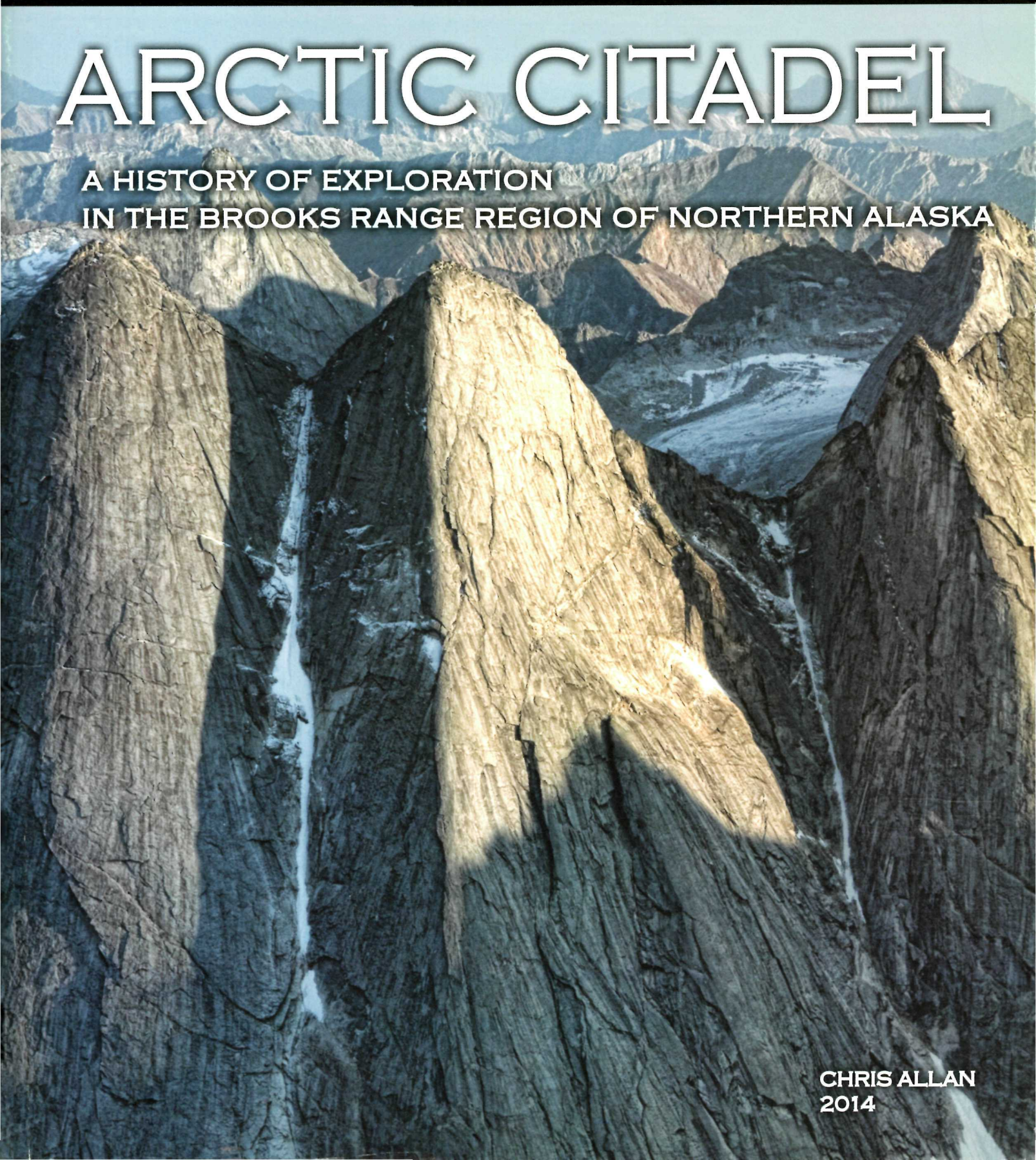
National Park Service
U.S. Department of the Interior
Gates of the Arctic National Park & Preserve

ARCTIC CITADEL

A HISTORY OF EXPLORATION IN THE BROOKS RANGE REGION OF NORTHERN ALASKA



CHRIS ALLAN
2014

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for enjoyment of life through outdoor recreation.

The Cultural Resource Programs of the National Park Service have responsibilities that include stewardship of historic buildings, museum collections, archeological sites, cultural landscapes, oral and written histories, and ethnographic resources.

Our mission is to identify, evaluate and preserve the cultural resources of the park areas and to bring an understanding of these resources to the public. Congress has mandated that we preserve these resources because they are important components of our national and personal identity.

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Chris Allan
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Front Cover: Arrigetch Peaks in the central Brooks Range, September 2008. Courtesy of Carl Johnson.
Back Cover: Geologist John B. Mertie exploring the Brooks Range, April 1924. USGS Photographic Library (J.B. Mertie 1125).

ARCTIC CITADEL:

A HISTORY OF EXPLORATION IN THE BROOKS RANGE REGION OF NORTHERN ALASKA



ARCTIC CITADEL:

A HISTORY OF EXPLORATION IN THE BROOKS RANGE REGION OF NORTHERN ALASKA

HISTORIC CONTEXT STUDY FOR:

GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE
NOATAK NATIONAL PRESERVE
KOBUK VALLEY NATIONAL PARK
CAPE KRUSENSTERN NATIONAL MONUMENT

CHRIS ALLAN

2014

Promontory in Itkillik River region of central Brooks Range, March 2010.
Courtesy of Carl Johnson.

ARCTIC OCEAN

NORTH SLOPE

Colville River

Continental Divide

DE LONG MOUNTAINS

Amphitheatre Mtn
3528ft
1075m

Black Mtn
5020ft
1530m

Mt Bupto
4131ft
1259m

NOATAK NATIONAL PRESERVE

Deadlock Mtn
2995ft
913m

Feniak Lake

Howard Pass
1647ft
502m

Lake Narvakrak

Noatak River

BROOKS RANGE

Kivalina

MULGRAVE HILLS

Noatak River

MAYUMERAK MTS

Tututalak Mtn
4474ft
1364m

Noatak

Akiknaak Peaks
2890ft
881m

Mt Angayukaqsraq
4760ft
1451m

BAIRD MOUNTAINS

CAPE KRUSENSTERN NATIONAL MONUMENT

CAPE KRUSENSTERN

IGICHUK HILLS

KIANA HILLS

KALLARICHUK HILLS

KOBUK VALLEY NATIONAL PARK

JADE MTS

Great Kobuk Sand Dunes

Ambler

Kobuk River

Kotzebue

Kiana

HOTHAM INLET

BALDWIN PENINSULA

Noorvik

WARING MOUNTAINS

Shungnak

CAPE ESPENBERG

KOTZEBUE SOUND

Selawik

SELAWIK LAKE

Inland Lake

SHEKLUKSHUK RANGE

Selawik River

0 20 40 60 80 100 Kilometers

0 20 40 60 80 100 Miles

Kikiktat Mtn
4126ft
1258m

Anaktuvuk River

Itkillik River

Itkillik Lake

Chandler Lake

Killik River

Anaktuvuk Pass
2200ft
671m

Cockedhat Mtn
7610ft
2320m

Agiak Lake

BROOKS RANGE

Agiak Cr

Continental Divide

Survey Pass
3520ft
1073m

Hunt Fk

ENDICOTT MOUNTAINS

GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE

Mt Doonerak
7457ft
2273m

Lake Matcharak

Cravens Pk
6180ft
1884m

Noatak River

Alatna River

Nahtuk Mtn
5980ft
1823m

North Fork Koyukuk River

Hammond River

Oyukak Mtn
7310ft
2228m

SCHWATKA MOUNTAINS

Mt Igikpak
8510ft
2594m

Arrigetch Peaks
7190ft
2192m

Takahula Lake

John River

Wild Lake

Wiseman

Coldfoot

Middle Fork Koyukuk River

South Fork Koyukuk River

Walker Lake

Iniakuk Lake

Nutuvukti Lake

Alatna Portage

Narvak Lake

Lake Minakokosa

HELPMEJACK HILLS

Evansville

Bettles

Lake Selby

ANGAYUCHAM MTS

ALATNA HILLS

Prospect Creek

Kobuk River

NORUTAK HILLS

Arctic Circle

Alatna River

Allakaket

Koyukuk



Musk ox tracks on beach sand along Nushralutak Creek, July 2008.
Courtesy of Carl Johnson.

TABLE OF CONTENTS:

Table of Contents

Acknowledgments	ix
Introduction	xi
Chapter 1: Early Approaches	1
Chapter 2: Military Exploration	17
Chapter 3: The Search for Gold and Oil	73
Chapter 4: Seeking Blank Spaces	143
Chapter 5: Arctic Citadel, Arctic Parks	189
Works Cited	207



Cloud-shrouded Brooks Range peaks, July 2008.
Courtesy of Carl Johnson.

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Icy overflow on the North Fork of the Koyukuk River, March 2008.
Courtesy of Carl Johnson

INTRODUCTION

Introduction

The Brooks Range, stretching 600 miles across northern Alaska, remained the last great uncharted tract of land in the United States long after the rest of the nation had been surveyed, studied, tamed, and trodden. The region's harsh climate and forbidding alpine slopes, its wild rivers and distance from population centers discouraged all but the most determined outsiders from venturing into this mountain chain that separates the vast Arctic coastal zone from the rest of Alaska. In fact, the Brooks Range was one of the least known regions on the continent well into the 1900s, existing as a kind of last frontier within the Last Frontier. Though their maps offered only blank spaces, explorers entering the mountains for the first time encountered a complex region home to Athabascan Indian and Inupiaq Eskimo people, including the Nunamiut or Inland Eskimos who eventually settled in the very heart of the mountains.

The Brooks Range has long remained a place of mystery, even while its popularity grows as one of America's largest and most challenging wilderness areas. This study examines the historical theme of exploration by revisiting the accounts of outsiders who traveled through this region and who produced a detailed record of their efforts to push back the frontiers of the unknown in Northern Alaska. Their accounts offer us a glimpse of an era when the wider world was first learning about Alaska's remote and exotic Arctic landscapes. The motivations and ambitions of Brooks Range explorers also help us to track evolving opinions about the value of the land and its inhabitants. Over time the American people have come to view the Brooks Range as worthy of protection and have absorbed new ideas about the meaning of exploration. Today visitors to the four national park units spanning the Brooks Range have the opportunity to explore in their own ways along the river valleys and among the snow-capped peaks of Alaska's Arctic citadel.

Few of the explorers who probed the Brooks Range region are widely known today because, unlike those who conquered the poles or climbed the world's highest peaks, their accounts were not widely published and their achievements were often eclipsed by more attention-seeking adventurers. A few authors have written about the history and culture of the Brooks Range and include chapters on early exploration in the region. John Kauffmann's *Alaska's Brooks Range: The Ultimate Mountains* (1992) and William Brown's *History of the Central Books Range: Gaunt Beauty, Tenuous Life* (2007) both provide summaries of the exploratory efforts that revealed the Brooks Range to the world. By contrast, this report allows more space for the explorers' own writings, maps, sketches, and photographs and focuses more broadly on exploration as a historical and cultural phenomenon, particularly with regards to the Alaska Native people who often acted as participants rather than spectators during more than a century of exploration led by outsiders. Although European and American explorers often claimed they were entering an entirely unknown and unexplored area, they were in reality traveling through the homes and the homelands of Alaska's indigenous peoples. Not surprisingly, the newly arrived explorers were unaware of the dangers they would face in the Brooks Range and often came to rely on Alaska Natives for the success of their missions.



Headwaters of the Noatak River near Lake Matcharak, July 2012. Courtesy of Fleur Nicklen.

This study describes the rugged terrain and rapid seasonal shifts that make the Brooks Range a devilishly difficult place to explore and which make these mountains a place where, even today, people come to experience a world largely unchanged by human beings. The Brooks Range forms the divide between the waters that flow northward into the Arctic Ocean and those that flow southward to the Yukon River or westward to Kotzebue Sound. And, explorers attempting to cross the Continental Divide (also called the Arctic Divide) found themselves traveling through multiple ecological zones and facing challenges unique to the place like the presence of riverine ice in mid-summer or the utter lack of trees on the Arctic Slope. Readers will note that the land itself becomes the principal actor in early Brooks Range travel narratives as explorers struggled up rushing rivers, through mosquito-infested bogs, and over mountain passes—and always with the threat of winter around the corner. Once snow and ice descended upon the land, most outsiders retreated to warmer latitudes, but a few remained and used indigenous means like dog sleds and snowshoes to reach their destinations. The accounts of travelers who passed through this unforgiving landscape could still serve as "how-to" manuals for today's adventurers who crave the thrill of testing themselves in a world dominated by natural forces.

Finally, this report describes an ideological shift in our understanding of exploration from traditional Western concepts of conquest and geographical discovery to a view of protected lands as places that can be discovered and rediscovered by generations of different explorers, each with new goals and each seeing the land with new eyes. The earliest European and American visitors to northern Alaska arrived with multiple goals—to claim land, trade for furs, seek scientific knowledge, and to discover the fabled Northwest Passage—and later explorers had similarly entangled motivations. Once the United States acquired Alaska in 1867, government-funded explorers arrived in the Brooks Range searching, for among other things, an inland route to whaling ships trapped by ice in the Arctic Ocean. In the process, however, they mapped the vast interior, learned about indigenous peoples, and scoured the land for mineral deposits. By the middle of the twentieth century a new form of exploration emerged, inspired in large part by the ideas of explorer and wilderness advocate Robert Marshall. As co-founder of The Wilderness Society, Marshall advocated the protection of wild, roadless areas and pointed to northern Alaska as a prime candidate. Instead of mapmaking or searching for mineral deposits, people eventually began arriving in the mountains drawn by a desire to enjoy personal discovery in a vast and unspoiled place.

This study is primarily concerned with land in and around the four national park units that span northern Alaska and protect approximately seventeen million acres of the Brooks Range region. Gates of the Arctic National Park and Preserve, Noatak National Preserve, Kobuk Valley National Park and Cape Krusenstern National Monument are some of the least visited park units in the United States due largely to their location in a distant and challenging corner of the country. These parks were created by President Jimmy Carter and the Alaska National Interest Lands Conservation Act of 1980, and each unit stands out for its unique natural and cultural resources. Kobuk Valley National Park, for example, is known for its rare Arctic sand dunes and Cape Krusenstern for its beach-sand ridges containing archeological material chronicling 5,000 years of Eskimo history. Because all four parks are linked geographically, they also present visitors with unparalleled opportunities to explore the largest nearly contiguous stretch of national parklands in the nation.

Since these four national parks units were created they have attracted visitors drawn by the natural splendor of the Brooks Range and the challenge of existing beyond civilization's pale. Many visitors enjoy the feeling that they may be the very first person to set foot on a particular mountain top or riverbank, a thrill that is often advertised as an important part



Headwaters of the Itikmalak River in the central Brooks Range, July 2008.
Courtesy of Carl Johnson.

of traveling in a "pristine wilderness." Although we can all benefit from spending time in the backcountry, we should not forget that this special place has long been home to Alaska Native people and that it is the historical setting for journeys of exploration dating back to the arrival of the first Europeans in northern Alaska. This report examines the explorers' accounts in an attempt to reveal the full complexity of the region's human history.

Geographical Scope of the Study

The Brooks Range is made up of a number of lesser mountain chains. These include the Baird Mountains, the Endicott Mountains, the Philip Smith Mountains, and others. From the British Mountains that cross U.S.-Canada border, the range extends westward across northern Alaska to the increasingly diminutive hills of the Lisburne Peninsula which juts into the Chukchi Sea. Because much of the effort of exploring the Brooks Range involves simply getting there, this study describes exploratory voyages that begin far from the mountains and, in some cases, may only reach the foothills of the range. For example, explorers attempting to reach the Koyukuk River drainage in the central Brooks Range might travel hundreds of miles up the Kobuk River or through western Canada and much of the Alaskan interior to reach their destination. The same is true for explorers approaching from the Arctic coast where rivers leading to the Brooks Range pass through two hundred miles of the coastal plain known as the Arctic Slope. As a result, telling the story of Brooks Range exploration involves a great deal of storytelling beyond the mountain range itself (and outside of the national park units in question).

Readers should also be aware that this study focuses primarily on exploration that took place in what are today Alaska's Arctic national parklands, which cover the central and western portions of the range. Although the eastern end of the range is not ignored, less attention is spent on exploratory efforts in the area that is today the nineteen-million-acre Arctic National Wildlife Refuge. Today the wildlife refuge lands are separated geographically from the four national park units by the Trans-Alaska Pipeline and the James W. Dalton Highway, which run north-south between Alaska's interior and Prudhoe Bay on the Beaufort Sea coast.

Cape Krusenstern National Monument lies along the Chukchi Sea coast and is separated from Noatak National Preserve by the Noatak River and a ribbon of land on either side of that waterway not managed by the National Park Service. Although the national monument lies within a coastal zone and is far from the highest mountains of the Brooks Range, it is included within the scope of this study because some of the earliest exploratory journeys into the interior began nearby and because Alaska Native people from Kotzebue Sound and the Cape Krusenstern area were the first to point the way for foreign explorers to the rivers that served as highways leading inland.

A Note about Naming

European explorers have long assigned names to the geographical features they pass on their journeys. Traditionally they named important features like a cape or a peninsula after members of a royal family, dignitaries, military officers, or after comrades who had fallen in the line of duty. On other occasions they named landmarks for notable experiences during the journey (e.g. Cape Deceit or Cape Disappointment). Occasionally they also added indigenous names to their maps or charts. Brooks Range explorers used all of these approaches and more. In the case of the Alatna River, which flows from the central

Brooks Range into the Koyukuk River, explorers used the Eskimo name (spelled alternately Alaskuk and Ah-lash-ook), and names associated with explorer Lt. Henry Allen (Allenkaket and Allen River), and only later adopted the presently accepted name, Alatna. The Kobuk and Noatak Rivers were similarly endowed with multiple names. When the explorer and wilderness advocate Robert Marshall began naming in Koyukuk country, he used Eskimo words he had learned to assign Native-sounding names to landmarks. Marshall also applied his own colorful place-names to Frigid Crags and Boreal Mountain, which he described as the Gates of the Arctic. In order to avoid confusion in this study, I attempt to use present-day place-names when possible while allowing the explorers themselves (in quoted material) to use the names common at the time. In rare cases when confusion seems likely, I follow the earlier or obsolete name with the present-day name in brackets.

Early Approaches



Pub.d by H. Colburn & R. Bentley, 1831.

Chapter 1: Early Approaches

Furs, Whales and the Quest for a Northwest Passage

Archeological evidence suggests that the first people to explore the Brooks Range were bands of Asiatic immigrants who crossed the Bering Land Bridge between Siberia and North America 10,000 to 15,000 years ago. These nomadic hunters began arriving near the end of the last ice age and lived in seasonal camps that offered access to water, plant foods, and panoramic views for spotting game animals. Their hunting tools and other material culture can still be found throughout the area. The Inupiaq Eskimos and Athabascan Indians are descendants of these ancient people, and when Europeans first approached northern Alaska they found Eskimos living in scattered settlements along the coast and along river systems that stretched into the interior. Some Eskimo groups, like the Nunamiut who today live in the village of Anaktuvuk Pass, routinely traveled hundreds of miles between the coast and the Brooks Range where they fished, trapped, and hunted the caribou herds corralled by mountain passes. In the interior, Gwich'in and Koyukon Athabascans lived on the southern side of the Brooks Range in camps where they could intercept migrating caribou or set nets in rivers and lakes where fish were plentiful. Both Eskimos and Athabascans routinely entered the mountains and crossed the Continental Divide for trade and hunting excursions. They also traveled east and west along river systems that connected the Eskimo and Athabascan traditional lands.

The first outsiders who claimed territory and established trading routes in northern Alaska were Russians attempting to extend their conquest of Siberia across the Bering Strait to North America. In 1728, Tsar Peter I ordered the navigator Vitus Bering to explore the Siberian and Alaskan coasts, but unseaworthy boats and foul weather convinced Bering to cut the expedition short. Later efforts to cross the strait were also abbreviated by rough seas and Native people who would rather fight than allow foreigners to usurp their lucrative intercontinental trade routes. Russian interest in northern Alaska plummeted when the fur hunters known as *promyshlenniki* discovered thousands of sea otter in the Aleutian Islands to the south. By comparison, the northern route to America did not seem either practical or profitable.[1]

For Eskimo people in Siberia and Alaska, the strait was a long-established route for crossing continent to continent for trading, warring, or seasonal hunting. Because Native Siberians and Alaskans routinely crossed the water in skin-covered boats called *umiaks*, Russian trade goods like metal cooking pots, knives, beads, and tobacco soon joined traditional Native commodities as they flowed into Alaska. In the 1800s Alaska Natives also acquired guns which eventually replaced traditional hunting tools like harpoons and bows and arrows. Similar trade items originated with Hudson's Bay Company traders to the east along the Mackenzie River corridor in Canada. The arrival of these exotic goods alerted Alaska Native peoples, even deep in the interior, to the existence of foreigners for a century before the outsiders arrived in person.[2]

In 1778, Captain James Cook of the British Royal Navy became the first European to sail along Alaska's northwest coast at a time when the Russian fur traders were still preoccupied by sea otter hunting on the Aleutian Island chain. In what was his third and last voyage around the world, Cook commanded the HMS *Resolution* and HMS *Discovery* as they sailed from the Hawaiian Islands to the American coast to begin a search for the Northwest Passage. During the late 1700s and early 1800s, the Russians, British, French, and Spanish all sent ships to the northwest coast of North America searching for an ice-free waterway linking the Atlantic and Pacific oceans. Such a waterway would allow European ships easy access to Asian ports and would make the discoverers fabulously wealthy. After skirting Alaska's southern coast and sailing through the Aleutian Islands, Cook's ships moved north through the Bering Strait before facing a wall of Arctic pack ice, the principal obstacle to navigation in the far north.[3]

After naming the nearest point of land Icy Cape and sending men to kill walruses on the ice floes, Cook ordered his ships to sail south once again before the pack ice could encircle the vessels and prevent their escape. While skirting the coast, he observed from the deck of the *Resolution* a point he named Cape Lisburne at the extreme western end of the Brooks Range, noting that it "appeared to be high land, even down to the sea." Although his stay in the area had been brief, the captain also named the Mulgrave Hills and glimpsed the coastline between the present-day community of Kivalina and mouth of the Noatak River. The land the British explorer saw is today within Cape Krusenstern National Monument.[4]

The Russians were alarmed by Cook's brazen excursion into a region they claimed by right of first discovery, but decades passed before they could muster a response. In 1816, Lieutenant Otto von Kotzebue, a Baltic German sailing for the Russian Imperial Navy, arrived along Alaska's northwest coast aboard the two-masted brig *Riurik* as part of a round-the-world voyage of discovery sponsored by the Russian Ministry of Foreign Affairs. In the far north, Kotzebue was supposed to search for both the Northwest Passage and a similar route northeast over the top of Siberia. After pausing briefly at a Native village on the Seward Peninsula where well-armed Eskimo men threatened to seize his ship, Kotzebue sailed north and east into a large sound that he would name for himself. After concluding that no navigable passage led from Kotzebue Sound into the continent, he paused several times to meet with Eskimo traders before sailing again into the North Pacific. En route, he also named the northern cape marking the entrance to Kotzebue Sound for his former commander, Admiral Adam Johann von Krusenstern.[5]

Ten years later the search for the elusive passage continued when the British explorer John Franklin arrived in the Arctic and glimpsed portions of the Brooks Range. In 1826, Franklin was nearing the middle of a three-year expedition that had taken him and his men across much of central Canada where they found the Mackenzie River and followed it to the Arctic Ocean. Once they reached salt water, Franklin and fifteen men took two small boats westward toward the Alaska territory claimed by Russia. Soon Franklin began to describe a mountain range that he called the British Chain. Today they are called the British Mountains, and they lie at the eastern extreme of the Brooks Range near the U.S.-Canada border. In his journal Franklin briefly described mountains growing higher and more snow-covered and noted, "the view into the interior possessed the charm of novelty, and attracted particular regard."[6]

Side Note #1

NORTHWEST PASSAGE

One of the earliest reasons that explorers came to Alaska and the northwest coast of North America was the search for an ice-free waterway linking the North Atlantic with wealthy Asian ports. Since the 13th century, when Marco Polo returned from the Far East with tales of Kublai Khan's kingdom, Europeans had been speculating about the geography of those distant lands and the best route to reach them. When Christopher Columbus arrived in the Caribbean Islands he believed he had reached the land of the Great Khan, but later investigations showed that the Americas were actually an obstacle to reaching Asia where trade for porcelains, silks, jewels, and exotic drugs could make merchants in Europe very wealthy. Without the mythical passage, European ships had to round Cape Horn at the tip of South America and cross the whole of the Pacific Ocean or travel east around the tip of Africa and cross the Indian Ocean. Both routes were long and dangerous.

During the early 1700s, Alaska and the coastline to California remained one of the last territories in the world unexplored by Europeans. In 1741 Vitus Bering sailed east from Siberia under orders from the Russian tsar and found large numbers of sea otter in the Aleutian Islands, and his discovery sparked a lucrative trade with the Chinese. Meanwhile, Spanish, French, and British ships circled the globe hoping to participate in the sea otter trade and to be the first to claim that unparalleled prize—the Northwest Passage. In 1778 Captain James Cook explored from what is today the coast of Oregon northward as far as Alaska's Icy Cape before being turned back by the threat of Arctic sea ice.

Even as Cook and his contemporaries extended Enlightenment science into the Pacific, the dream of a Northwest Passage endured and home governments made the search an indispensable part of every voyage. For this reason, some of the earliest mapping of the Alaskan coast was performed not because explorers cared about Alaska itself but because they were looking for a way through Alaska and Canada and back to the Atlantic. Frederick Beechey and John Franklin, for example, were both searching for the passage when they surveyed Alaska's Arctic coastline. For the Russians, the success of their American colony and profits from the sale of sea otter furs were paramount. Even so, Russian navigators (and those working for Russia like Otto von Kotzebue) searched both for a northwest passage and a northeast passage over the top of Siberia.

Facing page: This 1593 map by Corneille de Jode of Antwerp includes a northwest passage (labeled "El Streto de Anian") and a highly imaginative outline of boreal regions where Alaska is today. Rare Maps Collection, Alaska & Polar Regions Department, University of Alaska Fairbanks (G4371-S1-D4).


QVIVIRÆ REGNV, cum alijs versus Boreã.
Septentrio.
Meridies.
Oriens.
Occidens.
Oceanus 19. ostijs inter has insulas irrupens, 4. euripos facit, quibus indesinenter in Septentrionem fertur, atq; ibidem, mirè vehementerq; absorbetur.
Polus Magnetis respectu insularũ Capitis Viridis.
El Streto
Hic hominũ societates cernuntur ruri, in tentorijs habitantes, more Hordarũ, quas apud Tartaros videmus.
Bergi.
Circulus Anian
de Anian.
Reg.
Regio hæc plana est et silvestris, in qua boves, vaccæq; reperiuntur, gibbũ camelorũ habentes, cauda vero, et pedibus leones referũt.
Quiuira Regnũ.
Cabo de Corrientes
Mendocino
Tuchano
Las dos Hermanas
OCEANVS
Los Mongos
La Vezina
La desgraciada
C. Blanco
Las sierras Nevadas

Even had the musquitoes been less tormenting, the swampiness of the ground, in which we sank ankle deep at every step, deprived us of the pleasure of walking.

–John Franklin

Franklin recognized these mountains to be an extension of the Rocky Mountains that form the backbone of the North American continent, but he would not risk taking the time to push inland because he was concerned about sea ice and the approach of winter. Franklin wrote in his journal,

> A visit to the Rocky Mountains was often talked of, but they were now at a distance of two days' journey, and we dared not be absent from the boats so long, lest the ice, in its fickle movements, should open for a short time.

Franklin's journal also hinted at the difficulty of crossing the tundra where insects and sedge tussock mounds in standing water made walking a misery. "Even had the musquitoes been less tormenting," Franklin explained, "the swampiness of the ground, in which we sank ankle deep at every step, deprived us of the pleasure of walking."[7] The terrain that Franklin and later explorers described was arctic tundra, a mosaic of dwarf shrubs, sedges, mosses, grasses, and lichens that covers the mostly treeless coastal plain lying north of the Brooks Range. The mat of vegetation creates the sensation of walking on a thick and rather lumpy mattress, and in places tussock mounds can reach a foot or two in height, frustrating even the most determined traveler. Also, during summer in Arctic Alaska, the ice in the ground underneath the tundra begins to melt, producing a saturated landscape ideal for mosquito reproduction.

Over a year earlier the British Admiralty had hatched a plan to send additional ships to aid Franklin in locating the elusive passage. Captain Frederick Beechey, commander of the HMS *Blossom*, was sent around the world to rendezvous with Franklin at Icy Cape, one of the only known landmarks on Alaska's Arctic coast. But, Franklin was still 400 miles from the rendezvous point when he reluctantly decided to turn around.[8] Unbeknownst to Franklin, Beechey had already arrived in the Arctic and the *Blossom* had managed to navigate broken pack ice as far as Icy Cape. From there Beechey launched a barge with sails that traveled westward to Point Barrow, but to no avail.

Having failed in his attempt to find Franklin, Beechey chose to anchor the *Blossom* in Kotzebue Sound for the winter and to use the opportunity to chart the nearby coastline. During his one attempt to explore inland, Beechey faced traveling conditions similar to those Franklin experienced at the other end of the Brooks Range:

> The stones were covered with a thick swampy moss, which we traversed with great difficulty, and were soon wet through by it. . . . Several reindeer were feeding on this luxuriant pasture; the cliffs were covered with birds; and the swamps generated myriads of moskitos.[9]

Elsewhere in his account, Beechey described the soggy tundra as "elastic bog earth." The map that accompanied his official report shows that he did not take the time to explore the two largest rivers in the



Beechey's "Chart of Part of the North West Coast of America" (1826), showing the Lisburne Peninsula and Mulgrave Hills at the western end of the Brooks Range. Frederick W. Beechey, *Narrative of a Voyage to the Pacific and Beering's Strait . . .* (London: Henry Colburn and Richard Bentley, 1831).



Eleven miles from Point Barrow, Captain Beechey's crewmen erect a post to attract the attention of Captain John Franklin, 1826. Franklin was searching in vain in Canada and along Alaska's Arctic coast for signs of an ice-free waterway linking the Atlantic and Pacific Oceans. Frederick W. Beechey, *Narrative of a Voyage to the Pacific and Beering's Strait . . .* (London: Henry Colburn and Richard Bentley, 1831).

area, the Kobuk and the Noatak. The land at the mouth of each river was marked with a dotted line and the word *unexplored*. These principal waterways leading to the interior would remain unknown to outsiders for years to come.[10]

During the 1830s the sea otter population between the Aleutian Islands and the California coast had been hunted nearly to extinction and the Russian American Company began again to look northward for fur trading opportunities. For the most part, the Russian traders limited their operations to Alaska's western coast and to a few major rivers where they traded with Native hunters for wolf, fox, beaver, and muskrat furs as well as walrus ivory and caribou hides. During this period company agents established the trading stations of St. Michael, Unalakleet, Russian Mission, and Nulato, which helped them to monopolize trade in Norton Sound and the lower Yukon River region. The only extensive exploration of the interior was carried out by Lt. Laurenti Zagoskin who traveled on the Yukon, Kuskokwim, and Koyukuk Rivers, though at his northernmost point on the Kateel tributary of the Koyukuk he was still 150 miles south of the Brooks Range. Meanwhile, representatives of the Hudson's Bay Company pushed west from the Mackenzie and the Porcupine Rivers in 1847 to establish a trading post called Fort Yukon at the northernmost bend of the Yukon River.

The rivers that would ultimately lead explorers into the Brooks Range—the Kobuk and Noatak—were finally identified by yet another far-ranging search for Captain John Franklin in the Arctic. In 1845, Franklin was given command of the HMS *Erebus* and the HMS *Terror* and was sent into the North Atlantic to once again seek the Northwest Passage, but when he and his crews vanished in the Canadian Arctic Archipelago, the Admiralty sent a total of eight ships to search for him. Some of these ships sailed around the world to attempt a rescue by way of the Bering Strait, and one of these was the HMS *Plover* under Commander Thomas Moore. Moore was under orders to winter the *Plover* near the Bering Strait as a depot ship for Franklin if he ever emerged from the Arctic, but after failing to find any sign of Franklin, Moore retreated to Kotzebue Sound much like Beechey did with the *Blossom* twenty-four years earlier.

Within a short time, the surgeon aboard the *Plover*, John Simpson, became restless and set out to investigate Hotham Inlet inside Kotzebue Sound in May 1850 with two fellow crewmen and a team of dogs pulling a sledge. Traveling north along the snow-covered coast of the inlet, Simpson encountered the mouth of Kobuk River where he noted a depth of eleven feet and a rate of flow of two miles per hour. After traveling south to Selawik Lake, the men encountered Eskimos ice fishing and cooking their catch in wooden bowls into which they placed heated stones. Simpson traded tobacco for fish and inquired about local villages. The fishermen told him about a large village up the Selawik River and another one on the Kobuk "seven days journey northward beyond the hills." The men, however, warned that reaching the villages was impossible because the river ice was breaking up and the snow was too soft for men or dogs.

Some days later, having returned to the mouth of the Kobuk, Simpson and his crew encountered another man and several women and children who Simpson described as "subsisting on fish, and living in the open air, the very picture of squalid misery." He again traded tobacco for fish and noted that they called the river Kowak (an early pronunciation and spelling of Kobuk) and pointed northeast to indicate its source. The Eskimo man spoke of the river as the route by which the caribou migrated and described the process of spearing them from kayaks. As proof of his honesty, he pointed to piles of antlers and bones lying on the beach at his feet.



Kotzebue Sound Eskimos in skin-covered umiaks approach the English ship HMS *Blossom* with signs they want to trade. Frederick W. Beechey, *Narrative of a Voyage to the Pacific and Beering's Strait*... (London: Henry Colburn and Richard Bentley, 1831).

Side Note #2

CULTURAL ENCOUNTERS



In the 1700s and 1800s, when the earliest explorers sailed into Alaskan waters, they encountered various Alaska Native groups. When passing through the Aleutian Islands they met Aleuts, also called the Unangan. Farther north between Bristol Bay and Norton Sound they found Yupik Eskimo people, including the Siberian Yupik of St. Lawrence Island. After passing through the Bering Strait, the sailors interacted with Inupiaq Eskimos on the Alaska side and the Chukchi of Siberia. Although the earliest exchanges were brief and the language barrier slowed communication, artists aboard Russian, English, and American vessels often drew pictures of Alaska Natives and crews brought Native art and other objects back to their home countries. The goods the explorers offered in exchange became part of indigenous trade networks that stretched throughout the Arctic.

When explorers from the United States began entering the Brooks Range, they first asked Eskimo people along the coast about the rivers serving as highways to the interior. They also came to understand that coastal Eskimos traveled inland on a seasonal basis for trade, hunting, and fishing and that inland Eskimos frequently visited the coast. Koyukon and Gwich'in Athabascans farther to the south and east usually remained in the interior and moved in and out of the mountains whenever the need arose. As Army, Navy, and Revenue Marine personnel surveyed major river systems, they hired Native guides and interpreters and relied heavily on their geographical knowledge.

The tradition of European or Western exploration emphasizes the importance of firsts, and early explorers often claimed the right of first discovery, ignoring the presence of indigenous people who had occupied the land for millennia. In Alaska's Brooks Range, early explorers like Ensign William Howard and Lt. Henry Allen understood better than most that they were entering an indigenous world. They routinely enlisted the aid of Alaska Natives, ate indigenous foods, and stayed in Native homes. In fact, without the generosity and good-will of their Native hosts, these explorers would likely have turned back or died an early death in the wilderness.



An artist aboard the HMS *Blossom*, commanded by Capt. Frederick Beechey, drew this set of portraits of Inupiaq Eskimos at Cape Thompson along the Chuckchi Sea coast, ca. 1826. Frederick W. Beechey, *Narrative of a Voyage to the Pacific and Beering's Strait* . . . (London: Henry Colburn and Richard Bentley, 1831).



Another member of the *Plover* crew who gathered geographical information about both the Kobuk and Noatak Rivers was the ship's second-in-command Rochfort Maguire. Maguire interviewed Eskimos who visited the ship in Hotham Inlet about the region's major rivers and recorded details provided by a man named Erk-sin-ra. According to Maguire, the man told him,

> the Nigala or Colville is only a mouth of the main stream taking its rise in the mountains & that another mouth called the Nuna-tu [Noatak] pursues its course to the sea in Hothams Inlet or Kotzebue Sound near the place of barter.

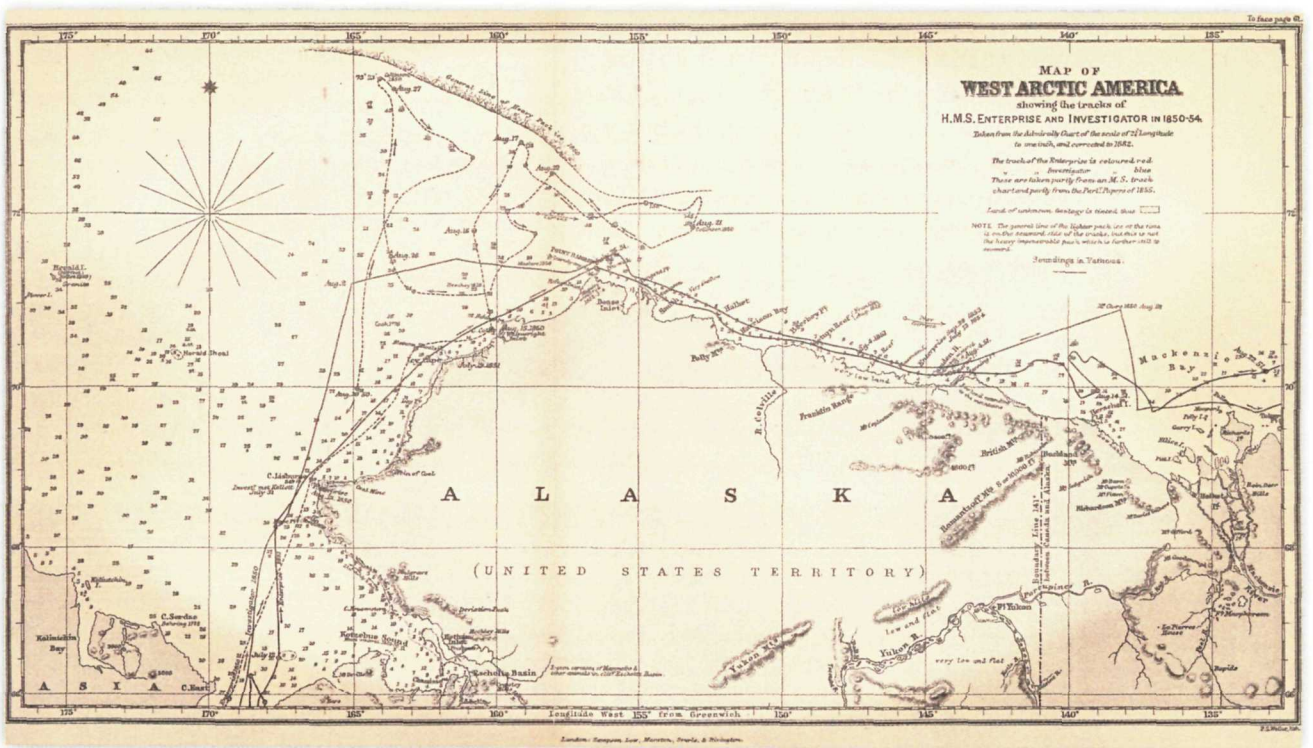
Some days later, Maguire continued pressing for information about rivers and was told about the Utukok near Icy Cape, the Kobuk, and the Kugururok River, a Noatak tributary. Although details do not exist, apparently a crewman aboard the *Plover* named Henry Martin advanced some distance up the Noatak River in February 1850 using a sledge and dogs.[11]

The search for Franklin's ill-fated ships continued for several more years and resulted in a great deal of exploration in the Canadian and Alaskan Arctic. One of these missions, led by Captain Richard Collinson of the HMS *Enterprise*, produced the first account of an attempt to climb into the eastern end of the Brooks Range near where Franklin himself had explored nearly three decades earlier. After completing a series of agonizing and dangerous sledge journeys over Arctic ice, Captain Collinson turned his attention to the inland mountains in May 1854. After struggling in deep snow near the coast, Collinson and his crew pushed through tundra and willow-choked streams before reaching an elevation of one thousand feet where they camped. Collinson's description of the next day could be considered the first example of a Brooks Range travelogue:

> The mist cleared off in the morning, and showed the range rising like a wall close at hand. Leaving the tent I set out, and crossing the valley, reached the foot of the range in an hour and a quarter . . . In another half-hour we gained a steep face, the sides rising at an angle of 35°, the soil totally disappearing, the mountain being built of sharp, but not large, fragments of sandstone . . . Up this, by aid of our hands, we climbed; but getting enveloped in a mist, we were brought to a standstill on a narrow shelf, where moss and lichens were growing and Tripe de Roche [an edible lichen] flourishing.[12]

According to their instruments they had reached an elevation of 2,250 feet before retreating to the coast because of the dense and persistent fog.

Although the crews of the *Plover* and the *Enterprise* found no sign of Franklin or his men, they did encounter a number of American whaling ships that had entered the Arctic searching for bowhead whales. In 1848 the American whaler *Superior* entered the Bering Sea and the whalers were astounded at the huge population of bowhead and other whale species in the area. This discovery sparked a maritime stampede, and by 1850 two hundred whaling ships were cruising in the western Arctic. While whaling in the Arctic could be extremely profitable, it was also very dangerous. In 1871, thirty-two of the forty-one ships whaling in the Bering Sea found themselves trapped by early sea ice. Although the crews were able to escape in small boats, all but one of the ships was crushed by ice.



Collinson's "Map of West Arctic America" showing the routes of the HMS *Enterprise* and his second ship, HMS *Investigator*, from 1850 to 1854. The map includes the eastern end of the Brooks Range at the British Mountains and Romanzof Mountains. "Alaska" and "United States Territory" were added to the map after the American purchase of Russian America in 1867. Richard Collinson, *Journal of H.M.S. Enterprise*... (London: Sampson Low, Marston, Searle, and Rivington, 1889).

Five years later, twelve whaling ships were lost near Point Barrow and fifty men died trying to escape.[13]

The immediate influence of the whaling industry on Alaska Native peoples was mainly limited to coastal areas where the arrival of whaling ships brought dramatic cultural change to the Yupik and Inupiaq Eskimos. From the beginning, trade was greatly stimulated as whalers bought furs, ivory, Native clothing, blubber, and baleen from Alaskan and Siberian Natives. In exchange the Natives received rum, tobacco, beads, knives, and other items. Eventually a lively trade in guns and alcohol led to some violent conflicts between whalers and Natives. Whale and walrus stocks were rapidly depleted, which placed pressure on Eskimo hunters trying to provide food for their villages, and Native hunters killed caribou and Dall sheep as far away as the Brooks Range to sell to hungry whaling crews. While the whaling industry transformed the lives of coastal Eskimos, its influence eventually extended to the interior by introducing new and more plentiful trade goods and by luring inland Eskimo groups to the coast in increasing numbers.[14]

Between the 1770s and the mid-1800s northern Alaska was visited by a number of foreigners with widely varying motivations. Cook, Kotzebue, and Franklin were all searching for a geographical fantasy, an ice-free passage across North America that linked Europe and Asia. The Russians were interested mainly in profiting from the trade in furs and representatives of the Hudson's Bay Company arrived for the same reason. Like the fur traders, the whalers who hunted in Alaska's northern waters were interested only in profit, and as a rule,

they became interested in Alaska's interior only when pack ice forced them from their ships. During the 1880s, when the next wave of explorers arrived to ascend the Kobuk and Noatak Rivers into the Brooks Range their goal was to save the lives of stranded whalers and to reveal to the world the mysteries of the Alaskan Arctic.

Endnotes

[1] Lydia T. Black, *Russians in Alaska, 1732-1867* (Fairbanks: University of Alaska Press, 2004), 15-37; Chris Allan, "The Diomede Islands in the Early Exploration of Alaska," Alaska Historical Society Proceedings, Kodiak,Alaska, October 5-8, 2005, p. 161-177.

[2] See Dorothy J. Ray, *The Eskimos of Bering Strait, 1650-1898* (Seattle: University of Washington Press, 1975); John R. Bockstoce, *Furs and Frontiers in the Far North: The Contest among Native and Foreign Nations for the Bering Strait Fur Trade* (New Haven: Yale University Press, 2009).

[3] James Cook, *Captain Cook's Voyages Round the World* (London: Thomas Nelson and Sons, 1897), 459.

[4] Ibid., 460-461.

[5] Richard A. Pierce, *Russian America: A Biographical Dictionary* (Kingston, ON: Limestone Press, 1990), 263-264.

[6] John Franklin, *Narrative of a Second Expedition to the Shores of the Polar Sea, in the Years 1825, 1826, and 1827* (London: John Murray, 1828), 135.

[7] Ibid., 138.

[8] Later, when Franklin learned that a barge from the *Blossom* reached Point Barrow before being driven back by pack ice, he wrote, "Could I have known, or by possibility imagined, that a party from the *Blossom* had been at a distance of only one hundred and sixty miles from me, no difficulties, dangers, or discouraging circumstances, should have prevailed on me to return [to the Mackenzie River]. Ibid., 145.

[9] Frederick W. Beechey, *Narrative of a Voyage to the Pacific and Beering's Strait . . .* (London: Henry Colburn and Richard Bentley, 1831), 358, 369.

[10] George Peard, *To the Pacific and Arctic with Beechey: The Journal of Lieutenant George Peard of H.M.S.* Blossom*, 1825-1828* (Cambridge: University Press, 1973), 46.

[11] Rochfort Maguire, *The Journal of Rochfort Maguire, 1852-1854* (London: Hakluyt Society, 1988), 306.

[12] Richard Collinson, *Journal of H.M.S.* Enterprise*, Expedition in Search of Sir John Franklin's Ships by Behring Strait, 1850-1855* (London: Sampson Low, Marston, Searle, and Rivington, 1889), 313.

