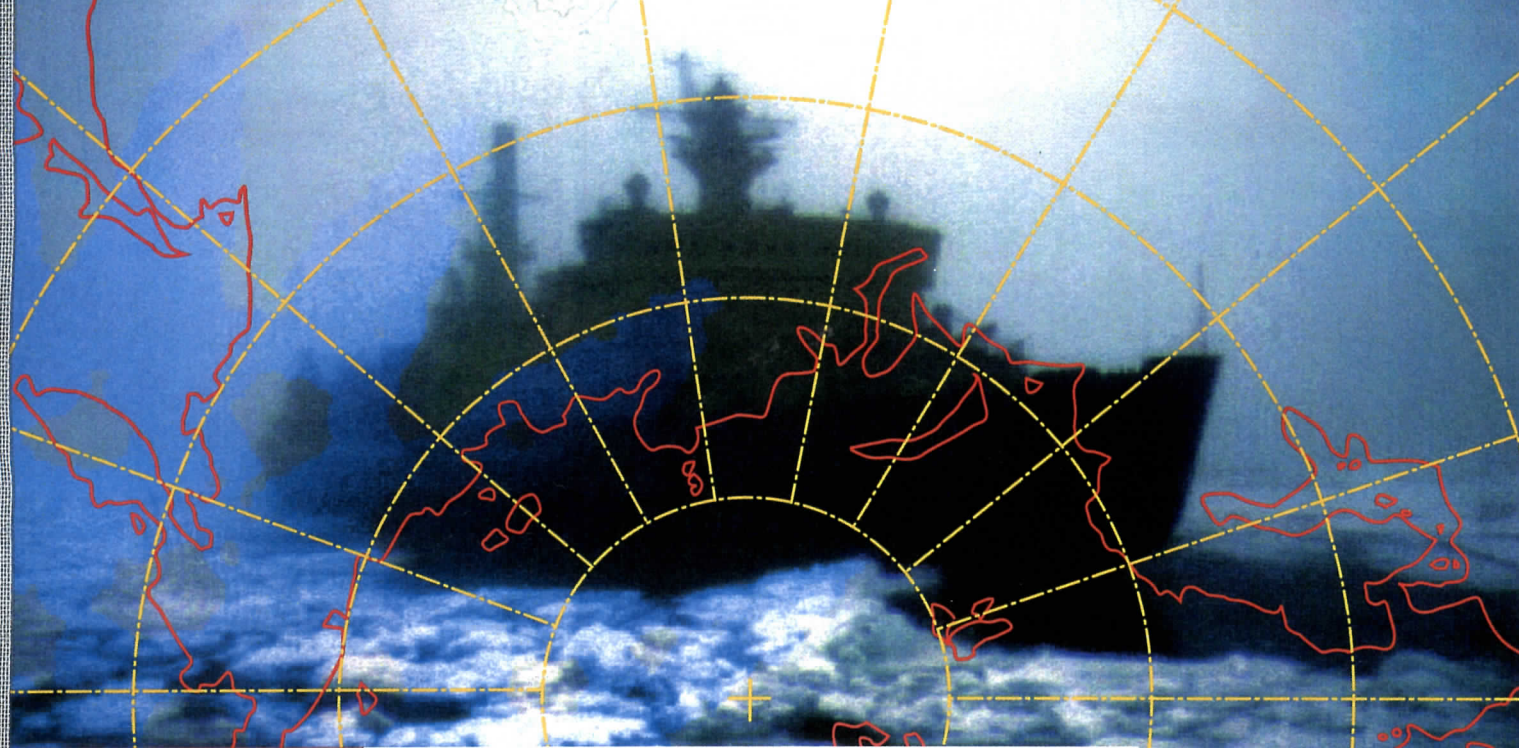


INSROP WORKING PAPER
NO. 28 - 1996, IV.1.1

Historical and Current Uses of the Northern Sea Route: Part I

Terence Armstrong

INSROP International Northern Sea Route Programme

Central Marine Research & Design Institute, Russia

The Fridtjof Nansen Institute, Norway

Ship and Ocean Foundation, Japan

International Northern Sea Route Programme (INSROP)

Central Marine Research & Design Institute, Russia

The Fridtjof Nansen Institute, Norway

Ship & Ocean Foundation, Japan

INSROP WORKING PAPER NO. 28-1996

Sub-programme IV: Political, Legal and Strategic Factors.

Project IV.1.1: Historical and Current Uses of the Northern Sea Route: Part I.

By Dr. Terence Armstrong
Scott Polar Research Institute
University of Cambridge
Lensfield Road
Cambridge, CB2 1ER
UNITED KINGDOM

Date: 4 January 1996.

Reviewed by:
Prof. William Barr, Department of Geography, University of Saskatchewan, USA.

What is an INSROP Working Paper and how to handle it:

This publication forms part of a Working Paper series from the **International Northern Sea Route Programme - INSROP**. This Working Paper has been evaluated by a reviewer and can be circulated for comments both within and outside the INSROP team, as well as be published in parallel by the researching institution. A Working Paper will in some cases be the final documentation of a technical part of a project, and it can also sometimes be published as part of a more comprehensive INSROP Report. For any comments, please contact the authors of this Working Paper.

FOREWORD - INSROP WORKING PAPER

INSROP is a five-year multidisciplinary and multilateral research programme, the main phase of which commenced in June 1993. The three principal cooperating partners are **Central Marine Research & Design Institute (CNIIMF)**, St. Petersburg, Russia; **Ship and Ocean Foundation (SOF)**, Tokyo, Japan; and **Fridtjof Nansen Institute (FNI)**, Lysaker, Norway. The INSROP Secretariat is shared between CNIIMF and FNI and is located at FNI.

INSROP is split into four main projects: 1) Natural Conditions and Ice Navigation; 2) Environmental Factors; 3) Trade and Commercial Shipping Aspects of the NSR; and 4) Political, Legal and Strategic Factors. The aim of INSROP is to build up a knowledge base adequate to provide a foundation for long-term planning and decision-making by state agencies as well as private companies etc., for purposes of promoting rational decisionmaking concerning the use of the Northern Sea Route for transit and regional development.

INSROP is a direct result of the normalization of the international situation and the Murmansk initiatives of the former Soviet Union in 1987, when the readiness of the USSR to open the NSR for international shipping was officially declared. The Murmansk Initiatives enabled the continuation, expansion and intensification of traditional collaboration between the states in the Arctic, including safety and efficiency of shipping. Russia, being the successor state to the USSR, supports the Murmansk Initiatives. The initiatives stimulated contact and cooperation between CNIIMF and FNI in 1988 and resulted in a pilot study of the NSR in 1991. In 1992 SOF entered INSROP as a third partner on an equal basis with CNIIMF and FNI.

The complete series of publications may be obtained from the Fridtjof Nansen Institute.

SPONSORS FOR INSROP

- Nippon Foundation/Ship & Ocean Foundation, Japan
- The government of the Russian Federation
- The Norwegian Research Council
- The Norwegian Ministry of Foreign Affairs
- The Norwegian Ministry of Industry and Energy
- The Norwegian Ministry of the Environment
- State Industry and Regional Development Fund, Norway
- Norsk Hydro
- Norwegian Federation of Shipowners
- Fridtjof Nansen Institute
- Kværner a.s.

PROFESSIONAL ORGANISATIONS PERMANENTLY ATTACHED TO INSROP

- Ship & Ocean Foundation, Japan
- Central Marine Research & Design Institute, Russia
- Fridtjof Nansen Institute, Norway
- National Institute of Polar Research, Japan
- Ship Research Institute, Japan
- Murmansk Shipping Company, Russia
- Northern Sea Route Administration, Russia
- Arctic & Antarctic Research Institute, Russia
- ARTEC, Norway
- Norwegian Polar Research Institute
- Norwegian School of Economics and Business Administration
- SINTEF NHL (Foundation for Scientific and Industrial Research - Norwegian Hydrotechnical Laboratory), Norway.

PROGRAMME COORDINATORS

- **Yuri Ivanov, CNIIMF**
  Kavalergardskaya Str.6
  St. Petersburg 193015, Russia
  Tel: 7 812 271 5633
  Fax: 7 812 274 3864
  Telex: 12 14 58 CNIMF SU
- **Willy Østreng, FNI**
  P.O. Box 326
  N-1324 Lysaker, Norway
  Tel: 47 67 53 89 12
  Fax: 47 67 12 50 47
  Telex: 79 965 nanse n
  E-mail: Elin.Dragland @fni.
  wpoffice.telemax.no
- **Masaru Sakuma, SOF**
  Senpaku Shinko Building
  15-16 Toranomon 1-chome
  Minato-ku, Tokyo 105, Japan
  Tel: 81 3 3502 2371
  Fax: 81 3 3502 2033
  Telex: J 23704

INSROP PROJECT IV.1.1.

HISTORICAL AND CURRENT USES OF THE NORTHERN SEA ROUTE

PART I

INTRODUCTION

This report covers the history of the Northern Sea Route from the 16th century until the 1990s, and is based on a great amount of sources, both secondary and primary. The report will hopefully meet the demand for information and documentation of the history of the Northern Sea Route in a wide sense: its exploration and use through the ages, the contribution of different nations to its exploration and exploitation, political consolidation of the area under the old Russian regime and the use of the Northern Sea Route by the Soviets to motivate their claim to sovereignty over adjacent territories and islands in the Arctic Ocean. In order to bring the report in line with the general INSROP research programme, each of the four authors has tried, as far as possible, to stick to the following scheme of investigation:

1) development of exploration and cartography,
2) economic significance of the Northern Sea Route
3) the Northern Sea Route in international law,
4) security policy considerations on the part of Russia/SU and adjacent countries,
5) development of technology and logistics
6) evolution of ecological thought concerning the Northern Sea Route.

However, since the 16th and 17th century saw little activity, several of the headings of the scheme do not apply here. Even in the 18th and 19th century some of the headings may seem anachronistic. The Northern Sea Route for the purposes of the INSROP programme is defined as the network of shipping lanes between Murmansk and the entrances to the Kara Sea in the west and Bering Strait in the east. Therefore we will not be concerned with the shipping lanes running westwards out of Murmansk or the White Sea, nor with those crossing the Bering Sea or the Sea of Okhotsk. Neither will the report be directly concerned with the development of river transportation, some aspects of which are complementary to sea transport. This usage is essentially the same as the Northeast Passage, an older term which excludes the Pacific leg of the route. Russians tend to regard this as the 'northabout' route between the eastern and western extremities of their vast territories - an attitude which geography forbids any other country to share.

A purely geographical definition of the Northern Sea Route may still seem too narrow for history writing. For our purposes it seems appropriate to define the Northern Sea Route as "the sea route between Europe and Asia to the North of the Eurasian continent", dividing it into three branches; 1) a northern sea route between Western Europe and Eastern Asia, 2) a northern sea route between Western Europe and the Asian part of Russia, 3) a northern sea route between the European and Asian part of Russia. We try to draw a clear dividing line between these three aspects of the Northern Sea Route.

