Eight

THE INTENT OF MONKS

We left our camp on Pingok Island one morning knowing a storm was moving in from the southwest, but we were not worried. We were planning to work in open water between the beach and the edge of the pack ice, only a few miles out, making bottom trawls from an open 20-foot boat. The four of us were dressed, as usual, in heavy clothes and foul-weather gear.

You accept the possibility of death in such situations, prepare for it, and then forget about it. We carried emergency and survival equipment in addition to all our scientific gear—signal flares, survival suits, a tent, and each of us had a pack with extra clothing, a

sleeping bag, and a week's worth of food. Each morning we completed a checklist of the boat and radioed a distant base camp with our day plan. When we departed, we left a handwritten note on the table in our cabin, saying what time we left, the compass bearing we were taking, and when we expected to return.

My companions, all scientists, were serious about this, but not solemn or tedious. They forestalled trouble by preparing for it, and were guided, not deterred, by the danger inherent in their work. It is a pleasure to travel with such people. As in other walks of life, the person who feels compelled to dramatize the risks or is either smugly complacent or eager to demonstrate his survival skills is someone you hope not to meet.

Our camaraderie came from our enthusiasm for the work and from exhilaration with the landscape, the daily contact with seabirds, seals, and fish. We rarely voiced these things to each other; they surfaced in a word of encouragement or understanding around rough work done in unending dampness and cold. Our mutual regard was founded in the accomplishment of our tasks and was as important to our survival as the emergency gear stowed in a blue box forward of the steering console.

We worked through the morning, sorting the contents of bottom trawls and vertical plankton tows. Around noon we shut the engines off and drifted under overcast skies, eating our lunch. The seas were beginning to slap at the hull, but we had another couple of hours before they built up to three or four feet—our match, comfortably. We decided, then, to search for seals in the ice front before heading in. An hour later, by a movement of the ice so imperceptible it was finished before we realized it, we were cut off from the sea. The wind, compacting the ice, was closing off the channels of calm water where we had been cruising. We were suddenly 200 yards from open water, and a large floe, turning off the wind and folding in from the west, threatened to close us off even deeper in the pack. Already we had lost steerageway—the boat was pinned at that moment on all four sides.

In those first hours we worked wordlessly and diligently. We

all knew what we faced. Even if someone heard our distress call over the radio, we could not tell him precisely where we were, and we were in pack ice moving east. A three-day storm was coming on. The floes might crush the boat and drive it under, or they could force it out of the water where we would have it for shelter.

We took advantage of any momentary opening in the ice to move toward open water, widening the channels with ice chisels, pushing with the twin 90-horsepower engines, the four of us heaving at the stern and gunnels. We were angling for a small patch of water within the pack. From there, it seemed, after a quick reconnoiter ahead on foot, we might be able to get out to the open sea. Thirty feet shy of our patch of water, we doubted the wisdom of taking ice chisels to one particular chunk of weathered pressure ice that blocked our path. Fractured the wrong way, its center of gravity would shift and the roll could take the boat under. The only way around it was to pull the boat, which weighed 3000 pounds, completely out of the water. With an improvised system of ice anchors, lines, and block and tackle, and out of the terrific desire to get free, we set to. We got the boat up on the floe, across it, and back into the water.

Had that been open water, we would have cheered. As it was, we exchanged quick glances of justifiable but not foolish hope. While we had been winching the boat over the ice toward it, this patch of water had been closing up. And another large floe still separated us from the ocean. Where the surf broke against it, it fell a sheer four feet to the sea. Even if we got the boat over that ice, we could never launch it from such a precipice.

Two stayed in the boat. I and one other went in opposite directions along the floe. Several hundred yards to the east I found a channel. I looked it over quickly and then signaled with the upraised shaft of my ice chisel for the others. It was barely negotiable to begin with, and in the few minutes it took to get the boat there, the channel closed. We put the prow of the boat against the seaward floe and brought both engines up to full power, trying to hold it

against the wind. The ice beside it continued to move east. The channel started to open. With the engines roaring, the gap opened to six feet. With a silent, implicit understanding each of us acted decisively. The man at the helm reversed the engines, heeled the boat around, and burst up the channel. We made 20 quick feet, careened the boat over on its port gunnel, and pivoted through a 120° turn. One ran ahead, chopping swift and hard at the closing ice with a chisel. Two of us heaved, jumping in and out of the boat, stabbing at chunks of ice closing on the props. One man remained at the throttles. Suddenly he lunged away, yanking the starboard engine clear of fouling ice. The man ahead threw his ice chisel into the boat and jumped across to help lift at the port gunnel. We could *feel* how close. The starboard side of the boat slid off the ice, into the water. The bow lifted on the open sea. There was nothing more for our legs to strain against. We pulled ourselves over the gunnel and fell into the boat, limp as feed sacks. Exhausted. We were out.

We were out, and the seas were running six feet. And we were miles now from a shore that we could not see. In the hours we had been in the ice, the storm had built considerably, and we had been carried we did not know how far east. The seas were as much as the boat could handle, and too big to quarter—we had to take them nearly bow-on. The brief views from wave crests showed us nothing. We could not see far enough through the driving sleet and spray, and the arctic coast here lies too low, anyway. We could only hope we were east of Pingok, the westernmost of the barrier islands, and not to the west, headed down into Harrison Bay, where the wind has a greater fetch and the shore is much farther on.

We took water over the bow and shouted strategy to each other over the wind and the sound of engines screaming as the props came out of the water. We erected a canvas shelter forward to break the force of the sea and shed water. We got all the weight we could out of the bow. A resolute steadiness came over us. We were making headway. We were secure. If we did not broach and if we were far enough to the east, we would be able to run up on a leeward shore somewhere and wait out the storm.

We plowed ahead. Three of us stood hunched backward to the weather.

I began to recognize in the enduring steadiness another kind of calmness, or relief. The distance between my body and my thoughts slowly became elongated, and muffled like a dark, carpeted corridor. I realized I was cold, that I was shivering. I sensed the dry pits of warmth under my clothes and, against this, an opening and closing over my chest, like cold breath. I realized with dreamlike stillness that the whole upper right side of my body was soaked. The shoulder seams of my foul-weather gear were torn open.

I knew I had to get to dry clothes, to get them on. But desire could not move my legs or arms. They were too far away. I was staring at someone, then moving; the soaked clothes were coming off. I could not make a word in my mouth. I felt suspended in a shaft in the earth, and then imagined I was sitting on a bare earthen floor somewhere within myself. The knowledge that I was being slammed around like a wooden box in the bottom of the boat was like something I had walked away from.

In dry wool and protected by a tarp from the seas, I understood that I was safe; but I could not understand the duration of time. I could not locate any visual image outside myself. I concentrated on trying to gain a sense of the boat; and then on a rhythmic tensing and loosening of my muscles. I kept at it and at it; then I knew time was passing. There was a flow of time again. I heard a shout. I tried to shout myself, and when I heard an answer I knew that I was at the edge of time again, and could just step into it. I realized I was sitting up, that I was bracing myself against heavy seas.

The shouts were for the coast. We had found Pingok.

We anchored the boat under the lee shore and went into the cabin and changed clothes and fixed dinner. Our sense of relief came out in a patter of jokes at each other's expense. We ate quietly and went to bed and slept like bears in winter.

* * *

THE storm blew for two days. We nearly lost the boat when an anchor line parted, and got wet and cold again trying to secure it; but that seemed no more than what we had chosen by coming here. I went for a long walk on the afternoon of the second day, after the storm had become only fretful gusts and sunlight threatened to break through the low clouds.

I still felt a twinge of embarrassment at having been reduced from a state of strength to such an impassive weight, to a state of disassociation, so quickly. But I did not dwell on it long. And we would go out again, when the seas dropped. We would go into the ice again. We would watch more closely; but nothing, really, had changed.

With the experience so fresh in my mind, I began thinking of frail and exposed craft as I walked down the beach, of the Irish carraughs and Norse knarrs that brought people across the Atlantic, bucking pack ice streaming southward on the East Greenland Current. My God, what had driven them? All we know is what we have deduced from the records of early historians. And the deference those men showed to their classical predecessors, to Ptolemy, Solinus, and Isidore, their own nationalism and religious convictions, their vanity, and the shape of the ideas of their age—all this affected what they expressed. And when it was translated, or when they themselves translated from others, interpolations, adaptation, and plain error colored the historical record further. So the early record of arctic exploration is open to interpretation. And this refined history is less real, less harrowing than what had happened to us in the boat. It is events mulled and adjudicated.

I wanted to walk the length of the seaside beach on Pingok, knowing the storm was dying away. I brooded over the fates of those early immigrants, people whose names no one knows, who sailed in ships of which there are neither descriptions nor drawings, through ice and storms like this one—but so much farther from a shore, with intentions and dreams I could only imagine.

The earliest arctic voyages are recorded in the Icelandic sagas and Irish imramha. But they were written down hundreds of years

after the fact by people who did not make the journeys, who only heard about them. The Norse Eddas and Icelandic sagas, wrote the arctic explorer and historian Fridtjof Nansen, are "narratives somewhat in the light of historical romances, founded upon legend and more or less uncertain traditions." The same can be said of the imramha and the records of Saint Brendan's voyage, though in tone and incident these latter are different from the sagas.

In the following pages, beginning in a time before the sagas, the notion of a road to Cathay, a Northwest Passage, emerges. The quest for such a corridor, a path to wealth that had to be followed through a perilous landscape, gathers the dreams of several ages. Rooted in this search is one of the oldest of all human yearnings—finding the material fortune that lies beyond human struggle, and the peace that lies on the other side of hope.

I should emphasize two points. Few original documents point up the unadorned character, the undisguised sensibilities, of the participants in these dramas. And the most common simile of comparison for these journeys—the exploits of astronauts—falls short. The astronaut is suitably dressed for his work, professionally trained, assiduously looked after en route, and nationally regarded. He possesses superb tools of navigation and observation. The people who first came into the Arctic had no photograph of the far shore before they left. They sailed in crude ships with cruder tools of navigation, and with maps that had no foundation or geographic authority. They shipwrecked so often that it is difficult to find records of their deaths, because shipwreck and death were unremarkable at the time. They received, for the most part, no support—popular or financial. They suffered brutally and fatally from the weather and from scurvy, starvation, Eskimo hostility, and thirst. Their courage and determination in some instances were so extreme as to seem eerie and peculiar rather than heroic. Visions of achievement drove them on. In the worst moments they were held together by regard for each other, by invincible bearing, or by stern naval discipline. Whether one finds such resourceful courage

among a group of young monks on a spiritual voyage in a carraugh, or among worldly sailors with John Davis in the sixteenth century, or in William Parry's snug winter quarters on Melville Island in 1819–20, it is a sterling human quality.

In the journals and histories I read of these journeys I was drawn on by a sharp leaning in the human spirit: pure desire—the complexities of human passion and cupidity. Someone, for example, had to pay for these trips; and whoever paid was looking for a way to be paid back. Rarely was the goal anything as selfless as an increase in mankind's geographical knowledge. An arctic voyage in quest of unknown riches, or of a new passage to known riches, could mean tangible wealth for investors, and it could mean fame and social position for a captain or pilot. For a common seaman the reward might only mean some slip of the exotic, or a chance at the riches himself—at the very least a good story, probably something astounding. Enough, certainly, to sign on.

