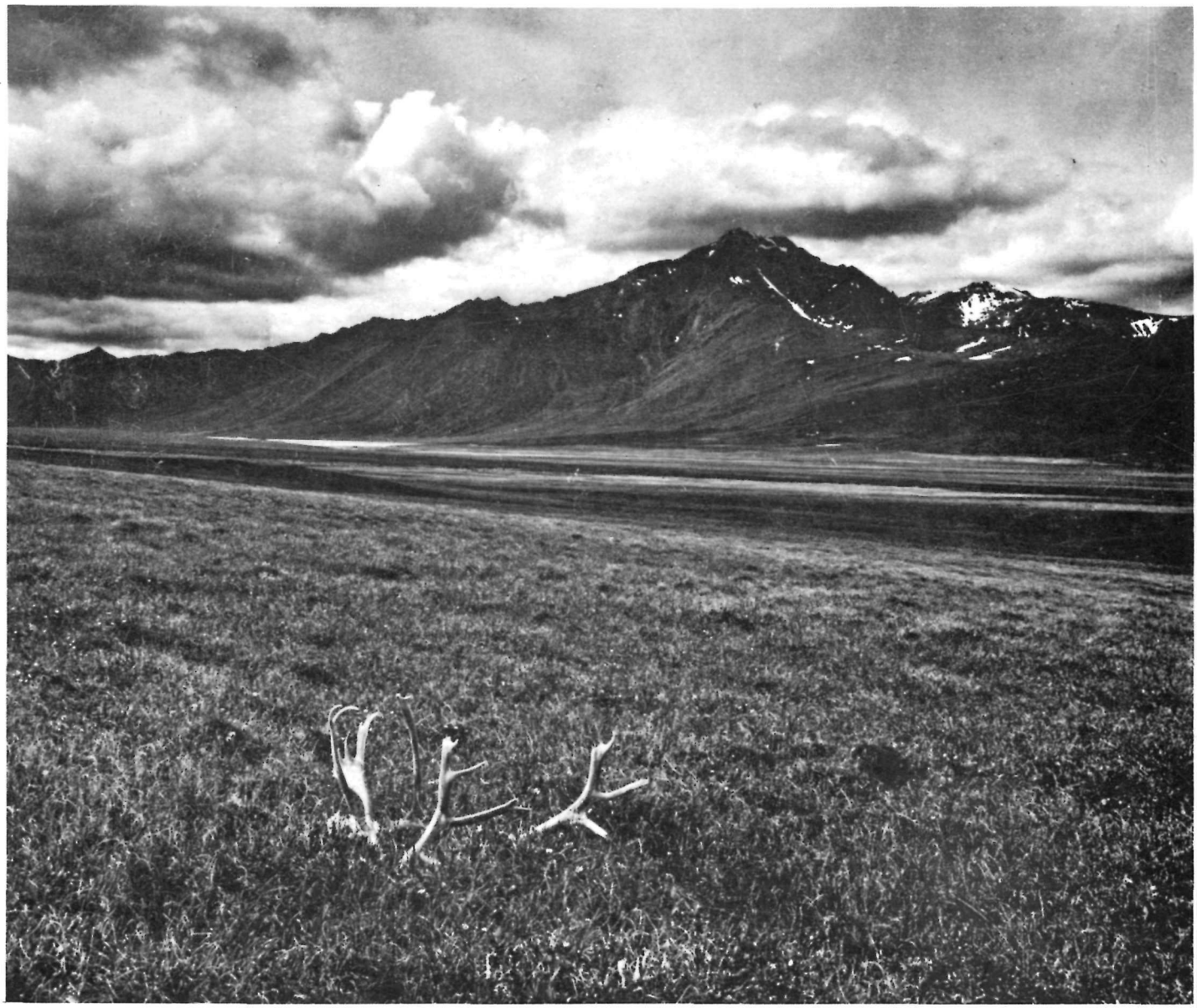
Gaunt Beauty... Tenuous Life



Historic Resources Study for

GATES OF THE ARCTIC NATIONAL PARK & PRESERVE

National Park Service, Alaska 1988

GAUNT BEAUTY . . .

TENUOUS LIFE

Historic Resources Study

GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE

National Park Service, Alaska

January, 1988

by William E. Brown, Historian
with site descriptions by Russell Sackett, Historical Architect



Ernie Johnson and Bob Marshall after their 50-day Alatna-John River trip. Photo taken with Robert Marshall's camera. Courtesy of the Bancroft Library, University of California, Berkeley.

Introduction

This Historic Resources Study is part of a multi-year, interdisciplinary Cultural Resources Inventory for Gates of the Arctic National Park and Preserve, performed under project direction of archeologist Michael L. Kunz. The inventory was programmed and funded by the National Park Service as an essential element of the planning process for the new park.

The project began with archeological surveys in 1983. Most of the historical research, field work, and writing was accomplished in 1984 and 1985. After delays caused by the author's intervening assignments to other tasks, this study now joins the four volumes of draft archeological reports prepared by Mike Kunz and his stalwart crew.

This work is offered as a functional document for the park in terms of: (1) recordation and evaluation of historic sites, and (2) narrative development of historical themes useful for historic site context and interpretation of the park story. Beyond these functional uses, it is the hope of the author that park employees' exposure to the narrative history will enrich their experiences in the park and make them attuned to the resources and neighbors they must work with.

The author apologizes for the length of this study, but is not unduly apologetic. No comprehensive history had heretofore been done on this remote region. Thus the historical narrative had to

build from the ground up, without benefit of prior syntheses, using many original sources. The nature of the history in this region--multi-cultural, anecdotal, and subject to severe variations of activity and decline--also militated against shortcuts. Lacking in this isolated, underpopulated part of the world were the structural frames and social progressions that allow generalization. People and events shone forth here that would be lost in the shuffle Outside. Nearly everyone and everything was unique. Finally, the author has violated hoary historical canons by quoting at length from original sources--particularly Native accounts, narratives of early exploration and enterprise, and the works of Robert Marshall. There were several connected reasons for this. People working in wilderness can't carry whole libraries with them--even if they could find copies of the rare and scattered documents that fueled so much of the narrative. And it seemed important, in a place that still beckons to the spirit and discovery, that original perceptions of homeland people and early discoverers not be filtered. Feelings, spiritual associations, adventure, and poetry--all richly exhibited in the quoted material--suffer in paraphrase. This study is, therefore, partly an anthology of original literature that most readers otherwise would never see.

The study has benefitted from many kinds of cooperation:

* In-Service historical, historic architectural and engineering, archeological, and anthropological talents

and perspectives were brought to focus by project director Kunz, with planning and programming preparations and assistance from Regional Chief of Cultural Resources Leslie Hart and her staff. The combined logistics of the historical and archeological sections allowed us to cover lots of ground.

* Particularly notable was the contribution of the Service's Historic American Buildings Survey and Historic American Engineering Record (HABS/HAER). Their documentation of historic structures and mining technology, both in-park and nearby, is a highlight of the study and a splendid example of a park benefitting from a program often categorized as external to park operations.

* Beyond the Service itself, the project design assured close cooperation between the National Park Service and the Bureau of Land Management, both agencies of the Department of the Interior. We jointly conceived a regional study that would benefit both agencies by applying the assembled talents for the park inventory to recordation and evaluation of historic resources in both jurisdictions. Archeologist Susan Will of BLM had earlier prepared cultural resources studies of Coldfoot and Wiseman, and these were eagerly appropriated by the author. Her final inventory of Wiseman historic structures is reproduced herein.

* Park Superintendent Dick Ring and his always cooperative staff supported the inventory project throughout with bases of operations and logistical help. In turn, the incremental products of the inventory from all disciplines were immediately incorporated into the planning process. Thus--under the congressionally mandated planning deadlines--research, field-proofing, and planning melded together as a team effort. In this context, anthropological and historic-use-pattern insights from the inventory work may have contributed most to the planning effort.

For the author it has been a tremendous privilege to work with the history, the land, and the people of the Gates of the Arctic.

William E. Brown
Project Historian
Gates of the Arctic NP&P
Historic Resources Study

Note on Sources and Restricted Distribution of this Study:

Most of the historical quotations and graphics used in this study are derived from public domain sources. Quotations from modern, copyrighted sources have been limited to short passages to stay within accepted scholarly-use criteria. All sources are credited in the notes and captions, whether in the form of direct quotation or copying of graphics, or in the form of paraphrased ideas. Permission will be sought, as appropriate, from publishers and authors not already contacted before formal publication.

To convey Robert Marshall's special insights, I have drawn heavily on his published literature, and from the Robert Marshall Collection--both written and photographic--at the Bancroft Library, University of California, Berkeley. The guardian of that literary estate, Robert's brother George Marshall, has been approached for permission to use these materials. He is in process at this writing of consulting with the Bancroft Library and the University of California Press on behalf of this study. Until permission is granted from George Marshall and the University of California, this preliminary printing of the study will be considered an in-house National Park Service draft, with distribution limited to concerned Park Service officials and selected scholarly reviewers.

William E. Brown

Acknowledgements

Obviously, much is owed to many after a work of this kind--to the members of the history, HABS, and archeological crews, whose work is identified in the pages that follow; to the park, regional office, and Washington office staffs for continuing support and patience; to the archivists of many institutions who helped me dredge up the old documents and photos and maps; to the people of the study region who gave both hospitality and knowledge unstintingly, most of them named as integral parts of the history. I thank all of these and hope that the work that follows requites their trust and efforts.

Lois Hull typed and retyped and word-processed the narrative, a monstrous job. Suzy Page pitched in to do the final typing on the site reports. And my wife, Carolyn Elder, with only moderate sighings and gnashings, derived the bibliography from my attribution notes, and other notes and scraps.

WEB

Contents--Volume I, Historical Narrative

Introduction i

Note on Sources v

Acknowledgments vi

Chapter 1: Land of Traditional Times 1

Chapter 2: Early Exploration 66

Chapter 3: Early Mining and Klondike Overflow 146

Chapter 4: Far North Camps and Communities, 1900-1930 218

Chapter 5: The Civilization of the North 336

Chapter 6: Robert Marshall's Koyukuk 421

Chapter 7: Still a Homeland 509

Chapter 8: Creation of a Park 580

Epilogue 613

Recommendations for further work 617

Bibliography 618

Illustrations and Maps:

Regional map and historical base map in end pocket

Photo essay on the land follows Contents

Chapter 1 illustrations follow page 34

Chapter 2 illustrations follow page 100

Chapter 3 illustrations follow page 182

Chapter 4 illustrations follow page 258

Chapter 5 illustrations follow page 382

Chapter 6 illustrations follow page 460

Chapter 7 illustrations follow page 546

Chapter 8 illustrations follow page 590

Contents--Volume II, Site Descriptions

Historic Sites and Structures Introduction II-1

Historic Sites and Structures List II-4

HABS/HAER Project Information II-6

Historic Structures Summary and Site Descriptions by Russell Sackett II-7

Sites within the park boundary II-10

Sites beyond the park boundary II-53

Sites and Structures noted during mining surveys II-85

HABS Documentation, Wiseman and Vicinity II-87

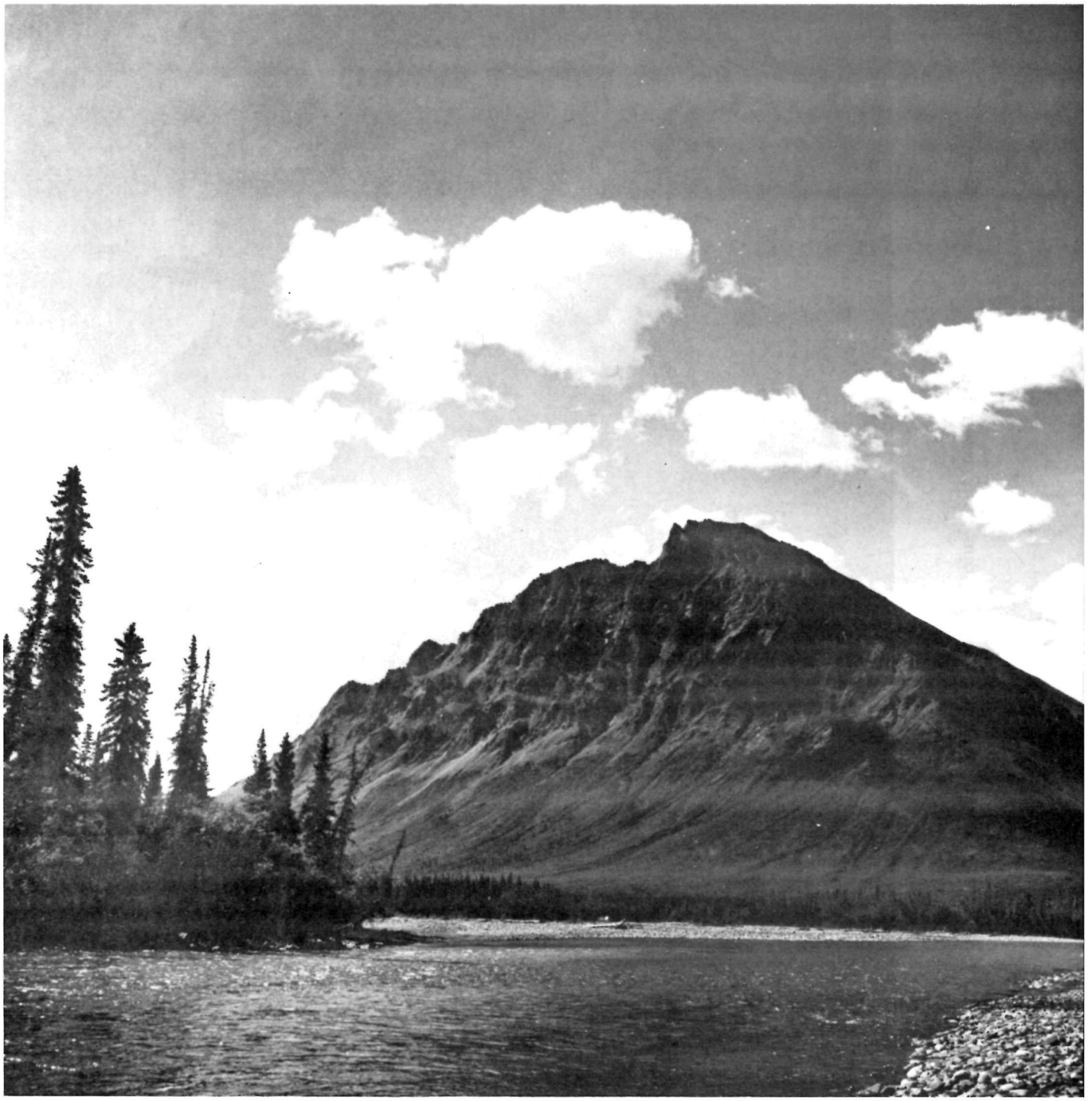
Historic Structures Inventory of Wiseman by Susan Will, BLM II-97

Wild Lake, Old Bettles, Chandalar, Anaktuvuk Pass II-98

The Land



The Gates of the Arctic from Ernie Creek Valley. John Kauffmann photo.



Frigid Crags, one of the Gates. John Kauffmann photo.



Under Doonerak Mountain on the Koyukuk's North Fork. John Kauffmann photo.



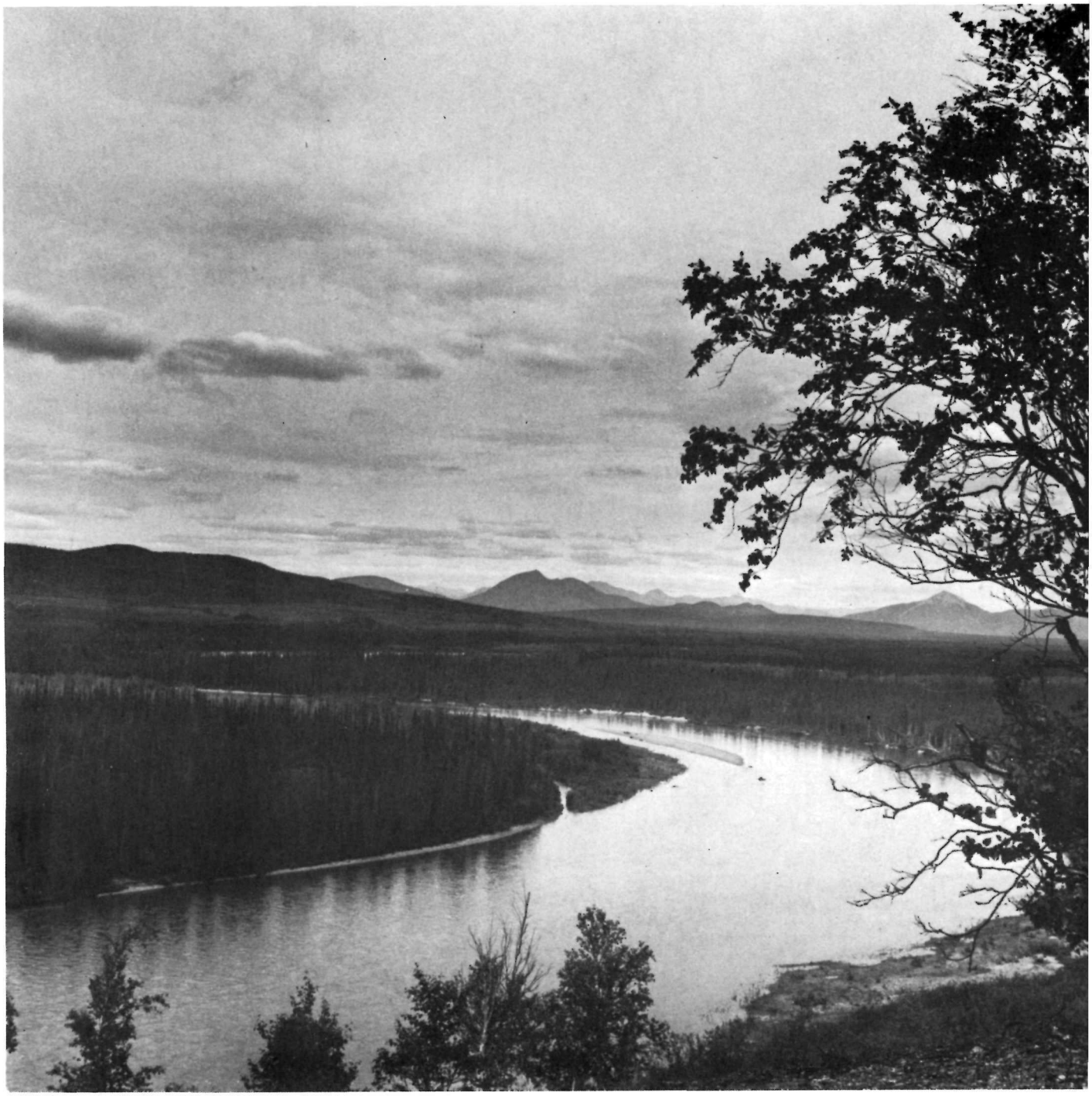
Arrigetch Peaks. Robert Belous photo.



Mount Igikpak. Robert Belous photo.



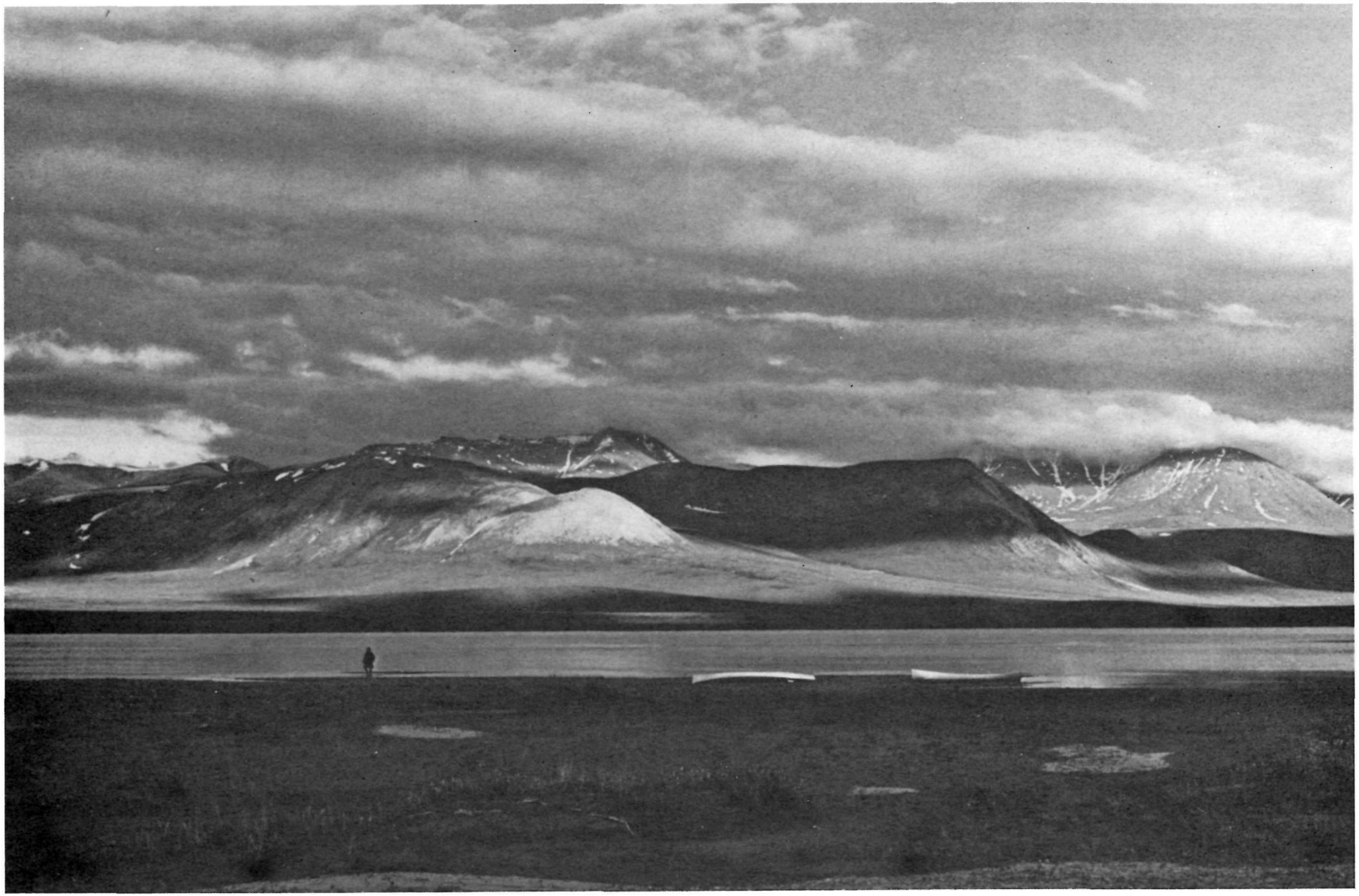
Takahula Lake. Robert Belous photo.



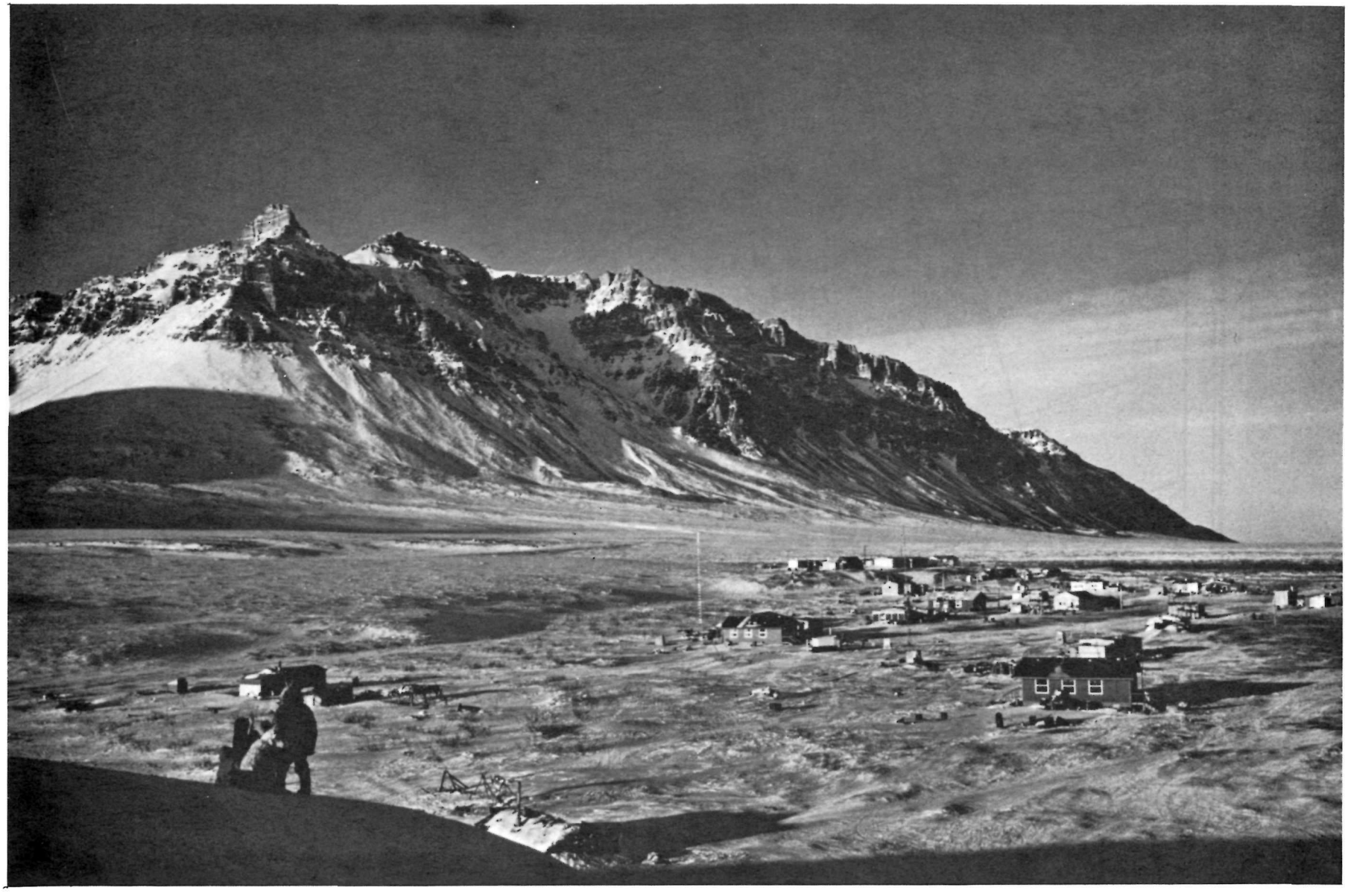
Kobuk River. John Kauffmann photo.



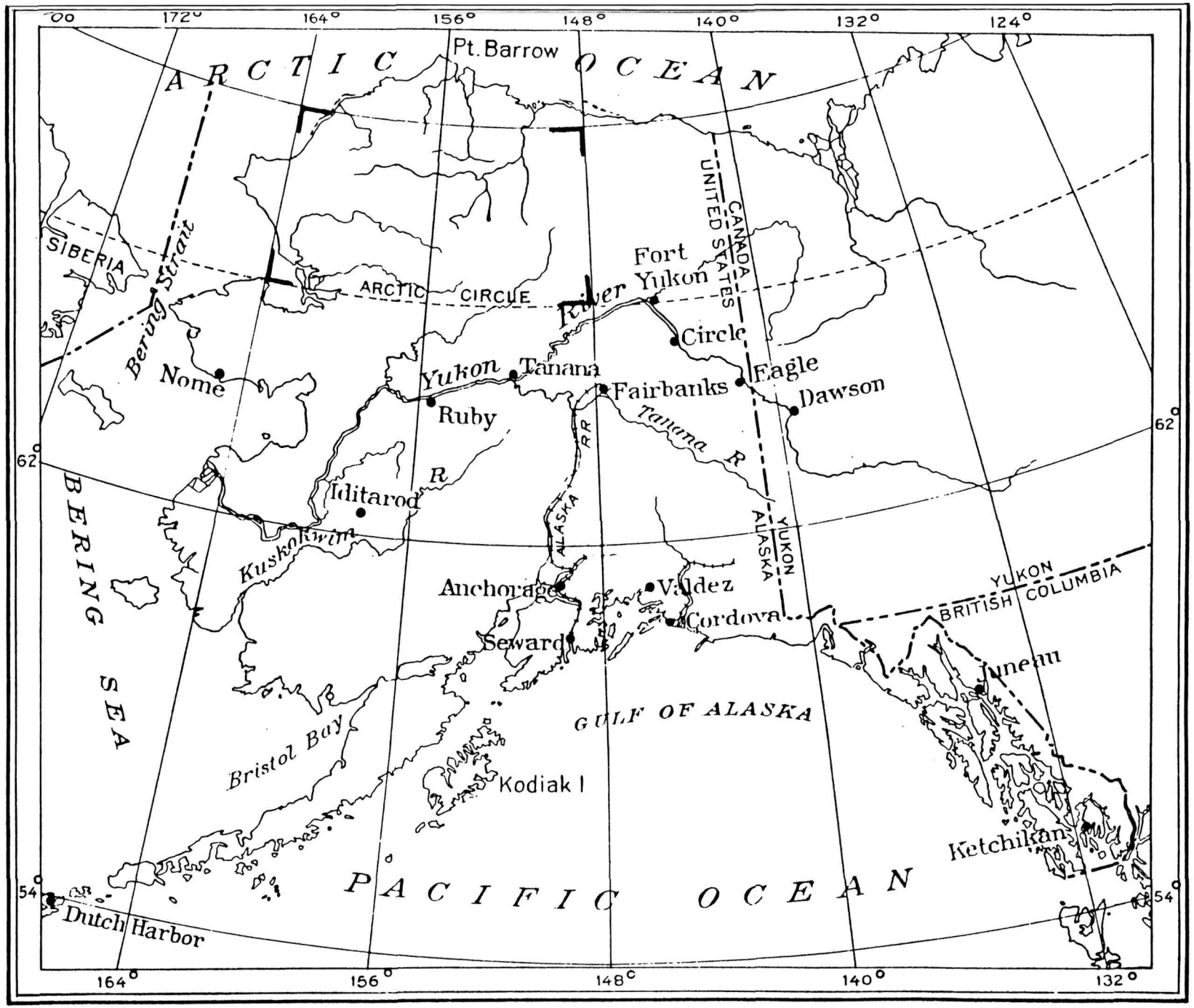
Narvak Lake. John Kauffmann photo.