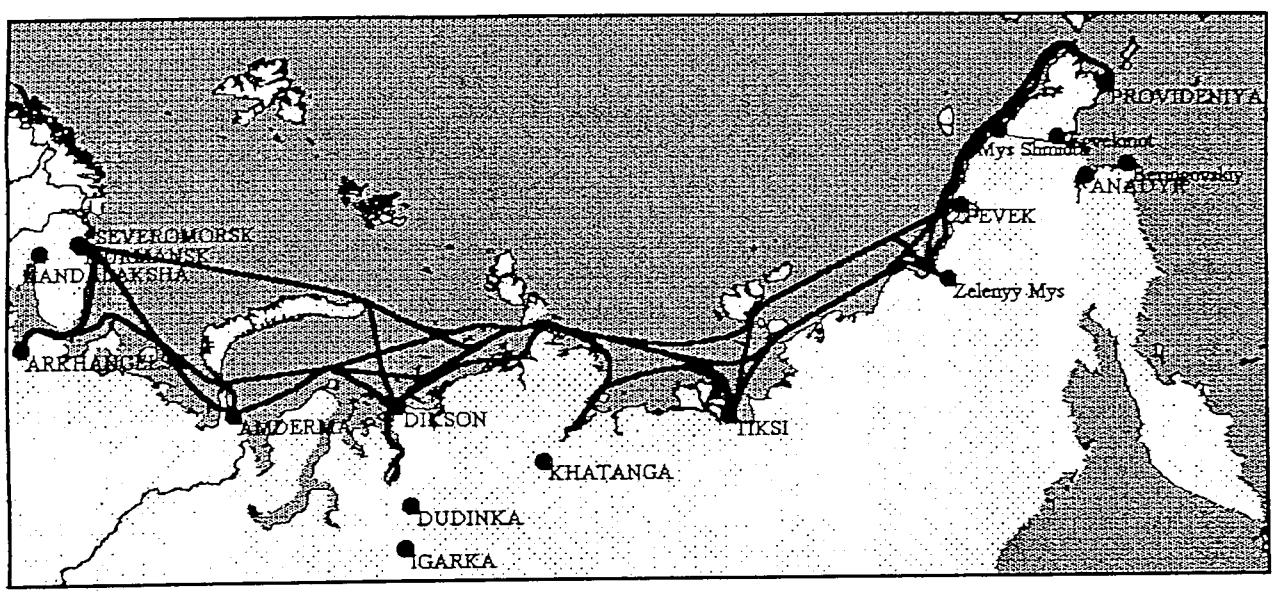
In relation to the rather voluminous Soviet literature on

the Northern Sea Route (V.Yu. Vize, M.I. Belov, D.M. Pinkhenson, V.M. Pasetskiy), which is written from a strictly Soviet point of view and occupied with emphasizing the Russian and Soviet achievements, our point of departure will be the post cold war international climate of the 1990s. It is our aim to surmount the national contradictions and the national bias of the some of the existing literature and its connections to the polar traditions of the respective countries, pay due attention to and consult literature and archival materials from all countries concerned. The team of authors do reflect this intention. It consists of four authors, from Russia, Great Britain, the Netherlands and Norway respectively, four countries which have been active in the development of the NSR through the ages.

The first part (history to 1743) is written by Terence Armstrong, former Reader in Arctic Studies at Scott Polar Research Institute, author of numerous works on Northern Russia, Soviet activity in the Arctic and the Northern Sea Route. The second part (1743-1855) is written by Dr Edwin Okhuizen, Department of cartography at the University of Utrecht, a specialist on the history and cartography of the NSR. The third part is written by professor Jens Petter Nielsen, University of Tromsø, a specialist in Russian history and Norwegian-Russian historical relations in the 19th and early 20th century. The fourth part is written by Vladimir Nikolayevich Bulatov, professor and director of the Pomor International University of Archangel. In 1990 Bulatov defended his doctoral dissertation on the theme, "The History of the Opening up of the Soviet Arctic and the Northern Sea Route during the period 1917-1980".

It has been our intention to produce an easily accessible report that will appeal to a broad circle of readers. The report is being published in four parts. The first to appear is that of Terence Armstrong.

Jens Petter Nielsen
Supervisor of INSROP project IV.1.1.



The Northern Sea Route.

HISTORY TO 1743

TERENCE ARMSTRONG

Table of contents

1.1 Exploration and cartography

It is impossible to say just when boats were first used in these waters, for it was certainly long before any written accounts became available. But there is archaeological evidence of human activity on shore in the Stone Age, many millennia before our era. One such centre was in the Kola region, where the evidence indicates a population based on a maritime culture flourishing in the 7th to 6th millennium BC. One may guess, however, that its interests and connections were in the west, towards Norway, rather than towards our present area of interest, where the climate is more severe, and that navigation will have been confined to a narrow coastal strip. Similar traces have been found at a number of points farther east, particularly at the mouths of the big rivers, relating to three or four millennia later, so human influences came gradually to be felt in the north. The extent to which the sea was used cannot be determined, but it must surely have been significant, especially in the west. Ochther, or Ottar, the Norse seafarer who appeared at the court of King Alfred the Great of England around 880 AD, evidently traversed parts of the Barents and Norwegian Seas, but we do not know his exact course. The first recorded voyage to the east of the White Sea was accomplished in 1032 by a group from the Severnaya Dvina led by Uleb. This group apparently reached the southern straits joining the Barents and Kara Seas (Karskiye Vorota and Yugorskiy Shar) but was unable to pass through them. They constituted a barrier which was to block the progress of many seafarers over the course of the next centuries.

Mentions of the north and its natural history occur with growing frequency in the chronicles of the peoples who had travelled there, and the idea of its having economic value became significant. Not only were the products of the region seen as likely sources of wealth, but the route itself might have great value.That was giving a world view, and one likely to appeal to a trading nation. One of the first to see the potentialities of a route in the far north was Robert Thorne, a Bristol merchant who had lived in Spain. In a letter to his government via the English ambassador in 1527, he pointed out (what he well knew) that Spain had discovered 'all the Indies and Seas Occidental', and Portugal 'all the Indies and Seas Oriental', so that 'now rest to be discouered the said north partes'.

A leading figure in the political and economic life of Moscow (in the second half of the fifteenth century Moscow had replaced Novgorod as the dominant state in European Russia), Dmitriy Gerasimov, became interested in the possible use of the river Ob as a route to China. A current belief was that the Ob rose in a lake on the far shore of which stood Kambukta, the capital of China, and Gerasimov produced a map showing this (long lost, but its substance was repeated in a map of the same date by the Italian geographer Battista Agnese). What might have inspired the idea of the lake could be Baykal, which is connected by river to the Yenisey, a river system parallel to the Ob but 800 km to the east. At all events the sea route to China did not lie in that direction, although the land route did, and this would have been known to Gerasimov.

The shipping possibilities offered by the north were

recognised by another influential Muscovite at about the same time - Grigoriy Istoma. He was sent by Tsar Ivan III on an embassy to Denmark in 1496, and he sailed westwards out of the Severnaya Dvina to round Scandinavia from the north. A return voyage by the same route was made the next year. This and other voyages by the same route were occasioned by the hostile presence of Sweden in the Baltic. But they did not, because they did not need to, venture eastwards out of the White Sea.

But from the 15th century Moscow did begin to take an interest in the lands to the east. The attraction was the hunt for the fur-bearing animals, especially sable, that lived in the northern forest, and this meant the hunt for the natives, from whom a fur tribute was exacted. This motivation for exploration was to continue for a very long time, and the value of Russian fur remained high. Depletion of the stock in one area led to the need to move on to another, so there was a direct connection between exploration and economy. It was at this juncture that written sources from western Europe begin to throw light on Russian activities in the north. For these we are indebted to Richard Hakluyt and Samuel Purchas, two editors and publishers of Elizabethan England.(1) They collected travellers' tales from many parts of the world, edited them carefully, and made them available to the English-speaking reader. The resulting shelf-full of volumes are a mine of information, much of which would have been lost if it had not been included in these collections.

In the first edition (1589) of his great book, *The Principall Navigations, Voiages and Discoveries of the English Nation* Hakluyt included sixteen separate items concerned with the

northern voyages, and for the second edition (1598-1600) he added five and trimmed or cut three. The first of the English voyages he lists was that led by Sir Hugh Willoughby, a professional soldier, and Richard Chancellor, a merchant. They set out in 1553 in the *Bona Esperanza,* the *Edward Bonaventure,* and the *Bona Confidentia*, aiming to circumnavigate Scandinavia from the north. Willoughby sighted what was almost certainly the southwest corner of Novaya Zemlya, but returned to the Kola peninsula, where he wintered, and all 70 on board died. But Chancellor, with the other ships, entered the Bay of St Nicholas, as the White Sea was then called, and reached the mouth of the Severnaya Dvina. Thence he proceeded overland to Moscow, where he established trading relations with Tsar Ivan IV, and duly returned to England by the same route. The account was borrowed by Hakluyt from Clement Adams, who had published it 35 years before, so it must have been familiar to many of the later readers. Most of the other items on this topic came from unpublished sources, and in particular the Muscovy Company, a London trading group formed in 1555 and the major sponsor of these voyages.

Chancellor's success in establishing contact with the government in Moscow, and the publicity provided by Hakluyt, gave the impression to many that these English voyages constituted the 'discovery' of Russia by the west. This of course was not so. The Muscovy Company, however, exploited Chancellor's success by sending out many more voyages; notably one led by Stephen Burrough, who had sailed with Chancellor, in 1556. These voyages encountered many Russian fishing boats in what is now the White Sea and the southeast corner of the Barents Sea. On the way back

one of the ships, which was carrying Chancellor, was wrecked on the Scottish coast and Chancellor was drowned - a most unfortunate event which surely delayed further advance to the eastward. The burgeoning Russian trade switched direction to the southeast, where the journeys of another remarkable English traveller, Anthony Jenkinson, were opening up new trading territory round the Caspian Sea. This traffic still used the White Sea, but followed the Severnaya Dvina and the Volga southwards.

But the north, and the possibilities it was thought to offer, was not forgotten. A commission to explore eastwards from the Pechora was given to James Bassendine in 1568. In 1580 a voyage was planned 'for discourie of Cathay', and two ships, the *George* and the *William*, were placed under the command of Arthur Pet and Charles Jackman. The instruction given was to sail to the land seen by Willoughby in 1553, to sail on to Vaygach, and thence eastward to the Ob, and, crossing its mouth, continue 'until you come to the countrey of Cathay'. The land on the right as they went eastwards was called Samoeda, for earlier English voyages had correctly determined that this was the territory of the dominant people in the area, the Samoyeds (now known as Nentsy). It was hoped that a navigable seaway might be found between 70 and 80 degrees north latitude - a contention that was much later proved correct.

Indeed, there was considerable optimism, in London, about the possibility of continuing to explore eastwards for a second season; perhaps ascending the Ob in doing so. But, so far as we know, none of these voyages got farther than the straits leading

into the Kara Sea. Pet and Jackman did no better than the others. The two ships were separated and never met again. The *William* ultimately got back to England; but the *George*, after wintering on the coast of Norway, set off westwards and was lost. Of the fate of James Bassendine nothing is known. Some believe he was never able to start at all.

Richard Hakluyt died in 1616, but his work was carried on by Samuel Purchas, another priest. Purchas called his book, which was even longer than Hakluyt's, *Hakluythus posthumus*, and it appeared in 1625. Much of Purchas' material he obtained from Hakluyt, as Purchas acknowledges, but the two men were not on good terms, it seems, at least for the last two years of Hakluyt's life. Some new material was added on northeastern voyages: the most important being the account by Gerrit de Veer of Willem Barents' three expeditions to Novaya Zemlya in 1594, 1595, and 1596-97.(2) The third of these included a sighting of Svalbard and an enforced wintering near the northern tip of the north island of Novaya Zemlya. Barents' main objective, to further the search for a way through to China, was commercially motivated; but commercial aims on the spot were subsidiary. The account is one of the best in polar literature, with adventure, drama, and a tragic yet successful outcome. As far as the search for a northeast passage was concerned, Barents can only be said to have demonstrated the impossibility of making further progress without technological advances in the design and powering of ships. Barents' wintering station was discovered by the Norwegian sealing captain Elling Carlsen in 1871 and it was subjected to detailed archaeological study. Barents' ship, which had been

anchored offshore, was not found at that time. Archaeological surveys of the site of Barents' house were carried out in 1933, 1977-80 and 1992: Only the bottom tier of timbers remains on the site. The remains of Barents' ship were found by members of the Dolphin souba-diving club of Moscow in 1989.

The Dutch of Barents' time had not forgotten about the economic aspects of Arctic exploration. Olivier Brunel, a merchant from Antwerp, was interested in developing trade links with the lower Ob region, which he visited twice in 1577-80.(3) He allied himself with another very active trader from the Low Countries, Balthazar de Moucheron, and in 1584 visited the mouth of the Pechora river and the southwest coast of Novaya Zemlya. Once again the idea of forcing a way through to China was given currency, but again to no purpose. Dutchmen continued to take an interest in northern exploration: one may mention in particular certain scholars and diplomats, such as Isaac Massa, firstly a merchant, secondly a diplomat, who was active at the beginning of the seventeenth century; he had a special interest in maps, of which he obtained several in Muscovy (they were normally high security objects). Massa's map of 1611 (see fig. 3) is one of the first to show the estuary of the Ob and the Yamal peninsula with portage routes across it.

Purchas tells of the activities of English traders on the Pechora river by agents of the Muscovy Company in 1611-15. They got no further east than Pustozersk on that river, but they learned of various Russian journeys and plans. In particular they heard of the apparent shipwreck of an English vessel at the mouth of the Ob in 1584. This seems not to have been a Muscovy Company

ship, and its identity remains a mystery. But this is not very surprising, for it is believed that up to ten English ships traded into these waters every year. The atmosphere, moreover, seems to have been friendly, with Russian fishermen quite willing to help visitors from the west who were new to the area.