As I read, I tried to imagine the singular hunger for such things, how desire alone might convey a group of people into those fearsome seas. The achievement of one's desires may reveal what one considers moral; but it also reveals the aspiration and tack of an individual life, and the tenor of an age. In this light, one can better understand failures of nerve in the Arctic, such as Bering's in the Chukchi Sea in 1728—he simply did not have Peter the Great's burning desire to define eastern Russia. And one can better understand figures in arctic exploration so obsessed with their own achievement that they found it irksome to acknowledge the Eskimos, unnamed companions, and indefatigable dogs who helped them.

Arctic history became for me, then, a legacy of desire—the desire of individual men to achieve their goals. But it was also the legacy of a kind of desire that transcends heroics and which was privately known to many—the desire for a safe and honorable passage through the world.

As I walked the beach I stopped now and then to pick over

something on the storm-hardened shore—bits of whale vertebrae, waterlogged feathers, the odd but ubiquitous piece of plastic, a strict reminder against romance.

The narratives I carried in my head that afternoon fascinated me, but not for what they recorded of geographic accomplishment or for how they might be used in support of one side or another of a controversy, such as whether Frederick Cook or Robert Peary got to the Pole first. They held the mind because of what they said about human endeavor. Behind the polite and abstemious journal entries of British naval officers, behind the self-conscious prose of dashing explorers, were the lives of courageous, bewildered, and dreaming people. Some reports suggest that heroic passage took place for many just offstage. They make clear that others struggled mightily to find some meaning in what they were doing in those regions, for the very act of exploration seemed to them at times completely mad. They wanted to feel that what they were doing was necessary, if not for themselves then for the nation, for mankind.

The literature of arctic exploration is frequently offered as a record of resolute will before the menacing fortifications of the landscape. It is more profitable I think to disregard this notion—that the land is an adversary bent on human defeat, that the people who came and went were heroes or failures in this. It is better to contemplate the record of human longing to achieve something significant, to be free of some of the grim weight of life. That weight was ignorance, poverty of spirit, indolence, and the threat of anonymity and destitution. This harsh landscape became the focus of a desire to separate oneself from those things and to overcome them. In these arctic narratives, then, are the threads of dreams that serve us all.

Apsley Cherry-Garrard, a companion of Robert Scott, said that exploration was the physical expression of an intellectual passion. His remark was made in an age when royal societies and governments underwrote most expeditions, out of a Victorian

sense of duty, curiosity, and orthodoxy. More exploration, by far, was instigated, and more geographical knowledge gained, with the underwriting of men of commerce, war, and religion, who went out for commercial gain or for national or religious conquest. Still, Cherry-Garrard's observation, concise and idealistic, is worth remembering. It points up the relationship between toil and belief, and alludes to the hope of reward that is so much a part of a decision to enter the unknown. It might at first seem to be no visionary Elizabethan merchant's slogan; nor serve to explain the voyages of Irish monks in search of *Terra Repromissionis Sanctorum*, the blessed landscape where one stepped over that dark abyss that separated what was profane from what was holy. But, in a sense, Cherry-Garrard's summation describes all arctic travel—the intellectual passion is whatever anyone imagined would be there for him.

Desire for material wealth, for spiritual or emotional ecstasy, for recognition—strains of all three are found in nearly every arctic expedition. From the beginning, however, the promise of financial reward proved the most enduring. Nansen, writing in 1911, regarded all arctic exploration as simply evidence of the power of the unknown over the human mind. "Nowhere else," he wrote, "have we won our way more slowly, nowhere else has every new step caused so much trouble, so many privations and sufferings, and certainly nowhere have the resulting discoveries promised fewer material advantages."

Leaving aside the Irish *peregrinatores* and the Norse for the moment, it became clear fairly quickly to early European explorers that beyond furs in the subarctic and fisheries at the arctic periphery, the land held no tangible wealth. Cartier's famous remark about southern Labrador came to stand for a general condemnation of the whole region: it looked like "the land God gave to Cain." "*Praeter solitudinem nihil video*," wrote one early explorer—"I saw nothing but solitude." And yet, fatal shipwreck after shipwreck, bankruptcy after bankruptcy, the expeditions continued, strung out on the thinnest hopes, with the most sanguine expecta-

tions. Men of character continued to sail to their death for men of greed. And unscrupulous promoters and aggrandizing individuals of every stripe continued to manipulate and take advantage of whatever new was learned.

One looks in vain for a rational explanation for this dedication —the exploration of the Arctic made as little sense as Pizarro's march in search of El Dorado, or Coronado's surreal wandering over the trackless llanos of the Southwest. There was at least gold and silver to be had in the Spanish conquest, high-grade ore in record time. Hiking down the empty beach at Pingok, my head full of the volumes of Hakluyt, the scholarly deliberations of Samuel Eliot Morison, the personal narratives of John Davis, of William Parry, I arrived always at the same, disquieting place: the history of Western exploration in the New World in every quarter is a confrontation with an image of distant wealth. Gold, furs, timber, whales, the Elysian Fields, the control of trade routes to the Orient—it all had to be verified, acquired, processed, allocated, and defended. And these far-flung enterprises had to be profitable, or be made to seem profitable, or be financed until they were. The task was wild, extraordinary. And it was complicated by the fact that people were living in North America when we arrived. Their title to the wealth had to be extinguished.

The most philosophically troubling issue of our incursion in the New World, I think, grows out of our definition of wealth—the methods for its acquisition and our perception of what sorts of riches can actually be owned and transferred. A fresh landscape brings out awe, desire, and apprehension in us. But one like North America, undeveloped, also encourages a vague feeling that we can either augment or waste our lives in such places, depending on what we do. Our colloquy with the original inhabitants, of course, is unfinished. And we are still asking ourselves: What is worth acquiring here?

In the following narratives, it is not solely the desire of some men for different sorts of wealth that becomes clear but the suspicion that North America offered more than material wealth. It offered wealth that could not be owned, like the clarity of the air and the sight of 300,000 snow geese feeding undisturbed on the Great Plain of the Koukdjuak. One cannot change the historical fact that the air is no longer clear in some places and that geese no longer feed in such numbers along the Koukdjuak, while the silver mines in the great mountain of Potosí are entering their fifth century of production in an atmosphere of urban despair and destitution. And that the native people have been abused.

Our anxieties about these things are honest and deeply perplexing. Our difficulty lies in part, I think, with our insistence on defining completely the terms of our encounter with new-found wealth. We do not like to be countermanded in our categories by having something define itself. We seem vaguely uneasy, too, with the notion that a flock of snow geese rising like a snowstorm over Baffin Island is as valuable or more to mankind than the silver, tin, and copper being dug out of the Bolivian Andes at Potosí. These are not modern misgivings; they date in North America from the time of Columbus and John Cabot.

What every culture must eventually decide, actively debate and decide, is what of all that surrounds it, tangible and intangible, it will dismantle and turn into material wealth. And what of its cultural wealth, from the tradition of finding peace in the vision of an undisturbed hillside to a knowledge of how to finance a corporate merger, it will fight to preserve.

Walking down the long beach at Pingok that day I understood something else about our encounter with North America, which I did not at first have words for. It had to do with tolerance. It seemed clear to me that we need tolerance in our lives for the worth of different sorts of perception, of which the contrasting *Umwelten* of the animals on the island are a reminder. And we need a tolerance for the unmanipulated and unpossessed landscape. But what I came to see, too, was that we need to understand the relationship between tolerance and different sorts of wealth, how

a tolerance for the unconverted things of the earth is intertwined with the substance of a truly rich life.

When Pytheas sailed from Marseilles through the Gates of Hercules (the Strait of Gibraltar) and turned north in search of tin and amber, he was likely not the first. Carthaginians probably preceded him. His journals and maps are lost. Roman historians, jealous of his success, later disparaged his accomplishment, which was probably the circumnavigation of Britain and the discovery of the Orkneys. He sailed as far as the north coast of Norway or perhaps as far as Iceland—both have been suggested as his *Thule*.* Pytheas' journey (330–325 B.C.) commonly serves as a starting point for a history of arctic exploration, but this is history from a Mediterranean point of view. People ancestral to the Celts of northern Europe and to the Norse no doubt plied the same waters Pytheas sailed, at the same time.

The Mediterranean view of the Arctic, down to the time of the Elizabethan mariners, was shaped by two somewhat contradictory thoughts. The Arctic represented both threat and salvation. In the classical mind—which means in most learned European minds in the Middle Ages—invasion and destruction came from the North, at the hands of roving warrior peoples, from vaguely known Cimmerians about 800 B.C., to the Teutonic tribes that fought the Romans, to the Norse and Saxons of later centuries. The North was a region of fierce, fabulous people like the Amazons and the Cynocephali, or dog-headed people. Of barbaric Sythians whose lands bordered the bleak prospect of the Northern Ocean. One might go there for tin or amber, or for horses and furs, but these lands "under the pivot of the stars" were held by "hasty and evil-tempered folk" who had "the nature of bears." They ate raw meat and fat, and the eggs of "fen fowl" (plovers, gulls, and geese), and were as curious and dangerous as nightmares.

* In the writings of Pytheas the term "Thule" refers to a place six days' sail north of Britain.

The Northern Ocean itself was a place of whirlpools (*Chaos* and *Maelstrom*) and rip tides. (Mediterranean sailors did not discover tides until they left that inland sea.) The Hyperborean Sea, wrote a sixth-century monk, "was one known only to Him who created it." *Oceanus innavigabilis* and *Oceanus caligans vel rigens*, it said on the maps. Unnavigable. A hardened ocean shrouded in darkness. Beyond this, however, beyond Boreas, Caecias, Argestes, Thrascis, and the other northern winds, on the other side of the Rhipaean Mountains, "terrible with snow," was a land more graceful and sweet, less troubled and more fecund than any anyone had ever known. The pastures were so excellent that "if the cattle were allowed to graze more than a small part of the day, they burst in pieces." The sound of moving water was as the music of a string quartet. Vines bore fruit twelve times a year. Wheat headed not in grains but in loaves. People lived in perfect peace, "far from the evils of tyranny and war." Their place of worship was within clouds of wheeling swans.

The Land of the Hyperboreans, which lay beyond all the malevolence symbolized by the barbarians, was in its different guises, including the various Isles of the Blessed in the Western Ocean and the "Wineland" of the Norse, one of the most powerful projections of the Western imagination. These same ideas of a land where "no enemy pursues" (the Elysian Fields, the Hesperides, Avalon, El Dorado, and Irish Brasil) were inseparably a part of early arctic exploration.*

The Irish imramha, or sea sagas, recount the voyages of monks searching for the Isles of the Blessed and, as it happened, for bleak outposts in the "desert of the Ocean" suitable for contemplation. The most widely known of these was written down sometime in

* Most maps located these fabulous islands to the west of Europe, but their association was with visions of the North as well. The discovery of the Azores and Madeira by the Portuguese in the fifteenth century (they may have been known earlier to Phoenician traders) lent support to the notion that there were other isles farther to the west.

the ninth or tenth century, the *Navigatio Sancti Brendani Abbatis*, the story of the seven-year voyage of the abbot Saint Brendan, in a carraugh with seventeen monks. Brendan was born about A.D. 489 in County Kerry and was abbot at Clonfert in East Galway when he left on his journey (or a series of journeys).