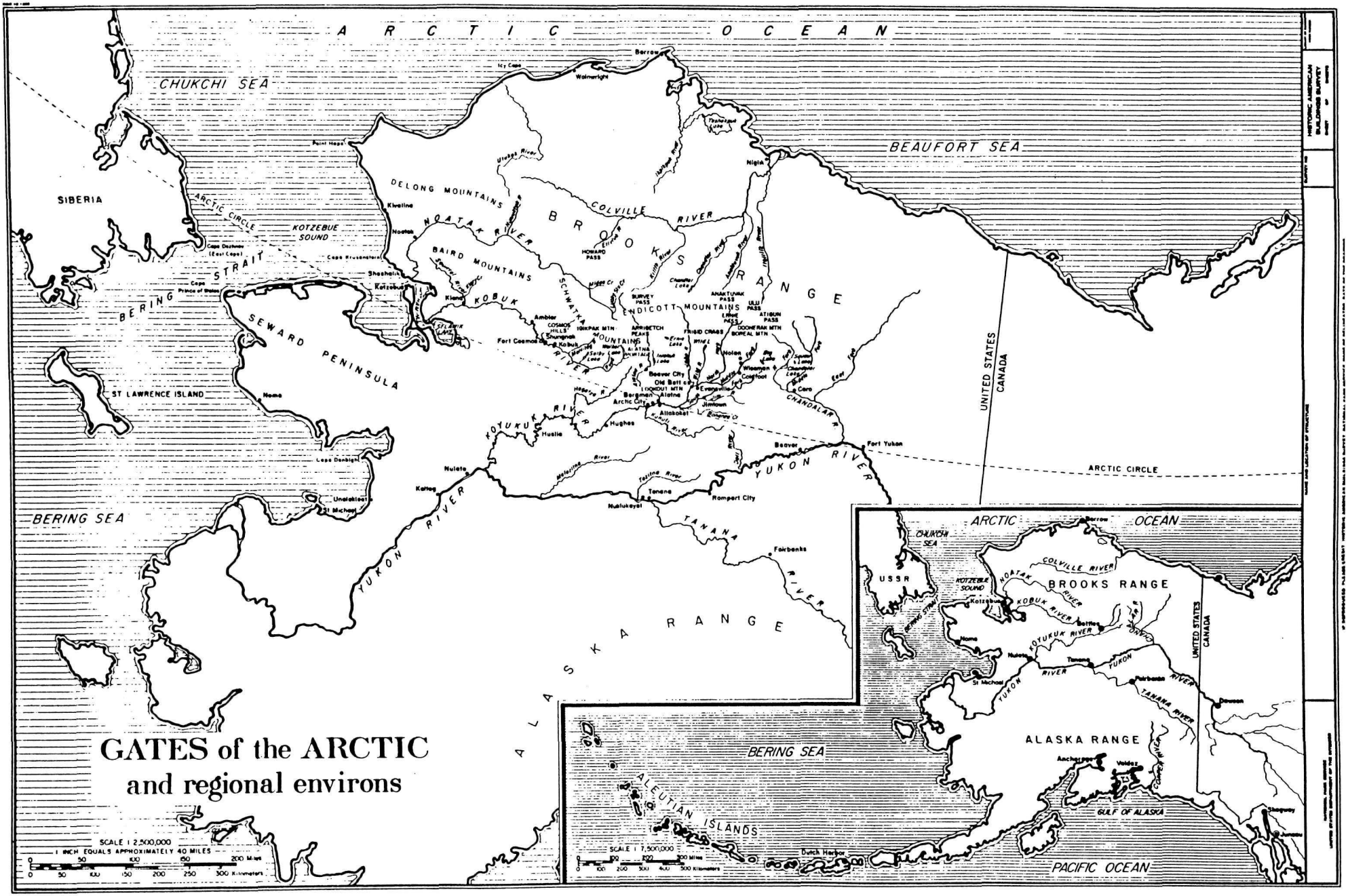
Killik River. John Kauffmann photo.



Anaktuvuk Pass Village. John Kauffmann photo.



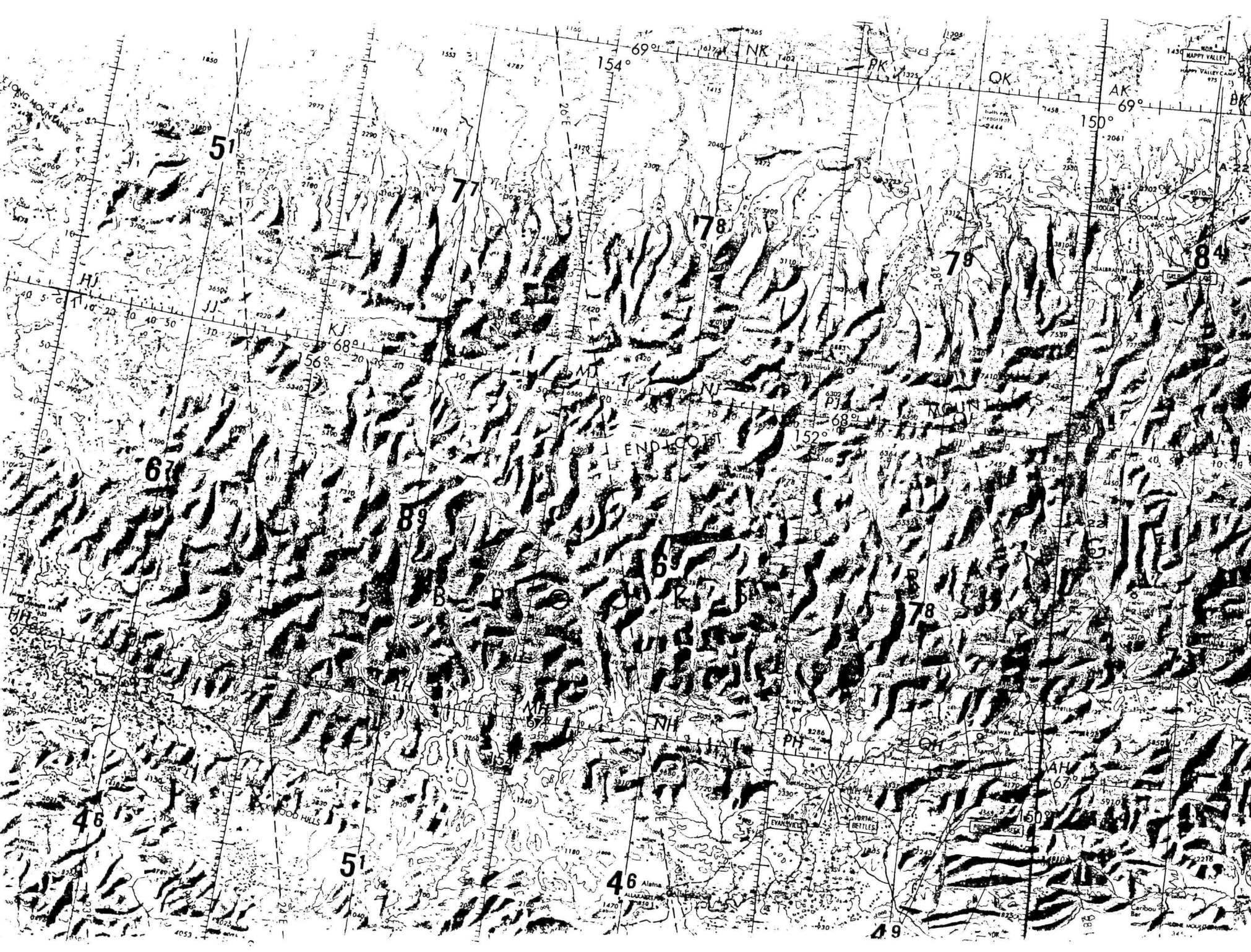
Early USGS Alaska base map, showing Gates of the Arctic region.
(Source: USGS Technical Data Branch, Menlo Park, CA.)



GATES of the ARCTIC
and regional environs

HISTORIC AMERICAN BUILDINGS SURVEY

The Gates of the Arctic region from Operational Navigation Chart C-9, Defense Mapping Agency, U.S Air Force. For reference, Bettles is just to the right of lower center. This chart gives some idea of the intricate mountain terrain and drainage patterns of the region, once described by a person who flew over it regularly as "a file under magnification."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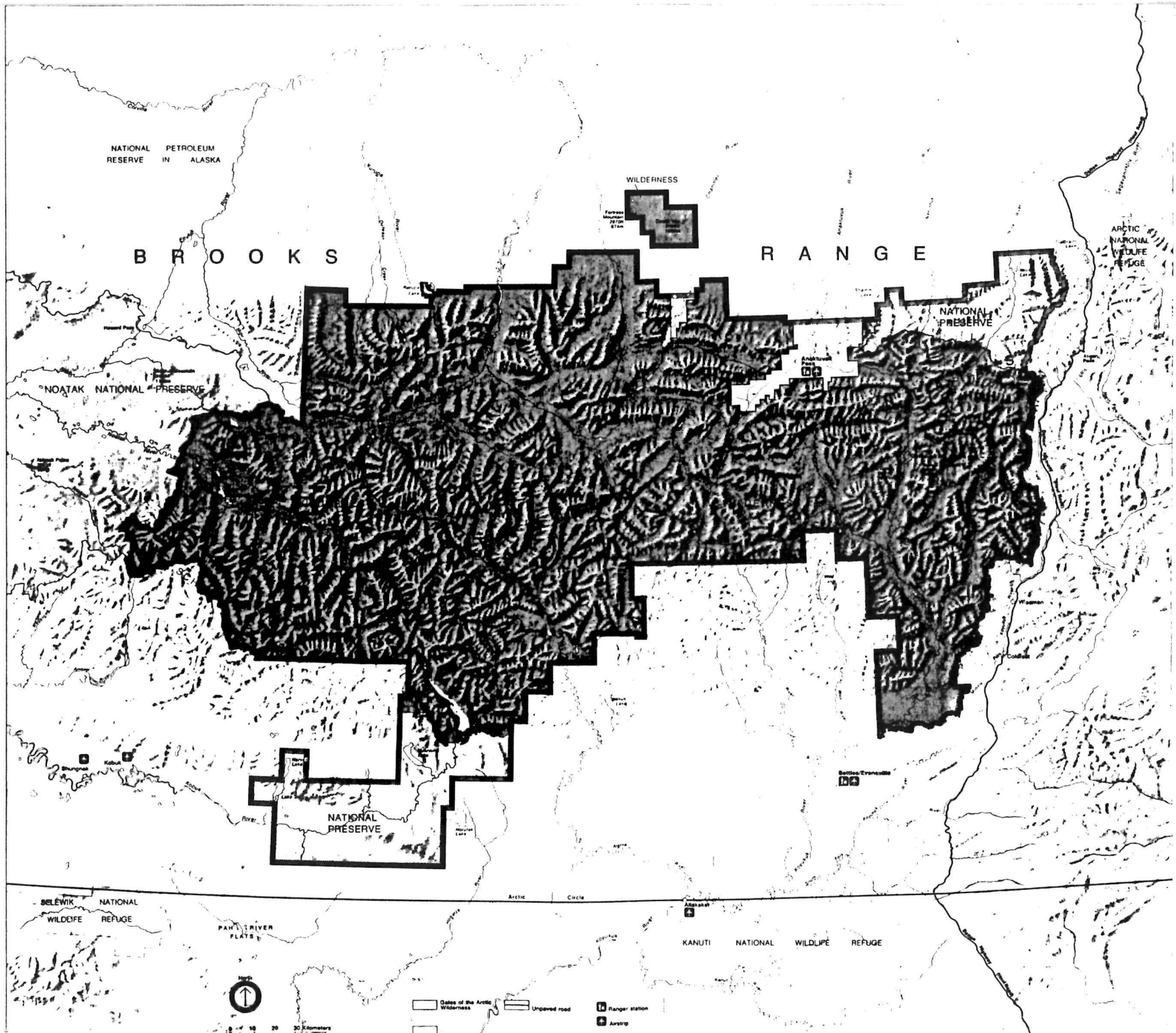

NATIONAL PETROLEUM RESERVE IN ALASKA
WILDERNESS
BROOKS RANGE
ARCTIC NATIONAL WILDLIFE REFUGE
NATIONAL PRESERVE
NOATAK NATIONAL PRESERVE
NATIONAL PRESERVE
SELEWIK NATIONAL WILDLIFE REFUGE
PAH RIVER FLATS
Arctic Circle
KANUTI NATIONAL WILDLIFE REFUGE
Gates of the Arctic Wilderness
Unpaved road
Ranger station
Airstrip
North
0 10 20 30 Kilometers

Chapter 1: Land of Traditional Times

In the central Brooks Range the Arctic Divide spills descending waters to Arctic Ocean and Chukchi Sea, to Yukon River and Bering Sea. Radiating from the mountain core, the rivers course through canyons and valleys verdant in summer's constant light, congealed and dim in winter's long night. South of the mountains, boreal forest covers the lowlands and probes the slopes. But toward the mountain crests north winds warp and stunt the last struggling spruce trees. They disappear, replaced by the dwarf plants of arctic tundra--a ground-hugging mat that survives winter under wind-packed snow. Beyond the continental treeline the veil of tundra vegetation cannot hide the rough structure of the land. Trending east-west, the Brooks Range blocks the farthest north drift of moist Pacific air and marks the transition to arctic deserts dominated by polar air.

The Gates of the Arctic region lies north of the Arctic Circle. Its major draining rivers trace the connections to adjacent regions--west-flowing Kobuk and Noatak, north-flowing tributaries of the Colville (Killik, Chandler, Anaktuvuk, Itkillik), southeast-flowing Chandalar, and south-flowing branches of the Koyukuk.

Passes carved by ancient glaciers and eroding rivers allow transit across mountains and through the valleys, where, in

summer, lakes of glacial origin reflect crowding peaks and towering clouds.

Each spring, following the natural routes of streams, passes, and portages, herds of caribou migrate north across the mountains from forested wintering grounds in the Kobuk, Koyukuk, and Chandalar drainages. These deer of the Arctic seek the rich sustenance of upland meadows in the northern foothills of the Brooks Range. There the cows assemble to calve. After calving, the bands concentrate, then disperse to range across the Arctic Slope--even to the coast 200 miles from the mountains. Finally they congregate again in preparation for the fall migration back through the mountains.

From earliest times, for at least 10,000 years, human hunters have seasonally posted themselves in the valleys and passes to intercept migrating caribou. At hundreds of lookout sites so far discovered and thousands more yet undiscovered the evidence of their vigils can be found--cores and flakes of stone, finely knapped projectile points and blades. They worked as they watched and waited--hammering, chipping, flaking with bone, antler, and stone--repairing weapons, making spare points, constantly attending to their tool kits. In the variations of form and substance that distinguish these artifacts one from another, style from style, can be inferred a succession of cultures over the millennia. The surface scatter and mixing of artifacts at the typical hilltop lookout station would confound dating and

classification were it not for a few stratified sites in neighboring valley and coastal locations. At these fortunate finds, cultural components have been laid down one over the other or in horizontal sequence to show the associations and progressions that reveal the ancient history of this land. A few names of generally accepted cultural traditions give a sense of this progression: American Paleo-Arctic, Northern Archaic, Arctic Small Tool, Northern Maritime, Athapaskan. Complexes associated with discovery or type sites add dimensions of sound and geography to the archeological abstractions: Tuktu, Denbigh, Kayuk, Ipiutak, Birnirk, Punuk, Kavik.

The people who made the artifacts, who lived and hunted at the places discovered by archeologists, were, to varying degrees, ancestral to the modern Indians and Eskimos of arctic Alaska. Precise cultural geneologies and evolutions elude modern understanding, particularly in the earlier millennia. Population movements have been tracked by the artifactual evidence--from Asia to Alaska, south to the deep interior of North America, east to Greenland. But dispersion of people and traits was not simply linear and one way. Five-thousand-year-old tools of the Northern Archaic Tradition, found at caribou hunting sites on the North Slope, could have been borrowed from Indians far to the south. Perhaps the wielders of these tools were Indians, as archeologist Douglas Anderson surmises, attracted "back" to the Arctic by the unusually mild climate of that period.

Gaps and incongruities in the archeological record hint at mysteries: People with distinct cultural traditions, seemingly unrelated to those who came before and after them--as the Old Whalers of Cape Krusenstern, who came out of nowhere and disappeared in a few decades. And the cultural dynamism of some periods indicates the explosive force of new technologies and subsistence strategies--as the Denbigh people of the Arctic Small Tool tradition, who 4,000 years ago swept from Alaska to Greenland to pioneer the eastern Arctic. Sometimes called Paleo Eskimos, the Denbigh people, Anderson states:

> . . . developed a subsistence that allowed them to harvest both caribou in the interior and seals at the coast. Perhaps more than any other single factor, this subsistence strategy, by which both land creatures and sea mammals were hunted during times of their greatest seasonal abundance, allowed the people to inhabit most of the American Arctic and sub-Arctic. Their technology was so successful that the same tool kit was suitable for many different habitats.[1]

During these thousands of years of migrations, cultural exchanges, and climatic and biotic variations, the inhabitants of northern Alaska perfected their myriad adaptations. Eventually they became the Indian and Eskimo peoples who would be discovered by Europeans two centuries ago.

Over all that time, to survive and flourish, these people had adjusted to each variable of the natural environment. They changed their habits and their habitats as necessary. If caribou failed they hunted sheep or went to the coast for seals. They spread up the rivers and became expert fisherfolk. From the materials at hand they fashioned every implement needed to carry out whatever strategies the conditions and times demanded. With neighbors, and across cultural lines, they borrowed and traded ideas, tools, and raw materials. Their tool kits, both mental and material, allowed rapid shifts from one hunting mode to another, from one place to another. Knowledge of an animal, a place, or a technique, once learned, was held in reserve for the time when it would be needed. Always there was an alternative ready, for inflexibility in the spare and unforgiving arctic world meant starving times or death, which occurred often enough despite the best calculations.

Nor did these people--so intimate with their homelands--lack spiritual vision. Rooted as their lives and cultures were in the very bedrock of natural forces and powers, they conformed their individual and social practices to the sacred order of their local landscapes. From observation and meditation they saw both the obvious and the ineffable in the natural order. They created rituals to reveal and propitiate the powers that surrounded and sustained them. Even in the mute evidence of their abandoned tools, the blending of science and artistry illustrates the balance and vigor of their lifeways.[2]

* * * * *

Until the late years of the 19th Century the central Brooks Range and the upper river valleys of its near environs remained terra incognita to white men. Because the country was buffered from bordering seas by hundreds of miles of forest and tundra traversed by unmapped rivers, the Eskimos and Indians of this northern heartland experienced only indirectly the transitory effects of European explorations along Alaska's arctic coast, beginning in the late 18th Century. Location of Russian and British trading posts on the Yukon River in the 1830s and 1840s, followed by Yankee whalers and traders along the arctic coast in the 1850s, abruptly changed Native societies in these accessible regions. And although events on the Yukon and the coast reverberated toward the mountains almost immediately, a few more decades would pass before the full effects of Euro-American incursion would reach the inland peoples. Thus in 1850 and for a short while thereafter, the folk of the central mountains and upper rivers held to the old views and ways of life.[3]

But it would be wrong to assume cultural stasis before the arrival of white men. This was not a lost world; not to the people who lived there. Archeological evidence shows that ancient Indians occupied both faces of the Brooks Range thousands of years ago, that early Eskimos then filtered into the northern part of the range from the coasts, displacing the Indians southward. In time, cultural regionalization produced a generalized pattern of ". . .

Eskimo life on the open tundra, mountains, and coasts, and Indian culture adapting to life in the forested region."[4]

In the past few centuries the mountain borderlands again became contested territory between Indians and Eskimos. Ethnohistorical and historical studies describe a shifting boundary that placed Athapaskan Indians on the upper Kobuk and Noatak rivers and on the north face of the mountains in valleys tributary to the Colville River. Then Eskimo expansions forced the Indians east and south. War alternated with trade along these changing cultural boundaries. Movements across environmental boundaries produced cultural inversions in various degree. Indians who moved into "Eskimo" terrain lived like Eskimos, and for forest-dwelling Eskimos the reverse was true.[5]

In 1850 the indigenes of the central Brooks Range--both Eskimo and Indian--shared even more basic traits than those occasioned by mutual borrowings and transgressions across the forest-tundra line. They were hunters-and-gatherers all. And all of them, with variations of detail, looked back to some Distant Time as source for the oral traditions of their memory cultures. In those first days, as Native historians described it, ". . . all creatures appeared as human beings, speaking and living like men, yet mysteriously possessing some distinctive animal qualities or occasionally donning animal guises."[6] In time the animal masks became permanent. But the differentiation of humans from the other animals left unbroken the bonds between them. In such a

cosmology, animals had souls, power, and the ability to suffer. Yet the hunter must kill the animal to feed and clothe himself and his family. The spiritual content of evolving human cultures arose from the need to alleviate the tension between these soul mates--the hunters and the hunted. Thus developed elaborate systems of taboo, intricate ceremonies to assure the animal's gift of itself to the hunter, and forms of courtesy to ease the suffering of and show respect for the taken animal. In this way its power would not turn malevolent, and its soul would come back in the guise of another animal, which in turn could be hunted. Disharmony and disease occurred when humans failed in their ethical duties, for example, by killing too many animals or failing to show proper respect. At such times, in one tradition, plants had pity on the hunters and offered cures.[7]

For these hunter-gatherers, then, the relationships between humans and the animals, plants, landscapes, and waters of their homelands composed a world view essentially spiritual in nature. The centrality of hunting in this scheme, its meaning far transcending mere subsistence economy, is described by Calvin Martin:

> Hunting, writ large, lends meaning and inspiration to life; as a way of living it gives participants their sense of identity. A proper, cordial relationship with animals becomes vital in maintaining that sense of identity--that sense of how the world functions and how humans are to conduct themselves within this larger

> sphere of existence. Animals instruct human beings . . . in the mysteries of life; by giving heed to animals and their ways--by making themselves receptive to their counsel--hunters learn how they must behave.[8]

Embedded in the rituals and old history of these lifeways were the knowledges and techniques of survival. Tradition set social structures that divided labor and assured the sharing of its products. Stories--both mythic and experiential--contained the science of place, season, and animal behavior. They described techniques of hunting, travel, cold-weather shelter, and the thousands more necessities of people living on the land. Languages geared to infinite descriptive detail conveyed every nuance of dynamic and dangerous environments.

Thus did accurately transmitted knowledge of the ever-accumulating oral tradition become the critical technology of light-traveling nomadic tribes and bands constantly adapting to changing conditions.[9] Thus did the functional and the scientific blend with the spiritual. One anthropologist saw the light in discussions with a Native elder, not of this place but of its spirit:

> . . . almost all he said was phrased in terms involving animals and natural phenomena. I naively wished that he would begin to talk about religious matters, until I

> finally realized that he was, in fact, explaining his religion.[10]

The traditional societies of the central mountains and upper rivers in 1850 included mountain- and tundra-dwelling Eskimos, who ranged across the northern part of the Brooks Range and through the foothills and valleys bordering the Colville River; the forest-dwelling Kobuk River Eskimos; and the groups of Athapaskan Indians living in the upper Koyukuk and Chandalar drainages. The origins, subdivisions, demographies, and territories of these various tribal and band groups are the subjects of a large bibliography replete with the controversies of a rapidly evolving science. The complexity of this academic terrain reflects both the dynamic realities of the cultures studied and the surge of data that has expanded the theoretical frame of northern anthropology since World War II.[11] One example of evolving understandings is explored in depth below, both for accuracy of usage in this study and for insight into cultural nuances that intrigue and frustrate students in the field.

Anthropologists of the 1940s and 1950s established a cultural distinction between coastal Eskimos (tareumiut) and inland/riverine Eskimos (nunamiut). Aside from location, the distinction was based upon the different life-ways and social arrangements resulting from primary dependence upon marine resources on the one hand and terrestrial/aquatic resources on the other. In standard literature references the Brooks Range

Eskimos--both traditional and contemporary--are called Nunamiut. Ernest S. Burch, Jr., cites a multitude of reasons for dropping these terms as cultural distinctions and group names, maintaining that the Eskimos themselves use the words solely in a relative-location sense, i.e., any group farther inland than another group would be nunamiut, or, going the other way, tareumiut. This is somewhat comparable to our saying, a person is from the East, with all the relativities implicit in that usage. Burch makes the further point that the imposed nunamiut/tareumiut dichotomy ". . . contravenes the Eskimo notion of an inland/coastal continuum. . . ."[12] This continuum comprehends both geography and culture, for the Brooks Range Eskimos of this study, as will be seen, could move to the coast and hunt sea mammals when caribou failed to support them in the mountains. Conversely, people based on the coast forayed inland to hunt caribou as a regular part of their subsistence strategy and in emergency when sea mammals were scarce.[13]

Heeding Burch's plea that error should not be perpetuated, in this study the traditional Eskimos of the northern Brooks Range-Colville River area will be described simply as mountain or inland Eskimos (except in contexts and quotations determined by the established usage). References to more recent groups will use the specific designations based on home territories coined by the people themselves, e.g., the Ulumiut (People of the Ulu Valley).

One final caution about cultural perceptions. Most visitors from temperate regions have described the homelands of northern Indians and Eskimos as cruel and barren wastelands. The people themselves were seen as enduring stoics, constantly at the margins of bare survival, socially undeveloped, and too primitive and isolated to know enough to choose a better place and way of life. Students who have lived long enough with these people to share their celebrations of life on the land, to enter at least the foyers of their respective societies, have found a different reality. A burgeoning Native literature in recent decades has made this reality available to all.

The "hard and forceful" northern environments do indeed dominate and structure human behavior[14] --an unrelieved truth in traditional times before the advent of modern imports and air transport. But this is also a world of great beauty, at times "nurturing and easy,"[15] in summer flowing with life, throbbing with excitement, color, and rhythm.[16] The very demands of its difficult seasons forged compensatory social systems distinguished by intricate kinship ties, visiting, and seasonal rounds of ceremonies, feasts, games, and dances. Trading fairs and potlatches combined all of these, serving as reunions that brought relatives and friends together from across the length and breadth of the country.[17]

This northern world was no lotus land, but neither was it a scene of relentless travail and hardship occupied by some ". . . type of subhuman arctic being."[18]

*****

For modern students, the 1850 cultural horizon is a long way back in this part of Alaska. It delimits a culturescape full of hidden valleys containing whole chapters of life and movement dimly perceived if perceived at all. Ancestors of present inhabitants may not have lived where the people now live; thus memory culture may contain old history of places and events far removed from modern locales and patterns of life. Ethnologists and historians, looking back with the aid of elders' memories, compare the traditions and patterns of modern culture groups to the mute evidence of archeology. Often the people and even the recent artifacts of a given place don't match. For at least several hundred years, the central mountains and upper rivers have been places of shifting cultural frontiers between Indians and Eskimos. The long-term cultural evolution of a given group in a given place cannot be assumed. Acceleration of population movements during the last century of white-Native contact so compounded traditional dynamics that one student has declared ". . . the general ethnography of northern Alaska . . . has been irreparably homogenized by time and circumstances."[19]

Despite these qualifications, the ties of memory and material remains do allow an approximate reconstruction of traditional

societies, locations, and lifeways in 1850. Though there were territorial surges and retreats by various groups of mountain Eskimos and Athapaskans, the broad pattern of recent centuries indicates a demarcation based on the Brooks Range divide, ". . . Indians seldom caring to travel farther north than the forested southern slopes and the Nunamiut seldom venturing far south of the continental divide."[20]

The situation is somewhat different on the upper Kobuk River, particularly above the Pah River junction and around Walker Lake. Here, Eskimos adapted to inland/riverine life penetrated the fringe of the forest environment and mingled frequently with Koyukon Indians from the upper Koyukuk. Early visitors recorded a bilingual people in this area who blended Eskimo and Indian life ways, as was appropriate in a cultural and biological ecotone.[21]

Annette McFadyen Clark, in Koyukuk River Culture,[22] compares the precontact habitats and lifeways of the Koyukuk, Kobuk, and mountain peoples. Her comparative study, with emphasis on the Koyukon Athapaskan Indians, provides a starting point for the discussion that follows. The works of J.L. Giddings (Kobuk River Eskimos), Nicholas J. Gubser (Nunamiut Eskimos), and Robert A. McKennan (Chandalar Kutchin Athapaskans) provide similar depth for their respective subjects.[23] The upper Noatak people are subsumed in the treatment of mountain, or Nunamiut, Eskimos.[24]

The similar environments of upper Kobuk and upper Koyukuk (as well as neighboring Chandalar country) contain a mix of swampy, lake-dotted lowlands and meandering, forest-lined rivers that head as swift mountain streams flowing out of constricted canyons and valleys. In the higher reaches of the streams, spruce-and-birch forest, tundra, and rock faces intermix depending on exposure and degree of slope. As elevation increases the trees fade into brush, then tundra interspersed with bare ground. Rising above all, craggy alpine peaks overlook mountain lakes and U-shaped valleys carved by the glaciers that dominated these highlands not so long ago. Generalized life zones break down into intricate vegetative mosaics in the lowlands, terraces, and valley slopes, reflecting such factors as permafrost and soil conditions, wind exposure, and successional stages in the active flood-plains and on the burned areas left by summer storms. Tundra prairies cover large expanses of exposed lowland; open muskeg bogs punctuated by stunted black spruce occupy poorly drained areas over shallow permafrost. Larger white spruce and birch grow on well-drained slopes and on natural levees that parallel the rivers. Willows and alders pioneer disturbed areas, both upcountry burns and river bars and beaches, and cottonwoods colonize the more stable streamsides.