In Moscow, however, all this foreign interest in the northern seas and coasts was seen as dangerous. Mangazeya, a Russian stronghold on the Taz (a right tributary of the lower Ob) was set up in the late sixteenth century as a base for the fur trade, and connection with it was primarily by sea.(4) Its vulnerability caused the government in 1619 to prohibit use of this sea route. This was a hard blow for Mangazeya, which went into a decline. How real the threat was is hard to determine. It is true that a plan was being hatched in the England of James I to invade and indeed annex the territory. It is interesting to consider what might have happened if there had not been any prohibition. The English might have been successful in penetrating further eastwards, using their navigational skills. But on the other hand their almost total lack of experience in ice navigation would have told strongly against them. The Dutch might have made a better showing than the English if more leaders like Barents could have been found.

The Arctic seas continued to attract explorers. Henry Hudson, a Londoner, made four voyages to the Arctic, of which the first two were to the northeast. In 1607 he tried to find a way round Svalbard and a route to the northeast via the Pole; but he could not proceed farther than the west coast of Svalbard. In 1608 he headed further east and explored the west coast of Novaya

Zemlya. The following year he started in the same direction but was obliged to turn west, where he sailed down the east coast of North America as far as Virginia. The Hudson river bears his name. For this voyage the Dutch East India Company were his sponsors. And then on the fourth, again to the northwest, his crew mutinied and he, together with eight crew members loyal to him and his young son, were cast loose in an open boat and never seen again. These were remarkable voyages, but made no progress eastwards.

A truly scholarly figure, much more than Massa, exercised strong influence in the seventeenth century and later: Nicolaes Witsen, one of the burgomasters of Amsterdam. Witsen wrote a very long book, 'Noord en Oost Tartarye', first published in 1692, which was in some sense a counterpart to Hakluyt and Purchas - indeed, repeating quite a lot of their material, but dealing for the greater part only with north Asia. It is significant that the book was reprinted i 1705 in an enlarged and improved edition, and then once more reprinted in 1785. Almost alone among the geographical treatises of the time, Witsen's book has never appeared in English or any other language.

The English themselves were much less active in these waters than they had been. Although they had been involved in whaling around Svalbard, there was only one significant English voyage of Arctic exploration in the seventeenth century, and that was a naval voyage commanded by Captain John Wood in 1676. Its results were not spectacular, and it is generally dismissed with some scorn, but it achieved some exploration of the west coast of Novaya Zemlya and produced the first description of

permafrost. Wood's ship was wrecked on Novaya Zemlya, but his consort, commanded by Captain Flawes, rescued the men on board and all returned safely.

1.2 Russian coastal exploration

Meanwhile the Russians were pushing eastwards - not by sea, however, but by rivers and overland. The start of this movement is generally taken to be 1581, when the cossack warrior Yermak Timofeyevich attached himself to the powerful Stroganov family and initiated a campaign against the Tatars of the Ob-Irtysh basin. This was successful, and although Yermak himself was killed in 1585, the initial impetus was given to an eastward advance which was to continue right across the continent and even over the North Pacific into Alaska. Although the main thrust of the advance was far to the south of the Northeast Passage, the use of the river system led to access to the sea at many points, and to the use, as we shall see, of coastal waters. The rest of this chapter is concerned with how this advance was conducted.

The Russian advance overland, across Siberia, tended to follow the river system, and proceeded at a remarkably fast pace. The continent was spanned, from the Urals to the Pacific, in little more than half a century (1581 - 1641). The motivation was the search for fur, fur being very commonly used for clothing, but also being the currency in which an important tax was paid - *yasak,* the fur tribute. The speed of advance was brought about by the rapid depletion of the stocks of fur-bearers and the consequent need to press on and find more. The advance,

furthermore, generally followed a rather northerly course, because the animals required a northern environment, and the hunters had to follow them. Their route therefore was not so far from the sea.

The first wave of advance took place in the seventeenth century. The basin of the Lena was reached in about 1630, and what was to become the major settlement of the region, Yakutsk, was set up in 1632. Typical of the hunters of that time was the cossack Il'ya Perfir'yev, who set down the Lena in 1633. When he reached the delta he sent off a detachment to the west, led by the cossack Ivan Rebrov, who became the first Russian to reach the mouth of the Olenek. He stayed in the area until 1637, when he returned to the Lena. He got permission to proceed farther eastwards along the coast, and in this way reached the Yana and the Indigirka. Meanwhile others were involved as well. Yelisey Yur'yev Buza was active in the waters round the Lena delta (1636-37), where he made a number of discoveries and corrected certain misconceptions: a supposed river Lama was shown not to exist, *lama* being the word for sea in one of the local native languages. Rumours of silver deposits also circulated, and attracted the attention of the *voyevoda* at Yakutsk, Golovin; but nothing was found at this time. In 1641 another party was dispatched from the Lena to the Indigirka under the cossack Fedor Chyurka; but the leader's ship was wrecked near the mouth of the Yana (the place is still called Mys Chyurkina), and later all the rest of the party died also.

Another reason why the pioneers kept so far to the north was the fact that more southerly routes were tried but found too

difficult. This was particularly true as the eastern seaboard was approached. The drainage basins of the Lena, Yana, Indigirka, and Kolyma are separated from the Pacific by mountains which also presented serious obstacles. The trail blazer in the area was the cossack Ivan Moskvitin, who reached the shore of the Sea of Okhotsk in 1641. One may note that Russia gained an outlet to the Pacific almost a century before she reached the shores of the Baltic.

Along the north coast other groups were pushing eastwards, prominent among them cossacks and hunters from groups led by Dmitriy Zyryan and Mikhail Stadukhin. Zyryan, a pioneer of the overland route to the Indigirka, went down that river to the sea in the spring of 1642 - the first Russian to do so. He reached the river Alazeya, where he was joined by other cossack groups, led by Mikhail Stadukhin and Semen Dezhnev. They descended the Alazeya in 1643 and advanced further eastwards along the coast to the Kolyma. Thus in a decade the entire coast from the Olenek to the Kolyma, a distance of over 900 miles (1440 km) had been explored.

Traffic grew rapidly from that time on. Officialdom kept some sort of check on the advance through customs offices which issued licences. In 1645 51 were issued to parties bound for the northeast by sea. The traffic of goods was two-way: furs moved westwards, and trade goods of all descriptions - food, textiles, manufactured goods - eastwards. Among the Russians involved were many members of the large trading groups, which had experience of working in these sorts of conditions in other parts of Siberia. While Yakutsk remained the major Siberian centre from

which this activity radiated, the 'advanced base' in the 1640s was the Kolyma river. The sea route between the two - which became, of course, part of the Northern Sea Route - did not present so many problems in the seventeenth century as it did later. The shallow water offshore often created a helpful shore lead in the sea ice, and this was not usable by the bigger ships which came later. Indeed, Belov points out that the first steamer to work on the Kolyma - Lena sector appeared in 1926, and a regular service started even later.

The seventeenth century voyages we have been considering make it clear that Russian seamen became quite familiar with coastal waters of the Kara Sea and of the Laptev Sea, but it is not clear how well-informed they were about the area between. This is the massive peninsula of Taymyr - the most northerly extension of Eurasia. There are no well-documented accounts of voyages along its shores, but there is very interesting archaeological evidence pointing in the direction of significant knowledge of this area. In 1940 some pots and pans were found on Ostrov Faddeya off the northeast coast of the peninsula by a party of hydrographic surveyors. Not much attention was paid to them, because it was known that Roald Amundsen, the Norwegian explorer, had wintered hereabouts some twenty years before. Nevertheless the area was examined again the next year, and yet again in 1945 by a properly staffed archaeological party under the leading specialist A.P. Okladnikov. Many artefacts were discovered - tools, clothes, bones, coins. Detailed study of these, especially the coins, led to the conclusion that a Russian expedition had wintered here in the first quarter of the

seventeenth century, possibly the year 1617. The question is, which way along the coast were they travelling, eastwards or westwards? There are arguments in favour of both possibilities, but those pointing to an eastward journey seem to be the more persuasive. If this is correct, then one may conclude that the coast of Taymyr was known to at least some Russians in the early seventeenth century.

We may return now to the extreme eastern end of the Northern Sea Route, from the Kolyma eastwards. There was much activity there in the 1640s, and many of the persons involved were the same as those active farther west. Among these were the cossacks Mikhail Stadukhin and Semen Dezhnev. Word had reached them of the abundance of fur in the Anadyr basin, which was believed to be on their line of advance. A rather large party of 50 hunters and traders was assembled on the Kolyma on the initiative of a leading trader, Fedot Alekseyev. In 1647 they set off, with Dezhnev as their leader, in four koches. But they met too much ice, and had to return to the Kolyma. Next year they tried again, with a still larger group of six ships and 60 men. At the last minute another ship, with a crew led by Gerasim Ankudinov, decided to join them. Four ships were wrecked on the north coast of Chukotka and Ankudinov's ship was wrecked just at the entrance of what is now Bering Strait. Thus only two vessels reached the northeastern tip of Asia. They proceeded southwards through the strait - which was not recognized as a strait - and then another storm hit them, separating the ships. One, with Ankudinov and Alekseyev, was carried south by storms; they apparently never saw Dezhnev again (some believe they reached Kamchatka and stayed

there).(6)

Dezhnev reached the Anadyr that autumn, but with only 24 men out of the 90 who started from the Kolyma; and of that 24 nine died in the next weeks. The following spring he went up the Anadyr and built an *ostrog* (wooden fort) which became the focal point for Russian power in this area. Dezhnev himself remained there for ten years, and returned overland to the Kolyma in 1659. He had discovered the sea route to the Pacific Ocean without being very excited about the fact - or even aware of it. What interested him more was the abundance of walrus ivory in the Anadyr region. He was not able to write a report, for he was illiterate, but he dictated certain statements to others. These documents survived and were found in the archives at Yakutsk in 1736 by G.F.Müller, a German scholar working for the Russian government as a member of the so-called Great Northern Expedition of 1733-43. We shall consider this shortly.

The absence of any solid evidence that Russian ships had sailed along the north coast of Chukotka caused all sorts of problems later. Might there not, for instance, be a connecting land bridge linking Chukotka with Alaska at a higher latitude than any explorer had yet reached? The surviving documents on which believers that Dezhnev did go through Bering Strait in 1648 must base their case are not models of clarity, and the arguments put forward have to be teased out of the statements Dezhnev made in some other context (most of Dezhnev's messages were complaints about food, companions, the hardships he had to undergo, and about arrears of pay). The lack of clarity was such that a leading American historian, Frank Golder, writing in 1914,

believed that Dezhnev's party never passed through the strait at all, but reached Anadyr overland. But Golder's case has been effectively refuted by Raymond Fisher, a contemporary Californian historian, and few would now doubt Dezhnev's achievement.

Thus we can state with considerable confidence that the whole of the north coast of Eurasia, with the possible exception of parts of Taymyr, had been sailed along by Russian seamen before 1650; and this achievement belonged truly to Russians, insofar as indigenous peoples of the area do not appear to have played any major role. The seventeenth century Russian seamen who plied these waters had no accurate idea of what there might be to the north of their course. The double island of Novaya Zemlya had been known to them for a long time, and it seems, from cartographical evidence, that they thought it must continue across the Arctic, out of sight but constituting a rocky barrier. Resolution of this point, like so many others, had to await technological advances in transport media. But the coastal waters they did traverse were of course much better known to them.

1.3 Cartography (7)

Maps showing the westerly approaches to the Northern Sea Route began to appear in the first half of the sixteenth century. These might be either the results of fieldwork done by an expedition or the maps compiled earlier, perhaps as an aid to planning. Nations were often very secretive about maps. It is generally not known which ones were consulted or used by particular parties, but there were a number to choose from if they could be obtained.

One of them, the so-called Wied-Lyatskiy map of 1542, was compiled by the Danzig cartographer Anton Wied on the basis of material collected by the dissident Russian Ivan Lyatskiy. The pioneering English expeditions of the 1550s produced a notable contribution in the shape of William Burrough's detailed map (fig. 1) of the north coast of Scandinavia and European Russia. This Burrough was a brother of Stephen, who sailed with Chancellor in 1553.