Their craft, the carraugh, was a long, narrow, open but seaworthy boat consisting of a wickerlike basket frame covered with oak-tanned oxhide caulked with tallow. Brendan and his monks sailed with wine and cold food, used oars and a single stepped mast to convey themselves, slept on a mattress of heather, and dropped a stone anchor in bays where they explored. Their journey is a wondrous epic, filled with ecstatic visions and astounding events. They met strangers with gestures of courtesy and used their healing arts among them. They took little note of the hazards they faced. The themes are of compassion, wonder, and respect (as distinct from the themes of property, lineage, bloodshed, and banishment that distinguish the later, Icelandic sagas).

Reading loosely, it is possible to imagine that Brendan reached the Faroes and Iceland, and perhaps saw the towering volcanic peak of Beerenberg on the eastern end of Jan Mayen Island. At one point the monks saw an iceberg that took three days of hard rowing to reach. Transfixed by its beauty, Brendan suggested they row through a hole in it, which in the evening light seemed "like the eye of God."

These impeccable, generous, innocent, attentive men were, one must think, the perfect travelers.

In the fifth and sixth centuries Ireland was the center of high culture in Europe. Its tribal monasteries were refugia for intellectual thought and spiritual practice. Under pressure from Rome to bring their tradition into line with Christian orthodoxy and pressed as well by barbaric Vikings, these monks, like fierce Essenes, moved north and west to the Faroes and to Iceland, where they built their cells and monasteries on promontories and plains facing the Western Ocean. Tradition, but scant reliable record, holds that

they moved on to Greenland ahead of the Norse, and thence to Labrador, Newfoundland, and the Saint Lawrence River Valley.

The Norse who came in their tracks, the second European culture after the Celts to enter the Arctic, are often cast as plunderers and wastrels, but the characterization is inaccurate. Many of the Norse who came to Iceland—the country was discovered in 860, according to the sagas, by Gardar Svavarsson, a Swedish-born Dane—were fleeing the tyrannic reign of Harald Haarfager or the rebellion of local inhabitants in Norse-occupied Ireland, Scotland, and Normandy. They were farmers and fishermen, not sea raiders. They began arriving in Iceland sometime after 870. Greenland, which may have been discovered by a Norwegian named Gunnbjörn Ulfsson, was made famous by Eirik Raude, made an outcast in Iceland in 982 for twice taking human life without reason. His banishment lasted three years, during which time "Eric the Red" stayed in present-day Julianehåb District in Greenland, on Eriks Fiord.*

In 986 Eric again sailed for Greenland from Iceland with twenty-five ships, of which fourteen, with about 500 people, arrived at Eriks Fiord. The settlers built houses of stone and turf, with turf roofs over driftwood frames. They raised a small breed of cattle, sheep, and goats, hunted seals and walrus, and caught fish. The community at Eriks Fiord, called the Eastern Settlement, and another 175 miles farther up the coast called the Western Settlement, came near to thriving during periods in the eleventh and twelfth centuries when there was some regular trade with northern Europe—walrus ivory, gyrfalcons, polar bear hides, and sealskins for iron, grain, manufactured implements, and simple machinery. It was a self-governing free state but, because of its tenuous economy, never politically stable. In 1261 it came under

* Most Norse and Danish place names in Greenland are being changed to Greenlandic Eskimo names. To avoid confusion I have used the older, more familiar names. The modern terms appear in the gazetteer.

Norwegian rule. The trade on which it depended, strictly regulated by a Norwegian charter, withered for a variety of reasons—the rise of the Hanseatic League, the shift of the Norwegian capital to Copenhagen in 1397, and financial collapse in Bergen, the Norwegian city from which ships for the Greenland trade sailed. The two colonies in Greenland were soon forgotten. Without trade to sustain them, a subsistence economy never being their forte, the remnant Norse population died out or intermarried with their Eskimo neighbors. Some last few may have been abducted by English slave traders in the sixteenth century.*

According to a widely accepted interpretation of the two pertinent sagas, that of Eric the Red (also called the Saga of Thorfinn Karlsevni) and the Tale of the Greenlanders, one Bjarni Herjulfsson, en route to Greenland in 986 and blown far to the west in a storm, stood off the coast of Labrador and then Baffin Island before arriving in Eriks Fiord. Eric's son Leif sailed in 1001 for the lands Bjarni had seen, in search of a precious commodity—timber. He landed first at Baffin Island (Helluland, "the country of flat stones"); then on the Labrador coast, perhaps at about 54°N, where there is a dense strip of coastal timber (Markland, "the forest land"); then, finally, on the northeast coast of Newfoundland, near the Strait of Belle Isle (Vinland).†

The Norse settlement at L'Anse aux Meadows, Newfoundland, excavated in the 1960s by Helge Ingstad, may have been used continuously by Leif and his brothers and Thorfinn Karlsevni before being abandoned in 1014. Apparently Norse skirmishes with

* There is a poignant line in the seventeenth-century *Annals* of the Icelandic Bishop Gisli Oddsson. He writes that the Norse, who had adopted Christianity about A.D. 1000, finally abandoned their morals, their faith, and their superior culture "*et ad Americae populos se converterunt*"—"and converted to the way of the American people."

† The sagas were not written down for another 200 years. The authors of the sagas, with a penchant for making what they heard fit what they believed (i.e., had read), may have invented this last name to signify a land of self-sown wheat and wild grapes suitable for winemaking.

the Indians and Eskimos proved too troublesome and costly. A child, Snorri, was born to Gudrid, the widow of Leif's brother Thorstein, and to Karlsevni at L'Anse aux Meadows in the autumn of 1009.

When the Greenland colonies faded away, Europe's sense of the Arctic receded to include only Iceland, with which she maintained a regular trade. Well into the sixteenth century, in fact, western Europe remained more aware of the voyage of Saint Brendan than of the existence of the Greenland colonies and Leif Ericsson.

A European understanding of world geography in the thirteenth, fourteenth, and fifteenth centuries was derived from wheel maps and older T-maps. The former presented the world arranged as a disk, with the Mediterranean at the center of a large continent and with a watery border beyond. The continent's outer shore was indented with the three embayments of the Outer Ocean—the Red Sea, the Persian Gulf, and the Caspian Sea. The T of the latter map was formed with the Mediterranean as a vertical line and with the Nile and Don rivers connecting horizontally through the Black Sea. Islands on the wheel maps were "distributed more or less according to taste, and as there happened to be room." At the utmost edge of the world, the realms of the sky, the sea, and the underworld met—but this was a cartographic abstraction. The idea that the world was a sphere was widely held. (It was the absence of spherical projections—the modern globe was not introduced in Europe until about 1492—that led people to talk about the earth as though it were flat.)

Beginning in the fourteenth century, cartographic representation of the world from Ptolemy's point of view slowly changed. With the development of compass, or portolano, charts, the coasts became better defined. The fanciful *Insulae Fortunatae*, variously titled, were moved farther north and west, into lesser-known waters. (Brasil, moved hither and yon, could still be found on British Admiralty charts in 1873.) Greenland, the quintessential

remote Arctic for Europeans in the fifteenth century, was drawn in on maps and the first globes as a peninsula stretching north and west from Scandinavia (as on the Fra Mauro map of 1459); or as land extending north from central Asia (Clavus' Nancy map of 1472); or as the farthest-east extension of Asia (Contarini map, 1506). The region of the North Pole was depicted as open water; as a separate continental mass (*Terra Septemtrionalis* [Land of the North] or *Terrae Polaris Pars* [Part of the Polar Land]); and later in the fifteenth century, after the magnetic compass had come into use in Europe, as a dark, magnetic mountain.

Fifteenth-century Europe was neither empirical nor discriminating in its geography. The spurious geographical entertainments of Sir John Mandeville's *Travels* (1356) were read as avidly as the eyewitness accounts of Marco Polo (1298), and both were held in the same regard. As was the case with the mariner's compass and the portolano chart, the introduction in Europe of authentic new geographic knowledge was no guarantee it would be welcomed and acted upon. When John Cabot sailed from Bristol to find Newfoundland, he held a letter patent from Henry VII; but what he found was of little interest to Englishmen and was soon all but forgotten. His vision, wrote Samuel Eliot Morison, was "like an exotic flower springing up in untilled soil" in England.

Bristol fishermen, in the view of American geographer Carl Sauer, had been fishing on the Newfoundland banks for several years before Cabot arrived, with no great concern for who owned the land or what sovereign might claim it. Their business was cod. Cabot's arrival, however, began the modern period of an Arctic more rigorously defined in the European mind. His voyage (1497) stirred the first serious European interest in the possibility of a Northwest Passage—through a strait separating North America from Polo's Chinese province of Ania, down which ships could sail unimpeded to the harbors of Cathay, the Moluccas, and the ports of India.

Before such a passage was sought to the north of Cabot's Newfoundland landfall by the English, the region to the south was

explored for the French by Verrazano and Cartier. Verrazano was Italian, from Tuscany. Like Columbus, a Genoese sailing for the Spanish, and like Cabot, a Genoese sailing for the English, Verrazano was a freelance explorer in an age when monarchs and merchants were not as enthusiastic about New World as Old World prospects. Their overriding interest was in finding a protected, unencumbered trade route to China. The Caribbean was a Spanish ocean, and the route around Africa was Portuguese. The overland route through the Middle East entailed payments to Turkish middlemen. (As far as England was concerned Spain also posed a threat to her export trade with continental Europe.)

The possible routes for the French and the English, then, were to be found, it was thought, either southward along Cabot's new coast (if his New Founded Isle was the hoped-for Asian promontory); to the north of his landfall if North America was a continent; or somewhere to the west, Newfoundland being just one more of the many islands thought to comprise "the western lands." The English also knew of the possibility of a Northeast Passage, around Norway's North Cape; Alfred the Great had transcribed the sober and accurate report of Ottar about his and his Norse companions' voyage into the White Sea about 880. Since England was looking for markets for its West Country woolens, the northeastern route was especially appealing. But it was not tried until 1553.

Verrazano was sent west in 1524 by the French, who were constrained as much as the English by Spanish and Portuguese control of the Southern Ocean and by middlemen in the Levant; and as much in need of "spices" from the Orient—not only condiments to preserve food (or enhance the taste of spoiling food) but drugs, dyes, oils, cosmetics, and perfumes. He coasted the eastern shore of North America, eliminating the possibility of any passage between Florida and Nova Scotia (except at North Carolina's Outer Banks, where Pamlico Sound looked like the Pacific to him). Ten years later Cartier sailed into the Gulf of Saint Lawrence for the first time. Again, there were Spanish, French, Portuguese, and

English cod fishermen there ahead of him—not to mention Estevão Gomes (a Portuguese sailing for Spain) and João Alvares Fagundes, a Portuguese shipowner with colonial ideas.

On his second voyage (1535), Cartier pursued a search for "Saguenay" (a land invented by a Huron named Donnaconna to flabbergast the French), and an exploration of the Saint Lawrence River. The rapids at this farthest-west point he named, sardonically, "La Chine" (China) Rapids. (The French interest in a western passage would continue to be a middle-latitude search for a river route, a guiding vision in North American exploration, for another 300 years.)

