations of Eskimo food gathering shows that the model is reasonable but not necessarily accurate in detail. It is, nonetheless, an improvement over previous work. From a consideration of caloric needs, Brack and McIntosh (1963) devised a crude model of a theoretical population of some mid-20th century Canadian Eskimos. In another publication (Foote, 1964a) I reconstructed a wildlife kill from a general analysis of the average weight of food products consumed by Eskimos and its nutritional value. The present study is a further advance since it offers more detail on seasonal food requirements and the food content of various wildlife species. It is

clear, nevertheless, that continued research should produce theoretical models which more closely approximate actual conditions than the model prepared for this study.⁶

Notes on Chapter 7.

1. It is doubtful whether any two authors will be in complete agreement on the exact average live weight of particular animals and plants. In the case of caribou, for example, studies by Lent (1960) and Rausch (1951) suggest the present arctic Alaskan animals weigh about 200 pounds. The older Noatak Eskimo hunters maintain, however, that the present caribou are smaller than the animals hunted at the turn of the century. They believe the infusion of reindeer blood into the caribou herds has resulted in a smaller animal. For this reason I have chosen an average live weight of 240 pounds. For the convenience of the reader who may question this weight, the caloric value on a 200 pound caribou is computed as follows :-

<u>Body part</u>	<u>% Total Weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Fat	10	9.0	100.0	-	-	7.2
Meat	35	31.5	1.1	27.0	-	3.7
Viscera	20	18.0	-	27.0	-	1.9
<u>Total Calories:</u>			<u>10⁴ Cal.</u>			
Meat and Viscera			7.2			
Fat			5.6			
Total			<u>12.8</u>			

These calculations indicate that a 200 pound caribou yields about 20 percent less calories from protein than a 240 pound animal.

2. No evidence has been found which supports Spencer's statement that on the arctic Alaskan coast a team of "14 to 16 dogs was not unusual" (Spencer, 1959, 468).

3. The special character of the Northwestern Arctic Alaskan environment and the Eskimo food gathering economy requires that extrapolation from other regions be done with care. For example Høygaard (1941) gives an excellent percentage division of foods eaten by the Angmagssalik Eskimos in 1936-37 but his figures do not apply to a bowhead whale hunting group or people living mostly on caribou. Stefansson (1937, 106) presents a useful percentage breakdown of Eskimo foods consumed by an average group. But he has not applied this analysis to particular regions, seasons and Eskimo bands.

4. If one assumes that the average live weight of a caribou is 200 pounds then the total Noatagmiut kill would be 10,577 animals. This would give 78.3 caribou per household each year.

5. It is interesting to note that Larsen and Rainey (1948, 31) estimate the inland Eskimo population of arctic Alaska in the late 19th century at about 3,000

persons. Based on a household size of seven persons and annual caribou kill of 64 animals, this inland population would consume 27,402 animals yearly. Spencer (1959, 203), on the other hand, says it was not unusual for a single inland hunter to kill 500 caribou in a winter. Spencer accepts an inland population of 3,000 people with ten persons per household, probably two of which are hunters. If only one half of these hunters caught as many as 500 caribou the annual winter kill would be 75,000 animals. Such a kill seems highly improbable.

6. For example, I believe the Tigeragmiut summer diet probably consisted of less than one percent berries and plants. The figure shown in the foregoing model is probably too high. Furthermore, I think that the walrus probably played a more important role in the mid-19th century Eskimo economy than is suggested by the present study.

CONCLUSION

Studies of man in Northwestern Arctic Alaska have in the past tended to look backward from a point near the mid-19th century or have dealt with the second half of the century. Surprisingly, although it has been recognized that the mid-century marked the initiation of changes in the traditional Eskimo, this period itself has never been investigated in detail.

The present study has sought to contribute to knowledge of mid-19th century arctic Alaska geography in two ways. First, it attempts to outline carefully the visits of Europeans and Americans to the region and to locate the written records of these travels. I believe that this aspect of the study provides the first concise statement of geographical exploration in Northwestern Arctic Alaska before 1855. It is hoped that this will be of value to future students of all disciplines who may need written historical references to the region. Second, historical information has been used to reconstruct, from a human geographical viewpoint, the traditional use of resources by three mid-19th century Eskimo groups. In this case enough statistical information has been assembled from written

references to allow a satisfactory estimate of the male to female, adult to child ratios of the population as well as the size of the average household. The same information, together with archaeological evidence, has furnished sufficient data for a reasonable, although not wholly accurate, estimate of the total Tigeragmiut, Naupaktomiut and Noatagmiut populations and their seasonal distribution. Lastly, knowledge of the Eskimo seasonal activities, diet, caloric needs and the nutritional value of certain animals and plants was combined with the estimated number of people and their dogs to construct a theoretical kill of wildlife. The methodology employed to reconstruct the mid-19th century utilization of wildlife, has proved to be a useful approach to an understanding of the traditional Eskimo food gathering economy.

Such understanding is essential if we are to comprehend the ways of pre-historic man in the Arctic and the changes caused in Eskimo society by contact with Europeans and Americans. Knowledge of the traditional Eskimo will also contribute to our understanding of man living as a hunter, as a food gatherer, and by so doing it will add to our understanding of human history.

Perhaps the most important conclusion which can be drawn from this study is :-

that the traditional Eskimo can still be studied in detail by combining the results of research into written historical records, archaeological investigations and field work among the present day Eskimo people.

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APPENDIX A

POPULATION STATISTICS

The assumptions listed in Appendix A are as follows
(see page 228) :-

(a) The average Eskimo nuclear family contained from three to five persons, two adults and one to three children.

(b) The average Eskimo household contained seven persons.

(c) The ratio of adult to child, in the family or household, was 13 to 7 (13:7) or 65 percent to 35 percent.

(d) The ratio of male to female, in the family or household, was 13 to 12 (13:12) or 52 percent to 48 percent.

(e) The ratio of adult male to adult female, in the family or household, was probably one to one (1:1) or 50 percent to 50 percent.

(f) The average number of adult males in the nuclear family was one.

(g) The average number of adult males in the household was between one and two.

APPENDIX A

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>St. Lawrence Island</u>					
1816 Jul 27	1 boat		8	59	146
1816 Jul 28	1 boat		10	11	39
1816 Jul 28	3 boats, 8-10 men/boat	(g) (b)	126	11	41
1816 Jul 29	3 boats, 10 men/boat	(g) (b)	140	11	41
1826 Jul 12	West end, "several" tents 4 boats with 8 persons/ boat		32	1	331
1878	10 villages		3,000	43	129
1878			1,500	13	100
1879			500	13	100
1880 summer			500	9	12
1879-80	Villages of Poonook, Poogovellyak, Kagallegak		300	44	456
<u>King Island</u>					
1842	Ukivokmut "large settlement"			3	87
1867 summer			c.250	46	41
1880 summer	Ookivagamute		100	9	11
<u>Sledge Island</u>					
1842	Aziagmute "large settlement"			3	87
1880	Sledge Island (Aziak)		50	9	11

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Diomed Islands</u>					
1779 Jul 27	Big Diomed Island 203 males, 195 women and children		398	47	94
1779 Jul 31	Little Diomed Island 85 males, 79 women and children		164	47	94
1826 Jul 19	Big Diomed Island "several" tents and huts			1	337
1826 Jul 19	2-3 boats	(b)	21	1	337
1850 Sep 19	Diomedes (native report)		300	4	74
1880 summer	Little Diomed		40	9	4