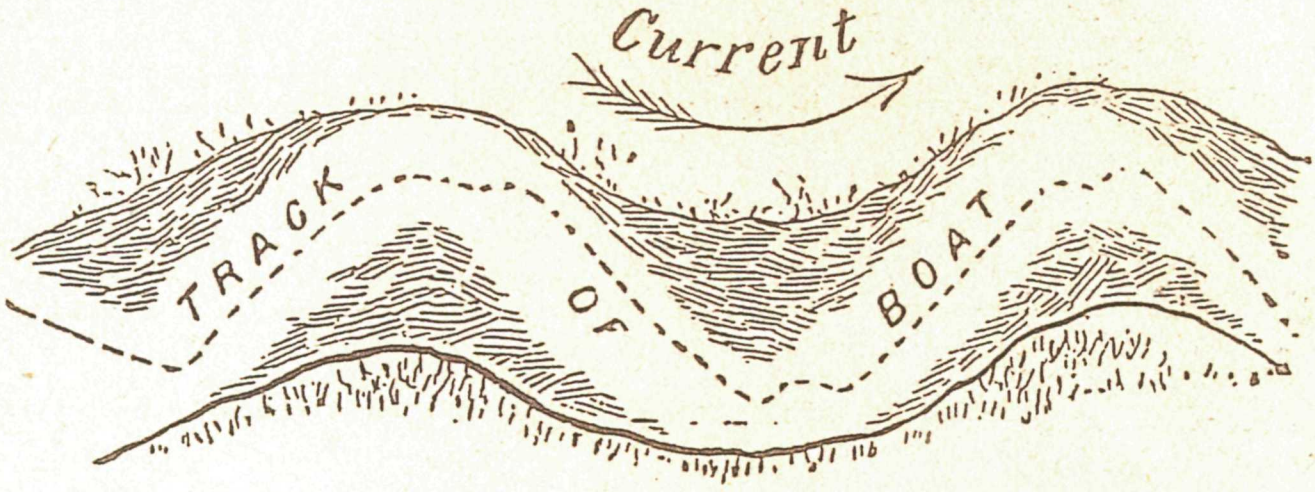
[13] Bockstoce, *Furs and Frontiers*, 260-260; John R. Bockstoce, *Whales, Ice, & Men: The History of Whaling in the Western Arctic* (Seattle: University of Washington Press, 1986), 21-26.

[14] See, Bockstoce, *Whales, Ice, & Men*, 180-204.



Motorboat cruising on the Kobuk River, September 2008.
Courtesy of Western Arctic National Parklands.

Military Exploration



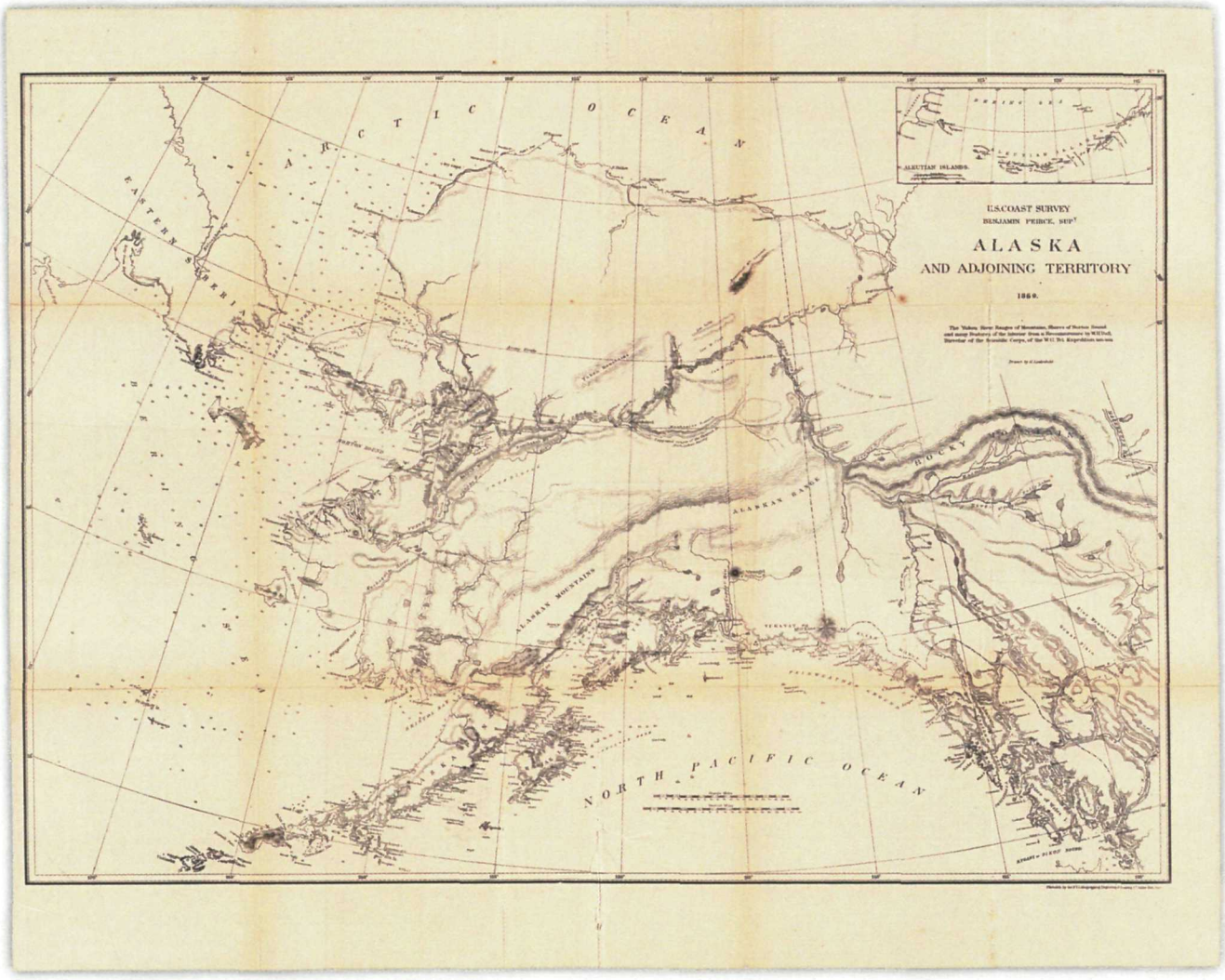
Chapter 2: Military Exploration

New American Territory

When the United States purchased Alaska from the Russian Empire in 1867 many Americans were still reeling from the devastation of the Civil War and many politicians were openly hostile to the idea of spending money to explore the distant and presumably vacant land in the North. During the 1860s, the naturalist William H. Dall became an investigator for the Western Union Telegraph Company, which was trying to establish a North America-to-Siberia telegraph link. In the process Dall became the "dean of Alaska experts," but his work kept him close to the Yukon River corridor and the map of Alaska that he created in 1869 showed the Koyukuk River running only a short distance northward. The lower sections of the Kobuk and Noatak Rivers (which he called the Kowak and Inland River) are shown, but he called them "small unexplored streams" and added, "They are prolonged far into the interior to fill up the unexplored spaces on most maps."[1] This broad ignorance of northern Alaskan geography began to dissipate in the early 1880s when ambitious officers from the Army, Navy, and Revenue Marine Service began their own exploratory efforts.

Army Brigadier General Nelson Miles led the charge to explore Alaska's interior despite opposition from both Congress and the War Department. Because Alaska was administered as a military district, the Army was at least nominally in charge of its defense, although at the time, Navy and Revenue Marine vessels had replaced Army troops as the main government authorities in the region. Even so, Miles insisted that more needed to be known about Alaska's geography and the region's indigenous population. At a time when Miles and much of the U.S. Army was occupied with fighting Indian tribes in the American West, the brigadier general wanted to assess the temperament and war-making abilities of Alaska Native peoples. In 1883 Miles began his fact-finding campaign by sending First Lieutenant Frederick Schwatka on an exploratory journey down the length of the Yukon River. The following year he sent his aide, William Abercrombie, to enter the interior from Alaska's southern coast by way of the Copper River. Although Schwatka's account of his Yukon voyage made no contributions to geographic or scientific knowledge, it was more successful than Abercrombie's lackluster effort. As soon as Abercrombie understood the challenges he faced, he abandoned the project a few miles up the Copper River.

Undeterred, Miles next sent to the Copper River a young volunteer named Lieutenant Henry Allen, who was determined to make his mark in the annals of North American exploration. Allen felt reports of Indian hostility in the interior were exaggerated, and he planned to take a lightly equipped, three-man party to the headwaters of the Copper River in a single season. Allen recruited Private Frederick Fickett from Sitka's Signal Corps station and Sergeant Cady Robertson to be his travel companions. Equipped with sleeping bags waterproofed with beeswax and linseed oil and a host of scientific instruments to map their way across the landscape, Allen and his comrades headed north in March 1885.



William H. Dall's "Alaska and Adjoining Territory" (1869) showing that most of northern Alaska remained a blank space. Rare Maps Collection, University of Alaska Fairbanks (G4370-1869-U55).

Much of the Allen expedition account lies beyond the scope of this study, but it should be noted that Allen relied heavily on Alaska Natives from the beginning of his journey. Along the Copper River, Allen employed seven Ahtna Athabascans as packers and guides, and as he advanced upriver using canoes and then sleds over a snow-covered landscape, he ran low on food and survived on handouts from Ahtna villagers. He also allowed two prospectors, Peder Johnson and John Bremner, themselves impoverished and hungry, to join his venture. At one point the whole crew built a twenty-seven-foot boat covered with moose hides, which they poled upriver with great difficulty. Injuries, hunger and disease plagued the group, though they eventually reached the Tanana River and descended to the Yukon River, a remarkable feat given that they had abandoned most of their supplies and were surviving on whatever food they could acquire along the way.

Once Allen reached the Yukon, he could have simply hitched a ride on a steamboat to St. Michael and reported to his superiors the success of his mission—a 1,000-mile exploration of the Copper and Tanana River systems. Instead, Allen decided to press on with Pvt. Fickett, exploring the Koyukuk River which extended north into Alaska's Arctic interior. After engaging some Koyukon Athabascans as guides and porters and purchasing five pack dogs, Allen and Fickett portaged overland from the Yukon near the mouth of the Tanana to the Koyukuk near the Arctic Circle. The two miners, Bremner and Johnson,



Explorers Pvt. Fred Fickett, Lt. Henry Allen, and Sgt. Cady Robinson at St. Michael, 1885. Their journey covered 1,500 miles of interior Alaska, beginning at the mouth of the Copper River and ending on the Yukon and Koyukuk Rivers. Fred W. Fickett Papers, University of Alaska Anchorage (HMC-0108-8b-1).

chose to stay behind to continue prospecting on the Yukon River for the remainder of the summer and Sgt. Robertson chose to take the steamboat *Yukon* to St. Michael where he could wait for Allen and Fickett to return.

Again deciding to press northward, Allen and his group reached the Alatna River, a Koyukuk tributary extending northwest into the heart of the Brooks Range. On Allen's maps the river is called the Allenkaket which appears to be a combination of *Allen* with the Athabascan suffix *-kaket*, meaning river or river mouth. It is not clear if this was an attempt by Allen to commemorate himself or whether it was an unintentional corruption of the local Athabascan name *Allakaket*. Farther upstream the men came to a second tributary which Allen named Fickett River for his companion but that is today known as the John River. At this point their food supplies were running dangerously low, prompting Allen to note in his journal, "We were beyond the habitations of the natives, in a country of little game, with about 8 pounds of rice and beans, 10 pounds of flour, 3 pounds of bacon, and 2 pounds of lard."[2]

Near the mouth of the "Fickett" the two men climbed a peak they called Lookout Mountain and observed the foothills of the Brooks Range to the north. Using an indigenous name for the river, Allen wrote in his journal,

> From its summit . . . we obtained a splendid view of the valley of the Ascheeshna [John River] and the mountains in which it rises. The extreme mountains whence it comes appeared to be 60 to 80 miles from us in a right-line course.[3]

Allen and Fickett then climbed down from their vantage point, ascended the river a short distance, and decided to end their push north and return home. This was the end of an amazing 1,500-mile journey that had taken Allen and his companions along three of Alaska's major river systems, over the Alaska Range, and into the foothills of the Brooks Range. General Miles gave the men a hardy congratulations and compared their accomplishments to those of Lewis and Clark's Corps of Discovery.[4]

Allen's official report was printed in 1887 and was distributed with a set of five maps. Some of those maps showed a range of "High Mts." to the north, and on the largest map in the set Allen named the range for William Endicott, the Secretary of War under President Grover Cleveland. Today the Endicott Mountains make up the central Brooks Range and are encircled by Gates of the Arctic National Park and Preserve. In addition to naming rivers and mountains, Allen and Fickett had two exchanges with Alaska Native people that illustrate the extent to which the Brooks Range was an indigenous landscape.

Along the rivers that the Allen party used to reach the Koyukuk, the military men hired new guides and were joined by a number of Koyukon Athabascans who, it seems, were simply going the same direction. "Accompanying us were three canoes, containing each a man," wrote Allen in his report. "Later a family, consisting of husband, wife, and small boy, in two canoes, joined us." The Native travelers taught the explorers a new method for advancing upriver that involved a variation on poling. The men moved along the riverbank equipped with "light sticks" in each hand to push the canoes forward. When they reached the mouth of the Alatna River, Allen began an exchange with the elderly head of the family. The man indicated that he had been over the portage linking the Koyukuk River system with the Kobuk River:

> He had, as he said, been more than once over the mountains in which

> this tributary heads, to a rather small river, Basnuna, then down it to a large river, the Holoatna [Kobuk River]. He mapped out the Allenkaket, showing it had five tributaries. He said it would require five days paddling up it before beginning the portage, which would also take five days.

Near where Allen and Fickett began their return home, they also encountered a man Allen called "a Mahlemute (Eskimo) in a patched and much-worn canoe" who was heading for the headwaters of John River and from there over the Brooks Range to the Arctic Ocean. The man first requested cartridges for an old model Winchester rifle which he had acquired from whalers, presumably from a coastal whaling station over 300 miles away. He was willing to part with a supply of dried salmon in exchange for tobacco, and he produced a hide poke filled with iron pyrite crystals, which Allen said, "he brought forth doubtless imagining he had a treasure." During his discussion with the man, Allen began to suspect that the Eskimo traveler had acted as a guide for another military-sponsored expedition from the previous year that had attempted to reach the headwaters of the Kobuk River and to portage to the Koyukuk.[5]

Allen had evidently heard about the expeditions of the Revenue Marine Service and the Navy that were taking place to the west where an inter-service rivalry had developed to reach the headwaters of the Kobuk River. The commanders in charge of the surveying efforts on the Kobuk were Michael Healy, the captain of the Revenue Marine cutter *Corwin*, and an equally energetic Navy lieutenant named George Stoney. Both men believed they could save the lives of whalers stranded on the Arctic coast if they could locate rivers that allowed for inland travel from Kotzebue Sound to the coast near Point Barrow. The key to this inland rescue plan was mapping the Kobuk and Noatak Rivers.

Rivalry on the Kobuk River, 1883-1884

Stoney's interest in the Kobuk River began in 1883 when, acting on his own initiative, he spent two weeks examining Hotham Inlet and the lower course of the Kobuk. In spite of the mosquitoes and becoming lost for days in the channels of the river's delta, he requested authority from the Navy to explore further the following year. As part of his request he pointed out that he would be "the first white man to visit it" and that he believed the river to be "an excellent highway into the heart of Arctic Alaska."[6] Meanwhile, Captain Healy decided to expand his duties in the Bering Sea from checking whaling ships for illegal trade liquor and rescuing vessels in distress to exploring Alaska's interior.

The race to explore the Kobuk began in earnest in May 1884 when Healy's man, Third Lieutenant John Cantwell, arrived at Hotham Inlet aboard the *Corwin*. Meanwhile Stoney arrived with the naval schooner *Ounalaska*, which he commanded specifically for the Kobuk River survey. In a letter to the Secretary of the Navy, Stoney wrote,

> The Revenue Cutter 'Corwin' is here, and I learn from some of them they are going to leave a party at Hotham Inlet, to explore the River I reported. I do not think they will take any honor from the Navy Department.

Stoney was not afraid of a little healthy competition and added in his letter that the presence of the Revenue Marine men would "only prompt us to make our work more thorough, if such was possible."[7]



Kobuk River explorer Lt. John Cantwell poses in beaded leather jacket, ca. 1885. Thomas W. Benham Photographs, University of Alaska Anchorage (HMC-0069-a4).

Meanwhile Cantwell assumed command of the *Corwin*'s steam launch and was the first to depart for the Kobuk River delta. The orders he carried described the broad scope of his mission:

> To ascertain the extent of the Kowak River, together with the character of the country through which it runs, the number and extent of its tributaries, the number, condition, habits, and customs of the inhabitants, and, in general, everything of interest to science and commerce relating thereto [and] make as accurate a survey of the river as is possible with the instruments furnished and the time allowed you.

Cantwell's orders regarding Alaska's Native people reflected a more cautious approach than was practiced in the American West where the Indian Wars were still underway:

> In dealing with the natives you will be careful to enforce the strictest integrity on the part of each member of your party, and should a collision take place between your people and the natives you will try and make good your retreat without bloodshed. If, however, this be impossible, act with firmness, decision, and moderation.[8]

In addition to a boat's crew, Cantwell brought along Assistant Engineer Samuel McLenegan, Quartermaster Horace Wilbur, Fireman J. Lewis who ran the steamer engine, and two Eskimo interpreter-guides from St. Michael, Andre Fernda and Natorak. Also joining the expedition at St. Michael was James Miller, a "practical miner," who wanted to prospect for gold during the trip up the Kobuk.[9]

Utilizing coal seams near the riverbank for fuel, the Revenue Marine party traveled upriver nearly twenty-five miles a day against a strong current, even while towing two large umiaks full of provisions. But on their fifth day progress slowed when they began having trouble keeping a head of steam in the launch's boiler and were compelled to stop every ten minutes to let the steam "bottle up." The wood the crew cut along the banks was not an improvement over the local coal, and they eventually resorted to the backbreaking task of towing the vessel from shore with a dragline. Along the way, they periodically paused to take astronomical observations and to talk to Eskimo families, some of whom traded dried salmon for tobacco or agreed to cut wood for the boiler.

The local Natives also showed Cantwell's party specimens of a green stone the Revenue Marine crew correctly assumed was jade, but Cantwell reported that when the foreign visitors expressed a desire to harvest their own green stone, they met with resistance from the Kobuk Eskimos:

> They say that whoever goes to that mountain and brings away any stone will be afflicted with some dreadful malady everafterwards, and that the stone belongs to the native and not to the white men.

To this prohibition, Cantwell responded with an interesting counter-argument:

> I argued that the stone did not belong to them individually but had come to them from their great-grandfathers, who were also our great-grandfathers. This direct claim to relationship did not meet with a very cordial reception, but they were not inclined to discuss it any further.



Lt. John Cantwell's men "tracking" the *Corwin*'s inefficient steam launch up the Kobuk River and past deposits of native coal, 1884. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1884* (Washington, D.C.: GPO, 1889).



A Kobuk River Eskimo fish camp where Lt. John Cantwell and his crew paused to dry the skin-coverings on their umiaks and to obtain firewood to feed the boiler of their steam launch, 1884. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1884* (Washington, D.C.: GPO, 1889).

Their boots had been worn out by hard walking, and they were compelled to cut pieces from their blankets to bind around their feet. Their clothes were torn, and their faces, haggard and blood-stained, fully attested the hardship they had undergone in the brief period since leaving the launch.

–John Cantwell

At a second village nearby, a little girl brought the visitors some fresh fish, and later the village's shaman put on a performance for the newcomers, though Cantwell was little impressed:

> After the sun had gone down behind the hills he retired to his tent, and shortly afterwards a tremendous beating of drums, singing, and howling were heard from the interior. The front of the tent was thrown back and the 'shaman' was discovered sitting between his two wives, alternately beating a tambourine-like drum and uttering short sentences as if in conversation with some unseen party. A crowd soon gathered, and the utmost attention was given to the impostor, who, I must say, acted the role of medium to perfection.[10]

As Cantwell and his party advanced up the river, Kobuk Eskimos in canoes joined the expedition and even helped Andre and Notorak with steering the skin boats and hunting for game when the group ran low on provisions. Thirteen days after setting out, Cantwell decided to abandon the increasingly useless steamer and to continue upstream in the umiaks. However, even this progress was threatened when the Native men, on whom they had begun to depend, said to Cantwell that they "would not go with me as the summer was too far gone and they must fish."[11] Cantwell tried plying them with ammunition for their rifles, but it soon became clear that they wanted something in addition:

> They then demanded half their pay in advance, which was granted, but this did not satisfy them, for they now came back and said I must make deer [caribou] very plentiful and close to their homes this winter. This remarkable request was occasioned by the fact that they thought I was a 'shaman' from seeing me work with the sextant and artificial horizon. I had no alternative but to promise plenty of deer . . . [12]

Meanwhile, McLenegan and Miller, the party's minerals expert, had returned from a three-day excursion into the mountains to collect samples of jade. As they stumbled into camp they looked exceedingly dispirited and mosquito-bitten, offering the others a warning about the perils of backcountry travel. As Cantwell explained,

> Their boots had been worn out by hard walking, and they were compelled to cut pieces from their blankets to bind around their feet. Their clothes were torn, and their faces, haggard and blood-stained, fully attested the hardship they had undergone in the brief period since leaving the launch.[13]

On the seventeenth day of his voyage, Cantwell began to realize that the local Natives traveling with him knew more than how to maneuver a skin boat through shoals and rapids—they knew the geography of the entire region. Cantwell was also impressed with the precision of their map-making skills and the fact that they knew how to travel north to within sight of the Arctic Ocean. In his journal Cantwell wrote,

> Every night I set the Indians at work making a map of that part of the river ahead of us, and it is remarkable how exact they are in details. From them I learned that during the winter all the Indians who come down to fish in the summer live near the headwaters of the river, and that after snow has fallen they make sledge journeys to the headwaters of the Koyukuk, where they trade with the Yukon Indians, and then go still farther to the northeast until they reach a range of very high mountains, where the moose and mountain sheep are found in great numbers. From two distinct sources I learned that the sea could be seen from the mountains on a clear day, but in only one direction, the view being shut out in all others by an intervening chain of mountains.[14]

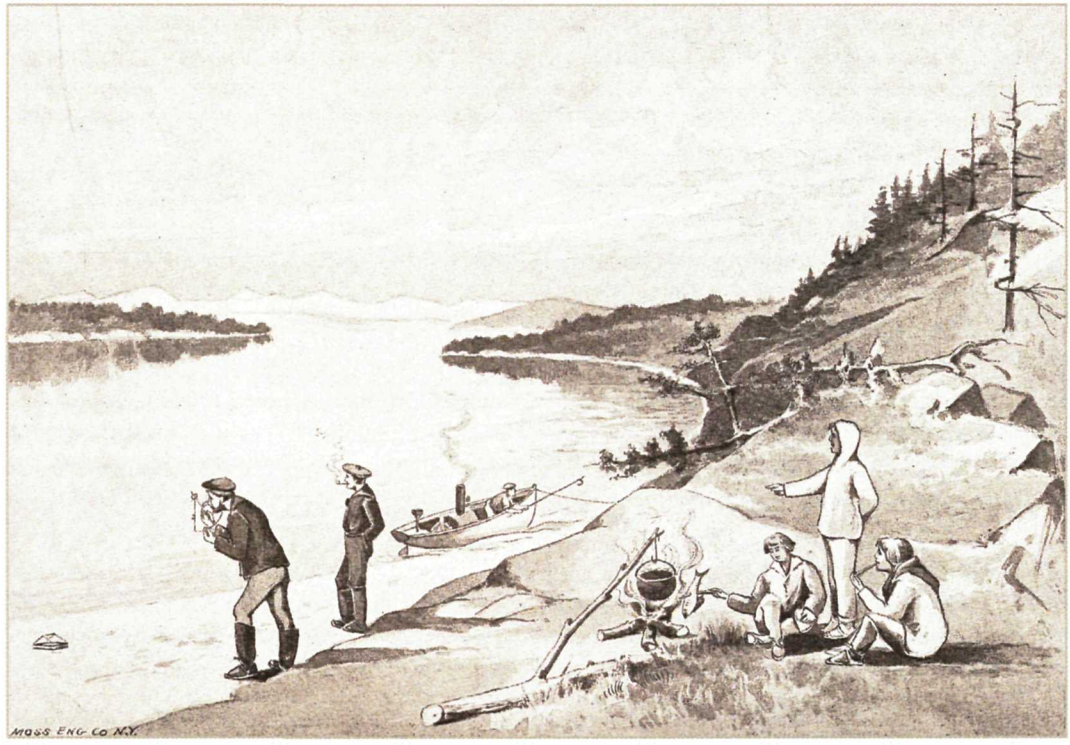
The topography the men described to Cantwell was a route through the Brooks Range, likely at Anaktuvuk Pass, which allowed access to north-flowing rivers like the Colville and the Ikpikpuk that lead to the Arctic Ocean. This route was just what Cantwell and his Navy rival were searching for, but it was also clear that for outsiders, inexperienced in Arctic travel, it would not be an easy passage.

As the Revenue Marine party struggled upriver, the seal-skin coverings on their boats became saturated and the sand and gravel carried into the vessels on the men's boots threatened to wear holes in the soft skins. To prevent being stranded without functioning boats, the men had to dry them on the beach for days at a time and apply hide patches to weak areas. These respites allowed Cantwell time to learn all he could from his Native boatmen and to write about the landscape around him:

> The country bordering the river in this locality is a level plain stretching away to the mountains, which extend to the left in a northeasterly direction as far as the eye can see, and on our right there were two ranges visible, the farther one being composed of mightier peaks than that nearer at hand, while over all the scene there hung a light filmy mist, the exhalations from the spongy tundra, softening the ruggedness of the mountains and intensifying the cool grays and blues of the far distance.[15]

...over all the scene there hung a light filmy mist, the exhalations from the spongy tundra, softening the ruggedness of the mountains and intensifying the cool grays and blues of the far distance.

–John Cantwell



Alaska Natives relax and cook a meal while Lt. John Cantwell uses a sextant to collect geographical information on the banks of the Kobuk River. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1884* (Washington, D.C.: GPO, 1889).

After twenty days on the river, they arrived at yet another village, likely in the vicinity of the present day village of Kobuk, and were welcomed by the inhabitants "with many manifestations of delight." According to Cantwell's guides, some of the inhabitants of this village had never before seen a white man, prompting Cantwell to note,

> They crowded around me, examining my clothing, etc., with the greatest curiosity. My watch was a source of never-failing interest to all, and whenever I took it out they eagerly pressed around me to see it opened, when they would express their astonishment by uttering the single world 'Kay' in a short surprised tone of voice. This ejaculation seems to answer the purpose of expressing either joy or grief, admiration or contempt, acquiescence or disapproval.[16]

Having advanced roughly 280 miles up the river, Cantwell began to realize the danger of pressing on. According to his sources, they were still twelve days away from the river's headwaters. The skin boats had begun leaking badly, and, worst of all, Cantwell would soon learn that Lewis, the man in charge of the launch's boiler, had let the water level drop and had "burnt the tubes" so that the vessel was entirely without power. Reluctantly, Cantwell decided to turn his party around and head for the ocean. Even so, he could not resist one last opportunity to visit the place they were calling Jade Mountain. Because the other Eskimos in the party refused to go for fear "the devil in the mountains would surely catch them," Cantwell asked Andre and Natorak to accompany him through the same terrain that had tormented McLenegan and Miller:

> At one moment exposed to the burning heat of the summer sun, and the next floundering, plunging, and struggling waist-deep in dark pools of stagnant water where the light of day never penetrates, we reached at last the banks of a roaring torrent which sweeps around the base of the Jade Mountain and separates it from a high rugged peak of the same range. The bed of the stream was filled with stones, and huge heaps of them had been piled up with human-like intention by the ice.[17]

Cantwell got his load of jade and, after camping overnight, the men made their way toward the expedition's riverside camp but not before facing their own insect onslaught whenever the group paused to rest. Cantwell wrote, "At such times the horrible pests would attack my face, neck and head with venomous force which no pen can describe." After several hours of travel through brush and along streambeds, the three men entered open tundra and felt a cooling breeze, prompting this response to the ordeal they had suffered: "we threw ourselves down and buried our heads in the yielding moss and grass until the wind had blown the mosquitoes away." When they finally stumbled into camp that evening, Cantwell was greeted with the unwelcome news that Lt. Stoney's Navy expedition had passed the Revenue Marine camp going upriver and had left him a note "kindly offering me any assistance he might be able to render our party."[18]

By the time Cantwell and his men reached the ocean once again and were picked up by the *Corwin* their excursion had taken fifty-four days and had covered a total of 1,105 miles, including a survey of Selawik Lake at the southern end of Hotham Inlet. However, Cantwell was not satisfied. In his report he wrote, "I regret the failure of the expedition to accomplish the prime object for which it was sent, namely, the exploration of a lake which is supposed to exist at the headwaters of the river." However, he did feel that the expedition was valuable, both because he had seen evidence of gold and silver along the Kobuk and because he believed that the river systems of the interior offered transportation links between settlements on the Yukon River and the Arctic Ocean where whalers were perennially in distress. As part of his argument for trying again the following year, he painted this grim scene:

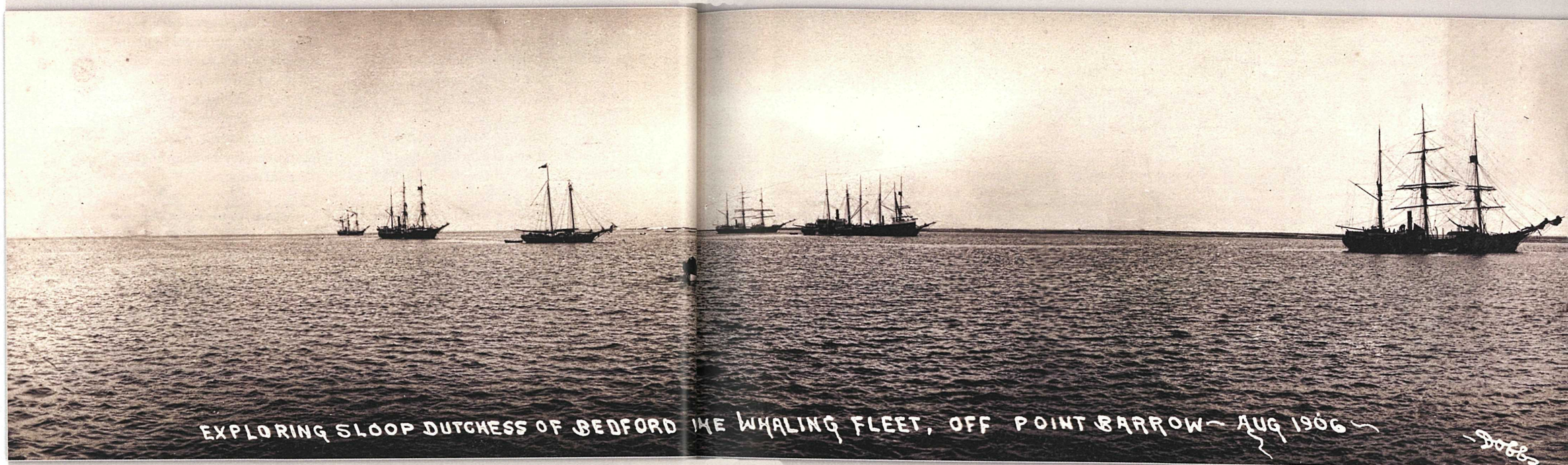
> Scarcely a year passes that does not carry with it a sad record of suffering and disaster to those whose business or duty brings them into the waters of the Arctic Ocean. . . . they look with sailors' natural dread on the dark wilderness, and, with a wild hope that they may yet escape, turn their ship's head toward the treacherous ice. A crushed and dismantled hulk, a few bleached and mangled bones or a wild disjointed story of misery and death related by the natives too often shows how bitterly hopeless was the struggle![19]

In a letter to the chief of the Revenue Marine Service, Cantwell wasted no time in expressing his desire to try again: "I think it only an act of justice to myself to inform you of my earnest desire to be allowed to make one more attempt."[20] Lt. Stoney, meanwhile, was also planning his next year's exploratory efforts.

Although Stoney's voyage up the Kobuk in 1884 was similar in many ways to that of Cantwell, there are details that are worth mentioning here. Stoney left his ship, the *Ounalaska*, on July 16 and boarded a steam cutter they called the *Helena* with three

Side Note #3

THE ARCTIC WHALING INDUSTRY



Arctic whaling ships at Point Barrow, August 1906. The sloop *Duchess of Bedford* used by the explorer and scientist Ernest de Koven Leffingwell is anchored with the fleet. Beverley B. Dobbs Collection, Atwood Resource Center, Anchorage Museum (P12-101).

The arrival in the Arctic of the whaling ship *Superior* in 1848 marked the end of the relative isolation of Eskimo people in northern Alaska. The captain of the ship, Thomas Roys, had passed through the Aleutian Islands and Bering Strait on a commercial reconnaissance, following rumors of large numbers of whales in the area. What he found astonished him. Roys quickly captured eleven whales and filled the ship's hold with 1,600 barrels of oil, sparking a flurry of excitement among the world's whalemen, whose catches had been declining elsewhere. Within four years 224 ships from whaling ports in the United States, as well as a few from Australia, Germany, Hawaii, and France cruised into the Chukchi and Beaufort Seas pursuing bowhead whales.

Energetic trade between coastal Alaskans and the whalers began immediately, augmenting the supply of trade goods locals received from Russian fur traders. Tobacco (called *towack* in the argot of the day), loaves of bread, combs, needles and thread, cooking pots, knives, and rum were popular among the Eskimos. The introduction of alcohol to northern Alaska's Native groups has often been attributed to the whalers, but as whaling historian John Bockstoce points out, alcohol distilled in Kamchatka reached the Alaska coast throughout the 1700s and early 1800s. Even so, the enormous influx of whaling ships increased the trade in spirits, which at times threatened the health and stability of entire communities.

During the 1880s, U.S. Revenue Marine Service ships cruised the Bering Sea, stopping whaling ships and confiscating liquor to curb the negative effects of the trade, but by then the whaling industry had already profoundly influenced the lives of local people. Although much of the cultural impact of whaling took place on the coast, Native people from the Brooks Range region were also drawn into its sphere when they traveled to the coast to trade, abandoned traditional weapons for firearms, and changed their seasonal migrations to take advantage of jobs with ships or at land-based whaling stations. The introduction of foreign diseases like measles, influenza, and scarlet fever, coupled with a natural cyclical decline of the Western Arctic caribou herd, also helped to disrupt Eskimo lifeways until by the 1890s much of the Brooks Range and inland Arctic Slope was depopulated.
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Three of Navy Lt. George Stoney's men "tracking" the team's umiak up the Kobuk River, 1884. The man in front wears anti-bug headgear designed by Stoney for the expedition. George M. Stoney, *Explorations in Alaska*, U.S. Naval Institute Proceedings (September-December 1899).

crewmembers, four Eskimo guides, an interpreter named Aloka, and provisions for forty days of exploration. Like Cantwell, Stoney used the cutter to tow two other vessels, a dinghy and an umiak capable of carrying six tons of cargo. And, as was the case with Cantwell's steam launch, the steam boiler that powered the *Helena* proved unreliable even after Stoney jacketed the steam pipes with sheet lead and the exposed parts of the boiler with "fire-clay and mud." Despite this effort, the men spent many hours collecting wood to stoke the enfeebled boiler. Although his Eskimo companions warned against it, the Navy men also dismantled Eskimo huts along the riverbank to use as firewood.

After ascending the river for 275 miles, the current became so strong and the water so low that Stoney decided to leave the cutter with his machinist and to set off in the skin boat. After failing in their attempts to paddle against the current, the remaining crew resorted to "tracking." Using a long seal-skin towline, half of the crew would enter the water or walk along gravel bars, looping the line around their shoulders and pulling the boat and the other members of the crew painstakingly upriver. Even while they struggled thigh-deep in the frigid water, the men in the traces were tormented by swarms of mosquitoes and often took to wearing specialized headgear with metal mesh over the face designed by Stoney for the voyage.

Although the crew formed two teams and took turns pulling, after traveling in this fashion for twelve hours a day over five days, the men were exhausted and suffered from foot injuries caused by walking in wet footwear over slippery rocks. The group had reached a tributary that Stoney called the Su-look-pow-vuck-to-ark but which today is called Selby River. Because two of his Navy crewmen were unable to travel, he left them in camp on the Kobuk and assembled a team to investigate Lake Selby, which Stoney hoped was one of the sources of the Kobuk River.

He took with him one Navy man and four Natives to carry a canoe he acquired along the way and their supplies which included four days' rations, blankets, oil-



Map of northwestern Alaska based on exploration of U.S. Navy Lt. George Stoney in 1885-86 on the Kobuk, Noatak, and Selawik Rivers. Rare Maps Collection, University of Alaska Fairbanks (M0130).

skins, a sextant and compass, a shotgun, two rifles, and ample ammunition. Each man carried a 30-pound pack and took turns carrying the canoe for a full day until they could again set sail, crossing the lake while Stoney took depth measurements. His Native assistants told him that the lake was full of very large salmon which on occasion reached six feet in length. Stoney climbed a nearby mountain and measured for latitude before deciding to begin their return trip.

One detail that Stoney offered on this occasion that is often missing from accounts of other explorers from this period is information about the methods they used to survey of the land and waterways. Here Stoney summarizes his technique:

> Single altitudes and equal altitudes or longitudes, and meridian altitudes for latitudes, [were measured] using sextant, artificial horizon and chronometer. The variation was obtained by using time azimuths with the standard compass set up on shore. The method of course and distance was used in measuring between observation points. The width of the river was ascertained by firing a rifle from the water-line when the range in yards was read from the sight bar. The drift of the current was found by heaving the log.[21]

The maps that resulted from these relatively primitive surveying techniques would

be criticized by U.S. Geological Survey topographers who traveled the same country years later, but given the challenges of backcountry surveying, it seems both Cantwell and Stoney did an admirable job. They were not, however, done. For both Cantwell and Stoney, these expeditions had been valuable shakedown cruises, and both were eager to ascend the river again the following year—this time to reach the headwaters and beyond.

Kobuk Headwaters and Beyond, 1885-1886

Like the year before, Cantwell was the first to advance up the river in 1885, this time with improvements to his steam launch that made a considerable difference. The firebox on the boiler of the launch had been enlarged and the exhaust-pipe modified to heat the water entering the boiler thereby increasing its efficiency. In addition, the Revenue Marine explorers brought a twenty-eight-foot skin boat that carried an extra supply of coal to postpone the day when they would have to cut firewood for fuel. Not only did their vessel make greater speed against the current, but their Native guides from Hotham Inlet were again on hand to help. At the Kobuk's lower rapids, the residents of a fishing camp met both boats and seized the towlines to pull them through the trickiest sections. "I recognized many old friends," wrote Cantwell, "and was in turn recognized by them, and was cordially invited to remain at the village for a while."[22]

Even after the supply of coal ran out and they had to start feeding wood into the boiler, the dial on the launch indicated a respectable eighty pounds of pressure. Even the dangerous clouds of sparks that had spewed from the exhaust funnel the previous year were on this trip extinguished by the new boiler configuration. Their rapid progress gave Cantwell and the expedition's natural history specialist, Charles Townsend, time to inspect abandoned Eskimo dwellings along the shore and to imagine what winter might be like for the area's permanent residents. As Cantwell explained, their impression was not favorable:

> We were glad to escape from the close, moldy atmosphere of the place and emerge once more into the clear, warm sunshine, and as we contemplated the beauty of the day I could not help but think how terribly dreary and desolate life must be in such a hole when the sun had gone to the far south and the iron grasp of the long Arctic night was laid upon the silent earth.[23]

When the weather began to change so did their luck. Rain showers soaked the crew, who were already wet and irritable after plunging into the current whenever the boats needed to be manhandled through rapids and over sandbars. The ubiquitous mosquitoes and biting gnats were also on hand to make the men miserable. The only relief they could find was from applying a thick varnish made of tar, gum arabic, and olive oil to all exposed parts of their bodies. "But even with this disagreeable preventative," wrote Cantwell, "our sufferings were simply indescribable."[24]

As the river became swollen with the daily rains, Cantwell and his crew began to see evidence of Native villages that had been flooded, and not infrequently they saw what Cantwell called a "teepee or summer hut" floating on the current toward the sea and looking very much like a large inverted wicker basket. When they approached a fishing village on an island in the river, Cantwell discovered several Natives he had met the previous year at a village called Um-nok-a-luk-ta

Our whole expedition would doubtless have suffered wreck here had not the natives warned us… that this whirlpool becomes exceedingly dangerous, and that large trees are drawn out of sight when caught in its vortex.

–John Cantwell

and convinced three of them to join his party. In the village a gray-haired man informed Cantwell that Natives never attempted to carry their boats higher than the navigable water. He also warned that opposite the fishing camp, dangerous whirlpools threatened to swamp the unprepared. This prompted Cantwell to write,

> Our whole expedition would doubtless have suffered wreck here had not the natives warned us . . . that this whirlpool becomes exceedingly dangerous, and that large trees are drawn out of sight when caught in its vortex.[25]

Days later the flooding continued, and along the riverbank the Cantwell party encountered two Native women with three children who were waiting for the salmon run to begin. The men of the group were away in the mountains hunting caribou, and the women and children had been subsisting for days on the young shoots of willow trees growing near the riverbanks. The explorers gave them a feast of pemmican, hardtack, and tea followed by a gift of tobacco. In return the women sewed patches onto thin places in the skin boat and repaired their boots while the Revenue Marine crew slept.

One of the greatest threats to the men navigating the river was groundings. They had long since learned to dread the moment the launch struck a gravel or sand bar and they lost all control of the vessel's movements. With distressing frequency the launch turned broadside to the current and tipped over on its keel, which often required two or three hours of fatiguing work during which the whole party would be wet from head to foot in the icy water. In the high water, they also encountered floating trees that threatened to puncture the skin boat or damage the launch, and they spent all day trying to detect these hazards beneath the surface. The danger caused Cantwell to wax eloquently,

> Sometimes it happens that a large tree with roots filled with earth . . . will ground on some gravel bed in mid-stream. In a moment the loose earth is washed away, the strong, pliant branches, borne down by the giant grasp of the river, bend and break; and when at last the tree shakes off this terrible grip and rises to the surface there remains only a whitened finger of vengeance, which points sadly at the murderer as he flees to the sea."[26]

Although the Cantwell expedition did carry photographic equipment with them on the Kobuk, the daily challenge of simply moving forward prevented them from taking many photographs. This reality makes Cantwell's prose even more important in understanding what the Revenue Marine crew saw when they entered Alaska's northern interior for the second time. Here Cantwell describes a rainy day that suddenly relents, allowing the sun to burst forth on a formerly somber landscape:

The river, which a moment before had seemed a turbid, muddy torrent, touched by the sunlight, became flame-like in its radiance, and, like a vast mirror framed with flowers, reflected the sun-kissed heights, and darkening glens with truthful impartiality.

–John Cantwell



Lt. John Cantwell's Revenue Marine exploration party and Alaska Native assistants at camp on the Kobuk River, 1885. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885* (Washington, D.C.: GPO, 1887).

On the mountains the moss lay in patches of red, brown, and gray, and below it the forests of spruce were turning from green to blue, from blue to purple, and soon would now be black. The river, which a moment before had seemed a turbid, muddy torrent, touched by the sunlight, became flame-like in its radiance, and, like a vast mirror framed with flowers, reflected the sun-kissed heights, and darkening glens with truthful impartiality. A dying dolphin assumes the colors of the rainbow; so dies a summer day in the land of the midnight sun.[27]

The higher on the river they went the more swiftly the water ran by and the harder they had to work. On July 11 Cantwell began to notice the foothills of the Endicott Mountains that Lt. Allen would glimpse and name later that same year. Cantwell described what he saw as his boat passed nearby hills partially blocking his view of the mountains at the heart of the much larger Brooks Range:

> By 2 p.m. we came in sight of an exceedingly rugged range of mountains, forming a spur of the boundary range on our left, and hidden until



Lt. Cantwell's men after a successful goose hunt, 1885. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885* (Washington, D.C.: GPO, 1887).

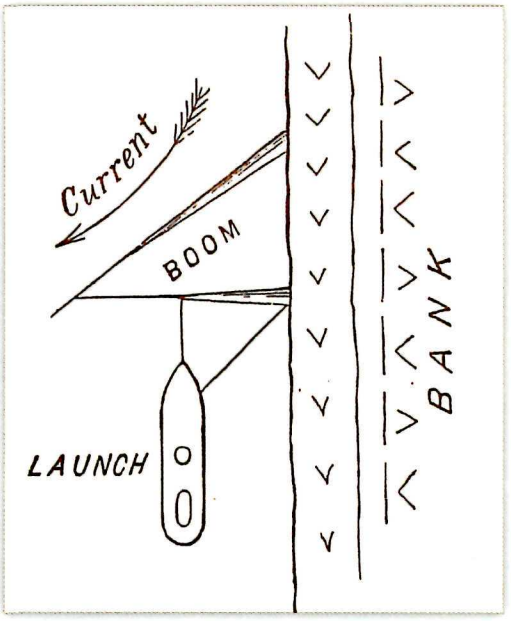
> then by the foot-hills along the river. I judged the height of these mountains to be twenty-five hundred to three thousand feet; but they seemed at first sight much higher on account of fierce precipitous formations.[28]

Near the point where Stoney had been forced to abandon his launch in 1884, Cantwell also found it necessary to board his skin boat, leaving the launch with Townsend and two crewmen as assistants to help with collecting natural history specimens.