Because they thought Cabot's Newfoundland might lie to the east of the meridional line of demarcation established in the Treaty of Tordesillas (at roughly 45°W), and therefore belong to them, the Portuguese sailed from both Lisbon and the Azores to explore. João Fernandes, a *lavrador*, or small landed proprietor like a Spanish hidalgo, sailed as far as Cape Farewell, Greenland, in 1500. (The landfall was initially named for him, an Anglicized version, Labrador, later being shifted to the west by mapmakers.) Also in that year, Gaspar Corte Real landed on Newfoundland, found relics of Cabot's (lost) second expedition, and kidnapped fifty-seven Beothuk Indians, whom he took back to Lisbon. He returned to the region in 1501, and he too disappeared. He was followed by a brother, Miguel, on a similar voyage in 1502; his caravel vanished as well.

An English merchant, Robert Thorne, was of the opinion that Cathay could be reached on two tacks—straight over the Pole, or west through a strait somewhere north of Newfoundland, which was coming to be called *Fretum Trium Fratrum*, the Strait of the Three Brothers (whether for the three Corte Real brothers or John Cabot's three sons is not known). Henry VIII obliged Thorne and sent out two ships in 1527—the *Dominus Vobiscum*, which was lost, and the *Mary of Guilford*, John Rut, master. Rut went a third of the way up the Labrador coast and then lost his nerve. He reversed course and sailed for the West Indies.

Henry VIII was notably uninterested in finding a Northwest Passage; but the idea was fertile in the minds of northern European entrepreneurs, who, if not sanguine, were at least hopeful. America, before and after Verrazano's and Cartier's voyages, was viewed by the English as a land discovered by accident and around or through which it was desirable to sail. The northern route was not encouraging because of the ice. Those who still subscribed to Parmenides' theory of geographical zones believed the frigid zone was impenetrable or represented too dangerous a passage to be feasible as a trade route. Others, like Robert Thorne, thought that the worst ice lay on the Arctic Circle—beyond that was an open ocean, good weather, and clear sailing all the way to the Strait of Anian, the western counterpart to the Strait of the Three Brothers.

The attitude among investors in England and the Netherlands, the two nations in most pressing need of a reliable, tariff-free route to the East, was cautious. Sebastian Cabot, a charming and forceful man trading on his father's reputation, and a fabricator of northern voyages in which he claimed to have participated, was as persuasive in arguing for venture capital for a northern voyage as geographers, who sensed North America taking shape out there on the horizon, were eloquent. In 1553, as governor of what came to be called the Muscovy Company, he sent three ships to the Northeast under the command of Sir Hugh Willoughby. (The ships were hopefully sheathed with lead to protect them against shipworms when they reached the warm Southern Ocean.) Willoughby and the officers and men of two ships froze to death on the north coast of the Kola Peninsula. The third ship, under the command of Richard Chancellor, reached the White Sea. During the winter, Chancellor made a 600-mile journey to Moscow and established what would become an overland trade route for Russian furs.

In 1556, a Muscovy ship passed through Karskiye Vorota Strait, and its master, Stephen Borough, became the first European to see the Kara Sea, the vast and intimidating icescape that lay beyond Novaya Zemlya. Daunted, Borough returned to England. Cathay seemed suddenly closer by way of Moscow.

The Dutch also tried in this direction. In 1596 Willem Barents, pilot for Jacob van Heemskerke, accompanied by a second ship under the command of Jan Cornelis Ryp, discovered the archipelago they called Spitsbergen (probably known 500 years earlier to Norse sailors, who named a land in this region Svalbard, "the cold coast"). The two ships later parted, Ryp returning to Amsterdam and Barents sailing west for Novaya Zemlya, thinking a way across the Kara Sea might be found to the north of the island. He rounded the island's northern cape before he was forced into winter quarters by heavy ice. At Ice Haven the men built a hut of driftwood, burned polar bear fat for light, and skirmished with curious foxes. They felt terrorized by polar bears; they were weakened by scurvy; and they endured relentless, crushing cold. Heat from a fire kept blazing in the hut did not melt ice on the floor only a few feet away. In the spring they refitted one of the ship's boats (the ship itself having been crushed during the winter, a sight that "made all the hairs of our heads rise upright with fear") and made a spectacular 1600-mile journey across ice and open water to the Kola Peninsula. Barents died on the way, of scurvy. Gerrit de Veer's narrative of this adventure, *The True and Perfect Description of Three Voyages, so strange and woonderfull, that the like has never been heard of before . . .*, chronicles the awful conditions they endured and conveys a certain nightmarish aspect, particularly because of their fear of the animals.

Finding a Northeast Passage was of no further interest to the Dutch or anyone else, until the opening of Russia's far eastern frontier by Cossacks, expanding the Stroganov fur empire, and the expeditions of Peter the Great.*

* Some of the impetus to open a Northeast Passage, across Asia and south through a "Strait of Jezzo," was a restriction imposed by the emperor of Japan against trade in the Kamchatka region for vessels coming up from the south. Japan took a significant tribute from Kamchatka, from silver mines it was thought. The Dutch were certain such a northern passage existed because Dutch traders wrecked on the Korean coast in those years found a stranded whale with a harpoon in it from the Spitsbergen fishery. The whale could only have gotten there through a strait between Asia and North America.

Under Elizabeth I, daughter of Anne Boleyn and Henry VIII, England became a formidable maritime power and achieved, as well, a national sense of identity and purpose, of which Elizabeth was the embodiment. These were the years (1558–1603) when Shakespeare wrote, when Francis Bacon established the scientific method, when Richard Hakluyt wrote *The Principal Navigations*, and when the queen's "West Country sailors" greatly expanded England's sphere of political influence. Francis Drake sailed around the world. Walter Raleigh organized the English colonization in Virginia. John Hawkins, a freebooter like both Drake and the circumnavigator Thomas Cavendish, made numerous improvements in ship design and distinguished himself with some of the others, including Martin Frobisher, at the defeat of the Spanish Armada (1588). In 1587 John Davis, the least warlike and piratical of them all, would sail up the west coast of Greenland and quietly into Baffin Bay.

Belief in a navigable Northwest Passage flourished under Elizabeth. It was energetically promoted by a highly visible merchant, Michael Lok, and it had the support of well-regarded minds, like Hakluyt's and the philosopher John Dee's. It was hotly argued for by Sir Humphrey Gilbert, a favorite of the queen (and yet another Devon neighbor of Drake, Raleigh, and Davis, though not their match at sea), in *A Discourse of a Discoverie for a New Passage to Cathaia*. Finally, at least two well-touted stories in support of a Strait of Anian were circulating in England at the time. A monk, one Antonio Urdaneta, claimed to have sailed through it in the 1550s; and a Portuguese mariner, Martin Chacque, claimed to have come through in 1556, west to east like Urdaneta. (Both tales were unfounded.)

In the thrall of this enthusiasm, Michael Lok founded the

Cathay Company and outfitted Martin Frobisher for a voyage of discovery in 1575. Frobisher sailed from London in a small bark, the *Gabriel*, with a crew of eighteen, accompanied by another small bark, the *Michael*, and an even smaller, unnamed pinnace with a crew of four. The pinnace went down in a gale that sprung the *Gabriel*'s mainmast and tore away her fore-topmast. The captain and crew of the *Michael*, "mistrusting the matter" as they neared Greenland, "conveyed themselves privilie away" from Frobisher and returned home, reporting the *Gabriel* lost in a storm.

Frobisher entered what he thought was a strait (actually Frobisher Bay, Baffin Island) on August 11. He spent fifteen days exploring both coasts, thinking the west one North America, the east one Asia, before he sailed for home, convinced this was the eastern opening of the Passage. A stone picked up by a sailor on the east shore, "merely for the sake of the place from whence they came," fell into the hands of Michael Lok, who had it declared gold-bearing ore, drummed up financial support, and dispatched a second expedition in 1577. Frobisher, with a belief in the Passage and a master mariner's keen desire to find it, probably cared very little for these plans, but went mining as directed and limited his explorations to Frobisher Bay.

The three ships, *Gabriel*, *Michael*, and the *Aid*, a flagship ten times the size of the two former ships, returned to England on September 23 with 200 tons of worthless bronze-lustered mica (amphibolite and pyroxenite). In hopes of gaining new investors, Lok arranged for the rock to be assayed at a high value. He was partly successful in attracting investors, though the canny stayed away. The third voyage ended in tragedy. Fifteen ships sailed in May 1578. The *Denys* was lost in a storm when they arrived, and on the return voyage, with 1350 tons of the spurious ore, they encountered more storms and forty men drowned, many of them Cornish miners.

Queen Elizabeth did not lose faith in Lok's enterprise until the very end. On their first voyage she waved to the ships from the palace window at Greenwich, as they passed by on the Thames.

On the eve of the second voyage she let Frobisher kiss her hand. Before the third, she placed a gold chain around his neck and extended her hand for each of the captains to kiss. Frobisher's men, during the second voyage, and on the peninsula Elizabeth herself had named Meta Incognita, found a badly decomposed narwhal, from which they took the tusk. In his account of the voyage, Dyonyse Settle writes that the men placed spiders in the hollow base of the tooth and that the spiders died. "I saw not the triall hereof," he writes. "But it was reported unto me of a trueth: by the vertue whereof we supposed it to be the sea Unicorne." Frobisher made a present of the tusk to Elizabeth.

This enterprise left Lok in debt and the Cathay Company bankrupt. The transparent greed of some of the investors, chicanery to keep the scheme alive, and the loss of workingmen's lives left a foul taste in many mouths. Frobisher cleared his own name in battle, was knighted, and died in 1594 fighting the Spanish.

Voyages of a very different sort were undertaken eight years later by John Davis, perhaps the most highly skilled of all the Elizabethan navigators, a man of a more serene disposition than the volatile Frobisher, much less the disciplinarian among his men, less acquisitive and less self-promoting of his achievements—part of the reason that he, of all the West Country mariners, was the one never knighted.

With the backing of Adrian Gilbert, a prominent Devonshire physician, and William Sanderson, a London merchant-adventurer, and under the patronage of the Duke of Walsingham, Davis outfitted two small ships, the *Sunneshine* and the *Moone-shine*, the former with a four-piece orchestra, and sailed from Dartmouth on the Devon coast on June 7, 1585.

Their first landfall was near present-day Cape Walløe on the southeast coast of Greenland, but fog and the ice stream in the East Greenland Current held them off. "[T]he irksome noyse of the yse was such, that it bred strange conceites among us, so that we supposed the place to be vast and voyd of any sensible or vegitable creatures, whereupon I called the same Desolation." The

two ships stood out from Cape Farewell (Davis would so name it on his second voyage) and came to shore, finally, near the old Norse settlement at Godthåb on July 29. And here took place one of the most memorable of meetings between cultures in all of arctic literature.

Davis and several others were reconnoitering from the top of an island in what Davis had named Gilbert Sound when they were spotted by a group of Eskimos on the shore, some of whom launched kayaks. They made "a lamentable noyse," wrote John Jane, ". . . with great outcryes and skreechings: wee hearing them, thought it had bene the howling of wolves." Davis called on the orchestra to play and directed his officers and men to dance. The Eskimos cautiously approached in kayaks, two of them pulling very close to the beach. "Their pronunciation," wrote Jane, "was very hollow through the throate, and their speach such as we could not understand: onely we allured them by friendly imbracings and signes of curtesie. At length one of them poynting up to the sunne with his hande, would presently strike his brest so hard, that we might hear the blowe." John Ellis, master of the *Mooneshine*, began to imitate, pointing to the sun and striking his breast. One of the Eskimos came ashore. They handed him pieces of their clothing, having nothing else to offer, and kept up their dancing, the orchestra playing all the while.