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Inland Seward Peninsula</u>					
1842	Seward Peninsula "a numerous tribe"			3	84
1850 Dec	"E-mow-rook", 16 miles up river north side of Port Clarence			6	
1850 Dec	"village" 60 miles up "Ko-groopak" river from Port Clarence			6	
1850 Dec	"village" on north side of Port Clarence			6	
1854 Feb 9	"Tup-cut-a-toui" 10 miles from Port Clarence			15	926
1854 Feb 10	Toscue or Toesue, 3 huts (b)		21	15	926
1854 Feb 11	Curvi-i-rook (natives away hunting) 7 huts, empty			15	927
1854 Feb 12	Hung-i-ow-ret (mostly children) 2 huts		30	15	927
1854 Feb 13	Kek-to-a-lek (deserted)			15	927
1854 Feb 13	Noo-kei-row-elek, 2 huts		15	15	927
1854 Feb 14	Near Kogrupaek, 2 huts (b)		14	15	927
1854 Feb 14	Near Kogrupaek (?), 2 huts empty			15	927
1854 Feb 16	Obell, (many children) 3 huts		50	15	928
1854 Feb 17	Poc-loc-low-reue (large hut)		25	15	929
1854 Feb 18	Show-e-yok, 4 huts (b)		28	15	929
1854 Feb 26	Kipliktok (Kotzebue Sound) 4 huts. One hut 10 persons	3 huts (b)	31	15	931

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Inland Seward Peninsula (contd.)</u>					
1854 Feb 27	"village" lately abandoned			15	931
1854 Mar 13	Kipliktok, 1 hut		10	15	936
1854 Mar 21	Loxsuk "village" just east of Port Clarence			48	940
<u>Port Clarence</u>					
1827 Sep 1	Takshook Siniogamiut Kaviazagmiut		400	1	265
1827 Sep 1	Winter village north side of Port Clarence		3	1	266
1827 Sep 1	Nookmiut "village"			1	267
1842	Kaviazagamiut "large settlement"			3	87
1850 Sep 5	5-6 boats, 8-10 persons/boat	c.	55	4	73
1850 Sep 14	Kaviazagamiut "large settlement"			5	187
1850 Sep 17	1 boat to Cape Prince of Wales		7	4	73
1850 Dec	Kaviazagamiut "village"			6	
1850 Apr 5	Kaviazagmiut "parties of natives numerous"			7	214
1854 Jan 9	Siniogamiut	c.	55	8	910
1880 summer	Siniogamiut		36	9	11
1880 summer	Kaviazagmiut		200	9	11
1880 summer	Cape York		24	9	11
1880 summer	Nookmiut		36	9	11
1880 summer	Takshook "village"			9	map

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Cape Prince of Wales</u>					
1826 Jul 20	"several habitations"			2	338
1827 Aug 30	village of "Eidannoo"			2	263
1827 Aug 30	village of "Kingaghee"			2	263
1842	village of Taphakgmiut "the largest settlement of all"			3	88
1850 Sep 19	2 boats (1 to Kingaghee, 1 to Diomed Islands)			4	74
1854 Jan 12	south of C.P. Wales, 3 huts	(b)	21	8	913
1854 Jan 16	south of C.P. Wales, 4-5 huts, empty			8	914
1854 Jan 19	upper village of Kingaghee, 20-30 huts		<u>c.</u> 225	8	915
1854 Jan 19	lower village of Kingaghee, 20-30 huts		<u>c.</u> 225	8	915
1854 Aug 14	near Kingaghee (Shishmaref and Hotham Inlet natives, 42 boats	(b)	294	4	329
1866 Nov 27	Kingaghee, 90 huts		900	10	
1880 summer	village opposite Diomed Islands		18	9	4
1880 summer	Kingaghee		400	9	4
1891 year	Cape Prince of Wales, village		539	52	21

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Shishmaref Inlet</u>					
1816 Jul 29	C.P. Wales to Shishmaref, "numerous habitations"			11	42-6
1816 Jul 29	2 boats, 10 men/boat	(g) (b)	93	11	45
1826 Jul 20	"considerable village" of winter huts			1	339
<u>Cape Espenberg (Ta-apkuk)</u>					
1816 Aug 1	5 boats, 8-10 men/boat	45 men (g) (b)	210	11	46
1816 Aug 1	c. 40 boats, 12-20 men/boat	640 men	2,940	59	148
1816 Aug 1	"a number of huts"			59	148
1816 Aug 12	1 tent			59	149
1816 Aug 13	"numerous" natives			59	149
1820 Jul 22	5 boats		48	51	199
1826 Sep 1	"several huts" empty	(g) (b)		1	451
1880 summer			42	9	4
1881 Jul 14	about 20 huts	(b)	140	13	38
<u>Bay of Good Hope (Kotzebue Sound)</u>					
1816 Aug 12	8 boats, 12 men/boat	96 men (g) (b)	447	11	56
1826 Sep 21	"few" natives, 1 boat	(b)	7	1	449

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<u>Deering</u> (Cape Deception, Kotzebue Sound)					
1816 Aug 10	1 boat		8	11	53
1816 Aug 11	"great number of boats"			11	53
1816 Aug 11	1 boat, 1 kayak		5	11	54
1842	"small settlement"			3	88
<u>Spafarief Bay and River</u>					
1842	River mouth "large settlement"			3	88
1848 Sep 18	"natives"			14	
1850 Mar 15	source of Spafarief River "village"			5	137
1854 Mar 2	Kip-pel-lik, 2 huts	(b)	14	15	932
1880 summer	mouth of Spafarief River		12	9	4

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<u>Elephant Point-Buckland River</u>					
1820 Jul 26	Elephant Point		200	51	204
1826 Jul 28	Elephant Point, "row" of empty huts			1	354
1826 Sep 9	headwaters Buckland River "a party" of natives			1	445
1826 Sep 9	Elephant Point, 7 kayaks 7 men and tents	(g) (b)	33	1	443
1826 Sep 20	Buckland River mouth "two parties" and "many deserted" huts			1	446
1826 Oct 8	Escholtz Bay 3 boats/ 30 to 40 men	35 men (g) (b)	163	1	459
1842	Buckland River "large settlement"			3	88
1849 Sep 11	Elephant Point, 22 tents		150	16	
1849 Sep 11- Sep 23	60 miles up Buckland River		2	16	
1880 summer	Buckland River mouth		90	9	4

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<u>Chamisso Island - Choris Peninsula</u>					
1826 Jul 25	West end Chamisso Island "few boats", 1 hut			1	343
1826 Aug 28	C.P. Wales natives, 6 boats and 5 tents		25	1	388
1826 Aug 28	"several" boats, 4 tents (b)		28	1	393
1826 Sep 6	2 boats		14	1	404
1827 Aug 15	"several" natives			2	256
1827 Aug 27	"a party" 8-10 natives		9	2	262
1827 Sep 1	Choris Peninsula, 1 boat (b)		7	2	278
1827 Sep 3- Sep 10	Choris Peninsula, 1 tent and 2 boats		24	2	279
1827 Sep 13	Chamisso Island, 2 boats (b)		14	2	282
1848 Sep 16	Chamisso Island		4	14	
1849 Jul 16	Chamisso Island, 2 boats with 24 men	(g) (b)	112	16	
1849 Jul 16	Choris Peninsula, boats with 12 men/boat, Spafarief natives			5	99
<u>Cape Blossom (Baldwin Peninsula)</u>					
1826 Sep 25	"some" natives in tents			1	455
1838 Sep 9	south of Cape Blossom		3	58	356

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<u>Kotzebue (Kikiktag)</u>					
1838 Sep 8	"very populous settlement"			58	358
1842	"large settlement"			3	88
1848 Sep 14- Oct 2	Chamisso Island to Hotham Inlet, no natives seen			14	
1880 summer			200	9	4
1885 Mar-Apr	"rather large village"			17	
<u>Selawik Lake and River</u>					
1842	"large settlement" on river			3	88
1850 May	1.5 miles up river "several huts"			18	92
1850 May	"large" village 4 days' travel up river			18	93
1880 summer	Selawik Lake		100	9	4
<u>Kobuk River</u>					
1842	"small village"			3	88
1850 May	"village" 7 days travel from river mouth			18	93
1880 summer			250	9	4