Significant fauna in the lowlands and foothills include primary and secondary subsistence species such as caribou, moose, brown and black bear, porcupine, beaver, muskrat, and snowshoe hare. The white sheep of the northlands seldom stray from the high

mountains, thus forcing extended hunting trips. Predatory fur-bearers include wolf, lynx, fox, mink, marten, and otter. Resident ptarmigan and grouse provide variety and emergency food, and migratory ducks and geese arrive just in time to eke out failing winter food supplies. Salmon and salmonlike fishes run or reside in the lakes and rivers.

Despite the fact that all of this forested upriver country is north of the Arctic Circle, the climatic regime is Interior Alaskan, more subarctic than arctic, except in the higher elevations. The Brooks Range blocks excessive north winds, producing a seasonal rhythm characteristic of the Interior: short, relatively warm summers and still, cold winters verging on eight months long.

Rapid transitions between the two main seasons bring breakup of frozen waterbodies in May, freezeup in October.

Clark sums up both similarities and distinctions between upper Kobuk and upper Koyukuk in this paragraph:

> The similarities in natural habitat of these two drainage systems in the region near the Arctic Circle are so striking that I believe we may be justified in considering them but two contiguous foci of the Arctic woodland zone of northern Alaska. However three relative differences characterize the faunal

> assemblages of the two regions: (1) the Kobuk has a far larger supply of salmon than does the Koyukuk, (2) until recently the Kobuk has had fewer caribou in the immediate valley although both areas are favorably situated to the caribou migration routes through the southern Brooks Range; and (3) the Koyukuk also apparently has had more moose than the Kobuk, at least since the time of contact. These differences appear to have been sufficient to result in the development of slightly different subsistence patterns in earlier times, with Kobuk Eskimo subsistence based upon salmon fishing, supplemented by caribou, and Koyukuk Indian based nearly equally upon salmon, moose, and caribou. Both of course, were further supplemented by small game and berries.[25]

By contrast, except for occasional forays south of the divide to hunt, trade, and gather wood, the mountain Eskimos lived in an environment treeless and seemingly barren. Arctic storms lash the exposed mountains at any month in the year, and the membrane of life spreads thin. Mobile in search of caribou--their main source of food, clothing, and shelter--these people variously occupied the high valleys of the Brooks Range divide and the descending valleys of rivers flowing north through foothills to the Colville River. Sedges, heathmoors, and lichens sparsely cover the high country, with willow and dwarf birch along the streams.

Wet-tundra meadow plants, with dense willow thickets in floodplains, dominate the lowlands of the Arctic Slope.

Sheep, bear, marmot, and ground squirrels, along with migratory birds and lake fish, supplemented the mountain-Eskimo diet, but caribou provided "the key to existence" for these people. When the deer failed to show or came in small numbers, starving-times loomed, and the people scattered to the forest edge south of the divide or went north and west to the coast. For only a limited time could they ". . . exist on the relatively poor fish and small faunal assemblage in their home region," lacking caribou.[26]

Ernest Burch conveys a sense of the difficulties facing caribou hunters in traditional times. Given that people cannot follow the herds, for they move on migration at an average 10km/hour pace, they must be intercepted.

> The problem for the hunter is to determine (well in advance) the route by which the seasonal movement is to take place. Once he has made this decision, he must move with his family and/or other hunters to the right spot and be ready and waiting when the animals arrive. During periods of peak tarandus [caribou] abundance this is not much of a problem, because fairly sizable bands of stragglers may be found at some distance from the main concentrations. During periods of low

> population, however, the judgment as to which "pass" is the correct one may literally be a matter of life and death.[27]

Burch goes on to describe the stresses of making the wrong pass selection: Should the hunters go or stay? Are the caribou merely delayed, or are they moving through the next or the next valley right now? And what if the hunters miss entirely; how much time do they have to decide and move to the coast? With the stakes so high, knowledge of the prey animals and climatic conditions, and refined capabilities for timely arrival at hunting sites were essential.[28]

*****

Meat and fat from mammals, fish, and fowl provided almost all the calories consumed by traditional hunter-gatherers of the central mountains and upper rivers. Berries, wild tubers, and green shoots of spring growth were eaten raw when gathered or used to garnish stews and pokes of meat and fat. But vegetables alone could not sustain life.[29]

Thus, patterns of livelihood for each group of people revolved around a few key animal species. Clark summarizes these major dependencies for the three environments central to this study:

> The Eskimos of the upper Kobuk River appear to have had a slight advantage over both the Koyukuk Indians and the

Nunamiut Eskimos in aboriginal subsistence. The Kobuk Eskimos did have more fish than the Koyukuk Indians, although there appears to have been few caribou and practically no moose within their own valley. They were, however, close to the mountains and readily could go there to hunt caribou and sheep. Some small game such as muskrat, beaver, and fowl also was available.

To the east, the Koyukuk Indians had less fish than the Kobuk Eskimos and less caribou than the Nunamiut, but they did have some moose and more small game than did the other two. The Koyukuk Indians lived in a true marginal subsistence region, but if one source should fail, they did have the others to rely upon and during lean years they usually had enough food resources to at least sustain life for most of the members of their small bands.

The Nunamiut were at once both more and less favorably situated than were either of the two riverine people. During times when the caribou herds were large, their Brooks Range habitat offered good security to the small bands of Eskimos, but if the herds were small or did not come, the Nunamiut were faced with starvation because the rest of the faunal assemblage in their habitat was not sufficiently large for them to sustain life in the mountains.[30]

In a way incomprehensible to modern people, buffered by distant agricultural bases and built environments, these traditional, living-on-the-land people were integral components of a biological system. They were top predators and carnivores within their ecosystems. Since major fish and mammal populations fluctuate in space and time, successful top predators must be opportunistic in seeking out alternate prey when primary species are absent or crash; they must be mobile, using seasonal rounds within their home territories to mesh with the annual cycles of animal concentrations--at the right times and places; and they must be prepared to migrate themselves if home territories fail to provide--often on short notice when margins are thin. In the cold and spare ecosystems of this region, human predators had to maintain a low population relative to prey populations, and corollary low density within their hunting territories where, except for migratory concentrations, animal life was spread thin. These critical strategies and constraints dictated the peoples' settlement patterns, the size of their social units, the weight and bulk of their domestic kits, and their schedules and routes of movement.[31]

Variations on these generic adaptations--reflecting both environmental differences and the infinite modes of cultural response--explain the fascination of modern people with ancestral ways of life. Here, in these remote and arduous places, lived people competent and courageous, reliant upon themselves

alone--telling us, with their ancient tools and a few surviving memories, about our own past.

Burch defines the traditional period as the time when the aboriginal people of this region ". . . were operating in terms of an essentially indigenous system of action," beginning long ago and extending through the mid-years of the 19th Century. True, even the earliest European explorers found Russian goods,transferred by Native traders from Siberia, in common use by North Alaskans. But these luxury items, prized as they were, made little difference in basic patterns of livelihood. In all matters of substance, the people relied on themselves, their home environments, and indigenous trade networks.[32]

Each traditional society in the study region comprised a homogeneous cluster of related families, separate and distinct from all other societies in the region, even from neighboring linguistic brethren. Clothing, eating habits, tool kits, and dialectical differences within the broad linguistic groups (Inupik Eskimo, Koyukon Athapaskan, Kutchin Athapaskan) allowed quick identification of strangers--who trespassed societal or ethnic boundaries at risk of life. At certain seasons and under certain circumstances travellers could cross these boundaries for trade, ceremonial, and recreational purposes. But the overriding fact of isolate societal life in traditional times was fear and suspicion of strangers. Kinship, trading partnerships between individuals of different societies, and intergroup trading fairs and

invitational gatherings, at appointed times and places, relaxed these inhibitions periodically. But countering warfare when the times were not right preserved societal and ethnic boundaries over time. It must be emphasized that these rules and dangers applied between any two Eskimo groups or between any two Indian groups as well as between Indians and Eskimos.[33]

Each traditional society had a distinctive annual cycle adjusted to take best advantage of local and regional hunting, fishing, and trading opportunities. In sequence, from the west, these societies, within the study region, were: Upper Noatak Eskimo, Upper Kobuk Eskimo, Colville River-Endicott Mountains Eskimo, two Kutchin Athapaskan groups (Dihai and Netsi) in the eastern Endicotts and upper Chandalar, respectively; and, to the south, Koyukon Athapaskan groups in the upper forks and tributaries of the Koyukuk.[34]

Descriptions of traditional patterns and movements for representative groups will illustrate the disciplines and opportunities at key locations within the region.

Mountain Eskimos

The Tulugagmiut (People of the Tulugak) band of mountain Eskimos headquartered around and took its name from Tulugak Lake in the upper Anaktuvuk Valley. This band of perhaps 50 people was part of a larger society whose individual bands roamed through the

central Endicott Mountains from the valleys just south of the divide to the northern foothills. Except for summer trade visits via the Colville (Kuukpik) River to the Arctic Coast, the band stayed mainly in the mountains, high valleys, and foothills of its home territory.

A head man or umialik provided counsel and direction for band activities, based on his proven strength of character and sound judgment. The leadership function was most important when the band prepared for spring and fall caribou drives.

The umialik predicted and selected the best place to intercept the migration, supervised construction of the ceremonial house or qargi, and assigned tasks relating to caribou corrals and snares. After coordinating the hunt, he oversaw the butchering and distribution of meat. Then he took an active role in communal singing, dancing, and feasting. His function as political, social, and ceremonial leader extended to settlement of disputes within the band.

Following the successful outcome of the spring drive in March or April, meat was cached and the band began to disperse into family units. These smaller groups hunted and trapped as they made their ways by sleds down to the foothills and locations along the Colville River to await breakup. While waiting, they cached their sleds and refurbished their umiat (skin boats). After the rivers were clear of ice, usually in May, the families loaded their craft

with children, trade goods, and food and floated downriver to Niglik at the Colville delta. There they engaged in trade, games, and feasting with coastal Eskimos. Many families spent the rest of the summer along the coast hunting and fishing.

As fall approached they began travelling back upstream to the places where they had cached their sleds the previous spring. Waiting for freeze-up, they hunted, fished, and trapped. Then they set off by sled to their home territory to prepare for the fall caribou drive. After the autumn hunt, the band once again dispersed into family units to hunt and trap until spring.

These seasonal dispersals of family hunting groups over thousands of square miles, except at times of caribou concentrations, kept the right balance between predators and prey. This necessity made the extended family the basic economic unit of mountain Eskimo society. Most often headed by the wife's father or grandfather, the family functioned as a unit, sharing food, tools, and other goods with all of its members. It was the context for the education and socialization process that taught children the basic skills and responsibilities of their society.

The seasonal round tapped all essential resources on schedule. Caribou--killed in large numbers during migration drives and occasionally after dispersal--provided the basic sustenance: not only meat and fat for food; but also bone, antler, and sinew for tools; and hides for clothing, footwear, bedding, and shelter.

Pelts of wolves, wolverine, and fox became ruffs and trim. The thick fleece of sheep made warm parkas, as did the skins of squirrels and birds.

Trade between inland and coastal Eskimos centered on furs and hides from the mountains for oil, blubber, and skins from sea mammals. These transactions represented an essential division of labor across environmental lines: the pure energy of seal oil stoked the inner frame; the superior mountain hides kept the heat in.[35]

Nearly constant movement through difficult and seasonally opposite terrains (wet in summer, frozen in winter); spasmodic kills of many animals whose meat had to be saved for gameless times; occupation of different kinds of places, in varying numbers, with extremes of weather the rule; split-second readiness for any prey, from large mammal to small, from fish to fowl--these things and many more led to finely tuned adjustments combining sufficiency with absolute economy of means.[36] Imagine the care, the endless shuffling and refining that shaped the substance and form of domestic gear, hunting weapons, clothing, food processing, and gradations of dwelling styles and equipage appropriate across the spectra of seasons and settlement patterns--from band village to the farthest family camp or individual shelter, from temperatures of 60 above to 60 below, with arctic wind blowing.

All technologies and activities derived from and worked with natural forces and supplies. Moisture does not condense and freeze on wolf and woverine fur, thus the parka ruff of these materials. Spring-kill meat, stripped and dried for summer use. Fall-kill meat, its freezer the open air. Summer camps on well drained moraines, legacies of ancient glaciers, above the waterlogged flats. Winter camps in willow groves, for wind shelter and fuel. Near a warm spring for easy winter water and ice-free fishing hole. Warm, light caribou hides for clothes, bags, pads, and covers; can be boiled and eaten in starving times. Moss house or caribou-hide tent with willow frame, piled with insulating snow. Seal- and caribou-oil lamps for heat, light, cooking. Cold-trap tunnel to winter house; good storage space. . . .

The secret of mobility in these extreme and contrasting conditions was to carry a light kit and turn to nature's commissary for everything else. Wherever they stopped, these people could make nearly everything they needed from the raw materials at hand.

Vignettes of traditional life as related by mountain Eskimos or live-in observers add substance to the bare chronicle of seasons and sustenance. Norwegian explorer Helge Ingstad lived with the Tulugagmiut during the winter of 1949-50:

> As I wandered into this endless mountain world, I often stumbled upon old signs of caribou hunting--traces of vanished times. Along the slopes of the valley where the

caribou have their tracks, I quite often came upon rows of little stone cairns. These were to lead the caribou to the spot where the marksman lay in wait with bow and arrows. At some places the hunters had built themselves stone screens, sometimes in a square like a small house without a roof.

On one beach a mass of caribou bones, half overgrown, lay strewn around. Here the beasts must have been driven into the water and then slaughtered from kayaks, being stabbed with a spear (pana) behind the last rib, close to the spine. The Eskimos have many stories of this kind of hunting, which was formerly of great importance. Sometimes hundreds of animals were killed, and were usually divided equally between the families which took part in the drive.

At another place I found the remains of a kangiraq, i.e. a large enclosure into which caribou were driven. These were usually set up on a height near a river and might be a hundred yards or more in diameter, consisting of a number of tall willow rods driven into the earth or snow. Along the inside of this enclosure snares made of animals' skins were placed at suitable intervals and fastened to a stone or stick. There were usually several enclosures, one inside another; the maximum number was four, and then the contrivance was called a sisamailik. There were snares along each line totalling several hundreds.

> The caribou found their way to the gate by following two lines of cairns which began several miles out in the open country, and which led across the river up the slope to the enclosure. Close to it there might be two snow walls. Thus a "street" was formed outside which the animals did not venture; far from the enclosure it was broad, and then gradually became narrower.
>
> A herd of caribou had to be driven into this "street" often from a long way off; there are stories of drives which took several days. The drivers worked together, running continually. This was child's play to them, thoroughly trained as they were.
>
> When the caribou had at last been driven up the slope towards the enclosure, people ran up from both sides, clapping their hands, hooting, and yelling. The beasts rushed in panic through the opening and into the inner enclosure. A number went straight into the snares; others broke through the willows into the other enclosures and were snared there. Some of the hunters sent a rain of arrows at the beasts trying to escape, while others were busy with their flint spears. There was sometimes a large bag, which was divided equally among the families participating.[37]

Bessie Ericklook, an elder from the Colville River remembers the early years:[38]

We did find artifacts from these old house sites. These people who lived in them . . . didn't have white man's tools. They were all made by them. Like the ones we found . . . . If these old houses weren't dug out of ground, and were built on top, we would never have found them . . . . They had houses like that long ago because they didn't have stoves for heat. My father told us that his folks . . . used to have a fire by their window on top of the house. They would heat rocks by the fire and when they were red hot, they put them in the middle of the house and would keep warm all night from them. That was how they kept warm. They also had water dripping into a water bucket made out of bark sewn together. And they had one dipper for all, made out of sheep's horn . . . . They used these for drinking because they didn't have cups . . . .

They would winter inland and return shoreward in the spring. Their tents would be made of caribou skins sewed together when still wet.

. . . . . .

The people who lived in these old house sites used braided caribou sinew for fish nets . . . . They used moose and caribou skin ropes. They would slice them after they rotted

the hair off and it would dry in a day. My father used that for ropes too. We all had snow shoes that he made us using skin ropes.

. . . . . .

My father told us long ago when people used to fight among themselves they used to build their houses in out of the way places where they wouldn't be found so easily.

Anaktuvuk Pass elder Elijah Kakinya remembers hard times:

My father used to say that that winter [when Elijah was a child] there weren't too many animals. People would walk hunting but they never saw too many animals. Once in a while they would get caribou. When it was freezing up, my father started mentioning going east towards Hula Hula [River, near the Canadian border], saying that there might be more animals there. He kept talking about moving there but no one wanted to go along with him. He had relatives already there so in November my parents left to go there, following the edge of the mountains. They had seven dogs when they started but they lost some because of starvation. Pretty soon they only had two dogs. Once in a while my father would kill a ptarmigan. When we woke up one day, the pup we kept in the house also had died. I hated to leave it but we had to go on. While they were traveling, my mother said that she saw

caribou tracks. They hadn't traveled very far, when they saw a man's tracks. My father told my mother to make camp there while he went on to look for people. While we were making camp, we saw ptarmigan but my mother missed shooting them. She put up camp in no time. They say she was a strong woman. She could hold down five strong dogs from running off. By then we only had one dog. When it got warm in our shelter, I went to sleep and I hadn't slept very long when my father woke me up to eat. He had found people not too far from where we camped and found out that there were lots of caribou around. My mother also gave our one dog some broth and some meat later on. While I was eating frozen meat, we heard something outside. When my mother looked out she saw that the dog we had just left earlier had followed us so they gave it some broth then meat later on. The next morning, someone from the village came for us with dogs. We found out that my mother's father was there also with my father's many relatives. We spent one winter there and in the spring returned to Sagvagniqtuuq [River, south of Prudhoe Bay]. When we returned, we saw that people had starved that winter because there were hardly any animals. Wherever we stopped we saw them.

Pete Suvaliq was a young man when his father told explorer Vilhjalmur Stefansson about Shamanism:

> When my father killed a wolf he wouldn't drink any broth from cooked caribou meat for 5 days. That was what the shamans believed in and practiced. They believed that the animal's spirit is still within the body. It follows whoever has killed it to his home. I've seen the people who believed in this. There was Nutaqsirauq, Kunagrak and others. Also, when a hunter brought home a male fox, he would hang up his knife on the wall. At first light, he would take his catch outside. That's how the spirit would leave. The spirit follows the hunter out the door and in that way cleanses the knife which is hanging on the wall.
>
> . . . . . .
>
> I also know that when Kunagrak brought home a fox he would put a piece of caribou fat in its mouth. I don't know the meaning of that one. These were the ways of shamans those days. My father once tried a song he was taught on a wolf. The wolf was in a wide open area and he decided to try it out. The wolf had sat down on a small knoll and there was no way it could get out of his sight. He was watching it through his binoculars. He sang a song that was supposed to put the animal to sleep. After he sang it he started walking toward it to see if the song would really work. When he

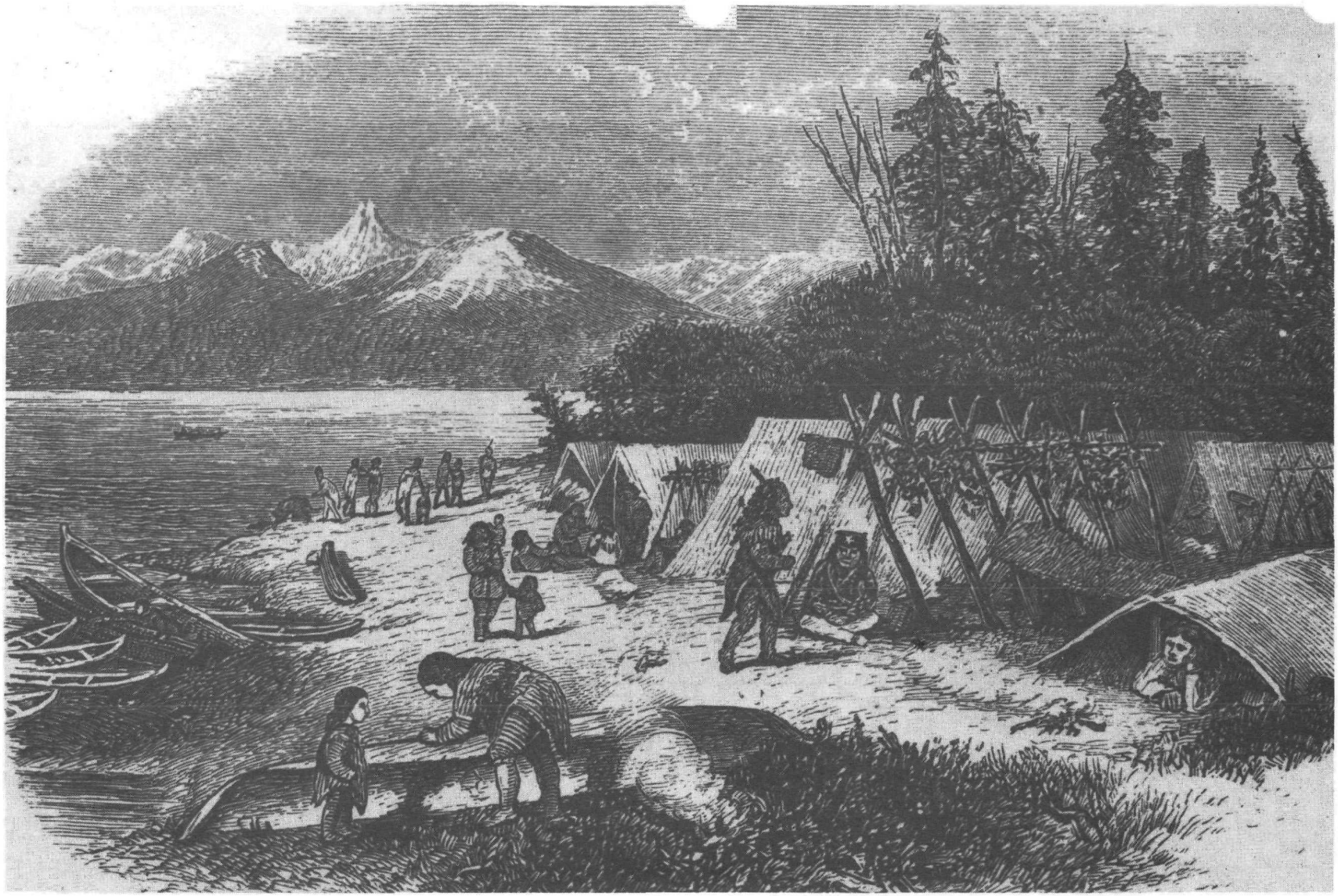
> reached it, the wolf almost woke up, but my father shot it. My father told me about it himself. He would also tell me a story about the people from inland which had several songs to go with it. One of the songs with two parts to it was to call the caribou to come to you. The other was to not miss when you shoot at the animal. This was during the time when the shamans still practiced and some of the inland people used these songs when they were hunting caribou. Not all the people knew these songs and just the few who knew them used them. I learned these songs because my father told them to me many times. There's no power to them though because I'm not a shaman. Long ago when the shamans wanted someone to become one they would kill the person. With their powers they would bring him back to life and at the same time give him powers to perform shamanism. That was the only way a person could become a shaman.

Anthropologist Lewis R. Binford documented hunting trips at Anaktuvuk Pass in 1971.[39] A significant food tradition was even then maintained by older hunters:

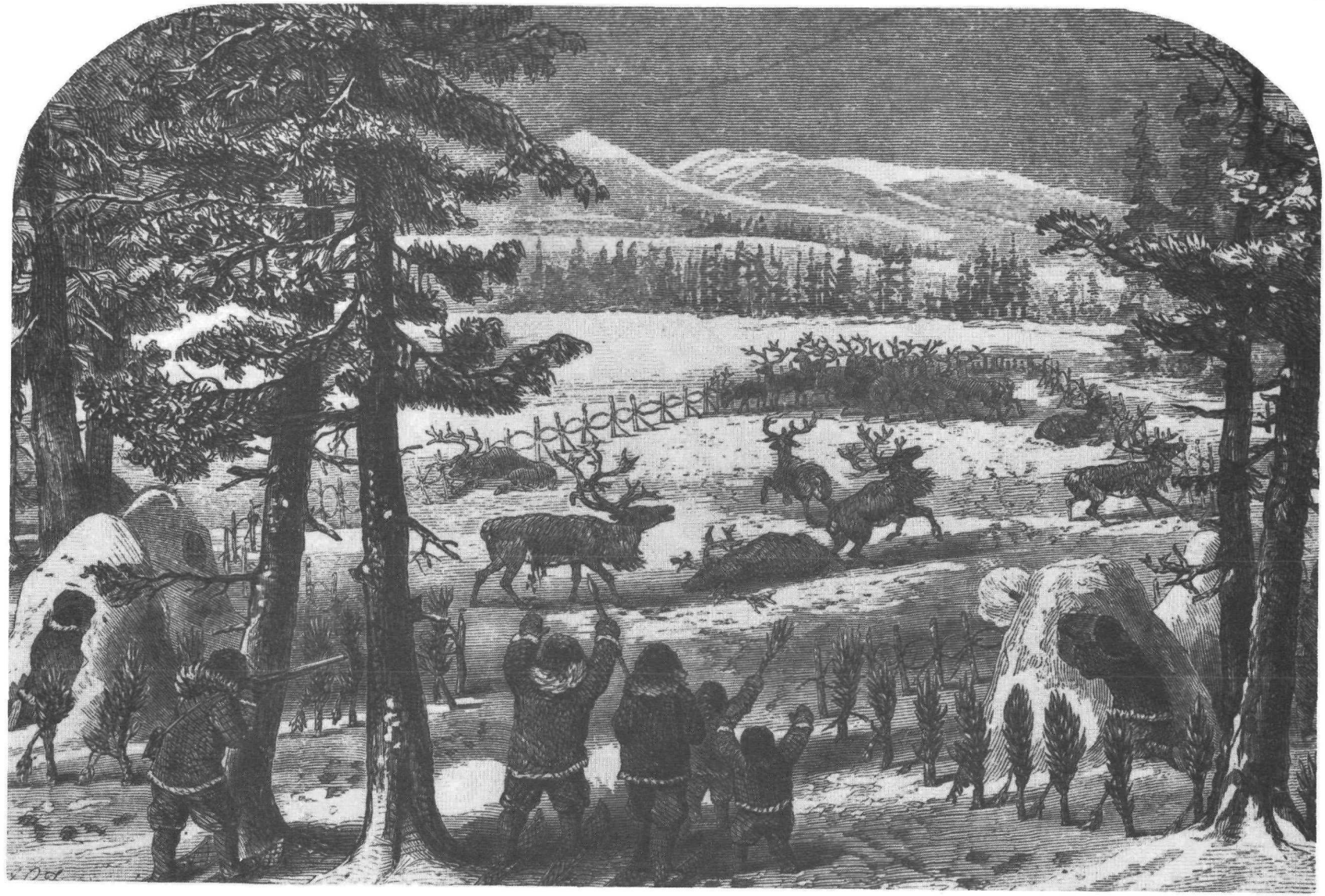
> Customarily, there are three basic kinds of trail foods: dried meats, akutuk, and marrow bones. Hunters generally preferred dried meat which had bones, such as dried rib slabs or a scapula. This preference is directly related to the versatility of bone use. Once the meat had been consumed, the bones could be used as fuel, or pounded up into small



Tanana River and Fort Yukon Kutchin (Athapaskan) Indians on Yukon River, 1867. From William H. Dall, Alaska and its Resources, 1870. Reproduced through the courtesy of the Bancroft Library, University of California, Berkeley.



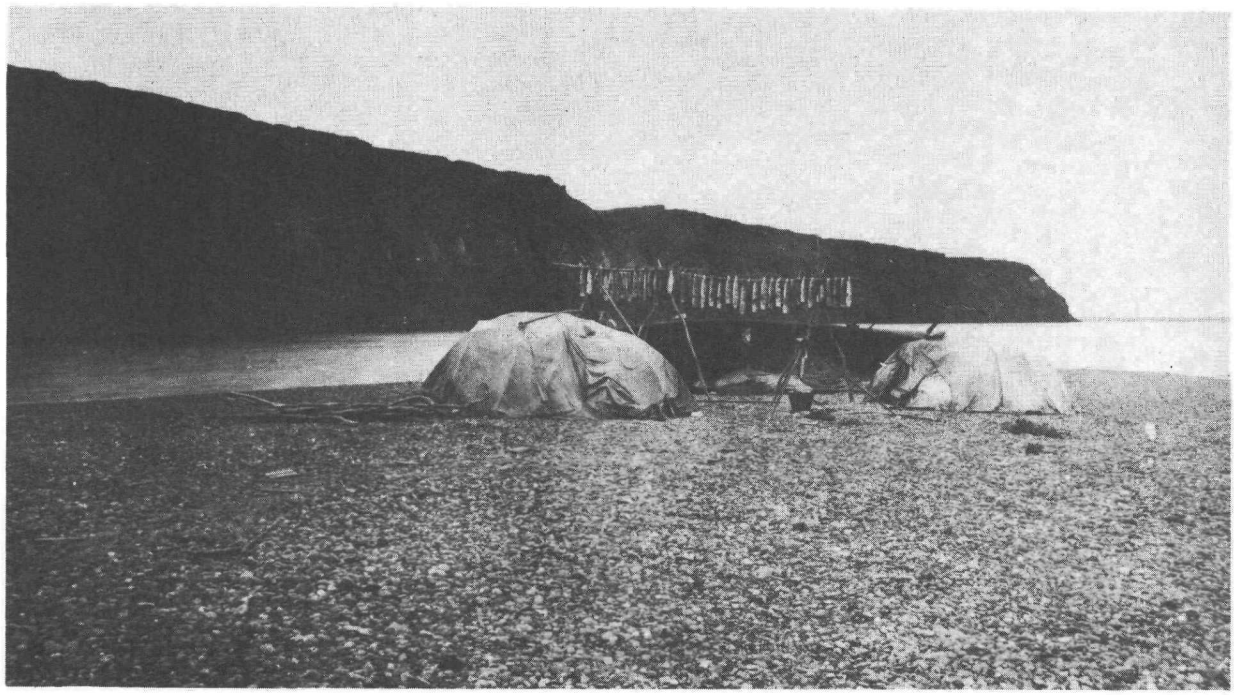
Tanana Indian summer encampment on the Yukon River, 1867. From Frderick Whymper, Travel and Adventure in the Territory of Alaska. Reproduced through the courtesy of the Bancroft Library, University of California, Berkeley.