The following morning the ships' companies were awakened by the very same people, standing on the same hill the officers had stood on the day before. The Eskimos were playing on a drum, dancing and beckoning to them.

(Davis's courteous regard for the Eskimos is unique in early arctic narratives. He found them "a very tractable people, voyde of craft or double dealing. . . ." He returned to the same spot on his second voyage; the moment of mutual recognition, and his reception, were tumultuous.)

Two days after meeting the Eskimos, Davis crossed the strait later named for him and sailed far up Cumberland Sound, which he judged, from the lack of ice, the breadth of the channel, the

set of the tides, the sight of whales passing to the east, and the "colour, nature, and qualities" of the water, to be the entrance to the Northwest Passage. Satisfied, he sailed for home. (There was no thought of overwintering on these early voyages. The ships were too small to carry a year's provisions.) On October 3 he wrote Walsingham that the passage was "nothing doubtfull, but at any tyme [of year] almost to be passed, the sea navigable, voyd of yse, the ayre tollerable, and the waters very depe."

Gilbert, Sanderson, and Walsingham were pleased with Davis's progress, and, with additional backing from merchants in the city of Exeter, he sailed again on May 7, 1586, with a fleet of four ships—the large ship *Mermayde*, the barks *Sunneshine* and *Mooneshine*, and a small pinnace, the *North Starre*. Davis sent the *Sunneshine* and the *North Starre* up the east coast of Greenland with instructions to explore as far as they could in search of a route over the Pole. With the other two ships he sailed for Godthåb, where he assembled a second, prefabricated pinnace on the beach, launched with the help of forty Eskimos.

The meeting with the people at Godthåb was marked initially by a spirit of fellowship, but the mood began to deteriorate once the Eskimos became "marvellous theevish, especially for iron." Davis tried to ameliorate the situation. He continued to trade generously with the Eskimos, and he cajoled his men to forbear. One afternoon a rock-throwing incident escalated into a fight and one of his men was wounded. That was enough for Davis. With a fair wind he sailed north.

On the 17th of July the two ships and the pinnace fell in with an enormous tabular iceberg "which bred great admiration to us all," a sight so incredible to them that Davis declines to write about it, saying only, "I thinke that the like before was never seene." They coasted its perimeter for thirteen days. Davis Strait, as it was later named, was full of ice where they had seen none the year before; the sight so worked on the minds of the men that they begged Davis to turn for home. He landed on the Greenland coast, disassembled the pinnace, transferred stores, and sent those

who wished to go home on the *Mermayde*. With the rest he sailed in the *Mooneshine* for Baffin Island. He passed the entrance to Cumberland Sound without recognizing it, crossed Hudson Strait in a snowstorm, and then sailed south along the Labrador coast, where they made several prodigious hauls of codfish on improvised hooks.

At Trunmore Bay (perhaps), where they anchored to dry fish, they were attacked by "the brutish people of this countrey." Two of Davis's men were killed and three wounded. Immediately afterward the ships were all but driven onshore by a storm when an anchor cable parted. On September 11 Davis turned for home, arriving to find that the *Sunneshine* and *North Starre* had been turned back by the ice before advancing very far, and that the *North Starre* had gone down with her crew in a storm.

Though not as enthusiastic as they had been, Davis's supporters underwrote a third voyage in 1587, with the understanding that while Davis himself sailed into the places he now thought might offer passage (Davis Strait, Cumberland Sound, Hudson Strait, and Hamilton Inlet on the Labrador coast), the accompanying ships would fish for cod to defray the expense of the expedition. Davis's own ship, a small, clincher-built pinnace, the *Ellen*, broke her tiller the first day out and, overall, sailed "like to a cart drawen with oxen."

At Godthåb, Davis explored the interior of the fiord while the crew of one of the other ships assembled a fourth craft, another pinnace on the beach. (Davis intended to explore in this pinnace while the other three ships went south to fish for cod.) Again hostilities broke out, with the Eskimos stealing nails from the shipwrights. Davis could not settle the issue. After a gunner fired a blank shot from a cannon, Davis ordered the half-assembled pinnace knocked down and stowed aboard the *Elizabeth*. With the *Sunneshine* leaking badly and that crew and the *Elizabeth*'s nearly mutinous with a desire to be off, Davis bade them adieu. He set a course north in the *Ellen* along the Greenland coast, sailing as far as 72°46'N, which he named Sanderson's Hope for

the Passage. The ocean was open far to the north and west, and of "an unsearcheable depth." But there was no wind to take him in either direction. He made southwest. After being beset for two days when he tried to penetrate the pack ice, he doubled the Cape of God's Mercy (named on the first voyage for the cape that pointed him into what he thought was the Passage), and headed up Cumberland Sound. When the wind fell off, he sailed back to the entrance and south past Frobisher Bay, which he named Lumley's Inlet. (With no reliable method to determine longitude, and under the pervasive influence of the problematical Zeno map, which showed Frobisher Strait at the southern tip of Greenland, Davis thought he was the first to visit here.)

He noted again, as he had the year before, the "furious overfall" of tides in Hudson Strait, "lothsomly crying like the rage of the waters under London Bridge." They cruised along the Labrador coast looking for the *Sunneshine* and *Elizabeth*, which, owing to the poor sailing characteristics of the *Ellen*, were to escort him home. They had not waited. On August 15, Davis set sail for Dartmouth. It took him a month to make the crossing.

Davis's accomplishments on these trips are stunning. He laid down most of the Labrador coast on sailing charts, some 700 miles of the west coast of Greenland, and most of southwest Baffin Island. His notes on ice conditions, plants, animals, currents, and the interior of Greenland, as well as his ethnographic descriptions of the Eskimos, were the first of their kind. He brought these lands not only onto the maps but into the realms of science. The "Traverse-Booke" he developed on the voyages became the model for a standard ship's log. The backstaff he developed anticipated the reflecting quadrant and the modern sextant. And *The Seaman's Secrets* (1594), much of it based on these three voyages, became a seventeenth-century bible for English mariners.

In subsequent years Davis discovered the Falkland Islands and sailed into the Pacific, hopeful of finding a western entrance to the Passage. He was killed by Japanese pirates in the Strait of Malacca, off Singapore, in 1605, at the age of fifty-five. He was a

loyal and courageous man, tolerant of other people's differences. His knowledge of navigation was a fine blend of scientific acumen and practical experience. In *The Worlde's Hydrographical Description* (1595), reflecting on the light that fell on the northern regions in the summer, he wrote that because of this suffusion of light the land beneath the Pole Star is "the place of greatest dignitie" on earth.

Davis's expeditions went out uninsured, like all others at the time —the risk of shipwreck due to crude instruments, errors in the charts, or inexperienced command was simply too high. A master mariner like Davis could determine his latitude with a quadrant, astrolabe, or backstaff. He had declination tables to compensate for compass errors. And he might be fortunate enough to have the journal or rutter of another pilot who had been to the area he was sailing, to warn him about reefs or give helpful advice about tides. But not until John Harrison built his first chronometer in 1735 would there be a reliable way to determine longitude.

The charts and maps available to expeditions, especially for westering mariners, were of little help. Too much of the information was whimsical or groundless, and updating maps often meant contending with theoretical concepts of geography with which practical mariners had little patience. Furthermore, with no way to determine longitude and scant information on compass variation in different parts of the hemisphere, they found it hard to place new lands accurately and so improve old maps. The Zeno map (1558), a fictitious compilation showing many large islands in the western North Atlantic, was of such intimidating authority, on the other hand, that even John Davis believed he had to "harmonize his work with universally received errors."

A competent mariner, observing of the weather and attentive to the subtle behavior of the sea and the movement of his ship, especially a known ship, frequently had an intuitive feeling for what he was doing, even along an unknown coast. If he was sailing "by ghesse and by God," he was mostly guessing right. He pre-

ferred a small, maneuverable vessel to a large cargo ship—a frequent point of disagreement with an expedition's backers—and tried, if possible, to sail in company with another ship. (It was not until 1821, when Parry set off on his second trip to the Arctic with *Hecla* and *Fury*, that anyone saw the wisdom of embarking in duplicate ships with interchangeable parts.)

Sailors, the best of them, had an astounding ability to keep their ships running, and were as resourceful as Eskimos with a handful of scraps in improvising a repair. They often pulled a small ship completely out of the water on a foreign beach and heaved it over to patch its hull. Their lot in arctic waters, where they ran the constant risk of being stove by ice, was dreadful. Their fare was utterly simple: salt beef and codfish, bread and dried peas, cheese and butter, and beer. All eaten cold. There were no hot liquids like coffee or tea. Sailors slept wherever there was room among the stores and provisions, and felt fortunate to have a change or two of clothing if they got wet or cold. The possibility of scurvy and shipwreck were always "hard by."*

Shipboard conditions slowly improved, the maps became more accurate, and better navigational instruments were developed. Books such as Davis's *The Seaman's Secrets* spread a technical knowledge of navigation. By the seventeenth century, cartographers were not so disposed to conjecture by filling in with an island or two. They left large areas like the Arctic blank now, something that would have astounded their predecessors. The maze of portolano lines on coastal charts became, in time, a circular arrangement of thirty-two winds, drawn like the petals of

* The cause of scurvy, a vitamin-C deficiency disorder that induces capillary hemorrhaging, loosening of the teeth, anemia, and general debilitation, was unknown. Victims showed "a tottering gait, attenuated form, and care-wore expression of countenance." James Lind, a Scottish naval surgeon, successfully treated scurvy-ridden sailors with oranges and lemons in 1747. A ration of lemon juice became the standard preventative in the British navy by 1795, though it was sometimes inadequate to stave off symptoms on a long cruise.

a flower—the wind, or compass, rose. Exploration, however, continued to be an arrangement between bankers and dreamers, carried out by tough, sagacious pilots and resourceful crews. And because the bills had to be paid, remuneration in trade from the newly discovered lands was never far from the minds of those who wished to pursue these journeys.

SEVERAL important voyages followed soon after Davis's last. Henry Hudson sailed for the Pole in 1607 with ten men and a boy in a small pinnace. They got as far as 73°N on the east coast of Greenland, where Hudson named a promontory Hold with Hope. On the return voyage he discovered Jan Mayen Island and the whale fishery at Spitsbergen. After a voyage to Novaya Zemlya, and a second voyage that started in that direction but turned for the east coast of North America and became an exploration of the Hudson River, he sailed in 1610 for arctic waters. That year he overwintered in James Bay, south of the strait and bay which today bear his name. In the spring some of the crew, fearing starvation, mutinied. They put Hudson and his son, three loyal men, and four of the sick in a boat and set them adrift, never to be seen again. The alleged ringleaders of the mutiny were later killed by Eskimos; those left alive sailed the *Discovery* home in a pitiful condition, reduced to eating candles, grass, and shreds of bird skin.