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<u>Hotham Inlet - Sheshalik</u>					
1826 Jul 22	Hotham Inlet "several" boats 10-13 men/boat			1	343
1826 Jul 26	Hotham Inlet 14 boats with 150 men	(g) (b)	700	1	351
1826 Sep 8	C. Krusenstern to Sheshalik "many" boats			1	441
1826 Sep 26	Hotham Inlet, 1 boat	(b)	7	1	455
1826 Oct 1	West end Hotham Inlet and "few" natives, tents			1	456
1826 Oct 2	Hotham Inlet a "party"	(b)	7	1	458
1826 Oct 3	Hotham Inlet "several" boats			1	458
1838 Sep 8	C. Krusenstern to Hotham Inlet 6 huts	(b)	42	58	353
1849 Dec 5- Dec 15	Hotham Inlet winter huts			5	135
1880 summer	Sheshalik		100	9	4
1881 Jul 15	Sheshalik, 60-70 boats, more than 200 kayaks		6-800	20	261
1881 Jul 15	Sheshalik, 200 tents	(b)	1,400	13	39
1883 Jul-Aug	Hotham Inlet, "more than 300 tents"	(b)	2,100	21	128
1884 Aug 22	Sheshalik		1,400	22	72
1884 Aug 22	Sheshalik, 10 boats arrived from C.P. Wales	(b)	70	22	72
1884 Aug 22	Sheshalik, 2 boats arrived from Point Hope	(b)	14	22	72
1885 Jul 1	Sheshalik, "trading Eskimos had not yet arrived"			19	7

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<u>Hotham Inlet - Sheshalik (contd.)</u>					
1885 Aug 4	Sheshalik		<u>c.1,000</u>	19	13
1885 Aug 27	Sheshalik, "only a few persons remaining"			19	13
<u>Noatak River</u>					
1880 summer	Noatagmiut village		400	9	4
1885 summer	river population		225	19	75
1885 Mar-Apr	Napoctoc River, 1 family (b)		7	17	
1885 Mar-Apr	Napoctoc-Noatak Rivers junction, 1 family (b)		7	17	
1885 Mar-Apr	1 day travel up Noatak River, 1 family (b)		7	17	
	Akveextrak ruins			dcf	
	Naupaktosugruk ruins			dcf	
<u>Cape Krusenstern</u>					
1826 Sep 8	"several boats"			1	441
1827 Aug 25	1 boat with oars (b)		7	2	261
1838 Sep 8	2 huts		10	58	353
1880 summer	Tikizat		75	9	4

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<u>Killeegmaek-Aneeukarnat</u>					
1826 Aug 1	North of Mulgrave Hills 3 boats	(b)	21	1	359
1838 Sep 5	20 men	(g) (b)	93	58	350
1838 Sep 5			60	58	350
1880 summer	Aniyakh		25	9	4
1885 Mar-Apr	Aniok, 2 families	(b)	14	17	
<u>Kivalina-Wulik Rivers</u>					
1820 Jul 31	near Kivalina, 30 huts	(b)	210	51	216
1838 Sep 1	Kavalnagmyout "a populous settlement"			45	144
1838 Sep 4	8 boats, 14 men each, 150 + person on shore		262	58	349
1838 Sep 4	112 men	(g) (b)	522	58	349
1842	Kivalingmiut, "quite a large settlement"			3	88
1880 summer	Cape Seppings		50	9	4
1885 Mar-Apr	Kivalina River mouth, recently deserted ruins			17	
1885 Mar-Apr	Eevruktusuk, "small settlement"			17	
late 19th century	Eevruktusuk, 4 to 5 families	(b)	31	23	

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<u>Cape Thompson</u> (Ipnot)					
1826 Aug 2	"small" tent village			1	361
1827 Aug 15	"some" natives			2	274
1838 Sep 2	north of Cape, 1 boat		11+	58	347
1838 Sep 2	Cape Thompson		14	58	347
1851 Jul 15	1 boat (from Cape Spencer) (b)		7	4	136
1880 summer	Ipnot		40	9	4
1885 Mar-Apr	south of Cape Thompson, Point Hope family, 1 hut (b)		7	17	
<u>Point Hope</u> (Tigaraq)					
1820 Aug 4	two settlements		600	51	218
1826 Aug 5	"many" winter huts			1	367
1827 Aug 27	natives preparing winter huts			2	277
1838 Sep 2	large winter settlement			58	346
1842	"large settlement"			3	88
1849 Aug 19			12	24	
1850 Aug 31			9	4	67
1850 Sep 20	8 boats		60-70	4	75
1851 Jul 15	1 boat (b)		7	4	136
1880 summer			276	9	4
1885 Mar-Apr	"second largest village after Utkiavik"			17	
	122 ruins of winter huts (b)		854	25	329
early 19th century	estimate of population		1,000	26	236

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<u>Kukpuk River</u>					
	Eetiblaeruk, 13 house pits, 6 older pits	(b)	91	dcf	
	West end Eetiblaeruk, 2 house pits	(b)	14	dcf	
	Kukpuk, north side, 5 house pits, 8 other pits	(b)	35	dcf	
	Kukpuk, south side, 14 house pits, 8 other pits	(b)	98	dcf	
	Umittoruk Creek, 1 house pit	(b)	7	dcf	
	Ogsaghaek, more than 5 house pits	(b)	35	dcf	
	Near Suklowlik, 1 house pit	(b)	7	dcf	
<u>Akalowlik Creek</u>					
1849 Aug 23			<u>c.</u> 40	16	
	Tapkarruk Creek tent rings, 1 house pit	(b)	7	dcf	
	Akalowlik Creek 3 house pits	(b)	21	dcf	
<u>Imnarruk</u>					
1851 Jul 16	"village"			4	137
1851 Jul 16	1 boat	(b)	7	4	136
	Imnarruk 2 house pits	(b)	14	dcf	

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<u>Cape Dyer (Kaypalauk)</u>					
1838 Sep 1	1 winter hut, 1 man	(b)	7	58	345
1880 summer			15	9	4
	Kaypalauk 2 house pits	(b)	14	dcf	
<u>Keelyiktangyawk</u>					
	2 house pits	(b)	14	dcf	
<u>Ukingyek</u>					
1838 Aug 30	3 huts, empty, good condition	(b)	21	58	341
1838 Aug 30			5	58	341
1849 Jul 20	"many natives" at two places			16	
1851 Jul 16	village and "several boats"			4	137
	4 house pits	(b)	28	dcf	

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<u>Cape Lisburne</u> (Niak Creek)					
1826 Sep 6	5 boats, 1 tent	(b)	35	1	440
1838 Jul 17	"people" from Pt. Hope			45	130
1838 Jul 19	"natives"		20	58	277
1838 Aug 23			10	58	336
1849 Jul 20	"many" natives			5	101
1849 Jul 21	2 boats, c.20 persons/ boat		40	16	
1851 Jul 16	3 boats	(b)	21	4	137
1851 Jul 16	"village"			4	137
1853 Jul 22	2 boats	(b)	14	27	157
1880 summer			13	9	4

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<u>Wevok</u>					
1826 Sep 5	1 man	(b)	7	1	439
1826 Sep 5	1 boat		11	1	439
1888 winter	3 families, 1 empty hut	(b)	21	17	
<u>Cape Sabine (Pitmegea)</u>					
1838 Jul 21	1 tent		7	58	279
1838 Aug 21	2 boats, 22 men	(g) (b)	102	58	335
1849 Jul 22	"natives"			5	102
1881 Jul 27	Corwin Mine 7 tents (Pt. Hope people just arrived)	(b)	49	13	50
1884 Oct-Nov	Caribou hunting camp, several families			17	
<u>Katziegalie</u>					
1884 Oct-Nov	8 houses (occupied)	(b)	56	17	
<u>Kukpowruk River</u>					
1884 Oct-Nov	near river mouth, empty huts			17	
	27 house ruins	(b)	189	60	67
<u>Point Lay</u>					
1826 Aug 20	1 boat		9	1	383
1880 summer			30	9	4
1884 Oct-Nov	"a number of houses" empty, at "Kak-kul-lik" (Kokolik) river mouth behind Point Lay			17	

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<u>Tolageak-Utukok River</u>					
1838 Jul 25	Utukokmiut 50 adult women	(f) (d)	160	45	132
1838 Jul 26	Utukokmiut 30 tents	(b)	210	58	285
1842	Utukokmiut in "large settlement", summer camp at 70° north			3	88
1838 Jul 26	Utukokmiut		100	58	285
late 19th century	160 tents	(b)	1,120	28	31
late 19th century	population estimate of Utukokmiut		800	28	31