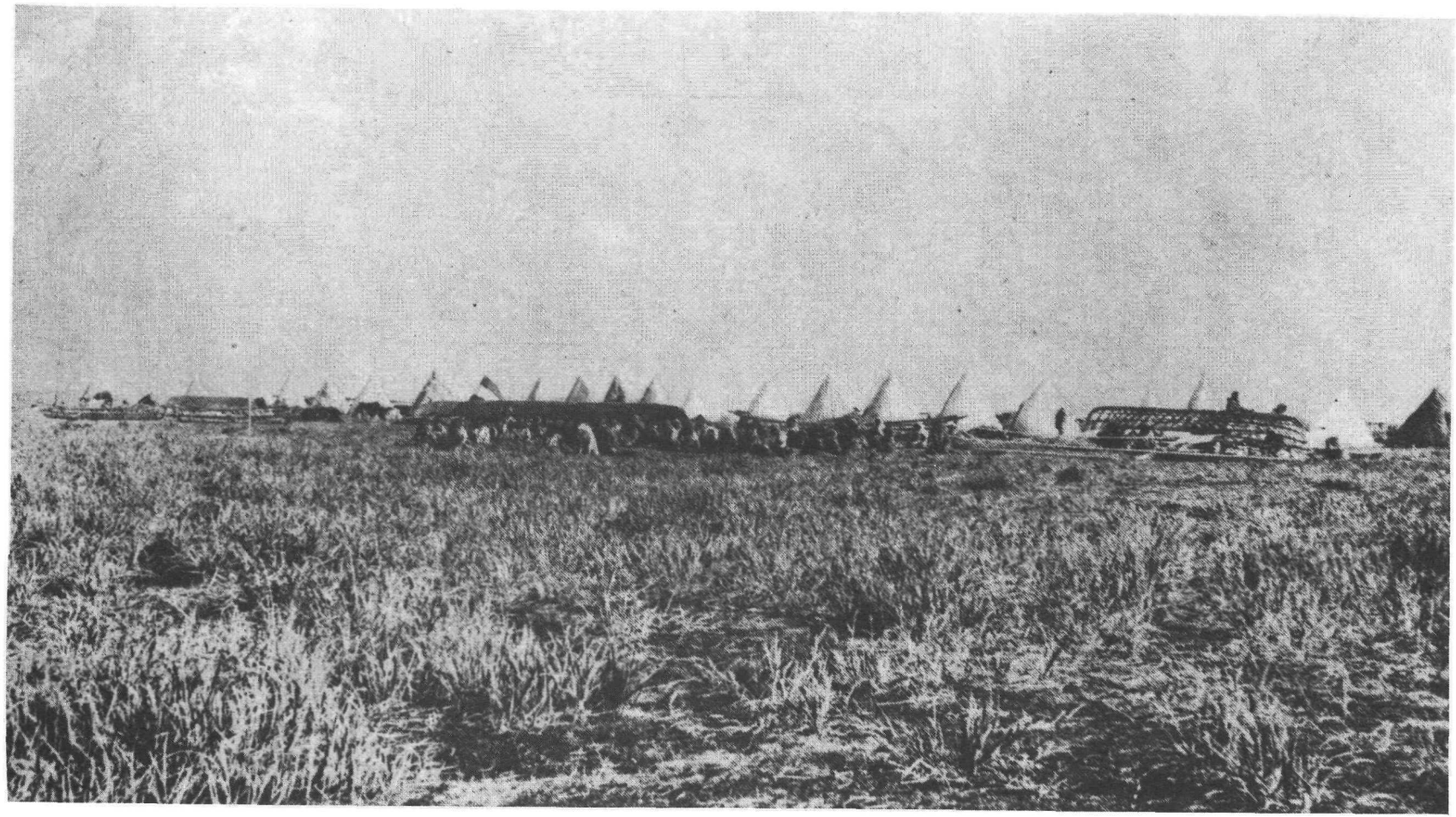
A Koyukon Caribou Corral, 1866. From Frederick Whymper, Travel and Adventure in the Territory of Alaska. Reproduced through the courtesy of the Bancroft Library, University of California, Berkeley.



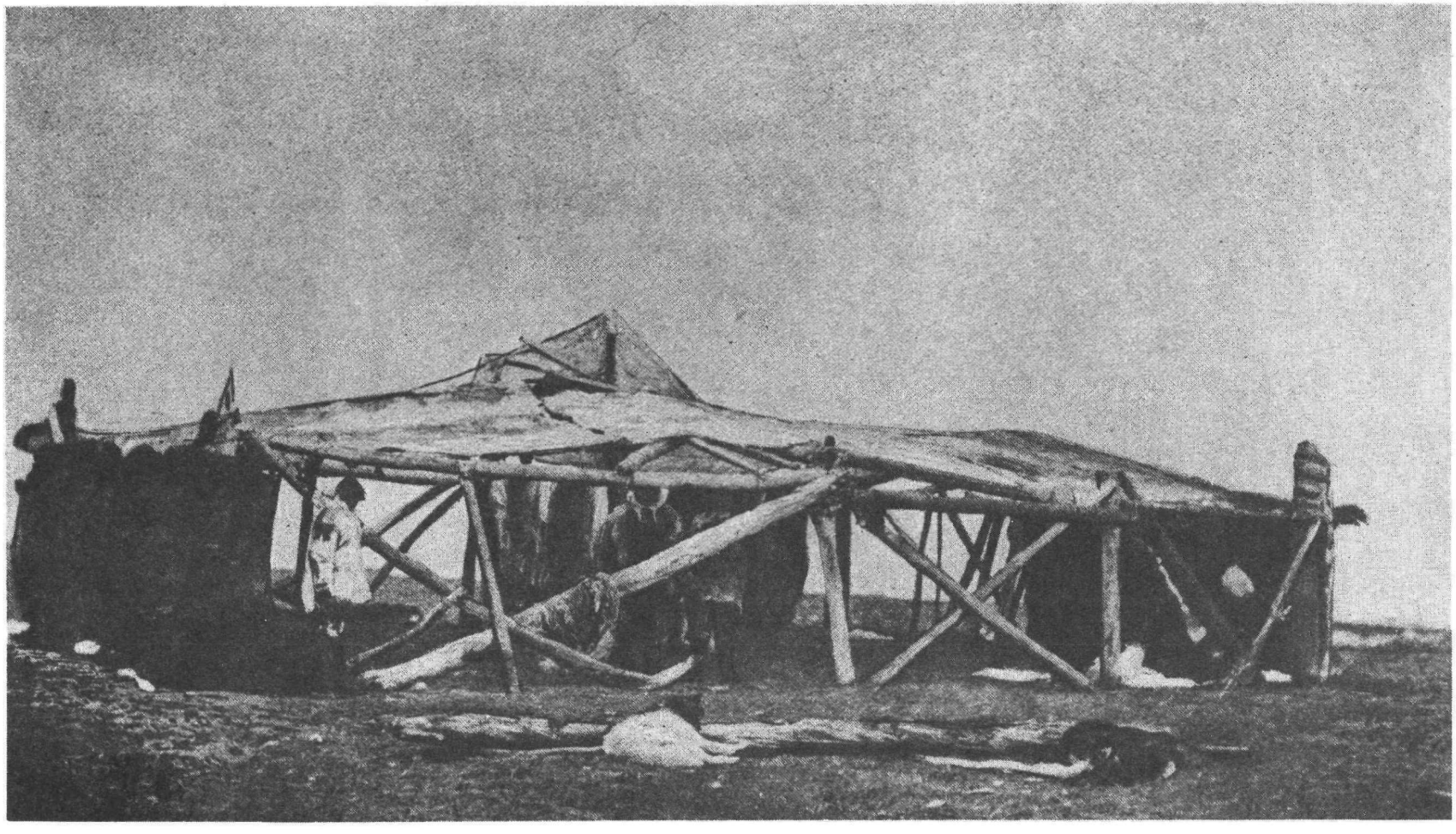
First Eskimos met on Schrader's traverse to the Arctic Ocean, at camp on Goobic (Colville) River, 40 miles from the coast. F.C. Schrader photo 1005 of 1901. USGS Historical Photo Library Denver.



The Eskimo camp, with skin boat on side for wind shelter, skin tents, and fish drying rack. F.C. Schrader photo 1006 of 1901. USGS Historical Photo Library, Denver.



Eskimo Summer Trading Rendezvous at Hotham Inlet, Kotzebue Sound, 1884. From Michael A. Healy, Report of the Cruise of the . . . Corwin . . . in 1884. Reproduced through the courtesy of the Bancroft Library, University of California, Berkeley.



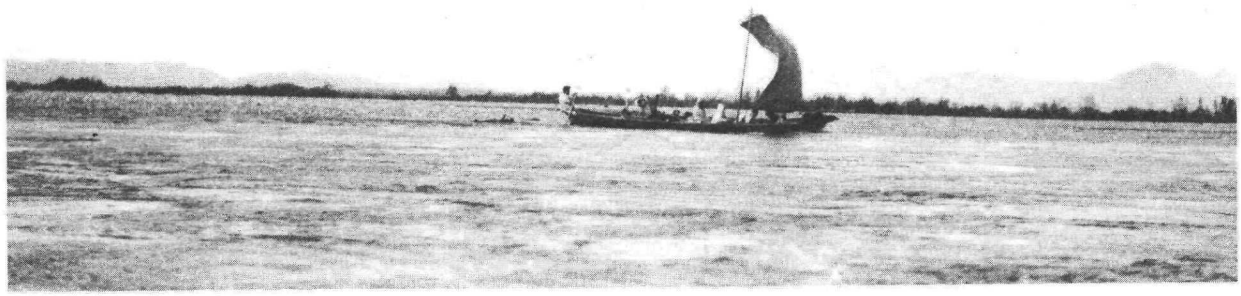
Eskimo Dance House, Hotham Inlet, Kotzebue Sound, 1884. From Michael A. Healy, Report of the Cruise of the . . . Corwin . . . in 1884. Reproduced through the courtesy of the Bancroft Library, University of California, Berkeley.



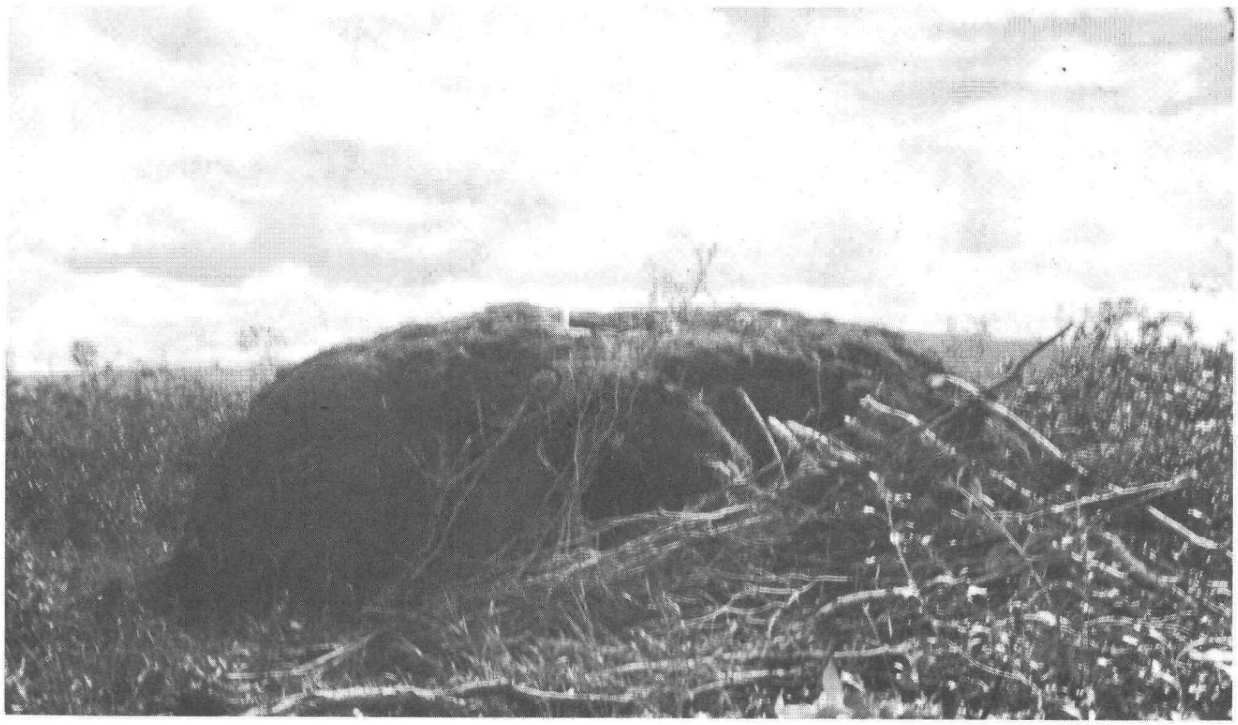
Natives at Sheshalik, Kotzebue Sound, 1884. From Michael A. Healy, Report of the Cruise of the . . . Corwin . . . in 1884. Reproduced through the courtesy of the Bancroft Library, University of California, Berkeley.



Fall scene on Kotzebue Sound, Natives preparing for ascent of Noatak River. W.R. Smith photo 300 of 1925. USGS Historical Photo Library, Denver.



Eskimos ascending Noatak River in skin boat. P.S. Smith photo 783 of 1911. USGS Historical Photo Library, Denver.



Sod igloo on Noatak River. P.S. Smith photo 653, 1911. USGS Historical Photo Library, Denver.



Native grave, Noatak Valley. P.S. Smith photo 780 of 1911. USGS Historical Photo Library, Denver.

Plates from Lt. J.C. Cantwell's "Alaskan Ethnological Notes," in his 1884 report, from Cruise of the . . . Corwin in 1884.

PLATE I.—IMLPEMENTS OF THE CHASE, NATIVES OF NORTHWESTERN ALASKA.

1. Holder for throwing spears, one-third size.
2. Snow spectacles, natural size.
3. Section of 2 through A B.
4. Spear-head of ivory for deer, natural size.
5. Arrow-head of ivory pronged for birds, natural size.
6. Spear-head of chipped flint, natural size.
7. Arrow-head of chipped flint.
8. Blunt arrow-head of ivory or bone for birds, natural size.
9. Spear-head of polished jade; very rare.
10. Seal spear with detachable ivory head, one-sixth size.
11. Bird spear with prongs of ivory, one-sixth size.

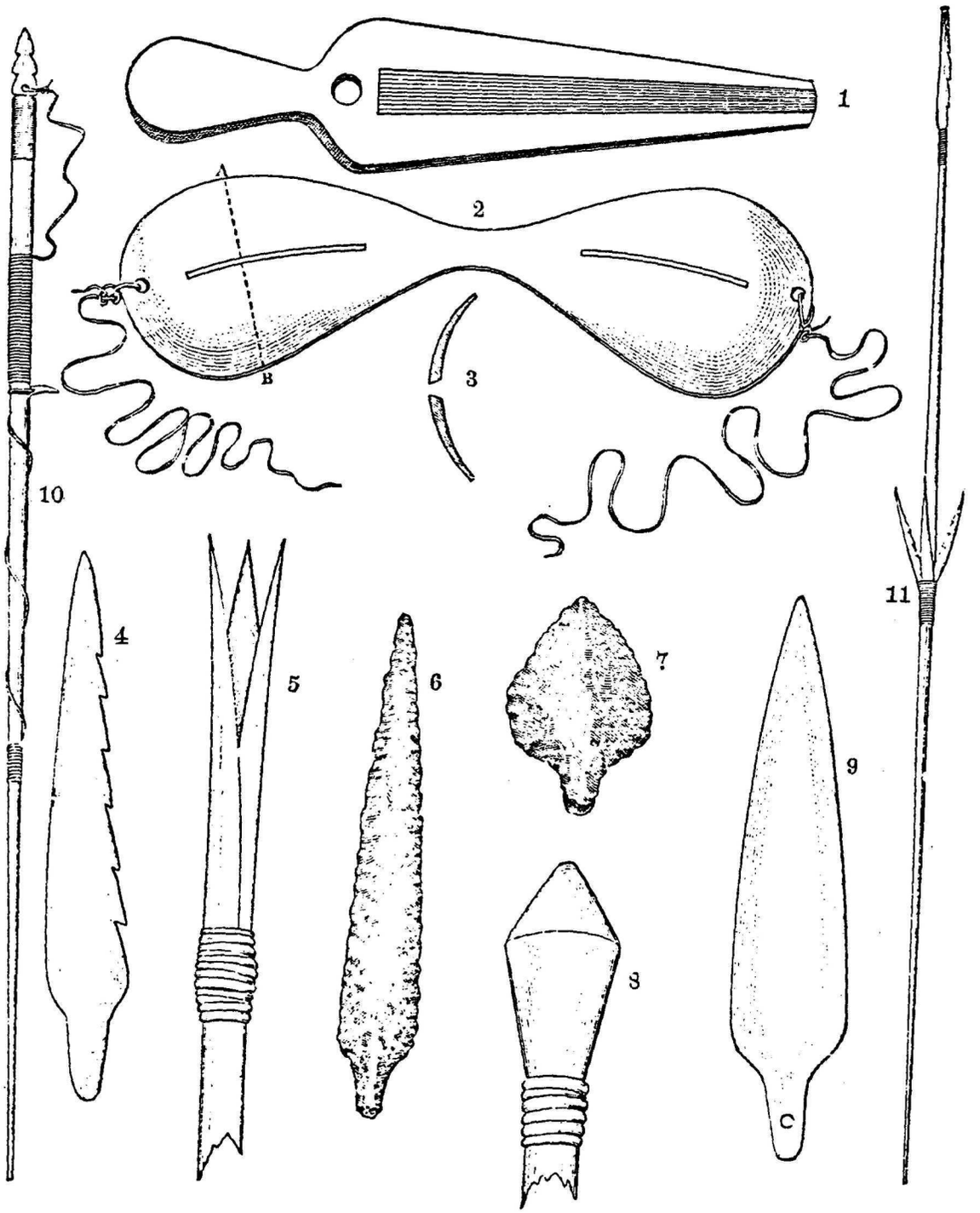

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PLATE III.—TRANSPORTATION AND LOCOMOTION, NATIVES OF NORTHWESTERN ALASKA.

1. Shoe of deer-skin with walrus-skin sole.
2. Shoe of walrus-skin with whale-skin sole.
3. Boot of hair-seal skin.
4. Boot of deer-skin ornamented with fur.
5. Shoe of fawn-skin.
6. Inner shoe or sock of tanned buckskin.
7. Snow-shoe.
8. Birch-bark canoe (Kowak River).
9. Sled (Kowak River).
10. Sled with ivory shoe (coast natives).



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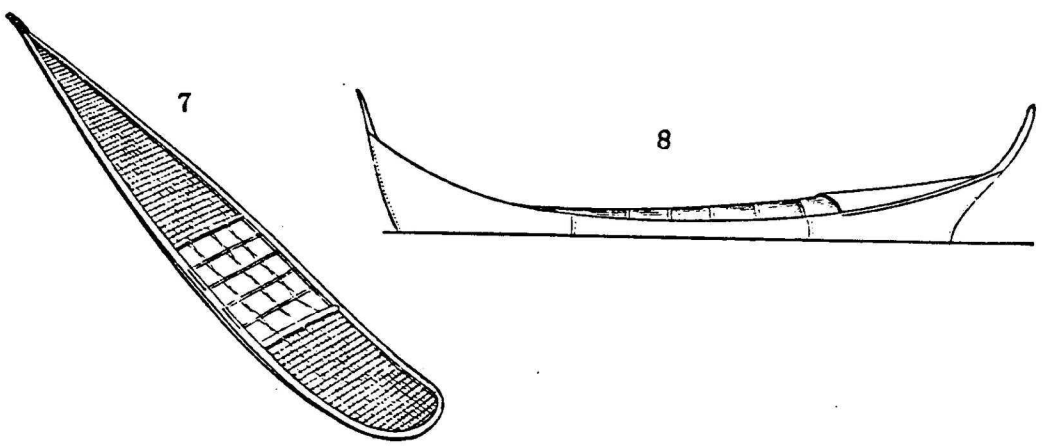

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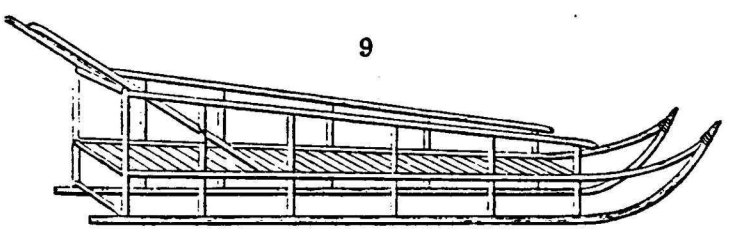

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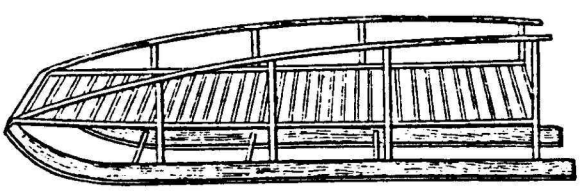

10

> chips and boiled to yield a "bone juice." This was the only drink besides pure water which hunters customarily consumed in the field. Akutuk was carried as small cakes. These were manufactured by the women from bone marrow and rendered bone grease, sometimes with berries or small stirps of dry meat mixed into the marrow. Akutuk cakes are still carried by the men, but their manufacture has dropped off considerably since commercial grease has been readily available (after 1953). Marrow bones were carried for the same reason that dried meat containing bones was preferred. They were a ready source of fat and once the marrow was consumed the bones could be pounded up to produce "bone juice," or used as fuel.

.he Upper Noatak people followed an annual cycle similar to that of the Tulugagmiut and other Endicott Mountain Eskimos--spring and fall caribou hunts, dispersal in the winter. But their summer float to the coast via the Noatak River took them to Kotzebue Sound, where they and other coastal and riverine societies hunted beluga whales, using skin-covered umiaks and kayaks. Later, in separate encampments lining the beach, the various groups joined in the trade fair at Sisualik (Sheshalik), a sand spit north of present-day Kotzebue. Eskimos from as far away as Siberia came to this great fair, ". . . a major occasion devoted to inter-societal trade, athletic competition, feasting, and alliance making."[40] In contrast to the quick downriver journey, the return up the Noatak ith tons of dried meat and muktuk (beluga skin with blubber attached) took time and hard work. Storms or early freeze-up

might catch the families laboring up the river, forcing them to relay their sea mammal products later, by sled. If this happened they might miss the fall caribou hunt and a tough winter loomed.[41] Barring such mishaps, access to the small beluga whales, which gathered by the thousands in Kotzebue Sound for calving, gave the Upper Noatak people a better balance of marine and terrestrial resources than that enjoyed by their mountain brethren to the east.

Anthropologist Edwin S. Hall, Jr., got help from a Noatak elder, Carl Luther, in assembling a tool kit typical of those used by his 19th-Century ancestors.[42] Carl's wife, Ellen, made a traditional tool bag of wolf, wolverine, seal, and caribou skins, sewn with caribou sinew. Measuring 10 by 21 inches, the ample bag held a mix of tools reflecting the historic combination of indigenous forms and materials with scraps of metal acquired through the Siberian trade. Cutting, drilling, and engraving tools, lashed or set in antler, bone, or wood handles allowed working of softer materials. Hammers and flakers shaped stone and jadeite. Shuttles and gauges aided net manufacture. Webbing and cordage from bark, baleen, hide, and sinew made snowshoes and lashings. The bag contained examples of manufactures in progress (lure, arrowhead, spear prong) as well as bits of ivory and other raw materials for future use. Substitution of metal cutting edges and points in place of slate, jadeite, or flint illustrated early stages of the 19th-Century transition to European goods, but sparely and selectively, given the high value of metal in those

ays. Such tool kits, with cultural variations, combined with ingenuity and local raw materials, enabled Eskimos and Indians of northern Alaska to fashion all implements needed for daily life.

Kobuk Eskimos

Ernest Burch has succinctly described the annual round of Kobuk River Eskimos:

> The people spent the fall and winter in comparatively large settlements distributed along the Kobuk, most of them located at or near the mouths of major tributaries. They preferred moss and sod-covered houses, of which as many as ten or fifteen might be situated in a single settlement. The Kobuk people had a diverse and rich resource base in the mid-19th Century. In the fall, they hunted caribou, bears, and several species of small game, and fished through the still thin river ice with weirs and hooks. Lean winters were uncommon, and they were usually able to enjoy themselves during the short days, as could their counterparts on Kotzebue Sound and in the Noatak Valley.
>
> In the spring, usually just before breakup, the Kobuk River people would leave their winter quarters, and spread out among spring camps comprised of perhaps three or four closely related families. Here they hunted muskrats and fished while the ice in the rivers and streams broke up. A few people

> shifted camps again for the summer fishing, but most remaine right where they were throughout most of the open water season. A few families on the upper river specialized in inter-societal trade, and they, like the people from the Upper Noatak, would follow the spring flood to Sisualik to hunt for sea mammals and to trade, but the bulk of the membership remained inland. In late July, the men would leave the fishing to the women, and walk north into the Baird and Schwatka Mountains to hunt caribou while the skins were prime for clothing. They would stay in the mountains for much of August, returning to the fishing camps in early September. By that time the women had normally caught and dried hundreds of pounds of whitefish and salmon, and the people were more than ready for the coming winter. Just before, or sometimes just after, freezeup, the people would move again to their fall/winter villages, and the cycle would resume once again.[43]

Explorers in the 1880s noted that the people living near the Kobuk headwaters around Walker Lake spoke both Eskimo and Athapaskan. Their lifeway combined elements of both cultures, and both Indian and Eskimo place names mark the area. Location of the upper Kobuk people placed them astride traditional trade routes connecting Kotzebue Sound, the Koyukuk River, and the central Brooks Range. Using such well travelled routes as the Alatna Portage, these people acted as middlemen for exchange of goods throughout inland arctic Alaska. Before 1840, most European items came from Russian

ources. After midcentury extended trade links with Hudson's Bay posts to the east brought flintlock muskets and metal traps to the upper rivers country.[44]

In the summer of 1940 archeologist J. Louis Giddings flew from Fairbanks to Allakakett on the Koyukuk River, then walked across the mosquito-infested muskeg of the Alatna Portage to the headwaters of the Kobuk River, whence he floated by raft and kayak to Long Beach, near the present village of Kobuk. Here, at a Kobuk Eskimo fish camp, he recorded a scene reminiscent of the 19th Century; for even in 1940 these upriver folk still responded to the salmon migration in essentially traditional manner:

> The women of Long Beach were in the midst of their salmon-fishing season. Formerly, I was told by one of the two or three very old men who remained in the village at that time of year, all the able-bodied men and older boys would leave the womenfolk early in the summer and climb up into the mountains where, in passes and on rocky plateaus, they would hunt both caribou and sheep for their pelts, eating well the while but staying away from their families until the salmon season was over. Meanwhile, the women, who alone were thought to attract salmon all the way up the river, worked as a team. Though times had changed, even now I was allowed to watch only if I kept my distance and stayed well out of the way.

All the women sat in front of their separate tents (in earlier days these would have been hemispherical, bark-covered huts) and waited for a signal from their lookout, a gnarled little old woman who stood on a sandhill with her eyes turned downstream. Then I saw her give the signal. Raising an arm and shouting commands, she galvanized the community into feverish activity. Two women dashed down to a light wooden boat in the bottom of which lay a folded net. (Earlier, birch-bark canoes would have been used.) Quickly launching the craft, one woman paddled swiftly toward the middle of the stream as the net paid out upstream. Her partner held the wooden stretcher against the shore. As the boat and far end of the net began to drop swiftly downstream with the current, forming a large arc to the end on shore, all the other women placed themselves along the near shore at short intervals to receive the net. Now I could see frothy ripples rising from the water nearly encompassed by the net.

The women in the boat reached the . . . [downriver] shore, jumped out to secure their craft, and at the same time pulled shoreward on the stretcher at their end of the net. As the net surrounded the churning mass of fish, all the women not holding onto its ends waded as far as possible into the river, plunging a hand and arm in the water shoulder deep to catch the weighted bottom of the net. With their other hand, each grasped the top of the net with its bobbing floats and, pulling together, dragged the net and its contents slowly to

the shore. At this point, all the younger girls dashed into the edge of the water, catching salmon by the tails and throwing them on the beach as high as they could. It was not until this time that the old man, my informant, picked up his short-handled wooden club and rushed down to do his part along with the women and children. Their job was to strike each salmon's head, dispatching it, or, at any rate, preventing it from flapping back into the stream. I estimated that hundreds of three-foot-long salmon had been caught in this one haul.