Another Elizabethan, Anthony Jenkinson, produced a fine map after extensive travels in the Caspian region in the 1560s; although he never went east of the White Sea, his map showed the Ob and its estuary (this map was until recently known only by virtue of its reproduction in collections by Ortelius and De Jode, but a copy of the original came to light just a few years ago in Poland). Barents' expeditions in the 1590s led to publication of several maps by De Veer, mostly of the Novaya Zemlya region. Among these was a fine large-scale map of Yugorskiy Shar (fig. 2), the most southerly of the three straits leading into the Kara Sea. The best of the maps of this period, from the point of view of possible further travel eastwards, was the map of Isaac Massa of 1611 (fig. 3). It covers the north coast of Eurasia from Nordkapp to the Pyasina river, and shows in some detail the coast between. The portages across the Yamal and Gydanskiy peninsulas are clearly marked (to east and west of the Ob estuary), and, unusual for the time, Ostrov Belyy (White Island) is correctly placed off the tip of Yamal.

All the maps so far mentioned are of western origin, that is to say they were drawn by professional cartographers who had

been trained at centres of learning in western Europe under the eye of the great figures of sixteenth and seventeenth century map-making like Ortelius and Mercator. Contemporary Russian maps, though carrying much information and perfectly usable, were from a school of altogether different accomplishment, and one which exhibits a culture lag of at least a century behind the leaders. A map of this sort is that compiled by Nikolay Spafariy, a Moldavian who served as Russian ambassador to China in 1676. Its author was an assiduous collector of material, but as far as the north was concerned there was little new that was not on the well-known Godunov map of 1667 (fig. 4).