At this point Cantwell named the skin boat *Pioneer* and loaded it with provisions to last twenty days, including two boxes of pemmican, one of tea, and thirty pounds of hardtack. Laboring for between fourteen and sixteen hours each day, Cantwell and his Native companions pushed on, past the mouth of the Pah River on the river's southern bank, to the vicinity of Selby River where they camped on a tundra knoll. There Cantwell wrote, "Fortunately the mosquitoes were not troublesome, and soon we sat around a blazing fire, smoking very comfortably and on terms of perfect equality."[29]

The next day, although the sun came out and temperature rose to eighty degrees in the shade, their toil did not cease. Because of the strength of the current, paddling the skin boat was no longer practical and towing the boat was impossible because the riverbank offered no more gravel bars on which to walk. Instead the Native members of the crew began poling, which involved considerable effort and skill. As Cantwell explained,

> The Indians stand well in the bow of the boat, and with poles eight to



A sketch showing Lt. Cantwell's use of a boom to keep his steam launch secure overnight while water levels in the river rose and fell. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885* (Washington, D.C.: GPO, 1887).

> ten feet long shove her step by step against the current. Considerable skill has to be shown in this kind of work, and often it happens that a breaking pole or careless movement of one of the party will be the means of losing all control of the boat. At such times all hands plunge overboard the moment the boat drifts to shoal water and hold her head up stream until a fresh start can be made.[30]

By this point Cantwell had entrusted a Native man named Tah-tah-rok with all navigation and commented at one point, "I never saw men work more faithfully than did these natives." As Cantwell's gratitude and admiration for his boatmen grew he wrote, "I am convinced that they accomplished more than twice as much as would have been accomplished by less experienced men in this peculiar style of navigation."[31]

The perseverance of the boatmen would soon be put to the test as the party approached their goal, the lake called Carloog-ah-look-tah or Big Fish Lake. Between the explorers and the lake was a set of rapids beyond which no Native had ever attempted to maneuver a boat, at least according to the old man at the last village. At this point, Cantwell knew that if he continued on foot he would be forced to leave nearly all of his equipment behind. Instead he and Tah-tah-rok hatched a plan to get the skin boat over the rapids by sending a team upstream to cut a raft of small logs that could be used to create a temporary wooden bridge through the fast water. Running lengthwise over the worst boulder field, the bridge would allow them to drag the heavily loaded boat upstream and past the obstacles.

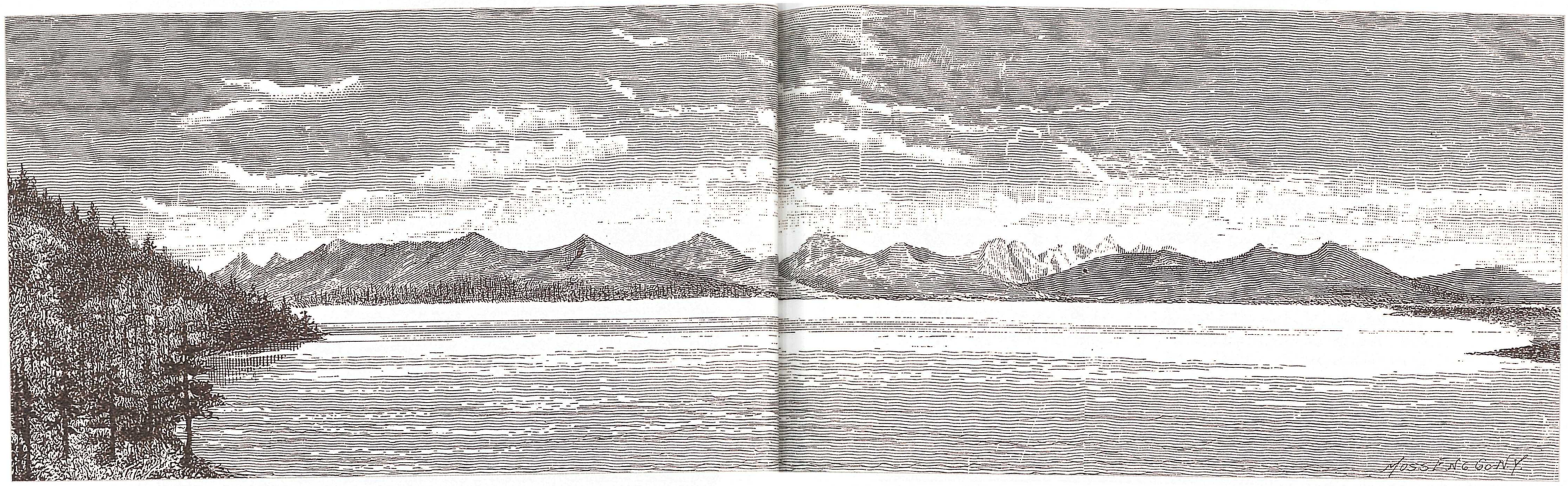
This plan was proceeding well until Cantwell heard a cry of distress over the river's roar and glimpsed Tah-tah-rok struggling frantically in the water. As the desperate man swept past the rock on which Cantwell was standing, the crew tossed one of their logs into the current and Tah-tah-rok managed to grasp it and hang on until the log jammed in between two rocks farther downstream. There the crew hauled him out of the frigid water. In his journal Cantwell noted,

> Although but a few moments in the water, the poor fellow's hands and arms were cut in a dozen places by the sharp rocks, and he was so much exhausted by his struggles that I decided to stop and make a cup of hot tea before proceeding any farther. This we did, and after bandaging up his hands the boat was hauled up and loaded again, and we proceeded on our way.[32]

This near-fatal plunge and the dropping temperature of the water as they moved north reminded Cantwell about their vulnerability



View of the rapids and boulder field on the upper Kobuk River that forced Lt. Cantwell to abandon his steam launch and proceed in a skin-covered umiak. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885* (Washington, D.C.: GPO, 1887).



The sensations of pleasure and triumph which took possession of me as I gazed upon its waters, now for the first time seen by a white man, amply repaid me for the long, tedious journey.

–John Cantwell

so far from aid of any kind. According to his account, he began singing a popular Gilbert & Sullivan tune of the day from *Pirates of Penzance*, which he modified for the circumstances. Instead of singing, "When constabulary duty's to be done, to be done/A policeman's lot is not a happy one," Cantwell began to sing with great feeling "An *explorer's* lot is not a happy one."[33]

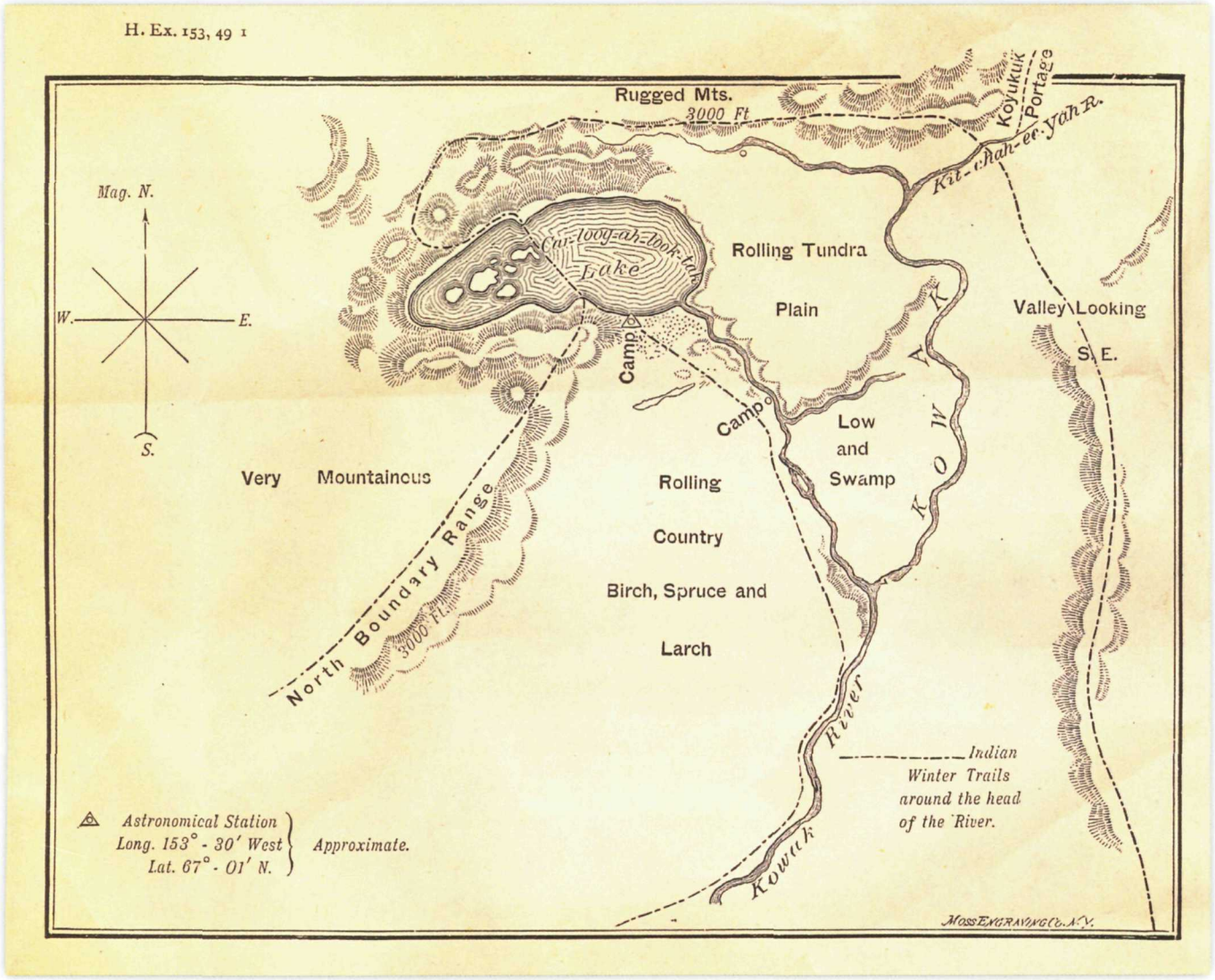
Despite the mishaps and discomforts, they were just three days away from their goal, the large lake that serves as one of the main sources of the Kobuk River. After hiking with the Native boatmen to the side of a hill offering views to the north, Cantwell saw Car-loog-ah-look-tah for the first time, which today is called Walker Lake. Cantwell described the moment in detail in his journal:

> Four or five miles away, and almost completely surrounded by mountains from twenty-five hundred to three thousand feet high, the blue sparkling waters of the long-sought lake burst upon my view. The sensations of pleasure and triumph which took possession of me as I gazed upon its waters, now for the first time seen by a white man, amply repaid me for the long, tedious journey. As the last rays of the setting sun gilded the rugged peaks and the shadows of approaching night crept silently upward, we turned back toward our boat, and the Indians set up a wild chanting 'Hung-hi-hung-ay' of joy.[34]

The next day, after reaching the lakeshore, Cantwell began his work, taking observations, photographing, and sketching for a detailed map he would later include in his report. He also hiked several peaks where he obtained a view of the entire lake and the landscape in every direction. Along cliffs that were almost perpendicular masses of granite, Cantwell carved his name and the date of their arrival. Meanwhile, his companions were attempting to test the lake's reputation as the home of immense fish. As Cantwell explained,

> Tales are told of canoes and venturesome hunters being bolted by these monsters, and one of my party baited a hook, made of the antlers of a reindeer, with a goose, and attaching our tow-line he gravely threw it far out into the deep water, and making the shore end of this novel fishing-line fast to a stout tree he sat down and waited for some unwary fish to bite.

Lake Car-loog-ah-look-tah (Big Fish Lake), which today goes by the name Walker Lake, is one of the sources of the Kobuk River. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885* (Washington, D.C.: GPO, 1887).



Sketch map of Lake Car-loog-ah-look-tah (Big Fish Lake), showing Cantwell's camp, the portage to the Koyukuk River drainage, and winter trails used by Alaska Natives. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885* (Washington, D.C.: GPO, 1887).

Despite his best effort, the fisherman was frustrated on this day when the monsters, it seems, were not biting. This caused Cantwell to again comment:

> Whether the appetites of the monsters had been dulled by a previous feast of an entire deer (or maybe a chance hunter), or whether, as I suspect, the size of the fish has been somewhat exaggerated by mendacious historians, is a question which future inquiry must settle, for, after remaining in the water all day and night, the tempting bait was hauled out and found not to have been molested.[35]

Even mentioning the lake trout they did catch and eat caused Cantwell to hesitate for fear his readers would question his honesty—they were between three and three and a half feet in length and he saw some under the water that appeared larger. "Having no other means at hand," wrote Cantwell, "we captured the fish by firing a rifle shot directly under them, and so were enabled to procure only those which approached very close to the shore."[36]

Above the lakeshore, Cantwell's companions called his attention to a dangerous-looking ridge and explained that they traveled along it during the winter when approaching the lake with plans to trade with

Koyukon Athabascans to the east. They also pointed to a break in the mountains between the Kobuk Valley and the Alatna River that is today called the Alatna Portage. Thanks to his Native friends, Cantwell had located the geographical link between the Kobuk River running east and west and the Koyukuk River system that allowed north-south travel in the heart of the Brooks Range. Using the various tributaries of the Koyukuk, a traveler could move northward to the Continental Divide and cross over to rivers leading to the Arctic Ocean.[37]

After the men spent a day exploring the vicinity of the lake, the wind picked up from the south and clouds began to gather threateningly along the tops of the mountains. Cantwell's companions advised that they return as quickly as possible to their boat before rains made the river too dangerous to run. The next day they began guiding the umiak over multiple rapids even though its skin covering was worn thin by abrasion. After stopping to fix a foot-long tear, they used an ax and brace-and-bit to install a length of spruce tree as a false keel they called "chafing gear" to protect the bottom of the boat from further damage. Once this modification was made, their downstream journey was rapid and largely effortless. This seems to have allowed Cantwell more time to describe his surroundings:

> Through narrow passages and deep pools we rushed. Now past low banks, with the darkening mountains away off across the purple tundra plains; then shut in by high rocky shores topped by clustering spruce and birch, whose tops stood out like needle-points against the star-lit sky. Now the river is once more a single stream, with an occasional island in the bends. The soft darkness fell like a veil upon the river, and when the moon rose it cast queer shadows along the banks. On, on, at break-neck speed, past densely wooded steeps and rocky bluffs, past mossy banks filled with flowers, and low plains covered by lagoons—on to the launch.[38]

Once the Revenue Marine party was reunited, they returned the Native guides to their village where Cantwell also interviewed the locals about their ten-day winter portages north beyond the Noatak River. The villagers explained that they gathered to trade and to hunt caribou near a river (presumably the Colville) that led to the sea where "there was always ice." Cantwell took notes as they described the very effective tactic of hunting caribou in water:

> Near its headwaters there was a lake, which, like the lake at the head of the Kowak [Kobuk], becomes each year the rendezvous for hunting. When a herd of deer is discovered the hunters surround it and gradually frighten the deer so that they see to escape by means of the lake. Into it they plunge, sometimes fifty at a time, and there fall easy victims to the hunters, who follow them in boats, and in order to save ammunition give the *coup de grace* with short spears.[39]

On August 11, just when they were shoving off from the shore, Cantwell's party heard the inhabitants of the village shouting and turned to see the Navy's steam-launch *Explorer*, with Lt. Stoney in command, round the bend and head toward them. Cantwell ordered his own vessel to stop and asked Stoney if he needed

The moment of our final parting had now come, and, under the circumstance, knowing nothing of the dangers before us, it was not a pleasant one. With the appearance of cheerfulness, however, we bade them farewell, and resolutely turned the canoe towards the north.

–Samuel McLenegan

any assistance. Stoney replied that he wanted to leave a bundle of mail with Cantwell who promised to deliver it to St. Michael. After spending an hour "very pleasantly" the two expedition commanders parted ways—Cantwell downstream to the ocean and Stoney upstream to the place he had selected as his winter headquarters.[40]

Two on the Noatak River, 1885

During the summer of 1885, the Revenue Marine's Captain Healy decided that in addition to Cantwell's party on the Kobuk he would send a second party up the lesser-known Noatak. For this job he selected an Assistant Engineer and Kobuk veteran named Samuel McLenegan, who left the *Corwin* to pursue his mission around the same time that Cantwell's party departed for the Kobuk. In the introduction to his report, McLenegan acknowledged that most of the Revenue Marine's efforts had focused on the Kobuk but urged his superiors to consider other possible routes into the interior:

> There was another river . . . known in the native tongue as the Noätak, discharging into the estuary about thirty miles north of the Kowak, and which seemed to have escaped notice. Although this river is figured vaguely upon the latest maps of Alaska, it was known only from native accounts, for there is no record of its ever having been visited by white men.[41]

According to McLenegan, white fur traders on the Yukon River told him they knew nothing of this northern waterway, though the Natives working at the same stations said they had traded with a tribe living on a northern river that might have been the Noatak. More concrete information was unavailable. "These facts are stated to indicate how utterly blank was that vast region even to those best informed upon the subject," wrote McLenegan, "and may convey a slight idea of the doubts and anxieties attending the work of exploration."[42]

The work of gathering information about the Noatak began as soon as the *Corwin* arrived in Kotzebue Sound, at which time Eskimo visitors to the ship were assembled in the pilot-house of the steamer and interviewed. Although many of them had traveled on the Noatak, they could offer only that the river was "very swift, shallow, and difficult to navigate." Undeterred, McLenegan loaded his supplies into a three-hatch kayak that the *Corwin* had procured at Unalaska in the Aleutian Islands. McLenegan's original plan had been to hire only Eskimo guides and not to take any of his fellow Revenue Marine servicemen. However, he could not find any Natives willing to go on this particular journey and found himself instead selecting a volunteer, a fellow sailor named Nelson. Although McLenegan had traveled the Kobuk with Cantwell the previous year, the prospect of heading into the wilderness with only one other man and no specific knowledge of his route made him nervous:

> The moment of our final parting had now come, and, under the circumstance, knowing nothing of the dangers before us, it was not a



Assistant Engineer Samuel McLenegan of the Revenue Marine cutter *Corwin* poses with shotgun and beaded coat and bag after returning from exploring the length of the Noatak River in a kayak, 1885. Thomas W. Benham Photographs, University of Alaska Anchorage (HMC-0069-a9).

The sense of utter desolation and loneliness which took possession of the mind was indeed difficult to dispel, and at times seemed almost unendurable.

–Samuel McLenegan

> pleasant one. With the appearance of cheerfulness, however, we bade them farewell, and resolutely turned the canoe towards the north.[43]

By the second day of the voyage their arms were becoming accustomed to paddling and they gained confidence as the wind filled the sail they had affixed to the skin-covered kayak. Making good time against a gentle current, McLenegan and Nelson soon entered a valley between the Mulgrave Hills and the Baird Mountains at the western end of the Brooks Range. But, the travel soon became more difficult when they faced an increasingly swift current and a channel filled with obstacles. McLenegan noted the point at which paddling would no longer suffice and the truly uncomfortable work of advancing up a northern river began:

> Thus far our tracking line had not been called in to requisition, but it was now manifestly impossible to proceed without it. The numerous bars and shoals in the river, together with the strong current, rendered our labor exceedingly arduous, and we were frequently obliged to jump overboard to avoid being swept over the shoals. After contending with these difficulties for a few hours both of us became thoroughly wet and fatigued... [44]

Soon a constant rain added to their discomfort, and on one occasion when Nelson was shouldering the harness, McLenegan lost control of the boat in a section of rapids and Nelson narrowly escaped drowning when he was dragged backwards and under the water.

After a week, the water level continued to rise and the boat's skin covering had begun to sag and to come apart at the seams. McLenegan and Nelson also began to feel battered and soggy, and the hours they spent in the frigid water threatened them with hypothermia and related discomforts:

> We had been in the water waist deep at times during the greater portion of the day, and consequently before nightfall became thoroughly chilled with cold. After going into camp for the night our chilled blood, again put in circulation, produced a most peculiar burning sensation, which caused no little pain and utterly precluded the idea of sleep.[45]

Eventually the storm that had hounded them passed and they were able to place their boat's water-soaked skin in the sun until it dried and could be oiled again. Even so, the alien quality of the landscape and the broad, featureless plateau surrounding much of the Noatak's length had begun to wear on their minds. As McLenegan explained in his journal,

> We had now gained one of the most desolate sections of country imaginable; in gazing over the portion already traveled nothing met the eye save an unbroken stretch of flats, unrelieved by forests or hills. Here and there a patch of Arctic willows, or

> perhaps a few scattered spruce trees, constituted the only variation to the scene. The sense of utter desolation and loneliness which took possession of the mind was indeed difficult to dispel, and at times seemed almost unendurable.[46]

The two men saw no evidence of wildlife or any Eskimos living in the area, not even at the hunting and fishing camp about forty-five miles from the river's mouth that would later become the village of Noatak.

As they gained elevation, McLenegan observed that the trees they passed were smaller in diameter and the river ran more swiftly. They wrestled with the canoe over rapids more often as they entered the western end of the Brooks Range. McLenegan also appeared to have forgotten the monotonous stretches of land that so preoccupied him earlier and began to revel in the novelty of the place:

> On the north bank of the Noätak . . . lay a long and rugged range of mountains; one group, occupying a somewhat isolated position, was particularly remarkable in appearance. The entire range, from base to summit, was of a light-red color and destitute of all vegetation, save a fringe of green around the base. The beautiful contrast afforded by snow-capped summits, red slopes, and green bases formed one of the most novel and interesting sights in the entire country, and offered a study well worthy an artist's brush.[47]

Before long the two explorers entered what McLenegan called the "Grand Cañons of the Noätak," a three-mile section with perpendicular walls rising on either side and a menacing current laced with submerged rocks. "The tops frequently overhung the river and seemed to threaten momentarily to topple over and crush us beneath their ponderous weight," he noted in his journal. Soon, however, they faced a more mundane threat.

Their foot-gear was disintegrating after being wet nearly every day. The two men had started with heavy boots that had become badly worn, and the seal-skin boots they bought for the voyage from Eskimo traders in Kotzebue Sound were useless because as soon as they became wet the stitches gave way and leather began to tear. As a result of trekking over rocky river bottoms their feet had become so painful they had difficulty standing. In spite of this, they pressed on.

The men had noticed the tracks of bear and caribou throughout their trip and noted that the animals created beaten paths that crisscrossed the landscape. However, McLenegan had not yet encountered an animal in the flesh. When he did it was an unforgettable experience and his description of the moment sounds as vivid as today's nature writing:

> One morning, about 10 o'clock, as we rounded a sharp turn in the river, I discovered an immense buck regarding us intently only a few feet distant, and evidently puzzled as to our intentions. Fearing that the slightest move would alarm him, we remained riveted in our positions, silently regarding the flashing eye and quivering nostril of the animal, until with a toss of his head he bounded away toward the mountains.[48]

McLenegan was electrified by the encounter and noted in his report,

> Nature indeed is very beautiful in those wild, desolate regions, and I

View from a bluff along the upper Noatak River near Lake Matcharak, July 2008.
Courtesy of Chris Ciancibelli.

Behind us the dark wall of mountains through which we had just passed towered upward until their summits were lost in the clouds, and seemed like an impassable barrier, shutting us off from the outside world.

–Samuel McLenegan

> shall never forget the thrill of pleasure experienced as I stood gazing at that wild and untamed creature, which undoubtedly saw for the first time the face of a white man."[49]

As the two men advanced eastward and upward in elevation, they entered a highland zone that offered no protection against weather fronts rolling in from the north. Their canoe had begun to leak badly and to lighten the load McLenegan chose to cache the greater portion of their flour, bacon, coffee and surplus ammunition under a "rubber blanket" which they supported on a platform of bent willow bushes. Even with a lighter kayak the men found that the river had become braided to such an extent that they had difficulty finding the main stream, and at night when they camped the treeless landscape offered no wood for heat or cooking. Again McLenegan's mental state turned dark:

> Behind us the dark wall of mountains through which we had just passed towered upward until their summits were lost in the clouds, and seemed like an impassable barrier, shutting us off from the outside world. Before us lay the level plains of the interior, stretching away in the distance, unrelieved by a single object upon which the eye could rest with any feeling of pleasure.[50]

As they dragged the kayak along the rocky banks of the river and leaned into frigid arctic winds, they began to lose hope of achieving their goal, causing McLenegan to continue his lament:

> The landscape was one of the bleakest imaginable; not a sign of life was anywhere visible, and the cold, piercing blasts which swept across the tundra caused us to realize keenly the solitude of our position and only increased our desire to see the end of the journey.[51]

Having left most of their food supply in the cache, the men were forced to ration what they had and to harvest from the land. McLenegan shot several small birds called curlews which Nelson turned into a thin soup that briefly filled their stomachs. It was clear, however, that hunger and exhaustion were taking their toll. When a sharp rock in shallow water split the canoe bottom, the two men were left sitting on the riverbank laughing and sobbing in disbelief at their predicament. Somehow, in the excitement of the moment, their footgear had been swept away by the river, and they were reduced to wearing strips of seal-skin as crude moccasins to protect their feet from the rocks. Hungry and increasingly desperate, McLenegan wrote of a rising sense of defiance in the face of disaster:

> Indeed, the difficulties encountered only seemed to awaken the stubborn elements of our natures, and with a determination not to be baffled, we prepared ourselves to meet anything short of utter annihilation.[52]

Traveling along this high, rolling country, the men passed a deserted fishing village and caches containing several Eskimo sledges and piles of skins, clothing, boots, and other items. Here McLenegan recognized that the Native people, having the same difficulty navigating the river in its higher reaches, would abandon their boats and use sledges instead to travel wherever they cared to go over tundra and snow. Around this time Nelson complained of feeling ill and came down with a high fever that left him too weak to travel for a day. As Nelson was improving, McLenegan insisted on pulling him in the kayak through what had become a continuous chain of rapids and riffles. While describing one occasion when he lost his footing and fell into the frigid water, McLenegan wrote, "After gaining the bank and finding that the cold bath had not deprived me of speech, I gave vent to my feelings in a manner which could not be mistaken."[53]

Footsore, hungry, and weakened, the two men pushed on until July 31 when the river seemed to disappear altogether and they were reduced to wading through the soggy tundra that lined the waterless streambeds. Near the end of a particularly exhausting day, McLenegan left to ascend a small hill while Nelson struggled to start a fire for coffee. Carrying only his compass, McLenegan assessed his surroundings:

> The scene which met my gaze upon gaining the height was one of utter desolation. In every direction, as far as the eye could reach, the dreary expanse of tundra, covered with small lakes and half-frozen marshes, stretched away in the distance. The Noätak, no longer the stately river which flowed into the sea, had degenerated into a mere rambling creek, the waters of which would not float even our light canoe. Not a vestige of life was to be seen. Even the hardy water-fowl, that seek the solitudes of the far north, seemed to have forsaken the region.[54]

Finally, McLenegan wrote, "Every effort had been made to accomplish the object of the expedition, and now that we had achieved all that lay in our power, I determined to retreat without delay."

Once the two men turned around, they experienced the unique pleasure of joining the current that they had struggled against for so many weeks. Recent rains had turned small brooks and creeks into rushing torrents that flooded even the surrounding countryside, and the floods reminded McLenegan that their cache, now 125 miles downriver, could easily be swept away. Such a loss would mean almost certain starvation. Although he could see that the dangers they encountered on the ascent were now doubled with a weakened kayak and a turbulent river, he was determined to try reaching the cache. His description of their descent contains one passage that would be familiar to any river-runner today:

> Rocks which before were plainly visible were now partly hidden by the flood, and every faculty was required to avert constantly impending destruction. In places of this kind the speed at which we traveled left no time for debate; an obstruction was no sooner sighted than we were upon it. Now resting on our paddles while borne swiftly along, the next moment we were straining every muscle to avoid the rocks which suddenly loomed up ahead and towards which we were dashing with locomotive speed. In places where the rocks were entirely submerged, the canoe

> seemed to be drawn toward them by some irresistible force, and before we learned to detect these places we had more than one escape from disaster.[55]

Knowing that every moment counted, McLenegan and Nelson mustered all of their remaining strength in the hope of recovering the cache, particularly after noticing that the Eskimo caches they saw earlier had already been swept away by the water. After covering a remarkable seventy miles in the first half of the day, they rested and again set sail.

The farther and faster they traveled the more they felt they might emerge victorious and alive. "The story of this eventful day is one of excitement and danger," recalled McLenegan, " . . . on and on we sped, and our novel race became intensely exciting." Once again entering the Grand Canyon of the Noatak and the western foothills of the Brooks Range, McLenegan recalled, "The wild rush of the river, mingled with the scream of the eagles and the madly dashing canoe, all contributed to the excitement of the moment."

Because the flooding had changed the shape of the river, the two men anxiously scanned the bank for sign of their cache. McLenegan described the moment he recognized the location with just hours to spare before it was swept away:

> As we were borne swiftly by I recognized the spot, and with an exclamation of joy we dropped our paddles and grasped the overhanging boughs to check the mad career of the canoe. A moment later the precious burden was lashed to the bidarka [kayak], and we determined to seek the first suitable place for camping. It was now very late, and the western skies, still lightened by the midnight sun, guided us to a resting place, where our long, adventurous journey was happily at an end.[56]

As he noted in his journal, they had figuratively and literally saved their bacon and suddenly all of their toil and worry seemed a thing of the past. They had suffered the misfortune of a particularly stormy and wet summer and snow on the surrounding mountains indicated that they were leaving just in time. McLenegan reported that the rest of the trip was "devoid of any incident of note."[57]

Stoney's Final Push, 1885-86

Unlike McLenegan and Cantwell, who limited their river ascents to a single season, Lt. Stoney's efforts in 1885 included plans to overwinter and to explore deep into the Brooks Range with dog sleds. His party included three other officers, an assistant engineer, a surgeon, and twelve other men, all of whom advanced 250 miles up the Kobuk River in late summer to the vicinity of today's village of Shungnak to begin building a winter headquarters for staging multiple expeditions. The team used a specially designed sixty-foot steamboat called *Explorer* and the steam cutter *Helena* for transportation and carried their own portable sawmill to speed the construction of their base camp. Stoney would name his camp Fort Cosmos after the Cosmos Club in Washington, D.C., an exclusive social club where most of his officers held memberships. The club was founded by John Wesley Powell, the famous explorer of the American West, for the "advancement of its members in science, literature, and art."[58]

At St. Michael, near the mouth of the Yukon River, Stoney had hired an interpreter named Aloka and two other Eskimo men who had worked for him the previous year—Ounalook, who they called Riley, and Oukutkoon who they nicknamed Bill. Stoney agreed to have the wives of these last two men



Lt. George Stoney posing in arctic costume after his successful exploratory excursions through much of the Brooks Range region, ca. 1886. George M. Stoney, *Explorations in Alaska*, U.S. Naval Institute Proceedings (September-December 1899).



Clearing begins for construction of Fort Cosmos, Lt. Stoney's winter headquarters, 1885. George M. Stoney, *Explorations in Alaska*, U.S. Naval Institute Proceedings (September-December 1899).

come along to keep their husbands happy and to sew, wash, dry fish, and assist the expedition in other ways. Each of the families had a son, whose names were Shopshuuck and Toggarack. Stoney recorded the pay that these men received as the equivalent of fifteen dollars in trade goods per month, which he noted only cost the government about four dollars. He added that in addition "the wives and children were fed and occasionally given small presents."[59] From the Alaska Commercial Company storehouse at St. Michael he also purchased winter parkas of double-layer caribou skin for each of his men, two large skin boats, and small items like steel sled runners and nuts and bolts. Before arriving at St. Michael, Stoney had also purchased one hundred pairs of skin boots and bundles of caribou hides and seal skins from Siberian Natives.[60]

By mid-July Stoney had established a depot in the Kobuk River delta to cache supplies and equipment before beginning the multi-stage process of ferrying the material upriver. By August 11 he found the ideal location for his headquarters and the men established an observation station to begin their surveying. At the same location he set up the expedition's sawmill and powered it with the *Helena*'s steam boiler once it was removed from the cutter and placed on land. After dividing themselves into teams of fishermen, firewood cutters, carpenters, and millers, the Navy men constructed a rather large and well-outfitted log barracks with grass-filled mattresses and bearskins on the floors. The building was equipped with several cast iron box-stoves for heat, a large Westwood range for cooking, and even a 104-gallon tank with a long rubber hose for use in firefighting should an ember or spark start a blaze inside the building. Meanwhile, just before freeze-up, Stoney set out one last time in the *Explorer* to purchase dried salmon and seal-oil from coastal Eskimos for feeding the expedition's 35-member dog team.

Stoney reported that by September 11 all the leaves had fallen from the trees and only a few berries remained on the bushes around Fort Cosmos. Soon a thin film of ice formed in their drinking buckets by morning and the last of the geese and ducks departed for warmer latitudes. In late September drift ice appeared in the river and the Native members of the expedition began building their winter houses. Stoney ordered his men to take the *Explorer* and *Helena* up a creek next to the camp where the vessels could be beached to protect them from damage when ice shifted in the main river channel. As soon as the snow began to fly, Stoney also commenced fire response drills and exercises to defend the camp from attack, measures intended to also keep the men fit and in good discipline. The routine in the camp included daily inspections of the men's quarters, weekly laundry days, and taps played each night at ten o'clock.

For Stoney, Fort Cosmos was a place to put into practice his best ideas about how Arctic exploration should be conducted. For example, he believed that in camp officers and enlisted men should enjoy the same liv-

ing conditions and that the men's health, both mental and physical, was of paramount importance. He insisted that the cook must not be lax in his duties and that the meals be hearty. The bill of fare in the camp offered an impressive range of local game including, over the course of the winter, 2,500 pounds of caribou meat, eighty ptarmigan, twenty-five rabbits, seventy-seven geese, seventy-six ducks and two sandhill cranes. The men also ate large numbers of sheefish and arctic char that the Native members of the expedition caught just as the river was freezing or in traps set under the river ice.

Stoney insisted on fresh meat at least twice a week during the winter and every day in the spring. At every breakfast they ate cakes with butter, and rolls or biscuits were served every night for tea. The men's favorite meal was pork and beans followed closely by Philadelphia pepper-pot soup, and their favorite dessert was "plum-duff with hard sauce," a popular Christmas cake with a topping made of sugar, butter, and brandy. At every meal the men could consume as much tea, coffee, milk, sugar, bread, molasses, and pickles as they wanted, and lime juice was distributed regularly to ward off scurvy. Monthly physical exams by the surgeon revealed that the men were not losing any noticeable weight, though Stoney noted in his account, "The rigid enforcement of these health-rules created the only murmuring during the whole trip."[61]

Stoney was also concerned about the mental health effects of close quarters inside and darkness and severely cold temperatures outside. In his account, he described the joy the men took at listening to the group's main musical instrument, a small boxy hand-cranked roller organ called a Tournaphone. Stoney also believed that hanging sheets of colored paper on the walls and providing colored globes as shades for the lights would "enliven the walls" and help his men endure the long darkness. Reading material and games were also essential in his view:

> Pictorial papers are a never-ending source of pleasure, no matter how old they may be. My men never tired of looking at them, and a few of the most striking they put up on the walls. Light, sensational novels were relished, also simple histories, stories of travel, geographies and rudimentary works of science. Games of cards, dominoes, checkers, etc., were played often by all hands, and thoroughly enjoyed.[62]

Stoney also asked his officers to teach classes on any topics of interest to the men. Mathematics was a popular subject at the beginning of winter, but interest tapered off over time. The officers also attempted to teach the interpreter Aloka how to read, but he showed so little interest that the project was eventually abandoned.

The Navy team waited until December, when the rivers were frozen and the ground was covered in snow, before launching their first exploratory effort. On the first of the month Stoney left Fort Cosmos with Ensign William Howard and four Natives to explore the headwaters of the "Notoark or Inland River" and to figure out if it was practical to attempt a sledge journey north to Point Barrow. They took three sleds, twenty dogs, and rations for twenty-five days and chose a route across the tundra and up the Nut-vuck-to-wo-ark or Ambler River. The main difficulty they faced was occasional fast-flowing water that did not freeze except for a thin ice layer that deceived the dogs and allowed the heavy sleds to break through. At certain rapids where there was no ice at all they had to ford the shallow river and pull the reluctant sled



Preparations begin at Fort Cosmos for a winter exploratory excursion, ca.1886. George M. Stoney, *Explorations in Alaska*, U.S. Naval Institute Proceedings (September-December 1899).

dogs across. At temperatures as low as fifty degrees below zero the dogs suffered from water freezing on their paws, which prompted Stoney to describe the Native methods that made any headway possible:

> To cross thin ice over running water, the natives make a bridge by laying saplings, two and three feet apart, over the crust and covering them with brush, which makes a slippery surface for the sleds. A long line is made fast to the end of the drag-rope and the other end is manned by natives on the other side of the bridge, who haul the dogs onto the bridge; once on, they quickly get over to the strong ice.[63]

Stoney claimed that he had used such temporary bridges to move a sled weighing several hundred pounds over ice so thin "that it could not bear the weight of a single dog." At points Stoney's account became a how-to manual for winter survival at high latitudes, including advice on dog breeding and selection, sleeping bag design, low-weight backcountry provisions, and this chestnut regarding the superiority of caribou skins over wool for cold-weather clothing—"Had wool been the best, the Creator would have put it on the reindeer."[64]

Stoney also praised the lean-to shelters of willow branches and ice blocks his Eskimo companions used each night and described their technique for caching food to pick up on the return trip. The process of caching involved covering a pile of provisions with layers of spruce boughs, dirt, snow, and ashes from a campfire. The ashes, Stoney explained, melted the snow, which refroze to create a solid dome of ice and dirt over the cache that would frustrate wolves and other potential thieves.[65] Upon reaching the headwaters of the Ambler River, they unloaded their sled and carried everything up a snow-covered slope to reach a mountain pass. About this difficult ascent, Stoney noted, "the white men found this very difficult, having to cut footholds in the snow; but the natives climbed the hill with ease."[66]

From the top of the divide, he described a splendid view of high mountains, deep gorges, rolling valleys, rivers, cataracts and frozen waterfalls, and within eight days the party reached the highest Native settlement on the Noatak River called Nimyuk or Cotton-wood. At the collection of four large huts, the explorers encountered thirty inhabitants subsisting almost exclusively on a large stash of caribou meat. The same day Stoney and his crew arrived, the villagers had killed thirteen caribou and in some of their caches there were as many as thirty carcasses. Stoney described being annoyed by the superstitions of the villagers:

> As it was their dancing season, no meat could be cut with an axe, so I was compelled to saw up a frozen deer—a difficult task. Neither could any meat be cooked in a house nor

This large body of natives surrounded us, the men beating tom-toms and the women singing, and for a time we felt anxious; but, their ceremonies over, they gave the hand of friendship and extended the freedom of their village.

–George Stoney

> any tea drawn; it had to be done outside and passed in through the chimney-hole. These fancies are persisted in because they think that to do otherwise would drive the deer from the mountains.[67]

He noted that in other places he was able to pay Eskimo people to ignore their fears and warnings from their shamans, but this was not the case in Nimyuk. Over the next few days the Navy party moved northward and eastward, following one of the branches of the Noatak to its source in the mountains before passing over the Continental Divide and down to the headwaters of the Colville River.

Traveling down a Colville feeder-stream, Stoney reached a village called Issheyuk made up of fifteen huts. While approaching the settlement, he was stopped by a group of young men who demanded tribute before letting the party pass. Although his Native companions appeared terrified and advised him to pay what was demanded, Stoney stood firm and said he would only consider the demand once he reached the village and spoke to the elders. There he found that the young men who demanded a toll were acting alone and did not have the support of their community. Stoney explained in his journal,

> Their failure was laughed at by the body of natives at the village, where several hundred of them were gathered from all parts of the Notoark and surrounding country to have a big dance. This large body of natives surrounded us, the men beating tom-toms and the women singing, and for a time we felt anxious; but, their ceremonies over, they gave the hand of friendship and extended the freedom of their village.[68]

Stoney and his group spent an entire day at the village inquiring if village men would be willing to guide a Navy party to Point Barrow approximately two hundred miles away across a landscape of snowy tundra and frozen lakes. Although they traveled to the coast every summer, the men turned Stoney down because they said in winter they would face starvation attempting the trip. They were not, however, entirely opposed to the idea and offered to take a Navy party along on their annual coastal migration in the spring. Stoney made arrangements with the most influential man in the village, Owpuk, to send a party with him to Point Barrow at that time.

After returning to Fort Cosmos and resting, Stoney set out on another excursion, this time to the south and west along the Selawik River which ends in the enormous Selawik Lake near Hotham Inlet. The traveling conditions though were dangerous for men and dogs alike, and the journey nearly ended in disaster as Stoney explained in his journal:

> The journey was particularly hard because of the cold weather, the thermometer ranging between -60° and -70° F.; and also because only a little wood was procurable for making fire. The dogs suffered terribly, their

Side Note #4

DAILY LIFE AMONG THE INLAND ESKIMO

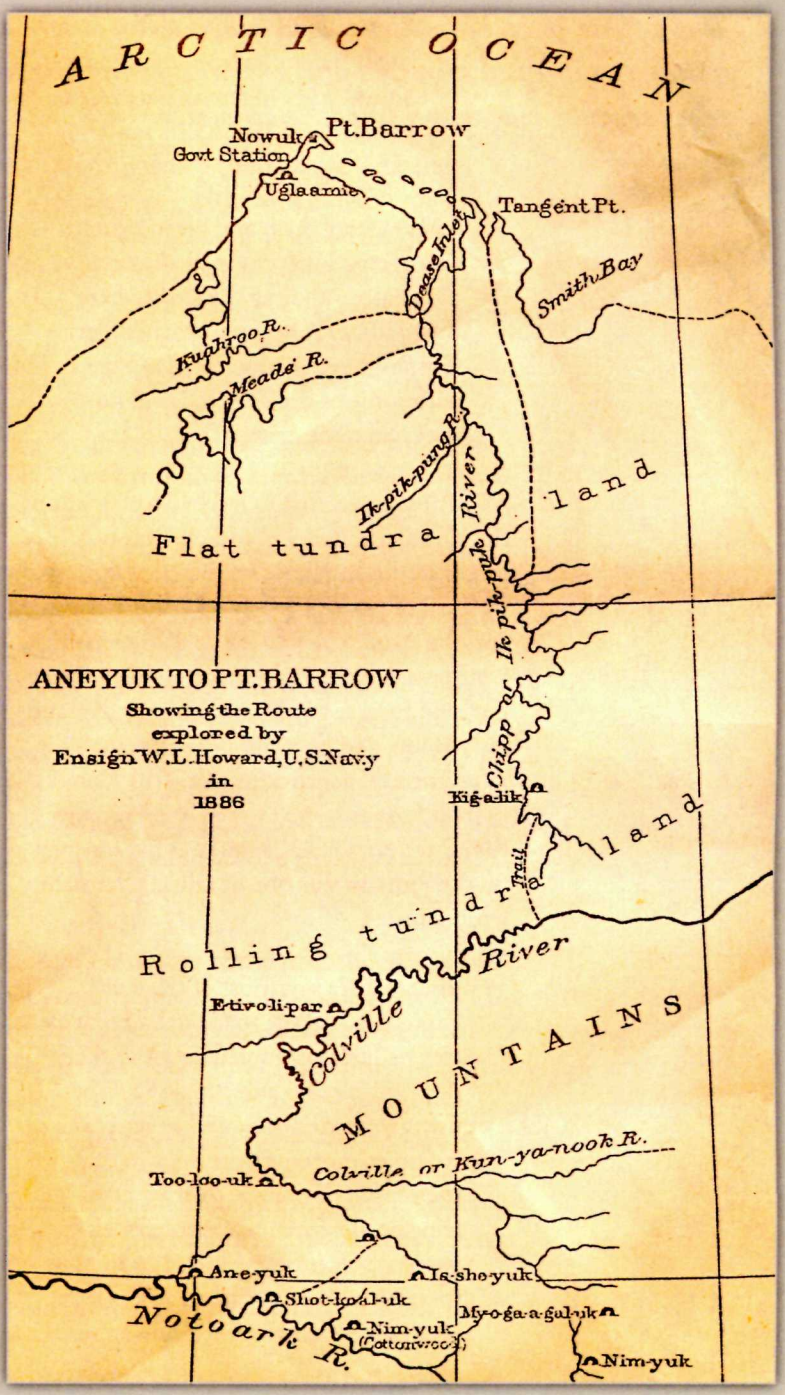


A tent frame near Point Barrow built from bent willow saplings, ca. 1900. Rev. Samuel Spriggs Photographs, Historical Collections, Alaska State Library (P320-55).

When chronicling his 1885 journey into the Brooks Range, Navy Lt. George Stoney described the lives of the inland Eskimo people known today as the Nunamiut. Although he was not a trained anthropologist, he commented on their marriage practices, burial rituals, medical technology, hunting skills, eating habits, and cosmology. While Stoney was searching for a guide willing to take some of his men to the Arctic Coast, he spent time as a guest in the village of Nimyuk or Cotton-wood and offered this rare glimpse of daily life:

At Nimyuk, at the headwaters of the Notoark [Noatak], the natives live in hemispherically shaped huts similar to those of the Putnam [Kobuk]; they have two ice windows on either side of the entrance and a meat-stand opposite. On this meat-stand at the back of the hut and opposite the entrance, several hundred pounds of deer-meat are always kept, so that a quantity will be on hand sufficiently thawed for use. As soon as I entered, some

of this partially thawed meat was handed me on a tray. Meat is never cooked but once a day, in the evening before turning in. About 5 P.M. a large fire is started and the pots full of meat are put on. These pots, the ordinary boiling pots of civilization, they get in trade; in their absence pots made of clay from the Selawik River are used. The cooking is done by the women who taste the meal from the moment it is put on the fire until it is thoroughly cooked; then the fire is dexterously thrown out through the chimney hole in the roof, by young men using long sticks as tongs. When the hut is clear of smoke, the flap that covers the chimney is hauled over for the night, and all hands go to sleep. When the hunters return from a trip they are given a hot meal. Upon entering the hut they take off most of their clothes and their wives and daughters hang them up. Then they fall to, eating pounds of the boiled deer-meat and drinking gallons of soup; a pipe is next enjoyed, and then all hands turn in for the night. All the household are fond of stripping and baking themselves before the fire, particularly the old people who go so close as to almost blister their skins; they say the heat makes them young and drives away their pains.



Ensign William Howard's route in 1886 from the Nunamiut Eskimo village of Nimyuk (at bottom) to Point Barrow on the Arctic Ocean. George M. Stoney, *Explorations in Alaska*, U.S. Naval Institute Proceedings (September/December 1899).