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<u>Kilimantavi</u>					
1826 Aug 18	4 boats		60	1	418
1826 Aug 17	"village" of winter huts, empty			1	417
1838 Jul 28	Kilyamigtagvik		25	45	134
1838 Jul 29	Kalymatagmiut		25	58	290
1842	Kilyamigtagvik a "small settlement"			3	89
1884 Nov-Dec	"many people" in winter huts			17	
	ruins about 12 house pits (b)		84	30	15

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<u>Akeonik (Icy Cape)</u>					
1826 Aug 16	"several" winter huts			1	379
1827 Aug 19	tents		c.20	2	275
1838 Jul 27	Kayakshigvik "numerous" people, 40+ adult men	(g) (b)	187	45	134
1838 Jul 27	Kayakshigvik		300	58	288
1838 Aug 15	Kayakshigvik no one seen			58	326
1842	Kayakshigvik on Icy Cape "large settlement"			3	88
1850 Jul 23	Icy Cape, 1 boat	(b)	7	54	
1852 Jul 29	winter village (occupied in winter)			55	
1880 summer	"Otokook" (Utukok people) at Icy Cape		50	9	4
1884 Aug			63	29	84
1884 Nov	huts "mostly empty" but was once a "large settlement"			17	
	ruins, 16 house pits	(b)	42		
	(6 of coast type, 10 inland type)	(b)	70	28	35
<u>Mitliktavik</u>					
1838 Aug 14	large summer settlement			58	325
	ruins about 12 house pits	(b)	84	30	15

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<u>Wainwright</u>					
1826 Aug 12	2 huts, "some" people	(b)	14	1	373
1826 Aug 20	"village" and "several" boats			1	418
1838 Jul 29	"numerous" people			45	134
1838 Jul 29	Wainwright 28 men, 2 boats	(g) (b)	133	58	290
1842	"Kakmalig" a "large settlement"			3	89
1849 Jul 25			<u>c.</u> 40	16	
1849 Jul 30	2 boats	(b)	14	16	
1849 Aug 1	"some" boats (just arrived)			16	
1850 Jul 23	21 tents	(b)	147	54	
1850 Aug 5	south side inlet, 6 winter huts	(b)	42	54	
1850 Aug 5	north side inlet, winter huts			54	
1851 Jul 17	10 boats	(b)	70	4	137
1852 Jul 20	"several" natives			55	
1852 Jul 26	no natives at usual hunting site at entrance to inlet			55	
1854 Jul 23	north spit of inlet, 19 tents	(b)	133	53	912
1880 summer	Killaimutes (Kuk River) at river mouth		150	9	4
1880 summer	Kolumakturrook (Wainwright)		45	9	4

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<u>Wainwright</u> (contd.)					
1881-83	Kuumeun (Wainwright) 10 families		80	31	38
1884 Nov-Dec	Ooldrunic (Wainwright) winter village "larger" than Kilimantavi			17	
<u>Point Belcher</u> (Sidaru) (Nunagiak)					
1826 Aug 20	"several" winter huts, coast "populous"			1	419
1838 Jul 29	3 miles north of Wainwright inlet 14 huts (b)		98	58	292
1838 Jul 29	south of Pt. Belcher empty settlement			58	292
1849 Aug 16	"huts"			24	
1850 Jul 23	1 boat		12	54	
1880 summer	Noona-agamute (inland people)		74	9	4
1880 summer	Ootkaiowik		55	9	4
1881-83	Sidaru 8 families		50	31	38
1883 Aug 6	14 winter houses (b)		98	57	
1884 Nov-Dec	Sidaru, 12 huts occupied (many people died 1871) (b)		84	17	
	ruins 13 huts (b)		91	30	56

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<u>Atanik</u>					
1838 Jul 29	Atanek "number" of people			45	135
1838 Jul 30	Atanyek settlement			58	293
1842	Atinikg or Kuik, "small settlement"			3	89
1884 Nov-Dec	Atanik possibly abandoned in 1871 when many people died here			17	

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<u>Pingasagrook</u> (Point Franklin - Sea Horse Islands)					
1826 Aug 15	winter huts "very numerous"			1	375
1826 Aug 15	tents, 3 boats	(b)	21	1	375
1826 Aug 21	Peard Bay, "several" boats			1	420
1826 Aug 24	south of Sea Horse Islands 9 tents	(b)	63	1	428
1838 Jul 29	Sea Horse Islands, 2 boats		25	45	135
1838 Jul 31	3 demolished winter huts			58	244
1838 Jul 31	Atanik peoples 12 males, 6 females	(g) (b)	56	58	296
1850 Aug 3	Sea Horse Islands		6	54	
1852 Jul 21	Sea Horse Islands "some natives"			55	
1852 Jul 26	Sea Horse Islands "numerous" natives			55	
1854 Jul 22	Sea Horse Islands 2 boats	(b)	14	53	912
1880 summer			29	9	4
1884 Nov-Dec	6 families	(b)	42	17	
<u>Sinaru</u>					
1853 Jul 14	6 tents	(b)	42	32	186

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<u>Walakpa</u> (Refuge Inlet)					
1838 Aug 3	Atanik people		25	58	297
1849 Aug 3	"numerous" natives			5	118
1850 Jul 26	1 boat, "natives"	(b)	7	54	
1851 Jul 23	Noo-na-boo or Il-lip-se people in "numerous" tents			4	139
1853 Jul 14	south of inlet "several" camps			32	186
1853 Jul 14	Iglu-lu-i "several" huts			32	186
1853 Jul 14	north of Iglu-lu-i, 1 hut	(b)	7	32	186
1880 summer			40	9	4

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<u>Cape Smyth</u> (Utkiavik) (Barrow village)					
1826 Aug 22	south of cape, "village" of huts, occupied			1	421
1826 Aug 22	Cape Smyth, "village" occupied			1	421
1838 Aug 3	Utkiagvigmyout "large settlement" empty			45	137
1838 Aug 4	south of Cape Smyth native camp			58	301
1838 Aug 4	Utkiagvik empty village		14	58	303
1838 Aug 8	Utkiagvik		8	58	318
1842	Utkeagvik (Utkiavik) "small settlement"			3	89
1849 Jul 30	71°15'58" N, "great many natives"			33	
1849 Aug 1	near Cape Smyth, 12 tents (b)		84	34	220
1850 Jul 26	"natives" south of Cape Smyth			54	
1850 Jul 26	natives moving south		50+	54	
1851 Jul 23	Refuge Inlet to stream south of Cape Smyth, 13 tents (b)		91	4	139
1851 Jul 23	From above stream northward to Cape Smyth, 6 tents (b)		42	4	139
1851 Jul 23	Cape Smyth, 5 tents (b)		35	4	139
1853-54	Cape Smyth, 40 winter huts occupied, estimated population		215-231	35	237
1880 summer	Cape Smyth		225	9	4

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<u>Cape Smyth</u> (Utkiavik) (Barrow village) - contd.					
1881-83	Cape Smyth, 23 families		130	31	38
1884 Dec	Cape Smyth, "large settlement"			17	

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<u>Point Barrow</u>	(Nuwuk)				
1826 Aug 23	"large village" of huts, "great numbers" of people present			1	422
1826 Aug 23	2 miles south of Pt. Barrow 19 men and 8 tents	(b)	56	1	426
1837 Aug 4	Point Barrow		<u>c.</u> 100	36	161
1838 Aug 4	Point Barrow "large Nugmyout village"			45	137
1838 Aug 4	2 boats, 32 men	(g) (b)	150	45	137
1838 Aug 5	Nugmiut village 20 + huts	(b)	140+	58	304
1838 Aug 5	2 boats, 32 men	(g) (b)	150	58	304
1842	Nugumut			3	89
1849 Aug 1	4 miles south of Pt. Barrow 71°20'30" "no less than"		80	24	
1849 Aug 1	5 miles south Pt. Barrow 4 tents		50	34	219
1849 Aug 2	Pt. Barrow <u>c.</u> 30 winter huts, 30 tents	(b)	210	34	227
1850 Jul 27	3 miles south Pt. Barrow "great many natives"			54	
1850 Jul 27	Northeast end of point		300+	54	
1851 Jul 25	Pt. Barrow		<u>c.</u> 100	4	141
1852 Sep 15	Pt. Barrow and Cape Smyth people returning to winter huts, 7-8 boats per day, 8-9 days			37	360