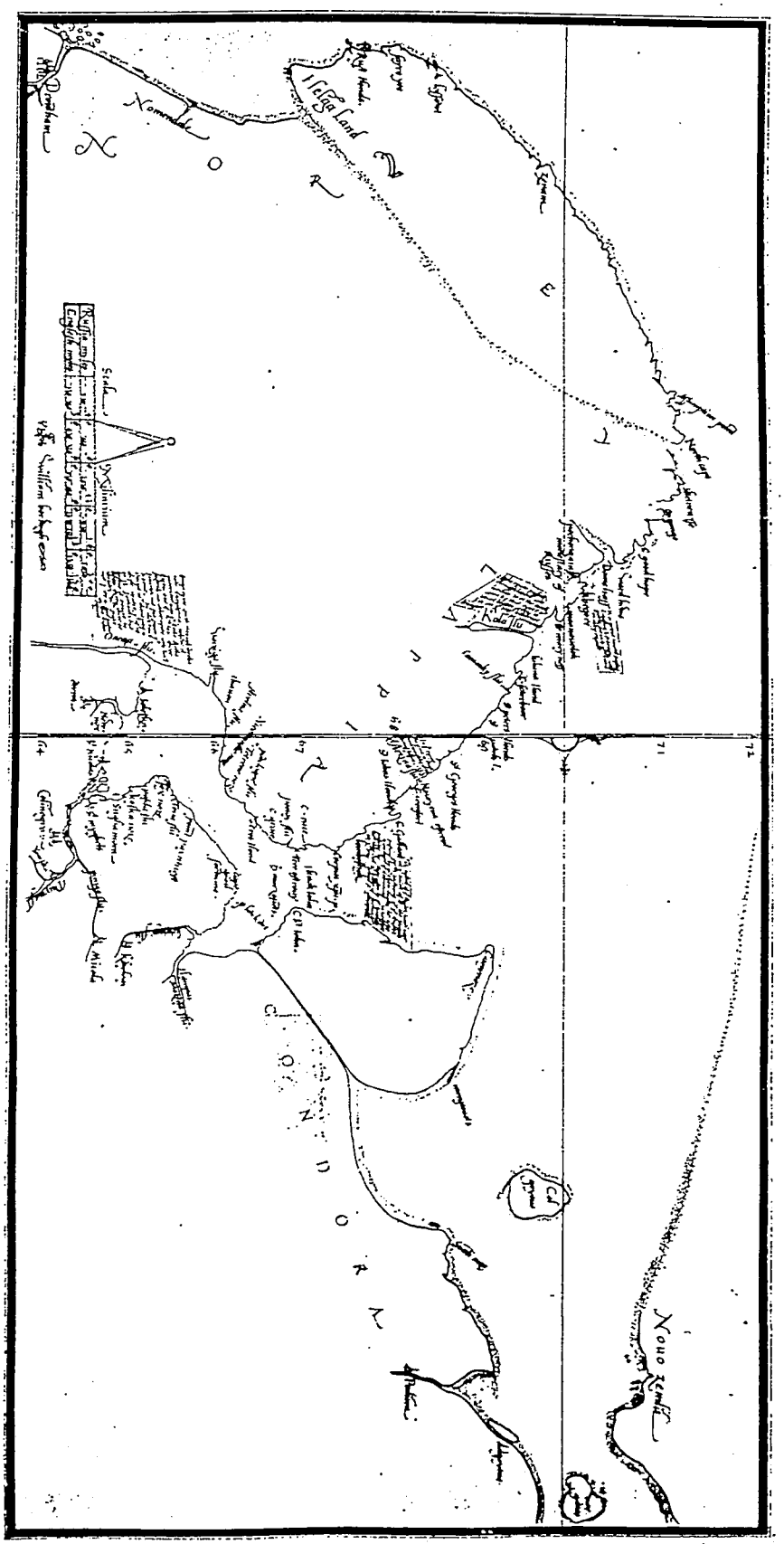


Fig.1. William Burrough's map of the north coast of Europe, 1560

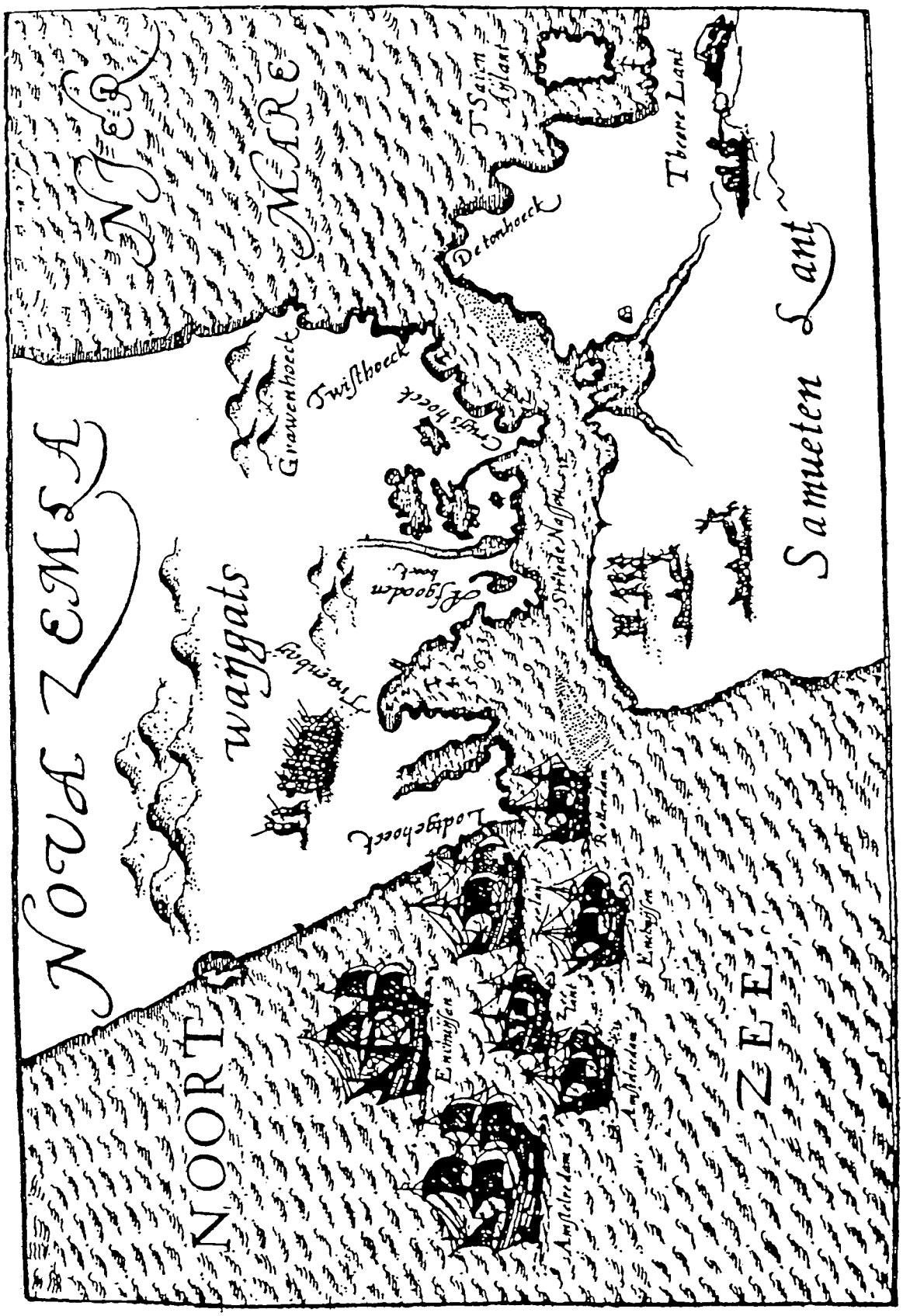


Fig.2. De Veer's map of Yugorskiy Shar, 1598

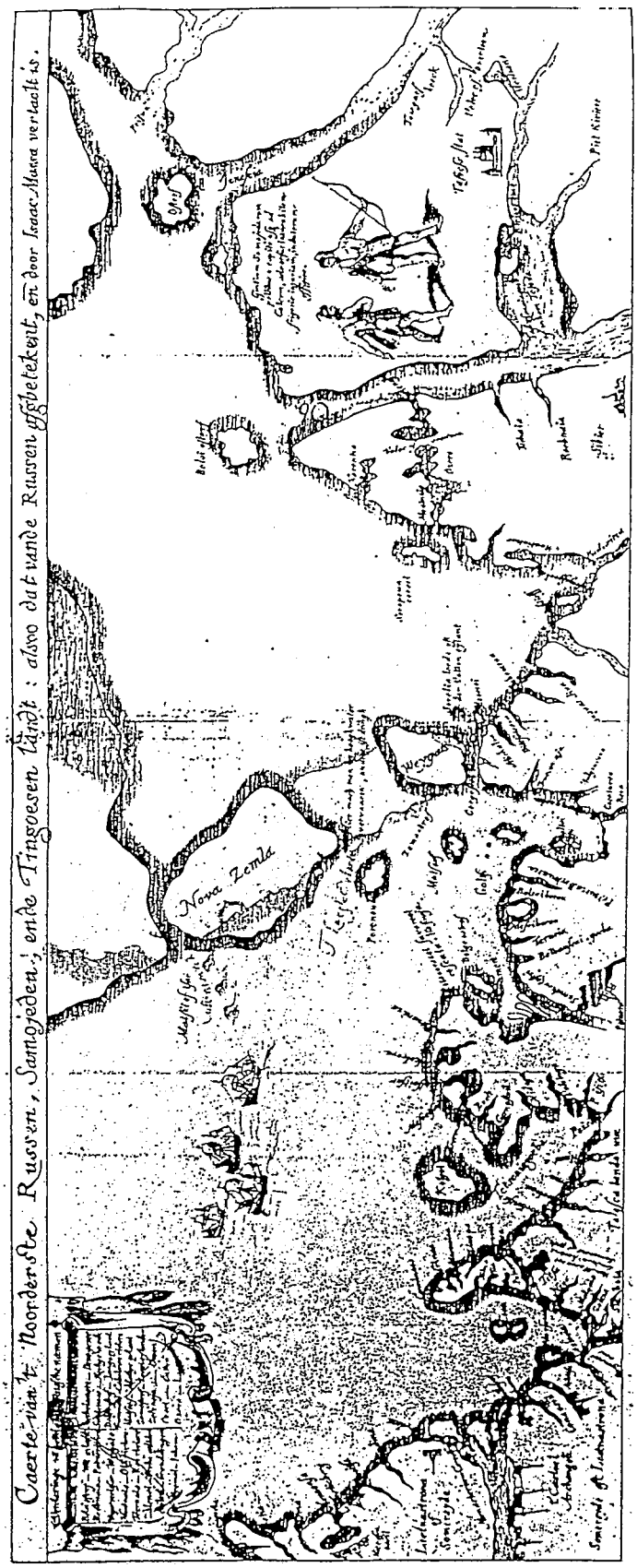


Fig.3. Isaac Massa's map of the north Russian coast, 1611

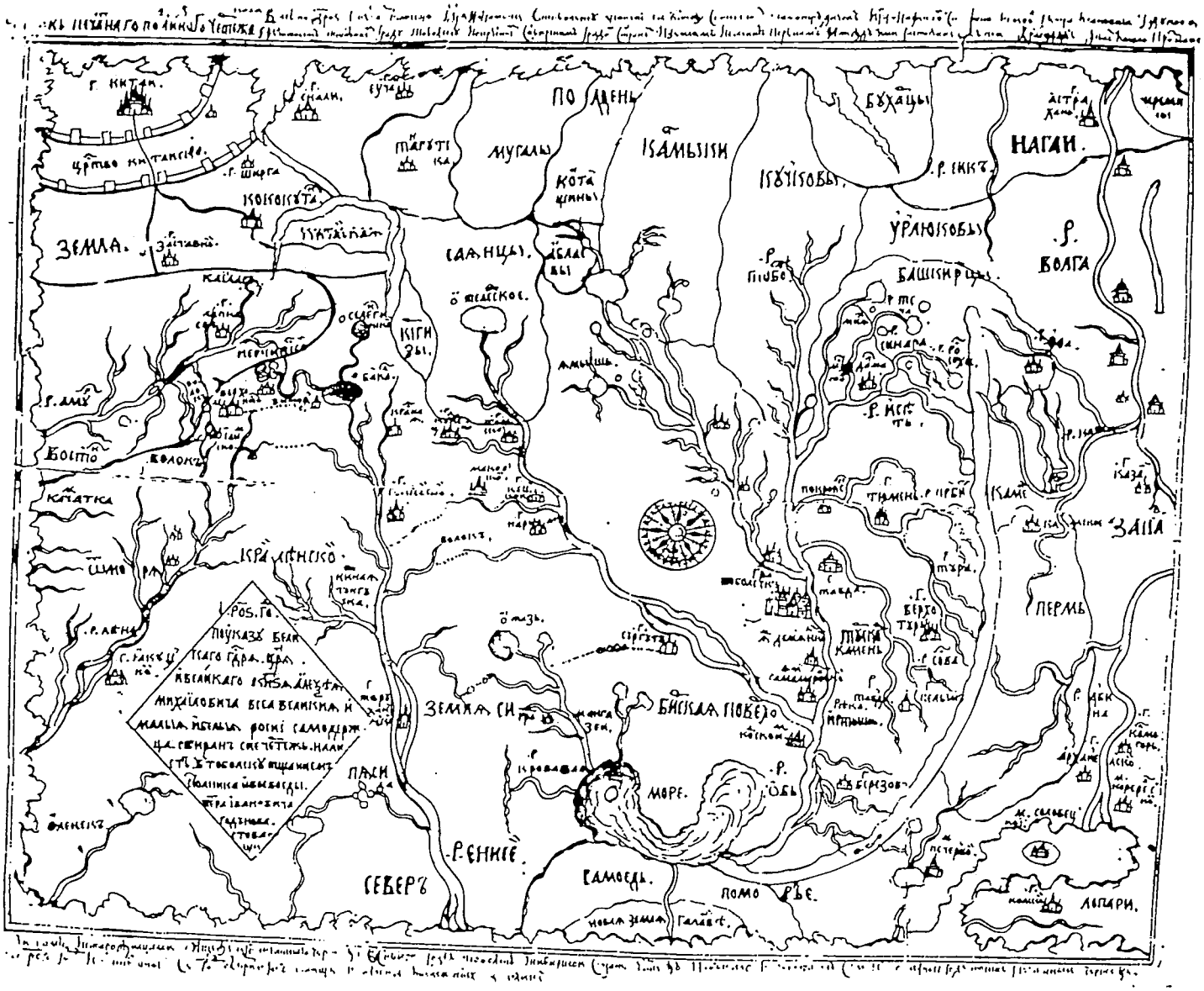


Fig.4. Godunov map, 1667

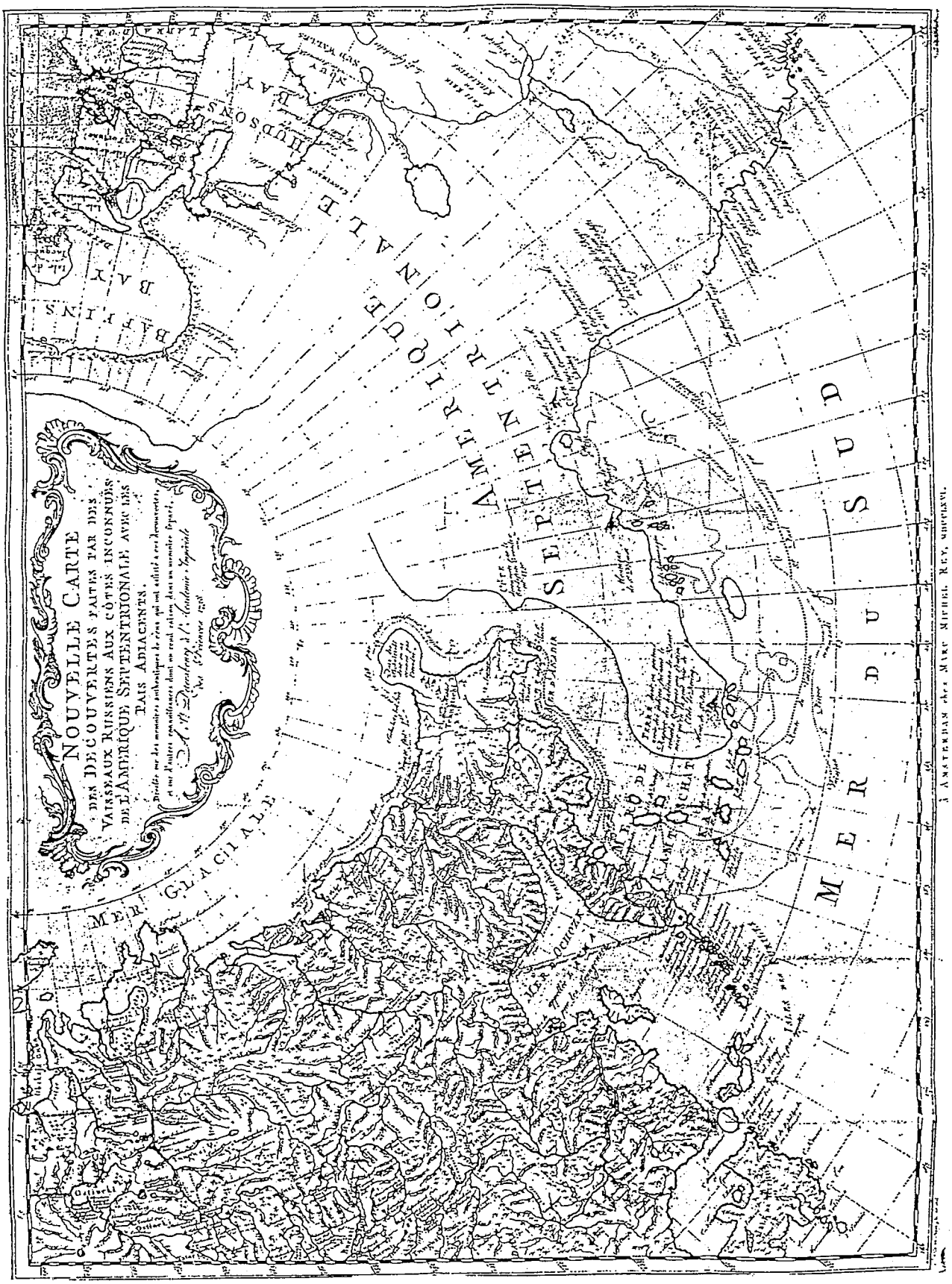


Fig.5. G.F. Müller's map of the Kamchatka expeditions, 1754

1.4 Economic significance

The prime importance of the fur trade has already been mentioned. A point to underline here is that fur was in much commoner use for clothing than it became later. What might be called the mass demand for fur could be met, however, from pelts of common and easily raised animals like the rabbit; so this drove the rarer and more luxuriant furs up-market and into a higher price bracket. One of the most sought-after of this group was the sable *(Martes zibellina)*, native to northern Siberia. Superfine furs of this sort acquired a much wider usefulness than just as elegant clothing; they became a special sort of currency. R.H.Fisher, in his very thorough study of the trade, draws attention to the fur tax (*yasak*), furs as salary, grants for military service, furs as gifts, furs as bribes in diplomatic dealings, furs as a medium of exchange. Russia's supply of furs enabled tsar Fedor Ivanovich in 1595 to make a present to the Holy Roman Emperor of 400,000 sable pelts - a quantity far out of reach of any possible rivals.(8)

What role the sea route may have played in this cannot be determined exactly, but it was surely great in the case of the town of Mangazeya, a place which was primarily concerned with the fur trade. Access to Mangazeya could be either by sea, crossing the southwest corner of the Kara Sea, a river-and-portage route across Yamal, and then the Ob estuary; or by river, which involved a much longer portage. Therefore the sea route to Mangazeya represents the first known regular use of the Northern Sea Route. So successful was it that tax evasion was suspected,

and its use was prohibited in 1619 - first of all to foreigners and then to Russians as well. The prohibition proved in the end fatal, as the centre of the fur trade moved farther east. Likewise the use of the sea route withered away too, for there was at that time no other significant freight that required transportation.

There were, of course, many other Russian introductions when Siberia was colonised. On the food production side, more advanced farming methods were brought in, and in the north traps augmented, and then replaced, other methods of killing small mammals; but none of these had any special relevance for the sea route. Likewise the trans-continental land route pioneered by the Russians opened up possibilities for use of a sea route to the Far East, but it was too early for this to happen.

1.5 International law, including sovereignty questions

There was no such thing as international law in our period, but nations could and did lay claim to territory generally regarded as belonging to another. The case has just been mentioned of the English plan of 1612 to annex some unspecified parts of north Russia. The country had recently emerged from a turbulent period known as the 'time of troubles' and was thought to be weakened. A reason for the English claim being in the north was that Sweden and Poland were interested in the other likely areas. The plan came to nothing, but confirmation that it did exist comes from a reference to it by Sir Julius Caesar, James the First's Chancellor of the Exchequer. Somewhat earlier (1578-79) another

European adventurer, Heinrich Staden from Westfalia, also had a plan to invade Muscovy by way of the White Sea. Large numbers of ships and men were to be involved and the Holy Roman Emperor was to back it. But this also came to nothing..

1.6 Technology and Logistics

The main contribution of Russia to the development of Arctic seafaring was in design of ships. Just as Russians had from earliest times used internal waterways as highways, so when expansion was to take place across coastal waters, it was to be expected that maximum use would be made of offshore waters. The little towns on the shore of the White Sea were the centres of the ship-building industry, so they were ideally placed to provide for the needs of eastward-bound traffic.

The White Sea ship-builders produced many different kinds of boat, suiting the design to the needs of the area. For the Arctic, the prime needs were to be able to cope with ice and with relatively shallow water. To meet these needs, two types of sea-going boat were developed: the *koch* or *kochmar,* and the *lod'ya.* The *koch* was especially well suited to working in floating ice, having a rounded hull section which protected the vessel when pressure came on by squeezing it upwards out of the ice (this idea was copied by Colin Archer, Fridtjof Nansen's designer, when he was at work on the *Fram* in 1893). The *koch* was intended primarily for the Mangazeya run. The other sea-going boat, the *lod'ya,* had many points in common with the *koch,* from which it differed mainly in superstructure. The two were about the same

size: 18 m. long, cargo capacity 35-40 tonnes, passengers and crew up to 30.

The ice itself could become a transport medium in winter, especially on rivers. But there was more to it than simply sledging or skiing over a smooth ice surface, because the floating ice could be, and often was, broken up, and did not offer a smooth run. There was therefore a technique to be learned on how best to promote a usable surface on the river ice.

