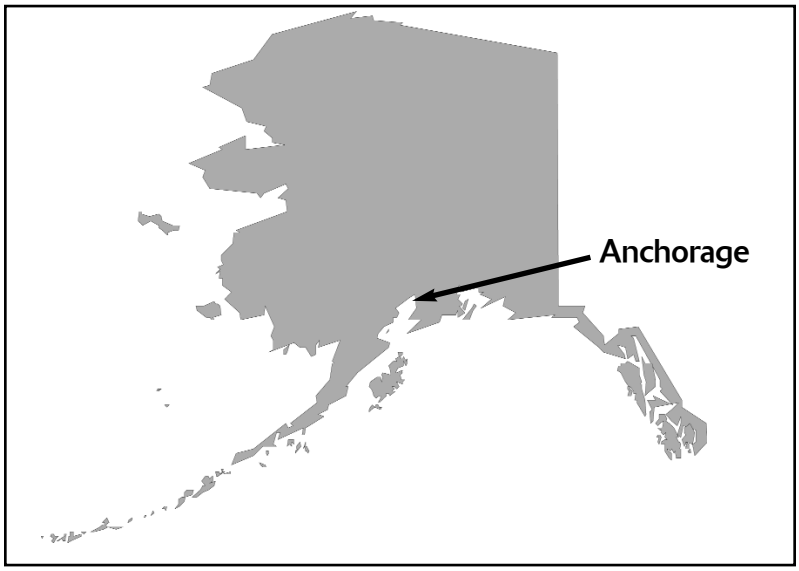
RUSSIA'S FAR EAST AND WRANGEL ISLAND

Day 1 Thursday, July 10, 2003

ANCHORAGE, ALASKA

0800: 61°10'N 150° 00'W
2000: 61°10'N 150° 00'W



Today marks the gathering-in day. From across the globe – Argentina, Australia, Austria, Canada, France, Germany, Great Britain (England, Scotland, and Wales), Guatemala, the Netherlands, Netherlands Antilles, Russia, South Africa, Switzerland, and the U.S. – we work our way to Anchorage, to its relatively small, rather quiet airport where mounted bears, a grizzly and a polar each at full height, greet us. This city, with its stunning backdrop of snow-capped mountains, all of it once an outpost of the Russian Empire, makes a fitting departure point for Russia's Far East and Wrangel Island.

The sprawling Millennium Hotel, a short distance from the airport, serves as our base this first night. In ones, twos, threes we arrive throughout the day, for some late into the night, while a number have come earlier, a day or more, to tour about the city and other areas of the State. Whichever and from wherever, it's a long haul, and we welcome the comfort and rustic atmosphere of the Millennium. We welcome, as well, the chance to begin meeting fellow passengers. Somehow we are not that difficult to spot, as we hang around at the registration desk, the elevators, perhaps at the patio for a drink, or the restaurant for halibut or maybe crab legs.

Quark representative and fellow passenger, Donna Barfield, welcomes us at an information desk in the lobby, beginning at 1800. For three hours she answers questions, sorts out logistics, and sets the pattern of the wonderful care we receive throughout the trip. It's also a good place to meet new friends.

Later this evening, at a 2100 meeting, we're quickly launched into our expedition and to the realities of "expedition." A broken pump on the fuel barge at the Vladivostok shipyard caused

a 24-hour delay in the delivery of fuel to the *Kapitan Khlebnikov*, assistant expedition leader Jennifer Clement informs us. The ship will arrive a day later than scheduled at our embarkation site of Anadyr, Russia. Tomorrow morning, instead of joining the ship directly from the flight to Anadyr, we will be spending 24 hours in that town. Pack a small bag with necessities for the next 24 hours, we're told. We won't have access to the rest of our luggage until we're aboard ship.

Jennifer, Donna, and staff member Norm Lasca outline the changed arrangements for tomorrow, break us into three groups, each with specific timetables for the morning departure, and field question after question. We all have one identical time – bags must be outside our rooms for pick up by 0430. "It's an adventure," someone calls out.

There's a rush to a side table heaped with bottled water, granola bars, and packaged snacks, provisions for the morrow, in case. The room empties quickly. Morning and the adventures are fast approaching, very much a "ready or not…."

The traveler sees what he sees, the tourist sees what he had come to see.
– Gilbert K. Chesterton

Day 2 Friday, July 11, and
Day 3 Saturday, July 12, 2003
ANCHORAGE, INTERNATIONAL DATE LINE
ANADYR, RUSSIA

0800: 61°10'N 150°00'W
2000: 64°37'N 178°11'E

Flight from Anchorage to Anadyr
Meals, Tours, and Overnight in Anadyr

Today is a topsy-turvy day of sorts and one in which we make lemonade. In the next 24 hours we lose track of time. We wake up, early, in Anchorage on July 11. Around 1245 Alaskan time, we're on the ground in Anadyr, Russia, but it's 0945 local time, and it's July 12, thanks partly to the International Date Line. And, soon after, we have lunch.

The day begins in an orderly manner, with the first group eating the hefty breakfast of fruits, eggs, sausage, bacon, and muffins in the hotel's Fancy Moose Restaurant, from 0500 onward, then identifying their baggage for the 0615 bus to the airport. Groups two and three follow at intervals.

Once at the airport, it's lines, lines, lines, long snaking lines. We inch forward, taking more opportunities to get acquainted as we collect boarding passes, shepherd our bags, go through security checks, take off shoes, and finally enter the departure lounge, before the final boarding pass check. And then we wait and wait, a companionable time intermingled among sports fishermen heading to the pristine streams across the Bering Strait, all of us soon to be aboard a Magadan Airlines flight specially diverted to Anadyr for our Quark group.

Take-off is 1030. We fly over Anchorage and its surroundings, over a cruise ship, tiny in the distance, over forested land, over mud flats along the coast, and then we're in the clouds at 31,000 feet. Soon the stewardesses are serving "breakfast," hot ham or beef sandwiches, bean salad, and chocolate granola bars. At times, the clouds lift to reveal snow-capped mountains, and later views go down to the ice-covered Bering Sea and stretches dotted with ice. Then we're crossing land pocked with waterholes and with lakes across the plain.

Nine-hundred miles, 2 hours and 20 minutes later, all of it a smooth ride, we arrive at the newly designated international airport at Anadyr. At last, we begin to make that lemonade, as well as to experience a new order in the making.

In a perfect world, on the trip planned for us, we would go through customs and then be whisked by helicopter directly to the ship. In either scenario, however, we would encounter the Anadyr Airport and Russian customs. We land on the one good runway and, as we taxi to the terminal, look out on a bleak scene, a mixture of two- and three-story cement buildings spread about, construction in progress, both on runways and at the terminal itself, clusters of people standing around. Life seems in slow motion. Accordingly, customs is a slow, methodical business. We stand in lines yet again and individually have our passports scrutinized and stamped. Once done, we wait outside to take one more bus, this time to the ferry. All the while we're confronted with the old and the new. Parts of the terminal are in disrepair. Other areas are newly, sleekly finished. The overall sense is of cement, of rawness.

"Come back in ten years," our guide, Sergei, tells us. He tells us that is the lens through which we need to view Anadyr, which is basically an administrative center for the Chukotka District. Anadyr and the whole district are at a crossroads, thanks to its governor Roman Abramovich. We first begin to hear his name today, from Sergei, and then whenever we visit native villages.

Termed the second richest man in Russia, through his oil and aluminum holdings, 37-year old Abramovich is spending 200-300 million of his own fortune to modernize this far-flung corner of Russia. “People were starving here five years ago,” Sergei tells us. Abramovich’s motivation is unknown, whether to use this area as a prototype for developing other parts of the country, to secure natural resources for himself (exploration for gold, gas, and oil is taking place in the interior just beyond the coastal mountains), to propel himself higher in national politics, or other reasons. He is becoming more familiar to the West through his recent purchase of England’s Chelsea football team, propelled by another unknown motivation.

For us, Abramovich’s interest is initially evident at the airport, which he hopes to make a stopover site for international flights. Perhaps not coincidentally, he owns 26 percent of Aeroflot. We see the airport at an embryonic stage. Further, he intends to develop a tourist industry in this Far Eastern region. This goal is also in embryonic form. Tourism as such has not really existed here. Many of the resident personnel who help us on this unexpected 24-hour stay are coping for the first time with over 100 visitors, on short notice. Unlike later portions of our trip, the time in Anadyr is hammered out on the spot, with the local representatives and under the guidance of Jennifer Clement and Donna Barfield, helped continually by the rest of the trip staff – Peter Clement, Bob Headland, Norm and Judy Lasca, Tony Soper, Frank Todd, and Danielle Sogno. It’s a true expedition start. We all cope with the unknown. Our “reward” is a totally unblemished look at the re-making of an area that has known much poverty and neglect. We discover that it also holds great spirit.

Our entry into Anadyr, across the bay from the airport, is by an old ferry, onto which we crowd on two separate runs. There’s a cool breeze on the half-hour ride, as well as sightings of seals and a beluga mother and child. On the last run, a stream of belugas porpoises off, parallel to the ferry, offering sleek streaks of bright white, surfacing and then diving repeatedly. Gulls fly overhead. In the distance, on a prominence of land across from town, we have good views of an experimental windmill farm being monitored for possible use here and in other regions, another contrast on this stark coast.

On land again, the first load of passengers is taken to hotels, three buildings in separate sections of town, all within walking distance of one another. Some of us stay at the “Upper Hotel,” others at the “Canadian Hotel”/Hotel Anadyr, and the remainder at the “Dormitory,”

adjacent to an open-air market. As is true time and again, we enter through unprepossessing exteriors to find surprisingly modern and/or attractive interiors, sometimes with quite elaborate appointments, such as crystal chandeliers and paintings in gilt frames at the Chukotka Hotel, where we eat dinner today and breakfast tomorrow.

We meet surprise after surprise. Lunch is served in a restaurant whose drab exterior totally belies the atmospheric grotto-like room in which we gather at round wooden tables. Selections include borscht, salad, and a beef dish, among others. We do not go hungry. Nor do we go thirsty. Large glasses of locally brewed beer – well received – are available at the long, fully-stocked bar. Waitresses bustle about, and through the language barrier heaps of food appears, our third meal by whatever time it is here on this side of the Date Line.

Our schedule today includes guided tours of the city at 1600. Some of us are actually picked up by bus at our hotels and have a formal tour. Many of us walk around this sunny and hot afternoon, with the museum a focal point, before fanning out around the central part of Anadyr, population 10,000, Segei says, though it feels much, much smaller. Anadyr was settled in 1889, by people from Western Russia. It became a city 50 years ago and still has a feel of the frontier, which it is. As in all Arctic communities, heating pipes are raised above the ground on platforms. Often these heating systems, as here, are ramshackle in appearance. Likewise, building are constructed on concrete pillars, so the heat exchange will not melt the permafrost.

There are few paved roads, most are hard-packed dirt and fairly wide, along all of which a steady, mostly slow stream of traffic passes – jeeps, a Toyota Land Cruiser, small vans, old trucks, kids on two-wheelers, babies in buggies, toddlers in small go-cars, military transport. Over the afternoon and evening, we see a gamut of vehicles, but most people are on foot or traveling by vintage buses such as those available to us.

Among the older, Soviet-style block buildings about town, some new structures stand out, particularly the barn-red "Canadian Hotel," with its lovely, wide wooden deck, the modern "super store"/mall, with handsome blue façade just down that same street at the corner, and, overlooking the waterfront, a culture center still under construction, interesting angles in shiny aluminum, an altogether different and showpiece in the making.

Some 1,000 construction workers are here from Turkey. Evidence of their presence includes the exterior of the "Dormitory," which is being insulated, and more streets being paved.

A number of the older buildings are decorated with colorful, large murals – a bright yellow sun on one, a group of Yupik in native costume, a native fishing from a kayak, whales, a map of the USSR, and more – all lively statements, as is a fishing boat moored high up on land amidst buildings, and now functioning as a bar.

We take in all of these sights as we move about the city, most of us drawn eventually to the collection of statues and memorials on a wide plaza fronting the bay. A soaring lone figure commemorates the young leader of a group of Bolsheviks who tried to overthrow the town government in the Russian Revolution. A nearby grouping of statues depicts some of his compatriots, youth of varying ethnic backgrounds, the Pioneers killed by businessmen in the town. Within this paved open area are also war memorials. As we walk about, we share this space with local residents, children come to play or hand-in-hand with an adult, groups of women sitting on benches and talking, and strolling couples.

People are spread out in small numbers on the grassy slopes nearby, almost the only grass we see in this city. Swimmers troop up from the water below. It's a peaceful, bucolic scene this summer afternoon at the edge of town, far away from the mainstream.

Those of us who visit the museum housed in two small buildings find an excellent display of native carvings; costumes – fur parkas and leggings, beaded moccasins, gloves, purses, beadwork and applique on fur; a dugout canoe; drawings and lovely watercolors of the area by a Chukotka artist; plus a charming collection of children's books. Again, we walk through a door and find unexpected quality, find dimensions and beauty that expand our sense of life here and of the cultural history of the region.

We gain the same insight into contemporary life – and where it's headed – by milling around the new "super store"/mall, that large blue building at a central corner, actually a large modern grocery store combined with a number of specialty kiosks. It's possible under this roof, in this airy, attractive space to buy frozen foods, pizzas, meats, fish, vegetables, canned goods, fresh produce, and the like, all paid for at gleaming check-out counters with sleek cash registers. Upstairs there are vacuum cleaners, microwaves, cameras, china, cosmetics, and jewelry for

sale, as well as an attractive café area where couples sit eating and talking, close by to an ATM machine on one side and an array of video games on the other.

Equally rewarding, we find great fascination in the people-watching, those walking down the street, native peoples, Russians, a couple examining furniture at the open market, young men buying beer at an open stall presided over by three young, often dancing, women in mod clothing, with music blaring, on a long afternoon. We enjoy the way many of the Russian women put themselves together, wearing high heels on the dusty streets and dressed as for an occasion. We watch people en route home from work and lines of those waiting for buses, lines of people perhaps themselves aware of new faces to scrutinize today.
The hours here in Anadyr provide a tapestry against which to view this entire region, a glimpse into the fabric of life here, just at the beginning of change. What's lacking in efficiency is made up for by the good will extended to us, along with the good food.

Our 2000 dinner takes place at the Hotel Chukotka, where the ceilings are high and the lounges grand, with sofas that make the wait for the second seating a little easier. We eat a splendid dinner on white tablecloths, choosing among vegetable and meat salads, chicken fillet stuffed with cheese or barbecue pork, French fries, boiled rice or spaghetti, and a fruit compote. It's beautifully served. We're well taken care of. When we walk back to our hotels, it's still daylight in the North, and the promenade we witnessed earlier in the day is still taking place. We have traveled far from our morning departure point in Anchorage. It has been a rich day.

The world is a book and those who do not travel read only one page.
– St. Augustine

Day 4 Sunday, July 13, 2003

ANADYR AND WELCOME ABOARD THE *KAPITAN KHLEBNIKOV*

0800: 64°10'N 150°00'W
2000: 64°11'N 179°32'W
Air Temperature: 18°C/64°F

Breakfast at Hotel Chukotka
Helicopter Rides to the *Kapitan Khlebnikov*
Orientation Briefing and Staff Introduction
Fire Drill
Introduction to Provideniya and the Chukotsky Peninsula

We awake to a lovely sunny morning in Anadyr, where the temperatures all along feel much hotter than the projected 24°C/75° F we were told to expect, or the 16°C/61° F announced on yesterday's flight. By the time we head to breakfast, the hulking dustbuster is already chugging up and down the dirt streets, spraying water as it moves, one of many repeated dousings that take place each day, all summer long in this city. So, apparently, do hordes of mosquitos, giant mosquitos, which we dodge for the next few hours.

Breakfast is served in three shifts beginning at 0900, in the same Hotel Chukotka dining rooms, as last night's dinner. Again, the food is bountiful and excellent – eggs, cheese, meats, fruit, pastries, sausage, coffee, tea, juices. The only scarcity at times is seating, so some of us stand balancing plates and cups, and then sit as places become available. We're learning the Anadyr shuffle.

The Anadyr tourist group in turn, such as it is, is learning also, with help from Quark Expeditions. The logistic feat of shuttling all 109 of us to the helicopter pad starting at 1030, goes quite smoothly. The first 22 passengers to take the 15-minute bus ride and then board the large Russian chopper are the first to embark on the *Kapitan Khlebnikov*. The rest of us have varying amounts of time to roam about Anadyr and/or to relax in the hotels until we're picked up at designated spots.

We all get a wider view and idea of the city on the bus ride out of town, past industrial areas, among them the power plant and storage buildings, out toward rolling tundra, with permafrost reaching down about 30 cm below the surface. Unlike in the center of Anadyr, where buildings have been renovated in the last year and a half, those we see en route are of Soviet-style Russian architecture, drab and functional, if crumbling. From this vantage, the city's larger size also becomes evident.

Will we recognize Anadyr in ten years?

The first two groups each have waiting time in which to botanize, to begin the Arctic plant search, with Jennifer Clement on hand to help with identification. Hunting on the dry tundra and in spongier areas, we quickly amass a list, by no means exhaustive in this relative lushness: buttercups; fireweed; two louseworts, one of them flame-tipped; two dandelion species; seashore chamomile; Labrador tea; and birch, all providing vibrant splashes of color.

When the helicopter touches down to pick up the first group of passengers, Expedition Leader Andrey Gostnikov bounds out of the door, likely as happy to see us as we are to greet him, for he is our proof that the *Kapitan Khlebnikov* is really here. He remains on the ground directing operations until the last of us are aboard, flying over myriad water holes in the tundra below, then over the bay and out to the ship, minute in the distance, solid and soaring as we set foot on the deck.

We are all on board by 1345, each greeted in turn by the ship's staff, particularly Chief Steward Aleksandr Vysochin, and directed to our cabins on Decks 5-8. Our Arctic jackets are in our cabins; before long we are on the ship's decks, clad in bright yellow and blue, easy to spot and warm. The last of us hurry to the dining room for lunch before closing time, to continue the moving feast of the past days – soup, salad, fish, minute steak, a vegetarian selection, ice cream, fruit, cheeses.

Mostly, we're simply happy to be on deck, to have time to unpack, settle in, and explore the ship. We prowl about, discovering the gymnasium, exercise room, ping pong table, sauna, and swimming pool on Deck 3; the dining rooms and hospital on Deck 4; the library, shop, lounge, and bar on Deck 5; the Lecture Room and office on Deck 7; the Captain's Bridge, with its great wrap-around stretch of glass windows on Deck 9; the open Flying Bridge up on Deck 10, offering a panoramic view from the top of the ship; and all the open decks about the ship, port and starboard, bow and stern. In short order, we settle in and make the *Kapitan Khlebnikov* home. Some of us gather for coffee, tea, and cakes in the Lounge, as we will for Afternoon Tea throughout our journey.

It's glorious and sunny this afternoon, with a clear blue sky as we set sail. Once out of the bay, beyond the spit, we encounter our first ice and sail easily through the floes. We're underway, on our expedition northward. *Stchastlyvogo plavanya* – Bon voyage!

"Now you're on one of the best ships, and we're going to one of the best places in the world," Andrey greets us at the 1700 welcome briefing in the Lecture Room. "You've had a unique experience," he continues, "a day in the capital of Chukotka." Then he introduces our fabulous staff, many of whom, of course, we've already come to know. They include a wide range of Polar hands and experts who make the journey ahead a time of learning and delightful encounter. He begins with Lars Wikander, President of Quark Expeditions, and his wife, Erica, spirited and much traveled fellow passengers, and then introduces the individual staff members:

Andrey Gostnikov, Expedition Leader, was born in Astrakhan, Russia, and graduated from the Odessa Marine Academy in 1981. For ten years he was employed by the Far Eastern Shipping Company (FESCO), gaining extensive experience in ice seamanship. In 1992, he began working on board the *Kapitan Khlebnikov* as Chief Officer, and has gained a wide knowledge of operating expeditions on icebreakers. This is his second season as an expedition leader.

Jennifer Clement, Assistant Expedition Leader, has a lifelong interest in natural history. She studied biology at Antioch College and the University of Michigan. In 1976, she began working in the travel field, joining her father, Dennis Puleston, on trips to, among other places, Alaska, the Galapagos Islands, Antarctica, and Spitzbergen. She and her husband, Peter, have traveled worldwide together and led scuba diving trips and land excursions on the Falklands, as well as spending countless seasons in the Arctic and Antarctic.

Jan Bryde, Chukotka Specialist, was born in Hamburg, but spent his childhood in Spain, before returning to Germany. After college, he became a travel agent and began working on cruise vessels in 1988. Between 1994 and 2002, he worked as a cruise director and expedition leader on various cruise and expedition ships, traveling to more than 115 countries, to "classical" as well as remote destinations, including Kamchatka and the Bering Sea, from the Kurils to Uelen in the Chukchi Sea.

Peter Clement, Naturalist and Zodiac Coordinator, has worked on expedition ships in Antarctica, the Arctic, South Pacific, the Galapagos Islands, and Central and South America since 1978. Raised on a sheep farm in the Falklands, he was educated in England and, from 1969, worked in sheep farming throughout Australia and New Zealand. He has led professional scuba diving trips and land excursions in the Falklands. He and Jennifer raise llamas and alpacas in New York.

Sasha Golikov, Russian Guide, was born in Vladivostok, where he still lives. A graduate of the Far Eastern University and the Institute for Oriental Studies, he teaches Mandarin, the History of China, World History, and Computing at the Institute for Oriental Studies. He joined Quark Expeditions in 2001, and has since worked on cruises in Kamchatka, the Northwest Passage, Chukotka, Baffin Island, Tanquary Fjord, and the High Arctic.

Bob Headland, Historian, is Archivist and Curator of the Scott Polar Research Institute in Cambridge, England. Through his work in historical geography and in studies of human effects on polar regions, he has provided data on climatic, glaciological, and biological changes in the Arctic and Antarctic. Decorated in 1984 with the Polar Medal, he serves as advisor to a number of expeditionary organizations and government departments, and as a Fellow of the Royal Geographical Society.

Norm Lasca, Geologist, is Professor of Geology and Senior Research Scientist at the University of Wisconsin. He teaches glacial and Pleistocene geology, earth surface processes, soils, and groundwater. Widely traveled and published, he has worked extensively in Arctic (especially northeast Greenland) and sub-Arctic areas of North America and Europe. He has lectured on Arctic and Antarctic cruises, as well as voyages to the North Pole, Kamchatka, and the Northeast and Northwest Passages.

Tony Soper, Ornithologist, is a naturalist and filmmaker who co-founded the BBC's famous Natural History Unit and became its first film producer. One of Britain's leading ornithologists, he has written numerous books, among them *The Arctic: A Guide to Coastal Wildlife* and *Antarctica: A Guide to the Wildlife*, and has repeatedly led film crews and tourists on expeditions to both the Arctic and Antarctic, Australasia, Africa, North and South America, and most countries in Europe.

Frank Todd, Ornithologist and Marine Biologist, is one of the foremost ornithologists, particularly known for his studies of the seabirds of Antarctica. Additionally, he is recognized as an expert on waterfowl, marine mammals, and bird life of the Arctic, among other areas. Researcher, zoo curator, and prolific author, he also established the first successful breeding colony of Emperor Penguins outside the Antarctic, for which he received the Bean Award, the highest honor in this field. His acclaimed book, *Waterfowl*, is the most complete such work.

Dan Zak, Ship's Physician, was trained in both internal and emergency department medicine. Born and raised in Seattle, he has worked in an emergency department just outside of Seattle since 1989. This is his eighth trip with Quark Expeditions, starting in 1997 with a trip to the North Pole. He has been to the Antarctic three times and to the Arctic five times.

Andrey also introduces **Evelyn Seeber**, Hotel Manager; **Danielle Sogno**, Shopkeeper; and **Judy Lasca**, Log Writer, all veterans of many Quark Expeditions trips.