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Point Barrow</u>	(Nuwuk) - contd.				
1852 Jul 22			100	55	
1853 Jul 4-7	27 to 30 boats going eastward		c.150	37	399
1853 winter	Point Barrow 54 huts occupied		309	35	237
1854 winter	Point Barrow 48 huts occupied		286	35	237
1854 Jul 3	Pt. Barrow 14 boats going east		74	35	264
1853 Jul 15	Pergnack (Perignax) "some" Nuwuk natives			32	186
1880 summer	Kokmullit (Pt. Barrow)		200	9	4
1881-83	Pt. Barrow 31 families		150	31	38

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Point Tangent</u>					
1837 Aug 3	4 tents, 3 boats	(b)	28	36	148
1837 Aug 6	2 huts			36	165
1838 Aug 5	Pt. Tangent "large summer camp"			45	140
1838 Aug 5	3 boats	(b)	21	45	140
1838 Aug 5			20+	45	141
1838 Aug 6	west of Pt. Barrow 4 tents	(b)	28	58	311
1838 Aug 6	4 boats	(b)	28	45	142
1838 Aug 7	5 tents, 3 boats	(b)	35	58	311
1838 Aug 7	40 men	(g) (b)	186	58	313
1838 Aug 7	1 boat		5	58	313
1851 Aug 1	2 boats	(b)	14	4	145
1851 Aug 2	east of Pt. Tangent 2 boats	(b)	14	4	145
<u>Pitt Point</u>					
1849 Aug 7	7 tents	(b)	49	34	235
1850 Aug 8	3 men	(g) (b)	14	38	61
1850 Aug 8	storage houses			39	104
1850 Aug 8	Pt. Drew, 2 boats (inland Eskimos)	(b)	14	39	97-101
1850 Aug 8	Pt. Drew, "several" boats			39	97-101

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Oliktok</u> (Beechey Point)					
1849 Aug 11	13 tents Oliktok		c.100	34	237
1849 Aug 11	east of Oliktok, 1 boat with 24 men, 1 woman, fr. Oliktok	(g) (b)	112	34	238
1849 Aug 11	east end of Jones Island 4 boats	(b)	28	41	
1849 Aug 12	east end Jones Island "two goodly collections of tents", 5 boats		c.87	34	240
1849 Aug 12	Beechey Point 84-85 men	(g) (b)	394	34	243
1849 Aug 12	Return Reef, "village" and 3 boats	(b)	21	34	244
1849 Aug 12	Near Beechey Pt. c. 100 men	(g) (b)	466	41	
1849 Aug 13	west end Return Reef, 2 boats with 40 men	(g) (b)	187	41	
1849 Aug 13	extreme east end of Return Reef, 2 boats, 40-50 men	45 men (g) (b)	210	34	248
1850 Aug 11	Jones Island a "mainland camp"			39	106
1850 Aug 11	Jones Island 2 boats		24	38	72
1850 Aug 11	east end Jones Island "a number" of people, mainland camp			39	108
1850 Aug 12	4 boats from Jones Island camp	(b)	28	39	110
1850 Aug 11	Return Reef, a "party"			38	74

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Nirlik</u> (Colville River mouth)					
early 20th century	400 tents	(b)	2,800	40	21
<u>Colville River</u>					
late 19th century	50 boats, estimated population		500	25	317
late 19th century	50 boats	(b)	350	25	317
1880 summer			50	9	4

<u>Date</u>	<u>Remarks</u>	<u>Assump- tion</u>	<u>Total Popula- tion</u>	<u>Ref.</u>	<u>Page</u>
<u>Camden Bay</u>					
1826 Aug 4	west of Barter Island 4 tents	(b)	28	42	148
1826 Aug 4	west of Barter Island one party, 1 boat	(b)	7	42	148
1837 Jul 20	Canning River mouth a "large" camp			36	124
1854 Jul 2	Camden Bay, 2 boats 16 kayaks (inland people?)		41	4	315
<u>Barter Island (Kaktovik)</u>					
1826 Aug 3	Point Manning "many" tents 54 adults	(d)	83	42	146
1826 Aug 4	Barter Island, 2 men from above group		2	42	147
1837 Jul 16	Barter Island 1 tent	(b)	7	36	118
1837 Jul 17	Barter Island		60	36	118
<u>Demarcation Point</u>					
1826 Jul 31	Demarcation Pt., huts, empty			42	142
1826 Aug 3	west of Demarcation Pt., "large" tent, enough for 40 persons, 18 sleds	(b)	126	42	145
1849 Aug 17	between Boulder Island and Barter Island, 8 tents, 1 driftwood hut	(b)	56	34	255
1849 Aug 20	Humphrey Pt., 4 tents		24	34	255
1849 Aug 20	Icy Reef, 2 boats, "several huts"	(b)	14	34	256

APPENDIX A

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Don Charles Foote

APPENDIX B

CALORIC CONTENT OF ANIMALS

APPENDIX B

BOWHEAD WHALE (GREENLAND WHALE)

(Balaena mysticetus) (Linnaeus)

Average Live Weight: 60,000 lbs (27,240 kg)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Blubber	40	10,896	100.0	-	-	8,716.8
Meat	17	4,631	0.7	23.6	-	463.1
Skin (muktuk)	17	4,631	1.2	12.3	18.2	609.4
Viscera	12	3,269	-	23.0	-	300.7
Blood	ND					
Bones	14					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and Viscera	763.8
Muktuk	609.4
Blubber	8,716.8
TOTAL	<u><u>10,090.0</u></u>

Mann, et al., 1962
 Omura, 1958
 Scoresby, 1820
 Tomilin, 1962

WHITE WHALE (BELUGA)

(Delphinapterus leucas) (Pallas)

Average Live Weight: 1,000 lb (454 kg)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Blubber	25	113.5	100.0	-	-	90.8
Meat	17	77.2	-	24.0	-	7.4
Skin (muktuk)	17	77.2	1.2	12.0	18.0	10.0
Viscera	23	104.4	-	24.0	-	10.0
Blood	ND					
Bones	17	77.2				

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	17.4
Muktuk	10.0
Blubber	90.8
TOTAL	<u><u>118.2</u></u>

Brack and McIntosh, 1963
 Doan and Douglas, 1953
 Grønlands Fangstlister, 1958
 Mann, et al., 1962
 Sergeant, 1962

WALRUS

(Obodenus rosmarus divergens) (Illiger)

Average Live Weight: 1,500 lbs (682 kg)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>fat</u>	<u>% protein</u>	<u>% carbohy</u>	<u>10⁴ Cal.</u>
Blubber	16	109.1	100	-	-	87.3
Meat	35	238.7	8	20.0	-	34.4
Viscera	26	177.3	8	20.0	-	25.5
Blood	ND					
Bone	11					
Skin	12					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	59.9
Blubber	<u>87.3</u>
TOTAL	<u><u>147.2</u></u>

Brack and McIntosh, 1963
Brooks, 1954
Freeman, 1961
Grønlands Fangstlister, 1958
Mann, et al., 1962
Mansfield, 1963, 1959

POLAR BEAR

(Thalarctos maritimus maritimus) (Phipps)

Average Live Weight: 800 lbs (363.6 kg)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Blubber	37	134.5	100.0	-	-	107.6
Meat ⁺	38	138.2	3.1	25.6	-	17.7
Viscera	3	10.9	3.1	25.6	-	1.4
Blood	ND					
Bones	15					
Skin	7					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	19.1
Blubber	107.6
TOTAL	<u><u>126.7</u></u>

Grønlands Fangstlister, 1958
 Harrington, 1964
 Lønø, 1957
 Mann, et al., 1962
 White, 1953

+ Includes weight of heart and lungs.