The entrepreneurs who employed Hudson, more interested in refitting for another voyage than in any trial for mutiny, sent the same ship back out under Thomas Button in 1612. He reached the far shore of Hudson Bay, realized Hudson's Sea was an embayment, and named a point there Hopes Checked. (Hudson, who thought he was sailing into the Pacific, named the southern cape at the entrance to Hudson Strait Hopes Advance.) Button, who overwintered at the mouth of the Nelson River, where he lost many men, discovered Coats, Southampton, and Mansel islands, and in the spring sailed to 65°N in Roes Welcome Sound.

In 1615 William Baffin, pilot, and Robert Bylot, captain, made the first of two important journeys together, this one into Foxe

Channel and Frozen Strait, north of Hudson Bay, where they determined that there was no Northwest Passage to be found via Hudson Strait. Baffin, a gifted navigator and an astute and accurate observer, saw the tide flooded from the southeast and ebbed from the northwest. He guessed, correctly, that the Passage lay through Davis Strait, and in 1616 he and Bylot went there. (Hudson's voyage, Button's voyage, and both of Baffin's were made in the *Discovery*, a bark the size of Davis's *Sunneshine*.)

The second voyage took Bylot and Baffin to 78°N, above Davis Strait and farther north than anyone else would sail for 200 years.* They named many of the sounds, bays, and capes for their investors, the same men who had sent Hudson and Button out before them—Smith, Jones, Lancaster, Digges, and Wolstenholme. Returning to the south, Baffin surveyed the east coast of the island that would be named for him, laying down charts until his work intersected that of John Davis.

When Baffin's journal and charts were prepared for publication, they were heavily censored; in time, his discoveries came to be disbelieved and were removed from contemporary maps. (It was not until 1818 that Sir John Ross would confirm everything Baffin had set down.) Baffin's work, and Button's journals and maps, were suppressed, probably, by investors who didn't want rivals nosing about for a passage in Baffin Bay. The early history of Hudson Bay after Button's voyage there in 1612 is a woeful chronicle of fatal disasters and bravado in search of a Northwest Passage and a fortune in furs and gold. When Charles II granted a permanent charter to Prince Rupert and other "Gentlemen Adventurers trading into Hudson's Bay" in 1670, he offered that company, in effect, a sovereign right to all lands drained by the

* Norse seamen went as far as "Norðrsetur," which may have been in the vicinity of Sullorsuaq Strait (70°12′N), and they likely sailed farther. Norse artifacts have been found in a Thule village on Bache Peninsula on Ellesmere Island (79°N), but it is uncertain how they got there.

rivers emptying into Hudson Bay. This sweeping privilege was made contingent, however, upon the Bay's efforts to find a Northwest Passage. Once the Gentlemen Adventurers saw the bales of lustrous furs brought out of the subarctic hinterlands by Pierre Radisson and Médard Chouart des Groseillers, they were disinclined to pursue any such geography. They were staring at a fortune. In order to protect it and create a trade monopoly, the Bay deliberately obstructed (initially) the search for a Passage in the region, since any business along such a route would bypass them on the way to China. The size of the bribe they reportedly paid to one Christopher Middleton to falsify his records of exploration induced the British Admiralty to set aside in 1734 a huge sum as a reward for the discovery of a Northwest Passage—£20,000.

The story of the Hudson's Bay Company is the story of an enormously powerful, nearly autonomous special-interest group that for hundreds of years strongly influenced the political, social, economic, and environmental fate of a country larger than most sovereign nations. Its stable base of remuneration in the New World—fur trapping—changed the whole focus of arctic exploration. Given the desolate aspects of the land, no one had suspected what a staggering number of high-quality furs would be brought out year after year, and for how many years this would go on.*

The other, earlier foundation of wealth found by merchant-adventurers in the Arctic was the whale fishery, first in the vicinity of Spitsbergen where it was shore-based and extremely competitive, especially between the Dutch and the British, and then in the open waters of the "whale-fisher's bight," a tongue of water that extends

* Between 1769 and 1868, the Hudson's Bay Company sold at auction in London, among other furs and skins, the following: 891,091 fox, 1,052,051 lynx, 68,694 wolverine, 288,016 bear, 467,549 wolf, 1,507,240 mink, 94,326 swan, 275,032 badger, 4,708,702 beaver, and 1,240,511 marten. During parts of this same period two other companies, the North West Company and the Canada Company, were trading furs in numbers as large.

unfrozen in winter into the northern Greenland Sea west of Spitsbergen, the last trace of the Gulf Stream.* Sealing took place here, too, in the spring on the "west ice," to the west of the whale-fisher's bight. (The whale and seal fisheries would thrive in the Greenland and Norwegian seas for more than a hundred years before whalers shifted to Davis Strait and North American sealers began to exploit a sealing ground just as large on the sea ice north and east of Newfoundland.)

When Henry Hudson returned to England in 1607 with stories of whales in the waters west of Spitsbergen, the Arctic was perceived for the first time as something of innate value, not solely the region of a problematical route to the Pacific. And its potential could not have been more emphatically set forth than by Radisson and Groseilliers, when they walked into the court of Charles II beneath armloads of marten, beaver, lynx, and wolverine furs from subarctic Canada. The Arctic would yield little else in the next 300 years except coal from places like Spitsbergen, but the furs and expanding seal, whale, and cod fisheries seemed adequate recompense from so bleak an area for investors who felt, in some instances, that they had been bullied into geographic exploration when all they wanted was a return on their (considerable) investments. With the growth of the Hudson's Bay Company's fur empire and the development of the fisheries, the staggering wealth of North America being shipped to Europe, and an opening of the southern Atlantic to less restricted trade, the idea of a Northwest Passage ceased to be commercially attractive. It became, instead, the solution to a geographic puzzle.

* The current, properly speaking, is the West Spitsbergen Current. It is a continuation of the warm Norwegian Current, which is a continuaton of the North Atlantic Current, where the Gulf Stream terminates semantically for oceanographers. The warm West Spitsbergen Current rounds the northwest cape of Spitsbergen, where some of it flows beneath the polar ice for another 1500 miles, emerging in the vicinity of the New Siberian Islands—an indication of the enormous volume of Caribbean water involved.

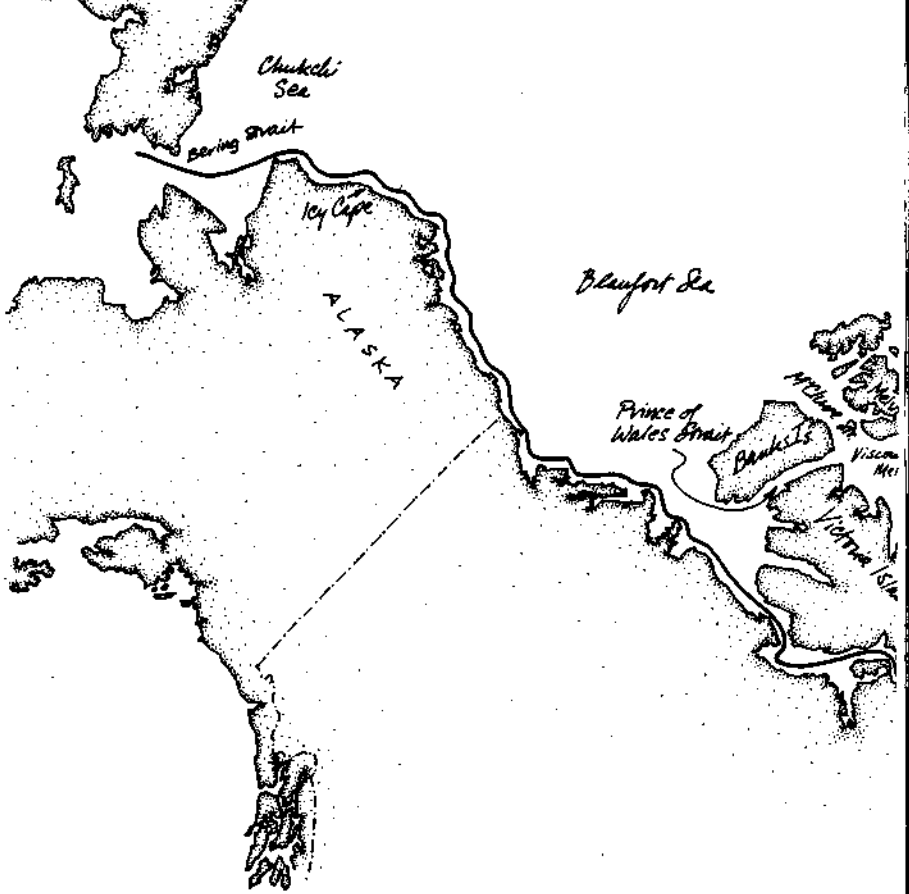
DURING the time of the first European voyages into the Arctic, the northern rims of Asia and North America remained unknown. In 1725 Peter the Great sent Vitus Bering, a Dane, to reconnoiter the eastern margins of Siberia and to see if Siberia and North America were connected. In 1728 Bering sailed through the strait that now carries his name and then bore northwest to 67°N.* Though the way was clear to round the Chukchi Peninsula and to sail west to the mouth of the Kolyma River, Bering turned back. In the fog in the strait he also missed the coast of North America. A geodesist named Gvozdev reached it in 1732 in the ship Bering left behind, landing in the vicinity of present-day Point Hope. In 1741 Bering tried a second time to determine the lay of the North American coast, this time with the naturalist Georg Wilhelm Steller along.† Bering shipwrecked on the return voyage in the Commander Islands, where he died, bringing to thirty the number of men who perished on the voyage.

Between 1733 and 1742 Russian explorers made a prodigious and nearly successful attempt to explore and map the whole of the north coast of Asia from the mouth of the Ob River to Bering's East Cape. The last section, from Bear Cape to East Cape, was not completed until 1824, by Ferdinand von Wrangel. (In 1867 an American whaling captain, Thomas Long, named Wrangel Island for him.)

The strait that separates the two continents (the western

* The Yearbooks of the Sung dynasty record a much earlier voyage in these waters. In A.D. 458 a Buddhist monk, Hwui Shan, together with four other monks, sailed north past the Kuril Islands and up the coast of the Kamchatka Peninsula, then east through the Aleutian Islands to mainland Alaska.

† Steller discovered and named many new animals on this trip, including Steller's jay (a verification of their North American landing) and Steller's sea cow, which was never seen again by scientists. The sea otter furs brought back by the expedition's survivors drew Russian free trappers into the region, who subsequently embarked on a bloody suppression of native coastal peoples.