We learn some procedures, as well – to turn our tags on the tagboard, from white to red each time we leave the ship and back to white when we return. "Don't forget to turn your tag!"; to face stern as we swing our legs over the side of the Zodiac for a landing; to clasp arm to arm when being assisted at the landing dock or coming to shore. We also learn about boarding helicopters, particularly never to approach one from the rear.

Andrey Matyushenko, the ship's Safety Officer, briefs us on lifeboat drills and on where to find our life preservers. Then he sends us to our cabins to suit up in the bulky orange vests and wait for the signal, seven short blasts and one long of the alarm bell. Once it begins, we file out and take our places on Deck 4 by our Muster Station. The drill ends with the opportunity to look into a lifeboat, a cozy craft that would hold us sardine-like but safe and floating. We jostle about before returning to our cabins and tucking the preservers into their niche once more.

Soon after, at 1900, we're back in the Lecture Room, as we will be again and again, this time to hear about the trip plans. Despite losing a day, we will still make all the planned stops on our itinerary, Andrey promises us. He, Jan Bryde, and Captain Vasilev have been studying the charts and figuring out ways to make up for the "lost" 24 hours. Tomorrow, Novoye Chaplino and Provideniya, and then north to explore a region seen by very few people ever: the natives of course, a handful of seafarers and whalers over the years, a sprinkling of scientists and, in the last decade, a few hundred eco-tourists. We're among the very few ever to encounter these pristine reaches.

Now to dinner, which offers the usual medley of choices and tastes over which we relax with friends. In the last two days, we've morphed from friendly strangers into a highly companionable group and in no time the *Kapitan Khlebnikov* has become home. We spread

out over the ship, some of us scanning for wildlife from the decks and Captain's Bridge, a watch that continues day and night throughout the trip. So far a few seals have been spotted, as well as birds we will see repeatedly – kittiwakes, Black-backed Gull, Herring Gull, Pelagic Cormorant, and murres. The count is on. And a special "eureka," grey whales are spotted.

Many of us stop for a drink in the bar, browse over books in the library, head to the sauna, or maybe just go to sleep after a wonderfully full day. Whichever, we are well launched, in good hands, under fair and always light skies. These are rich moments in time, and we know it.

The Lure of the North! It is a strange and powerful thing…to long for the great white desolation, the battles with the ice and the gales, the long, long Arctic day, the silence, the vastness of the great, white lonely North.
– Robert Peary

Day 5 Monday, July 14, 2003
NOVOYE CHAPLINO AND PROVIDENIYA

0800: 64°29'N 172°50'W
Air Temperature: 13°C/55°F
2000: 64°29'N 172°50'W
Air Temperature: 13°C/55°F

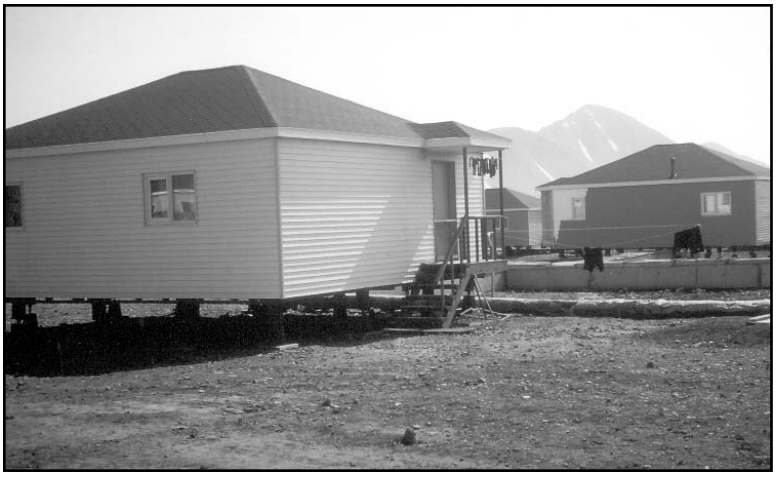
Zodiac Landing at Novoye Chaplino
Bus Trip to Provideniya
Captain's Welcome Cocktail Party
Captain's Welcome Dinner

At morning wake-up call, we still have 13 nautical miles to reach the native village of Novoye Chaplino, our first landing site. There's fog on the water, Andrey tells us, but also some blue sky. Expect a good warm day, he promises. By 0810 the village is in sight, a cluster of buildings and cement blocks, new construction evident, storage sheds fronting the beach. Once the site of a whaling operation, the remains of which can be seen at the shore, this tiny enclave hugs the coast amidst a magnificent setting of mountains ringing the bay. Closer at hand, murres paddle about in the waters around the ship, and we prepare for the Zodiac rides over to land, scheduled to start at 0930.

Today begins our exploration of the remote *Chukotsky* Peninsula, described in the daily schedule as "the land of the *Chukchi* people, one of the last groups to be subdued in the Russian conquest of Siberia. From the remote village of *Novoye Chaplino*," the background information continues – (much of this material supplied throughout the trip by Bob Headland, our resident historian) – "we intend to organize a tour to *Provideniya,* the administrative

capital of the *Provideniya* District, a lesser district of the *Chukotka* Autonomous Region, in the extreme Northeast of Russia."

It's a short Zodiac ride over to Novoye Chaplino, our picnic lunches stowed away, along with cameras and necessities for the day's outing. We quickly disembark, one by one, feet toward the stern, then walk up the beach to leave our life jackets in a protected spot for the return journey. Some of us change into hiking boots from our wet-landing gear. Each of us eventually joins a bus tour led by a native guide to show us about the village. Additionally, one of the first to greet us is Vladimir Bychkov, who has just returned from three years in Anchorage, earning his MBA, and is now establishing a tourist business based in Provideniya. He will remain with us throughout our time in Russia, regularly providing insight into this region and into the dynamic force of educated young men and women in present-day Russia, as do Sasha Golikov and the Russian staff aboard the *Kapitan Khlebnikov*.



As we bus around the small confines of Novoye Chaplino, through streets of old houses and areas of new ones, we learn that around 450 people, 160 of them children, live here, supported by government assistance and by subsistence hunting of ocean mammals and fish. The village was moved here in 1957, from its original site, hence the "Novoye." A fox farm also once operated here, but was shut down by the decline of the world fur market. Once again we hear the name of Roman Abramovich. He is funding the construction of new homes for the entire population. Through his support, workers from Central Russia are building snug, wooden, boxy-looking houses that stand high off the ground on steel stilts and are painted in light tan, grey, white, or beige, each with indoor bathroom and running water. In all, 76 houses will be constructed, and the old weathered wooden ones, dating from 1958, will be destroyed, all except for one. At the request of the people, that one will be saved as a museum.

Of special interest to us all, we tour the village school, which is attended by 100 children, kindergarten through high school. It's a functional, high-ceilinged building, empty now during the summer recess, but still enlivened by brightly-colored pictures of native scenes in the hallways. We see the principal's office and look into classrooms. In the science room we find a familiar sight on one wall, the Periodic Table of Elements, and on another a picture of Mendel. Suddenly this corner of the world seems more connected to us than we realize, and life in this village goes far beyond surface impressions, especially when we hear that the students can go on for higher education in Provideniya and sometimes beyond, in this new era.

Up from the shore we cluster and walk around the carcass of a grey whale, stripped of its meat shortly after its catch three weeks ago and left here, a rotting, blackened heap, impressive in size. Nearby, Frank Todd holds up a dead Glaucous Gull, with its immense wing span. Cameras click. We also find stands of mustard, primrose, mountain sorrel, artemesia, all lush in the Arctic summer sun.

Around 1115, we begin the trek to Provideniya, bouncing over pebbly ground in our vintage buses, 25 of us per vehicle. At first we ride along the bay, with snow-streaked mountains off in the distance on either side of us, fishing huts at the coast, stretches of fireweed across the land. Then we enter the interior, following a river into a valley where an occasional Snow Bunting bursts across our vision. We climb higher and look over at closer range to mountains, some jagged, some rounded. En route we pass a deserted military base, initially an isolated stone building, then more structures, once headquarters for the 20,000 troops stationed here in the Cold War. Alert then for an invasion from Alaska, the entire force is gone now, and Provideniya's fortunes have sunk with it. The daily schedule provides more background:

> "*Provideniya* is a deep-water port, which was established in 1938. The population during the times of communism was about 8,000. The city once was the soviet eastern 'Gateway to the Arctic' for this part of the world and an important military base, when it received a lot of benefits. As a major seaport of the Northern Sea Route, it had at least 500 ships visiting each year. *Provideniya* was also a hub for receiving and shipping coal further north. Located in the farthest Far East Russia, the city has always been totally isolated by road from the rest of the world; there are no tracks to anywhere distinct in Russia.

"Today the importance of *Provideniya* has catastrophically declined. It lost its importance for coal, and left the inhabitants with no other major source of income. Everyone who was able to afford a flight out left *Provideniya.* The number of inhabitants has declined to approximately 1,500, and living conditions are difficult. Wages from the government are paid late or not at all. There is hardly any tourism and nearly no infrastructure for it in this very remote part of Siberia. All in all *Provideniya* has the distinct appearance of a 'forgotten city' in the post-communism era, with obvious economical problems. There have been few advantages as a result of democratic changes in Russia for the inhabitants of *Provideniya."*

We drive through Provideniya, with the waterfront always in view, impressed after Anadyr and Novoye Chaplino by the size of this city, by the large number of buildings, many obviously empty, by the extent of its shipping facilities. A statue of Lenin stands in a concrete plaza benignly overlooking the scene, as we crowd about and children play around the stairs. Farther along at the opposite end of the city, we stop high above the coast at the Bering monument, a towering lighthouse covered by graffiti, traditionally left by the city's graduating high school students, we're told. Fewer and fewer ships need the automatic beacon signal in the dark months, but the lighthouse stands sentinel over the city's cemetery.

The lower portion of this cemetery looks out toward the water, while the upper area stretches back to the interior. The graves here are poignant, the majority marked by Eastern Orthodox crosses and well cared for in tidy rows. Many graves are blanketed with artificial flowers and faded ribbons. Many have plates for holding food offerings. Many have pictures of the deceased person. Some plots are fenced, the ground carefully covered with pebbles. In one such, the grave of a 19-year old man, a beer bottle stands by the cross. In another park-like setting, a table and two chairs flank the grave. Most evocative of all, a doll and a small stuffed animal lie on a small child's grave.

Our visit in Provideniya ends at the museum of local and natural history, a gem in the center of town, in a wooden building from the 1950s, next to the "Stalin architecture" and the "Khruschev boxes" from the '70s, the lively museum director points out to us. He guides us room by room through this choice collection of over 15,000 items, all simply and elegantly

presented, among them, a display of birds and minerals from the region; engravings on tusk; carved ivory and baleen ("When traders came here 100 years ago, the natives discovered they could sell carved ivory, and the art developed."); carpets of seal skin; beadwork; striking landscape paintings and photographs; cases of archaeological finds – harpoon heads, the oldest dated 2,000 years; wooden snow goggles; exhibits of native clothing; models of a sealing/walrus-hunting boat, of a sledge, and of a sled for women and children; and, most impressive, a large urt/tent made from wood and skins, standing at one end of a room, enabling us to envision such structures out on the tundra.

Some in our group visited this museum in the mid-90s and begin to realize that the long-haired, casually dressed Russian man with flowing moustache and expansive gestures (pictured above left with the bus driver) is the same director who showed us about back then, although formally dressed in suit and tie, short hair carefully combed, also speaking thoughtfully in excellent English, but in a reserved manner. Asked about the change, he laughs and says, "Times have changed." Also a schoolteacher in the area, he provides additional information about Provideniya.

He stresses how isolated this city is from the rest of Russia, eight hours by jet from Anadyr to Moscow – formerly the trip would have originated at the Provideniya Airport, but its runways are no longer able to handle large planes – and 2,000 miles from Vladivostok. Provideniya was a fueling base and repair site for the icebreaker fleet in Soviet times. In World War II, supplies came here from California and Seattle, and were then sent across Russia. Last year only 26 ships, including tourist cruises, came to this port. Mining has closed in the area, because it's cheaper to get natural resources from other regions. The oil and gas found here is enough for local needs, but not comparable to Prudhoe Bay. Heating in Provideniya, however, is supplied by coal. If the northern sea route opens, then the city will grow again.

Provideniya's main feature, he tells us, is its closeness to North America. That proximity and the shared territory of the Bering Strait are also important to the wildlife migrating through the area. Many scientists are here studying the marine mammals and birds. Archaeologists and linguists research the native culture. The Chukchi area currently has a population of 56,000, 17,000 native Chukchi and the rest Russian. The land here is pristine, he says, because there isn't mining. He evokes a wintertime picture of blacks and whites, snow, mountains, grey sky...an area he obviously loves.

On the bus to and from Novoye Chaplino, our guides offer more insight. The people in Provideniya have access to three television channels. There are about 15 stores, most for food, two or three for clothes. Salaries are around US$200 a month. By and large, food is expensive, with the exception of potatoes, which come from Alaska and sell for US$1 a kilo. Meat is US$5 per kilo. Vegetables and fruit are "very expensive," cucumbers US$8 a kilo, for example. Our guide says she buys cucumbers once a summer. No wonder we see tomatoes growing in so many windows. Travel is likewise expensive. Roundtrip airfare to Moscow is over $1,000, "but people try to go once a year." Provideniya is an administrative, educational, and engineering center.

In early afternoon, we re-trace our route back to Novoye Chaplino, stopping first to roam the tundra, stretch our legs, chase butterflies, search for flowers (anemones, red, white and purple bell-heather, cinquefoil, pink sedum, rhododendron, great lushness), and simply to enjoy the beauty of this Arctic landscape. At another stop, we gaze out to the bay where the *Kapitan Khlebnikov* is a tiny feature on the water. From this vantage the road winds down to the coast, and we can trace the path of the braided river on the valley floor. This is the spot where some eagle-eyed among our group encounter a Peregrine Falcon – "It looked us in the eye." On the ride back, we also spot several "susliks" – ground squirrels – along the roadside.

A special treat awaits us on our return to Novoye Chaplino. We gather in the school gymnasium, quickly filling up the rows of chairs, for a dance program by The Rising Sun, a group founded in 1964. "But dancing has always been part of the Yupik culture," the master of ceremonies says (surprise – it's our museum director and, no surprise, his manner indicates how close he is to these people, how respectful.), "so it's difficult to say when the group started. The dances reflect the common life of the people," he continues, "men hunting for bear and for walrus, women preparing skins, but the first dance is a free dance. You're all invited to join." Many of us do join the large number of native dancers, the performers colorful in traditional costumes, as well as villagers of all ages in everyday clothes, a throng of arms and legs and bodies moving to rhythmic drumming and chanting. A wonderful sight.

Then we watch a succession of dances, some performed by men, some by women, often mimicked by small children who are obviously learning the tradition, another insight for us.

Nine drummers accompany the dancers as they hunt various animals, work on seal skins, "push the whale," dry the meat, imitate the raven, rituals that bend time and take us into an ancient culture. As the program continues, the basketball-court sized room fills up more and more. We're joined by toddlers who move about freely and by many children in arms, villagers of all ages, teenagers, elders, some young Russian construction workers, the whole community. Everyone is drawn to the scene, mesmerized. Then there's one more free dance, and the arms and legs and bodies sway once more to their own beat. What a rich ending to our day on land.

We're all back on board by 1645, easy Zodiac rides to the ship, tags turned, with time to shower and get dressed for the Welcome Cocktail Party in the bar and lounge at 1830. It's a lively and happy group that gathers to sip champagne and trade stories of the day's journey, friends glad to be together. Captain Vasilev greets us and introduces his chief officers. We all know this is an extraordinary experience, a gathering of kindred spirits and adventurous souls bound for destinations that few are privileged to reach.

Soon we're trooping in to the Captain's Welcome Dinner, one more feast. Here in the Arctic we dine on Smoked Salmon served with Basil Sour Cream and Avocado Dip Garnished with Melba Toast; Salads and Dressings from the Buffet; Oxtail Soup with Old Sherry and Chester Sticks; Kiwi Sherbet; a choice of Roasted Fillet of Red Snapper and King Crab Meat Cake accompanied by Glazed Spring Onions and Mango Couscous and Chili Sauce in Crustade, or 'Chateaubriand' Beef Tenderloin Scented with Pepper Berry Crystal Salt accompanied by Vegetable Bouquet, Red Wine Shallots and Cheese Pocket with Fresh Herbs, or Stuffed Avocado with Couscous and Crème Fraiche; 'Horn of Plenty' – Puff Pastry Stuffed with Vanilla Mousse and Fresh Blueberries, plus assorted Ice Cream, Fresh Fruits, Cheese and Crackers from the buffet, and Pralines. Delicious.

At 2145, the sun blazes low on the horizon, its glittering reflection a line across the water. The sky is filled with soft pink, light blue above and then a muted grey cloud stretching along the distant coast, over the dark, silhouetted mountain range, mainly gentle curves, here and there a jagged peak at the shore and inland. The water stretches all around, a grey-blue merging into the eastern sky, peaceful and vast. Lone birds fly across our path, a murre, another, a fulmar, a kittiwake. The sun slides behind a mountain. We continue north.

The fair breeze blew, the white foam flew, the furrow followed free,
we were the first that ever burst into that silent sea.
– Samuel Taylor Coleridge

Day 6 Tuesday, July 15, 2003
YTTYGRAN & PUFFIN ISLAND (CHUKCHI PENINSULA)

0800: 64°38'N 172°31'W
Air Temperature: 9°C/48°F
2000: 65°33'N 170°27'W
Air Temperature: 8°C/46°F

Zodiac Landing on Whalebone Alley (Yttygran)
Zodiac Birdwatching Cruise around Puffin Island
Lecture: *Unveiling the Arctic*, Bob Headland
Recap

It's an early start today, with breakfast beginning at 0600, for our excursion to Whalebone Alley, the 500-year old whaling and ceremonial site on Yttygran Island. "By early morning," our daily program informs us, "we intend to be anchored off *Yttygran* Island, which is separated from the mainland by the *Senyavina* Strait. *Yttygran* is a well known archaeological site. It consists of several rows of skulls, jawbones, and ribs of the Arctic bowhead whale and it might be the most grandiose religious memorial place ever built by the Native people in the Arctic area."

From the ship, we can see the arched jawbones standing upright above the coast at the front of a wide, grassy plain that rises up a gentle mountain slope. It's a dramatic site/sight from a distance and even more so up close. Zodiac rides begin at 0730, a short, smooth trip over to the pebbly beach, where some of us witness a fly-by of eiders as we come ashore. At this point, we have a number of choices. Sasha leads a hiking group to the top of the first summit. Vladimir is stationed along the beach to interpret the archaeological sites. Norm roams up and down and across the plain, tracking down species among the abundant plant life. Frank and Tony are each out on the land, searching for birds and mammals.

We're free to join any of them at any time and also to wander about on our own, soaking up the mystery and grandeur of this place, which was largely unknown to the world until the 1980s. Since then, it has been scrutinized and its significance widely debated. The original name of this site is "Sikaluk," meaning "meat storage." "Yttygran" itself is Yupik for "halfway between two settlements." A small Yupik

village was located here until 1946, when the main population of some 40-60-100 people left, most likely re-located by the Soviet Government to a larger community in the region. Apparently, the native people don't know what this place was used for historically.

According to Vladimir, this area was built as a joint effort by native peoples from four or five communities between the 14th and 17th centuries. This particular site was likely chosen because of its good grey and bowhead whale hunting, and then it served as a ceremonial place after successful hunts. Thirty jawbones and 50 skulls, all from bowheads, have been counted here. The skulls have mainly been found in groups of four near the shore, theoretically used as platforms on which to dry skin boats, convenient to the chase if whales were sighted. (Four to ten skin boats would be used to harpoon a whale and then to drag it to shore, where the old people would help cut the meat.)

The standing jawbones, 1½ meters below ground and 5 meters above, were used to mark meat caches for the winter. Caches have also been found in the jumbled cascade of rocks on the plateau above the shore. In that area, a massive, 500-year-old skull set into the rocks serves as a cache covering as well as a striking presence. Apparently, the caches here have not been used as a meat storage for at least 60 years. The skree is well used, though, for ground squirrel holes.

Three-quarters of Whale Bone Alley was destroyed by ice two years ago, Vladimir tells us. "The ice moved like a bulldozer and pushed skulls away from the beach and many were damaged." However, not everything was destroyed along the shore. He points out a deep rectangular pit meticulously lined with pebbles, in which offerings were left to the gods. The workmanship has withstood time. Everything here is evocative, whether we're striding down the beach or tromping across the wide plain of dense grasses massed with flowers – blues, yellows, pinks, whites – whether we're scrambling about the masses of skree or hiking upward. The carefully arranged bones and those simply scattered about, all speak of purposeful human activity. We feel the sacredness of this place, as well as its unanswerable questions. Intermittent fog adds to the atmosphere, while often shrouding views to the distant mountains.

Many of us also visit the mounded remains of the native village at the far end of the coast from the standing jawbones, near to a freshwater lake. We look at circles that mark house sites now filled with the original whalebone roofing, and we locate the entrances that traditionally face the sea. A sturdy but trashed wooden cabin stands nearby, last used by hunters in 1992. These sites of human habitation hold even more lavish stands of flowers, in particular, primulas and Jacob's ladder in profusion behind the cabin. From this vantage, and others all across the area, we look out to see Pelagic Cormorants flying steadily across the water, lone murres, kittiwakes, rhythms continuing, despite the presence of our yellow-and-blue jacketed figures dotting the entire landscape.

Over 50 species are hunted down by the plant sleuths this morning. The large number and range are indicative of the numerous micro-climates to be found in this relatively small area, changes that produce rose root, marsh marigold, monkshood, Arctic poppy, wormwood (used by natives, we're told, to keep moths away from their fur clothing), angelica (whose root is used for medicine), fireweed, cottongrass, gentian, mountain sorrel, Lapland butterbur, primrose, grass of parnassus, boreal Jacob's ladder, three different louseworts, sea lungwort, willow, both yellow-marsh and stiff-stemmed saxifrage, among the whole. (A list of the plants seen throughout the trip appears at the end of the log.)

We leave just in time. By 1050, when the last of us return, a penetrating damp is setting in, with mist hanging in the air. Still, we board the Zodiacs with reluctance, not quite ready to depart this wondrous place.

Of course, there's more to come, always, lots and lots. Lunch is early, from 1130 to 1230, so we can take Zodiac cruises around Puffin Island (Povorotny Island). Groups 1, 2, and 3 line up on deck four for departures beginning at 1300. Groups 4 and 5 leave at 1400. Quickly, we head down the gangway and into the waiting Zodiac, ten passengers per boat, room enough for our bulky jacketed and life preserver-clad selves, plus camera gear and binoculars – plus driver, Andrey, Danielle, Grigoriy, Jan, Jen, or Peter, all excellent – and usually a naturalist, Frank, Bob, Tony, or Norm, all knowledgeable.

Then we're off to this small island of crumbling rock, whose fractures are caused by freeze-thaw activity here in the Arctic. Those fractures create the niches which draw the puffins to this nesting site. We approach amidst a flutter of puffin wings, birds flying back and forth, both Horned and Tufted Puffins in the air, on the water. Birds perch among the lower rocks, along the top, all across the face. A Glaucous Gull steadily moves above the scene, ever watchful. There's a flurry of cameras. The bay is calm, clouds low, brooding. We are in a ring of gently rounded mountains. Puffin Island presents a grey, rocky face; its interior is a lush green.

We motor slowly, often cutting the engine to watch, following the black-bodied Tufted Puffin and the white-bellied Horned Puffin. Pigeon Guillemots bob in the water, their white patches prominent. Looking down, we can see their red feet. Occasionally, we hear a high-pitched caw; more often, there is great silence or the lapping of water against the coastal rocks. Sometimes we watch and also hear the sound of a bird "running on the water" in process of taking flight. We also spot Herring Gulls, Pelagic Cormorants, and a Common Eider, as we watch, absorbed in the immensity of this setting and the fascination of this primal scene. Fifty minutes zip by. On our return, Tony finds the waters around the ship teeming with pteropods, tiny sea-going snails or "sea butterflies" that swim around with the aid of wing-like lobes on their feet. One more piece of the Arctic picture.