They appear in every conceivable way and shape; there are rugged, weather-scarred peaks, lofty minarets, cathedral spires, high towers and rounded domes; with circular knobs, flat tops, sharp edges, serrated ridges and smooth backbones.

–George Stoney

> feet cracking open and bleeding with every step. I was compelled to employ natives to drag the sleds where the roads were heavy. I reached Fort Cosmos after an absence of ten days with some of the dogs so far gone they had to be carried.[69]

The next excursion led by Stoney was to the Kobuk headwaters and over mountain passes to the Koyukuk tributaries, again with the goal of perhaps reaching Point Barrow and the Arctic Ocean. At a village near the confluence of the Kobuk and the Pah River he faced for a second time Eskimos demanding tribute, and he again refused to pay. Winter travel conditions along the Kobuk (which Stoney hoped to rename Putnam River) were also challenging. "The journey up the Putnam was one of unusual hardship," wrote Stoney,

> The weather was most of the time wretched, and the roads so bad that a way had to be tramped down so that dogs and sleds could get along. The drifts were extensive, and so deep as to sometimes cover the dogs so that they could not move. Nor was traveling on the ice much better; open water was met often, and sometimes we got in. . . . This state of affairs lasted all the way up to the headwaters.[70]

Once Stoney reached the vicinity of Walker Lake, he and his men portaged to the Alatna River and advanced upstream for a time despite the difficult traveling conditions. Stoney wrote of passing Takahula Lake and the Alatna tributaries of Pingaluk and Kutuk before spotting the magnificent Arrigetch Peaks, which he described with careful detail:

> They appear in every conceivable way and shape; there are rugged, weather-scarred peaks, lofty minarets, cathedral spires, high towers and rounded domes; with circular knobs, flat tops, sharp edges, serrated ridges and smooth backbones. These fantastic shapes form the summits of bare, perpendicular mountains.[71]

From here they moved up Kutuk River and over several passes in the heart of the Brooks Range, eventually reaching the vicinity of Nimyuk village and two other Eskimo settlements. After passing Agiak Lake and Amiloyak Lake, which straddle the Continental Divide, Stoney found a much larger lake and named it Chandler Lake for the Secretary of the Navy, William E. Chandler.

At the half-way point in his journey, Stoney began to lament the absence of wood for fuel and the fact that they were reduced to eating only frozen caribou meat. He wanted some warm food and drink, and because no wood was available at that altitude, he purchased a sledge from a local Eskimo man and began breaking it up to build a fire. The man's response was immediate:

> When the former owner of the sledge saw the labor of so many days' hard work being burnt, aroused by his superstitious fears, he became very

> much incensed. I was afraid for awhile I would have very serious trouble, which indeed, was only prevented by being very positive with the native, saying it was my sledge, and that I could do as I pleased with it.[72]

At Chandler Lake Stoney again endeavored to convince local Eskimo men to take him to Point Barrow and again he was refused because of the difficulty of traveling north during the winter. And again, he sought agreements from the Eskimos that they would take one of his men to the coast in the spring.

Before leaving the lakes, Stoney built a stone cairn for later explorers. Under the stones he placed a pepper shaker that held a letter stating who was in his party and how he had reached that point. Fearing that the cairn would be disturbed, Stoney took certain precautions:

> In order to impress the natives with the sacredness of the cairn, and that it must never be molested by any but a white man, I performed a variety of antics; and Bill, my dog-driver, told them, with much seriousness, that any one who touched the cairn would have his hand rot off, and whoever looked into it would be struck blind.[73]

On the way back to Fort Cosmos, Stoney had the advantage of traveling downhill much of the way, though at times the dog sleds went so fast that they became unmanageable and collided with the tethered dogs. As he descended the Kutuk River he encountered a group of Kobuk River Eskimos heading north into the mountains to hunt:

> This party numbered forty souls, and had fifty dogs and twelve sleds. Some of these people presented a rather singular appearance, their sleds being drawn by men, women and dogs all hitched up together. A woman with a child on her back and a single dog with three or four puppies playing beside it would drag a sled, which the man behind pushed and guided, yelling at the single dog as lustily as though his team comprised a dozen or more.[74]

In his report Stoney described a number of other excursions undertaken by him and his officers, including trips to Jade Mountain and to a nearby hot springs along the Reed River. He also described an impressive forty-six-day roundtrip that took Assistant Engineer Abraham Zane southwest to St. Michael on Norton Sound via the village of Nulato on the Yukon River. However, the most impressive journey, and the most relevant to this study, was the ninety-six-day excursion led by Ensign William Howard from Fort Cosmos north through the Brooks Range and beyond to Point Barrow.

To the Arctic Ocean, 1886

Ensign Howard, a native of Connecticut, had volunteered for service in Arctic regions and had already accompanied Stoney north to the Noatak headwaters. That earlier journey taught him the rudiments of winter travel, and Howard also possessed another quality that prepared him for a four-month trek across the most unknown section of Alaska's north: he was willing to live as the local people did and to eat an indigenous diet rather than hauling imported foods. Unlike Stoney, who rejected many Eskimo practices, Howard adapted quickly to the ways of his Eskimo hosts and they in turn incorporated him into their seasonal migration to the Arctic Coast.

Howard left Fort Cosmos on April 12, 1886 accompanied by a sailor named F.J.

Arrigetch Peaks with a small glacier at center, September 2008.
Courtesy of Carl Johnson.

Price and the Eskimo men Aloka, Riley, and Bill. The group took with them fifteen dogs and two sleds, each one weighed down by over four hundred pounds of supplies. For the first part of their journey, Assistant Engineer Zane also went along to hunt caribou near the Noatak to replenish the Fort Cosmos larder. Howard carried orders to find Owpuk, the man with whom Stoney had spoken a month earlier, and to take him up on his offer to guide them north from the village of Issheyuk at the Colville headwaters. From there Howard and Owpuk could join a larger group of Eskimos making their seasonal trek to the Arctic Ocean.

Unlike most other explorers, Howard took the time to describe in his account the trade articles that were a necessary part of any northern expedition, and his list provides an interesting snapshot of the items that most Native residents of the area valued:

> 50 lbs. leaf tobacco; 8 lbs. lead; 12 ½ lbs. shot; 17 boxes [percussion] caps; 8 knives; 10 papers needles; 12 thimbles; 12 combs; 6 bundles matches; 6 packs cards; can of beads; 3 pipes; 10 lbs. powder; 6 snow goggles; 6 files; some match-rope and snappers; and 15 lbs. dried fish for dog food.[75]

Although Howard was already familiar with the route up the Ambler River, his progress was slow because the men faced deep snow and streams covered with a layer of spring melt water. Along the way they found caches left by Stoney, and Howard described finding shelter in snow huts left behind by Eskimo hunters:

> [They were] made of blocks of snow cut from a packed snow drift and piled around a circular base to a height of a few feet, the roof formed by overlapping the higher layers. Upon becoming warm the moisture congeals upon the snow inside which keeps them dry. These huts are found all through the mountains, being made early in the season and through the winter by hunting parties.[76]

Traveling along the upper reaches of the Noatak River, Howard and his party at first found it difficult to locate Owpuk, and after searching for a time found him in a village called Tooloouk in a deep valley just off the Etivluk River. The village was made up of ten houses and seventy Eskimo residents who sent out dog teams to welcome the newcomers into town. After much discussion, Owpuk agreed to take Howard "to salt water," and in the meantime a special hut had been built for the Navy party out of poles stuck in the snow with their upper ends bowed and lashed together. Over this frame the locals placed a cover of caribou skins stitched together with sinew. After settling in and sleeping for a time, Howard sent the Eskimos in his party back to Fort Cosmos with eight dogs, one of their two sleds, and a written report on his progress.

During the week he spent in Tooloouk, Howard observed the daily lives of his hosts. He noted that the men were forever on the lookout for caribou and when they spotted some all the young men would leave in a rush. If they were successful, the women then took over the task of dressing the animals and preparing the meat, either by drying it or cooking it for evening feasts. "All the work in the village was done by the women," wrote Howard, "they sledded for and gathered the scarce wood, cooked the food and took it to the men who generally eat together sitting around in a circle." The appetites of the men seem to have impressed Howard who wrote,

> They eat ravenously until everything is gone, there being no apparent

> limit to their capacity. It is also wonderful the fatigue and exertion they can undergo without food or sleep, recuperating by eating and sleeping alternately for several days.[77]

He also noted that the men had collected large bundles of skins that they would later carry to the coast to trade for seal oil and rifles and that the coastal Eskimos depended on their inland cousins for skins to make clothing. While in the village, Howard also witnessed a "grand dance" that was a rehearsal for a dance they planned to perform upon reaching Point Barrow.

On May 1, Howard left Toloouk and joined a party of nearly fifty travelers with twelve sleds, each one pulled by four dogs. All the people traveled on snowshoes because the sleds were too heavily loaded to allow seating for passengers. Periodically they stopped to hunt and to allow the older members of the group to catch up. Traveling between ten and fifteen miles each day, the group took to the tundra when the frozen river was so sinuous that it no longer served as a convenient highway. On the tundra, the women picked the frozen berries left from the previous year in patches where the snow had melted away. As the group advanced toward the coast, storms coming from the north blew so hard at times that the dogs could not pull against the wind and the snow covered Howard's goggles until he could not see and was forced to take them off. By evening on the first day of storms he was suffering from snow blindness that lasted all night. His companions also suffered and tried traditional cures:

> The natives suffer a great deal from this source. Their only cure is the shaman who beats a tomtom and paints a circle around the eyes with a black paint made of ashes and seal oil, giving the appearance of having on glasses; as the eyes water a great deal, this pigment soon gets all over the face.[78]

Later during the journey, Howard applied to the eyes of his traveling companions an ointment from his medical kit made of Vaseline and an opium-based painkiller.

Howard noted that on May 6 a woman in the party was about to give birth along the trail, and he expressed concern that the only preparation the Eskimos made was to dig a hollow in a snow drift and line it with caribou skins. Then the caravan continued on, leaving the woman to give birth on her own. Toward evening the mother walked with her newborn infant three miles before arriving at that night's camp. Later, when the new mother was having difficulty keeping up Howard offered her a ride on his sled, but the others objected saying that she must travel on foot, make her own fire, cook her own food, and use her own special utensils. "According to their superstitions," noted Howard, "to do otherwise would result in misfortune to the child."[79]

The following day the caravan reached the village of Etivoli-par on the upper Colville River. There they found caches left by the Eskimo travelers the previous fall of caribou meat and fish still frozen solid and in perfect condition. While resting there for four days they began to see signs of spring. "The first goose of the season flew over, the natives were very jubilant and by imitating the goose's call kept it circling overhead several minutes," wrote Howard, adding, "I was not allowed to shoot it."[80] Before long the caravan split with Howard joining the party headed down the Ikpikpuk River and the others continuing down the frozen Colville.

After a short portage between the two river systems, Howard's group continued north

toward a village called Kigalik at the headwaters of the Ikpikpuk. The settlement consisted of thirty tents and 150 residents, and as the travelers approached, they were met by villagers who brought additional dogs to help their sleds along and who escorted them to the lower end of the camp which had been set aside for them. There Howard's companions also located elevated caches that held the frames of eighteen umiaks and twenty kayaks. Under the frames were bundles containing the seal-skin covers for the umiaks and caribou skins for the kayaks.

In the center of the village a large dance house was being constructed from bent poles stuck in the ground and covered with caribou skins donated by individual hunters for the occasion. During the day the men used the house as a workshop for building new boat frames, which were made from wood brought from the Brooks Range lashed with strips of baleen from bowhead whales hunted in the Arctic Ocean. During the evening the whole community gathered for a night of dancing. Women brought the drummers and dancers food and otherwise spent their time tanning skins and making clothing while the children gathered berries and wood and shot ptarmigan with bows and arrows. Meanwhile, Howard used the time to make a three-day trip south to a small promontory today known as Howard Hill. From this 500-foot perch he mapped the Ikpikpuk headwaters and looked out over the vast and treeless Arctic plain.

Howard soon noticed that the men were collecting fossil mammoth ivory that melted out of the riverbank nearby and were cutting the enormous tusks into pieces. He was given some of the ancient tusks but only under special conditions:

> Two mammoth tusks were brought me weighing about one hundred and fifty pounds each, one foot in circumference and ten feet in length. I was told of another too large to be lifted. There are many superstitions regarding their removal. I was never allowed to have mine in camp, nor even to touch it, until I arrived at Point Barrow. These tusks are found in the spring while going down the river; the water rising washes away the icy earth of the banks and shows the tusks firmly embedded.[81]

According to Howard, the Eskimos cut the ivory into two-pound chunks and either traded them on the coast or fashioned tool handles, water dippers, or fish-hooks for their own use.

In early June, when the ice began to break up and the river level began to rise, Howard gave his last sled and dogs as payment to Owpuk and spent several days helping to move the village back from the flooding riverbank. Attempts by the village's medicine men to stop the flooding caused some amusement for the villagers:

> The shamans gathered at the bank and would stick their knives at the water's edge to prevent any rising beyond it. Each failure was greeted with derisive laughter as the discomfited medicine men stepped back and pick up their submerged knives.[82]

Howard noted also that instead of dancing in the evenings, the favorite springtime amusement was tossing people high in the air on a sealskin blanket.

When the water level finally began to drop, they cached what they did not need and the boats were made ready. Because the loads extended four feet above the gunwales, each family arranged vertical poles along the sides of the vessels to keep their supplies in place. Some particularly heavy umiaks had kayaks lashed to their sides for additional stability. Howard observed that entire families coop-

erated to navigate the river, with the man steering from the stern and the children in the bow paddling with short-handled broad-bladed paddles. In the center of the craft, a woman operated a set of long, narrow-bladed oars held in place by hide oarlocks.

As the party traveled they stopped periodically to hunt caribou and to gather a root called *mashoo* that Howard said was succulent and tender; however, the bulk of their diet was seal meat and oil that had been cached since the previous fall. They also caught burbot and a freshwater white fish called *inconnu*. The dogs were fed on bones and pieces of caribou hide that had been soaked in seal oil. With the snow melting, sleds could no longer be used to transport caribou meat back to camp, so the hunters began to fit their sled dogs with packs instead. Howard described this arrangement,

> The snow was all gone so the deer had to be brought in on dogs saddles with sealskin bags or blankets placed over the back and tied around the neck and under the belly. These contained pockets on both sides in which the dressed deer meat was put. Two dogs can carry a deer.[83]

By mid-June Howard noticed a large number of women and children had what he described as a severe cold. He gave them medicine from his kit which appeared to help, but eventually his group was reduced to traveling with only one umiak because so many members of the group had been left behind. It is not clear which disease had infected the Eskimos or if Howard himself introduced it, but illnesses like measles, diphtheria, and influenza became widespread among Alaska Natives in the 1880s.

Eventually the Ikpikpuk River branched, and Howard's diminished party took the western channel, which flowed into Dease Inlet just fifty miles east of Point Barrow. Along the way they began to encounter large lakes created by the river as it spilled over the tundra, and before long they reached salt water where they spotted two tents erected by Point Barrow Eskimos. Howard was not impressed by their grease-covered clothes, but they were welcoming, he noted their generosity:

> As soon as we landed they brought us whale and walrus blubber to eat which even the dogs refused, though the natives ate it with apparent relish. . . . On hearing that I was out of flour they gave me a fifty-pound sack, which they [had] packed several miles across the tundra.

After conversing for a time with his hosts, Howard observed that coastal Eskimos routinely traveled long distances for trade sometimes staying away from home for long periods of time. "These people were on their way to the Colville and Mackenzie rivers," wrote Howard. "They were making their way along the Arctic coast with dogs, sleds and boats, carrying the boats on sleds over the ice until they meet water. The trip from Point Barrow to Mackenzie river and return occupies two years."[84] He noted also that travelers from Canada, whom he called Hudson Bay natives, had joined the group and that their women had several parallel stripes tattooed across their cheeks and top-knot hair styles similar to the Inuit of Greenland.[85]

While his party remained for over two weeks waiting for the Arctic pack ice to retreat from the shore, Howard fretted about reaching Point Barrow in time to catch a ride south. However, he could not convince any of his party to move before the ice conditions were better. While they were waiting, a group of Eskimos from Point Barrow arrived to trade and



Fair weather on the Kobuk River for Lt. John Cantwell's Revenue Marine exploration party, 1885. Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885* (Washington, D.C.: GPO, 1887).

Howard witnessed first-hand one of the effects of the whaling industry on Alaska Natives:

> In the evening they got drunk on liquor they brought with them, and insisted upon coming into my tent, making all sorts of threats one moment and the next attempting to embrace us. The sober men of the party had taken their knives from them, and I was cautioned to keep my firearms out of sight. They stole everything they could put their hands on, the women returning them as fast as taken. The orgy lasted all night . . .[86]

Once the effects of the alcohol wore off, the inland Eskimos and the Point Barrow men conducted a lively trade in skins from the interior for rifles, cartridges, caps, lead and tobacco, which the Barrow men had in abundance.

On July 12 Howard was greatly relieved when he and his companions finally launched their fleet of umiaks and pushed through fog and treacherous ice to reach Point Barrow.

There he was taken in by employees of the Pacific Steam Whaling Company, who fed the emaciated traveler. Howard recorded in his diary that during his arduous ninety-six day journey his body weight dropped from 160 to 86 pounds. Because ice continued to lock up the coast, Howard was forced to wait until August 13 to catch a ride with the *Corwin*'s replacement, the Revenue Marine cutter *Bear*, which carried him to Hotham Inlet where Lt. Stoney and the other members of the newly christened Northern Alaska Exploring Expedition were also waiting to be picked up. Even compared to the accomplishments of the rest of Stoney's expedition, Howard's trek to the Arctic coast was impressive. Not only was he the first outsider to cross both the Brooks Range and the Arctic Slope, but he obtained an intimate glimpse of the lives of Eskimo peoples from the Kobuk Valley to the Noatak and from the Ikpikpuk region to Point Barrow.

Until the mid-1880s the United States government knew very little about the vast territory it had acquired from Russia and the situation would have remained thus if not for a handful of ambitious military officers. While Congress was resisting the expenditure of funds for exploration in Alaska, members of the Army, Navy, and the Revenue Marine Service pushed on, managing to send men deep into Alaska's interior to explore major river systems. Because of commanders like Brigadier General Miles, Captain Healy, Lieutenant Stoney and enthusiastic volunteer explorers like Cantwell, McLenegan, and Howard the wider world finally glimpsed this remote part of Alaska for the first time. However, their exploits appeared in the newspapers only briefly and the government was slow to publish the results of the Revenue Marine's efforts. Also, for reasons unknown, the Navy's only copy of the accounts by Stoney and Howard went missing altogether and had to be reconstructed by Stoney many years later. As a result, Arctic Alaska would remain relatively unknown to the American public for another decade when the discovery of gold would catch and hold the world's attention and spark another round of exploration in the Brooks Range and across northern Alaska.

Endnotes

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[9] "A Narrative Account of the Exploration of the Kowak River, Alaska" in Michael A. Healy, *Report of the Cruise of the Revenue Marine Steamer* Corwin *in the Arctic Ocean in the Year 1884* (Washington, D.C.: GPO, 1889), 59.

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[11] Ibid., 59.

[12] Ibid.

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[14] Ibid., 61.

[15] Ibid.

[16] Ibid.

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[18] Ibid., 64.

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[25] Ibid., 28.

[26] Ibid., 28, 29.

[27] Ibid., 30.

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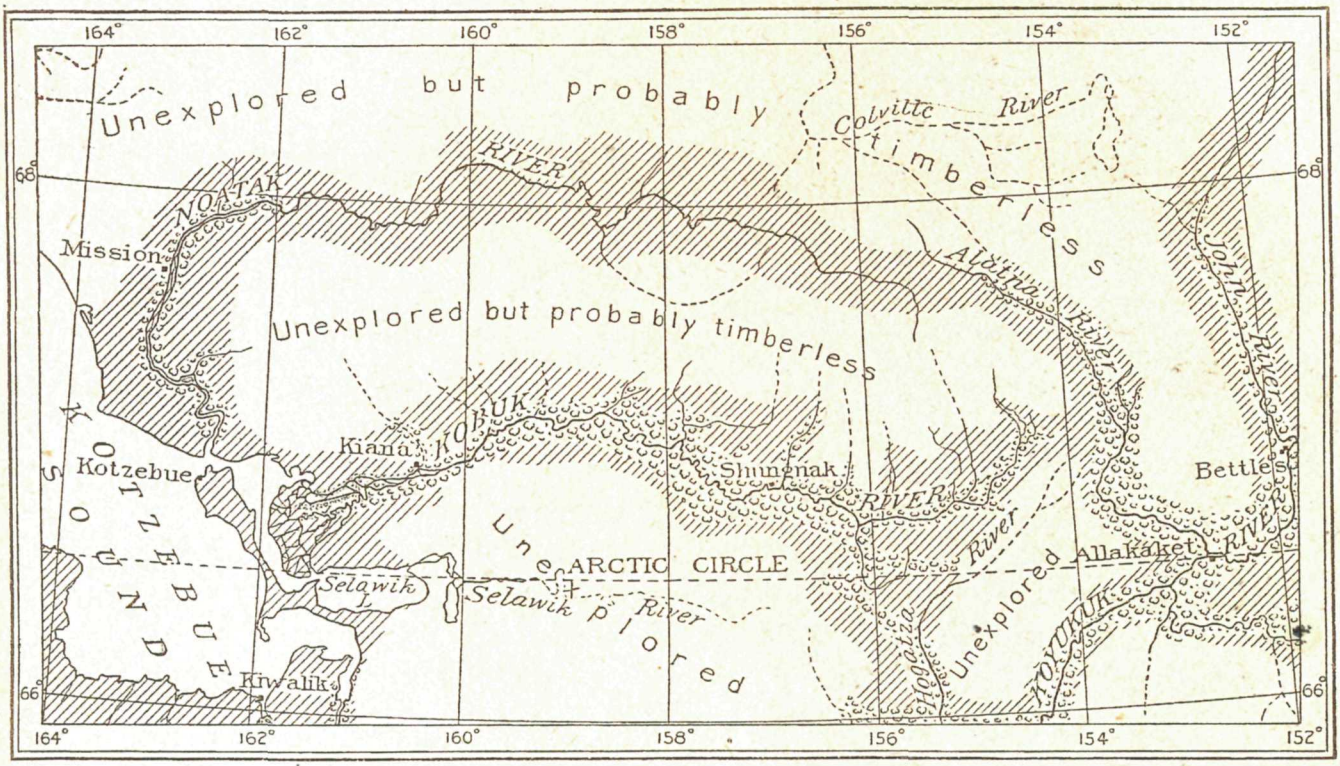
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The Search for Gold and Oil



Chapter 3: The Search for Gold and Oil

The Rise of the U.S. Geological Survey

During the 1880s, American military explorers set out to learn whatever they could about a vast terra incognita. Their orders were to investigate broadly Alaska's Native peoples, animals, plants, and river systems and to collect basic scientific data rather than focusing on any particular form of economic or industrial potential. That approach to exploration in the region changed as prospectors began discovering gold deposits along the Yukon River and thousands rushed to the Canadian Klondike and emerging gold fields across Alaska. In response, government geologists and topographers with the U.S. Geological Survey were sent to assess mineral potential and to provide gold miners with information to support the nascent gold mining industry. And, when excitement subsided about northern gold, discoveries of northern oil brought those same "technical men" to the Brooks Range region to launch a wide-spread and ambitious exploration of northern Alaska.

Some of the earliest prospectors in Alaska had arrived as hitchhikers with exploratory parties. For example, James Miller had joined Lt. Stoney's expedition, and John Bremner and Peder Johnson traveled with Lt. Allen to the Yukon River and later entered the Koyukuk River drainage in their pursuit of gold. Other pioneering prospectors crossed Chilkoot Pass and entered the Yukon River headwaters in the 1870s and 1880s. After strikes on the Fortymile River in 1886 and at Birch Creek near Circle in 1892, an ever-increasing number of prospectors made their way north. By 1895, the value of placer gold extracted by Yukon River miners reached $800,000, and by the following year the mining population along the river had reached one thousand. The stage was set for a much larger strike.

In 1896 a miner named George Carmack was prospecting with two Athabascan men—Skookum Jim and Tagish Charlie—when he found very rich indications of gold on the Klondike River. This discovery sparked a stampede the likes of which the world had not seen since the California gold rush of 1848. By the following year the boomtown of Dawson City had a population of four thousand and gold mining claims had been staked on all the tributaries for miles around. Meanwhile, thousands of people were making their way north by various routes, including Chilkoot Pass and White Pass in southeast Alaska and the all-water route by way of the Bering Sea and the Yukon River. However, before many of the gold-hungry hordes could reach the gold fields they learned from fellow stampeders that the Klondike was "all filled up"—all the paying claims had been staked—which caused the stampeders to either return home or look for promising ground in Alaska. Alaska was also an attractive option because Canadian officials taxed all Klondike gold at ten percent. Latecomers and disgruntled Klondike miners founded towns like Eagle City, just over the U.S.-Canadian border, while others looked further afield, including along the Koyukuk, Kobuk, and Noatak Rivers which entered the Brooks Range.

According to the trader and newspaperman Gordon Bettles, sixty-eight steamboats ventured into the North, South, and Middle



U.S. Geological Survey geologists assigned to Alaska: (left to right) Frank C. Schrader, J. Edward Spurr, and Harold B. Goodrich in field costume, 1896. USGS Photographic Library, Portraits Collection (3321).



Prospectors camped near the Koyukuk River, ca. 1899. Eric Hegg Photograph Collection, University of Washington (1136).

Forks of the Koyukuk River in 1898, bringing at least 900 men and a few women to face a cold and lonely winter in the Brooks Range foothills. That first winter over half of the stampeders changed their minds and headed for home, taking emergency rations and dog sleds to the Yukon River. The town of Coldfoot, incidentally, began as a tent city before most of its residents got "cold feet" and abandoned their dreams for the security of civilized life. The ones who remained lived in mining camps in the wilderness with names like Arctic City, Bergman, Beaver City, Rapid City, Peavy, Union City, Seaforth, Soo City, and Jimtown. They built log cabins and erected tents for the next cold winter of digging in the frozen ground and trying to avoid the principal threats to a gold miner's existence: scurvy and death by injury, drowning, or cold.[1]

A similar rush brought prospectors to the Kobuk and the Noatak Rivers, though they found little gold and dispersed even sooner than the stampeders on the Koyukuk. One eyewitness, Eugene McElwaine, reported that about 1,200 people took part in the Kobuk stampede after being tricked into buying passage by unscrupulous steamship operators who wanted more business. Of the people who reached Kotzebue Sound, about 800 spent the winter of 1898-1899 on the Kobuk and few indications of gold were found. In the spring most prospectors departed. The majority left Alaska, but a few went upriver and crossed to the Koyukuk drainage or crossed the Seward Peninsula to participate in the next big gold strike at Nome.[2]



Residents of "Arctic City," a mining camp on the Koyukuk River, emerge to greet a steamboat, August 21, 1898. Jasper N. Wyman Collection, Anchorage Museum (B1989.024.075).



Prospectors hauling their outfit up the Alatna River into the Brooks Range foothills, October 11, 1898. Jasper N. Wyman Collection, Anchorage Museum (B1989.024.081).

Prospectors panning for "colors" (signs of placer gold) on Myrtle Creek near the Middle Fork of the Koyukuk River, 1899. USGS Photographic Library, F.C. Schrader (402).

Although gold-seekers found their way up hundreds of Alaskan rivers and minor tributaries, their contribution to geographical knowledge of the region was negligible. As a rule prospectors had only two goals: to find gold and to pass safely through the country. For the most part they took no notes or compass bearings and created only a handful of rough maps. According to exploration historian Morgan Sherwood, prospectors were also reluctant to share what little geographic knowledge they possessed if it meant competition for gold. As Sherwood explains,

> Frequently, the prospector had no idea how to use a map, although this did not always prevent him from loud condemnation of existing charts. In a word, if the prospector did make an original exploration, and if he could or would communicate his information, the results were of little practical use to geographers and of almost no use to science.[3]

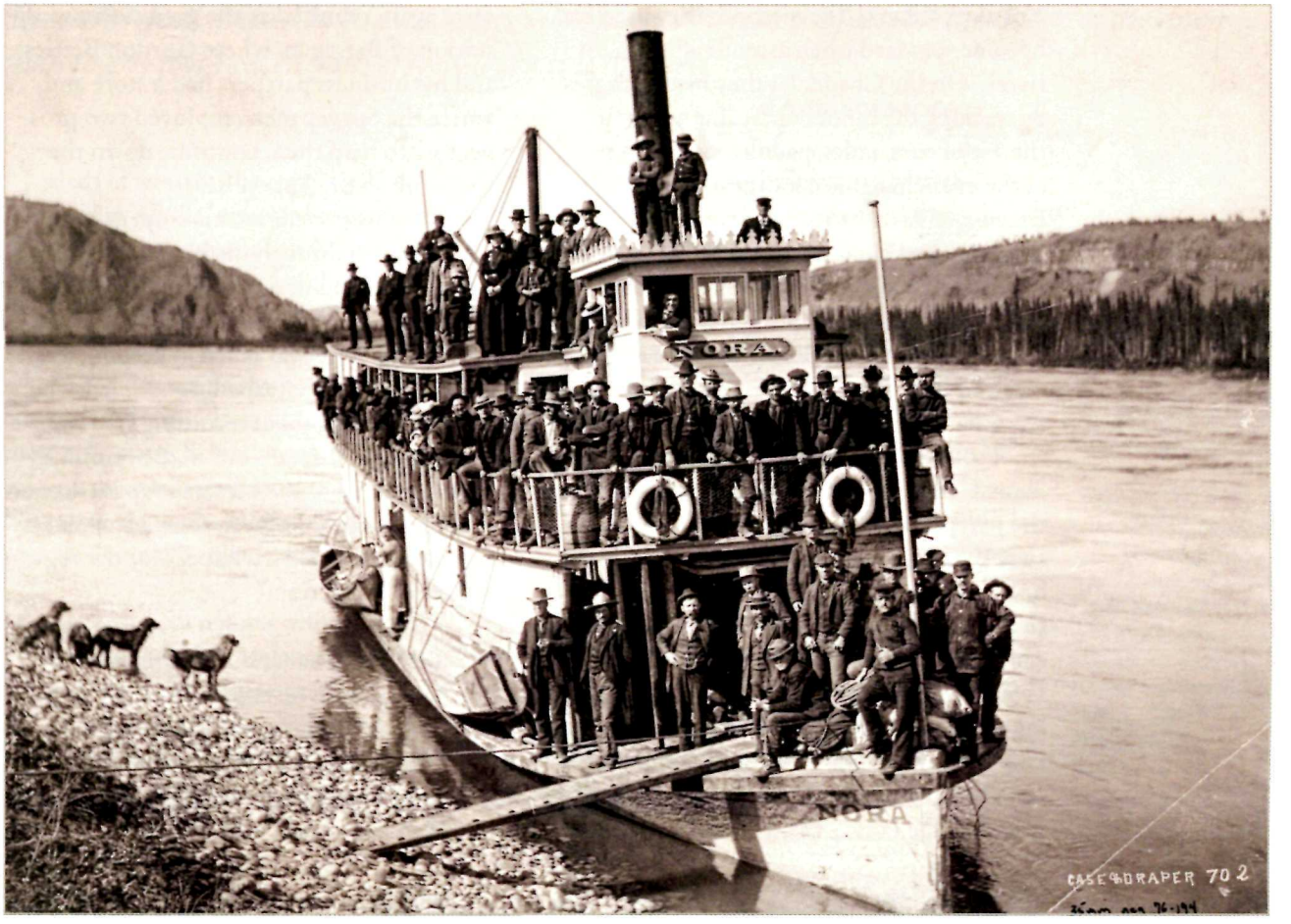
The government's response to the cry for better maps and to the need for a better geological understanding of Alaska's mineralized areas was to send employees of the U.S. Geological Survey.

Before the Klondike gold rush and its overflow into American territory, the Geological Survey had shown only mild interest in Alaska, focusing instead on areas in the contiguous United States where valuable minerals were more accessible. Lack of Congressional funding further retarded the agency's ability to begin work in Alaska. Small appropriations in 1895 and 1896 allowed a brief mineral exploration of the Alaskan interior and a search for coal along Alaska's southern coast, but once the world learned of Alaska's enormous gold mining potential, the government was quick to send Survey men with orders to produce "useful information" in "untechnical language."[4] By all accounts, the government scientists got on well with the prospectors and miners because they shared a common goal—finding precious minerals—and because the surveyors demonstrated that they could travel through the most difficult terrain with dog teams, pack horses, and canoes.

Schrader and Gerdine, 1899

In the first year, Geological Survey employees fanned out across Alaska, focusing on Alaska's southern half and areas already known to show high mineral potential like the Fortymile River basin. The first Survey men to venture farther north were geologist Frank Schrader, topographer Thomas Gerdine, and their four assistants. The group was tasked with making a geologic and topographic reconnaissance of the Koyukuk River region, but before they could begin their work, the six-man team faced the daunting prospect of simply reaching Alaska's interior. The challenges the survey team faced in reaching the Brooks Range region also provide some indication of how difficult it was for the stampeders the previous two years who crossed the Chilkoot Trail, built their own boats, found no lodging along the way, and packed their entire outfits on their back or on the back of an unfortunate horse. This route was commonly known as the "poor man's route," in contrast to the more expensive all-water route through the Bering Sea and up the Yukon River.

Schrader and Gerdine began in San Francisco on a ship that delivered them and their equipment—including three cedar Peterborough canoes—to Skagway on the last day of June 1899.[5] The survey crew had also been supplied with a new kind of travel



The steamboat *Nora*, crowded with gold-hungry passengers, pauses on the Yukon River near Eagle City, 1899. J. Bernard Moore Family Papers, University of Alaska Fairbanks (1976-35-30).

rations—evaporated vegetables and dried bananas from Puerto Rico.[6] From Skagway they were delayed by snow-slides in the mountains before they proceeded by rail to White Pass, horse sled to Summit Lake, and wagons to Lake Bennett. After waiting for the water level in the lake to rise, they boarded a steamboat for the trip down the Yukon River and into Alaska. However, owing to shallow water and repeated groundings, transfers to two other steamboats were necessary as well as a portage by horse tramway near the present-day city of Whitehorse. Every vessel on the river was full of gold-seekers on their way to the next big strike in Nome, and once the Survey team reached Dawson City, they transferred their whole outfit to an even more crowded "downriver boat." This new vessel prompted Schrader to note in his report, "a short night's lodging in one's own blanket on the hurricane deck, on the floor of the cabin, or in the wood pile of the engine room was considered a luxury."[7]

When at long last the steamboat reached Fort Yukon, their work could begin. After verifying the astronomic location of the town, which had been established three decades earlier by Army surveyor Charles Raymond, the six-man team proceeded downstream a short distance to the Chandalar River, which they ascended 200 miles before facing a fifteen-mile portage to reach

Koyukuk waters. The methods they used had become standard when ascending northern rivers. On the Chandalar they made progress by tracking the canoes up by line and with the use of oars, poles, paddles, or wading as the ever-changing conditions required. Because of swift current and frequently impassable conditions for tracking, the men worked hard to travel four or five miles in a day. During their difficult portage from the Chandalar to the Koyukuk drainage they received help from "a white prospector and a few Chandlar [sic] River natives."[8]

From the mouth of Bettles River, named that year for trader Gordon Bettles, the party ascended the Dietrich River for twenty miles until they were deep in the heart of the Brooks Range. Turning south to Slate Creek, they paused in the gold rush camp of Coldfoot at the creek's mouth. From there a detachment of their party portaged south to the South Fork of the Koyukuk and carried out a 140-mile compass traverse down that stream to its confluence with Middle Fork. The whole team was once again reunited at the gold rush supply station of Bergman, where Gordon Bettles and his business partners had a store and where the Survey men employed two prospectors to help them continue down the Koyukuk to the Yukon River.

The government scientists spent eighty days traveling through the heart of Koyukuk gold mining country, but their report on the journey offered few details about daily life on the trail. This was much in keeping with tradition for Survey expedition leaders who were meticulous about recording geologic and geographic details but were notoriously tightlipped about the personal experiences of team members. However, some of Schrader's comments reflected his respect for the ruggedness of the terrain:

> The Chandalar and Koyukuk River regions form no exception to the rule of Alaskan travel. The almost invariable means is by boat or canoe along the waterways in summer, and overland by trail with the use of dog



A fish drying camp established by Alaska Natives at the mouth of the Alatna River, 1899. USGS Photographic Library, F.C. Schrader (447).

The term 'trail,' as used in Alaska, refers more particularly to the passable condition of the country than to any foot-beaten path of well-worn line of travel.

–Frank Schrader

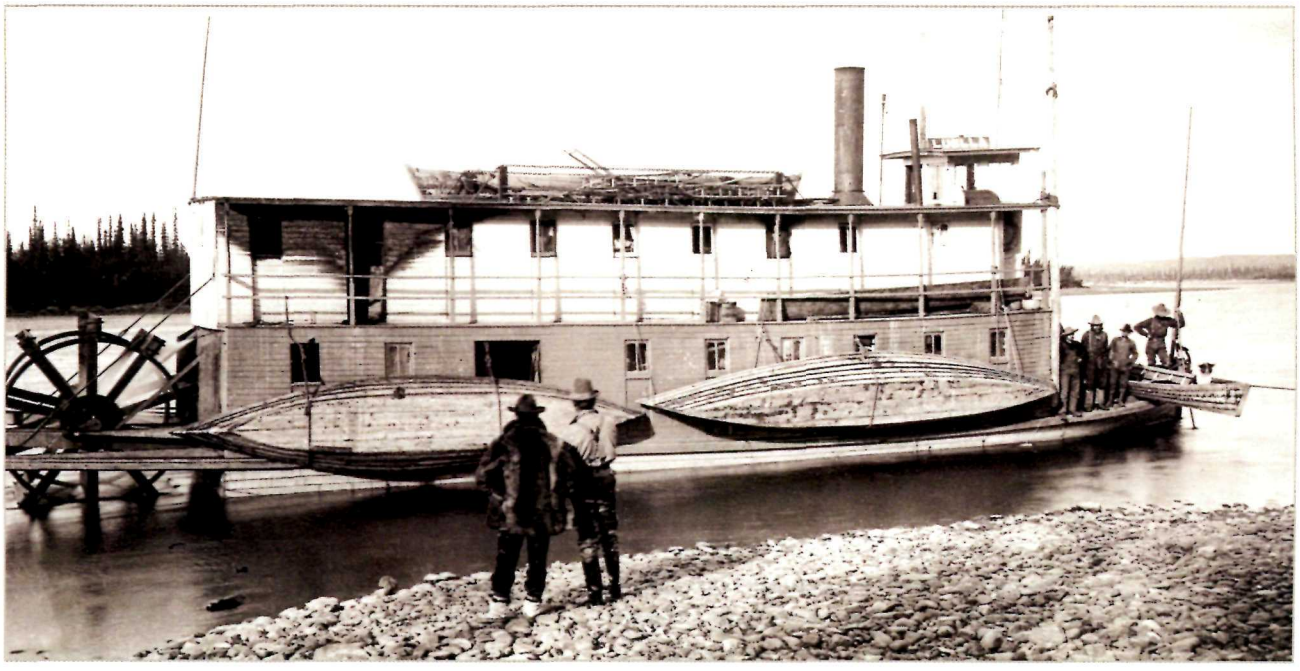
> sleds in winter. The term 'trail,' as used in Alaska, refers more particularly to the passable condition of the country than to any foot-beaten path of well-worn line of travel.[9]

When discussing the possibility of a trail between the headwaters of the Koyukuk and the Arctic coast, Schrader acknowledged that Eskimo travelers could cross the mountains but expressed doubt that it would otherwise serve as a route for regular travel:

> According to reports which seem to be authentic, the Malamut [Eskimo] natives of the Arctic coast have been known to visit the head of the Koyukuk Basin. They are supposed to have found passage through the mountains at the head of Dietrich River and to have descended this stream, but of this there is no certainty. The country in this region, however, is too rugged to be of promise for a practicable route of any sort.[10]

Schrader could not have known that seven decades later that same path through the Brooks Range at Atigun Pass would be the same used for the Trans-Alaska Pipeline and the Dalton Highway.

By the time Schrader, Gerdine, and their team reached the three branches of the Koyukuk, they found the region largely abandoned after the stampede of the previous year. Of the estimated 1,500 people who arrived looking for gold, only about



The steamboat *Luella* on the Koyukuk River above the trading station of Bergman, 1899. USGS Photographic Library, F.C. Schrader (449).



Frank Schrader's survey team 265 miles up the Koyukuk River, September 3, 1899. USGS Photographic Library, F.C. Schrader (490).

one hundred remained, concentrated mostly at Slate Creek and lower on the river near the supply centers of Bergman, Arctic City and Peavy. Schrader explained in his report that gold had been known to exist in the area for many years and that the gravel deposits called Tramway Bar, Hughes Bar and Florence Bar had all yielded placer gold in paying quantities. He then explained why Tramway Bar and the Koyukuk gold field in general were so hard to develop:

> Several attempts seem to have been made to work these deposits, but thus far with no great success, owing probably to the remoteness of the region, the difficulty of transportation, and the lack of capital to provide water supply, which could readily be drawn from the river above, or possibly from lakelets said to occur to the westward.[11]

An appendix to Schrader's report described new gold strikes in 1899 on a handful of creeks in the area, including Clara Creek, Emma Creek, Gold Creek, and Marion Creek. In spite of these periodic excitements, the Koyukuk long remained the most expensive and the most difficult gold field to reach in Alaska.

Mendenhall, 1901

The discovery of gold on the beaches at Nome in 1899 and the need to perform geological work on copper deposits in the vicinity of present-day Chitina and McCarthy drew the attention of the Geological Survey and postponed further exploratory work in the Brooks Range region until 1901 when two surveying expeditions were sent north. The first of these was led by Walter Mendenhall who was asked to conduct topographic and geologic exploration of a broad cross-section of northern Alaska and to collect "such information as will be of value not only to the scientific world, but to the prospector, the miner, and the trader."[12]

Mendenhall was keenly aware of the Geological Survey's mission to make the land useful to the new residents, who through their own endeavors had proven that great fortunes could be had but who could not be expected to rely on luck to build a lasting economic foundation for Alaska. Mendenhall's explanation of the dangers faced by gold-seekers echoed earlier concern for whalers trapped by Arctic pack ice:

> Capital disappears and years are wasted by prospectors who push out beyond the shifting frontier and pursue their search for gold where gold is not to be expected, and lives are being continually lost because the location and character of trails, drainage ways, and mountain ranges and passes are unknown, or because the knowledge which a few possess is not in a form available for the use of others.[13]



A surveyor with Frank Schrader's team takes measurements on the Koyukuk River, 1899. USGS Photographic Library, F.C. Schrader (463).

Mendenhall's team was made up of topographer De Witt Reaburn and five other Survey men who left Seattle on May 19, 1901 and took the gold-seekers' path over White Pass and onto Lake Laberge where they towed their two Peterborough canoes along the shore of the partially frozen lake. By June 4 they reached Dawson City where the party split into two parts, one staying in Dawson to buy supplies and gather information about their route north and the other pressing on to begin surveying between Fort Yukon and Fort Hamlin, a trading post located just downstream from the Dall River confluence.

Once reunited, the men spent ten days ferrying their equipment up the Dall River to Dall City, a collection of two or three abandoned prospector's cabins on the river's upper course. There the Survey men encountered prospectors who had made their way overland from Fort Hamlin and were trying to reach the Koyukuk gold fields. From Dall City, Mendenhall and his men portaged eighteen miles and climbed 2,500 feet to a point on the Kanuti River where their boats would once again float even though the water was "swift, shallow, and full of bowlders." Despite their best efforts, one thirty-mile succession of difficult rapids near the river's headwaters swamped their canoes several times and left them with holes punctured by sharp rocks. This caused delays in reaching the Koyukuk and the trading post of Bergman where they planned to acquire more food. Along the way, however, they did manage to hunt ducks and geese and to buy a few pounds of flour and bacon from a fishing party of Koyukon Athabacans.

The bulk of their supplies had been shipped ahead to Alaska Commercial Company representatives at Bergman who stored them over the winter. These supplies included two more cedar canoes and food for the rest of their journey. Once the men arrived at the post, company agent James Powers



An Athabascan Indian family camped 195 miles up the Koyukuk River, September 6, 1899. USGS Photographic Library, F.C. Schrader (497).

introduced them to John, a Kobuk Eskimo who was familiar with the portage between the Alatna and the Kobuk Rivers. With their new guide, they descended the Koyukuk to the mouth of the Alatna River. From there they ascended the Alatna for about one hundred miles and made a second portage from the headwaters of Helpmejack Creek to the streams that lead to the Kobuk River.

Having arrived at the midpoint between the two river systems, the Survey men camped and lighted a small, smoky fire called a smudge to discourage the mosquitoes. When the exhausted men failed to tend the fire it sprang out of control, igniting a minor wildfire that threatened to destroy the camp and all of their supplies. The fire was eventually beaten back but not before two tents and practically all the contents of one of them had been consumed by the flames. The sleeping bags and the heavy clothing of three of the men were burned, and only by redistributing their extra clothing and making blankets from the burnt fragments of the remaining sleeping bags could the men be re-equipped. To make matters worse, a packer and his horse, hired in Bergman to help with the heavy boats and supplies, did not show up until the last day of their difficult portage.[14]



A placer mining operation on Myrtle Creek near the Middle Fork of the Koyukuk River, 1899. USGS Photographic Library, F.C. Schrader (407).

By August 8 the party started down Kichaiakaka Creek on the west side of the divide and made their way toward Walker Lake which Lt. Cantwell had mapped sixteen years earlier. Concerned about the lateness of the season, they immediately began descending the Kobuk, even though the men feared the rapids where Cantwell had almost lost his Eskimo boatman. Their guide, John, proved to be an excellent navigator, but he had not traversed this upper portion of the river in summer and had also heard alarming accounts from his friends of Kobuk whitewater. The whole group was greatly relieved when the rapids had ample water and it only took one hour's work to line the canoes through boulder fields.