The Northwest Passage. To clear the middle Baffin Bay pack ice, ships must approach Lancaster Sound from the northeast. An alternate route passes west through Barrow Strait and Viscount Melville Sound, then south through Prince of Wales Strait. The exit through M'Clure Strait is almost always blocked by heavy ice as is the exit through M'Clintock Channel.

entrance to the Northwest Passage) was, according to some historians, first discovered by a Cossack named Simon Dezhnev in 1648. The Spaniards also sent explorers in this direction, but they never came this far north. A Greek pilot, Apostolos Valerianos (Juan de Fuca) told Michael Lok in Venice in 1595 that he had sailed into the Strait of Anian at 47°N three years before. Many suspect he didn't get even that far north, but there is a strait at that latitude, and it was named after him in 1788. Other, clearly unfounded claims for entering the Strait of Anian were made for Maldonado (1588) and de Fonte (1640). The first ship from Europe to reach Bering Strait was under the command of James Cook, who arrived in 1778 and sailed north and west until he was within sight of Icy Cape (70°20'N). (In expectation of this development, the British Admiralty had altered the provisions of its £20,000 Northwest Passage prize to include royal as well as private ships, and success by any route, not necessarily one via

Hudson Bay—a clear indication that the search for the Passage was now a matter of state, not commerce, and that Baffin's observation, that there was no route through Hudson Bay, had finally been heeded.)*

At the time Cook sailed into the Chukchi Sea the northern reaches of North America and most of the Canadian Archipelago were unknown. On July 14, 1771, an indefatigable and persistent overland traveler named Samuel Hearne reached a spot near the mouth of the Coppermine River on Coronation Gulf with a group of Slavey Indians and a Chipewyan guide, Matonabbee. On this, his third attempt to reach the area, he fixed the first point of geographical reference on the American shore of the Northern Ocean. In 1789, Alexander Mackenzie reached an island in the delta of the river that now bears his name, and a second point was fixed. Between 1819–1822 and 1825–1827 British overland naval parties under the command of John Franklin mapped the North American coast from the Return Islands (149°W) to Turnagain Point on Kent Peninsula (107°W). Hearne's and Mackenzie's overland routes, together with exploration of the southern British Columbian coast by George Vancouver (1792), and of the North American coast from south of the Columbia River to Icy Cape by Cook, eliminated the possibility of a Northwest Passage south of approximately 68°N. If there was a passage, it lay north of the explored North American coast, in an unknown region.

* * *

* A second award of £5000 was also established at this time for the first ship to sail within 1° of the Pole. And a third prize of £5000 was authorized for the first ship to sail past 110°W, since longitude could now be accurately determined. Cook had on board one of John Harrison's clocks, for precisely fixing longitude west of the Greenwich meridian. He called it "our never-failing guide." An imperious Admiralty Board gave the chronometer its stamp of approval but made Harrison, a cabinetmaker, wait thirty-seven years for his reward (another £20,000). They couldn't believe a commoner had actually solved the problem.

THE reasons for pursuing the search for a passage in the west—the ice in the east, north of Russia, was thought simply too formidable, too extensive—changed over the years. By 1820 no one was advocating the commercial feasibility of such a route. William Scoresby put the case succinctly in his *Account of the Arctic Regions*: annual ice conditions are too variable, the latitude is too high, the season is too short. But the possibility of obtaining new geographical knowledge, the opportunity for scientific investigation in the Arctic, and a broadening awareness of natural history, together with simple curiosity and the slim possibility of locating an arctic mine, were sufficient to keep an interest in the Passage alive.

In 1815, the war with France finally over, Sir John Barrow, Second Secretary of the Admiralty and founder of the Royal Geographic Society, could turn his full attention to his passion, geography, in particular the question of the Passage. Empowered to send British ships and naval officers on the expeditions he devised, he infused the endeavor with a lofty sense of purpose. Barrow had a disdain for crass motives of any sort—he deplored the Hudson's Bay Company's arctic hegemony as "a preposterous state of affairs"; he also trusted naively in the superior worth of rank and social position over practical experience, a trait, of course, that distinguished many Englishmen of his and later generations.

Scoresby, the experienced whaler, may have had Barrow's arrogance in mind, in fact, when he politely raised an objection in 1820 to "the want of experience in the navigation of icy seas" among the officers of the Royal Navy who figured in Barrow's plans. "No judgement, however profound, no talent, however acute," wrote Scoresby, "can supersede the necessity of practice." Certainly Barrow read these words, but he did not entirely heed them. No great disasters, save one, ensued during the twenty-seven years he directed his arctic enterprises, but it is worth noting Scoresby's general observation on those seeking "imperishable renown" in the Arctic.

Working fishermen were no doubt off the coast of Newfoundland before Cabot got there, in Frobisher Bay before Frobisher got there, in Hudson Strait before Hudson, and in Lancaster Sound before Ross arrived. These men, as it were, stepped aside long enough to let the gentlemen discover the land, and then went back to fishing. Fishermen and whalers were disposed to keep "new knowledge" to themselves; and they had few dealings with the social and intellectual strata of men to whom such knowledge might mean political leverage or social rewards.

Since normally there was no intercourse between, say, cartographers and common seamen, the two had different ideas about the state of arctic exploration. Joseph Moxon, an English cartographer living in Amsterdam, met a Dutch sailor in a tavern in 1652. He couldn't help overhearing his conversation with another fellow. The sailor said he worked aboard a shuttle ship, bringing whale blubber south from Spitsbergen during the season. Because they had arrived too early to gain a full load, his captain had taken advantage of open water to sail north. The Spitsbergen whalers kept a tally of such forays beyond 80°N, and this sailor believed they had sailed 2° beyond the Pole. No doubt he was confused, but it was possible in a good ice year for a whaler to get to perhaps 83°N. Moxon was astounded that this information did not circulate, and the sailor was apparently nonplussed by Moxon's interest in the matter.

Not only did men of such different background and pursuits rarely converse, but the field observations of fishermen and whalers, or of common seamen, were thought by the upper classes not quite appropriate to the developing purposes of science, nor useful for the general education of politically or commercially sophisticated men. This singular discourtesy stifled a broad-based understanding of the Arctic early on and contributed to a second problem—the perpetuation of prejudiced, unempirically founded knowledge by special-interest groups. The spheres of separate knowledge of the mapmaker, the able-bodied seaman, the whaling captain, the Eskimo, and the British naval officer were kept segregated through

contempt and condescension, and by social policies that divided people on the basis of education, race, social class, and nationality. Although this pattern of intolerance has long been a pattern of human life, it is especially in the area of geographic knowledge that these rifts are lamentable. No one class or culture can pretend to entirely grasp a stretch of land.

The distance that separates most arctic residents on a day-to-day basis from the aspirations and ideas of industrialists and social architects is prefigured in these early divisions. The Bristol fishermen thought Cabot's first voyage an extension of the royal amusement. British officers thought the common seaman too much of a scatterbrain and an adolescent to have anything pertinent to say about navigating through ice. Seasoned HBC factors twitted earnest neophytes newly arrived in the Arctic because they mistook their awkwardness and ineptitude for incompetence and stupidity. And no one took the Eskimo seriously.

Men like Scoresby stand out in arctic history, amid the contentious hegemonies of opinion that characterize especially its economic history, for several reasons: the breadth of his practical experience as an arctic whaling captain, his disinterested scientific observations, his education at Cambridge, and his sense of regard for the ideas of other people. The rarity of such individuals in arctic science, commerce, and public affairs today is as evident as it was in Scoresby's day. In a country in which the future of an entire landscape is at stake, the racial, social, and intellectual barriers remain. The good minds still do not find each other often enough.

John Barrow was adamant and single-minded about what he wanted in the Arctic: a careful accumulation of scientific knowledge. He fervently hoped that his enterprise would bring distinction to all involved, and, not the least of his concerns, enhance English prestige in the world. In 1818, he sent four ships north, all of them several light-years advanced in equipment, provisions, and seaworthiness over the tiny ships Davis and Baffin sailed in. The ships' officers included surgeons, draftsmen, and navigators as well

as men able to operate and record from the array of scientific instruments placed on board—barometers, chronometers, artificial horizons, theodolites, pendulums, water-sampling bottles, and several types of thermometer. (Also put aboard, with a deferential nod to Scoresby, were a master and a mate from the Spitsbergen fishery, the former sometimes called the ice pilot or ice master.)

The ships sailed in April, parted company in the North Atlantic, expecting, with bright-eyed optimism, to meet in the Pacific. HMS *Dorthea* and *Trent* shaped their courses north for Svalbard; HMS *Isabella* and *Alexander* for Baffin Bay. The former two, hammered mercilessly by gales and pack ice, took refuge in Magdalena Bay and Fair Haven in Spitsbergen to make repairs before sailing home. The other two ships, under Sir John Ross and Lieutenant William Parry, sailed up Davis Strait in the company of about forty whale ships, entered Melville Bay, which they named, and reached their "farthest north" at the southern entrance to Smith Sound. On the Greenland coast they met a group of Polar Eskimos. Through an interpreter who had come aboard in southern Greenland, a startling and memorable conversation took place. At one point, one of the Eskimos turned to the *Isabella* itself and inquired: "Who are you? What are you? Where do you come from? Is it from the sun or the moon?"

Ross decided Smith Sound offered no good prospect, and so sailed west and south, exploring the entrances to Jones and Lancaster sounds. Lancaster Sound, he reported, was but a bay, closed off by a range of mountains. (No other officer would confirm this observation, and it is impossible to know why he insisted on it. It all but ruined his career.) Coasting south along the east shore of Baffin Island, the officers confirmed the accuracy and completeness of Baffin's disputed report and suppressed charts, and discovered and named Pond's Bay. (Their reports of whales abounding in the new "West Water" brought the first large-scale influx of whalers into that part of Baffin Bay the following year.) Once home, Parry, adamant but discreet, let it be known that no mountain

range closed off Lancaster Sound, and that that was the way for the Admiralty to pursue its search.

Parry's excursion into Lancaster Sound the following year is one of the most admirable and engaging, not to mention successful, of all arctic voyages. HMS *Hecla* and *Griper*, provisioned for two years, departed England late in the spring and made for Cape Farewell. The *Griper*, a gun brig, was so "crank" except before the wind that she had to be towed much of the way if the expedition was not to lose time. Parry threw overboard daily a sealed bottle flagged with white cotton cloth which contained a note giving their location and certain scientific particulars, and directing the finder (in six different languages) to return the notice to the Admiralty with an indication of where and when it was found. They sounded at 57°N 30°W for the fabulous Land of Buss, reported by the *Emmanuel* of Bridgewater, homeward bound with Frobisher in 1578, but without success. Entering the East Greenland Current, they passed from the clear blue of the North Atlantic to the earth-stained water of the ice stream. Doubling Cape Farewell, they found the familiar fleets of seabirds: looms (thick-billed murres), Greenland parrots (Atlantic puffins), Mother Carey's chickens (Leach's storm-petrels), sea pigeons (black guillemots), and Greenland swallows (arctic terns). In Davis Strait they killed a horse whale (walrus), which the *Hecla*'s assistant surgeon, Alexander Fisher, carefully necropsied. The men marveled at the walrus's strength: it had broken off the tip of a harpoon driven through two auricles of its heart and fought the boats unceasingly for ten minutes. They also sought out and killed several polar bears, which Fisher thoroughly examined and described.

They were caught in the ice only briefly, as Parry forged his way through the middle Baffin pack and entered Lancaster Sound, more than a month earlier than they had been there in 1818. There was no ice in sight, and no bottom to the bay was visible to the west. One officer indicated in his journal that, though everyone was properly deferential toward Ross's observation of

mountains here, they could not "stifle [their] inward pleasures" at the prospect of open waters.