Of course, great numbers of fish must have been swimming upstream every hour of the day, but neither the aged lookout nor any of the others glanced again at the river. I learned that they would fish no more until the whole of this catch had been properly cut and strung on rows of fish fences to dry in the sun and wind. The fish were soon apportioned to the women of different households and thrown, heads inward, into pits previously dug and lined with fresh, full-leaved willow twigs. Then the cutting began. Each woman knelt beside her pit and deftly wielded a wide, half-moonshaped knife called an ulu. After chopping off the head with a powerful blow and tossing it into a container, she freed the orange meat from the backbone with two long slices. Chopping swiftly but lightly she divided the flesh into short segments, each held firmly to the skin. Girls now took the fish and hung them to dry over a rail of the long,

willow-poled fence. Nothing was discarded. Clusters of roe were also dried in the sun, and the intestines were thrown into a metal pot to be boiled for their oil. Still later, the half-cooked intestines were taken across the river and fed to the dogs straining at chains that held them to their posts.[45]

An old man of the upper Kobuk, Robert Cleveland, has told of traditional life when he was a child, about 1890, before the changes came:

This is the way people lived when I first remembered. When the ice went out in the spring the people moved to the river sloughs where they could catch fish. The boats used then ha- birch bark covers and in those days we used nothing made by the white man. There were no cups, plates, tents or canvas. We used only birch bark and our plates were wooden.

During the summer months the women did all the fishing. The families would travel down river and then the men would travel inland to the hunting grounds on the Noatak River, for their supplies of meat and skins for winter clothing.

. . . . . .

The men dried the meat and then wrapped and placed it in skins to be used for winter clothing. Several meat filled

skins made one load. The load was carried with the use of a tump line and a strap across the chest. It was not unusual for a man to have two or three loads which he moved in relays. Normally a man would take dogs to help carry the loads.

The men returned from hunting and were re-united with their wives some time in September, before the river froze up. The men came home on rafts along the creeks with good supplies of meat, bear, moose, sheep, caribou, marmot. This was added to what the women had gathered, black berries, blue berries, salmon berries, cranberries and masu [Eskimo potato].

. . . . . .

After the freeze up the people made traps for ling [cod] and when the ice started to form on the river they started to think about building a winter house. This was done by digging down into the ground about four feet, and putting in posts of spruce. The walls were also made of spruce timbers standing upright. Moss was then put on the walls and sand about 1 foot thick spread over it. The fireplace was in the centre of the house and made with a ring of rocks. The house was heated by these warmed rocks. This winter house was called a Sollik. These houses could accommodate 1-3 families . . . . Once the winter house was built, it was kept in good repair and used year after year.

. . . . . .

> When I first became conscious of a way of living, this is the way we lived. If the fishing was not good in the summer we did not eat, because in those days there was just nothing else to eat. There were very few rifles. Only the rich people could afford them. The rifles were muzzle loaders (su pu di pak) with either a single or double barrel. They made bullets by rolling foil lead and rounding it out with their teeth. But a lot of the people still used the bow and arrow in those days.
>
> The bow and arrow was used for hunting ptarmigan and rabbits. The muzzle loaders were used for big game only, caribou, bear, moose. When I was young enough to remember the rifle being used, I can also remember we had no cups, spoons or plates. We did have knives and olos (metal) and one kind of single blade axe. There were no double bladed axes.[46]

Robert Cleveland also told the story of how the Kobukmiut and the Koyukuk Indians finally made peace:

> Long ago there was always fighting between the Indians and the Kobuk people. They were only on good terms for a short time, then they would start to fight again. Both Indians an Eskimos gave names to the land.

The Kobuk men hunted away from the Kobuk in summer. They came home by raft in autumn, sometimes four men on one raft. Every year they were frightened that Indians might come into the summer camp to throw rocks. The women ran away if they thought it was an Indian raiding party.

Once, in late fall, the hunters were coming home. There was thick fog. The mouth of the Maneluk River [a mountain tributary of the Kobuk] was very foggy. They could not see the river banks. There was deep water and a good beach just up from the mouth of the Maneluk. They came close to the beach and saw a kayak coming upstream. One man had a hook made from a willow branch on the end of a pole. Sometimes in rapids they used the hook to steady the raft.

That kayak near the mouth of the Maneluk was so close that they hooked it and pulled it to the raft. They knew the man. He was an Indian named Katoleelauk. He jumped on the raft. His partner also came near but could not be hooked. He went around and around. Finally he was hooked, pulled to the raft and he jumped on.

The Kobuk men took Katoleelauk home. He had frightened the women so much that summer that they had collected very little food. They said to him, "Katoleelauk, you are a foxy trickster." He answered, "Oh yes." They guarded him all fall until freeze-up. Then the Kobuk people spoke to him,

"Now we meet together. You stay with us this fall. We will give you everything, clothes, boots, snowshoes. In winter you shall go home. Tell your people that you stayed with us. Tell them that the Kobuk people want to come over to the Indian people around Koyuk somewhere."

Katoleelauk stayed all fall. Then they fitted him out and let him go home. When he got home he told the Indian people that the Kobuk people wanted to meet with them.

In the long days of March and April, many sleds set out. They came to Pah River [a lowland tributary of the Kobuk] and along the river the Indians and Eskimos met. One man was in front of his sled. He took a spear and put it in the trail, point down. That man stood right there. The Indians could not come by. They waited. The Kobuk people watched them. For many hours they waited. They were cold. The man who held them back had lost many bothers and neighbours, killed by Indians. One woman carrying a baby also had lost many brothers and neighbours. She went after the man with the spear. She came to him and asked, "Why do you hold back these people?" She grabbed the spear. She took him home dragging his spear.

> Then the Indian teams came into the village. Each team went to a different Kobuk house. This is the way they met. Every year they met. The Indians came down. The Kobuk people went to them. After that there was no more fighting.[47]

Koyukon Indians

The Koyukon Athapaskans of the upper Koyukuk River are termed upland hunters of big game. In traditional times they and their Kutchin Athapaskan neighbors on the upper Chandalar followed a lifeway dictated by a marginal forest-and-mountain environment deficient in the fishery resources that made more bountiful the ives of river-valley Indians to the south. Big game--caribou, ear, moose--wandered as solitaries or dispersed bands through these boreal territories, and so did the people who preyed upon them. Two-household families and small groups of families were the rule; only occasionally, during communal caribou drives or at feasts and potlatches when food was accumulated beforehand, could the people come together in larger groups. Local "bosses" guided communal efforts during caribou hunts and fishing seasons. Salmon fishing provided significant food for Koyukon bands of the Hogatza and Kanuti river areas, at the southern margin of the study region; but for the Indians of the Koyukuk's upper forks and tributaries, fish were secondary resources, with such species as whitefish, grayling, and pike more important than the much iminished salmon of the upper reaches. When caribou were few, and before moose moved in large numbers into Koyukuk country in

the last century, the smaller forest animals--hare, beaver, muskrat, porcupine, squirrel--might combine as principal food resources. Migratory ducks and geese, and resident grouse and ptarmigan supplemented the hunters' diets.[48]

> Before firearms and mechanical transportation become available to the Natives of the northern interior of Alaska, their effective killing range was extremely limited. To overcome this limitation, they . . . learned to harvest wildlife with such devices as deadfalls and snares. These devices, coupled with a thorough knowledge of the behavior patterns of the target animals, allowed men to hunt in absentia and thus extend their predatory effectiveness. It is likely that remote harvesting techniques produced as much or more food and furs than did the activities limited to men and their hand weapons.[49]

The dominant food quest, the changing seasons, and the unpredictability of animal populations and distributions prevented settled village life for these upriver Indians. Despite a wandering lifestyle, members of a given family stayed together through most of the year. They combined or divided their labors as custom and circumstance demanded to accomplish the tasks of hunting and gathering, processing food, and producing clothes, shelter, and tools.

n summer, except for periodic hunting and trading trips, the people lived along major rivers, camping near stream junctions where the men fished with traps at stream entrances, the women with nets in eddies and sloughs. As berries ripened, they were gathered and stored in birchbark baskets for transport to the next camp. Meat and fish in excess of daily needs was air dried and stored.

Approaching fall meant relocation to upland lakes where lake and stream fishing took place and, after freeze-up, fishing through the ice. Winter house construction or repair anticipated the deep cold to come. These structures--partly sunk in the ground, walled and roofed with spruce logs and poles, covered with moss, sod, and dirt--were occupied on and off through the winter whenever the families returned from hunting trips. Group caribou hunts took place in late October, with several families joining together. Hide tents on willow frames, piled with insulating snow, provided shelter during these outings. Also, during this season, some hunters journeyed north to the mountains to hunt sheep. Through the winter, based in the winter dwellings, women hunted small game and fished through the ice. Men hunted caribou and moose, and took denning bears in the surrounding hill country.

During the darkest, coldest days of winter, game went to ground and thick ice inhibited fishing. This break in the hunting mperative allowed time for visiting and festivals with nearby Indian groups.

As sunlight returned in late winter, some families travelled to the Brooks Range or to the Kobuk for messenger feasts with their Eskimo trading partners; or Eskimos might visit the Indian encampments. These gatherings, the invitations carried by runners called messengers, were based on established intertribal partnerships. They fostered exchange of material goods as well as sharing of ideas and techniques. These institutionalized truces broke the prevailing atmosphere of hostility and suspicion in favor of festivity and friendship.

Springtime brought light, the first flights of returning birds, and a break in the weather. But in years of game scarcity and exhausted food stocks, this was the most difficult season. Families scattered and moved about constantly. Some went to muskrat camps near the rivers. Hunting parties began looking for returning caribou now gathering for spring migration. Parties of hunters posted themselves near caribou fences and surrounds. Caribou driven into these extensive barriers and flared enclosures, which were fitted with snares, could be killed easily with spears. Old people, left at winter camp to fend for themselves, trapped and snared any small game available; sometimes they hungered and died.

As late-May break-up approached, the Indians moved to spring fish camps on creeks between the lakes and major rivers. Easy cross-country travel ended as the landscape thawed and became wet

round. Now the birds came in large numbers and the men spent most of their time hunting them in the marshes. In June the annual cycle closed with return to summer camps along the big rivers.[50]

Richard K. Nelson has captured many Athapaskan perspectives and boreal-forest insights from living with Indian people, both Koyukon and Kutchin:

> I sat for many hours one midwinter night, listening to an older Koyukon couple. They spoke in vivid detail about their lives, especially about their many experiences hunting and trapping in a broad territory east of Huslia. At one point the man said, "My father trapped that country before me, and I trapped there all my life. But if you go there now it's still good ground--still lots of beaver in there, plenty of mink and otter, marten; good bear country. I took care of it, see. You have to do that; don't take too much out of it right now or you'll get nothing later on."
>
> His wife listened and nodded agreement. She was the more philosophical of the two, and she had a habit of ending his stories with something general or instructive. This time she talked for a few minutes about periods of scarcity, then she concluded: "People never kill animals for no reason, because they know there's times when they'll really need to kill anything they can find."[51]

> The country knows. If you do wrong things to it, the whole country knows. It feels what's happening to it. I guess everything is connected together somehow, under the ground.[52]

> A Koyukon elder once explained to me that all animals can communicate with each other and that they treat one another properly. This is why animals do not kill each other senselessly or without purpose. Wolves hunt with care, he said, checking the animals "to see which one they want." If they leave a kill behind they usually come back to feed on it again and again, until nothing remains except the bones.[53]

> When a brown bear has been killed, none of its meat should be brought into the village for some days or weeks; it is too fresh and potent with easily affronted spiritual energy. During earlier years, in fact, it was left in a cache at the kill site until the midwinter potlatch memorializing people who had died in the previous year.[54]

Amongst traditional Athapaskans, the potlatch was the central ceremonial of the year, permeating every phase of social life. "On the surface, it was simply a feast for the dead. Indians explain that a family is overwhelmed by sorrow after a death and that its headman, in order to forget his grief, holds a potlatch at which there is much feasting, dancing, and merrymaking, climaxed by a distribution of gifts." The festivities rejuvenated

he spirits of the participants and provided an honorific farewell to the deceased. But more than this, the potlatch affirmed its giver's prestige and wealth. Distribution of food, blankets, and other gifts was important ceremonially and functionally as a means of sharing that wealth with other members of the band. Finally, the potlatch offered a rare opportunity for people normally dispersed to come together as a group to entertain one another and renew their social ties.[55]

As a live-in anthropologist, Nelson became familiar with Alaskan Interior weather and the Koyukon response to it:

> Considering its power over people's lives and emotions, it is not surprising that weather is the most fully personified element in the Koyukon physical world. The interchange between people and these conscious entities is fairly elaborate and intense. Oncoming weather is announced by signs, it is received as a communion of awareness, and it is sometimes manipulated by people who have learned its few points of vulnerability.
>
> Formerly . . . people recognized a benign spirit of heat and a malicious antagonist, the spirit of cold. The two struggled for supremacy at different seasons and the weather of the moment showed who had the upper hand. . . . The temperature is perceived as much more than a physical

condition of inert air--it is a thing, an essence, as if a wild and moody animal controlled its own living heat.

But at least its moods can be anticipated. When deep cold approaches, the sun often has a bright spot, or "false sun," on either side. Koyukon people say, "The sun is building fires beside her ears," and if it is midwinter it may soon be -30° to -50°. This sign is caused, outsiders would say, by ice crystals precipitating from chilling air aloft--it is a very reliable one.

. . . . . .

In the Far North, cold can take people away with it--those who are caught outside with the wrong clothing or who become lost or venture onto bad ice. Cold comes with a dense and heavy calm that leans upon the land. If dogs are put in harness, they whine and lift their paws alternately; pulling the sled, they are hidden in fog from their own breath. Cold presses like liquid against clothing, pinches exposed flesh, and flows painfully into the vulnerable recesses of nose and throat.[56]

oses Henzie, a Koyukon elder of Allakaket, showed the persistence of old ways when he talked of them in 1978:

> We depend on our animals to make our living in this country. We have to treat them with respect. Like when I find a wolverine or wolf in my trap. After I shoot'em, I rub a little piece of moose fat on his nose. Then I make a little fire and burn that fat. Just like feeding them. I always carry that piece of fat in my sled bag.
>
> We give respect to animals but, not just animals, either. People lived in this country long time. We find their graveyards. They didn't live in one place like we do now. They would have fish trap in the creek, and spring camp and fall camp. Live all over. And when they die they just bury each other any place in the country. So Marie and me when we travel, we don't camp just any place. We have to look for where people cut trees or something. We look for someplace people used to camp long ago.
>
> Marie and I we're worse, other people camp anywhere. But if other people are in a bad place, bad ground, you know, it's like they can't sleep. Stay awake all night. We always watch. . . . If we find a human bone on the trail, we stop right there and make a little fire. We get all kinds of little food and throw it in the fire. And we tell that person we're just traveling around trying to make our living.

We wouldn't bother anything. We're just making our living, that's all. That's what we'd say. Throw that food in the fire. That's our old ways.[57]

utchin Indians

Just before contact with Europeans, the northwesternmost bands of Kutchin Athapaskans--Dihai and Netsi--centered on the mountain forks of the Koyukuk and Chandalar rivers respectively. In their spare mountain environments, which seasonally included both slopes of the Brooks Range, these big-game hunters depended mainly on caribou, with a limited winter fishery in upland lakes. By 1850, under pressure from expanding mountain Eskimos, the Dihai were fading eastward, where eventually they would assimilate with the Netsi along the Chandalar's East Fork, thus ending their influence within the study region. Previously, the Dihai had roamed throughout the Endicott Mountains as far west as Kobuk and Noatak headwaters.

In contrast to the enduring trading partnerships that encouraged peaceful Koyukon-Eskimo relations, increasing competition between the Dihai and Eskimos over caribou hunting sites in the mountains led to war. Old battlegrounds and stories tell of bloody encounters and raids throughout the central mountains as the Eskimos pushed eastward and southward. About 1850 an epic battle near Anaktuvuk Pass ended in defeat for the Dihai. The Endicott Mountains became Eskimo territory. Burch attributes the movements of Eskimos east from the Kotzubue Sound drainage and south from the Meade and Colville rivers to the decline of caribou around the ountain periphery. This shift of Eskimo populations to the rich mountain hunting grounds not only forced the retreat of the

isolated Dihai Kutchin back to core Kutchin territory, it was als
". . . the primary source of the so-called 'Nunamiut' population of the late 19th century."[58]

The Dihai and Chandalar Kutchin played more a memory than an active role in the post-1850 history of the study region.[59] These mountain Indians, far removed from the relative riches of their riverine brethren to the south, lived a hard life of constant movement in search of food. Elders who were children in traditional times recalled only hunting, periodic hunger, and hurrying on to the next place. A single family might cover hundreds of miles in a season, carrying only a skin tent for shelter. During the worst times, even the luxury of visiting was denied them; hunting took all their energy. Until the advent of white trading posts and the fur trade, even the steady occupation of vaguely defined band territories was subject to the vagaries of the resource base. People might have to spend a season or a year in another territory hundreds of miles from home hunting grounds. Dispersal of families was the rule; aggregations were rare; settled villages could not exist. Even today the highly individualistic or autonomous-family lifestyles of Kutchin villages is contrasted to the greater sociability and cohesion of Eskimo villages.[60]

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he mountain core of northern Alaska foiled Anglo-European mapmakers until the 1880s--in fact, the more remote reaches of this forbidding geography remained incompletely mapped until the advent of airplanes and the strategic focus on the region forced by World War II and its Cold War aftermath.[61] But traditional peoples knew the mountains and their riverine environs intimately. Their travel routes by river and portage, through the passes and along the mountain spine numbered in the scores--each route mapped in detail in the travellers' minds; each classified as to appropriate travel technology, seasonality, advantages and dangers, and the necessities of shelter, fuel, water, and food.

* steep, short pass might be chosen for a summer hunting party's rek to high country for sheep hunting. On the return, loaded with meat and skins, the hunters chose a broad river valley, sacrificing distance for the convenience of a raft float back home. The steep pass might be avoided in winter because of avalanche danger; as might the river because of hidden overflow that could quickly kill. Other passes could not be negotiated during windy seasons; at sub-zero temperatures a person could freeze to death in minutes in the hurricane-force winds that roared through these wind gaps. Snow and ice cover, with enough but not deep snow, encouraged winter overland travel. In summer, boat travel on the rivers avoided bogs and swamps. High water during spring runoff carried whole societies seaward in their amily umiaks; return upriver awaited the low water of late summer. The seasonal round nicely paired winter-overland and

summer-river travel, with established caches for sleds and boats at the seasonal exchange points. Skin-covered boats had to be dried periodically to avert water-logging and rot. Summer rains and windstorms might delay or abort upriver travel, forcing abandonment of boats and their loads of trade goods and meat. Then the people foot-slogged to the sled cache, returning to the boats after freeze-up to haul their supplies home on the sleds.

The combinations of travel technology and strategy--adjusted for season and terrain to accommodate light-travelling hunters, loaded hunters, family trading and festive parties, communal hunting groups--were infinite and artful. These understandings of landscapes and modes of movement--complemented by sophisticated sciences of shelter, clothing, and provisioning in spare environments marked by extreme and deadly weather--must be viewed as triumphs of cultural adaptation. They allowed these traditional people, in the full panoply of generations, to move rapidly with large quantities of goods over long distances, year-round, through country that today is inaccessible (short of helicopter landings) to all but the most resolute trekkers geared for adventurous struggle.[62]

Beginning in the 1880s, these perfected skills and knowledges would be shared, enabling the first white men to penetrate an ancient homeland, a new wilderness.

Chapter 1 Notes

1. Douglas D. Anderson, "Ancient Peoples of the Kotzebue Basin," Alaska Geographic, 8(3), 1981, 55, 56.

2. This scan of natural and cultural history was derived from various sources, including these most helpful: Howell Williams, ed., Landscapes of Alaska (University of California Press, Berkeley, 1958); Olaus J. Murie, "Alaska-Yukon Caribou," North American Fauna, No. 54, Bureau of Biological Survey (Washington, D.C., June 1935); Douglas D. Anderson, "Ancient Peoples of the Kotzebue Basin," Alaska Geographic, 8(3), 1981, 52-59; Ernest S. Burch, Jr., "The Caribou/Wild Reindeer as a Human Resource," American Antiquity, 37(3), 1972, 339-68; Barry Lopez, "Story at Anaktuvuk Pass," Harper's Magazine, December 1984, 49-52; Robert Gal and Edwin S. Hall, Jr., "Provisional Culture History (National Petroleum Reserve in Alaska)," Anthropological Papers of the University of Alaska, 20(1-2), September 1982, 3-5.

3. Wendell H. Oswalt, Eskimos and Explorers (Chandler & Sharp Publishers, Inc., Novato, California, 1979), 204-207; Annette McFadyen Clark, Koyukuk River Culture (National Museums of Canada, Ottawa, 1974), 78-83; Ernest S. Burch, Jr., Eskimo Kinsmen, hanging Family Relationships in Northwest Alaska (West Publishing o., St. Paul, 1975), 9-10.

4. Michael Kunz, "Athapaskan/Eskimo Interfaces in the Central Brooks Range, Alaska," The Athapaskan Question (The Archeological Association of the University of Calgary, 1977), 140.

5. Ibid., 136, 137.

6. Calvin Martin, "Subarctic Indians and Wildlife," American Indian Environments (Syracuse University Press, 1980), 38, quoting Frederica de Laguna.

7. Christopher Vecsey, "American Indian Environmental Religions," in Ibid., 21.

8. "Subarctic Indians and Wildlife," 44.

9. Julie Cruikshank, "Legend and Landscape: Convergence of Oral and Scientific Traditions in the Yukon Territory," Arctic Anthropology, 18(2), 1981, 72.

10. Vecsey, "American Indian Environmental Religions," 1. For the general tenor of these last paragraphs and the concept of Distant Time, I owe much to Richard K. Nelson's counsel and arious works (see bibliography).

11. Ernest S. Burch, Jr., "Indians and Eskimos in North Alaska, 1816-1977: A Study in Changing Ethnic Relations," Arctic Anthropology, 16(2), 1979, 123-134.

12. "The 'Nunamiut' Concept and the Standardization of Error," Contributions to Anthropology: The Interior Peoples of Northern Alaska (National Museums of Canada, Ottawa, 1976), 85.

13. Ibid.

14. Richard K. Nelson, Make Prayers to the Raven, A Koyukon View of the Northern Forest (University of Chicago Press, 1983), 33.

15. Ibid.

16. Joseph E. Senungetuck, Give or Take a Century, An Eskimo Chronicle (The Indian Historian Press, San Francisco, 1971), 24.

17. Burch, Eskimo Kinsmen, chapter 6; James W. Vanstone, Athapaskan Adaptations, Hunters and Fishermen of the Subarctic Forests (AHM Publishing Corp., Arlington Heights, IL., 1974), chapter 3.

18. Senungetuk, Give or Take a Century, 25.

19. Edwin S. Hall, Jr., "A Clear and Present Danger: The Use of Ethnohistoric Data for Interpreting Mound 44 at the Utqiagvik Site," Arctic Anthropology, 21(1), 1984, 137; see also Kunz, "Athapaskan/Eskimo Interfaces," 143, 144; Burch, "The Nunamint Concept," 66,67; _____, "Studies of Native History as a Contribution to Alaska's Future," typescript lecture paper, 32d Alaska Science Conference, Fairbanks, 1981.

20. Kunz, "Athapaskan/Eskimo Interfaces," 136.

21. Don Charles Foote, "Human Geographical Studies in Northwestern Arctic Alaska, The Upper Kobuk River Project, 1965" (typescript report), Montreal, 1966, 15.

22. Clark, Koyukuk River Culture, chapters 1 and 3.

23. J.L. Giddings, The Arctic Woodland Culture of the Kobuk River (The University Museum, University of Pennsylvania, Philadelphia, 1952); _____, Kobuk River People (University of Alaska, Fairbanks, 1961); _____, Ancient Men of the Arctic (Alfred A. Knopf, New York, 1967); Nicholas J. Gubser, The Nunamiut Eskimos, Hunters of Caribou (W.W. Norton & Co., New York, 1954); Robert A. McKennan, The Chandalar Kutchin (Arctic Institute of North America, Montreal, 1965).

24. See Edwin S. Hall, Jr., "Known Archeological Resources of the Noatak River Basin, Northern Alaska, as of January 1973" (typescript report for National Park Service), 12-18, for summary discussion of traditional Noatak life.

25. Koyukuk River Culture, 24, 25. Other sources for the south-flank forest environment include Nelson, Make Prayers to the Raven, 254-260; McKennan, The Chandalar Kutchin, 17, 18; Giddings, The Arctic Woodland Culture of the Kobuk River, 3, 4. The above description applies in general to neighboring Chandalar country, with the major difference that salmon do not enter the upper forks of Chandalar River (Alaska's Fisheries Atlas, Alaska Department of Fish and Game, 1978, I, Map 126-1). McKennan states that lack of this food source sets off the mountain-dwelling Chandalar Kutchin from their more riverine neighbors to the south, 17.

26. Clark, Koyukuk River Culture, 27-29.

27. Burch, "The Caribou/Wild Reindeer as a Human Resource," 346.

28. Ibid.

29. Clark, Koyukuk River Culture, 29.

30. Ibid., 30, 31.

31. Herbert R. Melchior, ed., Biological Survey of the Proposed obuk Valley National M<onument (typescript report for National ark Service, University of Alaska, Fairbanks, 1976), 203.

32. Burch, Eskimo Kinsmen, 9.

33. Burch, "Indians and Eskimos in North Alaska, 1816-1977," 124-129.

34. Ibid., 123-132. This paragraph greatly simplifies Burch's discussion. In the decades before 1850, Eskimo expansion from the Colville River into the Endicott Mountains resulted in retreat of the Dihai Kutchin and their absorption into Netsi Kutchin society. The Dihai had earlier extended their range as far west as the upper Noatak and had been gradually staging back eastward. Moreover, a large section of the Endicott Mountains, shifting with the above movements, but centered around the headwaters of the major rivers, was unclaimed territory visited by both Athapaskans and Eskimos.

35. This description of Tulugagmiut life paraphrases in part Grant Spearman's, Land Use Values Through Time in the Anaktuvuk Pass Area Cooperative Park Studies Unit, University of Alaska, Fairbanks, 1979), 33-47. Spearman summarized previous studies and the results of his own field work with traditional members of the Anaktuvuk Pass community.

6. Ibid.

37. Helge Ingstad, Nunamiut, Among Alaska's Inland Eskimos (W.W. Norton & Co., New York, 1954), 59-63.

38. These recollections by three elders of the Colville River-Endicott Mountains area were published ca. 1980 by the North Slope Borough Commission on History and Culture in Qiniqtuagaksrat Utuqqanaat Inuuniagninisiqun, The Traditional Land Use Inventory for the Mid-Beaufort Sea, I: Bessie Ericklook, 126-128; Elijah Kakinya, 148-151; Pete Suvaliq, 97. David Libbey and Grant Spearman assisted the author in place-name identifications; personal communications March 7, 1985.

39. L.R. Binford, "Forty-seven Trips," in Edwin S. Hall, Jr., ed., Contributions to Anthropology: The Interior Peoples of Northern Alaska (National Museums of Canada, Ottawa, 1976), 313, 314.

40. Burch, Eskimo Kinsmen, 17. Some people attended the fair at Sisualik one year and the fair at Niglik the next, allowing them to relay Siberian trade goods all the way to the Arctic coast. These gatherings of people from societies hundreds of miles apart spread ideas as well as goods, and reaffirmed social bonds between members of different societies, Ibid., 21.

41. Ibid., 17-19.

42. "Noatak Eskimo Tool Bag," Alaska Journal, 6(4), Autumn 1976, 230-234.

43. Burch, Eskimo Kinsmen, 19, 20.

44. Don Charles Foote, "Human Geographical Studies in Northwestern Arctic Alaska, The Upper Kobuk River Project, 1965," (typescript report, Montreal, 1966), 15, 16.

45. J.L. Giddings, Ancient Men of the Arctic (Alfred A. Knopf, New York, 1973), 302, 303.

46. Foote, "The Upper Kobuk River Project," Appendix C, Robert Cleveland's Account of Traditional Eskimo Life.

47. Ibid., Story 9.

48. Richard K. Nelson, Kathleen H. Mautner, G. Ray Bane, Tracks in the Wildland, A Portrayal of Koyukon and Nunamiut Subsistence (Cooperative Park Studies Unit, University of Alaska, Fairbanks, 1982), chapters 2 and 10; Nelson, Make Prayers to the Raven, 258-260; James W. Vanstone, Athapaskan Adaptations, Hunters and Fishermen of the Subarctic Forests (Field Museum of Natural History, Chicago, 1974), 121-125; A. McFadyen Clark, "Koyukon" Handbook of American Indians, Vol. 6, Subarctic, Smithsonian Institution, Washington, 1981), 585, 588.

49. Nelson, et al., Tracks in the Wildland, 55.

50. Clark, Koyukuk River Culture, 90-92. This account is based almost entirely on Clark's reconstruction, with additional material from the same source, 160, 161, 237; Clark, "Koyukon," 589; and Vanstone, Athapaskan Adaptations, 34.

51. Nelson, Make Prayers to the Raven, 200.

52. Ibid., 241.

53. Ibid., 219.

54. Ibid., 188.

55. Vanstone, Athapaskan Adaptations, 55, 56.

56. Nelson, Make Prayers to the Raven, 40.

57. Curt Madison and Yvonne Yarber, Moses Henzie, A Biography, Allakaket (Yukon-Koyukuk School District, 1979), 28.

58. Burch, "Indians and Eskimos in North Alaska," 132, 133; Edwin S. Hall, Jr., "Kutchin Athapaskan/Nunamiut Eskimo Conflict," The Alaska Journal, 5(4) 1975, 248-252; McKenna, The Chandalar Kutchin, 23-25. McKennan notes that the Chandalar Kutchin maintained trading relationships with Eskimos to the north, on the Arctic Coast, where they were seen from the time of the earliest white contact.