Once the river evened out the journey was pleasant. They stopped at the village at the mouth of Selby River and paused to do geologic and topographic work at Lake Selby. They passed several fishing villages on the way to the mouth of the Ambler River and noticed log cabins scattered along the banks of the river left by prospectors who fled the area in 1899. Just above the mouth of Pick River (near today's village of Shungnak) they met one white man who had been in the vicinity since the previous winter. He was out of provisions and living on fish while waiting for the return of the steamboat *Agnes E. Boyd* which made regular trips along the Kobuk. At the mouth of the Black River the party passed a well-equipped prospecting outfit with twelve pack horses, which had been brought overland from Nome during the summer. The men expected to spend the winter on either the Kobuk or the Noatak River. In the vicinity Mendenhall also saw a small sailboat near the Ambler River mouth carrying three white

Exploring expeditions in high latitudes, which are carried on only in the summer, with no provision for wintering, are limited in time, and hence... certain sacrifices must be made to the paramount necessity of gaining ground.

–Walter Mendenhall



Members of Walter Mendenhall's survey party pull a canoe through riffles on the way to the Kobuk River, 1901. USGS Photographic Library, W.C. Mendenhall (182).

men and two or three tons of supplies. After investigating the lower course of the Ambler, the party resumed their downstream travel until they reached Hotham Inlet and the Quaker mission at what is today the town of Kotzebue. From the new mining camp of Deering on the north side of the Seward Peninsula, the Survey team caught a ride on a crowded schooner to Nome where they boarded a steamship for Seattle.

This journey had accomplished all that Stoney and Cantwell strived to accomplish in the first year of their Kobuk explorations but in reverse. Even so, the journey was not easy, and Mendenhall was quick to point out in his official report that travelling roughly 1,200 miles across rugged country placed some limits on their ability to carry out their mission:

> Exploring expeditions in high latitudes, which are carried on only in the summer, with no provision for wintering, are limited in time, and hence . . . certain sacrifices must be made to the paramount necessity of gaining ground.[15]

Given that this was the first complete survey of the area between Fort Yukon and the ocean at Kotzebue Sound, it was a monumental

155°

153°

67°

Walker Lake

800

Aug.11

RAPIDS

GORGE

Aug.9 Var.29°30'E.

Aug.7

Kichaiakak

Aug.8

RAPIDS

Aug.10

Winter Portage

Nutavukti Lake

Reed River

GORGE

Aug.13

Kowak

Aug.14 Var.29°20'E.

Cabins

Aug.15

GORGE

Norutak Lake

Norutak River

Hogatza

Allen

Rapid City

July 30 Var.29°10'E.

Help-me-jack

July 27

July 25 Var.28°30'E.

Beaver City

July 24

July 23

Portage to Hogatza

July 22

River

July 21

July 20

Siruk Cr.

LEGEND

PLEISTOCENE

Silts, sands, and gravels

BERGMAN SERIES
MESOZOIC?

Sandstones, graywackes, and shales, latter sometimes slightly altered

Chiefly conglomerate and sandstone. On Kowak River includes red beds

METAMORPHIC COMPLEX
PALEOZOIC ?

Slate

Limestone

Schists of various types; may include slate and limestone

IGNEOUS

Diabasic intrusives

Vertical beds

Dip and strike

GEOLOGIC RECONNAISSANCE MAP
OF T
REGION ABOUT THE PORTAGE FROM KOWAK TO THE ALLEN RIVER

Geology by Walter C. Mendenhall Topography by D. L. Reaburn

19

Sc

10 0 10 MILES

Contour inter 00 feet
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Probable draina surveyed
Dates indicate

JULIUS BIEN & CO. LITH. N.Y.

Walter Mendenhall's geologic reconnaissance map showing the portage between the Alatna and Kobuk River systems, 1901. Walter C. Mendenhall, "Reconnaissance from Fort Hamlin to Kotzebue Sound, Alaska by Way of the Dall, Kanuti, Allen, and Kowak Rivers" (Washington, D.C.: GPO, 1902).



Mountaintop view along portage between Alatna River and Kobuk River systems. USGS Photographic Library, W.C. Mendenhall (217).

achievement. However, gaps were unavoidable as Mendenhall explained in his report:

> Observations made while the observer is struggling ahead at the end of a tracking line, or bending all his energies to the prevention of disaster in the wild waters of a gorge, or perhaps zigzagging up a thousand-foot climb with ninety pounds on his back, are not always as complete as desirable.[16]

This complaint was a common refrain among Survey explorers in the Brooks Range region where the demands of the environment and the rapidly changing seasons made travel difficult and topographic surveys and scientific study nearly impossible.

Schrader and Peters, 1901

The same year that Mendenhall and Reaburn surveyed northern Alaska from east to west a second team of Geological Survey scientists were tasked with an even more ambitious reconnaissance of northern Alaska. Frank Schrader, William Peters and six assistants were sent to travel up the Koyukuk and John Rivers, over the Continental Divide at Anaktuvuk Pass, and down the Colville River to the sea, a transect of Arctic Alaska not undertaken since Ensign Howard crossed the divide and the Arctic Slope in 1886. On this occasion, however, the government scientists were crossing the Arctic Slope seventy-five miles to the west and had the instruments and training to gather the first reliable geologic information about the region.

As Schrader explained in his report, the mission of the eight-man team was to collect information of all kinds relating to the geography, geology, and resources of the region to use in the preparation of a topographic map of Alaska. "As this northern region was practically unsurveyed and much of it was entirely unexplored," explained Schrader, "it was planned to make an instrumental survey along the route of travel, which was to traverse the Rocky Mountains stretching across

northern Alaska . . . [and] to carry on the work in as much detail as the adverse conditions would permit."[17]

The survey began at the Koyukuk trading post of Bergman where the government men picked up equipment and supplies that had been stored there the previous winter. Peters and three of the team's assistants were the first to arrive in Bergman after traveling by dog sled from Whitehorse to Dawson and then to Eagle and Fort Yukon, stopping at roadhouses all along the way. They then took the trail along the Chandalar River to Granite Creek and over a pass to the South Fork of the Koyukuk before descending the river to Bergman where they waited for Schrader to arrive by steamboat.

While they were waiting, Peters sent one man with a Native guide up the nearby Alatna River to the Kutuk tributary where he climbed a peak and reported that the area "appeared to be completely surrounded by high mountains." Along the way he also reported seeing a number of Eskimo caribou hunters. Meanwhile, Peters and rest of the party went with a Native guide up the John River. After seeing four fresh campsites along their route, the party eventually overtook an Eskimo woman who was subsisting on snowshoe hares that she caught with snare traps as she traveled. In total Peters encountered thirty men, women and children along the John River corridor, and as he explained in his report,

> It is their custom to ascend the tributaries of the Koyukuk in winter to hunt. Caribou is their principal source of food. They never go beyond timber line, and it is very seldom that natives of the north coast come as far south. When the waters run they build rafts and float down, bringing skins to Bergman for trade.[18]

The government team found traveling in deep snow softened by spring temperatures very tedious, but they encountered Natives who told them that the snow disappeared farther north and they could run dog teams over bare river ice. Once they were able to travel the frozen rivers, the Survey men managed to cover seventeen miles in a day and soon reached Anaktuvuk Pass. However, they did not linger because the group's guide warned of storms arriving from the Arctic, and instead of risking being trapped, they returned to Bergman to await spring break-up.

By May 29 the ice in the Koyukuk began to crack and move, jamming periodically while it melted. A week later the river was clear of ice and steamboats began arriving at Bergman. One of them, the *Luella*, took the surveying party upriver to the supply depot of Bettles near the mouth of the John River. There Schrader and Peters began preparations for their final push to the north. They paid one Bettles resident for the use of a horse and sent the animal with a hired man up the John to find good grazing and to wait for the rest of the party. When the survey party left Bergman they found the water fast and high and only managed to make progress using a local technique called "milking the brush," which involved "reaching out from the bow of the canoes, clinging and hauling on projecting bough branches and snags and aiding the advance by the judicious use of a pole from the stern."[19]

As the water level dropped they were able to switch to tracking and poling, which meant constant wading in the frigid water. By this time the snow remained only on mountaintops and the men stopped for a day at a time to climb prominent peaks for the purpose of mapping. They passed the northern limit of spruce on July 8 and saw only a thin growth of willows thereafter. The upper reaches of the John became more dangerous

Along the Itkillik River in the northeastern corner of Gates of the Arctic National Park and Preserve, August 2012.
Courtesy Zachary Richter.





Top: Frank Schrader's survey party camped on the John River, June 15, 1901. USGS Photographic Library, F.C. Schrader (857).

Bottom: Frank Schrader's survey party lunching on a gravel bar along the John River, June 27, 1901. USGS Photographic Library, F.C. Schrader (865).

with swift water running through narrow gorges and boulder fields. By July 17 they ran out of navigable water and used their horse and backpacks to transport their outfit to a small lake Peters called Cache Lake that empties into the Anaktuvuk River. This was most likely Eleanor Lake near the present-day village of Anaktuvuk Pass. There they caught grayling, shot several caribou, and saw indications of Dall sheep in the surrounding mountains but did not have the energy to pursue them. On July 22 they hired an Eskimo man to return the horse to Bettles along with their mail and reports.

Over the next few days, the surveying team entered a new world beyond the mountains where the Anaktuvuk River cut through rolling tundra in a relatively straight course toward the Arctic Ocean. The whole crew was delighted to find that the mosquitoes had largely disappeared in August and that they faced no more mountainous terrain. In fact, when Peters saw a small grove of balsam poplar that had grown to thirty feet in height, he reported that they looked gigantic "in a country that was almost flat, covered with moss, and dotted with small lakes."[20] By

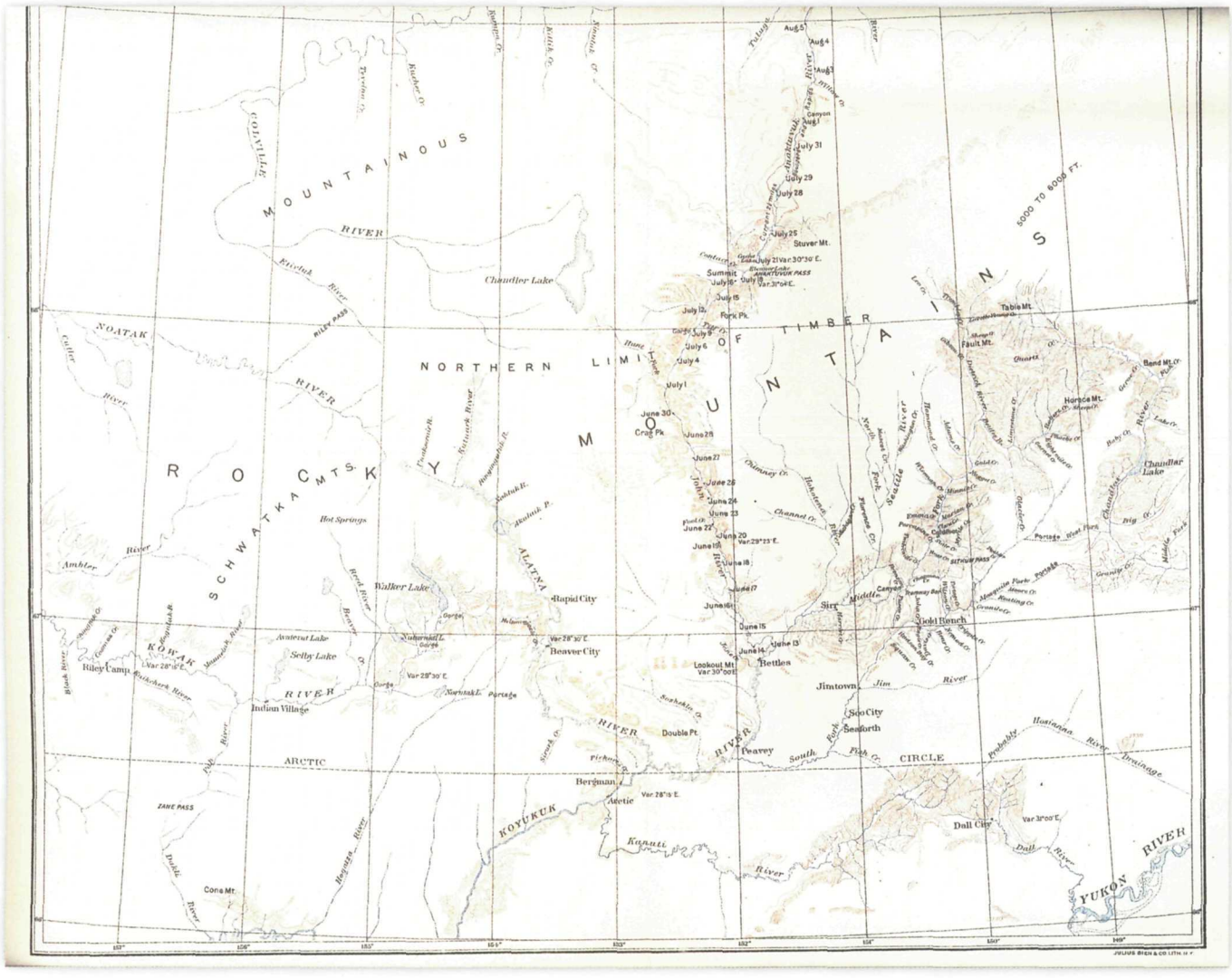


View of the central Brooks Range from a mountain peak along the John River, 1901. USGS Photographic Library, F.C. Schrader (896).

August 8 they could see the Colville Bluffs and soon entered the Colville River near an elbow where the river turns northward. Once the Survey men reached the mouth of the river where it entered the Arctic Ocean, they observed herds of caribou and a camp of Eskimos who "appeared friendly, but were not communicative." Later that same group, paddling a dozen umiaks, overtook the Survey party as they struggled toward Point Barrow. The government men were by this point low on food, footsore because their boots had rotted away, and increasingly concerned that they would have to spend the entire winter ice-bound at Point Barrow. Peters explained how the government scientists hatched a plan to speed their progress by negotiating for a ride with the Eskimo flotilla:

> As they appeared to weather seas that we dared not attempt in our canoes, and as our time was getting short and storms were brewing, I decided to induce these natives to take us in their boats.[21]

Together the Eskimos and the government scientists made their way along the coast, battling storms for several days and finding fresh water to drink between tussock mounds on the tundra. Around midnight on September 3 they arrived at Point Barrow, where the owner of Cape Smythe Whaling and Trading Company, Charles Brower, gave them a warm welcome. Brower also had unwelcome news—a steam whaler had left a day or two before and no more vessels were expected to pass the point that year. To allow them to leave, Brower loaned the Survey crew one of the skiffs that whalers used to pursue bowhead whales on the open ocean and suggested they could sail westward along the coast in the hopes of finding a ship. The men spent two weeks sailing, rowing, and towing their small vessel along the beach, always fearing that pack ice would advance to block their path. After spending four days hunkered down on the beach because of storms, they were delighted when the steamship *Arctic* approached their position on September 18. The ship's captain was in the process of taking



Map of the Schrader party's route up the John River to Anaktuvuk Pass and beyond. This was the first time since Ensign Howard in 1886 that any outsider had crossed the Brooks Range to reach the Arctic Ocean. "A Reconnaissance in Northern Alaska..." (Washington, D.C.: GPO, 1904).

a load of coal to Nome from the coal deposits near Cape Lisburne, but he agreed to take the men along. In Nome they could take another vessel to Seattle.[22]

Although the methods of topographic surveying are difficult for laymen to understand, Peters did offer a detailed description of the team's methods, which also illustrates the painstaking requirements of being a government explorer and the difficulties involved with surveying Alaska's rivers in the Brooks Range and across the Arctic Slope:

> At intervals of about 10 miles prominent points adjacent to the river were ascended for topographic sketching on the plane table. Two signals, usually stone cairns about 6 or 7 feet high, were left on each of these points to mark the ends of the base which was to be used in determining the distance to the next station. This next station was usually selected first, so that the base might be laid off at right angles to a line joining the two stations, or as nearly so as the shape of the summit would permit. The direction of the base was always projected on the plane-table sheet to permit the measurement of the angle between it and a line to any other station that might be occupied. The length of the base was from 300 to 600 feet, and was chosen with regard to the estimated distance and direction of the next



Eskimos encountered by Frank Schrader's survey party along the Colville River, 1901. USGS Photographic Library, F.C. Schrader (1005).



The Eskimos' camp, including fish drying racks, an upturned umiak, a cooking pot on the fire, and dwellings covered in caribou skins, 1901. USGS Photographic Library, F.C. Schrader (1006).

station so as to subtend an angle of about 22 minutes, which was measured with the micrometer screw of the alidade. Between stations a traverse of the river was made with prismatic compass and stenometer. The plat of the traverse was transferred to the plane-table sheet and fitted to the located points. The orientation of the plane table was controlled by

Owing to the remoteness of the region, the unexplored character of the country, and the uncertainty of transportation by reason of the Arctic ice pack on the north and the extreme shortness of the season, this work was probably the most difficult and hazardous of any ever undertaken by the Survey in Alaska.

–Frank Schrader

> the azimuths, determined with the theodolite when necessary.[23]

Like Ensign Howard's journey fifteen years earlier, the survey conducted by Schrader and Peters in 1901 crossed hundreds of miles of rugged terrain between the mouth of the John River and the Point Barrow in less than three months, and (like Howard) they still managed to board a ship to escape the advancing Arctic pack ice. Schrader later acknowledged the challenges that he and his men faced:

> Owing to the remoteness of the region, the unexplored character of the country, and the uncertainty of transportation by reason of the Arctic ice pack on the north and the extreme shortness of the season, this work was probably the most difficult and hazardous of any ever undertaken by the Survey in Alaska.[24]

It seems clear also that their journey would have been more difficult and more hazardous without the help of Alaska Native people, particularly at the end of their journey, something Peters acknowledged in a special section in his report:

> On the Arctic coast, where the larder and foot gear of the party had become reduced to inadequacy, the generosity of the Eskimos, manifested in their gifts of fresh fish, the loan of their mukluks, the use of their skin boats for transportation, and their aid as guides to Point Barrow, was of material value and too greatly appreciated to pass without notice.[25]

Era of Alfred H. Brooks

In 1894 a young man named Alfred Brooks graduated from Harvard University with a Bachelor of Science degree in geology and was at once employed by the U.S. Geological Survey. He was assigned to fieldwork in the southern Appalachians under C. Willard Hayes who had been to Alaska three years earlier. Hayes regaled the twenty-four-year-old geologist with accounts of Alaska travel that convinced Brooks the region needed to be explored for its mineral resources. He requested a northern assignment and soon joined other surveyors traveling to Alaska in the summer. In 1903 the Geological Survey established a separate Division of Alaskan Mineral Resources with Brooks as its chief. The new division had its own topographers and geologists and a leader who believed that the age of exploration in Alaska was far from over. In 1908, Brooks reported to the National Conservation Commission that eighty-four percent of Alaska was "geologically almost unknown" and that less than one percent had been mapped in detail.[26]

Despite the imposing amount of reconnaissance work that remained to be done, Brooks envisioned for Alaska a dramatic era of economic development. Gold, silver, and copper held the greatest allure for Alaska miners in the early 1900s, but Brooks felt that energy resources like coal and oil were equally



Alfred H. Brooks, first chief of Alaska geology for the U.S. Geological Survey, ca. 1924. USGS Photographic Library, Portraits Collection (32).

vital to the development of Alaska and the nation as a whole. Oil seeps had been discovered and some oil extracted at Katalla and Controller Bay along Alaska's southern coast, but during the early years of Brooks' work as chief of Alaska geology gold remained king. During the early decades of the century, survey work in Arctic Alaska would remain sporadic, though interest in northern petroleum would eventually make the Brooks Range and the Arctic Slope the stage for bold and exciting exploratory efforts.

The first Arctic expeditions Brooks organized were surveys that followed familiar rivers with a renewed interest in gold discoveries. In 1910 geologists Philip Smith and Henry Eakin, with two camp hands and a six-horse pack train, left the Koyukuk near the mouth of the Hogatza River and traversed the mountains between the Koyukuk and the Kobuk. While traveling down the Kobuk in a skiff, the team made its way to the Squirrel River where miners had recently discovered a new placer gold deposit.[27] The following year a survey party headed by Smith with the geologist Charles Giffin set out to survey the Noatak River for the first time since McLenegan and Nelson in 1886. Rather than fight their way against the current, the six-man crew went two hundred miles up the Alatna River and portaged to the Noatak River headwaters before descending to the sea.[28] Meanwhile, at the eastern end of the Brooks Range, an explorer and private scientist named Ernest de Koven Leffingwell was at work on the Arctic coast, probing the Canning River region between the mouth of the Colville River and the Canadian border.

Educated at the University of Chicago in physics and geology, Leffingwell first went north in 1901 as the head of the science staff for the Baldwin-Ziegler Polar Expedition, which failed in its attempt to reach the North Pole from Franz Josef Land, an archipelago off the northern coast of Russia. In 1906, at the age of thirty-one, he went north again with Danish explorer Ejnar Milkkelson on a privately funded effort they called the Anglo-American Polar Expedition. Their goal was to explore the Beaufort Sea for a land mass that many believed lay north of Alaska. When their efforts failed and their ship, the *Duchess of Bedford*, was crushed by pack ice, Mikkelson went home but Leffingwell stayed. Out of the wreckage of the *Duchess* he built a rustic cabin on Flaxman Island east of Point Barrow and used it as his headquarters for geological and geographical study of the nearby coast.



Eskimo women pulling a net full of fish from the Kobuk River, 1910. USGS Photographic Library, P.S. Smith (538).

Leffingwell spent nine summers and six winters in the Alaskan Arctic and managed to gather a remarkable amount of detailed information about the area Sir John Franklin had visited eight decades earlier. But instead of racing back to safety when the ice approached, Leffingwell survived in his makeshift cabin and succeeded in mapping the coastal zone as far as fifty miles inland. Accompanied at times by an Eskimo or two, he journeyed along the coast by small boat and by dog sled, ascending a number of Arctic rivers—the Sadlerochit, Okpilak, Canning, and Hulahula—which took him into the Brooks Range foothills at its eastern end. Under very challenging conditions he managed to produce a sophisticated study of the region's geography, hydrography, and geology, including the first ever scientific explanation of the role of the permafrost and ice wedges in shaping the Arctic landscape.

Leffingwell later wrote that because his work was basic science and not "spectacular" like the expeditions of Peary, Cook, Stefansson and Amundsen, he had become "the forgotten man." However, when Leffingwell turned over his reports to the Geological Survey, Brooks praised

Members of various USGS field parties on the afterdeck of the steamboat *Susie*, June 15, 1910. Philip S. Smith is standing in the middle rear, leaning on a post and smoking a pipe. USGS Photographic Library, A.G. Maddren (58).



Ernest de Koven Leffingwell (left) and Eskimo companions camp on a bluff along the Canning River at the eastern end of the Brooks Range, ca. 1910. USGS Photographic Library, E.K. Leffingwell (92).

the intrepid explorer for his self-sacrifice in the name of science and noted,

> The inland region has been visited by only a few prospectors and fur hunters, so that only its larger geographic features were known. The region as a whole therefore presented an almost complete hiatus in the scientific knowledge of Alaska, and Mr. Leffingwell has performed a most valuable service in mapping its geography and geology.[29]

One of the most enduring impacts of Leffingwell's work was his brief mention of "conspicuous mounds" at Cape Simpson and elsewhere near the coast that leaked crude oil into ponds on the tundra. His geologic work had identified the Sadlerochit sandstone formation later found to be the main reservoir of the Prudhoe Bay oilfield, but for the time being, the region's surface oil seeps were the only hints that the Arctic might hold large deposits of black gold. The Point Barrow trader Charles Brower had been hiring Eskimo men to collect the weathered tar at the edge of the seeps to sell as a fuel source, and it was from one of Brower's kegs of semi-liquid petroleum that Leffingwell obtained a sample for testing. After finding that the material was a mixture of oil, water, clay, and vegetable matter, Leffingwell issued this caution:

> Even if an oil pool were found in this northern region, there is serious doubt of its availability under present conditions, though it might be regarded as a part of the ultimate oil reserves that would some time be developed.[30]

In 1919 when the Geological Survey published Leffingwell's report this warning fell mostly on deaf ears. Instead some eager Alaskans and representatives of American oil companies rushed northward to stake mineral claims around the seeps.



View of Franklin Mountains at the eastern end of the Brooks Range along the Hulahula River, ca. 1910. Leffingwell's Eskimo companions and their camp in foreground. USGS Photographic Library, E.K. Leffingwell (65).

Before long, however, the rush to claim Alaska's Arctic oil was blocked by an executive order from President Warren Harding. The United States government had begun setting aside oil-rich lands in 1909 amidst concern that private oil developers were snapping up all the major oil deposits in North America at a time when the U.S. Navy was converting its ships from coal to oil-burning engines. If the trend continued, politicians feared they would not able to wage war for lack of fuel. The first such naval petroleum reserves were created in California and Wyoming, and on February 27, 1923 President Harding selected roughly twenty-three million acres between the Arctic Coast and the Brooks Range as a petroleum reserve. Suddenly there was a new reason to explore in northern Alaska.

Foran and Wix, 1924

Soon after Alaska's Naval Petroleum Reserve No. 4 came into being the Department of the Navy requested that the Geological Survey undertake a topographic and geologic survey of the entire area, which extended from Icy Cape to the Colville River and into the foothills of the western Brooks Range. Brooks was asked to head the effort and he soon outlined a five-year plan for multiple reconnaissance surveys. The first of these expeditions began in spring 1923 when geologists visited the oil seeps near the coast and surveyed the coastal zone by ascending a number of Arctic rivers, including at least eight-six miles along the Meade River. They found sizeable deposits of coal and the known oil seeps but more and more ambitious exploration was needed.[31]

The next year Brooks sent two parties into the field to investigate sections of the new petroleum reserve. The first of these was led by William Foran and Lee Wix with three assistants and two Peterborough canoes. The strategy for this expedition was to survey the western side of the reserve starting on the Arctic coast at the village of Wainwright and advancing up several rivers that cut across the tundra of the Arctic Slope. After crossing

Side Note #6

CARIBOU SCIENCE IN THE BROOKS RANGE

On July 14, 1920, thirty-one year old Olaus Murie left Seattle aboard the S.S. *Victoria* with the chief of the U.S. Bureau of Biological Survey, Edward Nelson, to begin what was supposed to be a short survey of Alaskan caribou. The research he conducted over the next seven years made him a pioneer in caribou biology and brought him face-to-face with Alaska's wildest and most challenging landscapes. Murie was charged with multiple tasks, including locating the largest caribou in Alaska, proposing techniques for crossbreeding large bulls with domesticated reindeer, collecting mammal and bird specimens, and serving as a warden for the protection of fur bearers. It was a daunting assignment but one Murie had been preparing for all of his life.

Within two years Adolph Murie arrived in Fairbanks to assist his older brother, and the two men began preparations for a mission to the Brooks Range. On December 20, 1922 they traveled north to investigate big game like Dall sheep and caribou but also gathered data on birds and fur-bearing mammals. For the next four months they covered a huge area, visiting the headwaters of the Alatna River, the community of Wiseman, a long section of the Chandalar River, and the communities of Fort Yukon and Circle. Along the way they faced the same challenges that any long-distance Brooks Range travelers of that era faced: dog fights, overturned sleds, trails lost in drifting snow, and the challenge of hauling up to four hundred pounds of frozen fish for dog feed.

Olaus Murie did not return to the Arctic until August 1924 when he and his fiancée Mardy got married in the tiny Yukon River community of Anvik before traveling north to Wiseman. There the newlyweds waited for freeze-up and spent several weeks dogsledding in the Brooks Range while Murie began his caribou studies again. That trip was described by Mardy in her book *Two in the Far North* (1962). As a founding member of The Wilderness Society, Olaus Murie pushed for protection of public lands in northern Alaska and, together with his wife, successfully lobbied for the creation of the Arctic National Wildlife Refuge at the eastern end of the Brooks Range.

Today more than 600,000 caribou migrate through Arctic Alaska, and Murie's landmark studies provide biologists with a baseline for understanding this dynamic population. The caribou and the trails carved by their hooves in the soft tundra can be seen throughout the Brooks Range region. At Anaktuvuk Pass, home of the Nunamuit Eskimo people, the caribou migrate through the mountains as they have for thousands of years, corralled by the steep cliffs on either side of the pass. When the caribou arrive, hunters fan out from the village to harvest this essential subsistence resource. Wildlife photographers and backcountry travelers hike long distances to witness the spectacle of thousands of caribou on the move, and the appearance of bleached caribou antlers on the otherwise naked tundra serves as a reminder of the timeless link between humans, animals, and the land.

Facing page: Olaus and Mardy Murie modeling their parkas and other cold-weather gear, ca. 1924. Courtesy of Murie Center, Jackson Hole, Wyoming.





William Foran's survey party camped on Utukok River 100 miles north of the Brooks Range, August 1924. USGS Photographic Library, W.T. Foran (41).

the Brooks Range, the government scientists ended up in the Noatak River drainage. The obstacles they faced, however, were considerable. To begin, the boat that carried them north through the Chukchi Sea in late July faced fast-moving ice floes that threatened to sink the vessel even before the Survey men reached their jumping-off point at the mouth of the Kuk River. After surviving a hull puncture and a damaged crank shaft, the ship's captain managed to navigate free of the ice and deliver his passengers, their equipment, and the canoes safely to land.

Setting out at the beginning of August, Foran, Wix and their crew pushed inland using outboard motors on their canoes. They passed snowdrifts still melting in the midsummer sun, deposits of native coal, and slumping tundra that was nearly impossible to cross on foot. Once they left the coastal plain and began gaining elevation, they faced snow flurries, dense fog, and low water in the rivers and streams that allowed rocks to gouge holes in the hulls of their canoes. Twenty-five days into the journey, the water gave out entirely. Because they were unable to manhandle two loaded canoes across spongy tundra, Foran decided to cache some of their supplies, including one canoe and outboard, a partial case of gasoline, and four fifty-pound



William Foran's survey party camp on the banks of Kaolak River on the Arctic Slope, August 12, 1924. USGS Photographic Library, W.T. Foran (57).

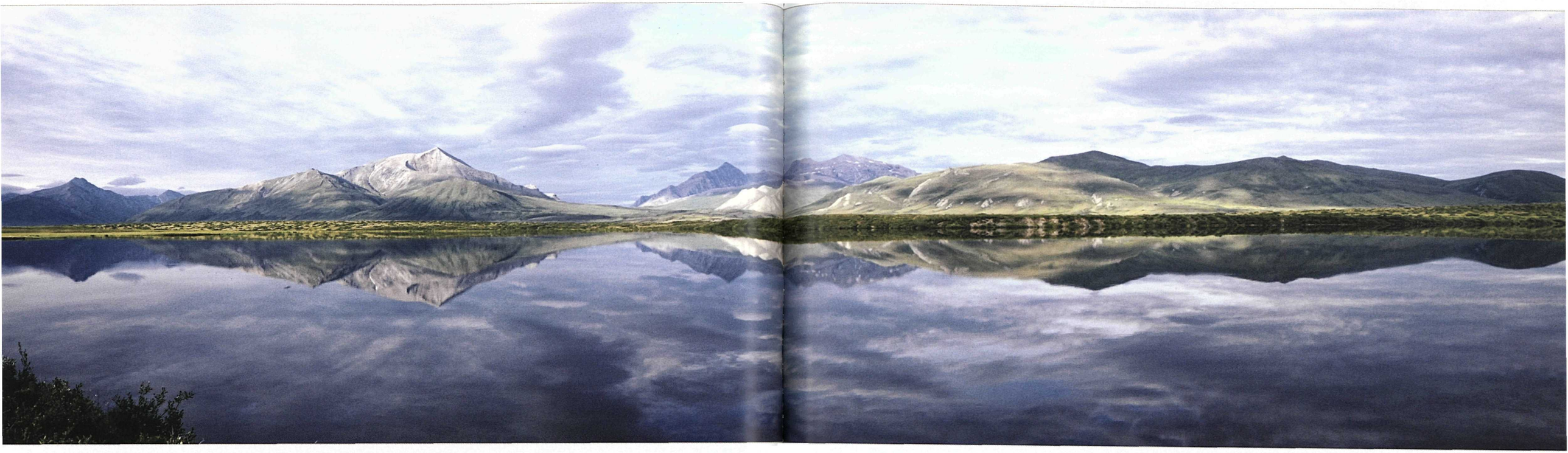
bags of food. However, Foran's journal entry for August 25 reveals that there were other issues that needed to be addressed before they could continue:

> Held consultation of war. Belgard says he hired out as cook, not pack horse, Hughes declares himself boatman and Longseth rodman. Final arrangement is to cache about one ton of equipment and supplies and backpack rest of outfit. Men all satisfied."[32]

Even with this lighter load, the men were now carrying heavy backpacks and pulling their last canoe, outboard motor, and gasoline supply through a landscape that prevented them from covering more than about four miles each day. The men would not remain satisfied long.

Over the next five days it became obvious to the team that their food supply would not hold out despite the occasional ptarmigan they managed to shoot. Along the way they also named the lake at one of their campsites Lake de Nogrub but then changed it to Lake Noluck, the name it carries today. Again, Foran's journal, amidst the routine geological observations and sketches of rock formations, revealed how the situation was becoming life-threatening: "Wix took rifle to hunt for caribou, but saw nothing—rest of party think we are either doomed to starve or freeze to death. . . . Grub situation getting serious."[33] After several more days of exhausting travel, Foran decided to send two men back to fetch food from the cache while he, Wix and Longseth began the difficult task of portaging the canoe and equipment across mountain passes and into the Noatak drainage. During several long days of work, Foran's feet swelled and he developed severe blisters, though on September 7 he returned to camp relieved to find that his men had returned from the cache with sixty pounds of food.

Although they were able to eat their fill for the first time in many days, the Survey party was not yet out of danger because the temperatures each night were dropping and the new supply of food would not last long. The men spent long hours simply trying to stay warm and to find twigs and other scraps of wood to build fires for warming water and cooking. Foran estimated that there was no other wood within a 20-mile radius, and the weather was so cold that the water in their tea kettle routinely froze before the tiny fire could warm it. In his journal Foran wrote,



Unnamed lake between Midas Creek and Lake Matcharak near headwaters of the Noatak River, July 2012. Courtesy of Fleur Nicklen.

Everybody sleeps with clothes on. No one but a brave man would attempt washing his hands or face in the icy water. He would keep shivering the rest of the day. Men can't get minds off food problem. Mutiny imminent?[34]

By September 14 they had cooked their last pot of beans and by the following day their last pot of peas and rice. Next they were reduced to eating only bacon rinds and a broth made with Steero-brand bouillon cubes. Except for his backpacking duties, the cook, Belgard, was put entirely out of work.

Knowing that a strategic retreat was no longer an option, Foran urged his men on toward the Noatak and the southern side of the Brooks Range where they hoped the weather would be warmer and they would be able to launch their canoe again. By this time they were reduced to working only three hours each day because they lacked the strength to do more. Once they reached the Noatak and were able to launch their canoe again, all five men were wedged into the vessel and they had to avoid rough water because the men realized they were too weak to move quickly in an emergency. As it turned out they were not too weak to bicker, and when Foran shot a low-flying seagull, a bitter feud erupted over a missing morsel of food:

> [The] boys had words with Belgard as to the mysterious disappearance of the seagull's gizzard (every morsel counted heavily at this time). Belgard explained that the gizzard was put on Wix's plate, but Wix accused Belgard of wolfing the gizzard while cooking the gull. Wix giving Belgard extremely vitriolic purge—words about hot lead to assist digestion of gizzard.[35]

During the fracas Foran ordered Hughes to sit on the gun and ammunition though the quarrel resulted in moody silences rather than violence.

For the next few days the men navigated the overloaded canoe through treacherous rapids with exposed boulders and on several occasions they nearly "turned turtle" when the craft slid sideways to the current. The vessel often took on water because it was so heavily laden that the water ran within four inches of the gunwales. Once through the Grand Canyon of the Noatak, they came to an Eskimo camp where, instead of more Steero broth, they were treated to raw caribou, cooked caribou, biscuits, sugar and coffee, which Foran said elicited "a grand and glorious feeling" among his crewmen.

The next day, carrying caribou meat and other provisions from their new friends, the Survey team continued down river, eager to reach the Eskimo village of Noatak. Along the way the group caught trout and grayling, ate caribou meat, and drank tea, but when they reached the mission, Foran reported that they ate steadily

This was too hasty an affair to warrant anything but a general description of the area traversed.

–William Foran



William Foran peers at the canoe he and his fellow USGS employees are dragging along a narrow creek southward toward the Brooks Range, September 2, 1924. USGS Photographic Library, W.T. Foran (59).

for eleven hours before going to bed bloated and groggy. That night none of the Survey crew could sleep because of overindulging in rich foods. They all suffered repeated bouts of diarrhea during the night, a scourge that continued the following day when they once again set sail in the canoe. In fact, they had to stop so many times to let the men out to find the bushes that they only traveled twenty-five miles.

For several days the men suffered stomach disorders, which they attempted to treat with "all sizes and shapes of pills," but to no effect, and the men were unwilling to stop eating despite the discomfort. As they reached the mouth of the Noatak and headed across the inlet to the Quaker mission of Kotzebue, they made plans to send one of their group to a government hospital because he looked thin and pale and his legs were "puffed out like an attack of dropsy." In Kotzebue a nurse concluded that "his blood is polluted with sugar and stomach is overworked" but that light meals and rest were all that he needed to recover fully. Although he was happy to be alive, Foran was not satisfied with their survey and wrote inside the flap of his notebook, "This was too hasty an affair to warrant anything but a general description of the area traversed."[36]

Smith and Mertie, 1924

During the early decades of Geological Survey operations in Alaska and across the American West journalists had attempted repeatedly to make heroes of Survey employees with headlines like "Government Scientists as Daredevil Explorers." However, the Survey's geologists and topographers were consistently modest about their achievements, and the agency's official reports were notoriously dry.[37] This was true also for the second of the two expeditions sent by Brooks into the Alaskan Arctic in 1924 under the leadership of Philip S. Smith and John B. Mertie. However, extensive newspaper coverage of the expedition, an ample collection of photographs, and Mertie's personal journal offer a vivid picture of their 700-mile transect of the Brooks Range and Naval Petroleum Reserve No. 4.



Foran party near the lower canyon of the Noatak River, September 20, 1924. USGS Photographic Library, W.T. Foran (65).

In many ways, an arduous slog through northern Alaska was business as usual for employees of the Geological Survey who annually crisscrossed Alaska, making maps to share with local prospectors and the American public. And although Smith and Mertie may have viewed their mission as routine, their plan was unusual because they intended to overwinter in the heart of the Brooks Range and enter the petroleum reserve as soon as the ice left Arctic rivers in the spring. The route they would follow was to the east of the one taken by the Navy's Ensign Howard thirty-eight years earlier, and the Survey men would lack the aid of expert Eskimo boatmen while descending northern rivers. Alaskan reporters concluded that the plan was likely "the most hazardous mission ever undertaken by this branch of the government service."[38]

To implement this new approach, Brooks selected Smith, a native of Massachusetts who joined the Geological Survey in 1906 and had tramped or "mushed" some 5,000 miles and had paddled canoes another 1,500 miles during his ten years of exploratory geology in Alaska. His work, which resulted in 38,000 square miles of reconnaissance maps, had taken him along several northern rivers and through the Seward Peninsula as well as to the Kuskokwim delta and the Fairbanks mining district. On the eve of this latest assignment, the *New York Times* reported that Smith "has had about every experience it is possible for a man to have in the arctic wilderness and still be alive." At forty-six years old, the only thing that slowed him down were his spectacles, which fogged up in cold weather.[39]

As Smith's second-in-command, Brooks chose Mertie who also wore glasses but could do without them in a pinch. Mertie was an affable and enthusiastic thirty-seven-year-old from Maryland who first came to Alaska as a field assistant in 1908 and soon began returning each summer for geologic mapping and studies of active mines across Alaska. The only interruptions to his Alaska work came when he was recruited to design aerial photography equipment during World War I and in 1920 when he signed on with Standard Oil Company to search for oil deposits in Bolivia and Argentina.[40] The survey crew also included topographic engineers Gerald



RECONNAISSANCE MAP OF THE NOATAK-KOBUK REGION, ALASKA

U.S. Geological Survey map of the Noatak and Kobuk Rivers showing the state of geographical knowledge available to teams entering the region in the 1920s. Philip S. Smith, "The Noatak-Kobuk Region, Alaska" (Washington, D.C.: GPO, 1913).



Philip S. Smith, head of a Geological Survey team that entered the Brooks Range in winter to survey Naval Petroleum Reserve No. 4, ca. 1925. USGS Photographic Library, Portraits Collection (20).

FitzGerald and Richard Lynt, who would create maps of the reserve, and two field assistants, Harry Tait and Frank Dodge. In Alaska, Smith hired two additional men to serve as camp hands, the veteran dog musher and mail-carrier Walter Blankenship and George "Scotty" Clark, a dog musher who began as a freight-hauler and later served as expedition cook. Reporters described the group as "all stout lads, hard as nails, with plenty of experience in difficult situations."[41]

Whereas most of the Geological Survey's work in Alaska was carried out without fanfare, the plan to camp deep in the Brooks Range in winter and dash across the Arctic soon caught the attention of national newspapers. By the time Smith and FitzGerald arrived in Nenana at the northern end of the newly completed Alaska Railroad in mid-February 1924, the *Washington Post*, the *Los Angeles Times*, and the *Seattle Daily Times* had all printed detailed descriptions of the mission and its logistical challenges. The *Christian Science Monitor* added that although the party was "not bent on adventure" that "the nature of the territory will make adventure practically a routine matter."[42] The plan also stirred speculation among Alaskans about what the men would find in the largest blank space on the territorial map. "Reports have trickled out of the Polar basin that great lakes of oil were to be found in this wilderness," wrote sources in Nenana, "but the Eskimos and Indians tell stranger stories. They say the land is haunted by weird beasts, some of such immense stature that they leave traces as large as dinner plates." These strange tales, reprinted in the *Washington Post*, apparently led some northern residents to conclude that remnants of far-north mastodon herds still lurked on the Arctic tundra.[43]

Unconcerned with monsters or mastodons, Smith and FitzGerald began preparations for their excursion immediately, assembling the dried foods, tinned butter, bacon, coffee, and tea purchased from the Northern Commercial Company. They also hired Nenana's horse-drawn mail stage and a second sleigh to take them to Tanana, 125 miles away on the banks of the Yukon River. Once in Tanana, they hired local Native women to sew fur parkas, gloves, and mukluks for the survey team and began purchasing sled dogs from mushers within a 150-mile radius. They also sent a telegram to "Scotty" Clark at the Yukon River mining camp of Ruby, telling him where to meet the party and to bring as many dogs as he could manage.



Geologist John B. Mertie along the Alatna River in the central Brooks Range after successful ptarmigan hunt, March 18, 1924. USGS Photographic Library, J.B. Mertie (1084).



Smith-Mertie party in Tanana, February 1924: (left to right) John Swanson, Walter Blankenship, Frank Dodge, Richard Lynt, Gerald Gost of Northern Commercial Company, Philip Smith, John Mertie, Gerald FitzGerald, Harry Tait, and Nicolai Titus. Philip Sidney Smith Collection, University of Calgary (5-3-1789).

Clark's enthusiastic response ensured that at the very least the expedition would not run out of cigarettes: "Am starting up river with thirty dogs and 5000 camels!" Once the sleds were ready, Smith got a jump on the season by sending six dog teams, each consisting of a sled with a trailer carrying loads of 1,000 to 1,500 pounds over the mail trail from Tanana to Allakaket on the Koyukuk River.[44]

Three weeks later, Mertie, Lynt, Dodge, and Tait arrived in Tanana and brought with them surveying tools and other technical equipment. They also brought the key to the survey's success: four Peterborough freight canoes from Canada that had been specially built, each one six inches shorter than the next so that they could be nested into one another and fit into a single boat-shaped crate. A special bobsled, pulled by fifteen dogs, was constructed to transport the crate of cedar canoes, and newly hired freight-haulers began transporting the expedition's four tons of food-stuffs and equipment into the southern foothills of the Brooks Range. Along the way they left caches of dried salmon at the side of the trail to feed the dog teams that would follow. It was calculated that during the winter each dog would require two pounds of salmon per day, equaling two tons. On the morning of February 27, all the residents of Tanana turned out to cheer as the Survey men left town heading north.[45]

During the nine days it took to reach Allakaket, the survey party camped in small "relief cabins" without doors or woodstoves that were built to shelter the winter mail carrier on



Sled dog teams pull supplies and a crate of Peterborough canoes up the Alatna River, March 15, 1924. USGS Photographic Library, J.B. Mertie (1078).

his monthly rounds. Like most Survey employees assigned to Alaska, Mertie normally travelled only in summer, and he delighted in the novel challenges of cold-weather work. He wrote in his journal about the hazards of stepping through ice-covered overflow on rivers and about the need to dry perspiration in one's clothes to avoid hypothermia. He was fascinated by dog mushing and wrote about the difference between dogs imported from elsewhere and native breeds:

> When an outside dog went through an overflow it would just stand and shiver and possibly freeze to death; whereas a native dog would pull to dry snow and immediately sit down and lick the snow and ice off his feet and legs and dry them with his tongue.

Mertie explained that although they seemed uniquely suited to their environment, the native dogs needed to be watched carefully because they "would attack anything that was down, including a man—even one of their own team." After stopping at the village of Allakaket briefly for a meal and a bath and visiting the Episcopal mission across the river, the survey team left that northerly outpost and launched themselves into the unknown.[46]

Because the freighting crews had to break trail and make repeated trips over much of the route up the Alatna River, Smith, Mertie, and the main party soon overtook the freight sleds just south of an Alatna tributary called the Unakserak. Mertie reported that when the two outfits met on the trail they created quite a spectacle and quite a racket, particularly when all 145 dogs howled at once. The next day the entire caravan of ten sleds and fifteen men advanced up the Unakserak River and discovered the extreme northern limit of spruce forest where they established a temporary camp, and because they had fulfilled their contract, Smith sent the freight-haulers and 112 dogs back to Tanana.