At 1630 this afternoon, Bob Headland guides us on an equally fascinating journey, spanning 500 years of Arctic exploration. Map by map and illustration by illustration he presents

Unveiling the Arctic, a history and geography of this region, the story of how the polar regions became known. He begins with a discussion of how the geography influences the history of an area, first defining the Arctic as the land above the tree line and at sea beyond the edge of the ice pack. Historically, the limits of the Arctic have moved farther and farther north so that, for instance, Svalbard/Spitsbergen is now a settled community.

The European and Asian areas of the Arctic became known much earlier than the North American, which proved the most difficult to explore, because of the number of islands and concentrated areas of ice; there are fewer islands and more open waters in the Eurasian Arctic. Additionally, the coastal plains of the Eurasian Arctic are shallow in contrast to the great depths along the coast of the North American Arctic. By the end of the1600s much of the Asian Arctic had been mapped.

As the Arctic was "unveiled," cartographers became aware of new discoveries and produced "honest maps," for instance, including information gained from William Barents' 1597 overwintering expedition to Novaya Zemlya. "If they didn't know an area, they listed it as *unknown*." Bob breaks the phases of exploration and other activity into eight often-overlapping blocks: the earlier Speculative Period to 1595; the Marine Exploitation, including hunters and trappers, as well as Barents, in the late 1590s, from 1600 to 1860; Russian Expansion, including the Great Northern Expedition and Bering (1720 to 1830); Northwest Passage, the British Royal Navy, including Franklin and the subsequent search parties (1800 to 1860); Ocean and Navigation, including the Tegetthoff Expedition, Nares, Nordenskjöld, DeLong, and Nansen (1860 to 1930); North Pole, over 17 expeditions trying to make the Pole (1890 to 1915); Confrontation Period, including the Cold War, the DEW Stations, and the Russian bases (1930 to 1991); and the Open Period (1991 to the present).

Barents' commercial expedition in 1597, contributed to the knowledge of the European part of the Arctic. Also, whalers and sailors were gradually expanding north. By the early 1600s, Novaya Zemlya, more of the Russian coast, Jan Mayen, and the East Coast of Greenland are "pretty well known." All of this information is reflected in a map dated 1606, on which Scandinavia, the top of Scotland, and Iceland are "more or less correct." Greenland is "reasonably" shown, as is Novaya Zemlya. Still, "over three quarters of the Arctic depiction is imaginary."

During the Great Northern Expedition undertaken by Russia from 1733 to 1743, under the command of Vitus Bering, 1,000 men worked in different detachments all along the coast of Russia and sailed down the rivers. ("The rivers were the way in and out of the Russian Arctic. In North America, only the Mackenzie River enters the Arctic.") Because of the Russian exploration, the geography of the Eurasian Arctic was well known by the mid-1700s; however, the Great Northern Expedition was solely land-based, so no islands were discovered. Accordingly, two maps of the Russian Empire dating to 1756, include everything but the Russian Arctic islands.

The key to the exploration of the Northwest Passage and the Pole lies in the Pax Britannica after the Napoleonic Wars. Because the British Navy was no longer necessary, it became important to find a way to use the ships. The intense period of exploration developed out of this need. Among many notable expeditions, John Ross sailed up the coast of Greenland in 1818, and met with the indigenous people near Cape York. Sir William Edward Parry sailed in search of the Northwest Passage in 1819, "in an easy summer," entering Lancaster Sound and eventually overwintering in Winter Harbor, where he left a carving of his route. John Franklin completed the exploration of the lower section of the American Arctic, but it was the 15 years of searches for the lost Franklin expedition that really mapped the Northwest Passage. "By getting himself lost, Franklin set the way for his searchers to explore more territory than he ever had," though Bob adds that Franklin probably mapped the Passage. Robert McClure made the first transit of the Northwest Passage, helped by finding Parry's marker in Winter Harbor. A map drawn after the Franklin searches, in 1856, shows the Northwest Passage all the way through, but short of details in the farther north.

The remains of George Washington DeLong's ill-fated *Jeannette* Expedition to the North Pole, 1879 to 1881, drifted three years on the ice from the area of Wrangel Island over to southern Greenland, where they were discovered by native peoples and brought to the attention of the science community. From this find, Norwegian Fridtjof Nansen conceived the idea of getting locked in the ice in an attempt to reach the North Pole.

The existence of land north of the Chukotka Peninsula was known from accounts of Siberian natives. Ferdinand Petrovich Wrangel made three unsuccessful attempts, from 1820 to 1824, to find this rumored land. Though he never saw the island, he reported its location accurately, and it appeared on maps. The first definite sighting occurred in 1867, by an American whaler.

Between 1912 and 1915, two Russian coal-fired icebreakers, the *Taymyr* and the *Vaygach*, surveyed and explored from the Bering Sea across to Murmansk, and in 1913, discovered the Russian island of Severnaya Zemlya. Until it was mapped in 1930-32, Severnaya Zemlya was "the last major unknown land on earth."

Before dinner, we bring our drinks from the bar and gather in the lounge, sitting at tables, standing in the back, spilling over into the library, for our first Recap. As he will throughout our trip, Bob Headland serves as impresario of this often humorous, always informal staff presentation. Norm begins with some geology, first a description of permafrost – ground that is frozen two years or longer. The permafrost table in Siberia starts at one-half inch beneath the surface, and may extend down as far as 1,000 feet. The active layer of the permafrost is that portion not frozen during the spring and summer thaws. The general rocks so far, he adds, are igneous. This is an active volcanic area all along the coast, and, hence, an active mountain-building area.

Tony is next, elaborating on birds of the Arctic – "We had a taste today of the great concentration of birds here. In June, July, and August, this is the right place to be to see the concentrations of seabirds." Of the 9,000 bird species in the world, 350 are seabirds. They are "more successful than any other birds." There are very few species, because it's a difficult life, but there's plenty of food for them. The problem they face is that to reproduce themselves they have to come to shore. The Wilson's Storm-petrel is the world's most common bird, but few will ever see it. Many of these birds like to follow ships. The passage of a ship both churns up the plankton and creates air waves for the birds to fly on. And, Tony believes, "They like to come to the ship because it's a change, and they like company."

Frank gives some background information on puffins. They're named "puffin" because they're puffy and chunky. Members of the Alcid Family, there are three puffin species: Atlantic, Horned, and Tufted. Puffins, penguins, and diving petrels are the only birds that use their wings to dive. Puffins fly 50 mph, feed primarily on fish (but also like krill), and have a forked tongue (very few birds do) which, pressed against the roof of the mouth, enables them to hold fish. There are 3 million breeding pairs in Iceland, and 16 million in Alaska. They live relatively long lives, as long as 20 years, and still breed in their later years. They lay one egg. As in all seabirds, except the Emperor Penguin, both sexes incubate the egg. Incubation is for 42 days. The chicks fledge at 48 days. A puffin colony is known as a "puffinery," the chick as a "pufflin."

Vladimir and Andrey bring things to a close with a few more nuggets of information – Penguin Island is called "Skinny Island" by the natives. There are three churches in Provideniya: Baptist, Pentacostal, and Russian Orthodox. They also offer a bulletin on the ship's progress: "The Captain is pushing the pedal to the metal," Andrey assures us, in order to fit everything in on our trip, despite the "lost day." The ship's speed is 17 knots, "making food for the birds," so we can reach Kolyuchin in the morning. Tonight we sail through the Bering Strait and will cross the Arctic Circle around 0100. From Kolyuchin, in the morning, we'll have 240 miles to Wrangel Island. Full steam ahead. Right now, it is full steam to the dining rooms.

At 2100, whales are all about the ship. Big Diomede Island lies ahead of us to starboard and way distant we can make out the Seward Peninsula on the Alaskan Coast. We look across the International Date Line into yesterday, both days under a brilliant sun, with clouds all around the horizon. Grey whales spout ahead of us, constantly. Perhaps they, like the birds, simply enjoy our company. Around 2200, we pass the jagged peaks to one end and then the gently sloping silhouette of Cape Dezhnev, the most eastern point of the Eurasian Continent. The captain marks our passage with a blast of the ship's horn. Auklets fly about. The sky behind us is full of lovely pinks, as we sail onward at the end of another brimming day.

Nothing more wonderfully beautiful can exist than the Arctic night.
It is dreamland, painted in the imagination's most delicate tints; it is colour etherealised.
One shade melts into the other, so that you cannot tell where one ends and the other begins,
and yet they are all there. No forms – it is all faint dreamy-colour music,
a far-away, long-drawn-out melody on muted strings.
Is not all life's beauty high, and delicate, and pure like this night?
– Fridtjof Nansen, *Fram*

Day 7 Wednesday, July 16, 2003

CHUKCHI SEA

0800: 67°26'N 179°17'W
Air Temperature: 3°C/37°F
2000: 69°09'N 176°26'W
Air Temperature: 4°C/39°F

Lecture: *An Introduction to Arctic Birds*, Tony Soper
Video Documentary: *Great North*
Lecture: *Arctic Flower Workshop*, Norm Lasca
Recap
Une Diner Francaise Speciale

"Welcome to the Arctic," Andrey greets us at wake-up call. It's colder this morning and we have a 35-40 knot wind from the northwest. We're sailing at 13-knot speed, expecting to reach Kolyuchin Island and its dramatic bird cliffs in an hour and a half, and then to spend three hours on land. Later in the morning, the landing is canceled due to high waves at the gangway, making the operation too dangerous, a disappointment for us all. Instead, we head north immediately, to the ice and to Wrangel Island. And to another full day.

At 1115, Tony Soper presents *An Introduction to Arctic Birds*, a marvelous overview of the bird life of the Arctic summer, a time of great activity. Seabirds necessarily must come ashore to breed. Both terrestrial and shorebirds come here to breed, because of the abundance of food. Food is the reason birds go anywhere; they can feed 24 hours a day in the Arctic nesting season and, thus, raise their young faster. Tony shows one magnificent slide after another, in the process reviewing the following birds, grouped according to families:

LOONS (DIVERS): Pacific and Red-throated.

PETRELS AND SHEARWATERS: Fulmar – the "classic bird that follows ships. Our albatross in the North." Superficially like a gull, but of the albatross family; long, straight wings; a glider; tubenosed, with a facility to distill salts; sits high in the water;

white and blue phases; the higher the latitude the more likely to see the dark phase. A sub-Arctic breeding bird. Has spread south during the last 100 years, fueled by waste from fishing vessels.

SWANS, GEESE, AND DUCKS: Bewick's (Tundra) Swan; Barnacle Goose – we won't see it here but it's typical of geese; white face; head and neck to chest are black; in medieval times classified as a fish so it could be eaten on Fridays; Oldsquaw (Long-tailed) Duck – common; Common Eider – common; lines its nest with eider down; young get away from the nest the moment they've hatched, feed on mosquitos; King Eider; Harlequin Duck.

EAGLES AND FALCONS: White-tailed Sea Eagle – "like a barn door flying at you;" Gyrfalcon – coastal bird; Peregrine Falcon – found all over the world; we saw it on the road between Novoye Chaplino and Provideniya.

GROUSE: Willow Ptarmigan.

SANDPIPERS: Purple Sandpiper; Turnstone; Sanderling.

PHALAROPES: Grey (Red) Phalarope – bug eaters, mosquitos, etc.; swivel around on the water bringing larvae up to the surface for feeding; female is the more colorful in plumage; she chooses mate, makes several nests, then chooses one, lays eggs; male incubates while the female leaves to find a second mate; then she "goes off to join a hens' club."

JAEGERS (SKUAS): Pomarine Jaeger (Skua); Long-tailed Jaeger (Skua); Parasitic Jaeger (Arctic Skua).

GULLS AND TERNS: Sabine's Gull – named after Sabine, a naturalist on John Ross's 1818 voyage searching for the Northwest Passage; a tundra breeder with black head and yellow-tip bill, smaller than the kittiwake. Herring Gull. Glaucous Gull – same size as the Herring Gull, but with more or less white primary feathers and light-grey wings. Black-legged Kittiwake – breed in large numbers on remote, exposed vertical cliffs; nests made of leaves and spit; chicks fledge by "fluttering off the cliff," hopefully into the water where the male parents wait to protect and escort them farther out to sea; Ivory Gull – totally white with black beak; lives entirely in the Arctic; well-developed claws on feet to cling on ice. Ross's Gull – named after James Clark Ross; first discovered in 1822 or '32; one of the few birds in the Arctic all winter; black "necklace;" pinkish breast in breeding plumage; wedge-shaped tail. Arctic Tern – red bill, black head, swallow tail; breeds colonially, in Arctic and sub-Arctic; winters in the Weddell Sea; flies 12,000 miles a year: "a bird of perpetual summer – doesn't know what winter is."

ALCIDS: Brünnich's Guillemot (Thick-billed Murre) – legs set well back on body; can sit up like penguins. Black Guillemot. Pigeon Guillemot. Tufted Puffin. Horned Puffin. Little Auk (Dovekie).

OWLS: Snowy Owl – a wholly Arctic bird; silent flight; feeds on lemmings; staggered breeding; chicks hatch in sequence.

PERCHING BIRDS: Hoary Redpoll.

The bird search continues from all over the ship. One of the great pleasures, we find, is the sight of a bird aloft or on the surface of the water. We have long and continuous looks, a mesmerizing pursuit, and in particular excellent views of Pomarine Jaegers today.

At 1500, the video documentary *Great North* is presented in the Lecture Room.

Then, at 1700, our "Arctic education" continues with an *Arctic Flower Workshop*, presented by Norm Lasca. First, we look at what we need to know to help identify the plants we encounter, such as number and color of petals; type of leaf, simple, compound, and where found on the plant, whether basal, whorled, alternate, or opposite; leaf edges, and on...in short, the basics. Next, he enlists our aid in compiling a list of characteristics of the Arctic:

1) Cold – with temperature changes from 21°C/70°F to -40°C/-40°F;
2) Wind – katabatic winds formed by cold air on ice caps spilling down at great speeds, also bringing bombardments of sand and debris;
3) Long summer days for 1½ to3 months, depending on latitude; periods of total darkness;
4) Soil conditions – quite poor; rocks break down very slowly here. A half-inch of soil can take thousands of years to develop in the Arctic;
5) Freeze-thaw action;
6) Arid climate with low precipitation – 2 to 10 inches of precipitation a year. This is a desert, but plants have to cope with excess moisture;
7) Permafrost – very cold right below the surface; ground has been frozen more than two years;
8) Topography;
9) Salt-laden winds from the coastal water.

Plants in the Arctic make adaptations to severe winter cold, seasonal freeze-thaw cycles, six months of darkness, and the short growing season. Ninety-five per cent of the biomass of the Arctic is underground. The wind brings in nutrients and also dries. Poppies and mountain avens, among others,

follow the sun. Most of the seeds are round, which means they can roll easily. Slow growth is especially evident in the willow; a willow trunk the width of a thumb equals approximately 150 rings or years of growth. The dandelion is the only plant that is ubiquitous from the Equator to the High Arctic. At the end of the workshop, Norm shows slides of Arctic plants we've found as we've traversed the land.

At Recap, Bob Headland speaks of the meteorological station that operated on Kolyuchin Island from 1980 to 1992. Over a hundred of these stations functioned throughout the Soviet Union, but now only five remain, and there is a corresponding break in the collection of scientific data. Tony Soper provides more bird information, first about the system used by tubenose birds for getting rid of salt and then how scavenger birds use their keen sense of smell to detect carrion. Norm Lasca gives some background about ice. First Year Ice is one to seven feet thick. Second Year Ice has gotten rid of the impurities and is less dense, thicker, stands higher in the water, has small puddles, bare patches, and is greenish blue in color. The ice year runs from November 1 to October 31. River and sea ice have different crystal structures; the salt ice is not as strong as river ice. Andrey predicts that we'll meet the ice pack during the night.

This evening we have an extra special dinner, *Une Diner Francaise Speciale*. Bon appetite, indeed. We set off with Foie Gras avec des Truffes Perigord Gele au Vin et des Raisins Glacees; the banquet continues with Soupe a l'Oignon; Sorbet aux Lampons; a selection of Tranche de Saumon Servi avec des Coeurs d'Artichauts du Riz Rouge de la Camargue et un Ragout aux Morilles, or Canard 'Barberie' au Four avec une Sauce a la Moutarde Pommery et des Cerises Piemont Servi avec du Choux Rouge et un Stroudel aux Prunes or Stroudel de Pommes de Terre aux Epinards Glazees et du Fromage Frais. Dessert is Crepe Suzette, Fruits Frais, Assortiment de Fromages Au Buffet, et Pralines. Ooh la la!

We're on a walrus watch tonight, in perfect conditions, as we sail through ice floes. At 0026, into the wee hours of the next day, we have our first polar bear sighting, a mother with cub, as close as a quarter mile from the ship. It's extraordinary to view these magnificent animals, to observe how they move, to witness the mother's own watchfulness of her cub, to see them in their domain. From the stern on Deck 4, Louise Christensen-Zak also observes a polar bear swimming near the *Kapitan Khlebnikov*, and then climb on an ice floe. "A blessing" she terms it, as are all the sightings, we agree.

There is nothing more enticing, disenchanting, and enslaving than the life at sea.
– Joseph Conrad, *Lord Jim*

Day 8 Thursday, July 17, 2003
WRANGEL ISLAND (OSTROV VRANGELYA)

0800: 70°57'N 178°31'W Air Temperature: 7°C/44°F
0200: 70°50'N 179°02'W Air Temperature: 4°C/39°F

Lecture: *Polar Bears and Other Furry Creatures of the Arctic*, Frank Todd
Lecture: *Introduction to the History of Wrangel Island*, Bob Headland
Helicopter Excursions to Devil Valley and to Research Station, Wrangel Island
Presentation about Wrangel Island by Research Scientist Vasily Baranuk

At 0730 wake-up call, we're just dropping anchor a mile from Wrangel Island, and Andrey and Jan are attempting to contact the director of the National Park of Wrangel Island. Despite much pre-planning, he is not answering his phone in the nearby village of Bukhta Rodzhersa. Instead, it turns out that he is at Somnitelnaya Bay, some 25 miles away, and the helicopter is dispatched to bring him to the ship. How much more easily things work in the Arctic today. So many people initially spent so much time trying to find Wrangel but, in 2003, the technological and political barriers are down. Still, we're not there yet, not until this afternoon.

At 0900, we're in the Lecture Room to hear Frank Todd's talk about *Polar Bears and Other Furry Creatures*, and to watch his fabulous slide presentation. He begins by showing pictures from a variety of Arctic environments and then of polar bears and other animals who live here – muskoxen, caribou and reindeer, hares, lemmings, ground squirrels, brown bears and grizzlies, weasels, wolves, and fox. "The High Arctic is more varied than people think," he tells us. "A large number of creatures take advantage of this place."

> The **polar bear** is one of the most highly adapted of all creatures, he says, the lord of its domain. Males weigh around 1,000 pounds, with the record over 2,200 pounds. Females weigh around 700. The male stands nine feet tall on hind legs. A bear's running speed is 25-35 miles per hour. Polar bears have thick, dense fur that's hollow. Despite their large size – "The larger you are the better off you are in cold places" – their appendages are small. The skin and tongue of a polar bear are black, a heat-retaining feature. Its eyesight is comparable to that of humans. Its hearing is not terrific, but it has the keenest sense of smell of any animal, able, for instance, to smell a seal 20 miles away. Normally solitary and nomadic, polar bears are more sociable around a great quantity of food. They're very curious and not afraid of anything.

Three-inch-long claws and hair on the bottom of their (enormous) feet provide traction on the ice. They have a distinct lopey run, swinging their feet as they go. These are the only bears who do not climb trees. Their solution to a problem is to confront it. They're perfectly comfortable in pack ice and able to cover 50 miles a day. They are efficient swimmers, helped by their blubber layer, as much as four inches thick. Their hair is six inches long. In the water they dog paddle with their front paws and steer with their hind limbs. They can swim as far out as 100 miles from the ice. Their tracks have been seen within 50 miles of the North Pole.

Polar bears can feed on the bottom of the sea. They'll eat kelp and clams, but they're mainly carnivorous, eating seals and carrion. (In our minds, bears live in a hostile environment, but that is not the case.) The polar bear's body heat is the same as ours, though it overheats much more. A polar bear may dig a snow pit and spend hours sleeping in it to cool off. Nonetheless, polar bears are not comfortable ashore and are at their most dangerous then.

A number of different hunting techniques are used by bears. They will sit at a hole and wait for a ringed seal, easily able to sweep a 700-pound seal out of the water, with a one out of 20 to one out of 50 success rate, maybe one every five days. The favored portion of the seal is the blubber. "A really efficient bear will take just the blubber and leave the rest for other creatures." Cape Blossom on Wrangel Island is a great gathering spot for polar bears, as well as a vast walrus haulout. "It's unlikely that a polar bear can take out an adult walrus alone, but at Cape Blossom that does occur."

Polar bears mate in the spring, but have delayed implantation, with the 60-day gestation period taking place in the Fall. At any given time, only one-third of the female population will be breeding. In October, the females come ashore in areas with snow cover of ten feet and dig a den "a little smaller than a telephone booth." The temperature in the den is 40 degrees higher than outside. Spitsbergen, Wrangel, and Harald Islands are the big denning areas, with 300 to 500 females on Wrangel and Harald. Except for pregnant females in their dens, all the other bears are nomadic in winter.

The young are born between November and January, weighing one pound. They are fed on high-fat milk, 33 percent, and grow rapidly. When they leave the den, cubs weigh as much as 25 pounds. They spend a couple of weeks around the den after they emerge and then come out on the ice at the time ringed seals are born. After being so long without nourishment, the mother bear has to get out on the ice to get seals. By the end of the first summer, cubs will weigh 140 pounds. Pup mortality is relatively low – "Polar bears are good mothers." The cubs stay with their mother for up to three years. A female will have three or four litters in her lifetime.

The troublesome bears are usually three to four years old. “They’re hungry and irritable.” He adds, “Do not stare a bear in the eyes. If they charge, it won’t be a mock charge.”

Research is conducted on bears by first subduing them with a tranquilizer dart. Then weight and other measurements are taken, a tooth is pulled to age the bear, and a collar transmitter is fitted. Five countries – the U.S., Canada, Norway, Russia, and Denmark – are involved in the protection of polar bears. Their population is estimated at between 10,000 to 40,000. Most researchers believe the higher number is correct. Global warming is the major threat to the polar bear. There is less and less ice and fewer and fewer seals. Pollution, especially around Spitsbergen, also has an effect on reproduction.

Subsistence hunting is allowed in Canada, which has a quota of 600, and in Greenland, which has a smaller quota; some of these hunting permits may be sold to outsiders. The number taken does not seem to impact the population greatly.

The **muskox** is not related to cattle; rather, its closest relative is a goat from the Himalayas. Males weigh between 700-900 pounds, but their great amount of hair makes them appear larger. They’re covered with an outer mass of long hair, in addition to an inner layer of kiviat, softer and warmer than cashmere, and are thus well adapted to the intense Arctic cold. All the muskox here come from an Alaskan island; those in Alaska all came from 34 animals that were brought from Greenland. “A great shaggy beast,” the muskox “scarfs out a living on vegetation.” They are very fast, easily running uphill. They can be aggressive, especially when in rut. The dominant male is fiercely protective of his females. Muskox often run as a tight group. Their defense mechanism is to form a protective circle around the young. This was suicide when men with guns appeared. Wolves are the major predator of the muskox, which are making a comeback in many areas. The total population is more than 165,000.

The **woolly mammoth** was here as recently as 4,000 years ago. Evidence suggests that the emergence of man is linked to the decline of mammoths.”They must have had an enormous population, judging from the numbers of mammoth bones and tusks found.”

The **caribou** (reindeer in the Old World) is the most northern and smallest of the deer species, the only one in that family in which the females also have antlers. They are the only deer whose nose is covered with fur. “Ratty” in summer, their hollow fur enables them to retain heat and to swim well. They have to be on the move, to the north in summer and south in winter, 1,200 miles in some cases. On the move, they hold their head and tail high. There was great concern about the Alaska pipeline. Much study was put in on how to structure the pipeline, and it has not been a barrier. Caribou are negatively impacted by mosquitos, which “drive them nuts,” draining as much as a pint of blood a day. To escape, caribou will head to the sea and go in if they can.