1.7 Bering's expeditions. The first Kamchatka expedition

We now come to perhaps the most remarkable piece of Arctic exploration accomplished by the Russians, or indeed by any other nation up to that time. Peter the Great was nearing the end of his reign, and he wished to pass on to his successors as much information as possible about the nature and extent of his vast domains. In his strenuous attempts to draw the country up to the level of accomplishment of the nations of western Europe, he had brought into being an Academy of Sciences and had attracted to it a number of scholars, particularly in the natural sciences. He was therefore able to launch a very long and carefully planned series of expeditions. Although Peter himself died just as the first expedition was starting, there can be no doubt that without his initiative it would never have started. What is so extraordinary is that Russia should have been the country where this new, and as it turned out, trend-setting method of exploration was first employed.

There is no shortage of source material on this impressive

venture. Not only did members of the expeditions themselves publish extensively, but in recent years, particularly in Soviet times, the archives in Moscow and Leningrad have been extensively consulted, with editions of ships' logs and participants' journals made available. As mentioned earlier, leading scholars of Soviet times have written detailed accounts based on the archival material: they are L.S.Berg, M.I.Belov, and V.I.Grekov, and they published respectively in 1924, 1956, and 1960.(9) Little of all this has been translated into English (or any other language), and our accounts here are based on material by all three of these authors.

The objectives of the expedition, and indeed its name, changed a number of times, always in the direction of greater size and scope. Only certain parts of the plans were relevant to a possible sea route, but the reader needs to know the broader background into which it all fits. Attention was focussed at first on the North Pacific; where Peter was exercised about the supposed proximity of North America. He sent off two geodesists, Ivan Yevreinov and Fëdor Luzhin, 'to Kamchatka and beyond'. They were out for three years, but did not sight America. Their exploration was to the south of Kamchatka rather than to the north (at this time it was thought by some, including leading geographers, that America might lie immediately east of Kamchatka). On their return Yevreinov produced a report and a map which evidently interested Peter, and caused him to undertake another, and larger, expedition, in order to resolve the question.

This second venture in the North Pacific became known as the

Kamchatka expedition, or later the first Kamchatka expedition, because another followed it. Parts of it were called the American expedition and the Great Northern Expedition. The man appointed to lead this already large operation was Captain of the First Rank Vitus Bering, a Dane in the Russian service since 1703. He was known to the tsar, who had given him jobs before, but his actual selection was by the Admiralty College. Bering was his mother's family name, which he preferred to his father's, Svendsen, as being less common. Vitus sounds rather good in Russian, where it may be confused with *vitiaz'*, the word for a legendary hero, but he was often called simply Ivan Ivanovich by his Russian friends. He was intelligent, courageous, and well-liked, but he was apt to vacillate and be over-cautious, and he lacked the true explorer's enthusiasm and determination. While he undoubtedly achieved much, in the opinion of a Soviet admiral and scientist, N.N.Zubov, his appointment was a mistake.

The instructions given to Bering have survived in a number of different versions. Here is one.

1. Build in Kamchatka or some other place thereabouts one or two decked boats.

2. [Sail] in these boats along the land which trends to the north in the expectation (since its limit is unknown) that this land is America.

3. And to find out where it joins with America, go to some town under European control, or if you see a European ship, learn from it what they call this coast, and write it down, and go on shore yourself and get reliable information, and, having put it on a map, return here.

It is clear from the way in which the instructions are worded that Peter did not have a very high opinion of his seamen's intelligence. It is also clear that the expedition was not being given, as prime task, the discovery of whether Asia and America were joined: Peter thought they were. But it must be noted that the contrary view is also expressed, notably by the historian V.I. Grekov. Some recent investigators believe Peter was not as interested in the geography as he was in the political potentialities in the North Pacific. Indeed, before the end of the century Britain, France, and Spain were all engaged in that sort of activity in the same area. It is true that there was no word about politics in the written instructions, but one should remember that there were probably spoken instructions too. Much has been written about Peter's real motives. The best account is that by R.H.Fisher,(10) who argues strongly against the traditional view that it was geographical knowledge that was being primarily sought, and instead argues that it was to locate and reconnoitre the American coast, for motives not only of trade but of imperialism. The geographical need had to be met, however, because there could be no passage, northeast or northwest, without a strait.

Bering received his orders early in 1725, just a few days before Peter died, and left immediately for Kamchatka. The main body of the expedition had left before him and he soon caught up with it. They all overwintered in the upper Lena basin and descended the river to Yakutsk, whence they left in 1727 to reassemble that summer on the Pacific coast at Okhotsk. They built a boat there, named *Fortuna*, and sailed to the west coast

of Kamchatka. Their starting point for the exploration voyage was to be on the east coast, but Bering would not round the southern tip of Kamchatka, believing the waters there to be dangerous. They therefore crossed the peninsula to Nizhekamchatsk by dog sledge that winter, and there in the spring of 1728 built another boat, the *Svyatoy Gavriil* or *Saint Gabriel*, in which they would carry out their assignment. They had taken three and a half years to reach the point of departure for the job they were sent to do. The party numbered 44, with Bering in command. They duly coasted along 'the land which trends to the north' and reached the strait which now bears his name a month later (15 August 1728). Visibility was not very good, and like Dezhnev they never caught sight of the North American continent, although they did sight, name, and land on, St Lawrence Island. When they had passed lat. 67 ° N. on August 16, Bering called on his officers to write down what should be done next (he was obliged by his instructions to do this). One was for turning round, one was for going on, and Bering was for turning - so that is what they did. We can now see that, had they gone on, a few days' sail to the west would have taken them to the north coast of Chukotka, and an equal or even shorter sail to the east would have taken them to Alaska. With hindsight one can see that failure to do either thing was Bering's major error. They retraced their steps rather exactly, making good time back to Kamchatka, which they reached on 2 September. On the way they sighted and named Diomede Island (presumably Ratmanov or Big Diomede, for they did not notice there were two).

After wintering at the same place as in 1727-28, Bering made

another attempt to sight America by following up a report by local inhabitants that land was sometimes visible to the east. This was probably the island now called Bering Island, where Bering died and was buried fourteen years later. He failed to find anything, and turned for home. This time he rounded the tip of Kamchatka, sailed on to Okhotsk, travelled overland to Yakutsk, and reached St Petersburg on 1 March 1730. While it took him just over five years to have one week at the location he was to investigate, he was able to publish an account of his travels a fortnight after returning. Although he had not found out where America was, he did have an idea where Asia ended. He was promoted to the rank of Captain-Commander, and then given command of the follow-up expedition which, it was hoped, would find the real answers.

1.8 The European discovery of northwest America

Bering has often been given the credit for European discovery of northwest America. Those who are disposed to honour him in this way may be thinking of the first expedition, when, as we have just seen, he was close to it in 1728, or of the second expedition, when, as we shall shortly see, he did indeed sight the continent in 1741, but was not the first to do so. Since the actual moment fell between these two dates, this is perhaps the time to explain what did happen.

Bering's expeditions had exploration as their declared prime purpose, but they were not the only government-sponsored activities in northern Asia. When Bering was on his exhausting

way to Kamchatka, another party left St Petersburg with the task of pacifying the always turbulent native people - the Chukchi - and extracting fur tribute from them. The man in charge and the proposer of the idea, was a cossack leader from Yakutsk, Afanasiy Shestakov. The party was joined at Tobol'sk by an army officer, captain Dmitriy Pavlutskiy. The two men quarrelled incessantly, until in 1730 Shestakov was killed by Koryaks. The expedition, consisting now of some 40 men, continued aboard Bering's ship *Svyatoy Gavriil,* in which they had sailed from Kamchatka. The captain was Yakov Gens, but he was ill, and so also was his second-in-command, Ivan Fedorov; so command went down to the third most senior person, the geodesist Mikhail Gvozdev. He examined the two Diomede Islands and landed on one of them. He crossed to the mainland, and on 21 August 1732 sailed along a coast which must have been the south coast of the Seward Peninsula of Alaska. The next day they saw a 'fourth island', probably King Island. The fact that Gvozdev mentions a fourth island but no third has led some to think he had only discovered several islands and not the continent.(11) But the third, which is shown on a map of 1743 based on Gvozdev's log, could well have been Fairway Rock, an islet in the strait.. Furthermore the local people often used the phrase *bolshaya zemlya* ('big land') which must mean mainland or continent.

Gvozdev's report (there were evidently two, but neither has survived) did not reach the relevant authority for six years, partly because he was denounced by one of the sailors and imprisoned until 1738. It was only in 1741 that renewed interest caused officials to look into the matter, and finally someone

understood the importance of the report and sent it out to Bering. But he had already been dead for a year.

1.9 Second Kamchatka expedition

While the first stages of Bering's expedition were only at times directly concerned with the Northern Sea Route, this next phase was closely relevant in a number of contexts. Although one might have expected officialdom to be not particularly keen on expensive forays into distant territory, the more so since three separate tsars reigned between 1725 and 1730, yet Bering himself was approached by the Senate in 1730 to find out more about the possible usefulness of the eastern territories to the state. Bering responded by suggesting various social measures, and by proposing further exploration of the Pacific littoral - effectively a proposal to continue the work of the first Kamchatka expedition.

A major difficulty, unfortunately not realised at the time, was that the map on which the planning was based was highly inaccurate, supportimg for instance the idea of North America flanking Kamchatka to the east. These ideas were very thoroughly discussed, and the opinions of a number of influential policy-makers were sought. Among the most important of these was I.K.Kirilov, Ober-sekretar of the Senate, who was later to play a leading part in the compilation of the two first Russian atlases. Kirilov in turn involved the new Academy of Sciences and the Admiralty College, both of which made very large contributions to the planning and the operations.

The idea of involving the best team of scientists the country could produce was a new one, and was viable because the Academy abounded with young blood willing to go out into the field for periods of years. The leading figure here, as we shall see, was the German polymath Gerhard Müller. For its part The Admiralty College, probably acting on the advice of its President, Admiral N.F. Golovin, made the astonishing proposal that marine operations should be extended to carrying out a survey of the entire north coast of the country, from the White Sea to Kamchatka - an undertaking which would, of course, demonstrate the existence or absence of a Northeast Passage. The personnel required for this task would number several hundreds, but the navy - another Petrine innovation - could produce them. All these plans, and many others, were approved by the Senate by early 1733.

Thus the plan for the second Kamchatka expedition was to accomplish the following:(12)

1. In the Arctic Ocean to carry out coastal surveys (a) from Arkhangelsk to the Ob, (b) from the mouth of the Ob to the mouth of the Yenisey, (c) from the mouth of the Lena westwards to the mouth of the Yenisey, (d) from the mouth of the Lena eastwards to Kamchatka (if there proved to be a strait between Asia and America). The first detachment was to be under the direct control of the Admiralty College.

2. In the Pacific (a) to reach the shores of America and if possible explore them, (b) to find a route to Japan and to study

the Kurilskiye ostrova, (c) to investigate the shores of the Sea of Okhotsk from Okhotsk to the Amur and the Shantarskiye ostrova.

3. To describe and study the natural history and peoples of Siberia and of the lands newly discovered by the academic detachment.

4. To describe the rivers east of Baykal with the object of discovering a shorter route to the Sea of Okhotsk bypassing Yakutsk.

1.9.1 Coastal survey: White Sea to Ob

The plans for this phase of the expedition brought about a very large increase in the size of the party, and therefore in the logistic arrangements. The basic strength at the start was 440, but this figure was greatly exceeded for particular tasks, such as transportation. Thus 1046 men were required to transport the expedition across Yakutia in 1740. The first sector to be explored was the one nearest to home - from the White Sea to the Ob. It will be remembered that this was the only part of the route to have been frequently navigated previously. Command of this detachment was retained by the Admiralty College itself, since Bering was travelling eastwards in order to prepare the way for the remoter assignments in Siberia.

Two *kochi* of 16.5 m length were built in the Admiralty yard at Arkhangelsk. The crews were drawn from the navy: Lt. Stepan Muravyev and 26 men were assigned to the *Ekspedition* and Lt.

Mikhail Pavlov with 25 men to the *Ob*. Both ships set sail on 4 July 1734 from Arkhangelsk. The crews included some seamen who had knowledge of this area. At first all went very well. They crossed the southwest corner of the Kara Sea around latitude 70 ° N., then continued up the west coast of the Yamal peninsula to latitude 72° 35′ N.; but then shoal water, contrary winds, and the death of a member of Muravyev's party caused them to return when they were only 150 km from the Ob estuary. They wintered on the Pechora river. During the winter the dead sailor was replaced, and two geodesists - V.Somov and V.Selifontov - joined the expedition.