59. According to Eskimo elder Tishu Ulen, Dihai spirits haunted the dark and lonely places and were the bogeymen of Eskimo children until recent times. Personal communication, November 1983.

60. Richard K. Nelson, Hunters of the Northern Forest, 273-74, 281-82; see Richard A. Caulfield, Subsistence Land Use, Upper Yukon-Porcupine Communities, Alaska (Alaska Department of Fish and Game, Subsistence Division Technical Paper, Number 16, June 1983), for a useful historical overview of western Gwich'in (Kutchin) subsistence patterns, 22-42.

61. Gerald FitzGerald, Surveying and Mapping in Alaska, USGS Circular 101 (Washington, 1951), 21, 22.

62. This discussion of routes and modes of travel based on Ernest S. Burch, Jr., "Overland Travel Routes in Northwest Alaska," Anthropological Papers of the University of Alaska, 18(1), December 1976, 1-10; Ernest S. Burch, Jr., "Inter-Regional Transportation in Traditional Northwest Alaska," Anthropological Papers of the University of Alaska, 17(2), December 1975, 1-9.

Chapter 2: Early Exploration

The coming of outsiders to northwest Alaska was no surprise to local Inupiat for around the turn of the 19th century a number of Eskimos, including the gifted seer, Maniilaq . . . had foretold it.

A new race, white men, would come into their land, Maniilaq said, and they would prove a mixed blessing. Some Inupiat would be made rich by them, others poor; and amazing changes would follow.

In the future, according to Maniilaq, it would be possible to travel upriver in a boat with ease without having to use a pull rope or paddle. Men would fly through the sky on iron sleds and speak through the air over long distances. Man would write on thin birch bark and a new kind of clothing would be introduced.[1]

or was the presence of indigenous peoples in northern Alaska a surprise to Europeans. The centuries-old trade between the Chukchis and Eskimos of eastern Siberia and their Alaskan cousins had spurred the interest and avarice of eastward moving Cossacks long before Russian explorers actually sailed to the Great Land. As early as 1648 a disputed Russian reconnaissance may have sailed from the trading center of Nizhne-Kolymsk, on Siberia's north coast toward the strait between Asia and America. Subsequent probes toward Chukotsk Peninsula and the descriptions brought back by Chukchi and Eskimo traders gave glimmerings of a land known to lie eastward, but still a mystery.

hese portents inspired Peter the Great, just before his death in 1725, to plan a series of voyages that led to Vitus Bering's fog-shrouded passage in 1728 through the strait that bears his name, and to his official discovery of Alaska in 1741. Between Bering's voyages, Mikhail Gvozdev and Ivan Fedorov were commissioned by their local commander in 1732 to sail from Siberia to explore islands and lands to the east. In their tiny ship Gabriel they briefly anchored off an Eskimo village at the later-named Cape Prince of Wales. Rising winds drove them back to sea before they could land. Though theirs was the first certain sighting of mainland Alaska by Europeans, their local venture was overshadowed by Bering's official discovery 9 years later.

ering's course in 1741 took him to the Gulf of Alaska and the Aleutian Islands, where sea otters and fur seals abounded. This

wealth of furs along Alaska's southern rim occupied Russian hunters and traders for many decades, saving delineation of the northern coasts to later explorers.[2]

The next phase of north Alaskan discovery began with British Capt. James Cook's voyage of 1778. Passing through the Aleutian Islands and Bering Strait to Icy Cape, he was blocked beyond 70 degrees north latitude by ice ". . . as far as the eye could reach . . . as compact as a Wall."[3] His venture and subsequent ones by Russians and Britons were moved by the quest for an Arctic Ocean passage between Europe and the Pacific. Imperial rivalry and traditions of naval exploratory prowess played no small part in this quest. Nor, as trade opportunities opened, was competition for furs a minor motive. Governments, scientific academies, and government-chartered companies--the Russian-American Company and the British Hudson's Bay Company foremost--focused these forces in a series of expeditions that by 1837 had charted Alaska's northern coasts and named its capes and bays after European sponsors and the discoverers and scientists from many nations who carried out their wishes.[4]

Meanwhile, Russian traders in 1833 established a post at St. Michael near the mouth of the Yukon. They cautiously probed the lower Yukon and in 1838-39 erected a post at Nulato, just downstream from the Koyukuk River junction, whence they traded as far up the Yukon as the Tanana River. Expansion of the Hudson's Bay Company westward via the Yukon and Mackenzie drainages

esulted in founding of the Fort Yukon post in 1847.[5] Thus the middle Yukon marked the transfer zone for European goods flowing northward to the central mountains.

Journals of official and company explorers mention random encounters with independent traders. For example, in July 1820 at Kotzebue Sound, Capt. Lt. Glieb S. Shishmarev of the Imperial Russian Navy hosted Capt. William J. Pigot of the American brig Pedler. Pigot had sailed from Hawaii to trade furs with the Natives.[6]

As charts improved and accounts of eager Native traders filtered to the outside world--where they quickly circulated amongst sea captains at Hawaiian and other wintering and refitting ports--the reach and pace of commercial activity increased. Various Royal Navy expeditions associated with Sir John Franklin's search for the Northwest Passage (beginning in the Alaskan arctic in 1826) and the subsequent expeditions that searched for him after his disappearance in 1847, opened up the arctic coasts and seas. Coastal Eskimo villages hosted first the explorers and searchers, eventually traders. Reports from the Franklin expeditions, describing great numbers of whales and walrus in arctic summering grounds, lured whaling captains north from the well-hunted Pacific. By the mid-1850s the arctic whaling industry was firmly established. In time, whaling ships would overwinter on the ırctic coast in places sheltered from the pack ice to get the jump on the migrating whales. In effect, the ships became winter

trading posts, which, together with later shore-based whaling and trading stations, irrevocably altered Eskimo lifeways and social arrangements. Dependence on white man's trade goods and foods, acquisition of modern rifles, working as crewmen and caribou hunters for the whalers, and the devastating impacts of diseases and liquor, paired with the decline of caribou and sea mammal populations, variously attracted, repelled, and killed the heretofore isolated Eskimos.[7]

By the time of the American purchase of Alaska in 1867, the perimeter of northern Alaskan geography was well mapped and well trafficked. But straight lines between the Mackenzie River on the east and Kotzebue Sound on the west, between the Yukon to the south and Point Barrow to the north traversed vast stretches of unknown ground. Tentative probes from these outer limits had been made:

* In February 1843 Lt. L.A. Zagoskin of the Imperial Russian Navy ascended the Koyukuk River about 60 miles to the mouth of the Kateel River. Deep snow and reluctance of Indian guides foiled his attempt to follow Koyukon trade routes to Kotzebue Sound; he returned to Nulato.[8]

* Surgeon John Simpson of the Franklin search vessel Plover tracked the lower reaches of the Kobuk River during the ship's 1849-50 winter layover in Kotzebue Sound. His Native guides tol< of tribes and villages farther up the river, and of big mountains,

ut more than 30 years would elapse before these hints would be pursued.[9]

* In 1866-67, the Western Union Telegraph Company traversed the lower and middle Yukon River, surveying for an overland telegraph route via Canada, Russian America, and Siberia. But completion of the Trans-Atlantic cable killed the venture.[10]

The American purchase of Alaska in 1867 ushered in a series of government-sponsored reconnaissance expeditions designed in part to consolidate United States authority in the new possession. One of these, led by Capt. Charles Raymond of the Corps of Engineers, rought portentious changes on the Yukon. Appropriately, on July 4, 1869, he departed St. Michael aboard the 50-foot-long paddle-wheel steamer Yukon; entering the mouth of the Yukon, he started the era of river steamboating that would dominate Interior Alaska transportation until World War II. His celestial observations at Fort Yukon, placing it well west of the 141st meridian, convinced the Hudson's Bay Company factor to evacuate the post. Its purchase by the Alaska Commercial Company, which had already taken over the St. Michael and lower Yukon posts of the Russian-American Company, gave the A.C. Co. initial control of Yukon River transportation and trade.[11]

Far to the north, First Lt. Patrick Henry Ray in 1881-83 operated Signal Service meteorological station at Point Barrow. This was the last effort in a short-lived attempt by enlightened army officers to give the army a major role in the scientific study and

development of Alaska. In early 1883 Ray travelled by sled up th Meade River, reaching the northern limit of the arctic foothills. This was the deepest inland penetration toward the central mountains up to that time. His account and that of his naturalist-observer Sgt. John Murdoch provided a wealth of information about the coastal Eskimos and their relations with inland Eskimos and Indians.[12]

The last fringing expedition of note before commencement of direct exploration of the central mountains was that of First Lt. Frederick Schwatka. His Alaska Military Reconnaissance of 1883 was the first full-length traverse of what became the Gold Rush trail from Taiya Inlet and Chilkoot Pass to St. Michael, via the entire length of the Yukon River. His insistence upon the need for army posts and steamboat-transport capabilities if the army were to effectively operate in the Interior foreshadowed the army's Interior posts-and-communications system beginning in 1898.[13]

By 1883 the coastal and riverine fringes encircling the central mountains were known. Scattered outposts rimmed the region, serviced by ocean ships and a rudimentary river-boat transportation system. Explorers and traders, informed by Native travellers, dimly perceived a geography of mountains at the core and rivers draining outward to familiar terrain on the perimeter. The general pattern of Indian and Eskimo occupancy and trade relations could be inferred from the descriptions of informants and chance encounters along the rim.

A backflash to one of these encounters serves to illustrate how events had early overleaped the staged progression of civilization's march, and how the Natives, pursuing their own ends, could jar the already stereotyped expectations of arctic explorers. In late April 1854, Cmdr. Rochfort Maguire of Plover, a Royal Navy depot ship winter-based at Point Barrow to aid the Franklin search, took a sled party eastward toward Beechey Point. Along the way,

> . . . he met "a party of four Indians, called by the Eskimaux, Ko-yu-kun," hunting at the mouth of the Colville. Maguire had been told that the interior Indians did not come to the coast except for summer trading, and he was surprised at their unseasonable presence; he was a bit anxious also, as each of the Indians carried a musket, while his own party had only two guns. Remembering well what had been the fate of Lieutenant [J.J.] Barnard [killed by Koyukon Indians in 1851] at Nulato, Maguire decided to return immediately to Point Barrow after giving the Indians printed notices of the Plover's station. The Indians, in turn, were disappointed that Maguire's party had brought nothing to trade.[14]

Maguire's main purpose at Point Barrow was to provide succor to Capt. Richard Collinson of Enterprise, a search vessel trapped by ce in the Canadian Arctic. In July 1854, Collinson finally broke free and made his way westward through the leads between pack ice and shore. Near Barter Island a group of Eskimos accompanied by

Interior Indians visited him with letters from the Hudson's Bay Company agent at Fort Yukon: Plover was still on station at Point Barrow. Maguire's notices, given to the Indians at the mouth of the Colville in April, had reached Fort Yukon in June. From there, Indian messengers veered north to intercept Collinson on the Arctic coast in July. Of course he rewarded them with ample gifts.[15] The Indians' use of established travel routes as messengers and recipients of prestigious gifts paralleled traditional practice. In this case golden opportunity beckoned in the form of coveted European goods, and the Indians employed their skills and interior lines to meet it.

Such prodigies of aboriginal travel were not unusual. For too long white men had watched Natives disappear into bordering woodlands or fade from sight over rolling tundra only to reappear hundreds of miles from their starting points. There seemed to be a great deal going on in the intervening unknown. Inevitably, blank spaces and speculative tracings on maps must be filled in and confirmed. Russians and Britons, and now Americans, had peered in from Alaska's rimlands. They had yet to traverse vast reaches of the center. By the 1880s machinery was in place to drive geographic exploration into all major unknown spaces. In the far north, the three military services--Army, Navy, and Revenue Marine (now the Coast Guard)--would sometimes combine, often compete for the honors of discovery.

Brig. Gen. Nelson A. Miles, whose Northwestern Department of the Columbia included Alaska, was a competent, vain, and ambitious man

ith imagination. Despite opposition from an antagonistic, pinch-penny Congress and the rival ambitions of civilian scientific bureaus, Miles promoted a dominant role for the Army in Alaskan geographic exploration, as in the trans-Mississippi West a few decades earlier. Though the Army had been withdrawn from Alaska in 1877--replaced by the Navy in Southeast Alaska, the Revenue Marine along the western and northern coasts--Miles insisted that he must learn about this territory for which he was militarily responsible. Because he was a man of vision, energetic young officers rallied to his standard. Miles' persistence and the dedication of his junior officers allowed one last chapter in the history of original geographic discovery by the Army.[16]

Lieutenant Schwatka's 1883 trek over Chilkoot Pass and down the Yukon was the first of the Miles-sponsored expeditions. Another, led by Capt. William R. Abercrombie in 1884, bogged down in the Copper River delta, failing its larger purpose to ascend the Copper and cross the Alaska Range to the Yukon drainage. It fell to Lt. Henry Tureman Allen to accomplish that purpose, and exceed it so far as the upper reaches of the Koyukuk. Allen's trek of 1885 inspired Morgan Sherwood to characterize it as ". . . the most spectacular individual achievement in the history of Alaskan inland exploration."[17]

Given mounting opposition to his designs, Miles' hopes for a systematic Army exploration of Interior Alaska could not be realized. But Allen's heroic journey gave the general great personal satisfaction and moved him to compare it to the

achievement of Lewis and Clark, with which it certainly ranked: 1500 miles of unexplored country traversed; three major river systems mapped, the Copper, the Tanana, and the Koyukuk; a geographic framework that served later explorer-scientists for decades, with maps prepared under the most trying circumstances that ". . . remained for a dozen years the only source of topographical information on the regions he investigated and were found 'marvelously correct' . . ." by a later explorer who retraced parts of his route.[18]

The outlines of Allen's trip to the Yukon, where he paused to refit before making the final push to the northern mountains, are these: In late March 1885, Allen, Sgt. Cady Robertson, and prospector Peder Johnson began the ascent of the Copper River, transported initially by Indians in their canoes where the water was open, pulling sleds through ice and slush where it was not. They carried a minimum of map-making instruments, rations, and camp gear. Pvt. Frederick W. Fickett soon joined them with additional supplies. But already the difficulties of travel forced a new logistical tactic. They quickly cut their supplies and equipage to the bone, abandoning even their tent, to get down to the 50-pound packs that tested the strongest man in their situation. Allen knew that Abercrombie's failure the year before was partly due to too many men with too much baggage. This knowledge, plus a three-man limit on Army personnel and a grudging budget of $2,000 imposed by Miles' nervous superiors, gave Allen the lean expedition he had recommended from the beginning. With recruitment of another prospector, John Bremner, found marooned

nd destitute at the Copper River Indian village of Taral, Allen was now ready to meet his charge to find out about the Indians and their country in the Copper and Tanana basins.

Picking up new guides or directions as they moved from one Indian territory to the next, often subsisting on roots and maggot-infested meat, tracking upriver in a moose-skin boat they had built--with many side adventures and near disasters--they reached the Copper River headwaters. They then passed over the Alaska Range, and, with a new boat made from caribou hides, ran down the raging Tanana to the Yukon. Some shoeless, some sick, all destitute, starved, and exhausted from the hardships endured, they staggered into the Nuklukayet trading station at the ukon-Tanana confluence on June 25, nearly a thousand miles from their starting point.

His mission completed, Allen could have floated down the Yukon and sailed home, already a hero. Instead, he made a quick trip by canoe down the Yukon past Nulato to meet the steamboats New Racket and Yukon. Returning by steamboat to Nuklukayet with reviving food and supplies, he paid off his prospector companions, and sent the sick Sergeant Robertson to St. Michael. Then, with Fickett, Indian guides and packers, and pack dogs, he prepared to head north through the woods for the Koyukuk.[19]

* * * * *

Allen's account of Yukon River trading, transportation, and India relations during the one-month interval between his arrival at Nuklukayet and departure for the Koyukuk gives a microcosmic view of pre-Gold Rush conditions on the river. It is a dynamic scene of flux and change as whites and Natives adjust to new realities. Many Natives still engage in traditional fishing at river camps as the various species of salmon arrive on scheduled runs. Others from the better trapping locales flock to the trading stations where traders compete for their furs. The designs of the Alaska Commercial Company to monopolize trade and close inefficient trading substations are resented by hold-over Russian Creoles, who, unemployed by these actions, tell the Natives of the exorbitant prices charged by A.C. Co. agents. Indian tyones or chiefs threaten to resist the closing of trading posts that would inconvenience them and consolidate the A.C. Co.'s prices and control. Prospectors are ranging the Yukon tributaries, laying the groundwork for later rushes that will soon sweep the country. Indians from the Tanana, Fort Yukon, and the Koyukuk gather at the Tanana's mouth, the historic boundary between British and Russian spheres of influence in the Yukon fur trade. Trading, games, dances, feasting, and fishing combine function and pleasure for Natives and whites alike, including patriotic salutes on July 4. New Racket, owned by old Yukon hands Arthur Harper, Al Mayo, and LeRoy Napoleon "Jack" McQuesten is hauling miners' supplies--the first such cargo to go up the river, but not the last. The A.C. Co.'s boat Yukon brings the usual supplies for Natives, catering to the fur trade, the older pattern of river commerce. Here,

ascent but building, are all the patterns, complaints, and ventures that will rule the river for 50 years to come.

To this arterial river, en route from one unknown to another, comes an explorer accompanied by prospectors. He canoes down the Yukon with another, Joe Ladue, and the local Tyone's son. He transfers then to a steamboat, the hooting herald of a new technology that will strip the river's banks in insatiable lust for the wood fuel that powers paddlewheels and steam whistles.

Allen shakes off rumors of Koyukon treachery, for he is travelling to their country and only they can guide him. His own re-expedition research into Russian, British, and American accounts, the spoken embellishments of his trader and prospector companions, and witnessed threats of Indian violence over the changing trade regime, confirm the danger. He has heard many versions of Russian Nulato's burnings and killings by Koyukon Indians trying to protect their own trade monopoly. So be it. More important, these sources of information tell Allen of trading ventures and trails to the Koyukuk. He knows of Zagoskin's progress to the Kateel, and of a later American post there that failed in the plot to intercept Indian traders with Nulato-bound furs. From the Canadian engineer of Yukon, Allen has just heard of a trading trip that the boatman and Al Mayo took the year before to a small village on the Konootena (Kanuti) River, a ributary of the Koyukuk, and he knows he has a choice of portage trails to this place.[20]

He also knows that time is short for first exploration of the Koyukuk by the Army. Mayo's trading venture is one signal, but there is another. The Revenue Marine and the Navy are closing in from the Kobuk River side. Allen's July 23 entry in his field notebook--written during the steamboat passage back up the Yukon to Nuklukayet--includes this intelligence: "[Lt. John] Cantwell of Cutter Corwin wanted to cross over to Koyukuk but Capt. [Michael] Healy did not desire it, but wanted him to ascend Stoney [Kobuk River] as far as he could then return."[21]

The time has come to go. After dickering and delay, Koyukon guides are finally hired, supplies packed. The riverine strip of relative civilization is left behind. The woods briefly part then close as the explorer's party leaves the Yukon. And the other world, not quite trackless, begins again.

*****

Allen chose the portage route used by the Koyukuks. He and his party (Fickett, 4 Yukon River Indians, 3 Koyukuks, and 5 pack dogs) barged down the Yukon 7 miles with a Russian trader, then headed generally northeast across the Yukon Mountains "of the present charts," then corrected to a northerly course following the divide between the Tozitna and Melozitna rivers. His notebook entry for July 28--the day of departure--states a prime objective, a pointed reminder of past hardships: "Will certainly try not go hungry on this trip." The average pack of the Natives held 50 pounds; each dog carried 25. Fickett and Allen ". . . were in light marching order, carrying only our instruments and weapons. The bedding for both of us consisted of a piece of waterproof linen, the remnant of a sleeping-bag used on the Copper River, and a single blanket."[22]

The Indians stayed on the ridges as much as possible, where high ground, sparsely vegetated or bare, was "fair for walking." But by the third day they descended from the mountains to swampy ground ". . . where the footing is miserable, the hummocks or tetes de femmes offer a very uncertain hold for the feet. To walk between them is to walk continually in water of uneven depth, which consequently is very tiresome." Hordes of mosqitoes and gnats brought more misery, but were displaced by other discomforts--days of cold wind and fog--which drove the insects to cover and were therefore welcomed. At night the wind died and the mosquitoes returned in force. To allow nightly repose, Allen and

Fickett, following Native practice, rigged a 2-man "wickyup" covered with strips of cloth and sealed with moss.

Except for an occasional displaced twig or bit of moss, caused by a group of Koyukons preceding them, the "trail" lay unmarked across the land. Allen admired the Indians' ability to follow it, their keeness of eyesight. One incident of the march impressed him greatly: Field glasses lost early in the forenoon; the loss discovered several hours later. An Indian backtracks many miles over the imperceptible trail to the surmised point of loss. He returns that night to their camp with the coveted glasses.

Allen's references to the Indians' trail and camp knowledge, their astute avoidance of obstacles and discomforts, were mixed with notes of impatience. Lack of shared urgency over white man's schedules that disregarded bad weather and terrain, haggling over compensation for work performed, and waning enthusiasm as the Yukon Indians progressed farther from home territory all caused delay and friction. Allen had learned to overcome these hindrances by tactics that transcended cultural differences. For example, when the Indians asserted that it would take 6 more days to reach the Koyukuk drainage, he informed them that rations would cease at the end of the fourth day. "They believed it. We reached the river at the end of the fourth day." On August 2, near Tatatontly (Todatonten) Lake, after a long march that would extend into the evening, the Indian packers issued their own challenge to the white men--a running race for a whole half hour, with packs on. Allen and Fickett hung on and finished the race,

roving to the Indians that they could ". . . keep apace with them. Though I must confess that it was the most stubborn contest I ever engaged in . . . ."

The next day, after a 4-hour march over marshy ground following the outlet of Todatonten Lake,Allen's party reached the Kanuti River. They fired shots to inform the nearby villagers of their approach, and were shortly paddled in canoes up the river to the village. The camp of 13 people was about 120 trail miles from Nuklukayet. Allen had pushed across the portage from Yukon to Kanuti in 6 1/2 days. He attributed this swift march across mostly poor footing to cool weather and light packs.[23]

..ithin 2 hours Allen discharged his Koyukuk packers, obtained two birch canoes, and, with Fickett and the four Yukon Indians started downstream to the Kanuti's junction with the Koyukuk. After a 14-mile run they reached the big river--swollen with excessive rains, 300 yards wide, and flowing at 4 miles per hour. Allen's hopes of reaching the Koyukuk headwaters in 6 days from this point seemed impossible against such a volume and current of water.

Accompanying the explorers from the Kanuti village were three young men and an old man and his family, en route to the uppermost village on the Koyukuk. The Koyukon men travelled alone in small canoes, with the women and children following in a large "squaw" ınoe of the type that Allen and Fickett commanded. Allen observed how they stayed close to the bank in shallow water where the current was slower, pushing themselves over the firm bottom

with a light stick in each hand. The explorers immediately adopted this form of propulsion and soon had the knack of it, steering and moving forward with dispatch. Allen marvelled at their swift progress. Fickett and Allen each had a canoe with two Yukon Indians, "hence each canoe had three pairs of sticks for propellers."

The river fluctuated radically with each rain shower. Allen attributed this to the combined effects of saturated moss on the ground surface and rocky or frozen layers immediately below, which shunted the rainwater directly into the streams.

The old Indian was quite a traveller. More than once he had crossed over the Alatna portage to the Kowuk (Kobuk) River, where "plenty Mahlamutes [Eskimos] live."[24] He mapped out the Allenkaket or Alatna River, tracing its five tributaries and describing the portage journey in days of travel under varying conditions.

By August 6 the tandem travellers had reached the mouth of the Nohoolchintna River, the South Fork of the Koyukuk on today's maps. On its bank, a few miles from the main Koyukuk, lay the last settlement on the upper Koyukuk drainage, which Allen estimated extended another 200 miles into the mountains. Before the Indians split off toward the South Fork village, Allen probed their knowledge of the country one more time. The old man told him that 2 long days or 3 short days would bring him to the Ascheeshna (John) River. Allen doubted the old man's claim that

5 days would be required to reach a second tributary, the Totzunbitna (Wild River), but the old man insisted, ". . . strengthening his statements by holding up his bare feet and counting the days' marches on his toes." The claim of 30 days' march to the Koyukuk's source was relegated to "a matter for future explorers" by the increasingly skeptical Allen. As it turned out the old man was correct about the John River but spaced out the more remote places. Still, Allen used the old man's descriptions and names to sketch the upper course and tributaries of the Koyukuk beyond his own limit of travel.

Departure of the Koyukuks and continued progress up the river disheartened the Yukon Indians. They became ". . . very timid, worked indifferently, and begged to be allowed to go back." They refused to eat until a visit by three South Fork villagers with salmon to barter relieved their dread of intruding strange country without local partners. Cold rain the next morning made them again "faint-hearted," reluctant to break camp. The Indians' sense of territorial limits and Allen's time-and-food supply limits combined to brake the northward journey. But the party pushed on toward the next big tributary, the Ascheeshna.

As they worked up the river gradient, first glimpses of snow-covered peaks changed to a horizon-filling range bearing east-west. The waters split into swift-flowing channels and the forest became marginal. With increasing elevation, effects of early frost tinged the leaves of deciduous trees. A cold wind from the snowy mountains cleared the sky of rain clouds, "much to

my delight," allowing a position observation for the first time in several days.

Finally, on August 9, they reached the Ascheeshna, named Fickett River by Allen, later named John River by prospectors in memory of Allen's former trailmate, John Bremner. Allen's matter-of-fact account of these few hours at the farthest-north point of his trek reveals by understatement the wild and remote nature of Brooks Range landscapes:

> . . . 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. It is true we had a cache of 60 pounds of food 68 miles below, yet we did not know what to expect before reaching Nulato. After ascending the Ascheeshna for 5 miles a halt was made to take an observation for latitude at our highest point, 67° 16'. The average width of this river is about 100 to 125 yards, with a depth near its mouth of 14 feet. Having become satisfied that this river would be navigable for many miles, we started down it to halt below its mouth, where the Koyukuk had 18 to 20 feet of water in it.
>
> We ascended Mount Lookout to get, if possible, the general course of the rivers and the mountains. From its summit, about 800 to 1,000 feet above the river, we obtained a splendid view of the valley of the Ascheeshna 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. The highest peaks I should judge are about 4,000 feet high and were snow-covered one-third the distance to their bases. The valley presented no marked contrast to other valleys previously described save in the absence of lakes. Its general course is NNE.
>
> The bearing of the farthest visible water of the Koyukuk from Mount Lookout is NE by E. For about 6 miles the river bears NE.1/2°N., then for about 15 miles it bends towards Mount Cone (bearing E. by N.), thence by many turns to NE. by E. The more abundant growth of timber along the water enabled its course to be approximately traced. The mountains from which it seems to come are much farther away than those of the Ascheeshna, though doubtless the same. They appeared, as far as the eye, aided with field-glasses, could determine, to become lower to eastward, though not to westward. A break in the mountains bearing NE. was seen at a distance of 20 to 30 miles. It is possible that this marks the valley of the Totzunbitna, described by the old Koyukun.[25]

That same evening, having fled the mosquitoes and gnats of Lookout Mountain, the party started downstream, "bound for home." Within minutes they met an Eskimo--resident on the upper Kobuk--who had ome down the Alatna, visited the South Fork Koyukons, and was now heading up the John and over the mountains where there were "plenty Mahlemutes." He asked for cartridges for his old-model

Winchester rifle, "which had been furnished by the Arctic whalers." Allen suspected that this man had guided Cantwell into the Koyukuk country, but since the Eskimo could not understand his questions, "we parted none the wiser." His outfit, including a patched and much-worn canoe, was "a rather sorry one," but he did have a bag of iron pyrites, "doubtless imagining he had a treasure," which he gave to one of the Yukon Indians when told it was worthless. Allen traded some tobacco for the Eskimo's pipe and three dried salmon. Here was a veritable epitome of the traditional and early-contact cultural mix.

The run down the Koyukuk was uneventful but long--and ever longer as the river matured into slow-flowing meanders through broad floodplains. Allen's field notebook filled up with bearings and topographical descriptions as he charted the river, its islands, and the environs. He was the first to do so for all but the lower reaches.

Progress was marked by encounters with the river people and the changing natural scene:

-- The morning of the 10th they passed women and children from the South Fork village en route to the Alatna for fish. One of the women sheltered her child from cold rain by dropping it into the enlarged neck aperture of her parkie, next to her skin.

-- The cache of flour and bacon, hoisted in a tree, was recovered undisturbed.

-- As they floated south (paddling without letup most of the time) the cold winds from the snow mountains ceased.

-- One day they followed 37 different courses along the island-studded, meandering river. Eroded bluffs reminded Allen of Dakota and Montana.

-- Broods of young ducks and geese improved their fare; they were taken "with scarcely any delay . . . while seated in canoes armed with one miserable shotgun and a carbine."

-- At a Koyukon camp at the Batza River they obtained fish "dried during the present season and stored away for winter use." The entire encampment escorted Allen to the fish cache to supervise the bartering.

-- After one day of 63 miles through tortuous meanders "equalling those of the Lower Mississippi," Allen noted a cut bank of solid ice covered with only a few feet of soil.

-- Twelve miles below the Hogatza River they discovered a poverty-stricken family of Mahlemutes, partially clothed in ragged caribou skins, living precariously on young waterfowls "secured by means of a tri-tined spear." Their pyramidal dwelling, covered by spruce bark, was the only one of its kind seen by Allen in the

Territory. "They pointed to the high mountains to the north, indicating that they would cross them when the litter of pups they were training had grown larger."

-- Of the various fish camps Allen passed--usually of only two or three families--the people of only one had such sufficiency of fish, or the inclination, to donate fish to the explorers. At this camp of 17 souls some miles upstream from the Huslia River, the inhabitants "vied with each other in giving the greatest amount."