(Without the mosquitos, the birds would have nothing to eat.) Caribou are an essential part of the Arctic fauna for humans. Reindeer herding is big business, the only way many peoples can survive. The native people in the Arctic are as endangered as any of the animals. "Their culture is under threat, but at least they're still around."

The **Arctic hare** weighs up to 12 pounds and is the largest of the hares. All white with black-tipped ears, it is an active creature when on the move, able to run at speeds of 40 miles per hour and to leap over obstacles. Its elongated snout enables it to get down to the vegetation through the snow. This is a sparse habitat, but "they know how to make a living." Their young, called "leverettes," are furred. There are three to eight young in a litter. The above ground nest is called a "foam."

The ecosystem of the Arctic revolves around **lemmings**, of which there are 12 species. These rodents are the fodder. In high lemming years everyone does well. At Wrangel Island, no Snowy Owls are born in a low lemming year. In a high lemming year, there will be nine owls born per pair. The **Arctic ground squirrel**, which we saw around the bones at Yttygran, is also important to many carnivores, for instance making up 80 percent of the Golden Eagle diet. The **short-tailed weasel** – or ermine – is "the most powerful and strong creature you can imagine." Hyperactive, it's almost never still; because of its high metabolic rate, it needs much food. In winter, it turns white with a black tail.

The **brown bear** is terrestrial. The Kodiak brown bear is almost as large as the polar bear. Grizzlies and brown bear are the same species, except that grizzlies are on the coast. They are adept at catching salmon with their huge claws.

A large **wolf** can weigh 175 pounds. The howl of the wolf is associated with the Arctic. The whole pack is involved in the rearing of the young. They are efficient predators. The smaller **Arctic fox** weighs up to 20 pounds. Fox are able to sleep outside for one hour at –80°C/-112°F, without a change in their body temperature. ("We are the ones who keep saying the environment is hostile. The animals here are perfectly adapted to this environment.") When resting, the fox wraps its tail around itself for warmth. In winter, foxes will follow polar bears and clean up the carcasses. In some areas, foxes couldn't survive without the bears. Fox tracks have been found within 25 miles of the Pole.

Fox farming was extensive in the native villages of the Russian Arctic, and the loss of these farms, because of the worldwide ban on furs, has been devastating to many areas. A corollary, bird populations, were devastated when fox were put on islands for fox farming. Brown and mangy in summer, fox can be fearless at that time of year. As winter comes on, they grow long white hair. The smart ones cache food for the winter. The fox have warrens that have been used for hundreds of years.

Most of the animals here have undergone huge adaptations to live in the Arctic.

We return to the Lecture Room later in the morning for another marvelous history lesson. Through maps, contemporary prints, and Bob Headland's inimitable running commentary we receive *An Introduction to the History of Wrangel Island*. Wrangel, 7,940 square kilometers in size and one of the most remote islands of the Eurasian Archipelago, is still not fully known and understood.

> Before Wrangel and tiny, nearby Herald Island (11 square kilometers) were discovered, there was much speculation about these islands, but there is no way they could be seen from the Siberian coast. From 1820 to 1824, Ferdinand Petrovich Wrangel led an expedition to survey lesser known areas of the coast. He did not get to the island subsequently named for him, but he did get reliable reports from the Chukchi of land here, so he put it on the charts. "He got it right."
>
> Whalers also operated around this area, seeking new whaling grounds. In 1848, a whaler from Sag Harbor came into this region, and from then until 1921, the whaling industry extended into the water toward Wrangel. Some 2,700 whaling voyages came either here or to Herschel Island in Canada through the Bering Strait. In 1849, as part of the British naval Franklin search expedition, HMS *Herald* sailed north and took possession of Herald Island for Queen Victoria, and also confirmed Wrangel's charts. In 1866, Eduard Dallmann, a German on an expedition sent by the King of Hawaii, became the first person to land on Wrangel, where he reported seeing footprints of muskox, actually "probably of pygmy mammoth." In 1867, Thomas W. Long of the whaling ship *Nile*, out of New London, Connecticut, made an accurate sketch of the south coast of the island and named it after Ferdinand Wrangel, on whose charts it first appeared.
>
> After Alaska became part of the U.S. territory in 1867, coast guard cutters began coming regularly to work the coast, because whalers were trading guns and alcohol with natives on both sides of the Bering Strait.
>
> On September 4, 1879, George Washington deLong, on the *Jeannette* Expedition, partly sponsored by the U.S. Government and mostly paid for by the newsman James Gordon Bennett, saw Herald Island in the distance. Two days later, the ship was stuck in the ice and traveled north of Wrangel, confirming that it was an island. Measurements taken showed that the depth of the sea was about 60 meters; elsewhere the depth dropped off 500 meters, marking the edge of the continental shelf. The *Jeannette* began drifting west, then east again, then west, eventually being crushed and sinking. The men reached and named Bennett Island, but the expedition ended tragically in their attempt to reach the mainland in three small boats. Two boats reached safety at the Lena Delta, but ultimately only 13 of the *Jeannette*'s crew of 33 survived.
>
> Revenue cutters going up and down the coast were also on the lookout for the *Jeannette* and for survivors. In 1880, a cutter sighted Wrangel and also reported

enormous starvation among the natives of the area. In 1881, there were specific orders to search for the *Jeannette*. Much better ice conditions that year made it possible for the steamer *Thomas Corwin* to explore Wrangel and Herald. Also in 1881, as part of its search for the *Jeanette* Expedition, the men of the USS *Rodgers* made a geographic and scientific study of Wrangel and produced a map after sailing around the island. An 1886 map of the Arctic shows Wrangel accurately.

In 1884, items from the *Jeannette* were found floating on the pack ice off the southern tip of Greenland. This showed there was an enormous drift in the Arctic. These relics and the new knowledge they brought of the drift caused by Arctic currents stimulated Nansen to make his journey with the expectation of traveling over the top of the Pole.

Whales became scarce in the Chukotka region and whaling moved to Herschel Island. The last of the U.S. cutters came to the Chukotka area in 1889.

Russia became more interested in the Northeast Passage and sent the *Taymyr* and the *Vaygach* to explore the Northern Sea Route in 1911. Members of this expedition were the first Russians to set foot on Wrangel. They built a cairn on the island and claimed it for the czar. Vilhjalmur Stefansson, an Arctic enthusiast, developed a fixation on Wrangel and its possibility as a center of navigation. He left his Arctic expedition of 1913-14, which was subsequently saved by Robert Bartlett. But in 1921, Stefansson set off for Wrangel and claimed it for Canada and Britain. In 1926, the Russians took everyone off of Wrangel and established a polar station. They surveyed the island and set up a landing strip. Garrisons were established there during the Cold War. In all, a total of six countries – the U.S., Britain, Canada, Germany, Hawaii, and Russia – have claimed Wrangel.

And at last WE get to set foot on the fabled Wrangel Island ourselves. There's time for a quick lunch and then at 1300, helicopter rides take off for Devil Valley, our first stop, where we each spend about two hours, and later for Doubtful River and a 30-45 minute walk-about.

Today's program gives more background information. "The long, narrow island is about 125 km (78 miles) wide and occupies an area of some 7,300 square km. It is separated from the Siberian mainland by *Longa Strait. Wrangel* Island is Arctic tundra; mainly covered by low-lying lichen. Although the highest part of the island reaches 1,096 meters at *Sovetskaya* Mountain, which was surveyed in 1938, there are no glaciers. Geologically, *Wrangel* Island consists of crystalline slates, granites, and gneiss, together with alluvial sands. [It] is a National State Reserve established in 1976. In this area live polar bear, walrus, reindeer, and muskox – the latter two are introductions."

It's a 20 minute helicopter ride from the *Kapitan Khlebnikov* to Devil Valley, out over the water and then along the coast to our landing spot on a pebbly beach, in an area cut by a small stream. We quickly disembark, shed life jackets, and scramble up an incline to the first terrace

level, a good scramble. At this point, we're on a gently sloping plain covered, as is the case in the Arctic, with only a thin veneer of soil, but supporting a profusion of flowers, most notably, at first glance, the vivid wine-colored paintbrush. To the front we look out to the water; behind us the land rises to gentle ridges.

All of us walk the short distance over to an area liberally filled with bones and dirt and grass, altogether different from the tundra in which it is located. We learn that this is the site of a temporary hunting camp used perhaps 2,500 years ago by Paleo-Eskimos to hunt walrus and whales, during a time when the ice conditions were different. The hunters would have lived in huts covered with animal skins. It's possible to discern where these huts were located, but nothing really remains of them. All the bones lying here, except for reindeer which are younger, are from this early time.

When the site was discovered in the 1960s, many more bones and some weapons were found here. Most were removed before the National Park was established in 1976. Scientists believe that the hunters came in small boats in early summer and left in early autumn. Spears are still found on the west coast, so that means the hunters went there quite often. It's possible that other camps like this exist on Wrangel, but scientists haven't been able to locate them. Another such site was also found in the 1960s, but its whereabouts or whether it still exists are unknown.

It's difficult to say what happened with the climate, but during the last 2,500 years, Wrangel has been uninhabited. Wrangel is the last place to have had mammoth; they were still here 3,500 years ago. Though humans and mammoth were here at the same time, their bones have not yet been found together. It's intriguing to stand at the edge of this long-ago campsite and hear traces of the early people whose lives were interwoven with this island, to connect with an earlier time on this remote stretch of land.

The areas over which we walk and hike are timeless and unspoiled. The hikers head upward, some directly up, others switching back and forth, some following the path of the river. Many of us simply fan out over the wide, sloping plain, fairly easy going terrain altogether. A few walk along the beach. All of us have the gently curving coast in view. The sky is blue, but filled with dramatic clouds, dark and low, with light at the edges. By mid-afternoon a cold wind is blowing.

Frank Todd alerts us to the sound and then the sight of nesting Black-bellied Plovers, their distinct black markings vivid against the tundra, once we spot them. We watch the aerial chase as this pair attacks a Long-tailed Jaeger, driving it further and further away. Then we're treated to a distraction display, as the female drags her wing across the tundra, feigning injury, to lure us from the nest. We play along. Snow Buntings flit across a land filled with lovely hues – purples, the red of sedum, yellow of poppy and spider saxifrage, shades of green. The ground is thick with willow in places. Among the numerous species, we find forget-me-nots, Lapland butterbur, mountain sorrel, dwarf fireworks flower, all perhaps abundant here in part because

of the long-ago human activity. Also, we find kiviat, the soft underhair of the muskox, all about in great abundance. The entire while, Frank keeps track of a white shape off in the distance that just might be a sleeping bear. If so, it sleeps the entire afternoon. The distant dark shapes turn out not to be muskox, since they never move. Hope feeds our imagination, and the search is a good way to scan the land.

At the scheduled time, each of the groups is helicoptered from Devil Valley over to Somnitelnaya Bay, to the research station. We land on a flood plain and walk up onto the first terrace level where abandoned houses are located. This is generally a marshy tundra, with permafrost near the surface. All the buildings are off the ground to prevent melting of the permafrost. Our immediate object here is to see four baby muskox just captured yesterday, that will eventually to be sent to the Siberian coast to begin another herd. The four are huddled together in a covered lean-to at the back of a good-sized pen, a mass of fur bodies. It will take them a month to acclimate, we're told. In 1976, scientists brought 20 muskox from Canada. Now the number on Wrangel has grown to 800, and the land cannot hold more. Thus, we're witnessing one form of conservation in the Arctic.

Of equal interest to us, we roam about the research station, which used to be a military site. An air force base was also to be established here, but that never happened. The area holds a clutch of ten or more dark wooden buildings in varying states of disrepair, as well as some structures scattered farther out, most abandoned. A number of large work vehicles with balloon tires stand about, some of them new but broken, "Russian-made so they don't work well," one of the researchers remarks. Old equipment lies on the ground, as do bales of wire. Oil drums are piled in every direction that we look. Electric wires are strung throughout the built-up area.

It's a dreary place on the surface – in contrast to the lovely tundra, yet the researchers with whom we talk are vibrant. Many live in Moscow or St. Petersburg during the winter, and relish the time on Wrangel. Four men live on this station in the summer. In all, 12 scientists are working on Wrangel, five of them women. No one overwinters.

Once more, we find a profusion of flowers at this site. In some places it looks as if they have been specifically planted to make a wonderful array of blues, reds, whites, and yellows, accented by green foliage. Even in this desolate village we have color.

"We are among the very few privileged to be on Wrangel Island," Andrey tells us after we are all back on board, by 1945. We do feel privileged, indeed.

Today is special for another reason. It's Jennifer Clement's birthday. She gets hugs from us all day long, and many of us are in the dining room this evening to sing *Happy Birthday* and share a piece of her cake, appropriately decorated for such a keen naturalist with a great walrus, our first real sighting.

Our Wrangel Island day continues at 2130, when we gather in the Lecture Room first to watch a slide-illustrated program and then a video, both presented by Vasily Baranuk, chief of the research group on the National State Reserve. Vasily studies the large Snow Geese colony on Wrangel, which has up to 40,000 birds on a 10-square-kilometer site. The geese – and Vasily – arrive when snow is still across the land. We also see pictures of:

- muskox – the program to remove some to the mainland began last year; reindeer – of which there are 7,000 on Wrangel ("It's too much. One hundred and fifty were brought here in the 1940s," he says, "and now they need to be controlled");
- polar bear;
- a walrus haulout and a mother walrus and her year and a half old daughter – "She still nurses from her mother";
- snowy owls, one with a lemming – "In a good lemming year," he tells us, "there are about 400 snowy owl nests";
- eider, of which there are four species on Wrangel;
- Glaucous Gull, Arctic Tern, Black-bellied Plover, and Long-tailed Jaeger.

Vasily also shows us pictures of flowers, sky effects, sunsets, and the landscape, from braided river systems to tundra to coastal stretches, giving us a sense of the many different habitats on this small island. What a rich finale to an already bounteous day. There is more to come tomorrow and tomorrow and tomorrow….

The difference between landscape and landscape is small.
But there is great difference between beholders.
– Ralph Waldo Emerson

Day 9 Friday, July 18, 2003
WRANGEL ISLAND (OSTROV VRANGELYA)

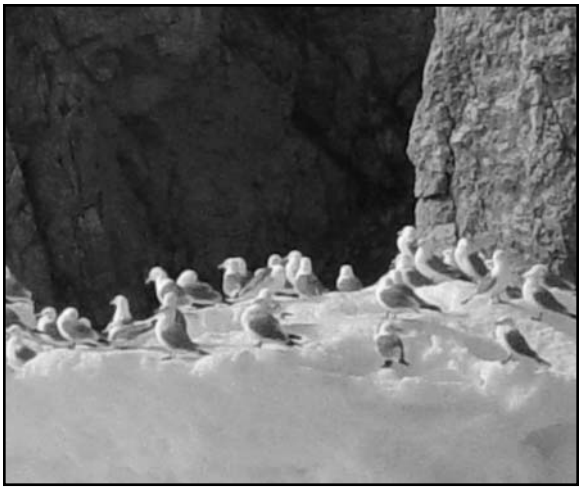
0800: 71°15'N 177°29'W
Air Temperature: 3°C/37°F
2000: 71°11'N 177°23'W
Air Temperature: 10°C/50°F

Zodiac Cruise to Bird Cliffs at Cape Litke
***Bayerische Spezialitaten* – Special Bavarian Lunch**
Helicopter Flights to the Interior of Wrangel Island for Muskox
Zodiac Landing on Shore of Cape Litke

Masses of kittiwakes follow the ship this morning, as we sail into Cape Litke on the eastern coast of Wrangel. By the time we drop anchor, by 0800, there's a constant coming and going of both murres and kittiwakes. Ice dots the calm surface of the water. The sun burns steadily through the clouds. Fog is draped over, but doesn't obscure, the nearby coast. We're positioned in a small bay, with rocky cliffs at one end giving way to undulating peaks and valleys. When the fog curtain lifts slightly, we can see mountainous terrain in the distance. It's a crisp, beautiful morning.

Zodiac cruises over to the bird cliffs begin at 0900. Low to the water, we weave our way through ice floes out a ways from the cliffs, with sun glinting on the surface and a blue sky above. Swarms of birds fill the air, as we approach the land and its jagged profile of high peaks and great folds of rock jutting into the water. We are looking at cliffs of limestone, which were formed beneath the sea and then fractured during uplift, providing the ledges on which the birds nest.

The cliffs are packed with birds. "Neighborhoods" of Thick-billed Murres line up all about the rock face. Kittiwakes sit motionless on "throne nests," some tucked back in eroded cavities, while most are sited on the "front line," often near murres. Higher up, Horned Puffins peek out of holes in a massive arch. Others stand on ledges out in the open. Glaucous Gulls



survey their opportunities as they sit on pinnacles that have been differentially weathered into grotesque shapes. Motionless "rivers" of rock and ice tumble down a narrow crevasse. Farther over, a waterfall streams down from the top heights in a straight drop. The cascade of water, calls of birds, fluttering of murres coming in for a landing, and the paddling of guillemots across the surface, mingle together into a continuous range of sound.

We take it all in as we slowly move along the cliff face, cutting the motor often just to sit amidst this extraordinary natural scene. Pelagic Cormorants fly by. We watch kittiwakes and murres and puffins coming back to the nest and those leaving to feed. We move closer to guillemots, distinctive with their white wing patches and red legs visible through the water. Once in a while, a Black Guillemot paddles its legs furiously, like a wind-up toy, and then dives under, a white flash and a red streaking below the surface, and then gone. Murres perch on ice floes. Tightly packed together and standing up on hind legs, they look like penguins at the wrong end of the globe. We head back reluctantly, through the ice floes once again and to the *Kapitan Khlebnikov* where, of course, a new set of treats awaits us, among them a special Bavarian lunch.

While groups one, two, and three are out in the Zodiacs, and then when groups four and five have their turn, those of us on board watch a superb video shot by world-renowned polar bear expert Nikita Ovsyanikov, recording his research year on Wrangel Island. He's been studying the wildlife of Wrangel for 17 years, first the foxes and, for the next ten years, the polar bears. In early spring, he comes to Cape Blossom for ten days of observation, returning again at the end of August when there is still ice around the spit and where there is a gathering of bears each autumn. Each day he has a 30-minute walk to his observation tower. Over the years, he's

had 500 "close encounters," which he handles by confronting a bear and "acting like the toughest bear."

His strategy of keeping the bears at bay by using his knowledge of bear behavior is successful, until one bear in particular, Gramilla, Russian for "brutal giant," becomes fixated on Nikita. For the first time, he has to use pepper spray to defend himself. After a winter storm brings ice and walrus on the beach, Gramilla successfully hunts a full-grown, 1½-ton walrus. It takes her a half hour to bite through the tough hide to kill the walrus. Then, once he's fed, Gramilla floats away on an ice floe, and Nikita doesn't see him again.

The spit at Cape Blossom is one of the few places where walrus feel safe to come on shore, as soon as the ice disappears. They are easily spooked, by the shadow of a bird or by a walrus coming from the opposite direction, and then they return to the water. Nikita observes that only male bears make direct attacks on walrus. During the season of the video, he observes 12 different attempts on the walrus herd, but none is successful. The most successful are the female bears, who stampede a herd and, in the rush, go in for a young one. Bears generally cooperate if there's enough food for all. Within two hours, a walrus is completely eaten. Gorged and happily satiated, the bears fall asleep on the beach. The foxes then scavenge.

Throughout the Autumn months, a set routine is carried out by the females on Blossom. They lead their cubs down to the spit to feed on whatever they find in early morning. Then, in early afternoon, they head to the tundra to make day beds; this is the time to feed the cubs. As the months pass, the walrus never let their guard down. Neither does Nikita. He has an encounter every day. By the end of October, winter is in the air. The number of bears changes from year to year, sometimes 150, but "a group of 20 is easier to observe." Then the long Arctic winter sets in, and the research year ends.

That Bavarian spread – "*Bayerische Spezialitaten*" – is, as all our "lunches" are, a feast. After our morning on the water in all that fresh air, we savor a Cream of Rolled Oats Soup with Ham Hocks, Small Flour Dumplings Gratinated with Cheese and Fried Onion Rings, Bavarian White Sausage and a Slice of Grilled Meat Loaf served with Sauerkraut and Potato Roesti or Whole Pan Fried Rainbow Trout or Boiled Rump of Beef, and, naturally, Apple Strudel to finish. Thankfully, we have a good hike ahead of us this afternoon and/or the option of climbing all over the ship or heading to the exercise room. Most of us opt for the return to land and another chance to explore Wrangel.

The 20-minute helicopter flights to the interior of Wrangel begin at 1300, across the water once more and then over plains and braided rivers, a panorama of land stretching out into the distant mountains and coast. Bare rocks everywhere, we land on a rocky hilltop and begin the trek downhill on rocky terrain and then to a wide, rocky riverbed leading down to the valley floor. In places the ground is spongy, supporting a mass of yellow flowers, lichen, and mosses. At the bottom of the valley we can see, to the south and east, a river and its tributaries draining water to the north. To the west we can see the central mountains of Wrangel, the core of which is composed of pre-Cambrian rock, over 600-million years old.

Our main focus, though, is straight ahead, toward the rocky prominence on which five muskox stand, a male, two females, one young, and a baby. Under instructions from Vasily Baranuk, we position ourselves at a distance, in a wide semi-circle, within good camera and binocular range, and simply enjoy the extraordinary opportunity to view these wonderful animals at such a close distance. The helicopter comes and goes all afternoon, with each of us having at least two hours time at this site to watch the muskox and also to roam about the valley if we choose.

The operative words over and over again are, “Stay back. Move slowly.” By our keeping back and moving slowly, and with the strategic placing of Vasily and of Leonid Bove, Director of the State Preserve, and of a border guard officer, all of us are able to keep the muskox on this slight rise, behind which is a sharp drop to a snow bank. The five move about, sometimes in a defensive circle with the youngest inside, but eventually some rest on the ground, with the male always on guard. As the hot afternoon continues and we have the luxury of bottled water, we’re concerned for the muskox. Leonid, who is also a veterinarian, keeps close watch on the animals’ behavior to be certain of their well-being. After our final group arrives and has some viewing time, the muskox are herded toward the river and left alone.

What viewing for us and what a place. Some of us watch a Long-tailed Jaeger catch a Snow Bunting – “It’s a low-lemming year,” Vasily explains. He points out Snowy Owls, white dots off in the landscape, easily visible to practiced eyes and to us, once he clues us. Bees are buzzing on this summer day. Birds chirping. The land is full of subtle color, shades of greens

and rusts. It gets hotter and hotter, but, as usual, we hike back up to the helicopter landing site wishing for more, and also with a feeling of great satisfaction.

And, yes, there are always more surprises in store. Tonight we have the added fortune of a polar bear found on a large ice floe that had been part of an ice-pressure ridge. Its crenellated surface gives our bear opportunities to "hide" from us as he moves down and up through the crinkled mass of ice. At one point, his two paws and head come up over an ice mound to look at us. Shortly thereafter, he slides into the water and swims across our bow, a wonderful chance for viewing and for shooting many rolls of film. The presence of a polar bear is never anything short of a wonder, no matter how many we may have seen before. It's a combination of the beauty of a powerful body in motion and of being in the presence of the animal through whose domain we are traveling.

In the early morning hours, technically July 19, a group of walrus – "about 80," it is estimated at Recap on Saturday morning – is spotted on an ice floe. This means that in less than 24 hours we've had muskox, polar bear, walrus, and bird cliffs. A good haul.