The next season started in June, when the river ice released the two ships. At first they could not enter the Kara Sea, but in early August they succeeded, and penetrated a little farther than in 1734. Those on board the two ships saw the signals sent by a shore party which had gone out to help them - but nevertheless they were unable to round the tip of Yamal, and returned to winter on the Pechora at the same location as before. These two unsuccessful seasons caused the Admiralty College to think that there was a measure of incompetence here, and Lt. Stepan Malygin was sent out to investigate. He found that Muravyev and Pavlov, who had denounced each other, were both guilty; and he himself was appointed to succeed Muravyev while Pavlov was replaced by Lt. A.Skuratov. The *Ekspeditsion* and the *Ob,* which were now in poor condition, were replaced in 1736 by two new decked vessels, *Pervyy* and *Vtoroy,* which Skuratov brought from Arkhangelsk.

A new start was made in 1736. Malygin and Skuratov once

again got to Yamal, but were obliged by ice to winter on the Kara river not far up the coast, having had an adventurous trip. During that winter one of the geodesists, Vasiliy Selifontov, made an extensive overland journey, following the coast of Yamal northwards and then southwards, erecting markers to guide the ships at sea. The stage was now set, and on 23 July 1737 Malygin and Skuratov finally succeeded in rounding the tip of Yamal and running south into the Ob estuary. There was no ice, but shoals, fog, and currents were troublesome. They reached the village of Berezov on 2 October and wintered there. Malygin, travelling overland, got to St Petersburg on 12 February 1738. Retracing his course Skuratov took the two ships back to Arkhangelsk; he wintered on the way at Kara, and arrived early in 1739. It was on this final voyage that most of the mapping was done; it had taken six seasons to complete it.

1.9.2 Coastal survey: Ob to Yenisey

It might have been expected that this would be the quickest voyage to make, since the two rivers are adjacent, and the first part of the route - down the Ob estuary - would have been familiar to some of the Russian sailors aboard. But that was not the way things went. First of all, earlier Russian voyages - to Mangazeya, for instance - cut across the Yamal peninsula by river and portage, without reaching the northern part of the Ob estuary at all. And we have seen what a struggle the White Sea to Ob contingent had in order to round the tip of Yamal.

The exploration of the Ob to Yenisey sector was entrusted

to a party of 55 men led by Lt.Dmitriy Ovtsyn. The party included the helmsman D.V.Sterlegov and the geodesists M.Ushakov and M.G.Vykhodtsev. Ovtsyn arrived at Tobolsk in April 1733 and set about building their ship *Tobol* which was not done in time for the 1733 season, but was completed in May 1734. Tobol set off downstream in June. Progress was slow. The ship suffered some damage from ice and scurvy broke out among the crew, so Ovtsyn obtained his officers' consent to turn back on 5 August (all dates are old style: add eleven days for the modern equivalent) when they had reached about lat.70° N. They reached Obdorsk (modern Salekhard) on 4 September and wintered there.

This less-than-spectacular performance was followed by a worse one in 1735. They had to wait for the Ob to break up and left Obdorsk on 29 May. They then encountered ice forming a barrier right across the estuary at lat.68 40'. Besides these geographical problems scurvy afflicted 38 of the crew, including Ovtsyn himself, and four died. Once again the officers voted to return. This time they ascended the Ob to Tobolsk, because the original instructions stipulated the work should be completed in two seasons only. During the winter Ovtsyn returned to St Petersburg to report, and was firmly told to go back and complete his assignment. However, a new vessel would be built for him.

So a third attempt was made. Ovtsyn did not wait for completion of the new vessel (called *Ob-Pochtal'yon)*, but set off from Tobolsk in the old *Tobol* on 23 May 1736 with a crew of 50; it included the helmsmen Fedor Minin and Dmitriy Sterlegov and the geodesist N.G. Vykhodtsev. Another geodesist, F.S. Pryanishnikov, worked on land on the south shore of the Taz

estuary. But once again the ice was too much for Tobol, although it reached a point almost at the junction of the Ob estuary with the sea. They returned, to winter again at Obdorsk, while Ovtsyn went up-river to Berezov, where he met a little group of Russian exiles - a meeting with most unfortunate consequences, as we shall see.

1737, the year of the fourth attempt, was a year in which the ice was very favourable, enabling Malygin to reach the tip of Yamal, and the information he brought was helpful to Ovtsyn. The new vessel also appeared at Obdorsk, having been brought down the Ob by senior helmsman Ivan Koshelev. Ovtsyn took over the new vessel, leaving the *Ob-Pochtalyon* to Koshelev; each vessel had a crew of 35. Both reached the mouth of the estuary on 6 August. They had some difficulty in determining the lie-of-the-land, mistaking some of the islands between the mouths of the big rivers for peninsulas. But both vessels turned into the estuary of the Yenisey on 31 August 1737 and proceeded upstream, reaching the vicinity of Turukhansk by freeze-up.

The assignment was complete. Ovtsyn reached Yeniseysk on 21 July 1738 and was ready to travel overland to St Petersburg and report his very creditable success. But on his way back he was suddenly arrested by the secret police and charged with consorting two years earlier with state criminals - chiefly Prince Ivan Dolgorukiy and his sister Ekaterina - who had been exiled to the remote village of Berezov. Ovtsyn had known them from his earlier days in the capital. The princess had been betrothed to the young tsar Peter II, who died in 1730, when he was only 15, and her brother Ivan had tried to put her on the

throne. But the plan misfired, and exile to Berezov was the price. Ekaterina was evidently playing the role of *grande dame* when advances were made to her by a lowly customs official named Tishin. Whereupon the princess must have appealed to the company at large to save her, and Ovtsyn must have leapt to her rescue, for he gave Tishin 'a cruel beating'.

This had repercussions. An investigation was held, and those concerned were punished. For Ovtsyn this meant court martial, reduction to the ranks, and being sent off as an able seaman to join Bering, who was by now at Okhotsk. The prince never regained his position, and was tortured and died soon afterwards. Ovtsyn's fate was better than this. As a crew member of Bering's ship *Sv.Petr* when she was wrecked on Bering Island four years later, he was one of the few aboard who had the physical strength and presence of mind to bring the ship over a reef and so save them all. He was soon afterwards reinstated in rank and served in the Baltic. His name is now attached to a strait off the mouth of the Yenisey and to a Russian survey ship, and also to the class to which it belongs.

1.9.3 Coastal survey: from Yenisey eastwards

While Ovtsyn was concluding his work in the Yenisey estuary, he saw an opportunity to move further along the coast eastwards. He gave this job to Fedor Minin, his helmsman, without fully knowing how difficult and complex this would be. The latter took *Ob-Pochtal'yon* down the Yenisey from Turukhansk with a crew of 27 which included under-helmsman Dmitriy Sterlegov. They reached the

mouth of the Yenisey only on 3 August 1738, and at about lat.73°.14′ met impenetrable ice. This obliged them to turn back on 30 August, but they were unable to reach Turukhansk, their wintering place, before freeze-up, and had to winter at 70°.27′. This fact meant that the next season (1739) was compromised already, because they were obliged to start by going upstream in order to revictual at Turukhansk, and this lost so much time that they could reach only lat.72°.09′ by the end of August when they had to turn back.

Minin decided he would use the 1740 season to erect markers, and sent Sterlegov ahead to do so. On this journey Sterlegov achieved the farthest north of the party - lat.75° 26′. Later in that same year Minin set out with the intention of rounding the whole of Taymyr, but was unable to get farther up the coast than 75°.15′, and returned to winter at Dudinka. For this lack of success the Admiralty blamed Minin personally. Minin nevertheless set out again on 10 June 1742, but at this point he was stopped by Khariton Laptev, the commander of the next party to the east, who had succeeded in linking up with his neighbour to the west. The luckless Minin was recalled to St Petersburg, where he was tried after complaints by his crew, and reduced to the ranks for two years. It is probably fair to say that of the five major exploring parties, Minin's achieved the least, and his results were not included in the Marine Academy's atlas of 1746. But we may feel today that his performance hardly demanded disciplinary action of that kind.

1.9.4 Coastal survey: from Lena westwards

As the administrative centre of the expedition had moved eastwards to Yakutsk, Bering was now able to exercise some measure of control over what was done. Two parties were to set off down the Lena. The first was to follow the coast westwards, heading back towards the Yenisey. Bering put Lt. Vasiliy Pronchishchev in charge of the crew of 50, which included the helmsman Semen Chelyuskin and the geologist Nikifor Chekin. A most unusual feature of the party was that Pronchishchev took his wife Tatyana (long known to history, incorrectly as Mariya) with him. They left Yakutsk on 29 June 1735 and reached the sea on 13 August. Their vessel - the double sloop *Yakutsk* - was damaged in the shallows of the Lena delta, causing them to stop and winter on the Olenek, only some 200 km along the coast.

They resumed their westwards voyage on 1 August 1736 and battled their way north through the ice along the east coast of Taymyr, reaching lat.77° 29', this is only fifteen nautical miles south of the latitude of the northern tip of Taymyr, and of Asia. But the ice had forced them far out to sea, and scurvy had taken hold, so Pronchishchev decided to withdraw to the Olenek and winter there again. They reached the place on 29 August, but that very day Pronchishchev died, and his wife a few days later; both were buried at Ust'-Oleneksk at the mouth of the Olenek. There was now an interval of three years, caused by other problems which will be explained shortly, and then a new leader of the Taymyr party was appointed in 1739, Pronchishchev being replaced by Lt. Khariton Laptev, already mentioned. Laptev set off in

June, again in *Yakutsk,* with a crew of 45. He got as far north as Zaliv Faddeya then retreated to winter at the mouth of the Bludnaya, where it debouches into Khatangskiy Zaliv. Following the example of the earlier parties, Laptev sent men ahead along the coast in order to put up markers. In 1740 he sailed north again. He encountered heavy ice which crushed *Yakutsk,* forcing Laptev to abandon her; he and his men walked back to their winter quarters on the Bludnaya. He at once started to plan a land-based survey, to be carried out by three parties, led by Laptev, Chekin, and Chelyuskin.

These set out early in 1741, each following a different course. Their routes did not quite follow the agreed plan, but Laptev and Chelyuskin met on the west side of Taymyr, not far from Sterlegov's farthest north, and they both went on to the Yenisey. They found, however, that the central section of the coast had not been covered, so they planned to make good that gap in 1742. Travelling with three dog sledges Semen Chelyuskin traced the entire coastline from Khatangskiy Zaliv to the mouth of the Taymyr; he reached the cape now named after him, the northernmost tip of Eurasia, on 9 May 1742. It was a remarkable feat. Chelyuskin's name was attached to it only a century later, when the Siberia traveller, A.F.Middendorf put the record straight.

1.9.5 Coastal survey: from Lena eastwards

Let us now return to the Lena river at the time of the failure of the Pronchishchev party in 1736. The party designated to map

the fifth and easily the most difficult sector - the Lena to Kamchatka - had gone down the Lena in company with Pronchishchev in 1735. Its leader, the Swede Peter Lassenius, commanded a crew of 52, in a vessel named *Irkutsk.* They had not gone far when severe ice forced them to winter at the mouth of the Kharaulakh. Scurvy broke out, killing Lassenius and 39 of the crew. The first season therefore yielded no results. Bering replaced Lassenius with Lt. Dmitriy Laptev, a cousin of Khariton, and he arrived at the *Irkutsk's* wintering site in July 1736. The *Irkutsk* sailed in August, but again heavy ice obliged Laptev to winter in the Lena delta. At this point Bering, having lost two of the detachment commanders, wondered whether progress would ever be possible, and with the support of the other officers sent D. Laptev back to St Petersburg to report. The Admiralty College was not prepared to throw in the sponge, and suggested that if the sea route was blocked, land-based surveys should be made, in particular in order to cut across the peninsula of Chukotka. Thus when Laptev returned with this stern message, three years had passed; he sailed down the Lena again in June 1739.

This time at last he was able to beat the ice and reached the mouth of the Indigirka where he wintered. At the end of July 1740 he again headed eastwards and reached the Kolyma on 8 August. He tried to go farther, but the ice stopped him at Mys Bolshoy Baranov, from which he had to withdraw, wintering again on the Kolyma. At this distant corner of the Russian empire one may note that a Russian settlement had already existed there for a century. In 1741 Laptev made one more attempt to reach the Pacific, but did no better than in 1740. Returning to the Kolyma

in August, he decided to avail himself of the overland option he had been offered; with 47 dog sledges they completed the journey to Anadyr, taking just three weeks to do so (27 October to 17 November 1741). After making local surveys Laptev returned to the Kolyma overland the way he had come, and thence to St Petersburg in December 1743. There was still some doubt about the geography of the Bering Strait area, in particular the possibility of a promontory extending north from Chukotka had not been decisively disproved, but a very remarkable series of surveys had been made.