While camped next to their piles of equipment, Smith and Mertie were surprised when an Eskimo man on a dog sled approached and offered to sell them a Dall sheep



Ice mound encountered by Smith-Mertie party en route to Unakserak River and the Continental Divide, April 21, 1924. USGS Photographic Library, J.B. Mertie (1124).

he had killed. The government scientists bought the meat, and the man agreed to take a package of letters with him back to civilization. When the letters were published in the *Washington Post* they described Mertie taking astronomical observations to calculate longitude and latitude and cutting firewood each day to stay warm. "None of us have been seriously frost bitten yet," wrote Mertie. "So, all in all, everything is going fine, and the success of the expedition seems assured. Just tell that to the doubters."[47]

While climbing eight miles beyond their camp, to an elevation of 3,300 feet, the survey crew discovered a notch through the mountains they dubbed Survey Pass, and on April 1 they began the arduous task of ferrying their food, equipment, and the canoes over the pass and into the valley below. With only three sleds and thirty-three dogs remaining, it took a month to establish a winter camp twenty miles north of the divide in a patch of willow trees "as large as a man's wrist" near the confluence of the Killik River and a tributary they named Easter Creek. North of the divide, trees were small and increasingly rare, so the willows were invaluable for firewood, for bough beds on which to set the tents, and for shelter from wind and storm.[48] The team erected two canvas wall tents with a woodstove in each for heat and cooking and settled in to wait for spring.

In camp the men were assigned chores and soon adopted a routine. Lynt put out traplines to catch rabbits for dog food and occasionally hunted Dall sheep. Dodge kept the wood bin full using an ax and a Swede saw. Blankenship looked after the dogs, and Clark did the cooking and kept a pail of melting snow on each stove for drinking and washing water. Clark also fashioned a net and caught a steady supply of grayling at a deep place in the river where it was not frozen to the bottom. FitzGerald and Tait kept themselves busy on mapping trips, each lasting between a week and ten days, exploring territory that Smith estimated to be "several thousand square miles of hitherto unmapped and undescribed country."[49] Smith and Mertie also explored the surrounding territory, although they were unable to conduct much geologic work because the ground was frozen and covered in snow.

The weather on the north side of the range was much colder, as low as 60 degrees



Topographic engineers Gerald FitzGerald and Harry Tait take measurements in Survey Pass as they crossed the Brooks Range moving north, April 1924. USGS Photographic Library, J.B. Mertie (1123).



Interior of wall tent for Smith-Mertie expedition, 1924. Note that the men packed stones around the woodstove to hold heat after the fire had burned itself out. USGS Photographic Library, J.B. Mertie (1150).

Camp life was confining and soon became very boring. The long wait for spring became wearisome. How I longed for something green!

–John Mertie



John Mertie behind his dog sled during one of many week-long excursions to explore the Brooks Range, 1924. USGS Photographic Library, J.B. Mertie (1125).

below zero at times, and often the men were confined to the tents. If one of them stepped outside to gather an armful of firewood, he needed to make sure his ears were protected or they would freeze before he could make it back to shelter. As the weeks passed, the men began to feel the effects of cabin fever. They played endless games of cribbage to pass the time, and Mertie read aloud to the others from his copy of Edmund Spencer's epic poem *Faerie Queene*. Each man had been allowed to bring two books—Mertie's second book was on mathematics—but this source of entertainment was soon exhausted. Mertie wrote in his journal, "Camp life was confining and soon became very boring. The long wait for spring became wearisome. How I longed for something green!"[50]

As the days dragged on, it became obvious that the survey party was running out of dried salmon to feed their dog teams, and hunting was not providing enough meat to keep all of the dogs alive. Knowing that the animals would starve to death if left on their own, the men faced the loathsome task of culling some of the dogs. In order to allow FitzGerald to continue mapping, they needed to keep one dog team going as long as possible, and although it saddened them, the men led eighteen of the dogs out one evening, just at sunset, and shot them. "Poor devils!" wrote Mertie who became chief executioner when the others refused. "It seemed a shame after they had worked so hard for



Unpacking cedar canoes to continue survey work in spring on the Killik, Colville, and Ikpikpuk Rivers, May 23, 1924. USGS Photographic Library, J.B. Mertie (1129).

us. They were not like horses. After the first one was shot, they understood what was going to happen to them. I would rather kill a dozen horses than one dog!"[51] This would be just the first of several occasions when the thinnest dogs were shot.

Before long any break in the routine became a welcome distraction, like giving and receiving haircuts or the time Blankenship lost a filling and Mertie used some "copper cement" supplied by his dentist, a stick of wood, a jackknife, and a piece of dental floss to shape a replacement. Blankenship would soon require further ministering when he returned from an excursion in great pain from snowblindness caused by an increasingly powerful sun reflecting off of the snow. After applying boric acid compresses and a black rag to block the sunlight, he recovered in just a few days. Still, these minor diversions and endless card games did little to dispel the boredom that prompted Mertie to write, "Every little cough, sniffle or paper rattle got on one's nerves. We thought spring would never come."[52]

Flocks of swans flying north in early May were the first sure signs that spring had arrived, followed by ducks, geese and the first willow buds on the trees around the camp. Although the temperatures still dropped to near zero at night, the rigors of winter had largely disappeared, and it soon became clear that they would need to exchange one mode of transportation for another. The time had come to unload the cedar canoes from their crate and to abandon the dog sleds and all other cold-weather gear. The canoes ranged from seventeen and a half to nineteen feet in length, and because the largest canoe would be more difficult to haul and the smallest more challenging to steer, Smith and Mertie played three games of cribbage to determine who chose their canoes first—Mertie won. While the others separated the canoes on a gravel bar, Mertie collected some of the wrapping that protected the canoes because the team had long since run out of writing paper.[53]

By mid-May patches of slush appeared on Easter Creek and a loud roar announced



Smith-Mertie survey team eases a heavily laden canoe down the Killik River, June 1924. USGS Photographic Library, J.B. Mertie (1178).

that break-up had arrived in front of the camp, but not until May 29 did the ice start to flow in the Killik River, their highway to the north. Anxious to launch the second phase of the survey, Smith divided the men into two parties to cover as much territory as possible before reaching the Arctic Ocean. Smith, Lynt, Dodge, and Clark would rapidly descend the Killik and then turn westward to explore the Colville headwaters before portaging to the Meade River and following it north to the Arctic Coast. Meanwhile, Mertie, FitzGerald, Tait and Blankenship would proceed downstream more slowly, surveying the region in greater detail before turning eastward along the Colville and northward on the Ikpikpuk River. Of the six dogs that remained from the original teams, Smith's group took four and Mertie's group took the last two. The dogs clambered atop fully loaded canoes and the northbound flotilla set sail on May 30.[54]

Not long after entering the Killik, low water forced the men to drag their canoes for miles over gravel bars while wading in the icy water at times up to their waists. If this were not bad enough, they also faced large patches of "anchor ice," bergs that formed on the bottom of the river and now periodically broke loose and came roaring to the surface. In addition, large stretches of the river were sheathed in aufeis, the broad overflow glaciers that formed in the winter and persisted well into the summer months.[55] In the spring, flowing

water cut narrow channels in the ice, and the survey crew made their way through these, gingerly guiding the boats while wading in the numbing water. As the flowing water undercut the ice, large blocks occasionally toppled into the stream, producing a huge splash and dangerous waves. Sharp ice repeatedly punched holes in the hulls of the boats, and on one gravel bar, Mertie miscalculated when he jumped out of his canoe to lighten the load and felt the boat grind over his foot. The foot immediately began to swell, and Blankenship and Tait declared it was broken because they could hear bone scraping against bone when they manipulated his foot. The accident kept Mertie and his crew in camp for a week, time they used to repair the canoes with strips of wood the project's organizers had the foresight to bring along, knowing that they would be traversing a nearly woodless country. Meanwhile, Smith's crew sped onward toward the Colville.[56]

Even after Mertie and his crew set sail again, the broken foot kept Mertie confined to his canoe for several days, though he eventually spotted a rock outcropping that he felt he should examine. Using a pair of paddles as crutches and at times leaning on one of his colleagues, he hobbled painfully along, collecting fossils and assessing new geological formations. On other occasions his companions gathered rocks and brought them back to the canoe for Mertie to analyze. Although they eventually left the ice hazards behind, the river continued to present serious obstacles. At one stretch of swift water dubbed Sunday Rapids, the men stopped to assess their chances from high ground before proceeding. Although the first canoe shot through unscathed, the second canoe, with Blankenship and Mertie at the helm, floundered in the first big waves and the two men held on while the boat submarined through a second set of rapids. In a stroke of good luck, the canoe remained upright, and they were able to guide it to the shore where they could dry their clothes and unload the soggy cargo. Their flour, beans, tea, most of the matches, salt and beds all got wet, but they were able to dry most items and still had enough matches to last the summer if they were careful. That night, however, as they were struggling to warm themselves, it started to rain and then to snow heavily. It was June 14.[57]

As the Killik swelled with spring melt, the sailing became easier, allowing Mertie and his men to resume mapping, gathering geologic data, exploring tributaries, and hunting to feed four people and two dogs. On one occasion Blankenship's dog, Spot, would not sit still atop a bundle of cargo and threatened to capsize the canoe. Blankenship was so irritated that he tossed the dog into the current and soon lost track of him. Mertie reported that Blankenship felt so guilty over losing the dog that he spent the whole night searching and calling for the animal, to no avail. On July 2, Mertie's party arrived at the much larger Colville River and camped at the confluence near what Mertie described as "a very old Eskimo camp site." There they found a note stashed by Smith two weeks earlier. In the note, Smith advised Mertie to locate the Ikpikpuk River "if you can find it" and to take it north to the coast, instructions that left Mertie feeling unsettled. "The drainage did not look at all like it was pictured to us," Mertie recalled. "Theoretically, the Ikpikpuk portage was to be found some distance from where we were, down the Colville, but I had my doubts."[58]

While Mertie and his men were setting up their tent, they were startled to see a column of smoke coming from a nearby hilltop, and despite his broken foot, Mertie was soon making the ascent to investigate. He discovered a fissure in the earth near the summit formed by a gaping coal seam that belched fire and smoke. Mertie called it "a bizarre sight" and commented that "to have slipped



Members of Smith's team work a canoe down the headwaters of the Ikpikpuk River, July 30, 1924. Philip Sidney Smith Collection, University of Calgary (5-2-1724).

and fallen into this gap would have meant instant death, either from the fall, the fire or the fumes." He speculated that the seam had been set afire by Eskimos long ago or by lightning and that it might continue to burn indefinitely.[59]

While the Smith party was struggling up the Colville on what would ultimately be an unsuccessful search to find the Meade River, the Mertie crew turned eastward (and downriver) for about thirty miles before beginning a series of long cross-country trips northward to search for a route to the Ikpikpuk River. At the beginning of each trip, Mertie and FitzGerald set out with a tarp to sleep under, bedding, a kettle, and food for two days, hoping to find streams that would take them to the Ikpikpuk headwaters, but instead they encountered a depressing drizzle and swampy land that drained their strength and their spirits. Only after travelling eighty-five miles in three days, and most of that with packs on their backs, did they find what they were looking for—two streams with a portage in between that would lead them north and west to the Ikpikpuk.

After Mertie and FitzGerald returned to their camp on the Colville, the men rested for a day to allow Mertie's badly swollen foot a chance to recover. The next day they located the first stream, though this leg of the journey began inauspiciously. The stream was so shallow that it took all four men to drag each of the boats into the stream's mouth and over riffles at sections of low water. Over the next seven days the men were tormented by mosquitoes and by the gravel bars that wore the hulls of their canoes thin. At night they lit smudge pots in front of the tent in an attempt to keep the mosquitoes and biting flies at bay, but nothing could be done about the ever-diminishing water level.[60] By the third day the men found themselves clearing boulders out of the streambed by hand and shoveling a channel three or four inches deep in which to drag the canoes. On the worst days the group made only three miles progress, and Blankenship and Tait began to express doubt that the streams would lead to the Ikpikpuk. It was here, when their prospects seemed most dire, that FitzGerald's dog Prince, the last of the thirty-three dogs that crossed the Conti-



The midway camp on the portage between Prince and Maybe Creeks, July 25, 1924. USGS Photographic Library, J.B. Mertie 1191).

nental Divide, was nearly eaten alive by the mosquitoes. As the dog whined and thrashed about, attempting to brush the cloud of insects from its eyes, FitzGerald decided to shoot him and the men agreed to name the stream Prince Creek in his memory.[61]

Once the crew reached the headwaters of Prince Creek, the real drudgery began. They needed to portage the eight miles between Prince Creek and the next tiny waterway, which they dubbed Maybe Creek because, as Mertie noted, "maybe we would make it to the Ikpikpuk drainage." A reconnaissance run by FitzGerald and Tait revealed that the water in the next drainage was even lower than what they had experienced thus far, and the only consolation was that cold and cloudy weather had damped the mosquitoes, allowing the men to lift their bug veils outdoors for the first time in several weeks. After unloading the cargo, all four men dragged one empty canoe across, came back, and dragged the second, before returning to camp. After one night's rest, they began portaging the cargo, with seventy pounds on their backs and two round-trips each day over soft tundra and tussock mounds that bent under their weight and threatened to toss the exhausted men to the ground. Mertie reported in his journal that he was too tired at night to sleep and that when he did doze off, dreams of "all sorts of fantastic things" left him feeling as tired as when he went to bed. "One who has never experienced this primitive means of transportation," he wrote, "can never understand what it means. It is like being back in cave-man times."[62]

On July 26, at the midway point in the portage, Mertie took a photograph of their camp that showed a canvas wall tent in the middle of a tabletop-flat landscape dotted with clumps of lichen and short tundra flowers. During the portage, the weather tormented Mertie and his men by delivering sprinkles but not enough rain to fill the streams and allow them to launch their canoes again. Mertie reported that when the first man arrived at Maybe Creek he found an empty streambed



Mammoth tusk found by Smith's team along the Ikpikpuk River, July 5, 1924. Philip Sidney Smith Collection, University of Calgary (5-2-1680).

and cried "My God, it's dry!" That night they went to bed with aching muscles and shoulders raw where the pack straps cut into them, not knowing that their luck would soon change. They awoke to realize that the intermittent showers that had so frustrated them earlier were now accumulating to create a few inches of flowing water. In fact, steady rain soon caused a flood that forced the elated travelers to move their camp to higher ground. Within a few days the water was bank-high, and they were sailing again, traveling thirty miles along the winding creek without scraping bottom and without ever stepping out of the boats except for lunch. "What luck! What drudgery we had been saved," wrote Mertie. "We were more fortunate than one could imagine, for seldom does such a heavy rain occur in that semi-arid country."[63]

During several days of easy travel, Mertie's only concern was that Maybe Creek continue flowing westward to the Ikpikpuk rather than plunging south and back to the Colville River. On the fifth day, he was delighted and relieved when the channel turned northward and he felt confident that they had finally found their river. Their descent of the Ikpikpuk was delayed only by occasional stints of surveying and by the need, in an almost treeless land, to gather driftwood where they could to have enough wood for cooking. Along the riverbank they spotted what they believed were mastodon skulls, leg bones, and tusks, some weighing 100 pounds and measuring nine feet, but these were far too heavy to take along. In the meantime, Mertie remained unaware that Smith and his party were also on the Ikpikpuk and about to overtake them. As it turned out, Smith's group had failed in their attempt to find the Meade River (it was too far west) and had doubled back to find the Ikpikpuk. After one day on the river, Smith spotted the paper jacket of the *Faerie Queene* at the water's edge, alerting him to the fact that Mertie and the other team members must have been ahead of them. Once the two groups were reunited, they celebrated briefly and swapped

stories before continuing their mapping and geological work.[64]

After traveling together for three days, the surveyors came to a fork in the river. In a bid to cover as much territory as possible, Smith and Dodge took one canoe along the eastern channel while Mertie and the others took the remaining canoes through the western channel (called Chipp River) leading to Admiralty Bay on the Arctic Coast. At this point in their journey, Smith and Mertie recognized that speed was essential if they wanted to reach Barrow by September 1 and board a ship before the polar ice made escape from the Arctic impossible until the next spring.

Mertie's group reached the ocean in only four days and found survey monuments left by the Geological Survey party that had mapped the coastal zone the preceding year. What they did not find was any driftwood on their stretch of coastline; instead they cooked with two primus stoves and gasoline that they had carried all the way from Tanana. Mertie's party crossed Admiralty Bay before veering westward toward the Eskimo community and trading post at Point Barrow. After dodging icebergs near the beach for several hours, they were met by a rescue launch sent from Barrow to search for crewmen evacuated from the Hudson's Bay Company schooner *Lady Kindersley*, which was stuck in the ice off the coast. After the Survey men stashed their canoes, the launch crew agreed to take them along, but soon the ice pack blocked the boat's progress, forcing Mertie and his men to walk the remaining distance overland. They arrived at Barrow on August 22 at one in the morning.[65]

Smith and Dodge, meanwhile, conducted time and compass surveying on the rest of Ikpikpuk River and visited with a small band of Eskimos, the first people that the government scientists had seen since leaving the Unakserak six months before. On the shore of Smith Bay—named for a Hudson's Bay Company official in 1837—the two men reported that they had trouble estimating distance or recognizing objects because of the lack of topographical relief in that part of the country. "[T]he west side of Smith Bay was entirely unrecognizable from the head of the bay," wrote Smith, "and even the shore not a mile away was inferred only by the presence of stranded logs along the beach, which apparently floated several feet up in the air."[66] Canoeing along the shore, Smith and Dodge hastily visited oil claims staked three years earlier by oil prospectors in the vicinity of Cape Simpson before skirting the sand reefs and islands that lie near the coastline. After waiting several days for storms to pass, they continued until pack ice blocked their way. The two men cached their canoe and much of their equipment and walked to Barrow, arriving within twelve hours of Mertie's party.[67]

After sending a message to the Geological Survey headquarters from Barrow's newly installed wireless telegraph station, the reunited survey team was informed that the *Arctic*, the ship that was supposed to carry them to Nome, had been crushed by the ice and sunk earlier in the month. As Mertie learned from the crew of the rescue launch, the *Lady Kindersley* was immobilized in the ice. Furthermore, the Revenue Marine cutter *Bear*, which ordinarily visited Barrow during the summer, had been badly damaged by ice and had been forced to return south for repairs. While awaiting more encouraging news, Mertie photographed the Eskimo men who spent long hours with telescopes on the roof of the Cape Smythe Whaling and Trading Company building trying to assess the damage. As luck would have it, a Bureau of Education ship, the *Boxer*, had taken refuge behind the Plover Islands east of Point Barrow, and after rescuing the crews from the other ships, its captain agreed to take the Survey men to Nome where they could find passage south.[68]

When Smith and his fellow explorers at last arrived in Seattle, nine months after they set sail for Alaska, they emphasized Alaska's coal-rich geology when speaking to the press rather than their inability to find far-north oil. In fact, Smith would say only that "the foothills and great valleys which are north of the [Arctic] Range contain some of the greatest bodies of coal on the American continent, further proof that Alaska in past ages had a temperate, if not a sub-tropical climate."[69] Even this abbreviated disclosure led the *Washington Post* to trumpet, "[The Arctic] may presently be sending us coal to keep us warm in winter, and that which we regarded as a land of inert desolation may be providing the source of energy for our industrial activities."[70] Smith and Mertie were less sanguine about the potential for energy exploitation in the Arctic. As for petroleum deposits, they stated plainly that "unless a very large supply of oil can be demonstrated, the development will be so costly that, for practical purposes, the area cannot be regarded as a potential source of oil in the near future." In a separate report they warned would-be oilmen,

> The region is most assuredly not one where anyone can get rich quick in oil without enormous expenditures of capital for development, and no one should risk funds whose loss will seriously embarrass him, because development of oil in this region is distinctly a wildcat undertaking of the most speculative character.[71]

The elusiveness of Arctic oil, however, did nothing to slow the Geological Survey's exploration schedule in Naval Petroleum Reserve No. 4—after all, their larger mission was to study the regional geology and to map the nation's last uncharted region. Between 1925 and 1927, Smith, Mertie, FitzGerald, and other Survey employees launched ambitious transects of the petroleum reserve and elsewhere in northern Alaska, but newspapers outside of Alaska no longer paid much attention.[72] Try as they might, reporters had been unsuccessful in their attempts to turn the Survey's tight-lipped geologists and topographers into celebrities. In 1926, a reporter for the *Christian Science Monitor* came closest to capturing the realities of government survey work when he wrote,

> Year by year they pitch their white tents under the wild majesty of the unnamed mountains. The men are a distinct type. They are physically big, mentally adventurous and conversationally direct. Their work attracts



Members of a Geological Survey team and their pack dogs crossing the Continental Divide between the Etivuluk and Aniuk Rivers in the Brooks Range, 1925. The Survey men named the route Howard Pass because the Navy's Ensign William Howard traveled it on April 21, 1886. USGS Photographic Library, W.R. Smith (272).

Side Note #7

THE MECHANICAL CONQUEST OF THE ARCTIC POSTPONED



One of two "snow motors" leaving Nenana on February 11, 1926 en route to Point Barrow. Two weeks and 65 miles later the effort was abandoned. Courtesy of Julie Warren.

In 1926 the Australian explorer George Wilkins hatched a plan to become the first person to fly an airplane over the North Pole. Aviation was still in its infancy in Alaska, and Wilkins faced one imposing obstacle—he needed to get his airplanes and fifteen tons of gasoline and supplies to Point Barrow, the northernmost point in the United States. Rather than shipping his entire outfit by sea, which would have taken too long, Wilkins announced to the world that he would fly north and send his supplies overland towed by two modified tractors called "snow motors."

The Detroit-Wilkins Arctic Expedition attracted media attention even before Wilkins reached Alaska. Not only was the explorer planning to fly over the Brooks Range, but he was also planning to use machines that could travel over snow and ice. To head his overland expedition Wilkins hired an Alaska sourdough named Alexander "Sandy" Smith who had ample experience crossing Alaska by foot and dogsled. Smith predicted that the "snow motors," which operated with twin cigar-shaped steel cylinders, would deliver the supplies to Barrow within thirty-five days and would force Alaska's sled dogs into retirement. Earl Rossman, a reporter and film-maker attached to the expedition, claimed the machines would "rob the Arctic of its terrors."

From the beginning the overland expedition was plagued by delays. Hummocky ice and snowdrifts the consistency of granulated sugar churned under the cylinders rather than providing traction, and starting the tractors in subzero temperatures led to broken engine parts. Soon the team realized that given their rate of fuel use, the machines would eventually consume all of the gasoline they were supposed to deliver to Point Barrow. After two weeks the machines had traveled only sixty-five miles, and Smith decided to abandon them in favor of a more reliable mode of transport. Acting quickly, he bought five sleds and sixty-eight dogs to take a much smaller load up the Koyukuk and John Rivers, through Anaktuvuk Pass, and north to the Arctic Coast. The "snow motors" had been a failure, and one New York reporter suggested that "the Alaskan huskies have every right to sit on their haunches and give the whole mechanical universe the merry ha-ha." Meanwhile, Wilkins' planes repeatedly crashed, and the Australian would try for two more years before making a successful flight over the pole.



Film-maker Earl Rossman poses behind his camera near Anaktuvuk Pass in the heart of the central Brooks Range, March 26, 1926. Rossman joined "Sandy" Smith as part of the Detroit-Wilkins Arctic Expedition and was recruited to aid in an overland supply run to Point Barrow. Karl Thiele Collection, Alaska State Library (P221-24).

Members of a Geological Survey team rest their dogs and their own legs during a cross-tundra slog through Howard Pass in 1925. The pass is located in a section of the Brooks Range that is today Noatak National Preserve. USGS Photographic Library, W.R. Smith (278).

> little public attention. The technical volumes that they compile accumulate dust on the shelves of the geologic survey. Only a line or so of blue to mark a new river, a hatch of brown contour tracings to indicate a mountain, or tales of coal and oil found in the frozen wilderness, to rouse the curiosity of a distant capitalist, tell the story of their adventures.[73]

While it is true that Survey men were not the type to boast and their reports were not bestsellers, there was a second reason that their exploits remained largely uncelebrated. Even before Smith and Mertie entered the Brooks Range, a transportation revolution was unfolding that would render the tradition of grueling overland travel an anachronism. During the mid-1920s, Alaska's earliest pilots began to test the limits of airplanes in the North—delivering mail across vast roadless areas, dropping bundles of newspapers by parachute over news-starved mining camps, and carrying passengers across the territory or on flightseeing tours of Mt. McKinley. Many people predicted that sled dogs would soon find themselves unemployed, replaced by the airplane and early-model snowmobiles.[74] While Smith and Mertie were camped in the mountains, Brooks had already requested funds for aerial surveys of the petroleum reserve, and the Navy was planning to survey Alaska's southern coast using amphibious planes mounted with cameras capable of creating a photographic mosaic of the landscape.[75]

Although aviation would soon transform transportation in much of Alaska, the Brooks Range endured as a place where machines could not travel—for example, pilots could fly over the range between Wiseman and Point Barrow, but they could not easily land in the mountains and expect to take off again. For the wilderness advocate Robert Marshall, the inaccessibility of Alaska's northern mountains was a blessing not a curse, and during the 1930s his wide-eyed celebration of the central Brooks Range would transform both the region's map and our understanding of exploration itself.

Epilogue: A New Name for the Arctic Mountains

On November 22, 1924, three months after Philip Smith and John Mertie returned from their ambitious survey of northern Alaska, Alfred H. Brooks passed away at the age of fifty-three. A man of great vigor and great devotion to Alaska, Brooks was admired by his employees and by average Alaskans who understood that his life's work was to promote the economic development of their region. During his twenty-two years as the U.S. Geological Survey's Chief of Alaska Geology, he worked tirelessly to locate Alaska's mineral wealth. In *Blazing Alaska's Trails* , published posthumously in 1953, Brooks also illustrated how exploration and economic development are closely allied. As a tribute to the man and his service to the nation, the Geological Survey renamed what had commonly been called the Arctic Mountains, the Brooks Range.[76]

Endnotes

[1] Philip S. Smith and John B. Mertie, *Geology and Mineral Resources of Northwestern Alaska*, USGS Bulletin 815 (Washington, D.C.: GPO, 1930), 331-332.

[2] Eugene McElwaine, *The Truth about Alaska, the Golden Land of the Midnight Sun* (self-published, 1901), 83-89; Joseph Grinnell, *Gold Hunting in Alaska* (Chicago: David C. Cook Publishing Company, 1901), 28-30.

[3] Sherwood, 149.

[4] Charles D. Walcott, *Maps and Descriptions of Routes of Exploration in Alaska in 1898*, U.S. Senate (Washington, D.C.: GPO, 1899), 12. See also, Sherwood, 171.

[5] The Peterborough Canoe Company, founded in 1893, was one of several cedar canoe manufacturers in Peterborough, Ontario that sold canoes throughout North America until the early 1960s.

[6] "Bananas in the Outfit," *Washington Post*, April 17, 1899, 4.

[7] Frederick C. Schrader, *Preliminary Report on a Reconnaissance along the Chandlar and Koyukuk River, Alaska, in 1899* (Washington, D.C.: GPO, 1900), 447.

[8] Ibid., 449.

[9] Ibid., 453.

[10] Ibid., 457.

[11] Ibid., 483.

[12] Walter C. Mendenhall, *Reconnaissance from Fort Hamlin to Kotzebue Sound, Alaska by Way of the Dall, Kanuti, Allen, and Kowak Rivers* (Washington, D.C.: GPO, 1902), 7.

[13] Ibid.

[14] Ibid., 9-10.

[15] Ibid., 18.

[16] Ibid.

[17] Frank C. Schrader, *A Reconnaissance in Northern Alaska across the Rocky Mountains, along Koyukuk, John, Anaktuvuk, and Colville Rivers, and the Arctic Coast to Cape Lisburne, in 1901*, notes by Walter J. Peters (Washington D.C.: GPO, 1904), 12.

[18] Ibid., 21.

[19] Ibid., 22.

[20] Ibid.

[21] Ibid., 24.

[22] Ibid.

[23] Ibid., 24-25.

[24] Frederick C. Schrader, "Recent Work of the U.S. Geological Survey in Alaska," *Bulletin of American Geographical Society* 34 (1902), 9.

[25] Schrader, *A Reconnaissance in Northern Alaska*, 13-14.

[26] Alfred H. Brooks, "Mineral Resources of Alaska" in *Report of the National Conservation Commission, February 1909* (Washington, D.C.: GPO, 1909), 572.

[27] Philip S. Smith, *The Noatak-Kobuk Region, Alaska*, USGS Bulletin 536 (Washington, D.C.: GPO, 1913), 15; Philip S. Smith and H.M. Eakin, *The Shungnak Region, Kobuk Valley and the Squirrel River Placers, Alaska*, USGS Bulletin 480-J (Washington, D.C.: GPO, 1911), 306-319.

[28] Philip S. Smith, *The Alatna-Notatak Region, Alaska*, USGS Bulletin 520-L (Washington, D.C.: GPO, 1912), 315-338.

[29] Ernest de Koven Leffingwell, "My Polar Explorations, 1901-14," *Explorers Journal* (October 1961), 13. Canning, 9.

[30] Alfred H. Brooks in Preface to Ernest de Koven Leffingwell, *The Canning River Region, Northern Alaska*, USGS Professional Paper 109 (Washington, D.C.: GPO, 1919), 9.

[31] Sidney Paige, Walter T. Foran, and James Guilluly, *A Reconnaissance of the Point Barrow Region, Alaska*, USGS Bulletin 772 (Washington, D.C.: GPO), 3-4. Alfred H. Brooks,

"Progress Report on Survey of Naval Petroleum Reserve No. 4, Alaska," USGS, Washington, D.C., April 12, 1924, typescript, 4.

[32] William T. Foran, Field Notebook 484, August 25, 1924, USGS Alaska Technical Data Unit, Anchorage, Alaska (hereafter William T. Foran, FN-484).

[33] William T. Foran, FN-484, September 1, 1924.

[34] Ibid.

[35] William T. Foran, FN-484, September 17, 1924.

[36] William T. Foran, FN-484, cover.

[37] William A. Du Puy, "Government Scientists as Daredevil Explorers," *Anaconda Standard* (Montana), October 22, 1911, n.p.

[38] "Geologists Will Make Winter Trip Arctic Oil Field," *Fairbanks Daily News-Miner*, January 15, 1924, 1; "Party to Seek Oil in Alaska," *Los Angeles Times*, January 16, 1924, 8; "Party Off to Chart Arctic Wilderness," *Washington Post*, April 22, 1924, 13.

[39] "Exploring Alaska Where Whites Never Have Been," *New York Times*, April 6, 1924, 20; Evelyn Mertie, *Thirty Summers and a Winter*, eds. Ernest Wolff and Bruce Campbell (Fairbanks: University of Alaska School of Mineral Industry, 1982), 78.

[40] William C. Overstreet and Robert M. Chapman, "Memorial to John Beaver Mertie, Jr., 1888-1980," *Geological Society of America Memorials* (1982), 4.

[41] "Exploring Alaska Where Whites Never Have Been," *New York Times*, April 6, 1924, 20.

[42] "Polar Alaska Will Be Explored by American Geological Party," *Christian Science Monitor*, April 5, 1924, 9.

[43] "Americans Explore Territory Eskimos Believe is Haunted," *Washington Post*, February 22, 1924, 4; "Unknown Arctic Region Inspires Strange Tales," *Fairbanks Daily News-Miner*, July 5, 1924, 3. Tales of mastodons living in the North were not uncommon. In 1887 the *New York Times* published a story about an Indian hunter who tracked an enormous animal "with great shining yellowish tusks and a mouth large enough to swallow him in a single gulp." "Mastodons in Alaska," *New York Times*, October 11, 1887, n.p.

[44] "Head Geological Survey Party on Trail to Tanana," *Fairbanks Daily News-Miner*, February 7, 1924, 1; "Second Unit of Survey is En Route Tanana," *Fairbanks Daily News-Miner*, February 23, 1924, 1; Philip S. Smith and John B. Mertie, *Geology and Mineral Resources of Northwestern Alaska*, USGS Bulletin 815 (Washington, D.C.: GPO, 1930), 10; Mertie, *Thirty Summers*, 72.

[45] *Fairbanks Daily News-Miner*, March 5, 1924, 3; "Polar Alaska Will Be Explored by American Geological Party," *Christian Science Monitor*, April 5, 1924, 9; "Exploring Alaska Where Whites Never Have Been," *New York Times*, April 6, 1924, X20.

[46] Mertie, *Thirty Summers*, 76-80. St. Johns-in-the-Wilderness Episcopal Mission in the community of Alatna was established in 1906 to serve both Eskimo and Athabascan children.

[47] "Uncharted River Is Found by Survey Men in Alaska," *Washington Post*, June 15, 1924, 1; "Finds Unknown River in Wilds of Alaska," *New York Times*, June 15, 1924, 15; "Arctic River Found," *Fairbanks Daily News-Miner*, June 17, 1924, 3.

[48] John B. Mertie, Jr., Field Notebook 521, June 3, 1924, USGS Alaska Technical Data Unit, Anchorage, Alaska (hereafter John B. Mertie, Jr., FN-521); Smith and Mertie, *Northwestern Alaska*, 11-12.

[49] Smith and Mertie, *Northwestern Alaska*, 12.

[50] Mertie, *Thirty Summers*, 86.

[51] Ibid.

[52] Ibid., 90, 92.

[53] Ibid., 88.

[54] Ibid., 92.

[55] Smith and Mertie, *Northwestern Alaska*, 13; Mertie, *Thirty Summers*, 92-94.

[56] Norman C. McLoud, "A Thrilling Search for Wealth in the Wilds of Alaska," *Popular Science Monthly* (January 1925), 40; John B. Mertie, Jr., FN-521, June 4, 1924; Mertie, *Thirty Summers*, 94.

[57] John B. Mertie, Jr., FN-521, June 5, 1924; Mertie, *Thirty Summers*, 96, 98.

[58] Mertie, *Thirty Summers*, 99.

[59] Ibid.

[60] Ibid., 100-102. See also, Philip S. Smith, "Explorations in Northwestern Alaska," *Geographical Review* 15 (April 1925), 252.

[61] Ibid., 102.

[62] Ibid., 108.

[63] Ibid., 110.

[64] John B. Mertie, Jr., Field Notebook 522, August 4-5, 1924, USGS Alaska Technical Data Unit, Anchorage, Alaska (hereafter John B. Mertie, Jr., FN-522); Mertie, *Thirty Summers*, 110.

[65] John B. Mertie, Jr., FN-522, August 20-22, 1924; Smith and Mertie, *Northwestern Alaska*, 16; Mertie, *Thirty Summers*, 111.

[66] Smith, "Explorations in Northwestern Alaska," 244. Smith compares his experiences with those of Vihjalmur Stefansson who recounts stalking for an hour what he supposed to be a grizzly bear before realizing that the animal was only a marmot sitting a short distance away. See also, Vihjalmur Stefansson, *My Life with the Eskimo* (New York: Macmillan Co., 1913), 76-77.

[67] "Away Up in the Arctic," *Fairbanks Daily News-Miner*, August 30, 1921, 1; "Our Oilfields Are Unlimited," *Fairbanks Daily News-Miner*, September 22, 1921, 3; John B. Mertie, Jr., FN-522, August 22, 1924; Mertie, *Thirty Summers*, 112.

[68] "Complete Survey Petroleum Fields," *Fairbanks Daily News-Miner*, August 28, 1924, 1; "Survey Naval Reserve Completed, Party at Barrow," *Nome Nugget*, August 30, 1924, 1; Smith and Mertie, *Northwestern Alaska*, 16-17.

[69] "Vast Quantities of Coal Found in the Arctic," *Fairbanks Daily News-Miner*, October 14, 1924, 1; "Finds Coal in the Arctic," *New York Times*, October 15, 1924, 22. For a history of coal use in northern Alaska see, Claus-M. Naske, "Mining Coal on the Meade River, Alaska," *Pacific Northwest Quarterly* 88 (Winter 1996/1997), 3-12.

[70] "Heat from the Land of Cold," *Washington Post*, October 17, 1924, 6.

[71] Philip Smith, "Geologic Investigations in Northern Alaska," in *Mineral Resources of Alaska: Report on Progress of Investigations in 1925*, USGS Bulletin 792 (Washington, D.C.: GPO, 1927), 118; Philip S. Smith, John B. Mertie, and William T. Foran, *Summary of Recent Surveys in Northern Alaska*, USGS Bulletin 783-E (Washington, D.C.: GPO, 1926), 166.

[72] "Geological Survey Party on Way Inside," *Fairbanks Daily News-Miner*, March 10, 1925, 1; "Geol. Survey Party Back from Colville River," *Fairbanks Daily News-Miner*, September 19, 1925, 1; "Geo. Survey to Continue Work in Alaska Oil Fields," *Fairbanks Daily News-Miner*, February 2, 1926, 1; "Smith and Party Back from Arctic," *Fairbanks Daily News-Miner*, October 5, 1926, 7; "Unexplored Area in Arctic to Be Surveyed," *Fairbanks Daily News-Miner*, February 26, 1927, 1.

[73] "Three Federal Expeditions to Lift Alaskan Curtain," *Christian Science Monitor*, June 5, 1926, 4A.

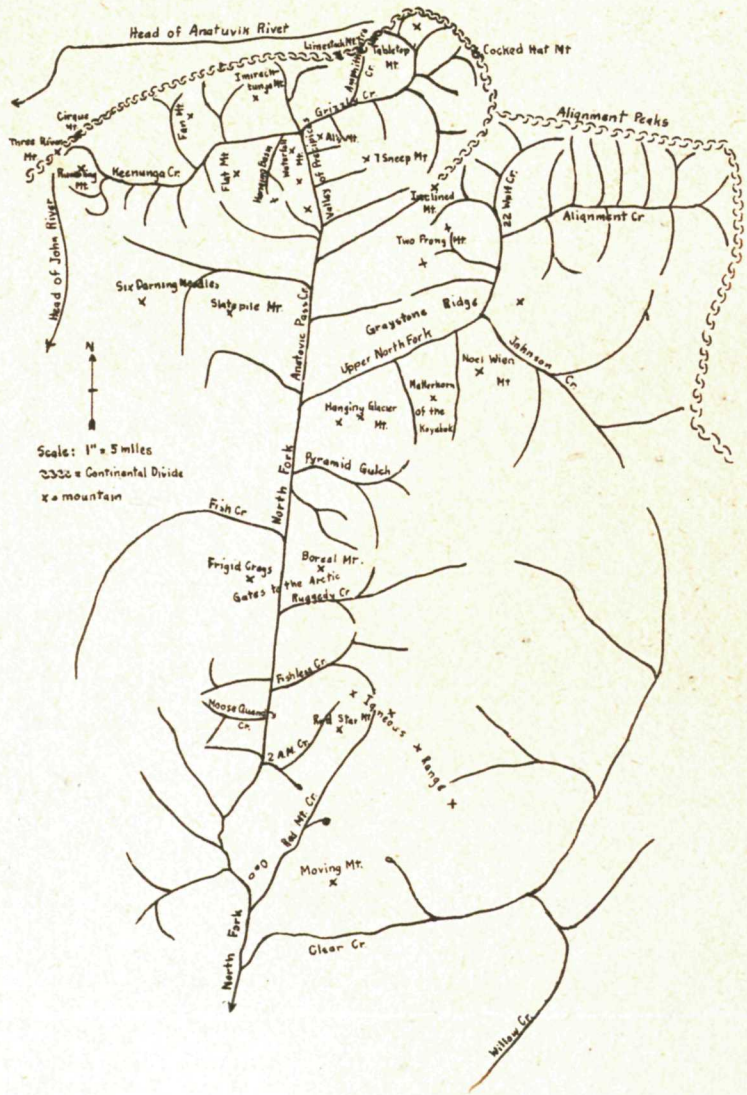
[74] "Motor Sled Planned for Alaska Hauling," *Seattle Daily Times*, October 14, 1923, 23; "Airplane May Replace Dog as Alaska's Mail Carrier," *Washington Post*, March 30, 1924, 7; "Alaskan Newspaper Delivered by Plane," *Washington Post*, July 19, 1924, 9; "Passenger Airplane Service in Alaska," *Washington Post*, August 10, 1924, ES10; "Seeing Alaska from Air Grows Popular," *Washington Post*, September 10, 1924, 14.

[75] Brooks, "Progress Report," 2, 9; "Expedition to Map Alaska from the Air," *New York Times*, May 24, 1926, 7; "Aerial Mapping Party Uncovers Alaskan Riches," *Christian Science Monitor*, August 25, 1926, 1; Carson Hathaway, "Fliers to Chart Alaska from Air," *New York*

Times, September 12, 1926, 10; "Navy Airmen Map Alaska," *New York Times*, October 17, 1926, 5.

[76] Philip S. Smith, "Memorial of Alfred H. Brooks," in Alfred H. Brooks, *Blazing Alaska's Trails* (Fairbanks: University of Alaska Press, 1953), 533-567.

Seeking Blank Spaces



Chapter 4: Seeking Blank Spaces

Robert Marshall and New Concepts

In 1929, as the airplane and automobile were changing travel for many Alaskans, a curious figure arrived in the Brooks Range with little more than a backpack, a pair of leather boots, and a desire to experience the thrill of discovery in an unmapped and unpeopled corner of the continent. His name was Robert Marshall—Bob to his many friends—and he introduced Americans to a new idea: exploration for the fun of it. According to Marshall, the era of heroic conquest and grand discoveries in the name of science had largely passed, leaving those few who craved the experience of primitive landscapes to seek their own personal joy. "The justification, if one is needed, for present-day exploration," wrote Marshall, "is almost exclusively the selfish one of giving oneself the exhilaration of that most glorious of all pastimes, setting foot where no human being has ever trod before."[1] Although Marshall's life would end early, the power of his evolving ideas about the values of wilderness transformed the way many Americans viewed wild places and gave momentum to the idea that the Brooks Range should be preserved as a place of exploration and self-discovery.

One of four children, Bob Marshall was born on January 2, 1901 in his family's brownstone house in New York City where his father, Louis Marshall, was a prominent constitutional lawyer, a leader in Jewish affairs, an advocate for minority rights, and a conservationist who denounced what he called the country's "hasty dismantling of her natural heritage."[2] The Marshall children all attended New York's progressive Ethical Culture School and passed the summer months in the Adirondack Mountains where the Marshalls shared a wilderness camp with five other families on Saranac Lake. During his summer romps the young Bob Marshall refined his woodcraft and climbed the surrounding mountain peaks with an enthusiasm unmatched by his siblings or anyone else. Eventually Marshall, his brother George, and their friend and guide Herb Clark became the first people to ascend all forty-six Adirondack peaks above 4,000 feet. At times he would climb three or four peaks in a day, and the guidebook he wrote rated them all with a system he called "All Around Pleasure in View and Climb."[3]

By the age of fifteen Marshall was determined to become a forester so that he might spend the greater part of his life outdoors. Even so, he had little idea what foresters really did and later confessed to "vague notions of thrilling adventures with bad men, of lassoing infuriated grizzlies and of riding down unknown canyons in Alaska." Marshall attended the New York State College of Forestry and in 1925 joined the U.S. Forest Service on the staff of the Northern Rocky Mountain Forest Experiment Station with headquarters in Missoula, Montana. While working among lumberjacks and fire-fighting crews, Marshall overcame his shyness and earned a reputation as a hard worker, a jokester, and an inveterate wilderness hiker, astonishing his coworkers by routinely walking thirty or more miles in a day through the Flathead and Lewis and Clark National Forests.[4]

After several years of Forest Service work in the American West, Marshall began to grow restless again. He enjoyed being a forester because of what he described as the



Robert Marshall in the early 1930s. Robert Marshall Collection, Bancroft Library, University of California, Berkeley.

I feel that one of the great values of exploration is in pitting oneself without the aid of machinery against unknown Nature.

–Robert Marshall

"delightful contrasts between the mental adventure of science and the physical adventure of life in the woods," but he yearned for more stimulating backcountry challenges, perhaps something closer to the exploits of his boyhood heroes, Meriwether Lewis and William Clark.[5] During the summer of 1929, in the middle of his doctoral program in plant physiology, Marshall picked up an atlas of the United States and began looking for blank spaces. Drawn to the map of Alaska, he observed that only two really large sections were left uncharted. The first was on the South Fork of the Kuskokwim River, southwest of Mount McKinley, and the second at the headwaters of the Koyukuk River.[6] Marshall found the idea of a summer in the Arctic irresistible and began planning his trip immediately.

Although he believed that in the modern age the justification for exploration was primarily the personal happiness of the explorer, Marshall began by planning a "social justification" for the trip he called his "two-month fling at real exploration." He would conduct a study of tree growth at northern timberline, investigating the natural forces that limit the progression of trees northward into the Arctic. He also sent several telegrams to the Alaska Agriculture College and School of Mines asking if they could select for him a traveling companion. Marshall then spent two weeks traveling from New York by train, steamer, and twisting railroad to the end of the line at Fairbanks, which he called "the metropolis of Alaska, where railroads and highways ceased." A mining student named Alexander Retzlaf met Marshall at the station, and the two men hit it off right away. Soon they would begin Marshall's investigation of a 15,000-square-mile "blank space" on the map of the upper Koyukuk River drainage.

North Fork of the Koyukuk River, 1929

In order to reach the foothills of the central Brooks Range, Marshall and Retzlaf boarded a seven-passenger airplane to reach the small gold mining settlement of Wiseman along the Koyukuk's Middle Fork, one hundred miles north of the Arctic Circle. It was Marshall's first time in an airplane, and he was dazzled by the thousands of tiny ponds and oxbows strewn across the Yukon Flats and the sight of three frightened caribou that "galloped wildly around, terrified by the mysterious disturbance of their silent haunts." Although he clearly saw the advantage of traveling one hundred and seventy-five miles in less than two hours, Marshall would later condemn machines for their ability to diminish wilderness. "I feel that one of the great values of exploration is in pitting oneself without the aid of machinery against unknown Nature," wrote Marshall. "When you use machinery to get the jump on Nature by making her reveal some of her secrets in advance, it seems to me a little bit like peeping at the end of the book to see how the plot will come out."[7]

A crowd of about twenty people met the plane in Wiseman, greeting the newcomers like old friends and hauling their luggage the half-mile to the town's roadhouse. Martin Slisco, the roadhouse proprietor, announced that the newcomers were invited to a dance staged in their honor and loaned the two men shoes because they had only boots for their backcountry expedition. Before long five



Christmas dance in Wiseman, 1930. Roger Kaye Photograph Collection, University of Alaska Fairbanks (1993-72-17).