Often I go to some distant region of the world to be reminded of who I really am.
There is no mystery about why this should be so. Stripped of your daily routines…
You are forced into direct experience. Such direct experience inevitably
makes you aware of who it is that is having the experience.
– Michael Crichton, 1988

Day 10 Saturday, July 19, 2003
CHUKCHI SEA & KOLYUCHIN

0800: 70°08'N 177°01'W
Air Temperature: 6°C/43°F
2000: 67°35'N 174°40'W
Air Temperature: 12°C/54°F

Recap
Lecture: *The Rocks You Have Been Stumbling Over*, Norm Lasca
Lecture: *Indigenous People of Chukotka*, Sasha Golikov
Zodiac Cruise to Kolyuchin Island

There's still ice around the ship this morning, 5/10s here in Longa Strait, on another beautiful, sunny day. Our "official" program begins at 0915, with a Recap in the Lecture Room, again under the direction of our incomparable Bob Headland, with a discussion of how many non-Russians have ever visited Wrangel Island. We turn out to be among only 500 or so, most as Quark Expeditions' passengers over the last 12 years, a fortunate few. Next, Tony Soper talks about nests and eggs, first those of puffins, who nest underground and have "conventional" white eggs since there's no need for camouflage. In contrast, Thick-billed Murres nest on precipitous ledges only inches across. They don't make a nest, but just put the egg directly on the rock. The egg is pear-shaped so it doesn't roll off so easily.

Norm Lasca reviews the geology of Wrangel – "The geological map is [still] top secret." The island's history starts in the pre-Cambrian, 600-million years ago. There is primarily sediment at the cliffs, sandstones in the valley. The land was uplifted and subsequently glaciated. He notes the U-shaped valleys rising above the plain where we hiked and viewed muskox yesterday. Meltwater from the rivers and streams has further sculpted the landscape.

Frank Todd provides additional bird and mammal lore, specifically on murres, muskox, and lemmings. The most northerly of the Alcids, the Thick-billed Murre, nests on cliff faces, using narrower ledges than the Common Murre. Within a single square meter there could be 37 Thick-billed Murres nesting. They probably don't breed until three years of age. The breeding population numbers some 11 million pairs, with some colonies exceeding one million pairs. The incubation period is 31-32 days. The eggs are laid in June and into July. No birds were carrying fish yesterday, so hatching hasn't yet begun.

When the chicks are three weeks old and still have down, about the third week in August, the parents push them to the water below – in some colonies, though not yesterday's, that's a 1,500-foot drop. The male then takes the chicks out to sea, swimming south as much as 600 miles to ice-free water. The female goes back to the nest and stays to cement her "ownership." If they both return the next year, they will nest again. If the female doesn't return in time, the male will find another mate. "Timing is everything for the pairs to stay together."

Frank shows us an example of kiviat, the undercoat of the muskox, two-thirds the diameter of cashmere and with a thermal quality eight times that of wool. He holds up and then passes around the beautiful long scarf that Jennifer Clement knitted from kiviat she collected in the Canadian Arctic and then carded and spun. The Wrangel Island muskox descend from a group brought from Alaska in 1975. At the height of the Cold War, this was the first Russian plane to land on U.S. soil since World War II. Thus, muskox helped to bring about the thaw in international relations.

Then we learn of the prodigious reproductive capacity of the lemming, the member of the food chain whose numbers dictate the breeding success of Snowy Owls and foxes. "Two good seasons in succession may produce 40-50 lemmings, where only two were before; following three productive years, the ground seethes with lemmings. Captive females bear up to 16 litters per year, each with 4 to 8 young, with female offspring mating at 20 to 25 days of age, and bearing their own litters 20 days later; within another six weeks, granddaughters are reproducing. Theoretically, one pair and all its offspring could produce 170 million lemmings in one year, if predators didn't intervene."

Vladimir Bychkov discusses the Wrangel Island State Preserve set up in 1976, to preserve wildlife, especially polar bears, walrus, and Snow Geese, as well as the tundra vegetation. The main office of the Preserve is in Pevik on the Siberian coast. Twelve people work for the Preserve, but they are only here for the summer season. Visits to Cape Blossom are absolutely prohibited. Four days ago, the ice was close to shore at Blossom and there were thousands of walrus. The wind changed and the ice floes left, the walrus with them. September is the big walrus haul-out time at Blossom, with as many as 70,000, 10-20,000 of them on shore at any time.

"If charged by a muskox," someone asks, "what do you do?"

"I don't know," Vladimir answers.

"Back away slowly," Frank says, "and hope there's not a cliff behind you."

"When I ask the wildlife people, 'Where are walrus?'" Andrey tells us, "they answer, 'This is not a zoo.'" He goes on to tell the story of the Chukchi hunter who consults the shaman about the weather. The hunter first gives him a gift, and then the shaman does his "shaman thing" and tells the hunter the weather will be good. The shaman goes to the meteorologist, gives him the gift, and asks if the weather will be good for hunting. The meteorologist goes to the window, looks out, sees the hunter and returns, saying, "It must be good because the Chukchi is going hunting." He concludes, "So we can count on good weather."

And good it is. At 1015, a brilliant sun sparkles on the water. Solitary jaegers fly over the ice. Some of the floes are quite dark and dirty-looking. Many are highly ridged. We slice easily through large floes into open water. Mainly though, our powerful ship moves straight ahead,

pushing the ice aside, a mesmerizing track to follow. In the distance, we see intriguing mirages of large banks of ice.

At 1030, we're back in the Lecture Room to hear Norm talk about *The Rocks We Have Been Stumbling Over*, actually a presentation in three parts, thanks first to a polar bear and later to walrus. With each announcement, we empty the room, rush out to the starboard bow, and then return after the sighting is over, to geology again.

The polar bear viewing is exceptional. When sighted at 1050, he is swimming to an ice floe, his black nose prominent as he turns his head. A flock of murres flies by, a kittiwake overhead. The bear climbs up on the floe and easily lopes across it. He turns back occasionally to check us out and then continues his amble to the far edge of the floe. He splashes into the water and swims once again, leaving a wake behind him and a continuous camera shoot on deck. As we come closer, he swims underwater, away from us. Then, at right angles to the ship, he heads out, dives under the end of a floe, and moves steadily across an expanse of water toward another floe. We sail on, most of us with our binoculars focused on his moving shape. We speed up and, if we take our sights off of him, it's suddenly impossible to re-locate him among all the ice. The lure of walrus at 1115, brings a similar flock to the port-side decks, for a shorter viewing. The ship again slows down, but the walrus slip off the floe, swimming and diving, and then we move on...and we return to the rocks.

> At the start of our one-hour, Geology 101 course, Norm discusses Geologic Time, first defining Relative Time, the age of rocks relative to one another, and then the concepts of Original Horizontality, in which sediments are deposited in water horizontally; Superposition, in which the upper layer of rock is younger than the lower layer; and Cross-cutting Relations, in which the rock that cuts across another rock is younger. Absolute time is determined through the historical record as it appears in tree rings and varves, and also by radiometric dating. Correlation is the determination of age relationships between rock units in separate areas through 1) Physical Continuity, in which a rock unit is physically traced from place to place, and 2) Faunal Succession, in which faunal species succeed one another in a recognizable and definite order, with

species appearing and becoming extinct simultaneously worldwide. Geology itself is based on Uniformitarianism, the principle that the physical processes operating today also operated in the past.

Next, Norm presents Geologic Time on a 24-hour scale, with the base of 4.6-billion years for earth's origin. The first single-celled fossils are dated to 3.5-billion years ago, or 0600. Fish became abundant 400 million years ago at 2200; dinosaurs at 230 million years ago, or 2248. The first important mammals arrived 65 million years ago, parallel to the extinction of the dinosaurs, at 2330; the start of the Ice Age two million years ago, at 2359. Recorded history dates back 5,000 years, the Industrial Revolution and the "despoiling of the earth in earnest" .003 seconds.

Then he takes us through the rock cycle, beginning with molten magma, which cools and crystallizes at varying speeds into igneous rocks. Chemical and physical weathering break down the rocks into sediment, which is either lithified and cemented or chemically precipitated into sedimentary rocks. These, in turn, are changed into metamorphic rocks under heat and pressure and eventually complete the cycle by melting into magma at temperatures above 600°C/1,100°F, and the process begins again and again.

Lastly, he shows slides from all over the world, particularly the Arctic and Antarctic regions, to illustrate these basic processes and principles. The next few days, on land and at sea, provide numerous "field trip" opportunities.

Just before lunch we leave the ice, marking a definite transition southward, as we head toward the Siberian coast, "making good time to Kolyuchin," Andrey announces, more "pedal to the metal."

This afternoon, Sasha Golikov gives us an introduction to the *Indigenous People of Chukotka*, their adaptation to the Arctic climate, and the history of this area. "This is not a good place to live in," he begins, citing the cold, the rocks at the shore, and the presence of mosquitos. It's "an inspiration for the poet, but hard for human beings to live in."

Among animals, there are two ways to survive in this environment. One is to accumulate maximum energy resources in the form of animal protein, as have the walrus, "which are really fat," and the whale, and attempt to be as big as possible. The other strategy is to increase reproduction and decrease the average period of gestation and lactation, as have the lemming and the seal. People can survive only in tiny communities.

There are at least 50 different ethnic groups in Russia, among them in the Chukchi Autonomous District, the Eskimo/Yupik, Chukchi, Koryak, Even, Itelmen and Yukaghir. Sibir was a small Tartar Khanate when it was conquered by Western Europe

in the 16th century, and all the area became known as Siberia. The many native groups throughout Siberia, among them also the Turukhansk, Evenk, Nenet, Yakut, and Taymyr, live far away from one another, but have much in common.

The two types of traditional native culture are reindeer herding and marine mammal hunting. In the northern part of Finland and Norway and in the Murmansk area, herds number about 30 reindeer. The Yakuts use reindeer as we use horses, for carrying heavy loads and for pulling sleds. In 1991, there were 600,000 reindeer in Chukotka, about 30 for every indigenous person. Reindeer provide skins to make tents, in summer using three or four pieces of driftwood and several skins per tent. Almost all of the clothing was made of reindeer skin, although that is no longer the case.

The marine mammal hunters descended from people who originally came from the Lake Baikal area to hunt mammoth, found none, and switched to hunting whales and walrus. The Yupik face has a wide nose bridge. In the native culture, baby girls were often killed and elders mistreated. There is evidence that the ancestors of people in Chukotka lived closer to the developed world. For instance, there are similar words in the Turkish and Mongolian languages to Chukchi. Long ago, the Chukchi lived near the Chinese border, which may explain other cultural similarities. Siberian Shamanism and the Mudang religion of Korea have much in common. In Siberia, which is a more male-dominated society, most shamans are male, whereas in Korea, China, and Japan they are women. Eskimo/Yupik people beat on the edge of the drum; Chukchi beat on the middle. The Korean people believed they were descendants of a bear; the Chukchi used the bear as a medium between the people and the gods.

The first Russians in this area came to Anadyr, to a site located to the west of today's city. Their settlements were located along the rivers, rather than along the coast. In their conquest of Northeast Asia, the Russians "obliged the Chukchi to pay as much as they could to the government." For a long time, the only government activities here were *yasaq*, the fur tax; *ostrog*, the fort that also served as a military base and a prison to house political prisoners and dangerous people; and *zimovye*, the winter camp visited for hunting.

At the end of the 18th century, a Russian-American company attempted to organize this part of the world. By the middle of the 19th century, the Russian attitude toward its Far East began to change. After Russia acquired Vladivostok in 1860, many Russians moved south from northern areas, and the navy was relocated there. From this time on, the Russian interest centered here, rather than in the North. The White Russians attempted to establish a government in Chukotka, but they were suppressed in 1922.

In Soviet times, from 1922 to 1991, Chukotka was neglected though not isolated, because there were three television channels. Still, during this time, the area was

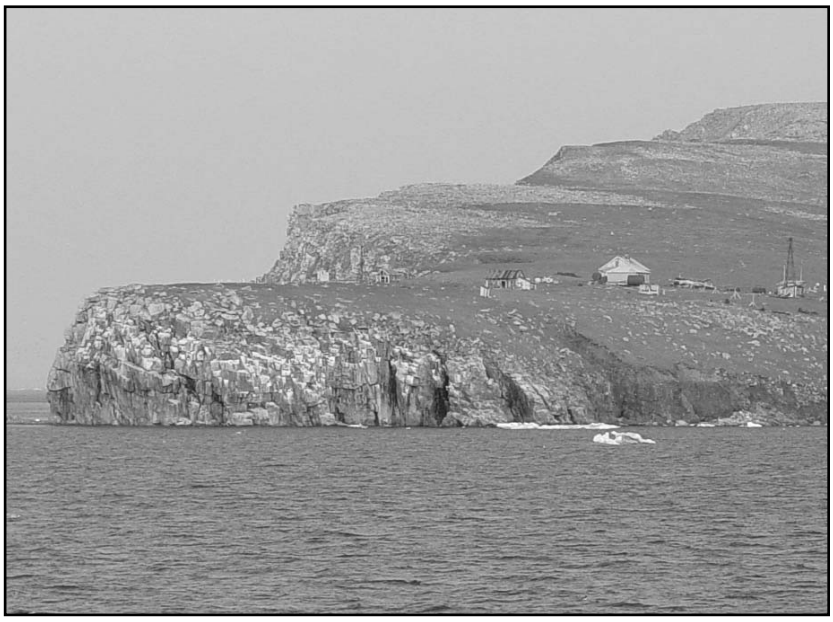
known to the rest of the U.S.S.R. mainly for three things: Chukchi jokes about the primitive people, "To go for the long ruble," and the Northern Sea Route. The Chukchi jokes portrayed the people as backward and stupid, and these stereotypes are what most Russians know of the area. The term "to go for the long ruble" refers to the huge difference that Russians could earn if they worked here rather than in the more westerly parts of the Soviet Union. People came to earn money and then went home to buy something like a car. For a long time, Chukotka attracted adventurous people from all over the country who wanted more money. Many were not well behaved and corrupted people here.

The Northern Sea Route was used by the Americans to supply Russia during World War II. During that time, a number of Chukchis were drafted into the army, but reindeer herders were exempt from the draft. The experience of World War II caused military leaders to think of Chukotka as a military staging point. At least one division of 15,000 men was stationed here during the Cold War.

From 1700 to 2000, the Chukotka population increased from 8,000 to 14,000. That of the Koryak decreased from 8,000 to 7,900. The Itelman and other groups came close to extinction. Those with their own districts did much better population-wise.

Chukotka is now part of the Russian Federation, though it remains unconnected to the rest of the country by railroad. Things began to change in 1999, with the arrival of Roman Abramovich, the new governor. He has brought hope by visiting the native villages, and he may be able to help the native peoples.

After dinner, starting at 2015, we are fortunate to have a second chance at Kolyuchin Island. No high waves stop us this time. Instead, we have a short, smooth ride over to the sandy beach where those in the first Zodiac see a walrus on the ice. All of us walk and pull ourselves up an old ladder and set of rail tracks, helped, if need be, by Norm positioned halfway up the "staircase." It seems a steep climb up what is really a gentle slope, but a challenge however it's done. In contrast to the towering rock cliffs thick with birds on the other side of the island where Frank and Tony are stationed,

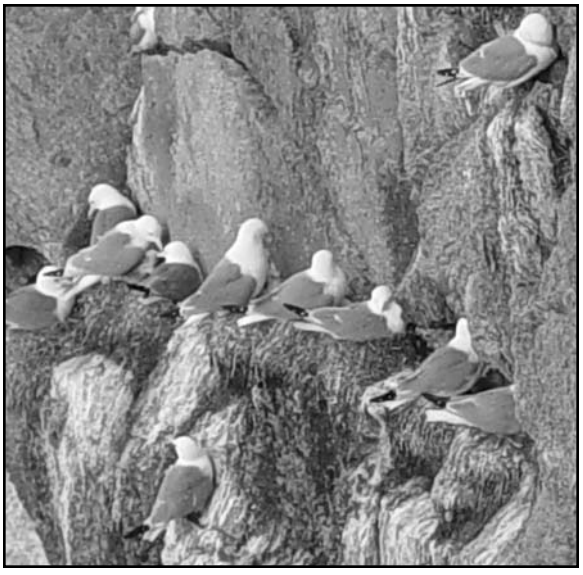


these are mainly tufted slopes filled with wildflowers and awash with color. Here and all about the island flowers grow boldly open to the winds at the surface and in the crevices between tufts.

Bob is waiting for us at the abandoned research station. This was one of a series of polar stations founded at the time when the Northeast Passage was to become a magisterial waterway, he tells us. The first building, now in ruins far down to the point, was built in 1934. Just near it, he points out the trigonometric station, dated 1944, as well as the light from the first lighthouse and the old electric generator. A new accommodation and power house were constructed in 1980, and remained in use until 1994, when the station was abandoned after maintaining 60 years of continuous meteorological records. The meteorological observatory just up the hill includes standard instruments – pressure, temperature, wind speed, and direction. Many other ancillary buildings include stores of food, fuel, a new wind-power generator, and other supplies. For much of the history of the station, heating was by coal, and the coal store, with a hole through its roof, is directly connected to the little funicular railway up which we walked – "Unfortunately, the train is not working," Bob adds.

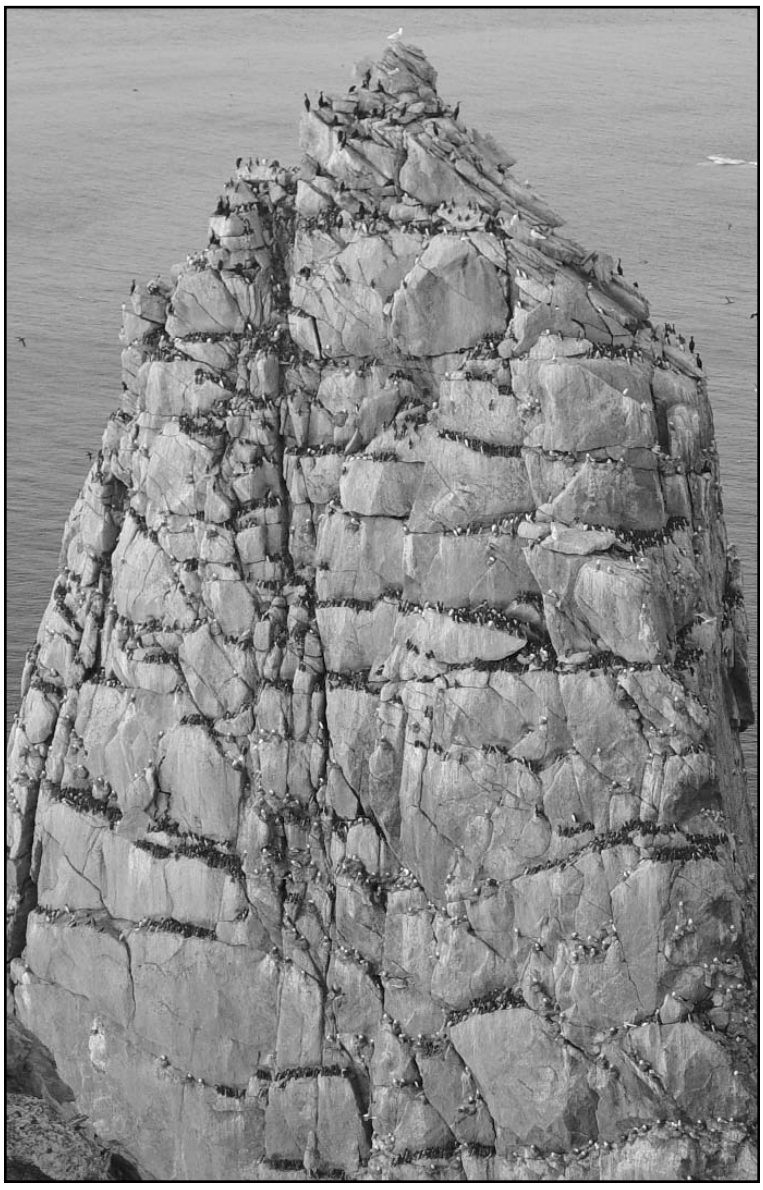
Just beyond the station is an area with large numbers of walrus skulls that date from Chukchi occupation prior to the establishment of the station. Some of these skulls were seen from the *Vega* in 1877-78, when Nordenskjöld made the first transit of the Northeast Passage.

When the station was closed, or more probably abandoned, Bob tells us, it was due to severe financial constraints experienced by the Arctic and Antarctic Research Institute of St. Petersburg. Many items were removed, but books, films, and some construction materials and furniture were left crated. "Subsequently, the weather has been unkind which, combined with some unfortunate vandalism, has trashed the station." Bob and Norm visited the station in 1991, when it was a warm, friendly, and welcoming remote observatory. "The contrast with present conditions is saddening."



We peer into buildings, also shocked at their ramshackle condition, and roam about the wide, debris-laden area of the former station. Its deteriorated state is in complete contrast to the natural riches of this area, and we head over to the bird cliffs.

No question, it's the birds that dominate here on Kolyuchin: Snow Buntings darting about across the landscape, and then the "stars" – puffins, murres, kittiwakes, and cormorants filling the cliffs right down to the water, in the air, and in the water, also. We see and hear it all, kittiwakes and murres nesting on lower cliffs; the dignified stance of the Thick-billed and Common Murres; and Pelagic Cormorants crowded together on ledges. Higher up, black and white Horned Puffins sit and stand in small groups. The all-black Tufted Puffins stand apart from one another and in lesser numbers. We find delight in watching both species, their red legs splayed in flight, but equally fascinating when almost motionless on land.



A veritable "tower of Babel" stands just offshore, a great mass of fractured rock whose ledges are likewise lined with murres and kittiwakes. Pelagic Cormorants are silhouetted at the top and, at the very top, a Glaucous Gull is in residence. The red fireball of a sun slowly sinks lower and lower in the sky, leaving a streak across the calm sea. The call of birds is constant, as we climb all about the hummocky plateau going from one set of cliffs to another, clambering over rocks and down to get better views and better pictures, carefully. In places, the coastal rocks lean in teetering angles, stacked and balanced for now. We look at these from afar and keep our distance.

Many of us also walk upward, first over the hummocky grass that stretches across the plateau and then to firmer ground, gaining a more expansive view the higher we climb. And everywhere this is a botanist's

feast: daisies, cinquefoils, dandelions, Jacob's ladder, sudetan lousewort, orange senecio, scurvy-grass, chickweed, willow, wormwood, all in great profusion. We explore it all on this beautiful evening, free to roam and to linger.

At first we're very warm, hot in our bulky jackets but, with time, the wind picks up, and it's much cooler. By 2300, the sun is setting into the mist, leaving a rosy glow behind. When we return to the landing site, a Red Phalarope is spinning about in the water, perhaps curious about the return of human activity to this deserted site.

We're all back on board by 2345. Looking across to Kolyuchin, we see the buildings of the station and the far end of the bird cliffs. The water is a teal green/blue the night quiet, the sky pale with light greys, pinks, whites, and blues shading into one another, a gentle finish to a superb time on land.

You hear a sound like the thundering rumble of an earthquake far away on the great waste.
Then you hear it coming ever nearer.
The silent world re-echoes to traverse deep water – the Arctic Basin.
– Friktjof Nansen about ice

Day 11 Sunday, July 20, 2003
UELEN, CAPE DESHNEV & DIOMEDE ISLANDS

0800: 66°27'N 170°24'W
Air Temperature: 9°C/48°F
2000: 66°09'N 169°41'W
Air Temperature: 13°C/55°F

Zodiac Cruise to Inchoun Walrus Rookery
Zodiac Landing at Chukchi Village of Uelen
Zodiac Landing at Cape Deshnev
BBQ Dinner on Deck
Crossing of the International Date Line

"Welcome to another day in paradise," Andrey greets us at wake-up call. At 0730 this morning, we cross the Arctic Circle, that invisible line 23°30' from the North Pole, feeling nary a bump, yet sad to leave the High North. "You won't see the Chukchi going hunting," Andrey continues, "but we have fine weather if you look out your porthole window." We also see Crested Auklets around the ship when we look out, and mountains over on the coast where we'll soon be cruising toward a walrus rookery. The adventures keep unfolding all day long.

The first group heads down the gangway and into the waiting Zodiac at 0915, off for a 45-60 minute walrus haulout watch. During that time, those of us remaining on board have the option of seeing the powerful documentary *Nanook of the North*, whose black and white photography and lesser technical proficiency seem just about right for conveying the challenge of life in this environment. When the first riders return, they too have a *Nanook* screening. The second shift of haulout viewers embarks around 1030.