-- Reflecting upon the hard condition of the Koyukuk Indians, Allen cautioned against a suggestion he had heard that shipwrecked sailors should be steered over the portages into that region "when unable to reach Saint Michael's by the coast on account of ice." Trusting to food from the Koyukuk Natives "would be fraught with more serious danger than a division of the party and the passing of the winter among the Eskimos."

-- Three miles below the Dulbekakat (Dulbi River) Allen found "the metropolis of the Koyukuk River." In this village of 45 souls lived a famous shaman, Red Shirt, who had been implicated in the attack on Nulato in 1851, when Lieutenant John J. Barnard of the Royal Navy lost his life [after, it should be noted, expressing the intention to "send" for the principal Koyukon Tyone to appear before him at Nulato[26]]. Allen had met Red Shirt a few weeks before on the Yukon, returning home to his village from a trading expedition to St. Michael. Now, on August 18, Red Shirt

was travelling again, over the portage through the mountains to the Kobuk River, thence to guide Lieutenant Cantwell to the Koyukuk. "Meeting Lieutenant Cantwell shortly afterwards on the Corwin, I learned that he had passed down the Kowuk [Kobuk] before the arrival of Red Shirt."

-- The next night Allen arrived at the mouth of the Kateel River, thus linking his original exploration on the Koyukuk to that of the Russian Zagoskin more than 40 years before. Allen noted the remains of the American trading station established soon after the Alaska purchase. The Koyukons had forced its abandonment, brooking no competition with their role as middlemen in the Kobuk-Koyukuk-Yukon trade.

-- Finally, on August 21, after "wondering whether there was an end to the Koyukuk River," Allen's weary party reached the Yukon, and a few hours later, Nulato. They missed by hours passage to St. Michael on the steamboat, which, by previous arrangement, was to have waited for them at Nulato until August 23. Having been forewarned by Natives of the steamboat's maddeningly recent departure, Allen may have taken sardonic consolation in noting a stratified bluff just above Nulato where millions of years of earth history lay exposed.

So the adventures of Allen and Fickett were not yet at an end. They continued their canoe travels down the Yukon, hiked across the Kaltag portage, canoed down the Unalakleet River, and --lastly--paddled, sailed, and cordelled an Eskimo skin boat along

55 miles of Norton Sound's windy and surf-battered coast to St. Michael. On September 5 they departed for San Francisco aboard the Revenue Cutter Corwin, Capt. Michael A. Healy commanding.[27]

*****

Original exploration of the Koyukuk by Lt. Henry Allen and Private Fickett barely led the movement of white men into that river basin. Within months, during the depths of the 1885-86 winter, Engr. A.V. Zane of Lt. George M. Stoney's expedition portaged from the Kobuk to the Koyukuk, striking that river at mid-course, then proceeding downstream to the Yukon and St. Michael. He returned by essentially the same route, following established Native routes both ways.[28]

In a larger sense, the white man's presence in northern Alaska had preceded them, having already wreaked radical change in the fabric of Koyukuk Native society. Allen astutely documented these changes, both in his narrative of encounters with Native people and in his summary reflections. He found that even the remote villagers on the Kanuti and the South Fork had suffered death or impairment from epidemics carried by Native vectors from trading stations on the Yukon and the coast. In these far places Allen noted a number of deaf mutes among those who had survived the diseases. He commented on the skewed demographics--few men to hunt for disproportionately large numbers of women and children. He understood that in hunting and gathering societies this is a most distressing condition, particularly at a time of extreme game

carcity, as then existed. He viewed the Indians' poverty-stricken and miserable lives with compassion, urging charity: "If the Government desires that this people should continue to exist, some provision for them should soon be made."[29]

Exploration of the Kobuk River by the Revenue Marine Service and the Navy began in 1883 as the offshoot of a special mission of appreciation to Siberian Natives. After delivering gifts to the Siberians for rendering aid to shipwrecked sailors, Naval Lt. George M. Stoney proceeded to Kotzebue Sound aboard Captain Healy's Revenue Cutter Corwin. While Healy continued his cruise up the coast, Stoney, with a boat, rations, and a crew member from the cutter, spent 2 weeks examining Hotham Inlet and the delta and lower course of the Kobuk. From a local Native he learned of an interior river (the Colville) that flowed to an ocean filled with ice, and of another major river (the Noatak) emptying into Hotham Inlet. His informant also told of portages and passes between the rivers. Thus was the basic geography of the western Brooks Range revealed. This initial and somewhat accidental collaboration of the two services led to rival claims of discovery of the Kobuk River by Stoney and Healy and impelled rival expeditions in following years. The Navy may have been out of bounds in pursuing interior exploration. But the upshot of competitive expeditions would be the rapid mapping of major rivers and travel routes in northern Alaska, thus integrating coastal, riverine, and mountain access until then known only to Natives.[30]

Upon Stoney's return from the lower Kobuk reconnaissance in 1883, he requested authority from the Navy to further explore the river the next year. For he believed it to be ". . . an excellent highway into the heart of Arctic Alaska." His request was grante and in April 1884 he sailed north from San Francisco commanding the schooner Ounalaska.[31]

Meanwhile, Captain Healy organized his 1884 summer cruise in Corwin for full-scale exploration of the Kobuk by the Revenue Marine Service. Captain Healy's long career in Alaskan waters, though marred by bouts of intemperance, brought him praise from Congress, the whaling industry, and missionary groups as a ". . . zealous and efficient officer in the discharge of his difficult and perilous duties in the Arctic."[32] As the Corwin's commander Healy directed the 1884-85 explorations of his officers Lt. John C. Cantwell and Engr. S.B. McLenegan on the Kobuk and Noatak rivers.

Upon Corwin's arrival at Kotzebue Sound, Third Lt. J.C. Cantwell took command of a steam launch and boat's crew and on July 8, 1884, began ascent of the Kobuk. His orders from Healy required survey of the river and description of its inhabitants and ". . . in general, everything of interest to science and commerce" from mouth to source.[33]

Stoney entered the Kobuk's mouth in a steam cutter 8 days later. Both parties proceeded upriver more than 300 miles, mapping the river and gathering valuable experience for the next year's effort. The small steamboats proved balky and underpowered for upper river travel, so Native skin boats, until then towed, carried the explorers on the final legs of their upstream ·ourneys. Cantwell turned back first, being short of rations and plagued by the troublous steam launch. The expeditions passed each other in the neighborhood of Jade Mountain, Stoney still on

the ascent. Neither party reached the headwaters in 1884, but Stoney proceeded a few miles beyond Cantwell's farthest point. Low water forced the Navy party to resort to laborious tracking of the skin boat, pulling it through rocks and riffles with a sealskin towline. Informed by an Eskimo that the river (called Putnam by Stoney, after a naval officer lost at sea) headed in a series of large lakes, Stoney took off across country to discover and name one of them, Selby Lake. Upon his return downriver to the schooner, Stoney assigned Ens. J.L. Purcell to a week-long survey of Selawik Lake near the Kobuk delta.

Cantwell had also left the main river on a reconnaissance to Jade Mountain, where he gathered mineral specimens. Cantwell's relations with the Natives, whom he viewed as energetic if not attentive to personal hygiene, were mainly good. His ethnological notes of the 1884 expedition provide a valuable record of late-traditional, early-contact times on the upper Kobuk.[34]

For both explorers the 1884 expeditions had been valuable shakedown cruises. The difficulties encountered led to improved outfits for the coming year. In Stoney's case, planning and logistics revolved around an overwinter expedition that could take full advantage of both riverine and overland travel. They both wanted to reach the Kobuk headwaters and prove by their own travels the geography and travel routes described by Native informants, particularly connections between the Kobuk, Koyukuk, Noatak, and Colville rivers. Both recognized the importance of a

and link across the mountains to the Arctic Ocean to allow succor or rescue of ice-bound whalers. They wanted to fill in the blank spaces and contact new Native goups in the mountains and north of them. Cantwell would seek more data on valuable minerals, whose signs he had noted along the upper Kobuk.[35]

The Revenue Marine expedition of 1885 aimed for the Kobuk River headwaters. Cantwell quickly reached the head of navigation for the improved steam launch, getting a few miles past Stoney's highest point of the year before. Leaving the launch in charge of Charles H. Townsend, whose natural science report helped make this expedition a scientific success, Cantwell proceeded upstream in a 28-foot skin boat. The Native crew led by Tah-tah-rok was faithful and hard working, often putting in 14-hour days. Their handling of the skin boat in what had become a swift mountain river of rocks and rapids elicited this praise from Cantwell: ". . . it is really marvelous what judgment and skill are shown by them in handling the skin boat . . . in this peculiar style of navigation."[36]

As they worked up the river Cantwell noted the abundance of game, particularly young geese not fully fledged, which they easily caught. The low banks of the river supported dense willow thickets, which made finding campsites difficult. Heavy timber clung to ridges and mountainsides. Many streams heading in small akes flowed into the river. The topography indicated that they were approaching the watershed between the Kobuk and the Koyukuk rivers.[37]

On July 16 Cantwell and his Native crew passed the Ung-ee-let-ar-geeak (Reed) River and began the final push toward Big Fish Lake, called Car-loog-ah-look-tah by the Natives, now shown on maps as Walker Lake. The river became swifter as the mountains closed in on the valleys and canyons of the uppermost segment of the river. Big Fish Lake was the largest of the Kobuk's feeder lakes and symbolized for Cantwell the primary source of the great river. The struggle up the last 40 river-miles is best told by these excerpts from Cantwell's narrative:[38]

> The weather continued fair and intensely hot. The mosquitoes were simply terrific, and our lives were a burden to us altogether until we emerged from the low country and reached a portion of the river inclosed by high bluff banks. At 6:30 the Indians stopped as if at a signal, and Tah-tah-rok called my attention to a low rumbling noise ahead. I thought at first it was thunder, but its steady sound, and the fact that thunder is seldom heard in these latitudes, convinced me that it was falling water. We pushed ahead, and my feelings can scarcely be imagined when, at 8 o'clock, we rounded a high, rocky bluff and came suddenly in sight of a seething mass of white water bursting its way through a gorge composed of perpendicular masses of slaty rock two hundred to three hundred feet high, surmounted by a forest of spruce and birch. The channel was completely choked with sharp-pointe rocks, past which the water flew with frightful velocity, breaking itself into mimic cascades of foam and spray.

> The Indians, as if sharing in my pleasure, set up a wild chant which echoed along the steep banks, and caused hundreds of gulls nesting in the crevices of the rocks to leave their perches and with loud discordant cries to circle round our heads.
>
> The head of boat navigation had been reached, just twelve days from the mouth of the river.

. . . . . .

Cantwell determined to get the boat as far upriver as possible, despite the barrier rapids. Using jammed logs to form "a kind of ways" over the rocks, Cantwell and his crew hauled the boat past the swift water. Shortly, they left the Kobuk's true headwater channel and tracked up Walker Lake's outlet stream. The shallows finally forced them to beach the boat and make camp. From this point they hiked to a hill from which they could see the lake:

> 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.

. . . . . .

Early next morning we left our camp and, taking with us our blankets and my instruments, we walked along the banks of the river toward the lake. . . . The walking was for the most part good, being over the dry moss of the rolling plain. In the ravines we struck small thickets of willow, but by making circuits we were enabled to avoid them. When we reached the lake we made a temporary camp on the beach at the foot of the mountain not far from the outlet, and I began at once the work of taking observations, photographing, sketching, etc.

. . . . . .

With Tah-tah-rok and one other Indian I ascended the mountains which bordered the southern side, and from this point obtained a magnificent view of the entire lake and country in every direction.



Lower end of Kobuk River Gorge, described by Cantwell. This is a 1901 photo, W.C. Mendenhall 232, USGS Historical Photo Library, Denver.



Rapids at the outlet of Walker Lake. W.C. Mendenhall photo 227 of 1901. USGS Historical Photo Library, Denver.



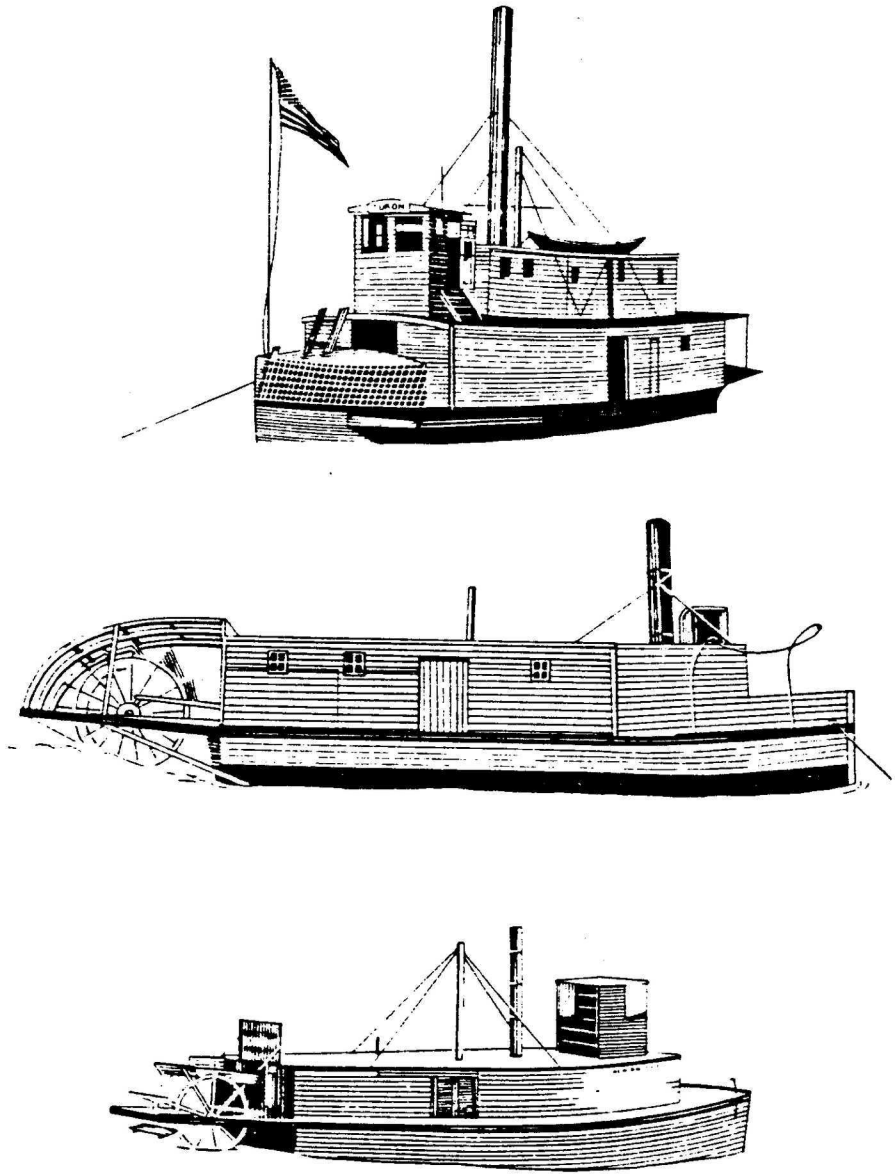
Looking southwest from the headwaters of Koyukuk River, more than 600 miles above its mouth. F.C. Schrader photo 355 of 1899. USGS Historical Photo Library, Denver.



Koyukon camp on Koyukuk River. F.C. Schrader photo 497 of 1899.
USGS Historical Photo Library, Denver.

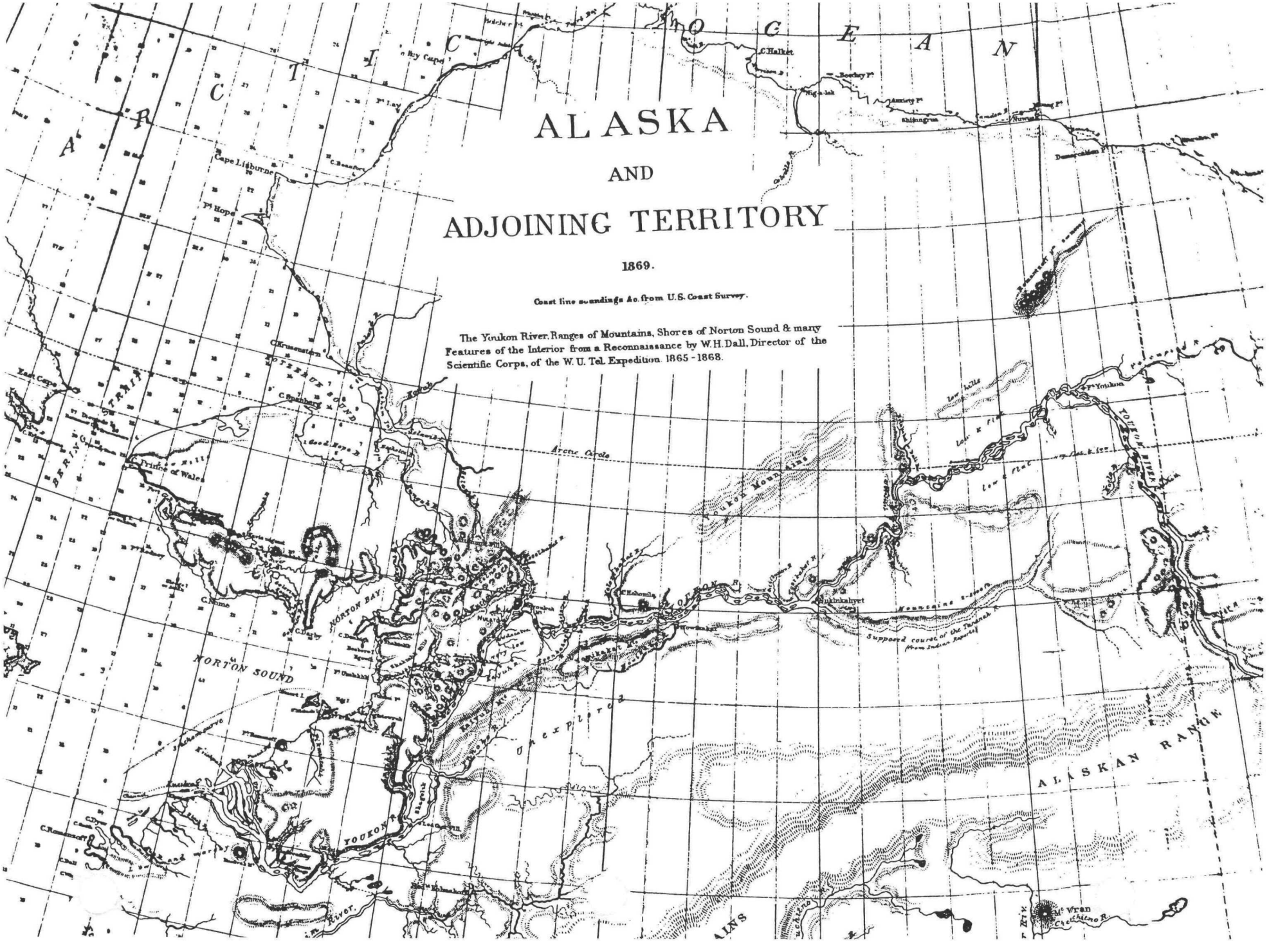


Nowikakat on the Yukon River in winter, showing dogs and sled, 1885. From Henry T. Allen, Report of an Expedition . . . in the Territory of Alaska, 1885. Reproduced through the courtesy of the Bancroft Library, University of California, Berkeley.



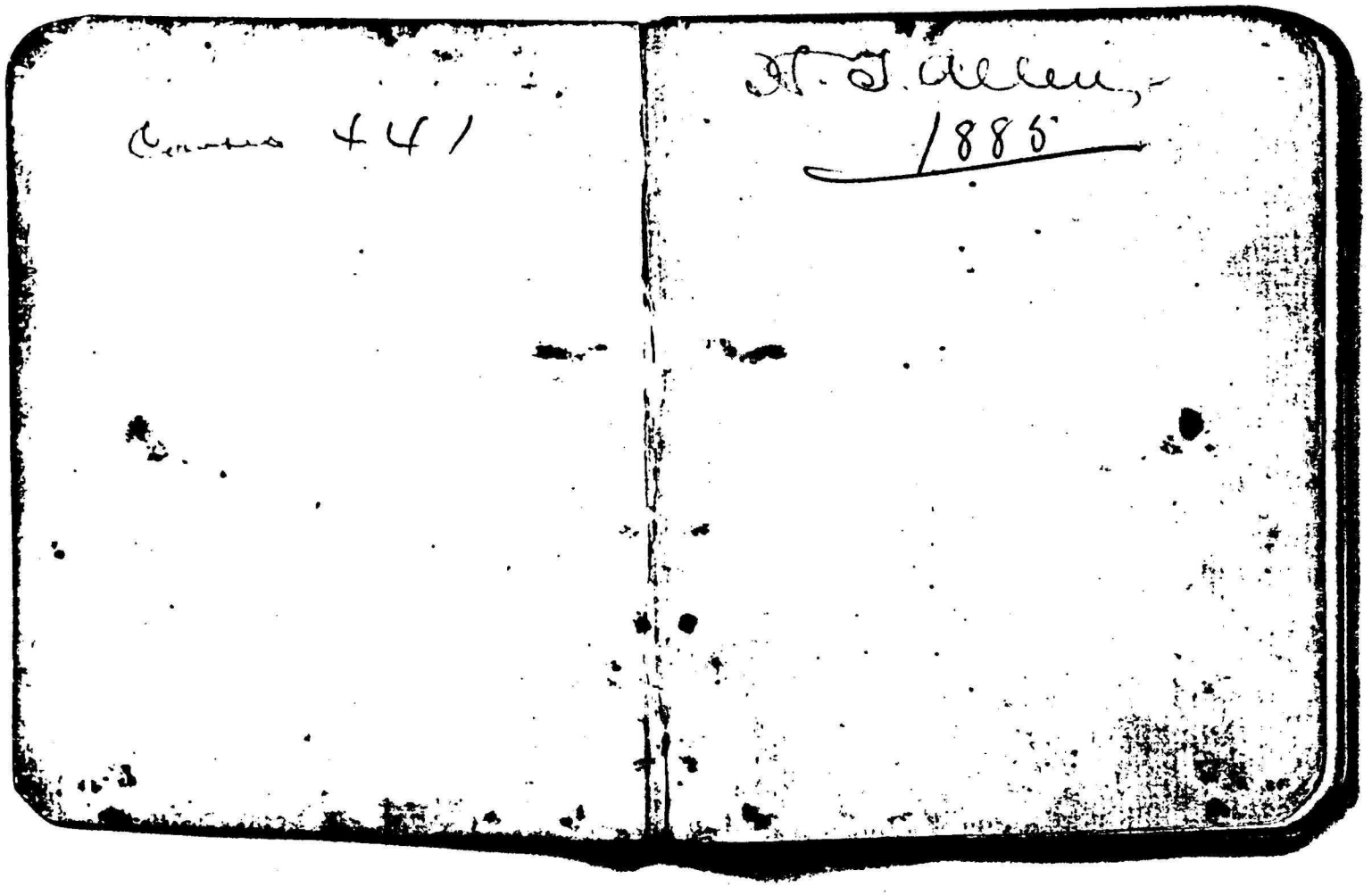
Yukon River Steamboats: Yukon (1869), St. Michael (1879), and New Racket (1883), after Schwatka and Allen. From Cornelius Osgood, The Han Indians, Yale University Publications in Anthropology, Number 74 (Yale University, New Haven, 1971), p. 7.

This section from the end-map of William H. Dall's Alaska and its Resources (1870) shows the state of knowledge of the Gates of the Arctic Region as of 1869. Except for the coastwise segments of draining rivers, the region is a blank, fit only for the map title.


ALASKA
AND
ADJOINING TERRITORY
1869.
Coast line soundings &c. from U.S. Coast Survey.
The Youkon River, Ranges of Mountains, Shores of Norton Sound & many Features of the Interior from a Reconnaissance by W.H. Dall, Director of the Scientific Corps, of the W.U. Tel. Expedition. 1865 - 1868.
ARCTIC OCEAN
Cape Lisburne
Pt Hope
C. Krusenstern
KOTZEBUE SOUND
C. Spanberg
East Cape
BERING STRAIT
Prince of Wales
Arctic Circle
Youkon Mountains
Pt Youkon
YOUKON RIVER
Low hills
Low & flat
C. Nome
NORTON BAY
NORTON SOUND
C. Darby
C. Hohomla
Nukluk
Mountains 2-500 ft
Supposed course of the Tanana R. (From Indian Reports)
Unexplored
YOUKON R.
ALASKAN RANGE
Mt Vran
Chetchitno R.

Passages from Lt. Henry Allen's original trip journal, Henry T. Allen Papers, Library of Congress.

The field notes that follow record Allen's farthest ascent of the John River, or Ascheeshna as he called it. The words ". . . and here we turn back" were the signal for the long float back down the Koyukuk to the Yukon. Before that final departure Allen stopped at the site that later became the river town of Bettles. He climbed "Mt. Lookout" behind the later townsite, describing in his notes the "splendid views" of the Brooks Range, then the Snow Mountains, and the river courses that drained them. Then, plagued by mosquitos, he and his companions jumped in their canoes and joined the current downriver.


Census 441
N. J. Allen,
1885

Dif in ws = 1°. 18'. 14"

~~57°~~ =

53°. 10' = 7hr. 0'. 35" Index error = 0

53°. 20' = 7hr 1'. 33"

53°. 30' = 7hr 2'. 31"

53°. 40' = 7hr 3'. 32"

53°. 50' = 7hr 4'. 27"

Left at 9:15 = 170 at the
very foot of Haigh Hills -
9:30 = lior + 9:45 = Sioric and Hog
lior + - In ascending this river
no diminution in volume of
water has yet been apparent -
Our food is getting very limited =
8" each beans and rice 10" flour
3" Bacon, 2" lard - little bit enough
tea and coffee and + dog, salmon
9:55 = 220 Ut Cone - 235 = l. +
Ut Cone from the left of river has
appearance of conf. 10.10.
Ascending the Aschishnah a
river with [illegible] stage navi-
[illegible] for the largest [illegible]
River bends to the general course
[illegible] = 105

which takes it to west of mts
with short snow tops 10:30 = 130
Current about 5 hr hour -
Right bank a gravel one with
much wash at ~~bottom~~
foot. Cross not Aschishnah,
but a channel of K. 11:00 = 2:30
is a large [illegible]
has high cut bank -
Halt 11.20 for noon obs -
Merid. alt. 77°. 57'. 40"
Index error = + 1'.
Left at 12:20 = 170. 12:40 = 190
12:50 = 110 - It is the
Aschishnah and here
we turn back -
Sounded this river and
find it to have a depth
of 14 or more feet and this
not confined to narrow
channel - The river will
average 125 yds -
Took dinner a little below
mouth of Aschishnah -
Left at 220 for mt Sooke

28

for observations of Ascher -
and Koukuk - Get a fine
Reached Mt Sort - at 3 [illegible] PM
Get a splendid view of Ascher
and the mountains from
which it comes. The extreme
mountains whence it comes
appears to be all of 80 or 90
miles a right line from here
The highest peaks of mts on
each side are about 4000'
above river bed being covered
with snow one third down
River makes more [illegible]
angle with the range to
East than that to West
There are only two lakes
visible and they near each
other about 12 miles from
here on East side - Other
than this the valley
presents no marked
peculiarities The

29

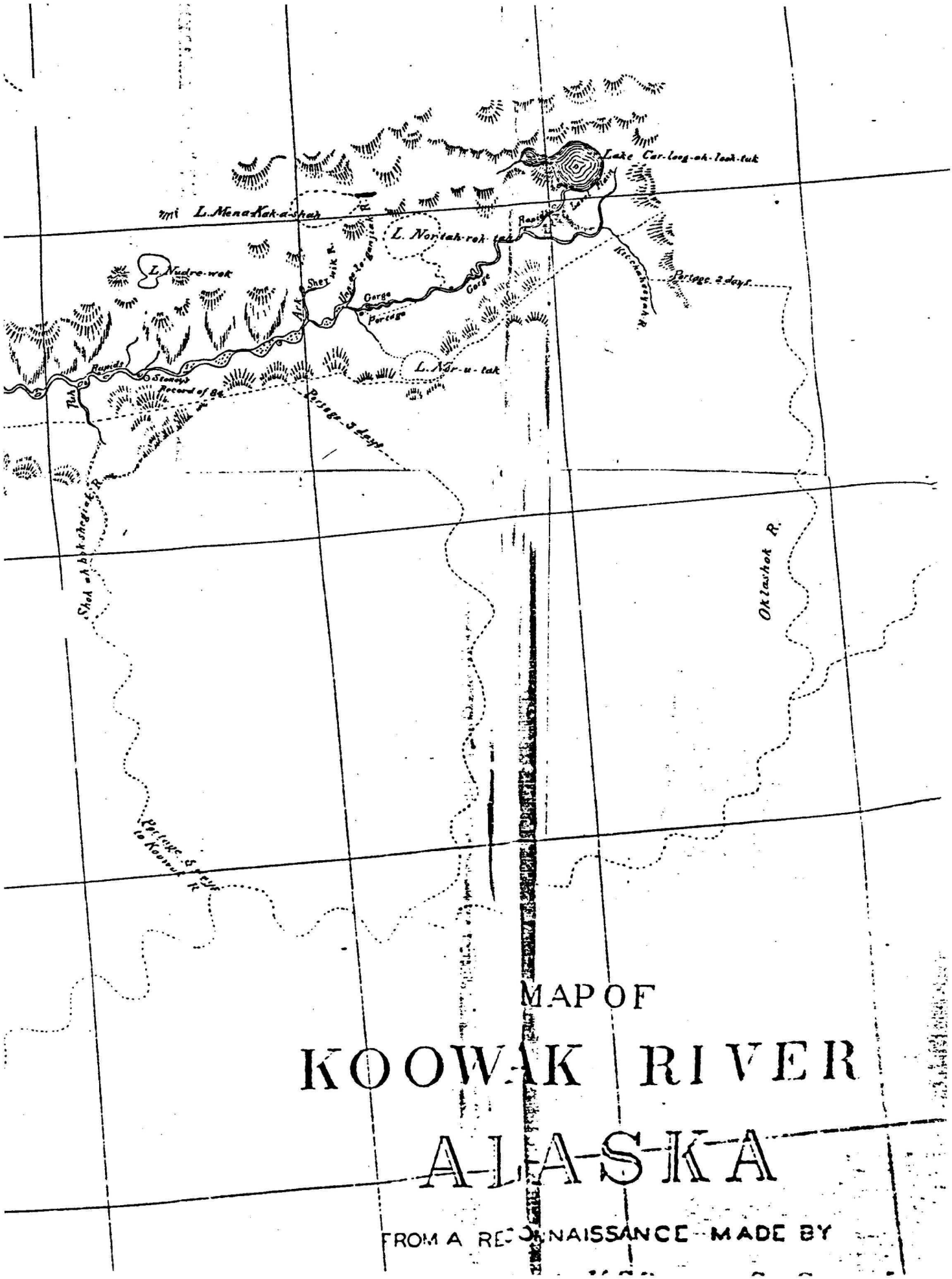
Course of Ascher - for quite a
distance is to North and East
and that what I first took to
be lakes.
The general course of Koukuk
is 205 - Mt Cone = 235 -
The course of river for about
6 miles = 190 then 3 to 5 miles =
220. then for 15 or 20 miles it
tends towards Mt Cone and
has a bearing from here
of ~~about~~ 228 ~~thence~~ it finds it
way by ~~[illegible]~~ many turns to
205 - The mountains from
which it seems to come are
much more distant than
those of Ascher - though of course
the same range - They appear
to get down to Eastward though
not to Westward as far as I can
see. I ~~to~~ take the mountains
to extend from N & W to S & E
I see a break in the mts =
195 from which I imagine
the Fotgumbitnah comes to
which place the Old nation

30 Said it would require
15 days to reach from here.
I see no lakes whatever.
Mosquitoes are worse here
than on the river. The
Mountains extend to the least
bit between the two rivers.
At 3:50 started down to
an Canoe Ready to go
down the Koukuk which I
sounded this morning and
found 18 to 20 feet.
Left dinner place at 4:40
Bound for Nulato.
5:15 = Sun dog to N. of Sun
5:35 met a Mahlamute
who had been down to
Nohoolchintah. My sus-
picions are aroused as to
whether he brought cold
Cantwell. He is going up
the Ascheshnah. He had
a bag of Iron pyrites
crystals.