Eskimo women and about twenty white men were clapping and swirling, using old-fashioned steps that the pioneering prospectors brought into the country during the Klondike-Alaska gold rush three decades earlier. Marshall, who held hopping races with the little Eskimo kids and danced with the young women, would later write, "that evening seems today a dear, half-remembered dream."

For the next two days, Marshall and Retzlaf bought additional supplies and hired two horses—Brownie and Bronco—from a local man. While Retzlaf fixed pack saddles

"Pioneers of Alaska"—the oldtimers Marshall met when he arrived in Wiseman in the central Brooks Range, 1929.
Robert Marshall Photograph Collection, Alaska State Library (p197-02)



Robert Marshall (left) and his traveling companion Alexander Retzlaf pose with mosquito head nets and gloves before their 25-day trek up the North Fork of the Koyukuk River, July 25, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-04).

and harnesses, Marshall climbed the peaks surrounding the town and asked old-timers about local topography, learning to his satisfaction that none of the men had been far up the North Fork of the Koyukuk River where he and Retzlaf planned to explore. While boring spruce trees to assess their age and growth rate, Marshall also encountered thick clouds of mosquitoes that forced him to don a hat, head net, gloves, and gauntlets. The experience prompted him to write, "I could see that anyone caught in this country for several days at the height of the mosquito season without special protection would surely be killed." The photograph they took to mark the beginning of their adventure shows both men wearing their anti-bug clothing in preparation for the next twenty-five days of exploration.

According to Marshall's sources in Wiseman and the nearby mining camp of Nolan, only five white men had ever been up the North Fork as far as the Clear River confluence, thirty miles from Wiseman. That group included men who would become Marshall's traveling companions and guides in later years—Jesse Allen, Kenneth Harvey, and Ernie Johnson who had built several winter huts along the North Fork and had the reputation of being the best trapper in the region. To Marshall, who craved the sensation of being the first to set foot in a particular area, this was good news indeed, and he wrote, "I suddenly realized that probably not a single one of the hundreds of mountains before me had ever been climbed."[8] Marshall's later travels with Nutirwik, an Eskimo resident of Wiseman, would remind the New Yorker that Alaska Native peoples had their own deep history of wandering the Brooks Range and that few locations could in reality be considered virgin territory for human beings.

Beginning on July 25, Marshall and Retzlaf took the dirt road northwest out of town and passed through the Nolan camp and forest burned black by wildfires before entering Pasco Pass. There they had their first taste of Arctic sedge tussocks, the bane of the Brooks Range traveler. Although Marshall seldom complained, he described this particular terrain in detail:

> These curses are tufts mostly of cottongrass, which gradually build up out of the swamp, the younger plants growing out of the dead remains of the earlier ones. As they grow larger, they also grow wider so that they are much bigger on top than below, becoming more or less mushroom-shaped. . . . They are very topheavy,



Al Retzlaf prepares a meal at the pair's camp on Glacier Creek, August 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-03).

> and when you step on them they are almost certain to bend over and pitch you off into the swamp. . . . Three-quarters of a mile of this seemed like five, and at one place we were afraid we could not get the horses through.[9]

After spending a night in an old prospector's cabin and another in their mosquito-proof tent, the two men advanced to the Glacier River and then reached the valley of the North Fork. Along the way, Retzlaf caught numerous grayling for their dinners and Marshall took notes about slope, soil, moisture, and elevation as it related to tree growth. Marshall also took photographs to document their progress. As they worked their way north, they traveled on terraces alongside the river where the horses could find forage and better footing. The travel was arduous (Marshall called it "abominable"), but descending nearer the river was worse because of impenetrable thickets of willows. "No matter which way we went," wrote Marshall, "we were in trouble."[10]

After reaching the Clear River confluence and ascending the loose rocky sides of what he called Moving Mountain, Marshall glimpsed imposing twin peaks that looked to him like gateways into an Arctic world. Exercising the explorer's prerogative, he christened them Boreal Mountain and Frigid Crags and declared them to be the "gates of the arctic," a name later adopted for Gates of the Arctic National Park and Preserve. Enchanted by their stark majesty and the rugged riverine landscape all around, Marshall called the location a "monumental entrance to a land of mystery" and counted as good fortune the fact that his new discovery was not located

Descending the North Fork of the Koyukuk River in an inflatable canoe, August 2010.
Courtesy of the author.



Sedge tussock terrain at the mouth of Bonanza Creek, August 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-06).

in the contiguous United States "where its wild sublimity would almost certainly have been commercially exploited." The two men camped in the gorge between the two peaks, and Marshall declared his satisfaction that they were seventy-four miles from the closest human being and more than a thousand miles from the nearest automobile.[11]

As they pushed north, Marshall took more photographs and climbed Slatepile Mountain. He would later declare that the hour and twenty minutes he spent on the peak "were easily worth the entire journey to Alaska," and he described the scene with obvious delight:

> In every direction rose mountains higher than mine. I seemed to be on a pedestal in the center of a great towering amphitheater with precipitous and lofty walls. There was variety as well as grandeur. To the southeast were three ragged giants with great glaciers near their summits. . . . Westward against a clouded sun, six massive black needles projected into the sky, a great black basin at their feet. Northward about fifteen miles away was the Brooks Range, least jagged of the visible mountains, but higher than any and capped with snow.[12]

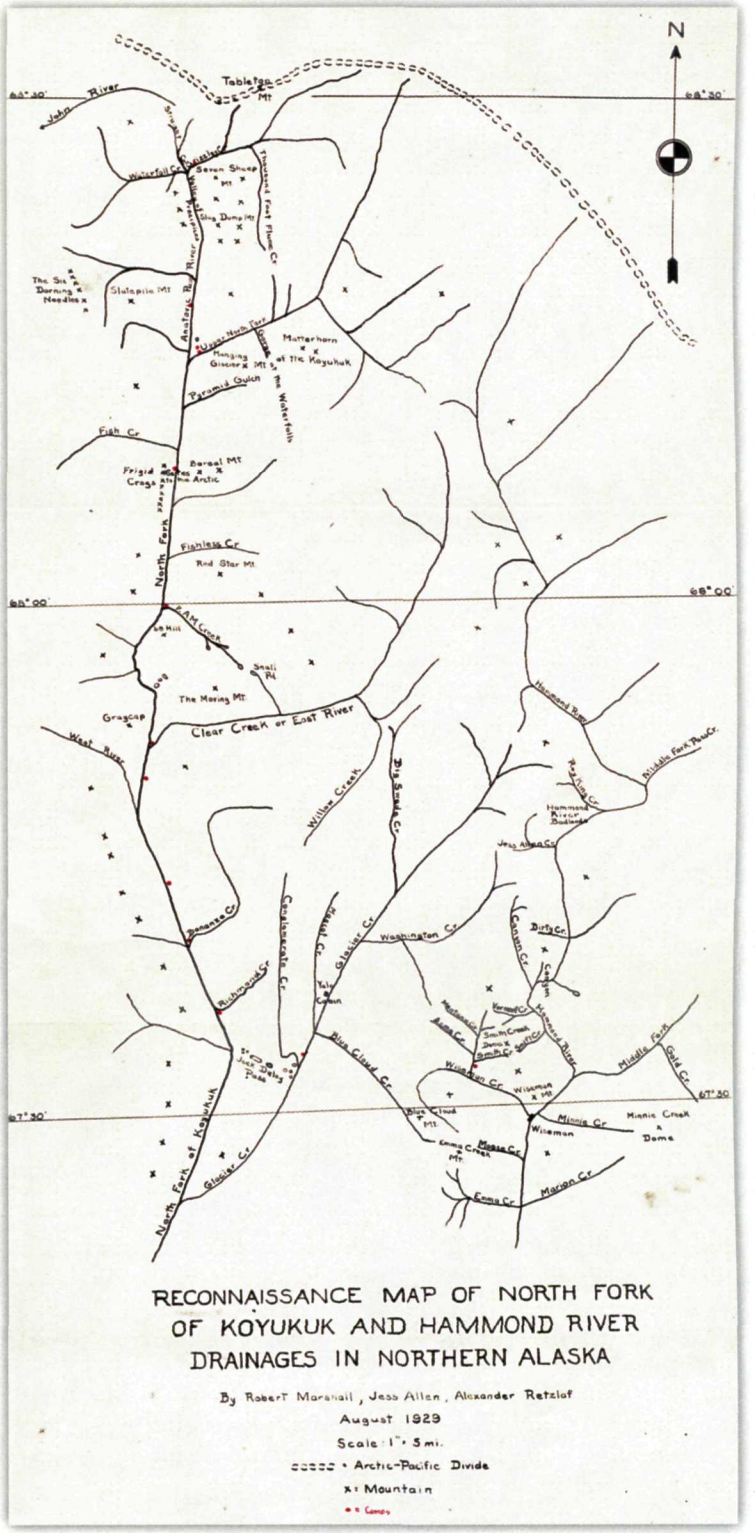
As the pair advanced, they reached roughly five thousand feet in elevation and the North Fork's headwaters near the Continental Divide. There they camped at a point Marshall estimated was thirteen miles from the closest trees and one hundred and one miles from the closest human being. Far above on the forbidding slopes, a waterfall

spilled in a 200-foot drop visible from their camp. That night their tent was lashed by wind and a frigid downpour which continued the next morning and made lighting a campfire almost impossible.

In the morning, Retzlaf started out in the drenching rain to the west branch of nearby Ernie Creek to pan for gold, while Marshall was tucked up inside reading George Meredith's proto-feminist novel *Diana of the Crossways*. Just then the horses snorted and Marshall jumped up to see them "dashing hell-bent" toward the tent, apparently unhampered by the hobbles on their legs. With lumps of sugar in his hand, he tried to calm the horses but suddenly Bronco gave a tremendous leap and galloped away. When Marshall looked up he saw an immense, whitish-brown grizzly bear striding toward the camp and another one beyond on the hillside. Desperate to keep hold of Brownie's halter while the horse bucked and dragged him from the camp, Marshall managed to grab a rifle and shoot from his waist without aiming:

> I thought I would scare the bear, but the shot must have echoed, because he proceeded with doubled speed toward the tent. Now I knew there was no choice but to let Brownie go and shoot in earnest. I hit the bear, but not fatally and he turned around and retreated into the hills. The other bear had already disappeared.[13]

This was precisely the type of adventure Marshall had envisioned as a child, and although it took hours to round up their horses and the rain left both men feeling cold and soggy, he was having the time of his life. This was the type of "physical exploration" that would not have been unfamiliar to Lewis and Clark over a century before.

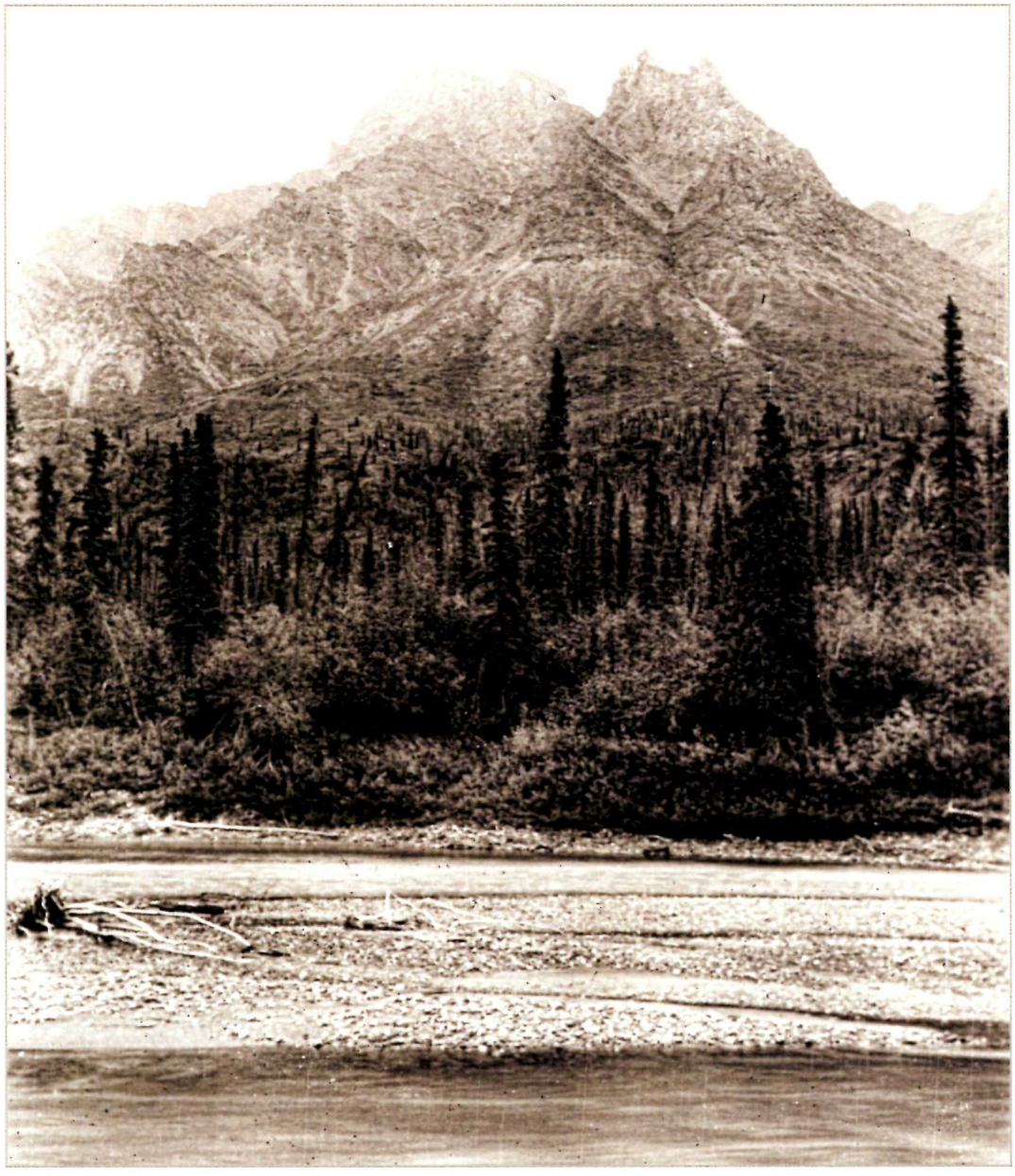


"Reconnaissance Map of the North Fork of Koyukuk and Hammond Drainages, Alaska," showing Marshall's campsites, named peaks, waterways, and the Continental Divide, August 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-25).



Frigid Crags, the west pillar of Gates of the Arctic, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-09).

The day after his bear encounter, Marshall set out along the newly christened Grizzly Creek to find the Continental Divide where all groundwater flowed north to the Arctic Ocean rather than south toward interior Alaska. Climbing to the summit of Alapah Mountain, he scrambled along talus slopes where fragmented rock slipped away under his feet and edged around large boulders that seemed poised to plunge down the mountainside. Marshall wrote of the experience, "The farthest north one goes from the Gates of the Arctic, which seemed the ultimate in primitiveness, the more jagged the country becomes." However, when he at last reached the flat mountaintop, his view of the range was snatched from him by uncooperative weather:



Boreal Mountain, the east pillar of Gates of the Arctic, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-10).

On the summit I was worse off than Moses, because he at least got one glimpse of the promised land, while all I saw of the country north of the Arctic Divide was fog and, for an instant, two barren snow-clad peaks in the shifting mist.[14]

After one more rainy night in camp, Marshall and Retzlaf decided to return to Wiseman only to find that the rivers and creeks along the way were now raging torrents. Unable to find gravel bars or easy river crossings, they were forced into tussock bogs that had been difficult before and were now "discouraging morasses."

Frigid Crags along the North Fork of the Koyukuk River, August 2010.
Courtesy of the author.

View of Hanging Glacier Mountain (left) and Boreal Mountain (far right) from Marshall's camp along the North Fork of the Koyukuk River, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-12).

As I walked for hours beneath the stupendous grandeur of these colossal mountains, I felt humble and insignificant.

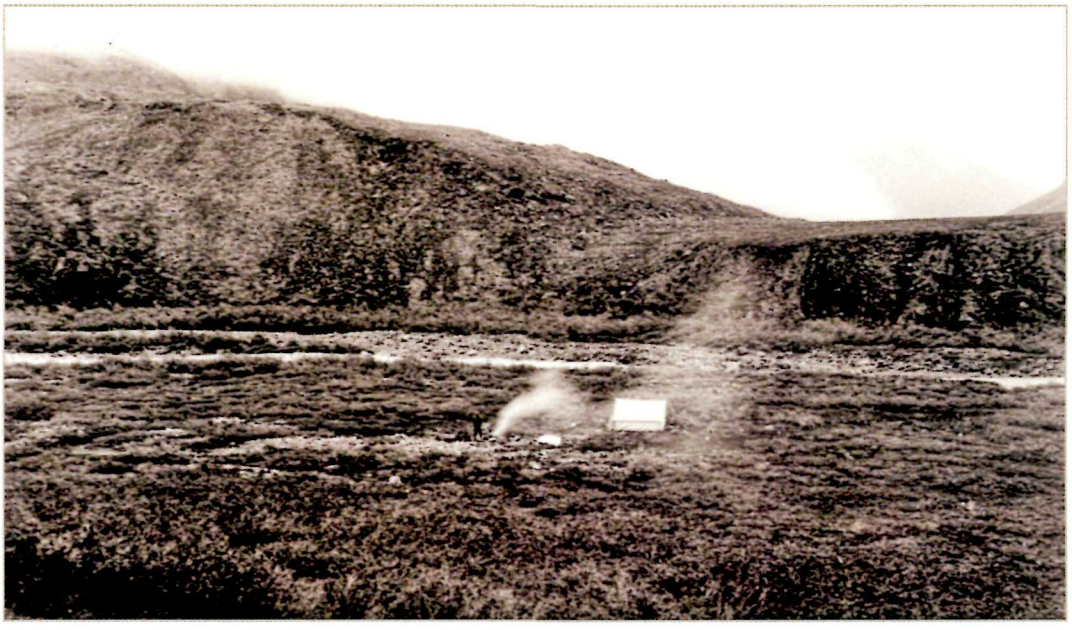
–Robert Marshall



West face of the Valley of Precipices, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-15).

After the horses were repeatedly mired in the swampiest stretches, the travelers took to the rocky ridges above where the horses were in constant danger of breaking a leg. Nonetheless, Marshall found beauty wherever he looked, and wherever he looked he assigned names to the landscape, including Mount Doonerak, a peak Marshall wanted desperately to climb and would return to in later years. Marshall wrote, "As I walked for hours beneath the stupendous grandeur of these colossal mountains, I felt humble and insignificant."[15]

The return trip to Wiseman was marked by more hazardous travel, including nearly having their campsite swept away by the swift and swollen North Fork. Because of the flooding, the creeks they passed were too cloudy for Retzlaf to catch any fish and all that remained of their provisions were eight ounces of salt and four ounces of tea. Fortunately their adventure was nearly at an end. The first person they saw after twenty-two days was Pete Dow, "a hard-bitten cynical sourdough" living in a tent at the Nolan camp, and when they reached Wiseman a mob of people came out to welcome them warmly. The roadhouse owner, Martin Slisco, kept slapping them on the back and laughing, repeating how relieved he was because there had been speculation in the town



Marshall's Camp 101, named for its distance from the closest human being. While Marshall and Retzlaf camped in the rain they had a close encounter with two grizzly bears, August 5, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-17).

that they might not return. Marshall and Retzlaf gorged on a sumptuous roadhouse dinner and answered many questions about the mysterious upper North Fork. A satisfied Marshall wrote,

> Adventure is wonderful, but there is no doubt that one of its joys is its end. That night, sitting in a dry room by a warm fire, we felt a pleasure unknown to anyone who has not experienced days on end of cold and soggy travel. Later, lying in bed with no rising rivers, no straying horses, no morrow's route to worry about, we enjoyed a delightful peacefulness.[16]

A Return to the Arctic, 1930-1931

Marshall's first taste of adventure in the central Brooks Range left him eager for more, and the following summer he returned to once again explore the Koyukuk drainage as far north as the Continental Divide. The plan was to continue his tree growth study and pursue more accurate mapping of a 1,000-square-mile section at the headwaters of the Koyukuk drainage. He accomplished this and much more over a period of fifteen months, much of which he spent recording the habits of the people of Wiseman. Marshall's sociological study of frontier residents sold well in the United States and would help to shape his understanding of the relationship between human beings and wild places. Declaring his neighbors in Wiseman to be "the happiest folk under the sun," Marshall introduced these frontier denizens to the nation and helped to popularize the Brooks Range as a place beyond the benumbing press of humanity and the tyranny of the clock.

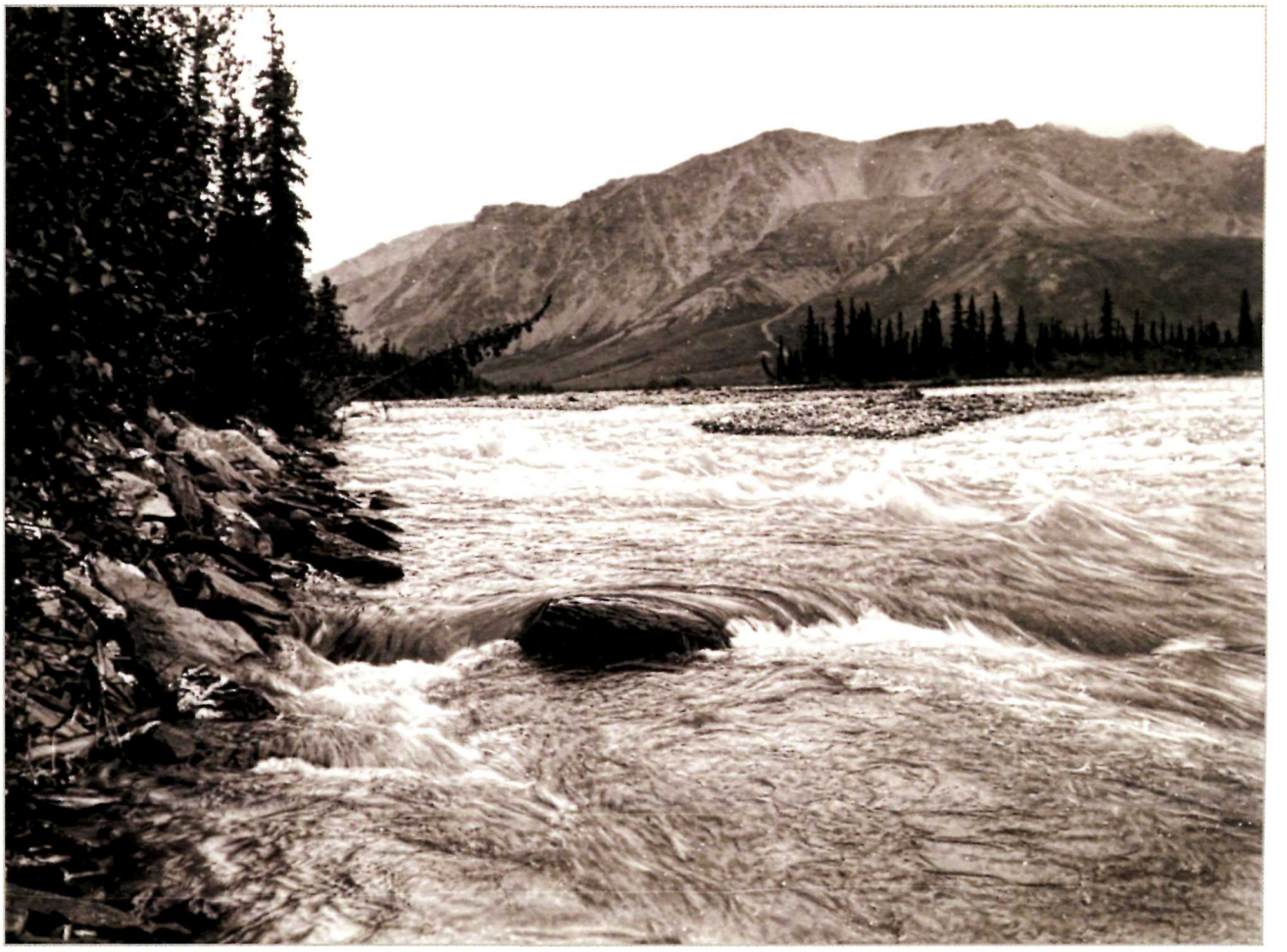
Marshall's second Alaska adventure began much like the first. The townsfolk greeted Marshall and Retzlaf at the airfield and the two headed north, this time with a local man named Lew Carpenter hired to bring the horses back from the expedition's basecamp. As the group reached the mouth of the Tinayguk River on the North Fork's western bank, they were startled by a voice shouting to them over the sound of the water. The voice



Bare mountains just south of the Continental Divide, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-19).

turned out to be Ernie Johnson, a fifty-year-old transplanted Swede who Marshall described as "a sort of Daniel Boone among the pioneers of this arctic frontier." Johnson had a comfortable and spacious tent with a Yukon stove, a cache to protect his stockpile of food, and a log cabin he used only in the winter because the sod roof leaked in the summer. Normally based in the village of Bettles fifty miles to the south, the good-natured Johnson told Marshall, "I can make better money as a carpenter, but I am staying out here because I like it among these ruggedy mountains better than anywhere else in the world."[17] After hitting it off famously, Marshall and Johnson agreed to explore the upper Alatna River together the following spring.

After leaving the Tinayguk and saying goodbye to Johnson, Marshall and his comrades moved north to Frigid Crags and Boreal Mountain where they enjoyed the transition to autumn in the brilliant gold leaves of the cottonwood and willow trees. At night they witnessed brilliant displays of the aurora bo-



The "turbulent and unfordable" waters of the Koyukuk North Fork, August 9, 1929. Robert Marshall Photograph Collection, Alaska State Library (p197-21).

realis and found the campfire pits they used the previous year. For Marshall the thrill of seeing the Gates of the Arctic had returned. "There were so many unexplored chasms, such an infinitude of barely scalable mountains," wrote Marshall, "that a person could spend many summers tripping from this center and still have fresh territory to explore.[18] When they at last reached Ernie Creek and the campsite that the previous year they had dubbed 101-Mile Camp (for the distance to the nearest human being), Marshall was chagrined to find that the food cache he had left buried there had been dug up by bears and that the cans were all torn open and scattered. Marshall's traveling companion was not nearly so concerned. Marshall wrote, "it gave Al, who has the true prospector's indifference to the sign of old tin all over the landscape, a great laugh."[19]

Marshall called the week that followed "explorer's heaven" as the team split up to pursue their own interests. Retzlaf went prospecting for signs of gold; Carpenter set up the camp before going hunting for Dall sheep; and Marshall climbed a new mountain or investigated a new valley every day and described the experience as "the sort of thing a person of adventuresome disposition might dream about for a lifetime without

Boreal Mountain along the North Fork of the Koyukuk River, August 2010.
Courtesy of the author.

The mouths of some major side streams entering these boundary rivers showed on the maps, but aside from this the forty-five hundred square miles were almost as unknown as the geography of the moon.

–Robert Marshall

ever realizing it." For Marshall the landscape provided what seemed like a last chance to discover an ancient, unspoiled world:

> I realized that the field for geographical exploration was giving out, but kept hoping that one day I might have the opportunity for significant geographical discovery. And now I found myself here, at the very headwaters of one of the mightiest rivers of the north, with dozens of never-visited valleys and hundreds of unscalable summits still as virgin as during their Paleozoic creation.[20]

The journey was not all rapturous adventure. Along the valley of Grizzly Creek Marshall paused to plant seeds he had harvested from spruce cones in order to test his theory that spruce stands would eventually extend over the Brooks Range and cross into the sheltered valleys north of the divide. His experimental plot was located twelve miles north of the treeline, and he speculated that it would represent a geographical leap for the species of about three thousand years.[21] Because Lew Carpenter had since departed to return the horses to Wiseman, Marshall and Retzlaf began packing the full load of their supplies in their backpacks. Days of climbing through tussock bogs and over half-frozen moss were made even worse by the arrival of the season's first snows. Even so, Retzlaf bore up stoically and Marshall, with his perpetual good humor, declared it a "glorious trip."

Once the two men returned to Wiseman, Retzlaf left to continue his studies in Fairbanks while Marshall rented the log cabin that would become his headquarters for studying "the unusual, independent and exciting life of the Eskimo and white man of the northern Koyukuk region." Already a popular figure in the town, Marshall received five or six visitors daily, and he dropped in on many of his neighbors during the winter months. He shared meals, attended community dances (perhaps his favorite activity), and visited the neighboring gold-mining camps at least a dozen times. He also went with local people on trips in the backcountry, including a novelty for Marshall—dog mushing. In November 1930 Jesse Allen and Kenneth Harvey invited him to travel by sled up the Middle Fork of the Koyukuk and then to the Clear River and west to a mining camp at Wild Lake. As usual, Marshall found the experience a delight.

Once spring arrived, Marshall continued his excursions into the central Brooks Range, setting his sights on an area roughly the size of Connecticut between the lower Alatna and Koyukuk Rivers to the south, the John River to the east, and the Continental Divide. Although the Alatna River had been traveled by the Geological Survey's Smith and Mertie in 1924 and the John River by Schrader and Peters in 1901, the haste with which they produced their maps left many geographical questions unanswered. "The mouths of some major side streams entering these boundary rivers showed on the maps," noted Marshall, "but aside from this the forty-five hundred square miles were almost as unknown as the geography of the moon."[22]

To remedy this, Marshall joined Ernie Johnson just after Wiseman's Independence



"See what came out of the North," Al Refziaf and Robert Marshall, ca. 1930. Robert Marshall Collection, Bancroft Library, University of California, Berkeley (2996-24a).

Day celebrations when Johnson arrived with a twenty-five-foot poling boat he had recently built from whip-sawed lumber. The vessel was equipped with a ten-horsepower outboard motor, and Marshall was quick to take the mountain man up on his offer to explore the Alatna River. To reach the river, they would first motor south along the Koyukuk's Middle Fork and the river's main stem before entering the Alatna River's mouth and turning northwest into the mountains. Along the way, the inveterate hiker found that river travel was comparatively easy as long as they avoided the shallow riffles and the overhanging trees along the riverbank called sweepers. After pausing briefly at Bettles and the twin communities of Allakaket and Alatna, Marshall and Johnson employed a combination of motoring, poling, and lining to make upriver progress. Along the way they used Philip Smith's 1924 map and a remarkably accurate free-hand sketch map from an Eskimo woman named Ekok who Marshall had befriended in Wiseman.[23]

Ekok's knowledge of the river was only the first evidence that this was not the unpeopled landscape that Marshall dreamed of but rather a place with a long history of Alaska Native presence and a history of white occupation and land use dating back to the 1890s. While advancing up the river, Marshall and Johnson stopped to talk with Eskimo families at their fish camps, and although Marshall seemed surprised to suddenly be, as he put it, "in the midst of civilization," he had fun chatting and joking and playing hide-and-seek with the children. Farther along the river, they came upon two modern-day prospectors, Eskimo men named Jack Sackett and Selawick Sam, trying their luck on the Pingaluk River halfway to the Alatna headwaters.

As Marshall and Johnson passed the jagged Arrigetch Peaks to the west of the river, Marshall found what appeared to be evidence that Alaska Native people had been there long before—tree stumps chopped with stone axes and notches in trees for gathering pitch used as waterproofing in birch-bark canoes. Still farther north, Marshall rightly noted that in 1923 Olaus and Adolph Murie had passed through, collecting Dall sheep specimens for the U.S. Biological Survey, and that in 1924 the Geological Survey team of Smith and Mertie had camped nearby in preparation for their spring-time push across the Arctic Slope. After trekking up the Kutuk River to the Continental Divide and examining through field glasses the confused convergence of streams feeding the Killik, Chandler, Alatna, and John River systems, the two men turned back to once again board their boat and travel south.

Near a stretch of rapids between the mouth of the Malamute Fork of the Alatna and the present-day boundary of Gates of the Arctic National Park and Preserve, they passed the site of a gold rush mining camp called Rapid City. The rotting hulks of stampeders' cabins evoked a strong reaction in Marshall who envisioned the moment when the men were forced to accept their fate—an entire winter in a cramped cabin far from home. "One can imagine the horror of these people," wrote Marshall,

> probably already discouraged in their quest for gold, wishing they had never left their secure farms or cities where they had lived in safety and relative comfort, thinking that in a day or two they would start down the river in their boats safely ahead of the freeze-up, but wanting to prospect just once more in the hope of still finding a bonanza which would free them from a life of constant labor. Then suddenly, waking up one early October morning,



Al Retzlaf with two Dall sheep he shot during his second excursion with Robert Marshall up the North Fork of the Koyukuk River, 1930. Robert Marshall Collection, Bancroft Library, University of California, Berkeley.

> weeks before the date for freeze-up even in the coldest regions to which they were accustomed, they found the Alatna covered over and escape locked up until distant spring.[24]

For Marshall, however, every escape from modern life was an opportunity for adventure and joy, leading him to speculate that even a failed gold rush expedition might later become a fond memory. After just two more days of motoring through the foothills of the central Brooks Range they were back in Wiseman.

By August 2 Marshall and Johnson had launched a new adventure, this time traveling up the John River, which enters the mountains roughly half way between the Koyukuk drainage and the Alatna. Here too Marshall encountered backcountry residents and noted how the river corridor appeared to be a traditional indigenous route through the Brooks Range to the Arctic Slope. As they moved northward, Marshall felt the same feeling he always reported as he approached the Continental Divide, an atavistic return to a world before the invasion of humanity:

It seemed as if time had dropped away a million years and we were back in a primordial world. It was like discovering an unpeopled universe where only the laws of nature held sway.

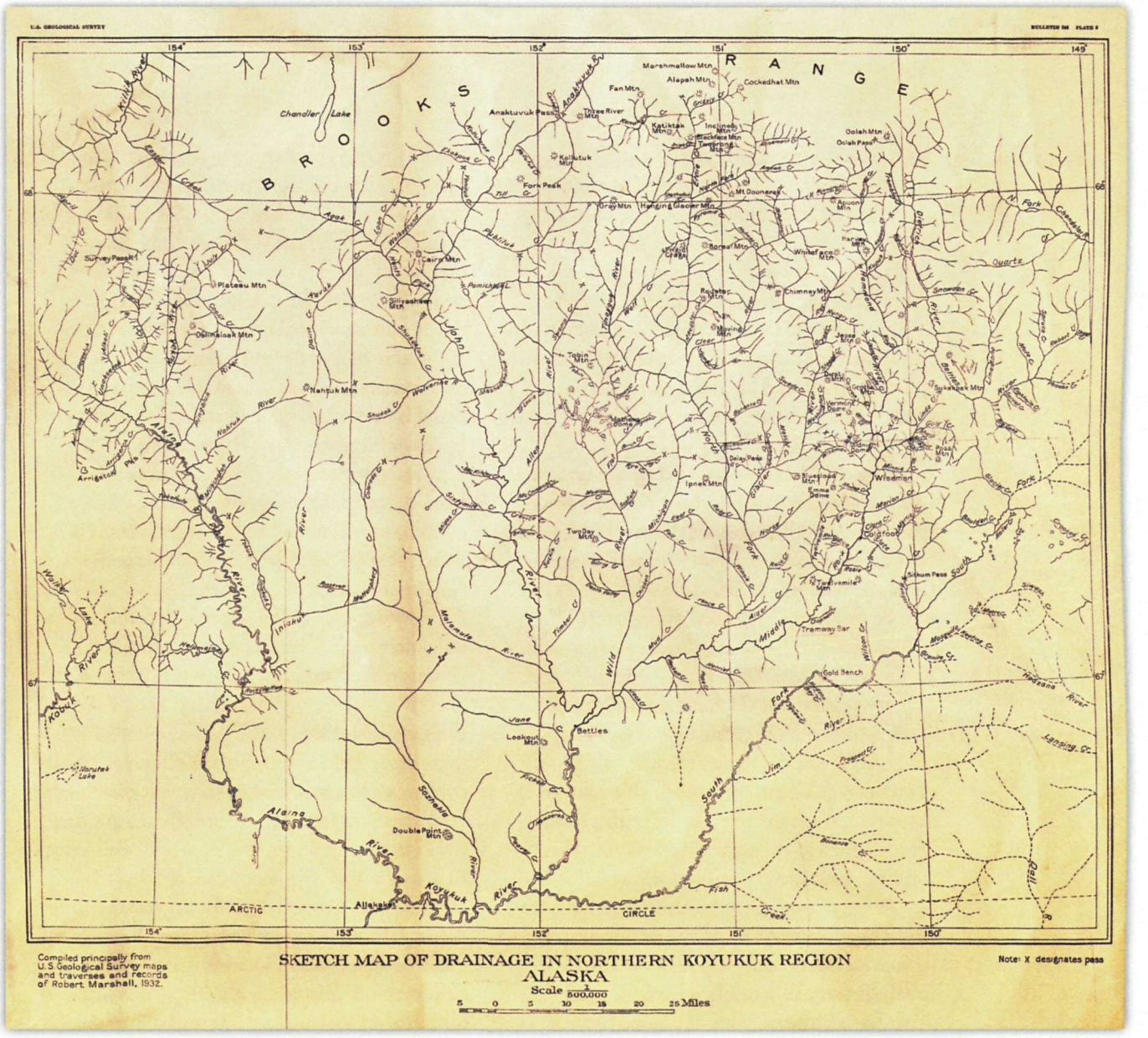
–Robert Marshall

> We walked up the right shore among bare rocks intermingled with meadows of bright lichen, while large flocks of ducks bobbed peacefully and unmindful of us on the water of the lake, and four loons were singing that rich, wild music which they have added to the beautiful melodies of the earth. No sight or sound or smell or feeling even remotely hinted of men or their creations. It seemed as if time had dropped away a million years and we were back in a primordial world. It was like discovering an unpeopled universe where only the laws of nature held sway.[25]

After hiking for several days to locate the source of the John, Marshall and Johnson found the waterway they called Loon Creek had become a swollen torrent due to recent rains, and the two men struggled for some time to move south. Among the feeder streams at the John's headwaters they came to an isolated mountain with a bare rock summit they knew would be ideal for mapping the many drainages pouring into the watershed. The idea that the peak had ever been climbed before never entered their heads, so Marshall was mystified when they saw in the distance a rocky bump with unnatural contours near the mountaintop. When they reached it they found a rock cairn built in 1901 by the Schrader-Peters expedition when the Geological Survey men went up the John River, over the mountains, and north to Point Barrow.

Marshall and Johnson spent five hours on the peak of what they named Cairn Mountain, enjoying the vast panorama of the Brooks Range with its black summits and sparkling green slopes tumbling in a wild confusion as far as they could see in every direction. Marshall described the scene as "endless mountains rising and falling as if the waves of some gigantic ocean had suddenly become frozen in full motion."[26] He also took more than forty compass bearings on mountain peaks, passes, river bends, junctions of streams, and other geographic features, and called each one out to his companion who jotted them into a notebook. Because he could see Boreal Mountain rising forty miles to the east, this was Marshall's first opportunity to tie the more familiar landscape of the Koyukuk's North Fork with the upper section of the John River (and by extension, with the Alatna headwaters).

While making their way home, the pair paused for several days at Bettles, and before they reached Wiseman, Marshall asked Johnson to slow their progress so that he could savor his last hours in the north country, which offered such a stark contrast to the rest of the United States where the Great Depression had rendered so many homeless and penniless. "Soon I would be leaving this arctic 'wilderness' where there was no unemployment, no starvation, no slums, no crowding, and no warfare," wrote Marshall, "and returning to 'civilization' where, according to the issues of *Time* and *Literary Digest* which had just come into Bettles, there was greater misery, worse unemployment, more starvation than ever before in the history of the country."[27] On that last night, the two friends found an ideal campsite on a gravel bar and tucked into a delicious stew of sheep meat. Marshall later wrote,



A sketch map of drainages in the Koyukuk River region, representing information collected by Marshall and several earlier U.S. Geological Survey expeditions, 1934. Robert Marshall, "Reconnaissance of the Northern Koyukuk Valley, Alaska" (Washington, D.C.: GPO, 1934).

We just sat, with a feeling warmer than the crackling fire, exulting in the sharp-edged pattern which the mountain walls cut against the northern sky; listening to the peaceful turmoil of the arctic river with its infinite variation in rhythm and tone; smelling the luxuriance of untainted arctic valleys; feeling the wholesome cleanliness of arctic breezes blowing on cheeks and hair.[28]

Radical Bureaucrat

Seven years would pass before Marshall returned to Alaska, years that he spent writing his book about the people of Wiseman and becoming America's foremost wilderness advocate. He spent much of his time trying to shake up American forestry practices, first within the Forest Service and later as an employee of the Office of Indian Affairs. With tireless determination, Marshall pushed for the government to address the issue of

deforestation from disease and excessive timber harvests, to nationalize large amounts of forestland, and finally, to save roadless areas from development. These goals were, as Marshall put it, "efforts to preserve large vestiges of the primitive." The frenetic pace of Marshall's life slowed not at all as he lobbied powerful individuals, wrote books and articles, performed his work as a federal bureaucrat, and continued to indulge his passion for long-distance hiking.

In 1933 Marshall left the Forest Service to work as Director of Forestry for the Office of Indian Affairs, a job that allowed him to explore ways to save both wilderness and traditional American Indian culture.[29] That same year he finished *The People's Forests* (1933), a polemic urging the United States government to nationalize most American forestlands and to manage them for the long-term benefit of all Americans. What Marshall hoped to accomplish was not only to redirect the efforts of federal agencies to protect wild lands but also to convince a wider public of the value of wilderness to the society as a whole. This was a tall order given that over eight million people were unemployed; banks were failing all over the country; security, commodity, and farm prices were plunging in an inflationary spiral that seemed out of control. Though his personal wealth made him immune to financial hardship, these realities pained Marshall greatly. Marshall supported President Roosevelt's New Deal policies but hoped the government would go further in adopting broad socialist policies.

Marshall's charisma and reformer's zeal attracted the attention of other wilderness advocates like the author of *Sand County Almanac* Aldo Leopold, the organizer behind the Quetico-Superior wilderness area Ernest Oberholtzer, the father of the Appalachian Trail Benton MacKaye, and a former National Park Service publicity man named Robert Yard. Together they discussed the need for a national organization to defend wilderness because at the time the National Audubon Society and the Isaac Walton League focused mainly on preservation of wildlife habitat and John Muir's Sierra Club was only functioning on a regional level in California. In 1934 Marshall wrote to a friend, "We want no straddlers, for in the past they have surrendered too much good wilderness and primeval [areas] which should never have been lost."[30]

Years earlier Marshall had written articles that were already shaping the nation's concept of wilderness, the most important of which was "The Problem of the Wilderness" (1930). In the article, published in *Scientific Monthly*, Marshall offered his own definition of wilderness as "a region which contains no permanent inhabitants, possesses no possibility of conveyance by any mechanical means and is sufficiently spacious that a person in crossing it must have the experience of sleeping out." According to Marshall, exerting one's self in these wild places was good for the physical body, but it was even more important to the mental self. In the same essay, he responded to what he called the "automobilists" who argued that wilderness excluded motorized recreation-seekers: "This is almost as irrational as contending that because more people enjoy bathing than art exhibits therefore we should change our picture galleries into swimming pools."[31]

Marshall insisted we never forget that a natural area can be converted into an industrial region or a corridor for highways, but the reverse is not true. In the end he raised his rhetoric to a revolutionary pitch, warning that if the forces of profit and road-building were to prevail, wilderness would swiftly disappear. "If that day arrives," he wrote,

> there will be countless souls born to live in strangulation, countless human beings who will be crushed under

I can't think of anything more glorious than to be on the trail with you again and exploring some more of what still remains to me the most beautiful country I have ever seen... There is still much exciting country to explore there and it would be too bad not to take advantage of it.

–Robert Marshall

> the artificial edifice raised by man. There is just one hope of repulsing the tyrannical ambition of civilization to conquer every niche of the whole earth. That hope is the organization of spirited people who will fight for the freedom of the wilderness.[32]

Marshall was not alone in his love of wilderness, but the power of this article and this message were instrumental in mobilizing support for The Wilderness Society, which he co-founded in 1935, and in shaping our modern appreciation of wilderness.

Meanwhile, Marshall's sociological study of the people of Wiseman—*Arctic Village*—had been published and was delighting Americans with stories of life in Arctic Alaska.. The book was a Literary Guild selection for June 1933 and sold over 3,500 copies in its first couple of years, a very good showing in the midst of the Great Depression. Using anecdotes, photographs, direct quotations, and statistics, the book presented an entertaining and revealing view of the lives of Wiseman residents and of the gold miners living in nearby camps. In his conclusion, Marshall argued that open spaces and the challenges of a life connected to the land made these people happier than any city-dwellers. In a nod to his socialist ideals, Marshall provided each of the residents he had written about their own copy of the book and a share of the royalties. By the second year of sales these totaled nearly four thousand dollars, and keeping half for himself, Marshall sent checks for eighteen dollars to over one hundred Koyukukers, leaving a little left over "for those children who will come of age in the future."

Attempts on Mount Doonerak, 1938-1939

In March 1937, Marshall wrote to Ernie Johnson, the companion of his 1931 explorations, "I can't think of anything more glorious than to be on the trail with you again and exploring some more of what still remains to me the most beautiful country I have ever seen . . . There is still much exciting country to explore there and it would be too bad not to take advantage of it."[33] His main goal, he explained, would be to return to Mount Doonerak, which he believed to be the highest peak in the Brooks Range, and to make the first ascent.[34]

On August 4, 1938, Marshall caught a flight from Ketchikan to Fairbanks, and on the plane some news reporters asked him if he "wasn't afraid of being lynched" in Wiseman given that rumors since the publication of *Arctic Village* suggested certain Koyukukers were not pleased with his candid descriptions of their lives. In addition, Marshall had written about them without their knowledge or permission, but when he landed in Wiseman, he found the people as friendly as ever. Youngsters who had not been born when he had last been there already knew him as Oomik, the Bearded One, though he had since shaved his face. They lined up excitedly for his famous piggy-back rides, and adults slapped his back, pumped his hand, and asked him where his whiskers went.