BEARDED SEAL

(Erignathus barbatus nauticus) (Pallas)

Average Live Weight: 600 lbs (273)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Blubber	27	73.1	100.0	-	-	58.5
Meat	25	68.3	0.4	26.7	-	7.3
Viscera	9	24.6	-	26.7	-	2.6
Blood	5					
Bones	16					
Skin	18					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	9.9
Blubber	58.5
	<u> </u>
TOTAL	68.4
	<u> </u>

Anderson, in Stefansson, 1951
Brack and McIntosh, 1963
Grønlands Fangstlister, 1958
Mann, et al., 1962
Mansfield, 1963
McLaren, 1958a
Rand, 1945
White, 1953

HARBOUR SEAL

(Phoca vitulina richardii) (Grey)

Average Live Weight: 200 lbs (91.0 kg)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Blubber	32	29.1	100.0	-	-	23.3
Meat	27	24.6	1.8	30.0	-	3.3
Viscera	9	8.2	-	30.0	-	1.0
Blood	5					
Bones	16					
Skin	11					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	4.3
Blubber	23.3
	<u> </u>
TOTAL	27.6
	<u> </u>

Bee and Hall, 1956
Mann, et al., 1962
Grønlands Fangstlister, 1958
Mansfield, 1963

RINGED SEAL

(Phoca hispida beaufortiana) (Anderson)

Average Live Weight: 100 lbs (45.5 kg)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Blubber	32	14.6	100.0	-	-	11.7
Meat	27	12.3	1.8	32.4	-	1.8
Viscera	9	4.1	-	32.0	-	0.5
Blood	5					
Bones	16					
Skin	11					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	2.3
Blubber	<u>11.7</u>
TOTAL	<u><u>14.0</u></u>

Brack and McIntosh, 1963
Grønlands Fangstlister, 1958
Mann, et al., 1962
Mansfield, 1963
McLaren, 1958a, 1958b
Ostenson, et al., 1965
Stefansson, 1921

GRIZZLY BEAR

(Ursus horribilis richardsoni) (Swainson)

Average Live Weight: 500 lbs (227 kg)

<u>Body Part</u>	<u>% Total Weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Fat	15	34.0	100.0	-	-	27.2
Meat	35	79.5	3.1	25.0	-	8.2
Viscera	20	45.4	3.1	25.0	-	4.6
Blood	ND					
Bones	20					
Skin	7					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	12.8
Fat	27.2
	—
TOTAL	40.0
	==

Bee and Hall, 1956
 Lønø, 1957
 Mann, et al., 1962
 Rausch, 1951
 Stefansson, 1957
 White, 1953

CARIBOU

(Rangifer arcticus stonei) (J.A. Allen)

Average Live Weight: 240 lbs (109.1 kg)

<u>Body Part</u>	<u>% total weight</u>	<u>kgs</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>10⁴ Cal.</u>
Fat	10	10.9	100.0	-	-	8.7
Meat	35	38.2	1.1	27.0	-	4.5
Viscera	20	21.8	-	27.0	-	2.4
Blood	ND					
Bone	25					
Skin	ND					

<u>Total Calories</u>	<u>10⁴ Cal.</u>
Meat and viscera	6.9
Fat	8.7
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TOTAL	15.6
	<hr/>

Anderson, in Stefansson, 1951
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 Stefansson, 1957, 1921
 Rausch, 1951
 Lent, 1960

HOARY MARMOT

(Marmota caligata broweri) (Hall and Gilmore)

Average Live Weight: 7.7 lbs (3.5 kg)

	<u>kg.</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	2.4	?	<u>c.</u> 20.0	?	1,920.0

Bee and Hall, 1956
White, 1953

VARYING HARE (SNOWSHOE RABBIT)

(Lepus americanus) (Erxleben)

Average Live Weight: 3.0 lbs (1.46 kg)

	<u>kg.</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.68	?	<u>c.</u> 15.0	?	408.0

Rand, 1945
White, 1953

ARCTIC GROUND SQUIRREL

(Spermophilus undulatus kennicotti) (Ross)

Average Live Weight: 1.7 lbs (0.8 kg)

	<u>kg.</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	-	22.0	-	400.00

Bee and Hall, 1956
Mann, et al., 1962
Rand, 1945
White, 1953

DALL SHEEP

(Ovis dalli dalli) (Nelson)

Average Live Weight: 160 lbs (73 kg)

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	<u>c.</u> 40	-	<u>c.</u> 25.0	-	16 x 10 ⁴

Bee and Hall, 1956

Rand, 1945

White, 1953

POLAR COD (TOM COD)

(Boreogadus saida) (Lepechin)

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	3.0	20.0	-	472.0

Mann, et al., 1962

TROUT

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	1.5	24.4	-	497.6

Mann, et al., 1962

WHITEFISH

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	1.3	25.8	-	515.6

Mann, et al., 1962

GRAYLING

(Thymallus arcticus signifer) (Richardson)

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	1.6	23.4	-	476.0

Mann, et al., 1962

SALMON

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	6.0	12.0	3.0	

Cameron, 1938
Mann, et al., 1962

THICK-BILLED MURRE

(Uria lomvia) (Linnaeus)

Average Live Weight: 2.1 lbs (0.964 kg)

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	<u>c.</u> 0.67	2.5	5.3	32.2	1,100

Mann, et al., 1962

Swartz, 1964

White, 1953

MURRE EGG

Average Weight: 0.104 kg

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.1	?	?	?	<u>c.</u> 160

Tuck, 1960

WILLOW PTARMIGAN

(Lagopus lagopus)

Average Live Weight: 2.0 lbs (0.9 kg)

	<u>kg</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.630	1.4	25.7	-	718.0

Mann, et al., 1962

White, 1953

COMMON EIDER

(Somateria mollissima)

Average Live Weight: 3.5 lbs (1.6 kg)

	<u>kg.</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	1.1	1.1	12.3	17.2	1,394.8

Mann, et al., 1962
White, 1953

SOURDOCK

	<u>kg.</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	0.3	3.7	10.2	263.6

Mann, et al., 1962

BLUEBERRIES

	<u>kg.</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	-	1.0	13.2	272.4

WILLOW LEAVES

	<u>kg.</u>	<u>% fat</u>	<u>% protein</u>	<u>% carbohy.</u>	<u>Total Cal.</u>
Usable parts	0.454	1.2	3.7	28.0	618.8

Mann, et al., 1962

APPENDIX C

CALORIC NEEDS OF ESKIMO
GROUPS

APPENDIX C

TIGERAQMIUT, 1850

122 households:	289 adult men
	266 adult women
	<u>299 children</u>
	<u>854 Total</u>

ANNUAL CALORIC NEEDS: Protein and Carbohydrate

			<u>10⁶ Calories</u>
Adult Men	289 x 1,950 cal. x 365 days =		205.7
Adult Women	266 x 1,625 cal. x 365 days =		157.8
Children	299 x 1,300 cal. x 365 days =		141.9
			<hr/>
TOTAL			505.4
			<hr/>

ANNUAL CALORIC NEEDS: Fat

			<u>10⁶ Calories</u>
Adult Men	289 x 1,050 cal. x 365 days =		110.6
Adult Women	266 x 875 cal. x 365 days =		84.9
Children	299 x 700 cal. x 365 days =		76.4
			<hr/>
TOTAL			271.9
			<hr/>

		<u>10⁶ Calories</u>
Total Protein and Carbohydrate		505.4
Total Fat		271.9
		<hr/>
TOTAL ALL CALORIES		777.3
		<hr/>

TIGERAQMIUT, Dogs, 1850

Assumption: 3 dogs per household = 3 x 122 = 366

ANNUAL CALORIC NEEDS: Protein

		<u>10⁶ Calories</u>
Dogs	366 x 900 cal. x 365 days =	120.2

ANNUAL CALORIC NEEDS: Fat

		<u>10⁶ Calories</u>
Dogs	366 x 900 cal. x 365 days =	120.2
	Total Protein	120.2
	Total Fat	120.2