It's a similar scene for us all as we travel toward shore, accompanied by skeins of low-flying murres, by kittiwakes and Glaucous Gulls in the air, and puffins bobbing on the water, some running across the surface with wings flapping and red legs in steady motion to gain lift, many already in the air. We stay 300 meters out from the walrus so as not to spook them and, from this vantage, enjoy the sight of white tusks and red-brown bodies massed together at the edge of the land and around some rocks in a traditional haulout.

Many of the Zodiacs have memorable encounters with a friendly Chukchi hunting party out salmon fishing and scouting walrus, in a boat driven by an outboard motor. Some of us are very close to spouting grey whales, occasionally glimpsing sight of a sleek body as it breaks the surface and then disappears, possibly a mother with her calf. We head over to bird cliffs, sparser than the ones we've seen earlier on the trip, but still a great treat as we ride along and find familiar nesters – murres, kittiwakes, puffins, cormorant. The water sparkles this glorious sunny morning.

We have an early lunch and then take to the Zodiacs again at 1300, for the short, choppy ride over to the Chukchi village of Uelen, an old settlement from the early 1900s, and now with a population of 700, both Russian and Chukchi and a very few Yupik. Local guides are waiting for us on the gravel beach and, by the time we're all ashore, we've been joined by great numbers of villagers – children, some in arms, teenagers, elderly and, in between, a little

fellow on his father's shoulders, all of whom mingle with us throughout our stay, as do huskies and other dogs. One memorable image for us all is of Danielle Sogno totally surrounded by children, as they braid her hair. Most of us shake hands with an old woman in a big, man's overcoat, who moves among and approaches us individually. These same wonderful faces appear all over town and later follow us back to the beach to send us off.

During the first half of our visit we're guided about the village in separate groups, walking up to the terraced level past boats high up on the shore and then onto Lenin Street, the one "major" thoroughfare, a wide, dirt-packed street that runs through town. Our attention is immediately drawn to the small wooden Orthodox chapel, with gleaming gold onion dome atop its tin roof. Erected last year, the chapel apparently isn't yet finished, perhaps inside, but it's striking, almost a miniature, building, and also a sign of freer times.

Many of us tour the one-bedroom wooden house of one of the guides, typical of housing available here, along with Soviet-style block apartment buildings. Most still live in private houses, we're told. This home is cozy, its rooms small; a tiny entry leads into a little kitchen and then into a larger living room, with a television and on the wall a Turkish rug. A number of us visit the five-bed hospital/health center, walking its narrow corridor and peering into another warren of small rooms, into the tiled examining room, the kitchen, the dormitory-style bedroom, noting bulletin boards with information on TB, AIDS, lice, and VD. Pregnant women are cared for from this facility and then, at 32 weeks, are sent to Laurencia for the birth and an additional four-week stay. Between seven and thirty children are born each year.

We see the three-story, grey brick school where students attend for ten years; instruction is in Russian but Chukchi and English are also studied. A short distance away, we come to the kindergarten building, most notable for its backyard playground, in which a great tree stump, surely driftwood, serves as the "jungle gym" nearby a slide and a large sandbox. From this vantage, we look over to the cove at the back of town and to rows of houses and small boats. This protected lagoon is a ready fishing site, gentle in contrast to the wide and sweeping beach fronting the open sea and from which larger boats are launched to hunt marine mammals. We hear about, but don't get to the meteorological station at the far side of town. We also learn of the once-thriving fox farm that has been closed down for a number of years at great economic loss to the area.

Sooner or later, all of us go into the building that houses large studios for carving and sculpture, and also contains an excellent one-room museum of native culture. Here the handsomely displayed exhibits of clothes, utensils, stone sculpture, detailed bone carvings – some full of wit, photographs, and more, provide glimpses into the breadth and richness of traditional native culture. Pieces of local sculpture and other fine artifacts are also for sale and extremely tempting, but off-limits to European and U.S. travelers. In a nearby corridor, pictures drawn by children of the village are on display and for sale. One little boy occasioned an impromptu auction when an adult with him held up the child's first picture and asked who would like to buy it. Lars Wikander was the fortunate winner, as was the proud young artist.

Vignettes abound as we walk about. We spot fish drying in a wire cage outside a second-story window and note tomatoes and cucumbers growing in at least one window. Dogs lie about. Most of all, though, we're drawn to people. Family groups sit on benches outside buildings. Numerous baby carriages are pushed up and down the street this afternoon. A wheeled army surplus tank drives through town. "She just adopted me," Laurel Jacobson says, as she walks by holding a little girl's hand. Boys and girls crowd about Dave Mann, as he shows them their pictures in his video camera. Hanne Zak is thronged with a pack of children.

Three Russian men ride by on a motorcycle. A man drives by on his motorbike, his child sitting in the attached sidecar. Boys ride well-worn two-wheelers. A little boy wheels a wheel with a wire fastened around it for a handle, up and down the street in wide circles, and in puddles at any opportunity, of course. Russian men in military uniforms walk in twos and threes. Groups of Russian women in black leather coats and wearing high heels promenade through the town, sometimes pushing baby carriages. As the afternoon moves on, more and more people are out on the street, much as we found in Anadyr – though it's difficult to remember that far back after all we've done in the interim.

By 1430, everyone – villagers as well as all of us from the *Kapitan Khlebnikov* – streams toward the community center for a cultural program of dancing and drumming. We find seating on benches set in semi-circles facing the wide concrete platform in front of the

building or stand at the back, all of us mixed together, equally intent. Jacob, the leader of the Uelen dance group, is well known throughout the Chukotka area as a dancer and drummer, and is the only survivor of those who formed this group in 1930. Currently, there are sixteen adult members in the dance group and seven drummers. Some 20-25 children attend the dance group, many of them now on vacation; those who have just graduated from high school are off in other cities.

The program opens and closes with a free dance; many of us join the sway of bodies in motion, to the special delight of the native dancers. In between, we watch a medley of dances performed in traditional costumes: tunics and trimmed boots for the men and boys, loose, flowered dresses trimmed with rickrack and sequins for many of the women and girls, with beaded head dresses, and parkas bordered with fur.

Among the dances, all accompanied by drumming, two young men and six women perform “a very old dance” imitating rabbits. Young children imitate reindeer. A women’s dance is followed by one with three very young boys – it’s clear how the learning process takes place; simply being there and mimicking patterns of the older dancers, as many of the very young

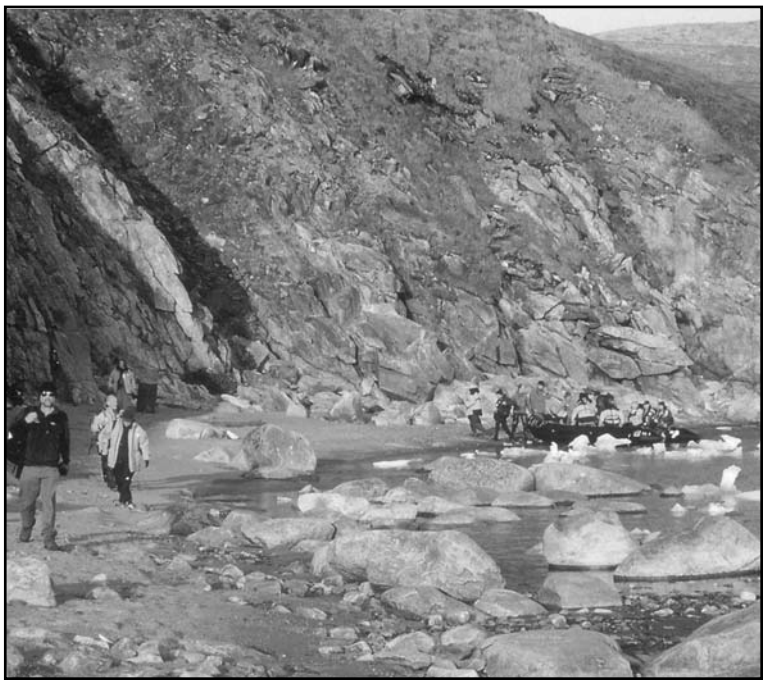
participants do. A "strong person shows us how he lifts weights." A "very old person [of 70] wants to show he's still very active" and "fishes by net for very small fish." Teenagers court and flirt. A young man "paddles a kayak," and we "see" him do so. Brothers and sisters interact. Each brings us close to ancient Arctic traditions and rhythms of life, carried as much, perhaps, by the haunting drums. The dancers, all enthusiastic, are of varying talent. Some are riveting to watch, both in the beauty of their movement and in the absorption in their art. All are charming.

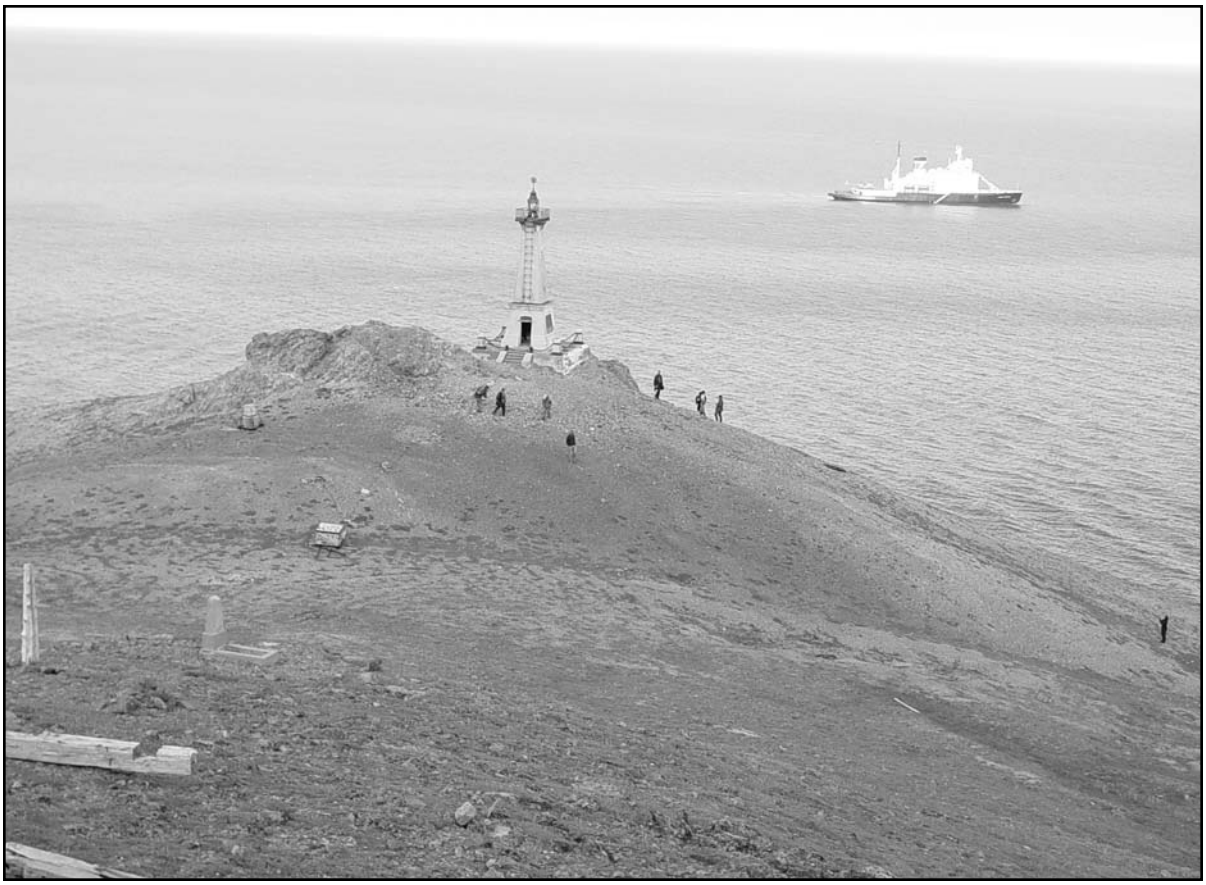
The native audience is captivating as well. Individual faces of all ages are striking in their beauty. The range of clothing we see is astounding. Every child seems to have a different hat: tousle caps of varying colors and themes, an intricate nordic pattern, baseball caps. One child sports a World Wildlife Fund button. Another wears a jacket with "Michigan" emblazoned on the back. A little girl is wrapped in a neon pink down coat. In contrast with it all, we look rather nondescript in our yellow jackets.

At the end of the program, Andrey and Jennifer Clement present gifts from the ship, including those that passengers have brought for the villagers. Crayons and pencils and paper are given directly to the head of the school and represent a bounty for this small community literally on the edge.

Re-tracing our path to the beach, we see this village through different eyes from those with which we came. This is a harsh place of great strength and simplicity, of beauty and complexity. Perhaps we know the Arctic a little better for our time at Uelen. Its people are still on the beach waving to us when we weigh anchor at 1600 and sail on. We won't, however, forget the people at Uelen.

There's time for tea and pastries and then it's off to Cape Deshnev, the most easterly point on the Eurasian continent, a great prow of rock into the Bering Sea. We pile back into the Zodiacs and zip across to yet another pebbly beach. From our landing site we head directly up to the first terrace following a muddy path, and then walking along the river until we find a place to cross, using rocks on which to get a foothold. On the other side we climb up again, if lucky on a path of sorts, to the remains of a 2,000-year old





village whose people were relocated in 1948. At this terrace level, we prowl through thick, high grasses around the stacked stone foundations of houses built in the 1700s and 1800s, as well as circles denoting earlier house sites, and we peer into bone-covered meat caches dug into the ground. Here at Cape Deshnev, there are also whalebone arches similar to those we saw at Yttygran. The flowers are also reminiscent of that earlier morning: monkshood, fireweed, marsh saxifrage, sorrel, wormwood, and myriad other species in abundance, at all heights in this lush environment.

We move across the plain and then climb down and up another little valley, always toward the lighthouse/monument built in 1955 to honor Semen Deshnev, the first westerner to pass this site and enter the Bering Sea, in 1648. Bob Headland is stationed here to give us background and tell the story of Deshnev, whose accomplishment was lost to history until a record of it turned up in the late 1800s in an obscure account written by a monk. The Swedish explorer Nordenskjöld renamed the point “Cape Deshnev.” Bob points out a graveyard on the opposite slope where victims of the 1880 famine were buried, many of them children. (Explorers and whalers of that time wrote in their journals of the extreme famine among the native peoples.) Altogether, the view from the foot of this tall, white structure is superb, taking in the archaeological site with its houses and caches, and then, farther over, part of the polar station (which was closed in 1964), and then out to sea. Farther up at the grave site, the view is even more spectacular. We look over to Big and Little Diomede and across the International Date

Line, into the past. Very much of the present, the *Kapitan Khlebnikov* lies off the coast, tiny from here and a welcome presence.

We have a wide plain on which to ramble, a vast area to hike upward on this warm and sunny late afternoon, and much to explore. Both up and down, over uneven terrain, grasses, rocks, and steep angles, this is good climbing country, making this an altogether an exhilarating stop, this furthest reach of the continent.

Perfect for hungry expeditioners, a Polar BBQ awaits us on the front bow soon after our return to the ship. Long tables are laden with Cole Slaw and other Salads – Potato, Beetroot, and Lettuce; Spicy South American Pepper Soup; Assorted Bread Rolls and Pretzels; Baked Potatoes with Sour Cream, Fried Rice and Vegetables, Corn-on-the-Cob, and Sauerkraut; Roasted Suckling Pig, Marinated Lamb Chops, Pork and Beef Steaks; Vienna, Thueringer, and Cheese Sausages; Various BBQ Sauces; Cookies, and Baked Caramelized Banana Topped with Ice Cream. Gebi serves us special hot wine. The smells are wonderful, the food, too. We eat and eat, crowded together at picnic tables on the open deck, talking and talking, savoring the company, the meal, the setting here in the Bering Sea. How will we ever top this restaurant?

To add some extra sparkle and to tempt us some more, Danielle has set up a display of items from the shop out here on deck. This is even easier than following the giant polar bear paws to the shop and just as fun. Those paws are a frequently followed path, judging by the number of new Arctic T-shirts in which people keep appearing.

The evening's not over yet. At 2300, Andrey announces that we will soon cross the International Date Line, which passes through the two-mile stretch between the Russian Big Diomede Island and the U.S. Little Diomede. He invites us all to the lounge to celebrate. Champagne glasses in hand, we wait for the exact moment when we re-enter yesterday, drink a toast and, for the remainder of the trip, try to figure out what the date is.

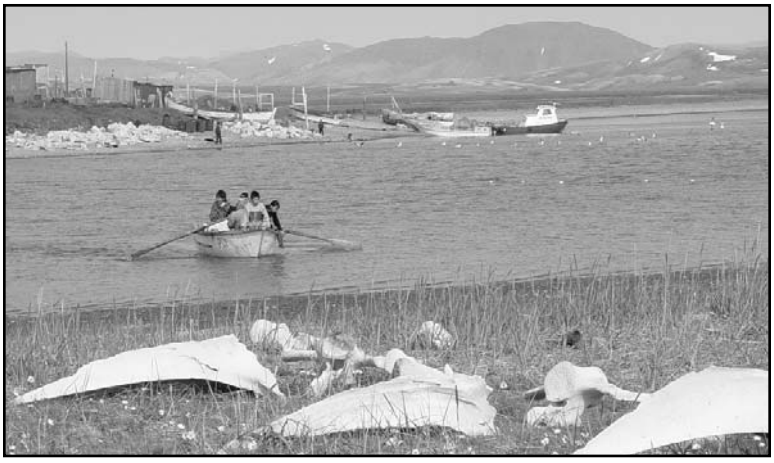
Beauty and Grace are performed whether or not we will sense them.
The least we can do is try to be there.
– Annie Dillard

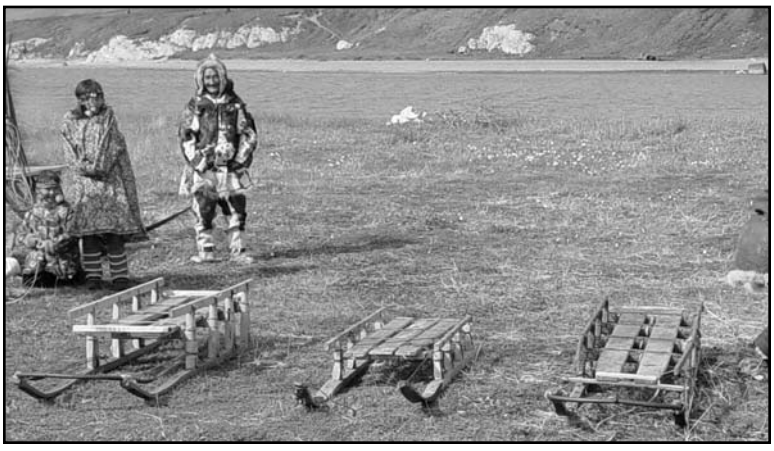
Day 12 Monday, July 21, 2003
YANRAKYNNOT & PROLIV SENYAVINA

0800: 64°58'N 172°29'W
Air Temperature: 16°C/60°F
2000: 64°43'N 172°48'W
Air Temperature: 18°C/64°F

Zodiac Landing at Native Village of Yanrakynnot
Zodiac Landing at Proliv Senyavina and Swim in Hot Springs
Recap
Bird Cruise around Nunangan Island

Today is another of those days when we wonder how 24 hours can hold so much, but it does – vibrant time at a native village on the Chukotka Peninsula in the morning, the afternoon out on the land, with spirited interludes at hot springs, and a glorious evening cruise around the bird cliffs on Nunangan Island. Who says you can't have it all?





Zodiac rides to Yanrakynnot begin at 0900. This traditional native village is located on the protected side of a small bay and fronted by a spit of land along the outer beach, as is the pattern with many native sites. We land on that spit, directly across from the village, and walk out on a wide, grassy plain where whale bones are arranged in an undulating line. Further over, we admire a series of wooden sleds, each of which is lashed together with strips of animal skin.

Nearby, people dressed in reindeer-skin clothing stand behind a table laden with bone and antler carvings and bead work, embroidered moccasins, purses, and necklaces. Quite bare at first, the area soon fills

up, one Zodiac load after another. More and more "vendors" arrive, two and three at a time, in boats across the short distance, and set up displays on the ground, more carvings, animal skins, articles of clothing, and dolls in authentic native dress. All morning we're treated to a floating bazaar; the same merchandise and individuals appear again when we're in the village itself. Some of the prices decline as time goes by.

Of even more interest and, as usual, the "people watching" and our interactions with them are a delight. In particular, two small children draw our attention. Both are dressed – engulfed – in beautiful, fur outfits, jackets, leggings, hoods, and waddle a bit as they walk. They patiently endure repeated picture sessions, as at least one of them has in earlier years. Jan Bryde presents that little boy with a lovely baby photograph taken of him on a previous visit.

We mill about for quite a while, a moving crowd within a small space. At some point we turn toward the beach, near to the sleds, where more villagers have assembled and where a cultural program is about to begin. This flat stretch looking across to the village becomes an ideal setting for a succession of traditional games, native dances, and drumming. As on such occasions before, we're taken into a different realm. We also become part of the show when we're invited to try some of the games and later to participate in a free dance.

To start off, a number of men jump over each of the sleds, spaced apart, one after the other, such a basic contest created with materials at hand. Yuri Feklistov, Ranjit Singh, and Caitlin Adamson all make the jumps, too. Dancers become ground squirrels in patterns devised long ago. Young girls dance "First Steps." Men lasso reindeer horns, a feat at which both Lisa Sette and Ad Brugman prove adept. In another elemental game, two people sit opposite each other, their hands clasped around a stick, and pull until one proves stronger. Mala Sikka tries her strength against that of a native woman and wins after a time of intense effort. Yuri Feklistov accepts the challenge and also wins against a native man. Two natives wrestle, more intense effort. Once the show is over, we all take to the beach, put life jackets back on, and cross in Zodiacs over to the other shore. Then we climb up to the terraced level for tours of the small village, population 390, 150 of them children.

Roman Abramovich has been in Yanrakynnot also, leaving money and hope. Six summers ago, a number of us visited this village when it was on the edge of destitution. Government support ceased after the U.S.S.R. split apart in the early 1990s and, in 1997, one of the schoolteachers told us that, if the subsistence hunters didn't bring enough food back, many of the people would starve to death that winter, particularly children and the elderly. At that time the community's clinic was totally bare; alarmed, our doctor returned to the *Kapitan Khlebnikov* and raided the ship's hospital surplus to bring some basic medical supplies for the native population. Then as now, we are greeted warmly.

Today's visit has an altogether different tone, certainly in part because tourism is being developed along this coast. The culture show is evidence of that, as is the volume of merchandise being offered by the numerous "entrepreneurs," many the artists themselves or

their spouses. Everywhere as we move about the streets of this small town, we're joined by local people, often in native dress. There's a sense of things happening, and going to happen. One by one the old houses are being torn down and replaced with new ones, eventually 100, each with its own bathroom and running water, as at Novoye Chaplino. Here the construction workers have been brought in from Central Asia. Within four years the school, the hospital, and the community center are slated to be replaced with new buildings. A shop is to be built, as well as public bathing and laundry facilities.

Nonetheless, chronic problems exist. Income levels are very low, too low to support the three to four children per family. A family receives a government grant when the first child is born. "This is considered an investment in the country." The school runs a breakfast program to help families. Most families, we're told, are way behind in their rent and have a high level of debt. Housing is owned by the government, and possibly, when people move into a new house, they'll be forgiven the debts from back rent and begin anew. "Everyone is in debt throughout the country," one of the guides says. "Throughout the whole world," someone adds. Here, though, there are fewer ways to deal with this reality, although that may be changing.

Some income is generated from the herd of 1,500 reindeer that belongs collectively to the village, and families have private herds of up to 15-25 reindeer. Other villages come here to buy limestone for use in cement, which is also produced for local use. There is talk of

reopening the fox farm at the edge of town. Asked about the worldwide ban on fur, the guide replies, "Russian people still wear fur."