1.9.6 Explorations in the North Pacific

The centre-piece of the second Kamchatka expedition, and in the eyes of Russian officialdom no doubt its most important aspect, was the new attempt to establish the lie of the land as between Kamchatka and North America. This major piece of exploration was to be undertaken by Bering himself and his second-in-command Aleksey Chirikov, operating from a base in Kamchatka. It is the best-known part of the whole complex of Bering's voyages and has been quite fully (but not exhaustively) written up. Furthermore, its area of study at no point falls within the Northern Sea Route as defined for this project. But for completeness' sake the briefest outline may be given here.

The two ships - *Svyatoy Petr* (Bering) and *Svyatoy Pavel* (Chirikov) - set sail from Kamchatka in June 1741, were separated by a storm, but each separately sighted the Alaskan coast a month later. Again for different reasons each turned for home after a very short stay. Bering made another landfall in the Aleutian

Islands, but failed to reach Kamchatka, being wrecked on an uninhabited island about 200 km short of his objective. Bering died in December 1741 on that island, today named Ostrov Beringa, but his companions made another boat out of the wreckage of the old and reached Kamchatka in August 1742. Chirikov's party had got there a year earlier.

Yet another maritime task allocated to the second Kamchatka expedition was to explore the seas to the south of Kamchatka, the Kuril islands and northern Japan. Lt. M.Spanberg, a Dane who had been on the first Kamchatka expedition with Bering, was put in charge, and between 1738 and 1742 explored in that area each summer. No very exciting discoveries were made, but some useful knowledge about the Kurils was obtained. The fourth task of the second Kamchatka expedition - to find a shorter route to the Sea of Okhotsk bypassing Yakutsk - was never completed, although some attempts were made.

1.10 The academic detachment

One of the many remarkable things about Bering's expeditions was the deployment, at that time and place, of such an impressive scientific team. At the core of the programme was a group of three scientists recruited by Peter the Great: Gerhard Müller, a German polymath who was the effective leader of the party, as well as being himself in charge of geography, history, archaeology, ethnography, and economics; J.G. Gmelin, a German botanist; and Louis de l'Isle de la Croyère, a French cartographer and astronomer. These were all men with reputations,

and they were given a very free hand in selecting the research they would undertake. They were almost continuously on the move, and Müller and Gmelin were in the field for the whole span of the expedition - 1733-43. A substantial library as well as a collection of scientific instruments accompanied them on their travels. Two more German scientists joined the project as time went on: another historian, J. Fischer, and the naturalist G.W.Steller. Russians came in at a rather lower level: five geodesists and six 'students'. Their area of interest, it must be remembered, was the whole of Siberia and not just the Arctic. It was chiefly the geodesists who went north, and some of their work has been mentioned.

Between them, these scholars produced some impressive results. Müller's *Opisaniye sibirskago tsarstva* (St Petersburg 1750), Gmelin's *Flora sibirica* (St Petersburg 1747-69), Steller's *Reise von Kamchatka nach Amerika* (St Petersburg 1793), and Krasheninnikov's *Opisaniye zemli Kamchatki* (St Petersburg 1755), to name but a few. The close connection with the military unfortunately led to difficulties and delays in publication, so some of the results did not make the impact they should have - indeed some of the cartographic material is unpublished even today (fig. 5).

In this short summary of results much more space has been given to the Great Northern Expedition than to any other endeavour related to the Northern Sea Route. This is as it should be, in the context of both the scale of the operation and the impact it had.

It is impossible to contemplate the manifold activities of this great undertaking without being impressed by the truly Russian scale and character of it all: the deployment of hundreds of men over nearly two decades, the astonishing courage and dogged tenacity displayed by many of them, the amassing of great quantities of data of the most diverse kinds; and on the debit side, the inefficient and overcentralised control, the secrecy, the severe disciplinary measures, the apparent losing of the thread of what was to be done next, and finally, the discovery by Müller of the report of Dezhnev's voyage of 1648 showing that Asia and America were indeed separated, and therefore evidence that a main geographical objective of the expedition had been known eighty-eight years before, and forgotten.

1.11 Sources and literature

This account is based largely on the writings of the Soviet historian M.I. Belov, whose work in the Russian archives has provided us with very much relevant information. Of the four volumes of the monumental *History of the discovery and utilisation of the Northern Sea Route* Belov wrote three himself, including volume 1, which covers our period. His judgements are apt to be strongly nationalist in feeling, but he has been able to search out many facts not found elsewhere. Cfr. M.I. Belov, *Istoriya otkrytiya i osvoyeniya Severnogo morskogo puti* [History of the discovery and utilisation of the Northern Sea Route], Moscow, Leningrad, 1956.

Besides this major work there is the more sea-oriented but

less detailed Vize, V.Yu. *Morya sovetskoy Arktiki* [Seas of the Soviet Arctic.], Third edition, Moscow, Leningrad, 1948. Two much shorter but very good works in English are Vaughan, R. *The Arctic: a history,* Sutton, 1994, 96-115, and Okhuizen, E. 'Exploration and mapping of the Northeast passage and northern Eurasia 15th - 19th centuries', in Raurala, N-E. ed. *The Northeast passage from the Vikings to Nordenskiöld.* Helsinki, 1992, 10-49.

The notes below are not meant to be a detailed catalogue of sources, but rather a guide to major items in the available literature, where possible in English.

(1) Hakluyt, R. *The Principall Navigations, Voiages, and Discoeries of the English Nation,* London, 1589, 250. 2nd edition 1598-1600. The relevant work of Purchas is *Hakluytus posthumus, or Purchas his Pilgrimes,* London, 1625.

(2) De Veer, Gerrit. *The three voyages of Willem Barents to the Arctic regions...* Beke, C.T., ed. London, 1853. 2nd edition, Beynen, K., ed. London, 1876.

(3) Spies, Marijke. *Bij noorden om.* Amsterdam, 1994. A new study of Olivier Brunel.

(4) Belov, M.I. and others. *Mangazeyskiy morskoy khod.* [The sea route to Mangazeya]*).*
Leningrad, 1980.

(5) Armstrong, T.E. ed. *Yermak's campaign in Siberia.* London, 1975.

(6) Fisher, R.H. *The voyage of Semen Dezhnev in 1648.* London, 1981.

(7) The five maps reproduced here were taken from Raurala, ed. *The Northeast passage from the Vikings to Nordenskiöld* 1992 (figs. 2-5), and *Arctic,* 37, 4, 437 (fig. 1), by kind permission.

(8) Fisher, R.H. *The Russian fur trade 1550-1700.* Berkeley, 1943.

(9) Berg, L.S. *Otkrytiye Kamchatki i ekspeditsii Beringa [*The discovery of Kamchatka and Bering's expedition*]*, 3rd edition, Leningrad, 1946. Belov, M.I. *op.cit.* see above. Grekov, V.I. *Ocherki po istorii russkikh geograficheskikh issledovaniy v 1725-1765 gg [*Outlines in the history of Russian geographical explorations in 1725-1765*]*, Moscow, 1960.

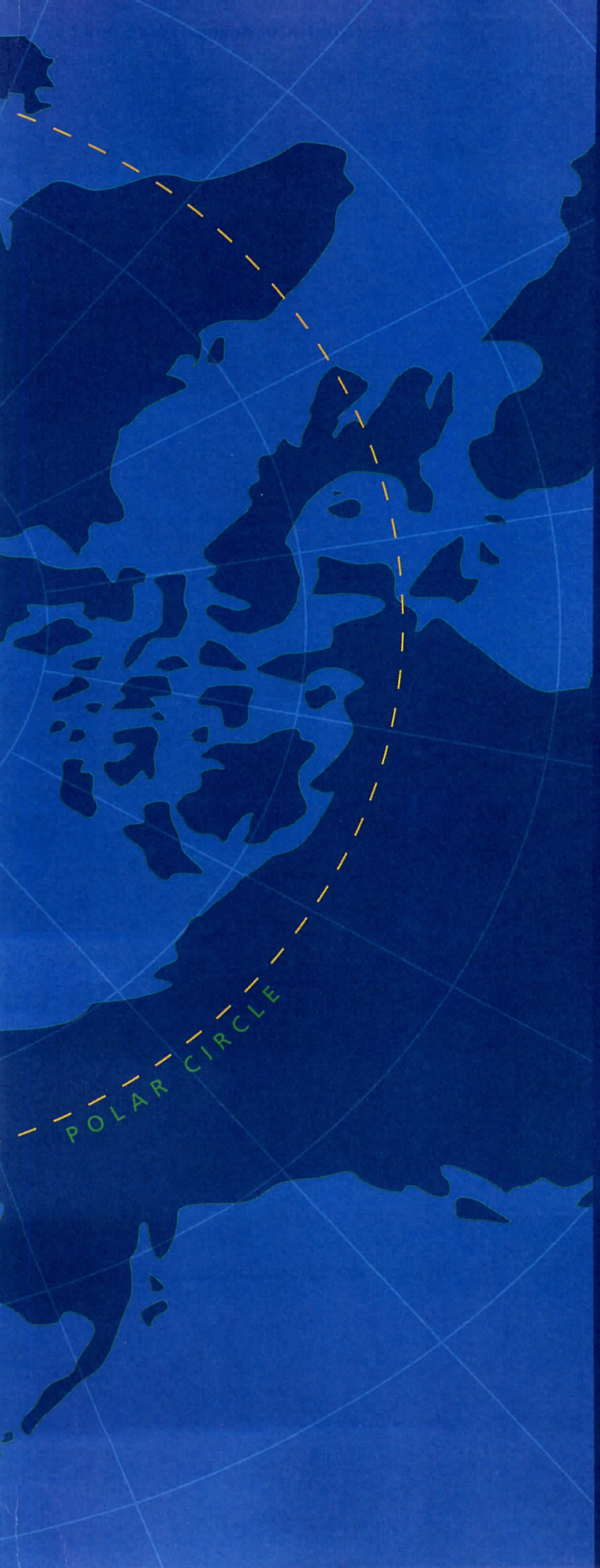
(10) Fisher, R.H. *Bering's voyages: Whither and why.* Seattle, 1977.

(11) Golder, F.A. *Bering's voyages.* Vol.1, New York 1922, 24.

(12) The first published account of the coastal survey part of the expedition is that by A.P.Sokolov - Severnaya ekspeditsiya 1733-1743 goda, in *Zapiski Gidrograficheskogo Departamenta,* Chast' 9, 1851, 190-469. Not all of this programme was carried

out. A good English version is to be found in the full edition of A.E. Nordenskiöld's *Voyage of the Vega round Asia and Europe*, London, 1881.

1.12 List of illustrations



The three main cooperating institutions of INSROP

Ship & Ocean Foundation (SOF), Tokyo, Japan.

SOF was established in 1975 as a non-profit organization to advance modernization and rationalization of Japan's shipbuilding and related industries, and to give assistance to non-profit organizations associated with these industries. SOF is provided with operation funds by the Sasakawa Foundation, the world's largest foundation operated with revenue from motorboat racing. An integral part of SOF, the Tsukuba Institute, carries out experimental research into ocean environment protection and ocean development.

Central Marine Research & Design Institute (CNIIMF), St. Petersburg, Russia.

CNIIMF was founded in 1929. The institute's research focus is applied and technological with four main goals: the improvment of merchant fleet efficiency; shipping safety; technical development of the merchant fleet; and design support for future fleet development. CNIIMF was a Russian state institution up to 1993, when it was converted into a stock-holding company.

The Fridtjof Nansen Institute (FNI), Lysaker, Norway.

FNI was founded in 1958 and is based at Polhøgda, the home of Fridtjof Nansen, famous Norwegian polar explorer, scientist, humanist and statesman. The institute spesializes in applied social science research, with special focus on international resource and environmental management. In addition to INSROP, the research is organized in six integrated programmes. Typical of FNI research is a multi-disciplinary approach, entailing extensive cooperation with other research institutions both at home and abroad. The INSROP Secretariat is located at FNI.