Marshall did find that the place had changed in the seven years he was away. Two or three planes now flew into Wiseman each week. One hundred and fifty tourists had visited the previous year, whereas only

Side Note #7

ON HAPPINESS

In 1929 when Robert Marshall first arrived in Alaska, he was eager to get away from people and into the wilderness of the Koyukuk River drainage. But the night he spent at a community dance in Wiseman in the Brooks Range foothills left a lasting impression—he called the memory "a dear, half-remembered dream." When Marshall returned to Wiseman the following year, he came for more exploration of the mountains and with a new justification for his travels. His stay would last fifteen months, during which he set out to study "civilization in the Arctic." His subjects were his neighbors, the Eskimos and pioneering gold miners of that remote town in the Brooks Range foothills.

Although he spent more time than most alone in the woods, Marshall was a gregarious fellow, quick with a joke and curious about others. He would later write,



Comrades in adventure: Ernie Johnson, Jessie Allen, Robert Marshall, and Kenneth Harvey in Wiseman, ca. 1930. Courtesy of The Wilderness Society.



Alaska Natives and white prospectors gather in Wiseman for Christmas dinner, 1930. Roger Kaye Photograph Collection, Alaska & Polar Regions Department, University of Alaska Fairbanks (1993-72-19).

"my meeting a number of the white and Eskimo people who lived on the borders of this remote region left me with a sense of their vivid character and with the impression that they were the happiest folk under the sun. I wished to know them better." The residents of Wiseman quickly embraced this energetic New Yorker and their conversations lasted long into the night. Marshall asked about their political beliefs, their dreams and aspirations, their approach to survival in the Arctic, and intimate details about their sex lives and personal habits. He put this all in a detailed sociological study published as *Arctic Village* (1933).

According to Marshall, the natural world surrounding Wiseman had much to do with the residents' positive outlook on life. He argued that economic independence (in the form of gold mining and subsistence hunting and gathering) and the daily challenges and variability of living remotely served as an antidote to modern afflictions like boredom and alienation. He also cited low population density which seemed to increase the importance of the individual and decrease the impulse toward racism and other prejudices. When it came to missing out on modern-world conveniences, he concluded,

> A person misses many things by living in the isolation of the Koyukuk, but he gains a life filled with an amount of freedom, tolerance, beauty, and contentment such as few human beings are ever fortunate enough to achieve.



Sign of change—the first automobile to reach the foothills of the Brooks Range in Wiseman, 1931. Floyd Hyde, a young mechanic in Wiseman, said about this car: "You know sometimes you buy a third hand Ford for about twenty-five dollars and they throw in a very much older car for extra parts. Well, this is about like the extra parts car." —*Arctic Village* (1933). Young Family Photographs (UAF-1983-145-654).

one had come in during Marshall's stay seven years before. And the town's only automobile now hauled men and supplies all summer to the mining operations at Nolan Creek and Hammond River. "One constantly hears [the auto] rattling around the dirt streets of town," Marshall noted.[35] Whether he liked it or not, the same technological advances that had transformed his beloved Adirondacks and other wild places in the United States had also arrived in the central Brooks Range.

On August 10, Marshall set out with his friends Ernie Johnson, Jesse Allen, and Kenneth Harvey and two dogs in a thirty-foot riverboat they called "the raft" and headed once again up the North Fork and through the Gates of the Arctic for twenty-nine days "beyond the paths of man." After a week of motoring, pushing, pulling, poling, and dragging the raft, they camped two miles below Ernie Creek and 108 miles from the nearest settlement at Nolan Creek. There they huddled for the next five days waiting for the heavy rains to stop so that they might climb Mount Doonerak. When the rains did not let up, they instead crossed the Continental Divide and spent over a week exploring the headwaters of the Anaktuvuk River, which flows northward into the Arctic Ocean. On their way back to the North Fork, Marshall became pensive about his return to home and career:

> I lay on my back and looked through the door of the tent at the foothills across the valley. I tried to reflect on remoteness and adventure beyond the frontiers, but I could not for long, because it seemed more secure and peaceful here, with three competent and devoted companions, than it did back home in the heart of Washington.[36]

This sense of security did not last long. As the autumn colors deepened and the rain continued to fall, flood waters made the North Fork a raging torrent, prompting Marshall to ask his friends about his chance of survival if their boat overturned. Ernie Johnson answered that a man could not survive thirty seconds in the icy water, adding, "keep your head above water, float with the current, and save your strength to work yourself out on whichever side you can."[37] Just two days later, the temperature had dropped below freezing, a light snow was falling, and Marshall and his comrades found an occasion to test this advice. At a section of the river where floodwaters had tunneled through the bank rather than cutting it away, the boat was sucked into the void before the men could react.

"There was a frightful crunching of shattered wood as the boat passed under the overhanging bank," Marshall wrote. "All at once I was deep under icy water where no light penetrated. Immediately I felt the overwhelming certainty of death. There was no reasoning in it and there was no fear, but there was no doubt either." When Marshall popped out from under the embankment and once again saw sunlight, he realized that he would survive the experience. Following his friend's advice, he made his way to slack water and walked, dripping and shivering, onto the beach. Marshall's three companions took more time to break free of the current, and Allen had become trapped on the opposite side of the river from the others. Before long, however, they were all warming themselves around a bonfire. It was later that Marshall realized that without Johnson's waterproof match case, they might have all perished from exposure in the freezing weather.

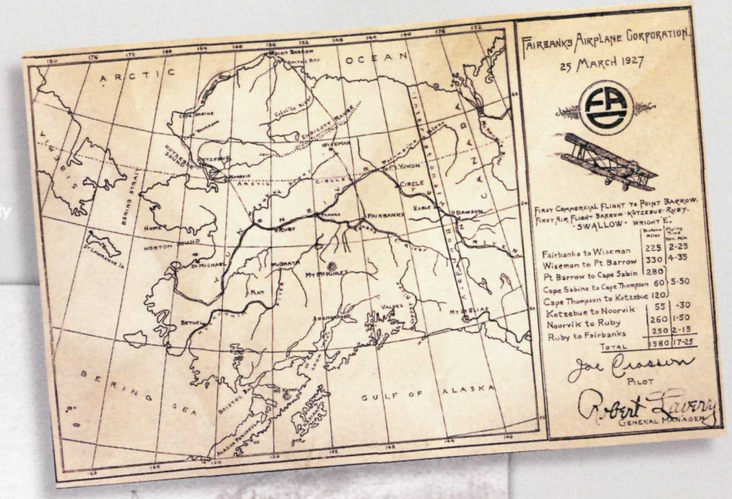
The men spent the next day drying equipment and fixing the boat and four days after that they were back in Wiseman. Most people would have considered the trip a nightmare given that they capsized, failed to climb Mount Doonerak, and faced rain twenty-seven out of twenty-nine days. It had been the worst weather and the worst high water in the memory of the oldest inhabitants of the area. They had lost much of their equipment and most of their photographs and had nearly died, but the New Yorker was irrepressible. "Nevertheless," he wrote, "we had explored the upper reaches of the Anaktuvuk; and, for purely a good time, it would be hard to beat our four weeks' adventure in unexplored wilderness."[38]

Still disappointed at his failure to summit Mount Doonerak, Marshall returned to Wiseman nine months later in June 1939 to try again. Because Ernie Johnson was busy with mining and could not come, a new member of Marshall's adventuring gang stepped in—Nutirwik, a local Eskimo man who also went by the name Harry Snowden. Nutirwik, whose Eskimo name meant blizzard, brought two of his dogs, Coffee and White-eye, and Harvey brought his own husky Moose to help carry supplies. Rather than manhandling a large boat up the North Fork again, the climbing team spent more time backpacking on their trip north, and although Marshall never made a habit of complaining, his comments on this occasion bear repeating because they mirror the experience of so many Brooks Range explorers:

> It is hard to describe how slow and plodding it really seems when you are out of practice and there is no trail and you have a 55-pound pack tugging on your headstrap and shoulders. You have hardly gone five minutes when the muscles in your neck are so sore that you know every step for the next six or seven hours will be pain. You throw off the headstrap to rest the neck and the pack

Side Note #8

AVIATION IN THE BROOKS RANGE: PARADISE LOST?



Right: Schedule of the Fairbanks Airplane Corporation, March 25, 1927. The map shows Wiseman as an important stop en route from Fairbanks through the Brooks Range to Point Barrow. Wien Family Papers, Alaska & Polar Regions Department, University of Alaska Fairbanks (2010-50-1032).



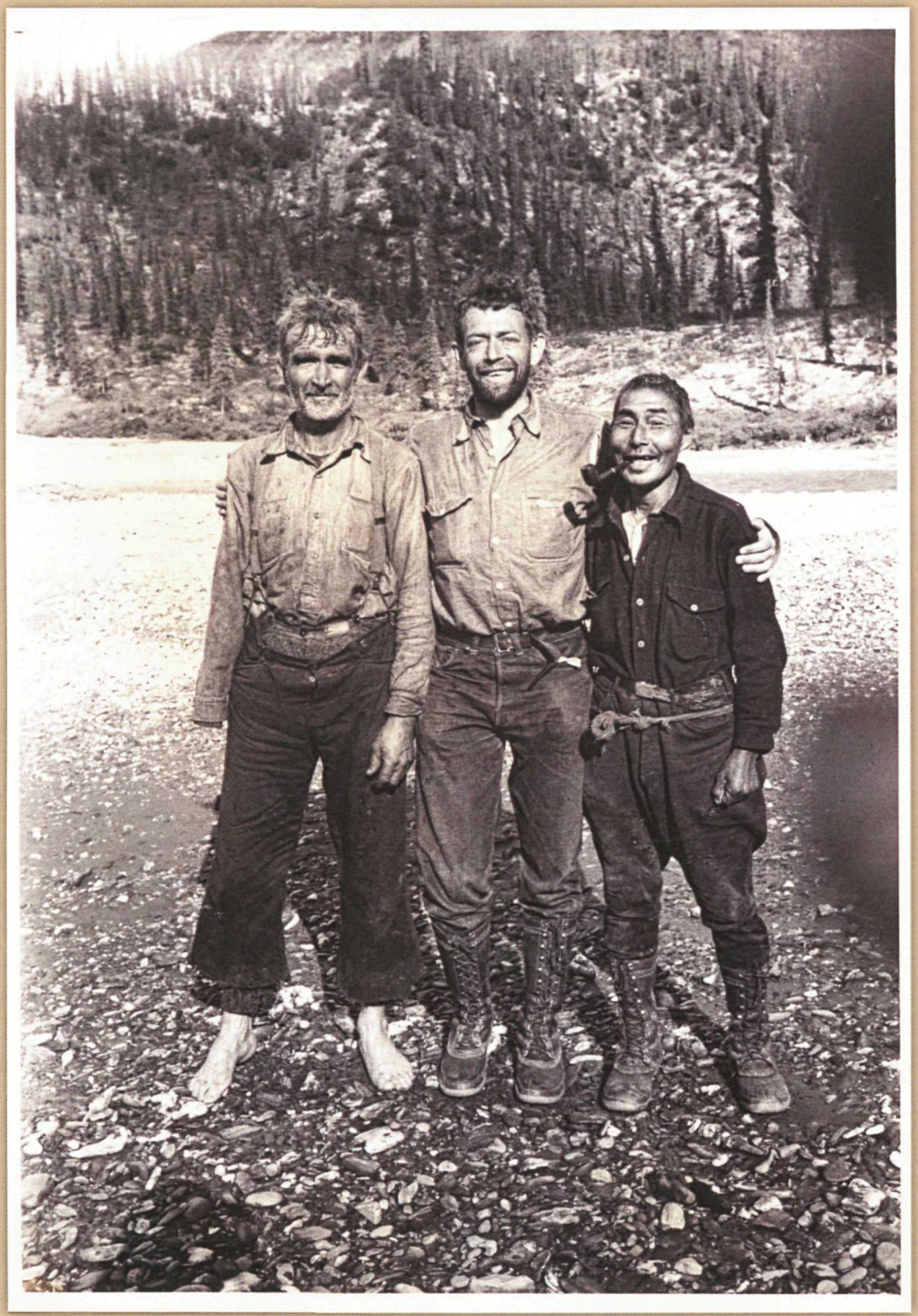
Pioneering pilot Noel Wien makes the first ever airplane landing in Wiseman, May 5, 1925. Hazel Lindberg Collection, Alaska & Polar Regions Department, University of Alaska Fairbanks (1993-151-1032).

During the 1920s technology began to change the way people traveled in Alaska. Automobiles, bulldozers, and airplanes arrived in increasing numbers and gradually took the place of traditional modes of transport like dog sleds, boat travel, and arduous hikes through the backcountry. Robert Marshall, who arrived in Alaska for the first time in 1929, observed that the tiny mining community of Wiseman in the foothills of the Brooks Range had monthly air service, one automobile, and only four miles of road. When he returned in the late 1930s, air travel was firmly established in Wiseman and some of the area's first tourists were arriving. For Marshall, who deeply distrusted machines and their effect on wilderness, this amounted to the destruction of paradise. For many others it was the beginning of a new and exciting era.

The first airplane in Wiseman arrived on May 5, 1925 on a gravel bar in front of town. On that day, a local Eskimo girl named Dishoo witnessed the arrival of this miracle of technology:

> They had wired the plane was coming in here, and we were all sitting in front of the old store waiting for it. The fellows was mostly all down from the creeks, and they had been staying around town two weeks waiting for it.... Suddenly Martin [Slisco] jumped up like he was crazy, and he shouted, 'I see it! I see it!' We all looked the way he was pointing, but we couldn't any of us see it. After a while we saw something way down the river, looked like a mosquito hawk. Then it looked like a bird, and we told Martin it was nothing but a bird he saw. Finally it got as big as a raven and then we heard it and knew it was the plane.

As the plane approached for a landing, pandemonium ensued as the spectators either sprinted toward the plane or scattered in terror. The following year those same residents contributed their own money and labor to construct an airstrip and soon two or three planes were landing each week. In time Wiseman became an important refueling point for airplanes flying over the Brooks Range to Barrow on the Arctic coast. Today most travelers use the airfield at Bettles (built in the 1940s) as their jumping-off point for excursions into the Brooks Range, and bush planes for hire can take visitors to locations throughout the Brooks Range region using pontoons for water landings or ballooned tires for landing on gravel bars.



Jesse Allen, Robert Marshall, and Nutirwik at Canyon Creek in the central Brooks Range, 1939. Robert Marshall Collection, Bancroft Library, University of California (1037-24a).

> pulls so violently on your shoulders you imagine it is turning them inside out. You go back to the headstrap again, pushing against it for all you are worth, perspiring freely in spite of the hour of evening, swatting at fifty mosquitoes which have lighted on your forehead and your cheeks and your neck, letting down your black mosquito net which instantly makes the whole world dark, pulling it up again when you almost stifle in the sultry evening, noticing suddenly that your ankle is sore where the boot has rubbed off the skin, stumbling over sedge tussocks, forcing your way through thick willow brush, sliding along on uncertain side hills ankle deep with sphagnum moss, neck aching, shoulders aching, ankle aching, on, on, on.[39]

Although Marshall and his friends would again fail to climb Mount Doonerak, they did manage to map Amawk Creek and the headwaters of the Hammond River as well as to climb lesser peaks like Apoon and Alhamblar Mountains east of the North Fork headwaters. These observations added even greater detail to Marshall's elaborate map of the Koyukuk drainage. Unaware that this would be his last visit to Alaska, Marshall contemplated his return to what he called the "great, thumping, modern world" and his feelings were mixed:

> I should be living once more among the accumulated accomplishments of man. The world with its present population needs these accomplishments. It cannot live on wilderness, except incidentally and sporadically. Nevertheless, to four human beings, just back from the source streams of the Koyukuk, no comfort, no security, no invention, no brilliant thought which the modern world had to offer could provide half the elation of the days spent in the little-explored, uninhabited world of the arctic wilderness.[40]



Nutirwik and Marshall atop a peak at the headwaters of the Hammond River in the central Brooks Range, 1939. Robert Marshall Collection, Bancroft Library, University of California (13432-24a).

Marshall's Legacy

Bob Marshall was not only interested in the rights of minority groups as they related to

In the name of a balanced use of American resources, let's keep Alaska largely a wilderness!

–Robert Marshall

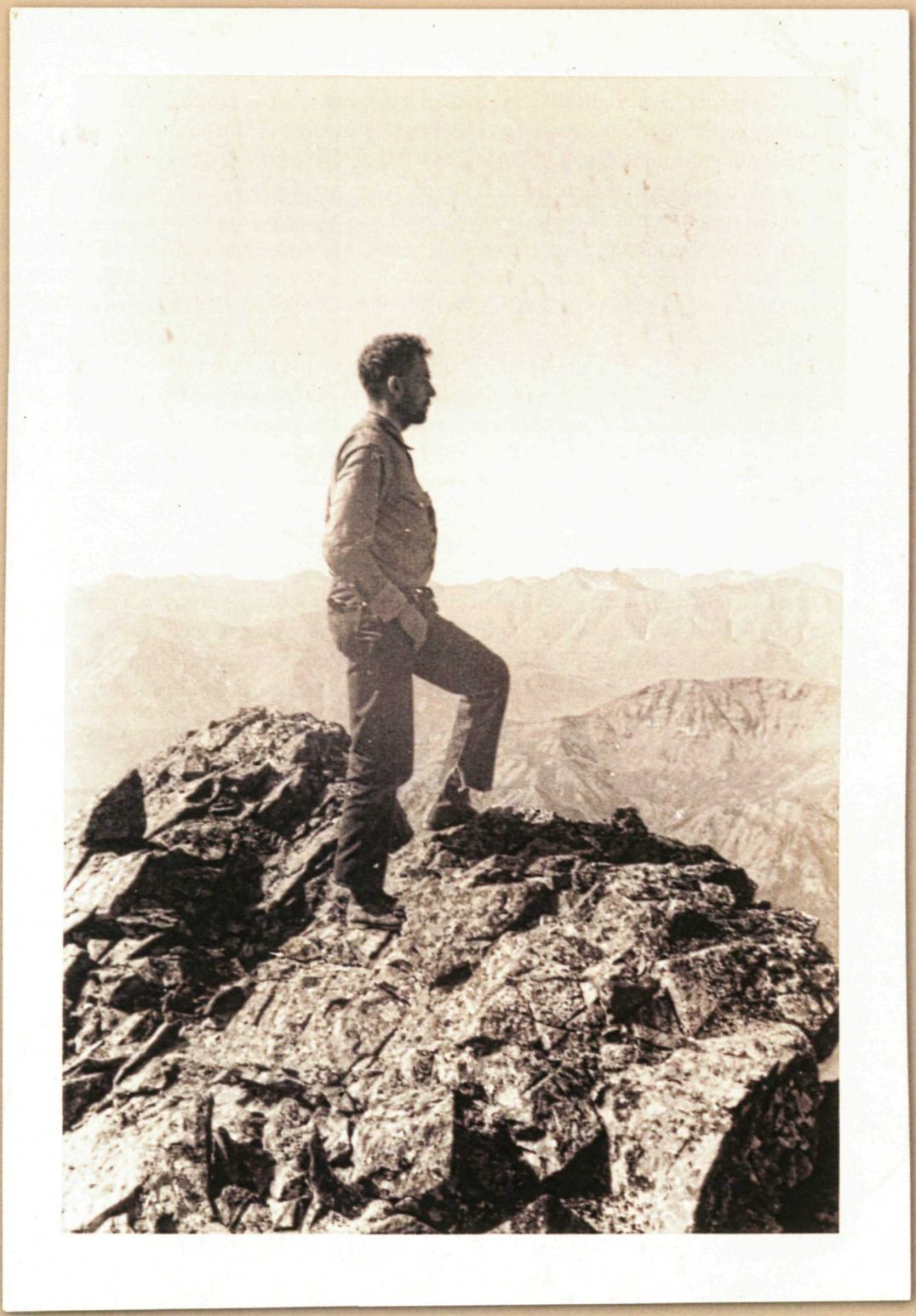
wilderness. Like his father, he was concerned with underdogs everywhere. In Washington D.C. he marched with World War I veterans to push for payment of their bonuses (and was arrested during one demonstration); he wrote about the needs of American Indians while working for the Bureau of Indian Affairs; and he contributed generously to civil liberties groups. There is no doubt that he was attracted to socialism as an organizing theory for social justice, but in practice he was more a romantic than a revolutionary. When the editor of the *Journal of Forestry*, Franklin Reed, reviewed *The People's Forests* at Marshall's request, he called it "a dangerous book," though Reed also praised Marshall for promoting open discussion on the topic of forest conservation.[41] Other critics of Marshall's ideological stands were not so forgiving.

Marshall's donations to unions and socialist organizations during the 1930s caught the attention of conservative congressmen, and in 1935 Hamilton Fish III, a fervent anti-communist in the House of Representatives, publicly condemned him before the House Committee on Un-American Activities for contributing to the Veterans Rank and File Committee and for his chairmanship of the Washington branch of the American Civil Liberties Union. According to Representative Fish, Marshall and hundreds of others in federal service promoted communist activities that included "inciting strikes, riots, sabotage, industrial unrest and revolutionary propaganda." When he finally heard the charges against him, Marshall told a *New York Times* reporter, "Because I've been out in the woods and up in the Arctic a good part of the past five years, it may be that the Bill of Rights was repealed without my hearing about it."[42]

Marshall made more waves in 1938 when asked to give his opinion about Alaskan resource development for a congressional committee report entitled *Alaska—Its Resources and Development*. In the report, Marshall argued that "pioneer conditions" and the "emotional values of the frontier" in an undeveloped Alaska were worth far more to the nation than agricultural settlement would be.[43] In an appendix to the report, Marshall painted Alaska as the last hope for establishing a large area free from roads and industry, and he added that, in his opinion, the territory's Native population would be much happier being left alone to live off the land. "Therefore," he concluded,

> I would like to recommend that all of Alaska north of the Yukon River, with the exception of a small area immediately adjacent to Nome, should be zoned as a region where the Federal Government will contribute no funds for road building and permit no leases for industrial development. . . . In the name of a balanced use of American resources, let's keep Alaska largely a wilderness![44]

Not surprisingly, many Alaskans erupted in protest. They disliked the government report, but they liked Marshall's contribution even less. The Alaska territorial legislature called for a new study and rejection of the old. Even the report's principal authors believed Marshall's proposals were extreme and irresponsible, and there was some confusion about how the offending appendix made it into the published report.[45]



Marshall during his last attempt to climb Mount Doonerak, July 1939. Robert Marshall Collection, Bancroft Library, University of California (6389-24a).

By January 1939, editorials in Alaskan newspapers were picking apart the report and Marshall's contribution in particular. One angry Fairbanks writer demanded, "How'd you like to see about a third of Alaska fenced off for a playground for the playboys and playgirls of America? . . . that is exactly what would happen in the wholly extraneous opinion of one Robert Marshall of the U.S. Forest Service." This particular contributor continued, "Every Alaskan knows that the development of mineral properties or use of her commercial forests would not despoil her scenic charms or deface her beauty any more than a speck on the moon."[46] Alaska's newspapermen and their readers were not the only ones to respond negatively to the idea that an outsider would promote parks and discourage future federal spending in Alaska. In *Valley of Thunder*, published in 1939, the novelist Rex Beach used his protagonist, David Glenister, to promote the rapid development of the region and to protest outside interference. "Sometimes," Glenister complained, "I think Washington is seriously bent on turning the entire territory into a national park, a picnic ground for visiting schoolma'ams in which us sourdoughs will be forbidden to run anything except filling stations and hot-dog stands."[47]

During this minor firestorm of negative media attention, Marshall had returned to the western states for another marathon series of hikes in the North Cascade Mountains and elsewhere and was returning home on November 11, 1939 aboard a midnight train between Washington, D.C. and New York City when he suddenly died. Although his friends and family were shocked at the news, there had been some indications that Marshall's health was fragile and that he may have had a form of heart disease. America's most energetic and most charismatic spokesman for wilderness and advocate of exploration in wild places was gone, but the ideas that drove him still prompted lively debate across the nation.

In the decades that followed, Marshall's voice was joined by many others who believed that unspoiled wild places offered values that far outweighed their potential as a roadway or a mine. And the National Park Service, which Marshall had often criticized for its promotion of roads and hotels in parks, would in time become a great defender of the wilderness ideal. As a powerful environmental movement evolved in the United States, a cluster of national parks were created in northern Alaska and many Americans were inspired by *Arctic Village* and the volume of Marshall's Alaska writings published posthumously as *Alaska Wilderness* (1956). The most adventurous among them traveled the mountains to walk in Bob Marshall's footsteps and to experience a new kind of exploration—a perpetual investigation of unspoiled places.

Endnotes

[1] Robert Marshall, *Alaska Wilderness: Exploring the Central Brooks Range* (Berkeley: University of California Press, 1956), 4.

[2] Sherry Devlin, "Bob Marshall: His Vision was his Legacy" in Rick Graetz, *Montana's Bob Marshall Country* (Helena: Northern Rockies Publishing, 2004), 97.

[3] Donald D. Jackson, "Just Plain Bob Was the Best Friend Wilderness Ever Had," *Smithsonian* 25 (August 1994), 93.

[4] Robert Marshall, "Adventure, Arrogance, and the Arctic," *Wings* 7 (May 1933), 10.

[5] Robert Marshall letter, August 20, 1928, quoted in Introduction to First Edition in *Alaska Wilderness: Exploring the Central Brooks Range* (Berkeley: University of California Press, 1956), xxv.

[6] Robert Marshall, *Arctic Village* (Fairbanks: University of Alaska Press, 1993 [reprint]), 3.

[7] Robert Marshall to Melville B. Grosvenor, National Geographic Society, March 1, 1935, quoted in Introduction to First Edition in *Alaska Wilderness: Exploring the Central Brooks Range* (Berkeley: University of California Press, 1956), xxxiii.

[8] Marshall, *Alaska Wilderness*, 7.

[9] Ibid., 8.

[10] Ibid., 10.

[11] Ibid., 14.

[12] Ibid., 16.

[13] Ibid., 18.

[14] Ibid., 20.

[15] Ibid., 22.

[16] Ibid., 30.

[17] Ibid., 37-38.

[18] Ibid., 39.

[19] Ibid., 40.

[20] Ibid., 40-41.

[21] See also, Martin Wilmking and Jens Ibendorf, "An Early Tree-Line Experiment by a Wilderness Advocate: Bob Marshall's Legacy in the Brooks Range, Alaska," *Arctic* 57 (March 2004), 106-113.

[22] Marshall, *Alaska Wilderness*, 82.

[23] Ibid., 87.

[24] Ibid., 97.

[25] Ibid., 103-104.

[26] Ibid., 107.

[27] Ibid., 108-109.

[28] Ibid., 109.

[29] Robert Marshall, "Wilderness Now on Indian Lands," *The Living Wilderness*, December 1937, 3-4; Robert Marshall, "Ecology and the Indians," *Ecology* 18 (January 1937), 159-161.

[30] Robert Marshall to H.C. Anderson, October 24, 1934, Robert Marshall Papers, Bancroft Library, University of California, Berkeley, California. See also, James M. Glover, *A Wilderness Original: The Life of Bob Marshall* (Seattle, WA: The Mountaineers, 1986), 177-178.

[31] Ibid., 147.

[32] Ibid., 148.

[33] Quoted in Introduction to First Edition in Robert Marshall, *Alaska Wilderness: Exploring the Central Brooks Range* (Berkeley: University of California Press, 1956), xxviii.

[34] Marshall, *Alaska Wilderness*, 110.

[35] Glover, *Wilderness Original*, 242.

[36] Marshall, *Alaska Wilderness*, 127.

[37] Ibid., 131.
[38] Ibid., 140.
[39] Ibid., 145.
[40] Ibid., 165.
[41] James Glover, "Bob Marshall: A Natural," *American Forests* 92 (September 1986), 54-55.
[42] "Federal Officials Accused as 'Reds,'" *New York Times* (February 2, 1935), 5.
[43] Glover, *Wilderness Original*, 120.
[44] U.S. Congress, House of Representatives, Natural Resources Committee, "Alaska: Its Resources and Development" (Washington D.C.: GPO, 1938), 213.
[45] Glover, *Wilderness Original*, 261.
[46] "'Let's Keep Alaska a Wilderness,' Oh, Yeah! [editorial]," *Fairbanks Daily News* (January 16, 1939), 2.
[47] Rex Beach, *Valley of Thunder* (New York: Farrar & Rinehart, 1939), 103.

Arctic Citadel.

Arctic Parks



Chapter 5: Arctic Citadel, Arctic Parks

It is one form of the learning process itself, and . . . it is often a branch of science which resulted in a discovery of a place trod many times over by previous generations of explorers sent on other missions in days gone by.

–William Goetzmann

After studying several generations of Brooks Range explorers, it seems reasonable to ask for a more precise definition of exploration and an answer to the question—Who qualifies as an explorer? In his Pulitzer Prize-winning *Exploration and Empire* (1966), historian William H. Goetzmann probed the meaning of exploration and, to the extent possible, the identity of the people we call explorers. And while his ideas allow for grey areas, he concluded that an explorer is someone who "seeks discoveries" with a sense of purpose or mission. To Goetzmann, exploration is not mere adventure-seeking, and it is more than an isolated confrontation with the unknown or a one-time event like a first encounter with an island or foreign shore. As he explains, exploration, more than anything, unfolds over time as outsiders come to understand a new landscape. "The accent is upon process and activity," he writes, "with advances in knowledge simply fortunate though expected incidents along the way." He continues,

> It is likewise not casual. It is purposeful. It is the seeking. It is one form of the learning process itself, and . . . it is often a branch of science which resulted in a discovery of a place trod many times over by previous generations of explorers sent on other missions in days gone by.[1]

In the history of the Brooks Range one finds that same unfolding of understanding as several generations of investigators arrived to probe the river valleys and climb the alpine peaks of a region that for many years held outsiders at bay. Located above the Arctic Circle and far from major population centers, the Brooks Range offered many obstacles to the uninitiated. Explorers faced clouds of mosquitoes, unpredictable weather, rugged terrain, and the challenge of packing in all the equipment and most of the food needed for months of travel. Uncharted rivers offered the threat of capsizing and hypothermia while wind, floods, rain and physical exhaustion all took their psychological toll. And winter—always around the corner, always threatening—dominated the schedules of all exploratory parties, whether they planned to escape its icy grip or stay on through the long season of cold and dark.

As Goetzmann points out, a new world is seldom revealed by a single discoverer but instead by a succession of determined seekers. In this the history of exploration in the Brooks Range proves the rule. Explorers in northern Alaska arrived periodically over several generations and on each occasion their routes and motivations varied. The earliest outsiders to arrive on Alaska's northern shores were Russian fur traders (or employees of the Russians) acting as agents of colonization on behalf of the Russian

tsar and pursuing profits in the fur trade. Although they established posts on some major rivers, they had little incentive to penetrate the unknown interior. European ships also visited Alaska's northern coastline, pursuing both a share of fur trade profits and a cartographic fantasy: an ice-free channel linking European traders with Asiatic kingdoms brimming with spices, jewels, silks, and other commodities. And again, they glimpsed Alaska's Arctic mountains but did not stay long enough to investigate.

Once the quest for the Northwest Passage faded, another more pedestrian cause emerged as hundreds of whaling vessels pushed into the Arctic Ocean. The perennial threat of whaling crews becoming trapped in the Arctic ice pack provided Navy and Revenue Marine crews a reason to enter Alaska's northern interior in the search for an inland rescue route. The United States government showed little interest in Alaska in the early decades after purchase, but the process of exploration accelerated when prospectors discovered large placer gold deposits in the 1890s. The Klondike-Alaska gold rush resulted in U.S. Geological Survey teams entering northern Alaska to map waterways and identify potential mineralized areas. In time, the search for gold was replaced by the search for petroleum. When Robert Marshall arrived in the central Brooks Range, searching for the nation's last large section of unmapped territory, he was driven both by old motivations—like mapping and naming—and by new ideas that revolutionized our understanding of exploration. Marshall introduced the idea that as the era of traditional exploration ended, another began—an era of exploration for the joy of it.

Indigenous people have been consistently excluded from the explorer's club. Because newcomers from Europe, Canada, and the United States usually viewed the world through a lens tinted with racial prejudice, being the first person in an "undiscovered" land meant being the first *white* person. And, in the Western world's literary canon of exploration, indigenous people are most often portrayed as uncivilized tribes to be conquered or objects of curiosity waiting to be discovered. This study attempts to correct this cultural myopia by showing that not only did local indigenous people understand the larger geography of their region but they traveled extensively, often covering hundreds of miles along a network of trade and travel routes that crisscrossed northern Alaska. Furthermore, they did so with an ease that made the attempts by foreign explorers look childish. Alaska Natives were routinely hired as guides, interpreters, boatmen, and hunters, and they occasionally joined expeditions as whole family units. Through expedition accounts we learn their names, their skills as long-distance travelers, their travails and concerns, and even the trade goods they received in exchange for their services. While attached to exploratory parties, Alaska Natives left their homes for long periods of time and, in the case of Lt. Stoney's Fort Cosmos, they overwintered alongside the explorers they were aiding. In this way, certain Alaska Natives became active participants in the process of exploration.

The identity of the Brooks Range explorer adopts still greater complexity when considering some recent arrivals to the region. For example, Robert Marshall can be viewed as a scientist conducting an experiment to measure the behavior of spruce trees at northern latitudes or a philosopher who used his experiences in Alaska to shape his ideas about the value of wilderness. Some might argue he was also the region's first tourist given that he arrived by airplane on his summer vacation with disposable income and a camera around his neck. Though they have seldom been

Snowy mountain slopes near the Itkillik River in the northeastern corner of Gates of the Arctic National Park and Preserve. August 2012. Courtesy of Zachary Richter.



Nunamiut Eskimo dog team on caribou hunt in Anaktuvuk Pass, 1962. Ward W. Wells Collection, Anchorage Museum (WWS-3421-89).

called explorers, many other people have traveled into the Brooks Range seeking discoveries of their own. For example, scientists examine the geology, flora and fauna, and changing ecology of the region; anthropologists, archeologists, and historians study the human occupants of the land from the present to the earliest peopling of the Americas; back-to-the-landers have built cabins and experimented with a life lived closer to the earth; photographers and other artists seek inspiration in a remote and unfamiliar landscape; mountain climbers, river-rafters, and backpackers test their own physical limits in an unforgiving environment; and local people, both Native and non-Native, enter the mountains to continue traditional patterns of land use like hunting and fishing. In fact, archeological evidence indicates that the Brooks Range region has been a travel corridor and homeland for human beings since the end of the last ice age. Should the franchise of the explorer be expanded to include anyone who arrives, as Goetzmann puts it, "seeking discoveries"?



Men hunting caribou in Anaktuvuk Pass, 1962. Fur-covered rifle scabbard in foreground. Ward W. Wells Collection, Anchorage Museum, (WWS-3421-73).

Our common understanding of what constitutes exploration usually includes a vast and little-understood place like Antarctica, the ocean floor, outer space, or subterranean cave networks. Without that vast, little-understood place, the notion of exploration begins to lose meaning. In recent decades, the modern world has brought new technologies and new infrastructure to the Brooks Range, and these changes seem to erode its status as a large, mysterious, and inaccessible place. Snowmobiles, all-terrain vehicles, helicopters,

Weathered bull caribou antlers at the headwaters of the Alatna River, August 2011.
Courtesy of the author.

Side Note #9

CHANGES IN THE BROOKS RANGE: THE HICKEL HIGHWAY

During the late 1960s Alaska was abuzz with news of oil discoveries on the immense tundra landscape north of the Brooks Range known as the Arctic Slope. Exploration confirmed that a field southwest of Point Barrow contained an estimated 9.6 billion barrels of oil—the largest field ever discovered in North America. But, the oil companies that rushed north found the Arctic a difficult place to extract oil. Petroleum engineers and drilling rig workers faced severe cold, persistent darkness, and permafrost, which would turn into a quagmire when heavy equipment disturbed the vegetation insulating the frozen ground below. At great expense, the companies used flotillas of barges and C-130 cargo planes to get materials to the coast at Prudhoe Bay. Then Alaska's Department of Highways attempted to open the Arctic oil fields to truck travel by punching a rough road through the Brooks Range—and through the area that would later be designated as Gates of the Arctic National Park and Preserve.

Alaska governor Walter J. Hickel had been elected in 1966 on a platform that included widespread resource development. He approved the plan to use bulldozers to scrape a road north so that Alaskan trucking companies could also profit from the Arctic oil boom. Opponents of the plan were concerned that the road would damage one of the continent's great wild places while offering the state only limited economic return. Robert Weeden, president of the Alaska Conservation Society, was one of the first to sound the alarm. In a letter to Governor Hickel early in the road-building process, Weeden spoke for the conservation community:

> Their concern is that the trail will quickly become an ugly, useless scar on the face of Alaska when erosion, thawing, and changing transportation needs cause abandonment; and that the devil-take-the-hindmost aura of the whole project will lead to unnecessary destruction of scenery, streambeds, and game habitats.

Once the road was complete the construction crew was feted by the Alaska Carriers Association and the new governor, Keith Miller, who named the roadway the Walter J. Hickel Highway. But when spring arrived, the exposed permafrost began to melt, prompting critics to call it the "Hickel Canal," the "Hickel Ditch" and the "Hickel Canoe Trail." After the rough highway remained unused for several years, the builders of the trans-Alaska oil pipeline received permission to transport heavy equipment and supplies along the same route. Today the remnants of the old roadbed can be seen from an airplane, following the John River north through Gates of the Arctic National Park and Preserve to Anaktuvuk Pass and beyond. This scar on the land serves as a powerful symbol of Alaska's ongoing land use debates and of the mixed feelings many Alaskans and many Americans have about the cost and benefits of development above the Arctic Circle.



Crew worker Fred Hobson on the newly completed Hickel Highway north of Anaktuvuk Pass, 1969. Courtesy of Harold Tilleson.

Oil tankers and a bulldozer following the Hickel Highway route with Anaktuvuk Pass village in the background. McCutcheon Collection, Anchorage Museum (B90-14-3-361).



Bulldozer convoy and fuel trucks on the Hickel Highway en route to a construction camp for the Trans-Alaska Pipeline, March 1974. McCutcheon Collections (B90-14-3-244).

and airplanes with pontoons or oversized tires are now capable of delivering passengers to most any corner of the region. Cameras mounted in aircraft and satellites orbiting the earth capture detailed images of the land from above. And satellite telephones, emergency locator devices, and GPS units can eliminate much of the risk of spending time in the backcountry.[2] More permanent changes to the Brooks Range region have come in the form of mines scattered across northern Alaska and development associated with the Arctic Slope oil industry. The discovery in the late 1960s of oil deposits at Prudhoe Bay has led to the construction of a trans-Alaska oil pipeline and two roads cutting across the central Brooks Range. The so-called Hickel Highway was built in 1969 by the State of Alaska in an attempt to profit from the Arctic Slope oil boom, and although the project was soon abandoned, the overgrown roadbed can still be seen from the air along a route that cuts through the central Brooks Range. The second road was the James W. Dalton Highway, which today runs north-south between the Beaufort Sea coast and Interior



Aerial view of Atigun Pass and the new "haul road" (later called the Dalton Highway) built to allow construction of the Trans-Alaska Pipeline in the Brooks Range, ca. 1976. McCutcheon Collection, Anchorage Museum (B90-14-3-451).

Alaska, paralleling the northern section of the oil pipeline.[3]

The creation of national parks and other land conservation units has also transformed the Brooks Range region in recent years, acting as a counterweight to this trend toward development and resource extraction. The first of these was the 19.3-million-acre Arctic National Wildlife Refuge established in 1960 in northeastern Alaska. The wildlife refuge encompasses much of the eastern Brooks Range, including the Romanzof Mountains and the section of the British Mountains described by John Franklin in 1826. Led by Wilderness Society president Olaus Murie and his wife Mardy in the 1950s, the successful push to save a large swath of Arctic Alaska from development was a major victory for advocates of environmental protection.[4] The passage of the Wilderness Act of 1964 offered the possibility of even greater legal protection for wild lands and encouraged activists who looked to Alaska as the nation's last hope for large land conservation units. After the discovery of oil deposits on Alaska's Arctic Slope, a fierce debate erupted over the best use of public lands in Alaska. Alaska Native people organized

Side Note #10

ANAKTUVUK PASS: A HOME IN THE MOUNTAINS

The village of Anaktuvuk Pass, home of the Nunamiut Eskimo people, is one of Alaska's most isolated communities in a state full of isolated communities. Situated in the heart of the Brooks Range between dramatic mountain peaks, the village takes its name from the 2,200-foot pass through which herds of caribou make their annual migration between the Arctic Slope and the southern side of the mountains. The word *anaktuvuk* means "place of caribou droppings," hinting at the intimate connection between the Nunamiut and the caribou that traditionally provided meat, clothing, and skins for temporary shelters.

Until quite recently, the Nunamiut, or People of the Land, led a highly mobile life, walking, sledding, and boating hundreds of miles between the Brooks Range and the Arctic Ocean. This was the case in 1886, when Navy ensign William Howard joined a party of Nunamiut on a trading excursion to Point Barrow. Along the way Howard encountered hundreds of villagers and reported to his superior, Lt. George Stoney, how the Eskimos managed to travel through several distinct ecosystems and all kinds of weather using a combination of snowshoes, dog sleds, skin boats, and food caches left at strategic locations.

Early in the twentieth century, Nunamiut bands living in the mountains were among the last nomadic indigenous people in North America, and although they used guns instead of bows and arrows, their connection to their ancestral land was largely unchanged. During the 1940s they began trading wolf pelts and other furs with a pilot named Sigurd Wien for food and ammunition. Wien convinced the Nunamiut families to settle where he could promise regular air service and the possibility of schooling for the children. By 1949, five families from Chandler Lake and eight families from the Killik River moved to a plateau at the headwaters of the John River and founded the village of Anaktuvuk Pass.



Anaktuvuk Pass men drumming, May 1970. Drummers include (from left to right) Arctic John, Elijah Kakinya, Frank Rulland, and Simon Paneak. Ward W. Wells Collection, Anchorage Museum (WWS-4827-128).

In the early 1960s the National Park Service began to consider the creation of a large national park in the central Brooks Range and by the late 1970s the residents of Anaktuvuk Pass decided that allowing their village to be encircled by a national park was the best way to protect the caribou migration routes and buffer the community from unwanted change. Today, the village is located inside the boundaries of Gates of the Arctic National Park and Preserve, and the residents continue to hunt caribou and to live their lives in a difficult and dramatically beautiful place.



Trans-Alaska Pipeline as it approached the south side of Atigun Pass in the Brooks Range, just east of what is today Gates of the Arctic National Park and Preserve, February 10, 1977. McCutcheon Collection, Anchorage Museum (B90-14-3-419).

to claim their ancestral lands; the State of Alaska pushed to claim the 104 million acres promised when Alaska became a state; and the federal government, guided by a president and members of Congress sympathetic to the environmental movement, demanded a share of Alaska's public lands in the "national interest." After a decade of push and pull, President Jimmy Carter signed into law the Alaska National Interest Lands Conservation Act of 1980, commonly known as ANILCA. The law doubled the size of the nation's national park system by creating ten new park units and adding to three existing parks for a total of 43.6 million acres of new national parklands in Alaska. Among these new parks were four units spanning much of the Brooks Range region: Gates of the Arctic National Park and Preserve, Noatak National Preserve, Kobuk Valley National Park and Cape Krusenstern National Monument. With a combined size of over seventeen million acres, these new parklands extend in a nearly unbroken chain from the Chukchi Sea eastward to the James W. Dalton Highway almost four hundred miles away.

When national parks are created each is selected to protect a unique set of resources.

In Alaska's northernmost parks, these resources include undeveloped and unaltered Arctic landscapes, populations of animals and plants in intact ecosystems, and archeological sites dating back to the first human habitation of the Americas. Under the authority of ANILCA, the parks also provide local residents the opportunity to maintain a traditional way of life by continuing subsistence harvest of plants and animals. One might argue that the new park units in the Brooks Range also preserved opportunities for a new type of exploration, as presaged by Robert Marshall a half-century earlier. During the 1930s, Marshall argued fervently that the wild corners of the world were rapidly disappearing and that they should be protected to "prolong as much as possible" opportunities for exploration.[5] Today national parks in the Brooks Range region offer people from around the world an opportunity to participate in the process of discovery. In this sense the Brooks Range has been transformed from a forbidding Arctic citadel that often thwarted outsiders to a citadel of a different type, one that guards a vast, unspoiled natural world and offers travelers the chance to experience landscapes available nowhere else. Robert Marshall called this form of exploration "perhaps the greatest aesthetic experience a human being can know."[53]

Endnotes

[1] William H. Goetzmann, *Exploration and Empire: The Explorer and the Scientist in the Winning of the American West* (New York: Monticello Editions, 1966), xi.

[2] "Aerial Exploring: Planes Have Conquered the Wilderness and Now Give Surveyors Wings," *New York Times*, October 11, 1953, 18; Gerald FitzGerald, "New Tools for Mapping in Arctic Alaska," *Canadian Surveyor* 13 (July 1957), 484-490.

[3] Chris Allan, "The Brief Life and Strange Times of the Hickel Highway: Alaska's First Arctic Haul Road," *Alaska History* 24 (Fall 2009), 1-29.

[4] Roger Kaye, *Last Great Wilderness: The Campaign to Establish the Arctic National Wildlife Refuge* (Fairbanks: University of Alaska Press, 2006).

[5] Letter, Robert Marshall to Melville B. Grosvenor (National Geographic Society), March 1, 1935; reprinted in Marshall, *Alaska Wilderness*, xxxii.

[6] Ibid.

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Today national parks in the Brooks Range region offer people from around the world an opportunity to participate in the process of discovery. In this sense the Brooks Range has been transformed from a forbidding Arctic citadel that often thwarted outsiders to a citadel of a different type, one that guards a vast, unspoiled natural world and offers travelers the chance to experience landscapes available nowhere else.

—Chris Allan, 2013