This remote village – in a magnificent setting, with mountains around the bay and extending into the distance – is linked to the outside by post office, telegraph, and three television stations. Young people attend technical school in Provideniya; 15-20 students are studying medicine or taking teacher-training in Anadyr. One handsome woman, her face classically beautiful, dressed (on this hot day) in fur-trimmed reindeer-skin tunic, leggings and boots, a much-older-looking 49, tells us she must continue working because her daughter is studying to become a doctor. That seems the definition of hope in these small villages, that the next generation has opportunities beyond reindeer herding and marine mammal hunting, beyond subsistence.

We tour the old school dating from the 1960s, and are impressed once more with the quality of the basic Russian education, a legacy from Soviet times. In this building, 69 children, in grades 1 to 8, study Russian, mathematics, physics, geography, biology, history, music, and Chukchi. If students wish to continue and do the two years of high school, they must leave the village to study elsewhere in Chukotka.

We visit the rather spartan library and look at the small computer room and its two computers, one received last year and the other two years ago. The school is hoping for more, but there's a shortage of computers in Russia. One of President Putin's goals is "the computerization of Russia," our guide tells us, with access to the Internet in every school. An Internet café recently opened in Anadyr; there are ten in Vladivostok. "Progress" is obviously underway.

After we've made a circuit of the village, winding along its main road, past its houses and community buildings, we take a different, steeper path back down to the beach. From there we swing over to an open plain to watch demonstrations of dog sled teams. Then it's our turn, if we wish. Remo Buschkotter looks totally comfortable as he sits on the sled behind the dogs and rides off. So does Hilde Sanders. Both make it back to the ship. As do we all by 1230, leaving amidst crowds of villagers and carrying bead work, skins, dolls, and more back with us, along with happy memories of our last encounter with native peoples of Chukotka. Throughout the region they have shown us an hospitable and memorable time, faces and encounters, which make the Russian Far East totally alive for us.

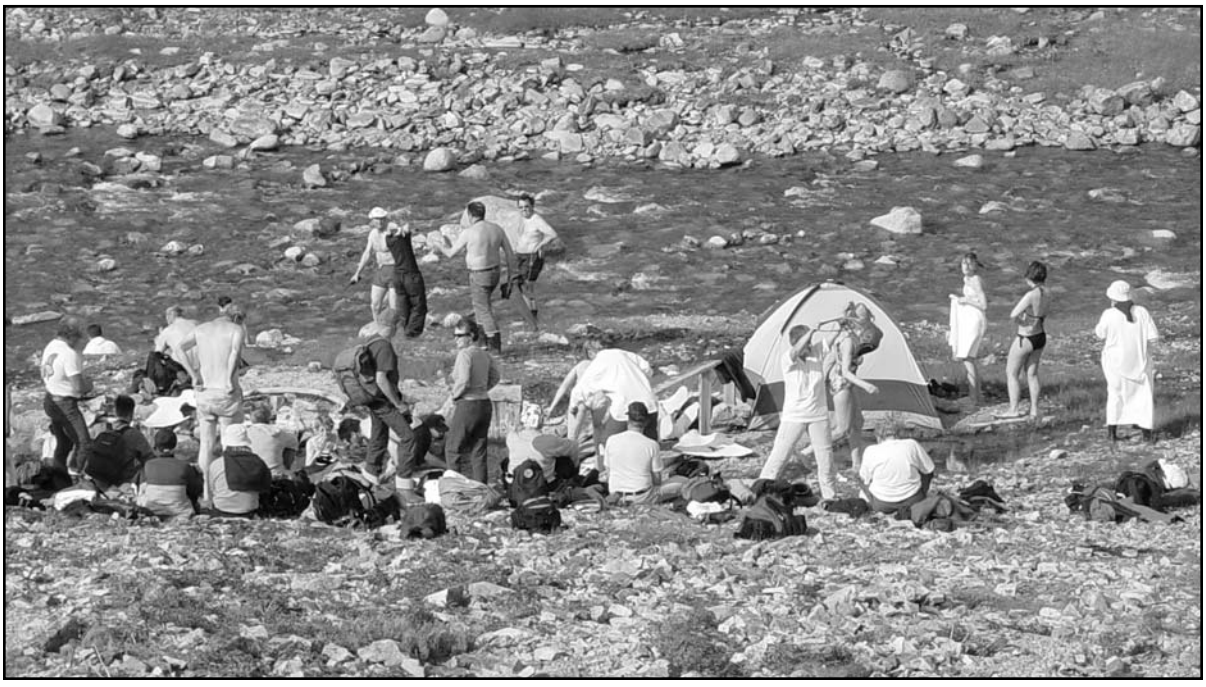
The day's adventure continues with the long-anticipated trip to local hot springs. During lunch, the *Kapitan Khlebnikov* repositions into *Proliv Senyavina*, a fjord off of *Bukta Rumilet*. Zodiac rides begin at 1500. We travel a short distance over to land, then through a narrow channel and into a pristine lagoon on the shores of which our guide, Vladimir, has built a snug log cabin, the ultimate get-away-from-it-all site. En route we pass a native campsite and exchange waves with two men near the tent, all a part of this magnificent setting far away in its rhythms and simplicity from the 21st century, especially on this clear and beautifully sunny afternoon. Vladimir will, in fact, bring vacationers here to stay in the cabin. The hot springs,

where he has created large pools beside a flowing river, are among the attractions for anyone coming to the area. We strike out immediately across the tundra on the mile-long trek to the springs.

Some of us meander across this sweeping tundra, if not en route then on the return, pausing to marvel at the flowers lavishly spread in all directions, dwarf river beauty, rose root, Kamchatka rhododendron, northern goldenrod, grass of parnassus, red-stemmed saxifrage, mountain avens, among the colorful profusion. Keen sighters find a ptarmigan in browny-green vegetation.

Altogether it's a marvelous walk, level at first, with dried river beds to scramble down and up, patches of rocky gravel, some marshy ground, and ultimately a gradual slope upward. By the time we reach the hot springs area, we have a commanding view down to the springs, to the opposite mountain slope, whose bare upper reaches have been differentially weathered into contorted shapes, and to the river and its valley, eventually braided streams that empty into a delta in the lagoon and then to the sea.

The truly commanding sight, as the afternoon wears on, is of all of us scattered about the slope, in bathing suits or whatever, clothes and towels piled about, near to the big white changing tent that we do or do not use, carefully working our way about, sometimes on rocks around slippery mud, often with a helping hand, careful not to walk on hot streams. Most of us spend stretches of time in the two hot water pools, one right against the river, luxuriating in the sheer bliss, in the beauty of the scene, in the sound of the river rushing by, in just being here. A few daring souls take a dip in the cold river waters. The usual reluctance to leave asserts itself.



But of course there are still more rewards. On the way back many of us see a pair of nesting Sandhill Cranes off in the distance, toward a freshwater pond. Their large brown shapes are tricky to locate – "Look to the second green patch…no…yes, they look like big rocks." Finally, there are lots of "Ooohs." We stand peering through binoculars to see these North American overwintering birds on their nesting ground and learn that in the Arctic they use vegetation to "paint" themselves from grey to brown "so they're less visible," Frank Todd tells us. Female eiders in flight are easier to spot. We're also lucky and find their nests lying directly on the tundra and filled with large eggs. We stay a short while. Then Frank covers the eggs with eider down and we leave. Our path, via diverse routes, is back to Vladimir's campsite and to the Zodiacs at the shore, then to the *Kapitan Khlebnikov*.

At Recap before dinner, Norm Lasca gives us the geology of the hot springs. Because this is an active volcanic area, there is magma near the surface, and "we benefited from that today." He also notes the thriving presence of ferns near our bathing pools. "Without the warmth of the hot springs and the hot soil, the ferns wouldn't have been there." Nor would the mud in which we slipped and slid, which is the result of reduced permafrost, again due to the subsurface heat.

Next, Tony Soper does a weather report of sorts, observing how fortunate we've been with the weather. Winter is on its way. "Within a month, the creatures that come up here for the summer will be gone. The real problem is finding food, which is easy now but will become scarce later on." The animals that remain depend on polar bear kills and on "the stuff the bears leave behind after they eat." Thick-billed Murres overwinter in the Arctic in polynyas, openings in the ice that do not freeze. Keeping warm is not a problem for them. They're well adapted. "They are truly an Arctic bird."

Lastly, Frank Todd talks about "marine beasties," grey whales and walrus. Grey whales breed in Baja but come up here to feed because "this is where the productive areas are." The bowhead whale has the longest baleen, while the baleen of grey whales is very short and coarse, enabling them to feed on the bottom. Once a "serious product" for umbrellas, corsets, and other products, baleen has been replaced by plastic. Of similar use to the grey whale baleen, the walrus' 400 whiskers are very tactile and enable it to "get down and muzzle" on the seabed to feel clams. A big walrus' stomach can hold 100 pounds of clams. From Recap, we head to the dining rooms, as we are no match for the walrus.

One last treat this non-stop day, a surprise announcement that we are invited to sign up if we wish to take a Zodiac cruise around the bird cliffs on Nunangan Island. At least 60 of us load into the Zodiacs beginning at 2120, and soon we're off for one last, wonderful chance to see thousands of nesting birds. Overhead the air is filled with birds as we approach and with the cacophony found at all bird cliffs. The "cast of characters" layered up and down the fractured rock on narrow ledges also remains basically the same: kittiwakes, some with chicks; Thick-billed Murres; guillemots; Tufted and Horned Puffins; Pelagic Cormorants; and Glaucous Gulls. We motor slowly, scanning the cliffs, following the continuous motion as birds come and go, intrigued by the goings on at this ancient site, to which these species return year after year. Tonight we even find a new species, about 150 Harlequin Ducks in molt skittering along in a fast-moving line at the base of the rock, as they surely have done throughout time.

At the start, the sun burns low in the sky, dramatically lighting a sweep of clouds. By our return around 2240, the sun has dropped behind the mountains and the sky holds a great band of greys shading into pinks and then wispy ribbons and trails of rosy pink, soft light, all of it, Arctic light. All along the Kamchatka coast we see gently sloping mountains, their lower reaches accented with patches of snow. Fainter and fainter mountains are silhouetted in the distance. We look over to nearby Nunangan, its bird sounds too far away, its massive rock seemingly quiet and inactive. We know differently. It's a magic world up here in the evening light, a still, peaceful world, a pause before sunrise.

Life is either a daring adventure, or nothing at all.
– Helen Keller

Day 13 Tuesday, July 22, 2003

AT SEA

0800: 64°12'N 173°57'W Air Temperature: 11°C/52°F
2000: 64°11'N 179°34'W Air Temperature: 15°C/59°F

Lecture: *Arctic Whales, Seals, Walrus, Otters and Such*, Frank Todd
Video: *A Wildlife Expedition to the Sub-Antarctic Islands and Antarctica*
Slide-illustrated Talk: *Avian Review*, Frank Todd and Tony Soper
Disembarkation Briefing
Last Recap
Farewell Cocktail Party
Special Russian Farewell Dinner

"We all live on a yellow icebreaker" for this one last full day. The continued fun of simply being on the *Kaptian Khlebnikov* is tinged with sadness that it's all gone so fast. Troopers, we forge ahead for one great final day.

A Frank Todd show gets us started in good fashion. His slide-illustrated presentation of *Arctic Whales, Seals, Walrus, Otters and Such* gives wit, abundant information, and stunning images of marine mammals, beginning with the walrus.

WALRUS: The walrus is the third largest of the *Pinnipeds* after the elephant seals. The three groups of *Pinnipeds* are: 1) the fur seals and sea lions, 2) true seals, and 3) walrus.

Male walrus weigh 3,000-4000 pounds and grow to 12 feet long. "They always look like they have too much skin." Their skin is 1½ times more than they need, with 5-6 inches of blubber. That blubber accounts for 900 pounds of a walrus' weight and is important as a food reserve. The skin itself is "surprisingly sensitive." They scratch a good deal and will roll around on their backs, "like a great big dog."

Walrus teeth are highly modified into tusks 3 feet in length and weighing 12 pounds each. "You have to have a powerful neck to hold up that weight." The tusks are used as ice picks or axes, in self-defense, for social dominance, and as a sexual characteristic. The head is small. Some 400 vibrissae/whiskers enable them to "get down in the mud" to aid in locating clams, their main food source. They have a great ability to suck the clams out of their shells. Their stomachs can contain 3,000-6,000 clams.

Very few animals are more gregarious than the walrus. " If one comes up on a piece of ice, the others all want to come up, too." They have "great fantastic personalities" and are quite friendly. They are extremely curious or wary, depending on whether they are hunted in the area. Underwater they are very streamlined. Skilled swimmers, they can "sprint" 20 mph. Extremely vocal, they snort, bellow, whistle, and blow. Males produce a distinct bell sound at mating time. They make extensive migrations almost exclusively on the ice. One in 1,000 is a rogue walrus. These "rogues" eat ringed seals and are "leaner and meaner." They have a yellowish look. We see them only occasionally.

Primarily only males haul out. Females gather separately with their calves in summer; males congregate in large numbers in southern areas, some at traditional haulout spots, with 12,000-15,000 individuals. There's a lot of milling around offshore at a haulout. "They crawl over one another to get ashore."

Breeding takes place from December to March. Male breeding territories are 25 to 30 feet, and there are conflicts at that time. "Two males can have quite a battle." Calves are born in early May, weighing 120 pounds at birth. They are well cared for by the females for up to 2½ years, fed on milk of 35 percent fat; the calves weigh 450 pounds by the end of their first summer.

Calves produce the best skin for rope. Female skins make the best umiaks, because the females don't fight and their skins, therefore, are generally free of tears. Two female skins can cover an umiak. Walrus are still hunted, mostly subsistence. Late spring is the best time. A walrus will be harpooned and then picked off with a shotgun. In the old days, every part of the walrus was used by the Inuit. "Last year the food situation was so slim in Siberia, that people went back to eating strips of the skin."

There are 25,000 Atlantic walrus, 10,000 in Canada, 10,000 in Greenland, and 5,000-6,000 in Norway. From 1860-1880, 200,000 Pacific walrus were harvested. As a result, the population declined to 50,000 but has now risen to about 200,000. The Pacific walrus is 10 percent larger than the Atlantic walrus.

RINGED SEAL: The ringed seal is the most common Arctic seal, with a population of 4-5 million. It weighs between 100 and 200 pounds. The ringed seal was the first mammal, other than a human, at the North Pole, recorded by Frank, as one popped up beside him in the same hole in which he was "swimming" at 90° North. Polar bears depend on the ringed seal, which is also "an intricate part of the Eskimo culture." There is no longer a market for the fur of seals, but they are used by the Inuit as dog food and to make many items, such as the float for whale hunting.

Ringed seals have relatively large claws, essential for digging out caves/dens in a layer under snow and ice. Up to 10 x 40 feet, these dens offer protection from weather and from predators. In some areas 40 to 50 percent of the pups will be taken by bear and fox. When first born, the pups have luminous fur, which is shed in three weeks to the typical waterproof seal fur.

BEARDED SEAL: The bearded seal weighs between 550 and 770 pounds. It has a very distinct beard and is sometimes called the "square-flippered seal." It's the only competitor of the walrus for clams. The Inuit especially prize the bearded seal pup for its fur. Relatively solitary, these seals are not found in groups and are infrequently seen. Their population numbers a half-million in the Arctic.

RIBBONED SEAL: The ribboned seal, one of the most distinctly marked of the seals, weighs about 230 pounds.

HARBOR SEAL: The 300-pound harbor seal is found throughout northern areas, generally not on the ice, but hauled out on rocks. In the womb, it has white fur, which is shed *in utero*. The pups are born black, enabling them to blend into the dark rocks. The **Spotted Seal** is the "ice version of the harbor seal" and lives on the ice.

ELEPHANT SEAL: The elephant seal is the second largest of the *pinnipeds,* 16 feet in length and over 1,000 pounds. Found in California and Mexico, it makes two migrations of tremendous distance, traveling from California to the Gulf of Alaska and

back down again, some 5,000 miles. All of the males are in the Arctic now. Elephant seals can dive to 5,000 feet and stay down for as long as two hours.

STELLAR SEA LION: At 2,400 pounds, the stellar sea lion is larger than the polar bear. These seals have declined from 300,000 to 150,000, maybe from global warming, maybe from fishing techniques.

FUR SEAL: In Antarctica, the fur seal was harvested almost to extinction. It is the most severely dismorphic of all mammals, with females much smaller than the 600-pound males. A fur seal can maintain beachmaster status for one, maybe two years only, with one male tending 40 females. There were 2.5 million **Northern Fur Seals** in the 1980s, now that number has been reduced to 1.5 million.

STELLER'S SEA OTTER: The sea otter is the only marine mammal that depends on its fur rather than blubber to survive. As such, it has one million fur fibers per square inch; in contrast, the fur seal has 650,000 per square inch. Among the very few mammals that use a tool, sea otters beat a rock against a clam to open it. The sea otter trade almost wiped them out. They come ashore on the Kuril Islands, but not in most other areas.

STELLER'S SEA COW: The Steller's sea cow was discovered by George Steller, the ship's doctor on a Vitus Bering expedition in the 1740s. Rather than teeth or tusks, they had horny mouth plates. They tasted like beef and one could feed 27 men for a month. Mostly wiped out by indigenous peoples, within a short time of its discovery by Bering's crew, the Steller's sea cow was hunted to extinction.

Frank continues with a review of the *Cetaceans,* first the toothed whales and then the baleen. Toothed whales have a single blowhole; baleen whales have two.

BELUGA: The beluga is a toothed whale and relatively small, 16 to 18 feet and about 3,800 pounds. It has no dorsal fin. "If you live under the ice, you don't want a fin on the back." One of the most vocal of the whales, the beluga is known as the "sea canary." Along with the narwhal, the beluga has no neck vertebrae, so it can twist its head and is also able to move its lips. "They have a lot of personality." In the wild they don't show much of themselves. They don't rise much above the water. They gather at the mouths of rivers where the young are born and in fresh water to shed their skin. European hunters "were not kind to beluga," but they are holding their own now with a population of 100,000, though still subject to subsistence hunting for mukluk.

NARWHAL: Exclusive of its nine-foot tusk, which is the only tooth it has, the narwhal is about the same size as a beluga and is very seldom seen from a boat. The narwhal tusk, inspiration of the unicorn legend, is a secondary sex feature, which grows only on the left side of the head and always slants to the left. Males joust in the

breeding season, so the tusks are sometimes broken. Subsistence hunting takes place yearly, mainly for the tusks. The population numbers 50,000, most around Baffin Island.

KILLER WHALE: The killer whale is the largest of the dolphins, with a length of 30 feet, weight of 10 tons, and a 6-foot-high fin. Its "disruptive coloration," in which pattern breaks up the outline of the animal, provides camouflage against predators**.** The killer whale is "a very curious animal," and "despite the stories" there is no record of one attacking humans.

GREY WHALE: The grey whale, 46 feet in length and 55 tons in weight, breeds in Baja. The only baleen whale to feed on the bottom of the ocean, the grey whale makes an extensive migration to feed in the Arctic. Encrustations accumulate on its skin in warm water and because of its slow swimming. The grey whale breeches, especially in the breeding season, though no one knows why. They come completely out of the water and fall on their backs, maybe as play or in courtship.

MINKE WHALE: The fast-swimming Minke whale is 30 feet long, weighs 10 tons, and has a large dorsal fin. The smallest of the baleen whales, it is the most numerous, some one million worldwide. The Japanese take 800 to 1,000 Minkes each year for research, "mainly gastronomic research."

HUMPBACK WHALE: "We're too far north for them." The humpback, so-called because it humps its back when it swims, is 50 to 60 feet in length, one-third of that taken up by its flippers. "No whale is more acrobatic than the humpback, 50 tons out of the water." The humpback is also graceful underwater. Every humpback has a different tail and can be tracked by its tail print.

BOWHEAD WHALE: The bowhead whale is also known as the "**Right Whale**" because it was "the right whale to kill," – easy, huge, slow-moving, with lots of baleen, and, unlike many whales, floats when dead. Noted for the dip between the blowholes and its back, the bowhead is 65 feet long and weighs as much as 122 tons. Its head equals one-third its length and its baleen plates are up to 15 feet long. It's further identified by its white chin and the v-shape of its blow. It takes several tons of plankton per day. "The baleen rattle when they shake their heads with a mouthful of plankton and water." Bowheads are also acrobatic. One of the most popular of the whales to hunt, they were eliminated around Spitsbergen and in the Bering Sea by whalers. There is still subsistence hunting, but the bowhead is making "a slow recovery." There are 3,000-4,000 bowheads in the Southern Hemisphere. "Probably no animal on the planet lives longer than the bowhead, up to 200 years. Bowheads taken in modern times have had wooden harpoons in them of a type not used for 200 years."

Frank ends with an invitation for us to come back on more trips to enjoy and track down more marine mammals. We accept.

More armchair adventure, at 1130, when we return to the Lecture Room to view a documentation video filmed and narrated by Tony Soper. Who better than Tony, co-founder of the BBC's Natural History Unit, a film producer, and an intrepid traveler to both the Arctic and Antarctic, to guide us on *A Wildlife Expedition to the Sub-Antarctic Islands and Antarctica*?

After lunch, it's the Frank and Tony show, intrepid guys all around, giving us an "Avian Review," with more of those superb pictures and pithy comment. They provide one final wrap-up of the birds of the Arctic (mostly): Common, Pacific, and Red-throated Loon; Fulmar; Pelagic Cormorant; White-tailed and Bald Eagle; Steller's Sea Eagle; Peregrine Falcon; Gyrfalcon; Rough-legged Hawk; Willow, White-tailed, and Rock Ptarmigan; Whistling, Bewick's, Trumpeter, and Hooper Swan; White-fronted, Snow, Blue, Canada, Siberian Red-breasted, Barnacle, and Brent Goose; Mallard; Baikal Teal; Common, Pacific, Spectacled, and Steller's Eider; Long-tailed Duck; Common and Surf Scoter; Harlequin; and Red-breasted Merganser; Thick-billed Murre; Black and Pigeon Guillemot; Parakeet, Crested, Least, and Whiskered Auklet; Horned and Tufted Puffin; Long-tailed and Pomarine Jaeger; Glaucous, Sabine's, Ivory, and Ross's Gull; Black-legged and Red-legged Kittiwake; Arctic Tern; Sandhill Crane; Dunlin; Turnstone; Black Bellied and Semi-palmated Plover; Red-necked and Red Phalarope; Short-earred and Snowy Owl; Raven; Snow Bunting; and Lapland Longspur. So many more reasons to journey back.

The Disembarkation Briefing in the Lecture Room at 1700, with everything we need to know to get us off the ship, through Russian customs, and over to Alaska, slides naturally into our final Recap.

Masterful as ever, Bob Headland presides over the decoding of the *University of the Arctic Final Examination*. Ever since these exams appeared in the envelopes on our cabin doors the evening of July 19, there's been a coming and going to check the color of Danielle's eyes, to count the seats in the Lecture Room, to find out the greatest depth of the Arctic Ocean, to figure out "the three things most feared by polar explorers," to name the several poles which occur in the Arctic, to match vernacular and Linnean botanical names. In all, 60 questions challenged the hardy who took the "test," excellent source of fun, games, and knowledge for the "takers," as well this afternoon for those who simply hear the reading of the answers, as only Bob could. In the process, we roam the Arctic once again.

Then it's to the party, to Farewell Cocktails in the Bar and the Lounge at 1830, a chance to thank Captain Vasilev and his officers for this splendid trip in the Russian Far East, and for one more festive celebration. Maybe dressed up a bit, filled with the good times and great interest and the friendships of this entire voyage, we stand in noisy rooms, in a happy place and moment. Those good feelings and high spirits carry over into the dining rooms where we

feast on a very special farewell Russian dinner, fit for tsar and comrade and traveler alike: Chilled Russian Sevruga Malossol Caviar Served on Smoked Marinated Salmon and Pepper Mackerel with Melba Toast; 'Pelmeni,' Original Russian Pasta Filled with Minced Meat and Garlic; Salads and Dressings from the Buffet; 'Borscht Moskowsky'; Siberian Tundra Berry Sherbet*;* 'Russian Kulibijak,' Tranche of Lemon Cured King Salmon Folded in Chinese Cabbage Leaf with Rice, 'Kasha' (Buckwheat) and Beetroot accompanied by Potato Balls Refined with a Shot of Vodka or Boeuf 'Stroganoff,' Sauteed Beef with Mushrooms, Onions, Julienne of Cornichons and Sour Cream served with Noodles and Vegetable Garnish or Cabbage Strudel with 'Kasha' (Buckwheat) on Carrot Sauce; and 'Baked Alaska Ice Parade.'