	TOTAL ALL CALORIES	240.4
		=====

TIGERAQMIUT

WINTER:

122 households	289 adult men
	266 adult women
	<u>299 children</u>
	<u><u>854 Total</u></u>

Dogs: assumption 3 dogs per household = 3 x 122 = 366

WINTER CALORIC NEEDS: Protein and Carbohydrate

		<u>10⁶ Calories</u>
Adult Men	289 x 1,950 cal. x 240 days =	135.2
Adult Women	266 x 1,625 cal. x 240 days =	103.7
Children	299 x 1,300 cal. x 240 days =	93.3
TOTAL		<u>332.2</u>
Dogs	366 x 900 cal. x 240 days =	79.0
TOTAL		<u><u>411.2</u></u>

WINTER CALORIC NEEDS: Fat

		<u>10⁶ Calories</u>
Adult Men	289 x 1,050 cal. x 240 days =	72.8
Adult Women	266 x 875 cal. x 240 days =	55.9
Children	299 x 700 cal. x 240 days =	50.2
TOTAL		<u>178.9</u>
Dogs	366 x 900 cal. x 240 days =	79.0
TOTAL		<u><u>257.9</u></u>

TIGERAQMIUT

SUMMER: Coast and Inland

122 households: 289 adult men
 266 adult women
 299 children
 854 Total

Dogs: assumption 3 dogs per household = $3 \times 122 = 366$

SUMMER CALORIC NEEDS: Protein and Carbohydrate

			<u>10^6 Calories</u>
Adult Men	$289 \times 1,950 \text{ cal.} \times 125 \text{ days} =$		70.4
Adult Women	$266 \times 1,625 \text{ cal.} \times 125 \text{ days} =$		54.0
Children	$299 \times 1,300 \text{ cal.} \times 125 \text{ days} =$		48.6
TOTAL			<u>173.0</u>
Dogs	$366 \times 900 \text{ cal.} \times 125 \text{ days} =$		41.2
TOTAL			<u>214.2</u>

SUMMER CALORIC NEEDS: Fat

			<u>10^6 Calories</u>
Adult Men	$289 \times 1,050 \text{ cal.} \times 125 \text{ days} =$		37.9
Adult Women	$266 \times 875 \text{ cal.} \times 125 \text{ days} =$		29.1
Children	$299 \times 700 \text{ cal.} \times 125 \text{ days} =$		26.2
TOTAL			<u>93.2</u>
Dogs	$366 \times 900 \text{ cal.} \times 125 \text{ days} =$		41.2
TOTAL			<u>134.4</u>

NAUPAKTOMIUT, 1850

28 households:	66 adult men
	61 adult women
	<u>69 children</u>
	<u>196 Total</u>

ANNUAL CALORIC NEEDS: Protein and Carbohydrate

		<u>10⁶ Calories</u>
Adult Men	66 x 1,950 cal. x 365 days =	47.0
Adult Women	61 x 1,625 cal. x 365 days =	36.2
Children	69 x 1,300 cal. x 365 days =	32.7
		—
	TOTAL	115.9
		==

ANNUAL CALORIC NEEDS: Fat

		<u>10⁶ Calories</u>
Adult Men	66 x 1,050 cal. x 365 days =	25.3
Adult Women	61 x 875 cal. x 365 days =	19.5
Children	69 x 700 cal. x 365 days =	17.6
		—
	TOTAL	62.4
		==

	<u>10⁶ Calories</u>
Total Protein and Carbohydrate	115.9
Total Fat	62.4
	—
TOTAL ALL CALORIES	178.3
	==

NAUPAKTOMIUT, Dogs, 1850

Assumption: 4 dogs per household = $28 \times 4 = 112$

WINTER CALORIC NEEDS: Protein

		<u>10^6 Calories</u>
Dogs	$112 \times 1,600 \text{ cal.} \times 183 \text{ days} =$	32.8

WINTER CALORIC NEEDS: Fat

Dogs	$112 \times 200 \text{ cal.} \times 183 \text{ days} =$	4.1
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SUMMER CALORIC NEEDS: Protein

Dogs	$112 \times 900 \text{ cal.} \times 182 \text{ days} =$	18.3
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SUMMER CALORIC NEEDS: Fat

Dogs	$112 \times 900 \text{ cal.} \times 182 \text{ days} =$	18.3
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Total Protein	51.1
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Total Fat	22.4
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TOTAL ALL CALORIES	73.5
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NAUPAKTOMIUT

WINTER: Inland

28 households:	66 adult men
	61 adult women
	<u>69 children</u>
	<u>196 Total</u>

Dogs: assumption 4 dogs per household = $4 \times 28 = 112$

WINTER CALORIC NEEDS: Protein and Carbohydrate

		<u>10^6 Calories</u>
Adult Men	$66 \times 1,950 \text{ cal.} \times 182 \text{ days} =$	23.4
Adult Women	$61 \times 1,625 \text{ cal.} \times 182 \text{ days} =$	18.0
Children	$69 \times 1,300 \text{ cal.} \times 182 \text{ days} =$	16.3
	TOTAL	<u>57.7</u>
Dogs	$112 \times 1,600 \text{ cal.} \times 182 \text{ days} =$	32.6
	TOTAL	<u>90.3</u>

WINTER CALORIC NEEDS: Fat

		<u>10^6 Calories</u>
Adult Men	$66 \times 1,050 \text{ cal.} \times 182 \text{ days} =$	12.6
Adult Women	$61 \times 875 \text{ cal.} \times 182 \text{ days} =$	9.7
Children	$69 \times 700 \text{ cal.} \times 182 \text{ days} =$	8.8
	TOTAL	<u>31.1</u>
Dogs	$112 \times 200 \text{ cal.} \times 182 \text{ days} =$	4.1
	TOTAL	<u>35.2</u>

NAUPAKTOMIUT

SUMMER: Coast

20 households =	47 adult men
	44 adult women
	<u>49 children</u>
	<u>140 Total</u>

Dogs: assumption 4 dogs per household = $4 \times 20 = 80$

SUMMER CALORIC NEEDS: Protein and Carbohydrate

		<u>10^6 Calories</u>
Adult Men	$47 \times 1,950 \text{ cal.} \times 183 \text{ days} =$	16.8
Adult Women	$44 \times 1,625 \text{ cal.} \times 183 \text{ days} =$	13.1
Children	$49 \times 1,300 \text{ cal.} \times 183 \text{ days} =$	<u>11.6</u>
	TOTAL	41.5
Dogs	$80 \times 900 \text{ cal.} \times 183 \text{ days} =$	<u>13.2</u>
	TOTAL	<u>54.7</u>

SUMMER CALORIC NEEDS: Fat

		<u>10^6 Calories</u>
Adult Men	$47 \times 1,050 \text{ cal.} \times 183 \text{ days} =$	9.0
Adult Women	$44 \times 875 \text{ cal.} \times 183 \text{ days} =$	7.0
Children	$49 \times 700 \text{ cal.} \times 183 \text{ days} =$	<u>6.3</u>
	TOTAL	22.3
Dogs	$80 \times 900 \text{ cal.} \times 183 \text{ days} =$	<u>13.2</u>
	TOTAL	<u>35.5</u>

NAUPAKTOMIUT

SUMMER: Inland

8 households: 19 adult men
 17 adult women
 20 children
 56 Total

Dogs: assumption 4 dogs per household = $4 \times 8 = 32$

SUMMER CALORIC NEEDS: Protein and Carbohydrate

		<u>10^6 Calories</u>
Adult Men	$19 \times 1,950 \text{ cal.} \times 183 \text{ days} =$	6.8
Adult Women	$17 \times 1,625 \text{ cal.} \times 183 \text{ days} =$	5.0
Children	$20 \times 1,300 \text{ cal.} \times 183 \text{ days} =$	4.7
	TOTAL	<u>16.5</u>
Dogs	$32 \times 1,600 \text{ cal.} \times 183 \text{ days} =$	9.4
	TOTAL	<u>25.9</u>