Ice again halted their progress in western Lancaster Sound. Parry made use of the time to explore to the south, in Prince Regent Inlet, before continuing west. On August 21 they were startled to find the broken end of a boat's sail yard floating in the water. Had someone been here before them? No—a seaman remembered its having fallen overboard when they had turned south for the inlet. Parry's progress west was spectacular. Like Verrazano 300 years before, or Cook in Bering Strait, he enjoyed excellent weather and good sailing. Near Fellfoot Point, Devon Island, one of the officers, with a mirthful shrug, figured the bearing and distance for Icy Cape. They came on large pods of belukha, which Parry speculated had come from the mouth of the Mackenzie River, an indication of open water ahead. The crews approached in the boats and "repeatedly urged one another to pull smartly" in order to get closer to the belukhas and hear the "whale-song"—a sound like that made by "passing a wet finger around the edge, or rim, of a glass tumbler."

At 9:15 P.M. on September 4, the ships crossed the meridian at 110°W and claimed the Admiralty prize. Parry was giving names to islands and headlands almost hourly. He paused long enough to land at several places where the men discovered primitive (Dorset?) ruins and brought on board the skulls of musk-oxen. They also found a narwhal tusk inland on Byam Martin Island.

Parry watched the needle in the binnacle compass wander about sluggishly and aimlessly and surmised, correctly, that he had sailed north of the Magnetic Pole. He ordered the binnacle taken below and began to steer by celestial navigation—no mean trick in an arctic summer. Early in September, along Dundas Peninsula, Melville Island, with the weather deteriorating and the ice closing in on them, Parry sensed the end for that year. They reached their farthest west at noon on September 17 at 112°51'W and returned

50 miles up the coast to a place they named Winter Harbor, where they went into winter quarters.

Winter closed quickly—the men had to cut a canal 4082 yards long and 35 feet wide through 7 inches of new ice to get the two ships into the protection of the harbor. The ships were anchored in five fathoms of water, 120 yards apart and 500 feet off the beach. A hut was erected on shore, where the expedition's scientific officer, Edward Sabine, set up his instruments. The ships and the hut were linked with lines, and after two nearly disastrous episodes (which required the amputation of frostbitten fingers and toes), Parry gave orders that no one was to wander out of sight of the ships.

The singular Parry, who turned twenty-nine on the voyage, had made thoughtful preparations for overwintering. Wagoncloth was brought out and run over the spars to create a completely sheltered deck for exercise. On November 5, *Miss in Her Teens, or The Medley of Lovers* was performed on the quarterdeck, and similar farces were produced throughout the winter—with *Miss in Her Teens* getting an encore at the end of the season. Sabine, at Parry's appointment, began to edit and publish *The North Georgia Gazette and Winter Chronicle*, which appeared on November 1 and regularly every Monday thereafter for twenty-two weeks.* It contained strictly anonymous essays, poems, and articles by Peter Pry About, John Slender Brain, and others, and featured adjudication of various issues in the Court of Common Sense. A close reading indicates that several of the officers didn't care for the production and that practical jokes were played on those who wouldn't join in this bit of officers' public-school amusement.

After the first few weeks they saw very few animals, and

* Parry had named the first tier of islands north of the Parry Channel the North Georgia Islands for King George III, distinguishing them from South Georgia in the Antarctic. They are now called the Parry Islands.

Parry suggested that the caribou and ptarmigan and other creatures must walk south across the ice to North America for the winter. Only wolves and arctic foxes remained behind. They caught a fox and kept him as a pet, and "Jack" became tame enough to eat from everyone's hand. The dogs on board made a tentative liaison with the wolves that came around. One, a white setter named Carlo, went off and never returned. Parry's black Newfoundland, Boatswain, got in a fight with a wolf in which the wolf, as well, came off poorly.

The officers and men lived in reasonable comfort, with bread baked fresh daily and beer freshly brewed (except when it wouldn't ferment because of the cold). Condensation from cooking and breathing froze to the walls and bulkheads and had to be chipped away regularly. Clothing never seemed to dry; bedding —fumigated weekly with gunpowder and vinegar—was always damp; light, from the single six-inch candle issued each man every six days, became precious. Parry and his officers worried about three things: scurvy, that perennial arctic menace; idleness, which they believed abetted the onset of scurvy and discontent; and their fate. They also expressed concern in their journals about their families, that they might worry too much about them.

The men were regularly inspected for signs of scurvy, and antiscorbutics—three-quarters of an ounce of lemon juice with sugar every morning—were part of every man's ration. (For the worst cases, the enterprising Parry grew mustard and cress near the stovepipe in this room. Daily exercise on deck or ashore if the weather was good was required, and each man had daily tasks to perform—so many that by midwinter the crew was complaining they had too much to do, which pleased Parry.)

In the evenings the officers gathered to read and listen to music, Parry playing his violin and one of the other officers a flute. Religious services were held on Sundays. In spite of the regularity of their lives and "the public obligation to be cheerful," they sensed their vulnerability, a "gloomy prospect which would sometimes obtrude itself on the stoutest heart."

The men amused themselves outside by making mortar barrels out of sea ice and by rendering the blubber of the sea mammals they had killed during the summer for oil, for their winter light. Many of them took long walks, "in a silence far different from that peaceable composure which characterizes the landscape of a cultivated country: it was the death-like stillness of the most dreary isolation, and the total absence of animated existence." Parry wrote of the pleasure of staring at a stone in the snow, for the relief it gave the eye. And of being able to hear a man singing to himself more than a mile away. And the explosive cracking of timbers as cold took the ships.

The return of the sun was so eagerly anticipated that during the time of day when it might be expected to loom early because of refraction, a continuous watch was kept from the top of the *Hecla*'s mainmast. On the fated day, February 3, a relay of men watched—ten minutes each—from the crow's nest. It appeared at 11:40 A.M., Winter Harbor time.

On February 13 two sailors received thirty-six lashes for drunkenness. On the 14th it was −55°F and Mr. Fisher poured water through a colander 40 feet up in the *Hecla*'s mast to see if it would freeze before it hit the deck. On February 24 at 10:15 A.M., clothing hung too near the stove in Mr. Sabine's observation hut caught fire and set fire to the building. The blaze was quickly put out, but a man who tried to save the instruments subsequently lost fingers on both hands to frostbite. A young pet glaucous gull died in the fire and was remembered in a dignified eulogy in the next issue of the paper.

March and April came on, but the cold weather did not break; the men suffered the consternation they would have felt had they been in northern England, expecting the return of warmth with the return of the sun, and some signs of spring. On April 9 Parry made his celebrated drawing of the sun's halos and arcs. On April 16 a brilliant solar corona became visible when a layer of light, fleecy clouds passed under the sun, revealing "the most soft and exquisite tints of lake, bluish green, and yellow about their

edges, that can possibly be imagined." On June 16 a triple rainbow appeared.*

Parry had not planned for such a long stay as this, and he became anxious about the time of their departure, and their chances of reaching Icy Cape before fall. He decided if he was away before the end of June, he would be fine. In May the men started wearing black crepe veils to prevent snowblindness, and they cheered the sight of the first unfrozen water, on the ship's black paint. On May 24 it rained, but the ice showed no signs of weakening.

On June 1 Parry departed with eleven officers and men to explore to the north and west. The men pulled a cart with 800 pounds of provisions and equipment, on which they rigged a sail to help them over the wet and snowy terrain. Parry named many geographical features for his officers and midshipmen, collected geological samples, examined the remnants of a paleo-Eskimo camp, and constructed several cairns, as was their wont almost everywhere they put ashore. The cairns were roughly 12 feet high and 12 feet across at the base. A tin or copper cylinder, or sometimes one of Messrs. Dankin and Hall's preserved soup tins from the ship, containing the names of the shore party, the date, a short account of the voyage, and perhaps a penny from an officer's pocket, or a uniform button, was buried at the base.

The men returned to the ships on June 15. With no sign of breakup, Parry sent hunting parties out for ten days at a time to secure meat (brant, caribou, muskoxen, ptarmigan), and daily sent members of the crew out to collect sorrel.

Finally, on August 1, the two ships sailed out of Winter Harbor and set out again for Icy Cape. They got no farther west than they had the year before. The pack ice in M'Clure Strait

* While the first and second rainbows occur at an angle of 180° from the sun, the third and fourth occur around the sun and are almost never seen. What Parry took for the third rainbow was in fact the fifth level of refraction.

was impenetrable, and the floes humbling—one that had ridden up on another was 42 feet thick. On August 7, far to the southwest, they saw a shore, which they named Banks' Land in honor of Sir Joseph Banks, the proponent of a Northwest Passage whose mantle Barrow had assumed in 1815.

Parry already had his crews on two-thirds rations, in case they were forced to spend a second winter. He tried to get farther south by going back east first. It took him until August 30 to decide that it was hopeless for that year, and he shaped his course for home. On the way out of Lancaster Sound he gave the present Somerset Island the name North Somerset after the homeland of Lieutenant Liddon, the *Griper*'s captain, and the present Devon Island the name North Devon after his own native country. On the 4th and 5th of September they met whalers from Hull. The following day they met four Eskimo men near Clyde Inlet and spent several days with them before sailing for England.

Parry wrote that he had not reckoned with either the severity of the climate or the shortness of the sailing season. But his success was spectacular. It would be eighty years before anyone discovered so much new land in the Arctic in a single voyage—and no one before him had ever seen so much.

A storm the *Hecla* ran into on September 14 tore away the ship's stern boat, broke the foremast off two feet above the forecastle deck, snapped off the main-topmast, and broke away the bowsprit. To get clear of the wreckage they had to cut away their starboard anchor. On the 27th they sighted Foula Island in the Shetlands. On the 29th Parry disembarked at Peterhead and took a coach for London. With him, sealed, were all the journals, drawings, sketches, and notations produced by crew and officers on the expedition, "to be thereafter dispensed of as [the Admiralty] may think proper to determine."

The following spring Parry sailed again, to search for a southern entrance to Prince Regent Inlet, which he would find—Fury and Hecla Strait.

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I thought across the range of these things, walking along the beach at Pingok. The day after a little trouble in the ice it is possible to imagine, if but imperfectly, the sort of reach some of these men made into the unknown, day after day. I think of Brendan asleep on a bed of heather in the bottom of his carraugh, and of the forlorn colonists at Eriks Fiord in the thirteenth century. The exemplary John Davis in his tiny pinnace, the *Ellen*. I think we can hardly reconstruct the terror of it, the single-minded belief in something beyond the self. Davis wrote of the wild coasts he surveyed that he believed God had made no land that was not amenable, that there were no wastelands.

Walking along the beach, remembering Brendan's deference and Parry's and Davis's voyages, I could only think what exquisite moments these must have been. Inescapable hardship transcended by a desire for spiritual elevation, or the desire to understand, to comprehend what lay in darkness. I thought of some of the men at Winter Harbor with Parry. What dreams there must have been that were never written down, that did not make that journey south with Parry in the coach, but remained in the heart. The kind of dreams that give a whole life its bearing, what a person intends it should be, having seen those coasts.

Nine

A NORTHERN PASSAGE

ALL DID NOT GO as smoothly on Parry's first expedition as his *Journal of a Voyage for the Discovery of a North-West Passage from the Atlantic to the Pacific* implies. In the pages of *The North Georgia Gazette* are hints that the officers of the *Griper* were ostracized. The coarser lot of the sailors is made clear in an expedition surgeon's report on the death of one William Scott, from alcoholism and acute psychosis. And the *Hecla*'s assistant surgeon, Alexander Fisher, notes in his journal on February 28, "We had a portion of the Second, Nineteenth, and Twenty-second articles of War read on the quarter-deck