Following dinner, we're invited to the lounge for a performance of Russian folk songs, led by Second Chief Officer Grigoriy Akulich and sung by the lovely waitstaff who have served us so beautifully throughout our trip, among them, Larissa, Helena, Lena, Oksana, Inna, and Galina. All of the women are dressed in exquisite costumes from different Russian provinces, a magnificent array of materials, styles, and headdresses. Altogether, they're a striking group in their handsome and colorful outfits. The folk songs are equally memorable, capturing a range of human feeling that transcends language. Toward the end, Grigoriy breaks into a familiar song and asks us to join in. "We all live on a yellow icebreaker, a yellow icebreaker…" resounds through the lounge, and this is our home. Who needs a submarine?

Brilliant pink clouds streak the sky this evening.

Regions of mountainous and wild, thinly inhabited, and little cultivated,
make a great part of the earth, and he that has never seen them,
must live unacquainted with much of the face of nature,
and with one of the great scenes of human existence.
– Samuel Johnson

Day 14 Wednesday, July 23, 2003
DISEMBARKATION DAY AND FLIGHT TO ALASKA

0800: 64°37'N 178°11'E
2000: 61°10'N 150°00'W

Helicopter Flight to Anadyr International Airport
Magadan Airlines Flight to Anchorage

However reluctantly, we're up and about first thing this morning. Our heavy luggage is outside our cabin doors by 0700, if not earlier, and is soon carried away. Breakfast runs from 0700 to 0900. We vacate our cabins by 0830, when the first group takes off in the helicopter for Anadyr International Airport, something of a euphemism from our experience, perhaps simply a hope. Group by group, we wait in the lounge and on the decks for the call, and then come to stand in line before the heli pad.

Frank, Tony, Bob, Norm, and Danielle spend time exchanging good-byes with us. Erica and Lars Wikander are at the steps with hugs and handshakes and sparkle, keeping us company the while. As always, Jen and Peter get us safely to the helicopter. Over on land we find the rest of the staff, Jan overseeing the luggage and Andrey and Sasha making Russian customs an easy formality compared to our experience way back on July 11/12. All fabulous staff, the whole lot, the people who make the trip happen.

By 1100, we're all on board our Magadan Airlines flight, taking off for Alaska and yesterday. Almost an hour into the flight – while we are munching on boiled chicken (yes, that was chicken), rice and peas, on good Russian bread, cheese, pickles, chocolate bars, more than we could possibly need (nothing changes) – the stewardess announces, first in Russian and then in English, that we are now over the border between Russia and the United States. We are back to July 22, most likely, to a world we left 11, or is it 12, fast days ago. The smooth, 3-hour and 25-minute flight brings us to Anchorage at 1525; at least that's what the clocks say, and we have to believe them, so mixed up are our own clocks at this point.

Most of us return to the Millennium Hotel for the night, running into one another in the lobby, the bar and the restaurant, sharing drinks and food, fish, crab, marvelous Alaskan fare, and fabulous memories of the trip just ended. Some remain to tour about Alaska. The majority set off the next morning for far-flung destination points around the world. All of us take a part of the Russian Arctic back with us.

Strange: there is always sadness on departure.
It is as if I cannot after all bear to leave this bleak waste of ice, glaciers, cold and toil.
– Fridtjof Nansen

BIRDS AND MAMMALS

Birds

Common (Pacific) Loon	*Gavia pacifica*
Arctic Loon	*Gavia arctica*
Northern Fulmar	*Fulmaris glacialis*
Pelagic Cormorant	*Phalacrocorax pelagicus*
Peregrine Falcon	*Falco peregrinus*
Lesser Snow Goose	*Anser erythropus*
King Eider	*Somateria spectabilis*
Long-tailed Duck (Oldsquaw)	*Clangula hyermalis*
Black-bellied Plover	*Pluvialis squatarola*
Ruddy Turnstone	*Arenaria interpres*
Northern Phalarope	*Phalaropus lobatus*
Red (UK, Gray) Phalarope	*Phalaropus fulicaria*
Horned Puffin	*Fratercula corniculata*
Tufted Puffin	*Fratercula cirrhata*
Crested Auklet	*Aethia cristatella*
Parakeet Auklet	*Aethia psittacula*
Least Auklet	*Aethia pusilla*
Thick-billed Murre or Guillemot	*Uria lombia*
Common Murre or Guillemot	*Uria aalge*
Pigeon Guillemot	*Cepphus columba*
Black Guillemot	*Cepphus grylle*
Herring Gull	*Larus argentatus*
Glaucous Gull	*Larus hyperboreas*
Ivory Gull	*Pagophila eburnea*
Black-legged Kittiwake	*Rissa tridactyla*
Arctic Tern	*Sterna paridisaea*
Pomarine Jaeger or Skua	*Stercorcarius pomerinus*
Parasitic Jaeger or Skua	*Stercorcarius parasiticas*
Long-tailed Jaeger or Skua	*Stercorcarius longicaudatus*
Snowy Owl	*Nyctea scandiaca*
Northern Raven	*Corvus corax*
Yellow Wagtail	*Motacilla flava*
White Wagtail	*Motacilla alba*
Snow Bunting	*Plectrophenax nivalis*

Mammals

Pacific Walrus	*Odobenus rosmarus*
Ringed Seal	*Phoca hispida*
Harbor Seal	*Phoca vitulina concolor*
Beluga (White) Whale	*Delphinapterus leucas*
Grey Whale	*Eshrichtius gibbosus*
Polar Bear	*Ursus maritimos*
Arctic Ground Squirrel (Suslik)	*Spermophilus undulatus*
Muskox	*Ovibos mischatus*
Lemming	*Dicrostonyx groenlandicus*

PLANTS AND FLOWERS

I = Ittygran • Provideniya and Novoye Chaplino • W = Wrangel Island
K = Kolyuchin Island • Cape Deshnev = D • Yanrakynnot = Y
Bukhta Rumilet Hot Spring = H

Common Name	***Scientific Name***	***Location***
Alpine Arnica	*Arnica alpina*	I, D, H
Alpine Bistort	*Polygonum viviparum*	I, W, Y, H
Alpine Forget-me-not	*Myosotis alpestris*	W, D, Y
Anemone, Alpine or Drummondii	*Anemone drummondii*	D
Anemone, Richardson's or Yellow	*Anemone richardsnii*	I
Arctic Bramble	*Rubus arcticus*	I, D, H
Arctic Daisy	*Chrysanthemum arcticum*	K, Y, H
Arctic Dock	*Rumex arcticus*	P, I, D
Arctic Harebell	*Campanula uniflora*	P, W
Arctic Poppy	*Papaver radicatum*	P, I, W
Arctic Spring-beauty	*Claytonia arctica*	H
Aster, Siberian	*Aster sibericus*	Y, H
Avens, Mountain	*Dryas octopetala*	P, I, W, D, H
Bearberry, Common	*Arctostaphylos uva-ursi*	H
Bedstraw, Northern	*Galium boreale*	H
Birch, Dwarf	*Betula nana*	H
Blueberry, Arctic [Bog Bilberry]	*Vaccinium uliginosum*	D, H
Bog-rosemary, Common	*Andromeda polifolia*	H
Butterbur, Lapland or Frigid Coltsfoot	*Petasites frigidus*	P, I, W, Y, H
Buttercup, Arctic or Creeping	*Ranunculus hyperboreus*	I, W, D, Y, H
Buttercup, Snow	*Ranunculus nivalis*	W

Buttercup Sulphur-colored	*Ranunculus sulphureus*	D
Capitate Valerian	*Valeriana capitata*	I, D
Chickweed, Alpine	*Cerastium alpinum*	D
Chickweed, Field	*Cerastium arvense*	H
Chrysanthemum, Entire-leafed	*Chrysanthemum integrifolium*	H
Cinquefoil	*Potentilla sp.*	I, D
Cinquefoil, One-flowered	*Potentilla uniflora [vahliana]*	P, K, D, Y, H
Cinquefoil, Buttercup	*Potentilla ranunculus*	D
Cinquefoil, Snow	*Potentilla nivea*	K, Y
Cinquefoil, Villous	*Potentilla villosa*	K
Cornel, Dwarf or Lapland	*Cornus suecica*	H
Cotton Grass, Arctic	*Eriophorum scheuchzeri*	I, W, H
Cotton Grass, Common	*Eriophorum angustifolium*	I, H
Crowberry, Common	*Empetrum nigrum*	H
Cuckoo-flower [Meadow Bitter-cress]	*Cardamine pratensis*	I
Dandeliion sp.	*Taraxacum* sp.	K
Dandelion, Smooth	*Taraxacum glabrum [kamtchaticum]*	P, W, K, Y
Draba,	*Draba* sp.	I
Draba, Snow	*Draba nivalis*	I, D, Y, H
Fleabane	*Erigeron* sp.	I
Fleabane, Muir's	*Erigeron muirii*	W
Frigid Shooting-star	*Dodecatheon frigidum*	I
Gentian	*Gentiana* sp.	I
Gentian, Delicate or Slender	*Gentiana tenella*	Y
Goldenrod, Northern	*Solidago multiradiata*	D. H
Grass of Parnassus, Kotzebue's	*Parnassia kotzebuei*	I
Heather, Moss-like Mountain	*Cassiope hypnoides*	P, I, D
Heather, White Arctic Bell	*Cassiope tetragona*	I, D
Hedysarum, Alpine [Liquorice-root]	*Hedysarum alpinum*	I, W, H
Horsetail, Common	*Equisetum arvense*	I, D, H
Jacob's Ladder, Boreal	*Polemonium boreale*	P, I, W, K, Y, H
Labrador-tea, Narrow-leafed	*Ledum palustre*	H
Lady's-mantle	*Alchemilla* sp.	P
Larkspur, Northern Dwarf	*Delphinium brachycentrum [chamissonis]*	I
Lousewort, Capitate	*Pedicularis capitata*	I, H
Lousewort, Flame-tipped	*Pedicularis flammea*	I
Lousewort, Sudetan	*Pedicularis sudetica*	I, D, K
Lychnis, Nodding or Purple Bladder Campion	*Melandrium apetalum*	I, W
Marsh Marigold	*Caltha palustris*	I, W
Monkshood	*Aconitum delphinifolium*	I, D, Y, H

Moss Campion	*Silene acaulis*	I
Narrow-leafed Saussurea	*Saussurea angustifolia*	I, W
Northern Tansy-mustard	*Descurainia sophioides*	H
Northern Water Carpet or Alternate-leafed Golden Saxifrage	*Chrysosplenium alternifolium [tetrandrum]*	I
Orange Senecio	*Senecio fuscatus*	W, K
Oxytrope	*Oxytropis* sp.	W, D
Oxytrope, Northern Yellow or Field	*Oxytropis campestris*	D
Paintbrush sp.	*Castilleja* sp.	W, D
Paintbrush, Elegant	*Castilleja elegans*	W
Paintbrush, Pale Painted	*Castilleja pallida [caudata]*	W, D
Pink Plumes	*Polygonum bistorta*	P, I, H
Plantain, Common	*Plantago major*	H
Primrose, Chukchi	*Primula tschuktschorum*	I
Rhododendron, Kamchatka	*Rhododendron camtschaticum*	P, H
Rose Root	*Sedum [Rhodiolia] rosea*	P, I, W, D, Y, H
Sandwort, Arctic	*Minuartia arctica*	W, D
Sandwort, Sea-beach	*Honckenya peploides*	I
Saxifrage, Brook	*Saxifraga punctata*	I, D
Saxifrage, Bulblet	*Saxifraga cernua*	D
Saxifrage, Prickly	*Saxifraga tricuspidata*	W, D, Y
Saxifrage, Red-stemmed	*Saxifraga lyallii*	D, H
Saxifrage, Spider Plant	*Saxifraga flagellaris*	W, H
Saxifrage, Stiff-stemmed	*Saxifraga hieracifolia*	I, W, D, Y, H
Saxifrage, Thyme-leafed	*Saxifraga serpyllifolia*	W, H
Saxifrage, Tufted	*Saxifraga caespitosa*	W
Saxifrage, Yellow-marsh	*Saxifraga hirculus*	I, D, H
Sea Lungwort	*Mertensia maritima*	I
Sea-coast Angelica	*Angelica lucida*	P, I, Y, H
Sea-shore Chamomile	*Matricaria ambigua*	P, Y
Senecio, Arctic [Groundsel]	*Senecio atropurpureus*	I, W
Senecio Fuscatus	*Senecio fuscatus*	W
Scurvy-grass, Common	*Cochlearia officinalis*	P, K, Y
Sorrel, Grass-leafted	*Rumex graminifolius*	Y
Sorrel, Mountain	*Oxyria digyna*	P, I, W, D
Spiraea, Beauverd's	*Spiraea beauverdiana*	P, H
Starwort, Low or Low Chickweed	*Stellaria humifusa*	W, K
Stitchwort, Long-stalked	*Stellaria longipes*	I, W, K, H
Thrift	*Armeria maritima*	W, Y
Twinflower	*Linnaea borealis*	H
Vetch, Hairy Arctic Milk	*Astragalus umbellatus [frigidus]*	W
Weasel-snout, Glaucous	*Legotis glauca*	W, D

Weasel-snout, Hulten's	*Legotis hultenii*	P
Wild Rhubarb or Alpine Fleeceflower	*Polygonum alpinum*	I, H
Willow, sp.	*Salix* sp.	P, I, W, K, Y, H
Willow, Arctic	*Salix arctica*	I, W
Willow, Net-veined	*Salix reticulata*	P, I, D, H
Willow-herb, Broad-leafed or Dwarf Fireweed or River Beauty	*Epilobium latifolium*	I, D, H
Willow-herb, Great or Fireweed Tall or Rose Bay Willow-herb	*Epilobium angustifolium*	I, H
Willow-herb, Swamp	*Epilobium palustre*	I, H
Wormwood sp.	*Artemesia* sp.	H
Wormwood, Arctic	*Artemesia arctica*	I, D
Wormwood, Glomerate	*Artemesia glomerata*	P, W
Wormwood, Northern	*Artemesia borealis*	W, K, Y
Wormwood, Tilesius's	*Artemesia tilesii*	I, D, Y, H

WRANGEL POEMS

KK like an Arctic Tern
from pole to pole it takes its stern
however the difference between the two:
KK is not laying eggs and Arctic Terns do!
– Hilde Sanders

Ships Passing In The Night?
In icy
Wave-tossed inky ocean
Of stupendous time and trackless span,
The vessels of our lives are like tiny, lighted passing ships
Voyaging shared existence for unknown terminable twinkling eye-blinks,
Being guests in each other's present as we
Cruise uncharted limited life-seas.
To grasp these mortal finite hours we must
Lay down all minor stuff, instead, seize with gusto
The gracious moments given to us,
Make good memories,
Courageously claim
The major enjoyment that can be ours,
For there
Is
Only
Now
To give
One another
The eternal warming gift of kindness.
So let our crafts sail companionably side-by-side
This little vital while, rather than coldly cross
And leave emptiness trailing
Behind in our fast fading
Wake-furrowed
Paths.
– Louise Christensen Zak

PASSENGER LIST

Adams, Shirley (Chime)	Kinmount, Ontario, Canada
Adamson, Naomi	Toronto, Ontario, Canada
Adamson, Caitlin	Toronto, Ontario, Canada
Arnfield, Richard	Richmond Hill, Ontario, Canada
Barfield, Donna	Connecticut, USA
Baumgartner, Theresa	Wangenried, Switzerland
Bowering, Jack	Edmonton, Alberta, Canada
Brinker, Wilhelmina	Groningen, Holland
Brosig, Klaus-Dieter	Bickelheim, Germany
Brugman, Ad	Herefordshire, UK
Buschkötter, Hermann	Beckum/Wesf. Germany
Buschkötter, Remo	Beckum/Wesf. Germany
Cain, Joan	Georgia, USA
Clanfield, Ronda	Richmond Hill, Ontario, Canada
Costley White, Richard	Toronto, Ontario, Canada
Craig, Hugh	Edinburgh, Scotland
Craig, J. B.	Edinburgh, Scotland
Cross, Lynn	Oregon, USA
Cunningham, Tori	Etobicoke, Ontario, Canada
Davidson, Cameron	Virginia, USA
Dawson, George	Kinmount, Ontario, Canada
De Jong, Frieda	Amsterdam, Holland
Deutsch, Peter	Vancouver, British Columbia, Canada
Deutsch, Marika	Vancouver, British Columbia, Canada
Doan, Helen	Toronto, Ontario, Canada
Dolman, Loren	California, USA
Dörr-Latussek, Margret	Koeln, Germany
Evstefeeva, Yulia	Moscow, Russia
Feklistov, Yury	Kremlin, Moscow
Frank, Don	California, USA
Garber, Dan	Georgia, USA
Garber, Nancy	Georgia, USA
Geeves, Warren	Lyneham, Act, Australia
Gilardini, Daisy	Breganzona, Switzerland
Gonsalves, Andy	Stockport, UK
Graber, Sid	Nevada, USA
Hagan, Terry	Kinmount, Ontario, Canada
Harding-Edgar, Gabriele	Edinburgh, Scotland
Hoffman, George	California, USA
Hoffman, Inga	California, USA
Hofmann, Urs	California, USA

Hoogenboezem, Engelina	Saint Martin, Netherlands Antilles
Hyatt, Pam	Vancouver, British Columbia, Canada
Jackson, Erica	Toronto, Ontario, Canada
Jacobson, Laurel	New Mexico, USA
Jepsen, Palle Uhd	Swansea, Wales
Jones, Gerry	Toronto, Ontario, Canada
Keogh, Peter	New Mexico, USA
Keogh, Robin	New Mexico, USA
King, Hilary	Lincolnshire, UK
Klahn, Michael	Wisconsin, USA
Kromer-Popp, Lisel	Regensburg, Germany
Kulma, Ted	Illinois, USA
Lasca, Judy	Wisconsin, USA
Lowe, Nicola	Edinburgh, Scotland
Madden, Jack	Florida, USA
Madden, Sandy	Florida, USA
Mann, Dave	Washington, USA
Mason, Rosemary	Swansea, Wales
McCowan, Bruce	New Mexico, USA
Millman, Lawrence	Massachusetts, USA
Moennich, Anne	Gau Bickelheim, Germany
Moriceau, Sonia	Hereford, UK
Morrison, Alicia	Florida, USA
Mortifee, Jane	Vancouver, British Columbia, Canada
Muir, Sally	Surrey, UK
Murenets, Nikolay	Moscow, Russia
Nelson, Richard	California, USA
Odle, Jean	Michigan, USA
Okunuki, Eiko	Vancouver, British Columbia, Canada
Orth, Jeffrey	California, USA
Peter, Nancy	California, USA
Popp, Klaus	Hamburg, Germany
Popp, Jürgen	Hamburg, Germany
Sanders, Hilde	Zevenhoven, The Netherlands
Sanders, Puck	Leiderdorp, The Netherlands
Sette, Lisa	Alaska, USA
Sheekey, Duncan	Essex, England
Sheridan, Jeanne	New York, USA
Sikka, Mala	Glamorgan, Wales
Silva, Zelfa	Buenos Aires, Argentina
Simpson, Juliet	London, UK
Singh, Ranjit	California, USA
Skinner, Virginia	California, USA

Symchych, Anne	Massachusetts, USA
Symchych, Catherine	Wyoming, USA
Thomson-Mann, Ann	Washington, USA
Tommer, Elisabeth	Rickenbach, Switzerland
Walther, Roswitha	Pattensen, Germany
Weisert, Gabe	California, USA
Wikander, Lars	New York, USA
Wikander, Erica	New York, USA
Wyatt, Ann	Idaho, USA
Zak, Hanne	Washington, USA
Zak, Ariel	Washington, USA
Christensen-Zak, Louise	Washington, USA

Memories

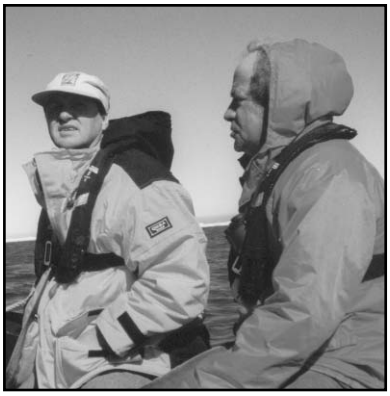
Memories








Memories





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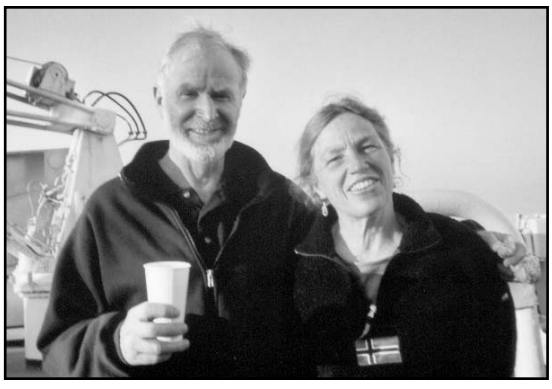

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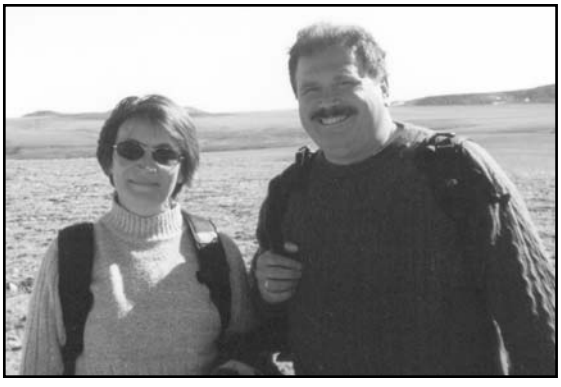

RUSSIA'S FAR EAST AND WRANGEL ISLAND

Aboard the *Kapitan Khlebnikov*

July 10-23, 2003

Ship's Officers:

Captain	Victor Vasilev
Chief Officer	Vladimir Pisarev
Chief Officer	Andrey Matyushenko
Second Chief Officer	Grigoriy Akulich
Chief Radio Operator	Victor Berezin
Chief Engineer	Aleksandr Smolin
Chief Electrical Engineer	Sergey Ustyugov
Crew Doctor	Yevgeny Yarovenko
Chief Steward	Aleksandr Vysochin

Expedition Staff:

Expedition Leader	Andrey Gostnikov
Assistant Expedition Leader	Jennifer Clement
Naturalist/Zodiac Coordinator	Peter Clement
Historian	Robert Headland
Geologist	Norman Lasca
Ornithologist	Tony Soper
Ornithologist/Marine Biologist	Frank Todd
Chukotka Specialist	Jan Bryde
Russian Guides	Sasha Golikov
	Vladimir Bychkov
Ship Physician	Dan Zak

Hotel Staff:

Hotel Manager	Evelyn Seeber
Executive Chef	Olaf Roos
Entremetier	Otmar Stark
Gardemanger	Michael Holz
Pastry Chef	Wolfgang Fellner
Service and Wine	Elke Fraider
	Andrea Moser
Bartender	Gebi Scherrer
Shopkeeper	Danielle Sogno

Log:

Log Writer	Judy Lasca
Photographs	Peter Clement
	Judy Lasca
	Norman Lasca
Log Editor	*M R Publishing, Inc.*

RUSSIA'S FAR EAST AND WRANGEL ISLAND

QUARK EXPEDITIONS

980 Post Road
Darien, CT 06820 USA
203-656-0499
800-356-5699
Fax: 203-655-6623
www.quarkexpeditions.com

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Aboard the *Kapitan Khlebnikov*

July 10-23, 2003

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