SUMMER CALORIC NEEDS: Fat

Adult Men	$19 \times 1,050 \text{ cal.} \times 183 \text{ days} =$	3.6
Adult Women	$17 \times 875 \text{ cal.} \times 183 \text{ days} =$	2.7
Children	$20 \times 700 \text{ cal.} \times 183 \text{ days} =$	2.6
	TOTAL	<u>8.9</u>
Dogs	$32 \times 200 \text{ cal.} \times 183 \text{ days} =$	1.2
	TOTAL	<u>10.1</u>

NOATAGMIUT, 1850

135 households:	319 adult men
	295 adult women
	<u>331 children</u>
	<u>945 Total</u>

ANNUAL CALORIC NEEDS: Protein and Carbohydrate

		<u>10⁶ Calories</u>
Adult Men	319 x 1,950 cal. x 365 days =	277.0
Adult Women	295 x 1,625 cal. x 365 days =	175.0
Children	331 x 1,300 cal. x 365 days =	157.1
		<hr/>
	TOTAL	609.1
		<hr/> <hr/>

ANNUAL CALORIC NEEDS: Fat

		<u>10⁶ Calories</u>
Adult Men	319 x 1,050 cal. x 365 days =	122.2
Adult Women	295 x 875 cal. x 365 days =	94.2
Children	331 x 700 cal. x 365 days =	84.6
		<hr/>
	TOTAL	301.0
		<hr/> <hr/>

	<u>10⁶ Calories</u>
Total Protein and Carbohydrate	609.1
Total Fat	301.0
	<hr/>
TOTAL ALL CALORIES	910.1
	<hr/> <hr/>

NOATAGMIUT, Dogs, 1850

Assumption: 4 dogs per household = $4 \times 135 = 540$

WINTER CALORIC NEEDS: Protein

		<u>10^6 Calories</u>
Dogs	$540 \times 1,600 \text{ cal.} \times 240 \text{ days} =$	207.7

WINTER CALORIC NEEDS: Fat

Dogs	$540 \times 200 \text{ cal.} \times 240 \text{ days} =$	25.9
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SUMMER CALORIC NEEDS: Protein

Dogs	$540 \times 900 \text{ cal.} \times 125 \text{ days} =$	60.7
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SUMMER CALORIC NEEDS: Fat

Dogs	$540 \times 900 \text{ cal.} \times 125 \text{ days} =$	60.7
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Total Protein	268.1
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Total Fat	86.6
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TOTAL ALL CALORIES	354.7
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NOATAGMIUT

WINTER: Inland

135 households: 319 adult men
 295 adult women
 331 children
 945 Total

Dogs: assumption 4 dogs per household = $4 \times 135 = 540$

WINTER CALORIC NEEDS: Protein and Carbohydrate

			<u>10^6 Calories</u>
Adult Men	$319 \times 1,950 \text{ cal.} \times 240 \text{ days} =$		149.3
Adult Women	$295 \times 1,625 \text{ cal.} \times 240 \text{ days} =$		115.1
Children	$331 \times 1,300 \text{ cal.} \times 240 \text{ days} =$		103.3
TOTAL			<u>367.7</u>
Dogs	$540 \times 1,600 \text{ cal.} \times 240 \text{ days} =$		207.4
TOTAL			<u>575.1</u>

WINTER CALORIC NEEDS: Fat

			<u>10^6 Calories</u>
Adult Men	$319 \times 1,050 \text{ cal.} \times 240 \text{ days} =$		80.4
Adult Women	$295 \times 875 \text{ cal.} \times 240 \text{ days} =$		61.9
Children	$331 \times 700 \text{ cal.} \times 240 \text{ days} =$		55.6
TOTAL			<u>197.9</u>
Dogs	$540 \times 200 \text{ cal.} \times 240 \text{ days} =$		25.9
TOTAL			<u>223.8</u>

NOATAGMIUT

SUMMER: Sheshalik

80 households: 189 adult men
 175 adult women
 196 children
 560 Total

Dogs: assumption 4 dogs per household = 4 x 80 = 320

SUMMER CALORIC NEEDS: Protein and Carbohydrate

		<u>10⁶ Calories</u>
Adult Men	189 x 1,950 cal. x 125 days =	46.1
Adult Women	175 x 1,625 cal. x 125 days =	35.5
Children	196 x 1,300 cal. x 125 days =	31.8
	TOTAL	<u>113.4</u>
Dogs	320 x 900 cal. x 125 days =	36.0
	TOTAL	<u>149.4</u>

SUMMER CALORIC NEEDS: Fat

		<u>10⁶ Calories</u>
Adult Men	189 x 1,050 cal. x 125 days =	24.8
Adult Women	175 x 875 cal. x 125 days =	19.1
Children	196 x 700 cal. x 125 days =	17.2
	TOTAL	<u>61.1</u>
Dogs	320 x 900 cal. x 125 days =	36.0
	TOTAL	<u>97.1</u>

NOATAGMIUT

SUMMER: Nirlik, Piknik, Point Barrow

30 households:	71 adult men
	65 adult women
	<u>74 children</u>
	<u>210 Total</u>

Dogs: assumption 4 dogs per household = $4 \times 30 = 120$

SUMMER CALORIC NEEDS: Protein and Carbohydrate

		<u>10^6 Calories</u>
Adult Men	$71 \times 1,950 \text{ cal.} \times 125 \text{ days} =$	17.3
Adult Women	$65 \times 1,625 \text{ cal.} \times 125 \text{ days} =$	13.2
Children	$74 \times 1,300 \text{ cal.} \times 125 \text{ days} =$	12.0
	TOTAL	<u>42.5</u>
Dogs	$120 \times 1,600 \text{ cal.} \times 125 \text{ days} =$	24.0
	TOTAL	<u>66.5</u>

SUMMER CALORIC NEEDS: Fat

		<u>10^6 Calories</u>
Adult Men	$71 \times 1,050 \text{ cal.} \times 125 \text{ days} =$	9.3
Adult Women	$65 \times 875 \text{ cal.} \times 125 \text{ days} =$	7.1
Children	$74 \times 700 \text{ cal.} \times 125 \text{ days} =$	6.5
	TOTAL	<u>22.9</u>
Dogs	$120 \times 200 \text{ cal.} \times 125 \text{ days} =$	3.0
	TOTAL	<u>25.9</u>

NOATAGMIUT

SUMMER: Inland

25 households: 59 adult men
 55 adult women
 61 children
 175 Total

Dogs: assumption 4 dogs per household = $4 \times 25 = 100$

SUMMER CALORIC NEEDS: Protein and Carbohydrate

		<u>10⁶Calories</u>
Adult Men	$59 \times 1,950 \text{ cal.} \times 125 \text{ days} =$	14.4
Adult Women	$55 \times 1,625 \text{ cal.} \times 125 \text{ days} =$	11.2
Children	$61 \times 1,300 \text{ cal.} \times 125 \text{ days} =$	9.9
	TOTAL	<u>35.5</u>
Dogs	$100 \times 1,600 \text{ cal.} \times 125 \text{ days} =$	20.0
	TOTAL	<u>55.5</u>

SUMMER CALORIC NEEDS: Fat

		<u>10⁶ Calories</u>
Adult Men	$59 \times 1,050 \text{ cal.} \times 125 \text{ days} =$	7.7
Adult Women	$55 \times 875 \text{ cal.} \times 125 \text{ days} =$	6.0
Children	$61 \times 700 \text{ cal.} \times 125 \text{ days} =$	5.3
	TOTAL	<u>19.0</u>
Dogs	$100 \times 200 \text{ cal.} \times 125 \text{ days} =$	2.5
	TOTAL	<u>21.5</u>

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PRO	Public Records Office, London.
Adm.	Admiralty files of the Public Records Office, London.
CHS	The Church Historical Society (Episcopal), Austin, Texas.
BM	British Museum, London.
SP	Scott Polar Research Institute, Cambridge.
BB	<u>Blue Books</u> , the British Parliamentary Papers on Arctic Expeditions. Great Britain, Parliament, House of Commons. Sessional Papers, Accounts and Papers. (For further reference, see: <u>Arctic Bibliography</u> , Vol. 8, 1959, Nos. 45212 to 45257).

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