31

Could make out very little
from him. Bought his pipe
and 3 dog solution from him.
His peculiar mouth orna-
ments of whalebone valued
at one skin each.
His outfit was a rather
sorry one. Went into camp
at 8:00 p.m. Our rate
was at least 9 miles
a full six being due to
current.
Distance from
Ascheshnah to dinner = 8 m
dinner to camp = 8½ × 9 = 29
Total = ~~44~~ – 37
M
Monday Aug 10th 85
Rain fell six inches last night
Left camp at 5:25 in a rain
that promises to continue.
The Mahlamute met as far as
we could learn had come from
the Alakakat. 1:50 passed
first camp above
Nohoolchintah.

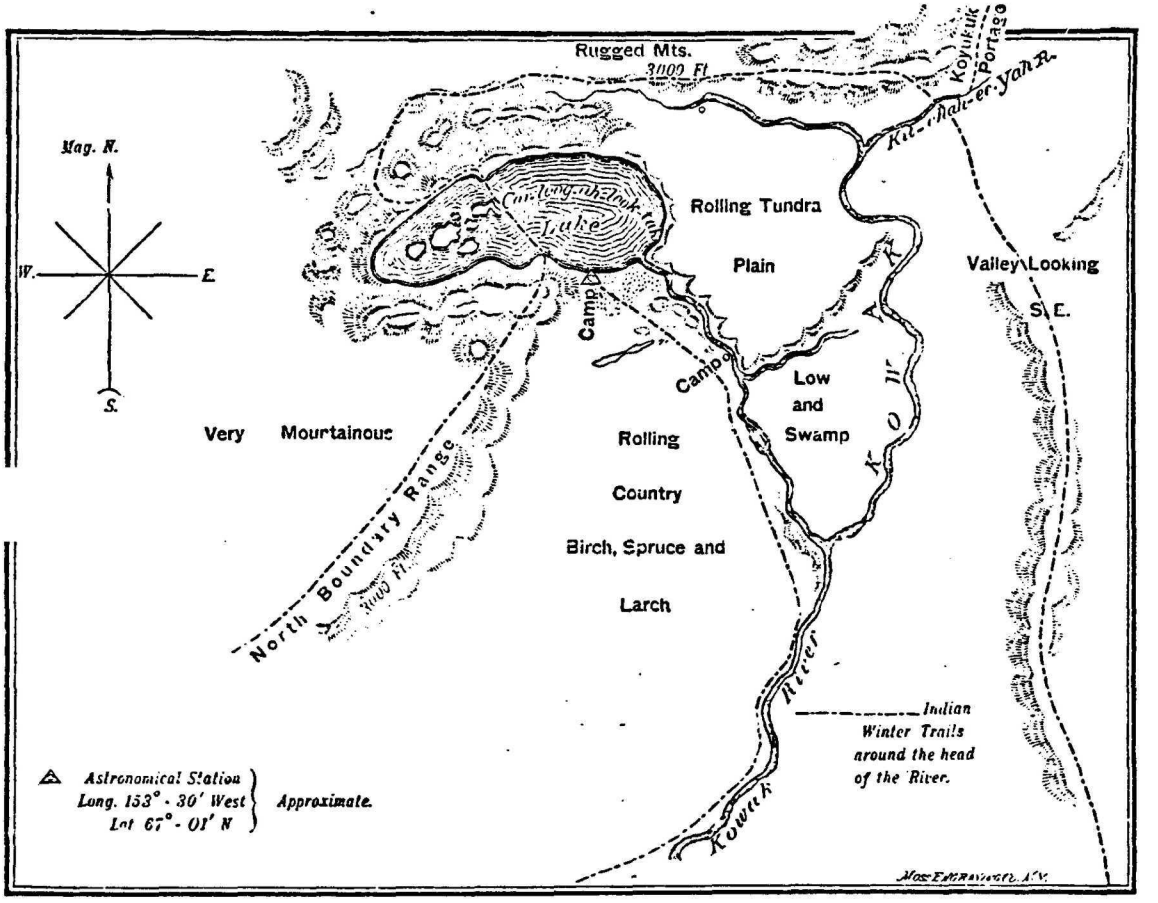
The upper Kobuk River and detail of the Walker Lake area in Lt. J.C. Cantwell's Narrative Report, from Cruise of the . . . Corwin in 1885.



MAP OF KOOWAK RIVER ALASKA

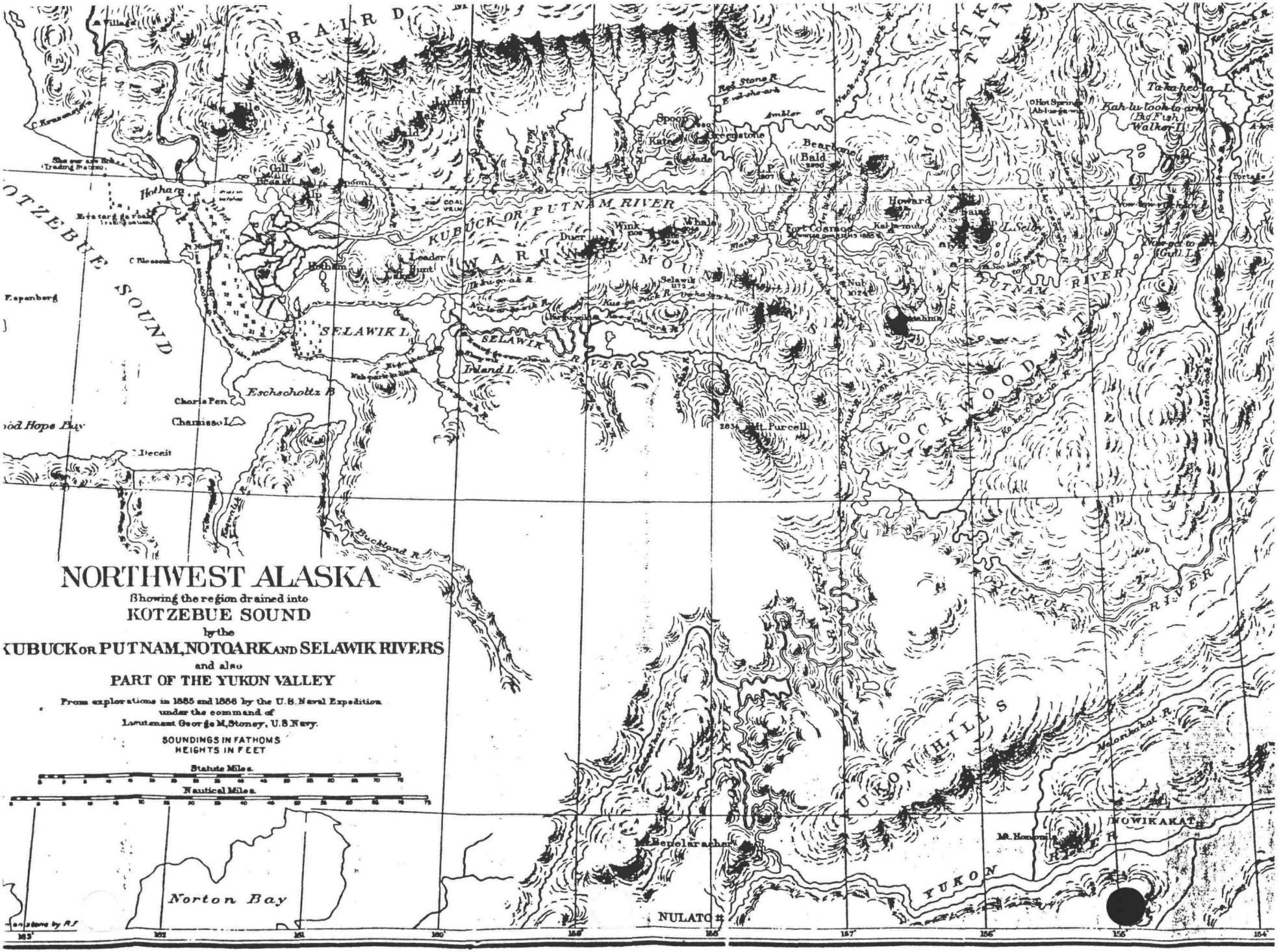
FROM A RECONNAISSANCE MADE BY

H. Ex. 153, 49 1



Rugged Mts.
3000 Ft
Koyukuk Portage
Kit-chah-er-yah R.
Mag. N.
W.
E.
S.
Lake
Rolling Tundra
Plain
Valley Looking
S. E.
Camp
Camp
Low
and
Swamp
KOWAK
Very Mountainous
Rolling
Country
Birch, Spruce and
Larch
North Boundary Range
3000 Ft.
River
Kowak
Indian
Winter Trails
around the head
of the River.
Astronomical Station
Long. 153° - 30' West
Lat 67° - 01' N
Approximate.

Section of Lt. George M. Stoney's map of exploration on the Kobuk River, published originally in the U.S. Naval Institute Proceedings in 1899. Note Fort Cosmos, winter quarters in 1885-86, near the upper center of the map, and Walker Lake, upper right.


NORTHWEST ALASKA
Showing the region drained into
KOTZEBUE SOUND
by the
KUBUCK OR PUTNAM, NOTOARK AND SELAWIK RIVERS
and also
PART OF THE YUKON VALLEY
From explorations in 1885 and 1886 by the U.S. Naval Expedition
under the command of
Lieutenant George M. Stoney, U.S. Navy.
SOUNDINGS IN FATHOMS
HEIGHTS IN FEET
Statute Miles.
Nautical Miles.
KOTZEBUE SOUND
KUBUCK OR PUTNAM RIVER
SELAWIK L.
SELAWIK RIVER
Inland L.
Eschscholtz B.
Chamisso L.
Charis Pen
Espenberg
Norton Bay
Buckland R.
Mt. Purcell
Fort Cosmos
Howard
Bearbone
Bald
Greenstone
Spoon
Whale
Wink
Duer
Leader
Hotham
Gill
Red Stone R.
Ambler or Nuck-vuck-to-ark
Kah-lu-look-to-ark
Walker L.
Ta-ka-heo-la L.
Hot Springs
Portage
Mt. Benelarachar
Mt. Honomila
NOWIKAKAT
YUKON RIVER
YUKON HILLS
NULATO
Melozikakat R.
Koyukuk River
LOCKWOOD MT.
PUTNAM RIVER
SCHWATKA MOUNTAINS
BAIRD
163°
162°
161°
160°
159°
158°
157°
156°
155°
154°

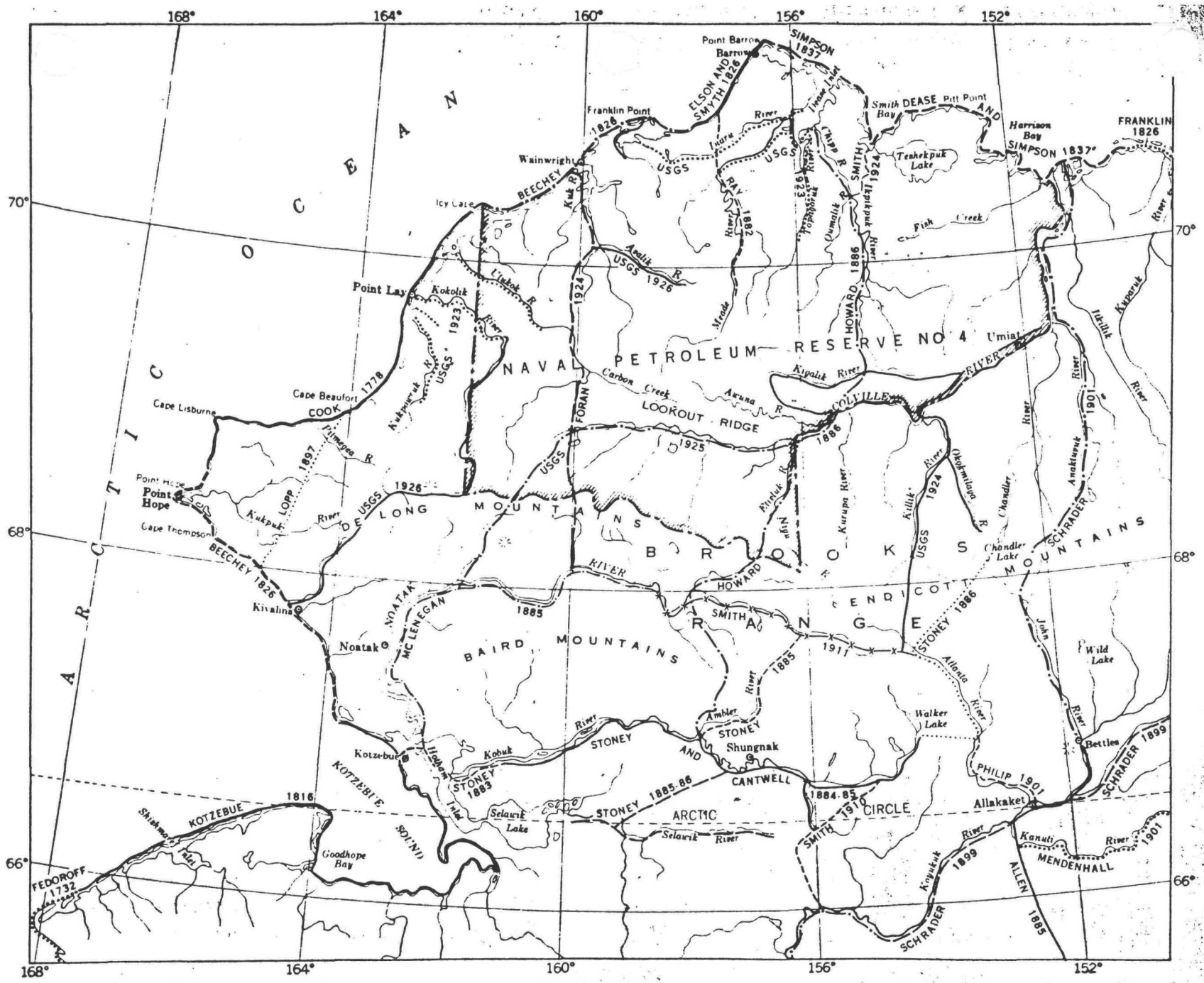


FIGURE 8.—Sketch map showing exploratory routes and progress of investigations in northwestern Alaska. (Map is modified from plate 3 of Geological Survey Bulletin 815.)

From USGS Professional Paper 301, History of Exploration, Naval Petroleum Reserve No. 4, 1944-53 (GPO, Washington, 1958).

All the northern coniferae spread the deep green of their branches on the mountain slopes, and the larch, the birch, and willow were massed in clusters of deep foliage, through which the waters of the lake sparkled like a jewel.

The country to the northeast, north, and west was nothing but a series of short, detached, and rugged mountain ranges and isolated peaks, some of which were still snow-covered. On the south, west, and north sides of the lake the mountains were at the water's edge. In some places, especially on the south side, the sides of the mountains adjacent to the lake had broken down, leaving bare perpendicular cliffs of dark slaty rock one thousand feet high, while on the other side the thick moss grew almost to the summits. At a height of eighteen hundred to two thousand feet the ravines were morasses, through which we had to wade, up to our waists in water and thick grass, to reach the top. At the east end of the lake the country was low, rolling tundra land, through which the river flowed to the southwest.

Five islands were crowded together in the west end of the lake, and were covered with spruce and willow trees.

Our point of observation was about half way down the lake on the south side. Here the cliffs were almost perpendicular masses of granite, broken into many

peculiar forms by frost. Upon one of these cliffs I carved my name and the date of the arrival of the party at this point.

Opposite, a sand-spit projected into the lake from the north shore. With this single exception, the beach on that side is an unbroken line of white sand, extending from the head to the foot of the lake. On the south side two projecting points divide the sheet of water into three almost equal portions.

From our high position we could see that the lake contained no shoal places, except at the mouth of the outlet. The depth of water must be very great, as we could not get bottom sounding with a forty-fathom line.

When hunting around this lake during the winter the Indians cross to the north shore at the point where the long sand-spit projects into the water. A short walk along the beach to the westward brings them to a place where the ascent of the mountains can be made, and they reach the ridge along which they travel in order to get around the head of the river. In this vicinity the deer are said to congregate in great numbers, and the dry river-bed, filled with snow, affords a natural and easy means of capturing them. . . .

. . . . . .

Having completed the reconnaissance of the lake, we returned to our boat, and next morning set out for the smaller branch of the river by means of a shallow stream which leads from the lake outlet almost across the low swampy land which lies between this river and the Kowak [Kobuk]. We made a short portage and reached the Kowak, up which we began to shove the boat. The river here was not over fifty yards wide and scarcely more than one foot deep anywhere. All day we pushed the boat up the shoal stream past the mouth of a small stream called the Kit-chah-ee-yak, and did not rest until the lightened boat, drawing five inches, would no longer float.

The Kit-chah-ee-yak River, which flows into the Kowak near the foot of Lake Car-loog-ah-look-tah, drains a valley in the southeast which lies at right angles to the Kowak Valley, and it is the most noticeable, in fact the only, break in the mountain-bounded horizon. The natives informed me that by crossing the ridge which forms the northern boundary of the Kit-chah-ee-yak one day's journey in winter brings them to the Ah-lash-ok [Alatna] River, which is a tributary of the Koyukuk. This is the route taken by the Kowak Indians when they wish to meet those of the Koyukuk in order to trade.

Cantwell's downstream journey through the Kobuk canyons was nearly foiled by the patched and battered skin boat. Protecting it with a false keel made of a spruce tree and basketwork bumpers made of woven willows, the crew lined and portaged through the narrow passages, finally reaching deep water and the launch.[39]

While Cantwell steamed and boated up the Kobuk, another of Corwin's officers, Asst. Engr. S.B. McLenegan, and Seaman Nelson struggled up the Noatak River in a 3-hole kayak or bidarka 27 feet long. Theirs was an arduous journey through barren, rainy wilds with hardly any respite from hardship and suffering. During the month's ascent to a point more than 300 miles above the river mouth, they spent endless hours waist deep in the freezing current harnessed to the tracking line. Short rations, constant cold and wet, and grueling labor mark this heroic exploration.[40]

In characterizing the river, McLenegan stated that ". . . it was known only from native accounts, for there is no record of it ever having been visited by white men." Even the Yukon traders knew nothing of this river, beyond a vague conception of its being there, indicating ". . . how utterly blank was that vast region even to those best informed." McLenegan traced the river through alternating mountains and lowlands, ending in its upper midcourse "lying on the tablelands of the interior . . . . an elevated plateau, rolling occasionally

into hills and then stretching away into vast tracts of moorland."[41]

A few paragraphs of McLenegan's narrative of exploration distill his and Seaman Nelson's hardships and hardihood:[42]

> 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. . . . The sense of utter desolation and loneliness which took possession of the mind was indeed difficult to dispel . . . . No trace of human habitations could be found, and even the hardy waterfowl seemed to have foresaken the region, leaving nothing to remind us of the great and busy world thousands of miles below.
>
> . . . . . .
>
> The stream again pursued a very tortuous course, winding in and around the mountains, through deep canyons and gorges, where, in spite of the wretched weather, we could not fail to admire the grandeur of the scenery. In the mean time the fresh breeze of morning had increased into a gale which fairly whistled through the chasms, and hoisting our sail, we were driven rapidly forward, notwithstanding the opposing current in the river. The work now became exciting in the extreme. . . .

Imbued with a spirit of boldness bordering on recklessness, the canoe was driven before the gale.

. . . . . .

Directly above here the river, by a sharp turn, leaves the mountains and enters upon a country of an entirely different character. Indeed, this sudden transformation of scene is one of the most peculiar and striking features of the Noatak River region.

As we entered upon this last section I cannot convey an idea of the picture which met our view. 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.

A fresh breeze sprang up, and as usual, we made sail in order to lighten our labor. Proceeding in this manner for a mile or more we reached a rapid portion of the river, which I determined, if possible, to sail through, hoping to save the cold bath which would otherwise be involved, for the tracking line could not be used in passing it. By dint of hard work we had gotten about

halfway through when the bidarka fouled with a sunken rock. Before the calamity could be averted the canoe had whirled broadside to the current and capsized. Fortunately the water was not deep, and so soon as our senses were recovered we righted the craft and put into the bank. A survey of the damage revealed only a thorough wetting, and our next impulse was to indulge in a hearty laugh, even though there was nothing particularly ludicrous in the situation. The canoe had partly filled with water, by which everything was more or less damaged. The only serious loss was that of our footgear, which, by some unaccountable means, had disappeared in the excitement of the moment. Otherwise than an icy bath, however, and the loss mentioned, we experienced no particular hardship. . . . Indeed, the difficulties encountered only seemed to awaken the stubborn elements of our natures, and with a determination not be baffled, we prepared ourselves to meet anything short of utter annihilation.

. . . . . .

Late in the afternoon we found on the left bank what appeared to be a grave, and, prompted by curiosity, I determined to halt and examine it. Upon gaining the spot we discovered that it was a well-disguised cache, containing a large quantity of skins, native clothing, boots, and a general assortment of native possessions,

together with a sledging outfit. The significance of these caches now became evident; the extreme difficulty attending the navigation above this point made it clear that the natives, on returning from the coast, abandoned the river here and completed their journey on sledges.

. . . . . .

We had now gone beyond the head of canoe navigation and had reached, practically speaking, the headwaters of the river. The vast number of lakes which covered the face of the country, all of which were drained by the river, made it evident that it could not be traced to one source. Above us the Noatak divided into several branches, and as none were navigable, further progress was manifestly impossible. 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.

. . . . . .

Late in the evening we gained the rapids above the canyons, and, with a common impulse, grasped the paddles for the coming struggle. Finally, after rounding a sharp turn, the canyons suddenly loomed up ahead, the lofty walls of which towered hundreds of feet above us. Swiftly we were drawn in by the rushing waters and soon

> gained the gloomy depths of the gorge. Every faculty was now on the alert, for the dangers seemed to multiply as we advanced.
>
> . . . . . .
>
> After 2 o'clock we entered the "home stretch" of the river and eagerly strained our eyes to catch the first glimpse of the sea. In the distance, on the opposite shore of the inlet, the clear-cut headlands stood out in bold relief against the evening sky. The feelings of joy and relief which rose within us found no room for expression, and the prospect of a speedy termination of our journey, after the many hardships of the summer, was indeed cheering.

In 1885, as in 1884, the Revenue Marine had "upstreamed" the Navy, Cantwell on his return down the Kobuk again passing Stoney on the way up. But the more deliberate Stoney had compensated by organizing and equipping for a new kind of interior arctic exploration. Not satisfied with the limitations of summer reconnaissance, he had provisioned for a 20-month overwintering expedition manned by a large contingent of officers and men. His well-laid plans included two river steamers, one a flat-bottomed boat for low-water travel, and a portable steam-driven sawmill. This he used to build a winter camp, Fort Cosmos, some 250 miles up the Kobuk. From this base, near the location of the modern

village of Shungnak, he could send out expeditions in all directions--using dogs for extensive winter travel through the mountains and toward the Yukon. He assigned his officers specific scientific and expeditionary responsibilities, maintaining strict military schedules and discipline.[43] Under this regime an impressive list of accomplishments resulted, summarized here by Morgan Sherwood:

> Once settled in at Fort Cosmos, Stoney organized a number of winter trips. Surgeon F.S. Nash was sent inland to collect ethnographic information. On December 26, Engineer A.V. Zane crossed over to the Koyukuk and descended it to the Yukon and St. Michael, returning in February of 1886. Stoney himself explored Selawik Lake and River, began observations for a base line to triangulate the Kobuk Valley, and examined the headwaters of the Noatak and the Alatna. He reached Chandler Lake and a tributary of the Colville, where he was told by natives about a route to Point Barrow. By the end of the summer of 1886, Stoney had completed an instrumental survey of the Kobuk Valley, prospected the famous jade mountain, and sent a party to complete a survey of the Noatak.
>
> The most original exploration of the Stoney Expedition was undertaken in April by Ensign W.L. Howard. With two white men and two natives, Howard struck due north across the Noatak and portaged to a native village

visited by Stoney earlier in the year. Howard then descended to the Colville and followed it a few miles before crossing to the Ikpikpuk, which took him to the Arctic Ocean near Point Barrow.[44]

Stoney's full report with finished maps was never published, nor were the individual scientific reports of his officers. Stoney asserted that both the Secretary of the Navy and the Congress had approved report publication, but "In some way the papers have mysteriously disappeared."[45] Historians attribute the loss to various causes: interservice rivalry, personal rivalry between Stoney and Healy, or the fears of Navy brass that Congress would charge them with "wasteful duplication" of effort on the Kobuk River.[46] Alfred Hulse Brooks of the U.S. Geological Survey greatly admired Stoney's accomplishments and lamented that only Stoney's later abbreviated account, the expedition log, and the manuscript maps survived the suspected purge of records.[47] That abbreviated account, first published in the Proceedings of the U.S. Naval Institute in 1899, remains the principal source for Lieutenant Stoney's 1885-86 Northern Alaska Naval Exploring Expedition. Manuscripts and the diary relating to Ensign Howard's northern Alaska crossing have recently been found and summarized by anthropologist Edwin S. Hall, Jr., allowing detailed insight into that momentous journey.[48]

From both Stoney's account and the log book of U.S.S. Explorer (the shallow-draft sternwheeler that served as expedition workhorse on the Kobuk) emerges a picture of detailed planning, logistics, and camp operations. Stoney knew the value of Native clothing; he traded tobacco and other goods for Native boots, pants, parkies, mitts, and skins as the charter schooner Viking conveyed the party up the coast to Kotzebue Sound. He used Native labor extensively in relaying his elaborate inventory of supplies up the Kobuk, using cache camps at intervals up the river, for his boats could not haul all the goods at once. (This deliberate and staged advance gave Cantwell the short-term lead on the Kobuk that year, but was the key to Stoney's staying power over the winter.) Camp buildings copied Native cold-weather building technology, being semisubterranean and covered with dirt like Native winter houses.

Once established at Fort Cosmos, the race against winter commenced in earnest. The prime necessities were shelter, wood, meat, and fish--for heat and food, for man and dog. Both Natives and whites were employed in the many tasks according to Stoney's division of labor into specialized work gangs--fishermen, woodcutters, carpenters, and sawmillers. Native women dried salmon for winter use. Refined modes of water supply, heating, sanitation, and exercise, along with careful diet and food preparation, assured a healthy camp. Established routines, amusements, and technical instruction eased the psychological burdens of camp life.

By late September the boats were laid out for the winter, beyond the reach of crushing winter ice. Supplies were cached. The men had moved into the large winter house and serious exploration could begin.[49]

From the central location of Fort Cosmos, well up the Kobuk River, ". . . we were able to strike across the several divides into the adjoining river-valleys by comparatively short routes . . . ."[50] As soon as ice and snow conditions allowed, beginning December 1st, individual exploring parties fanned out to the Noatak headwaters and across the Arctic Divide, to the Koyukuk and St. Michael, to the Reed River hot springs, and to Selawik Lake. Later Stoney set up a base line for triangulation of the Kobuk Valley; still later he proceeded from its head to the Alatna headwaters and over the Arctic Divide to Chandler Lake, named by Stoney for the Secretary of the Navy. On his trips across the divide where the streams flowed north into the Colville River, Stoney contacted mountain Eskimos. They refused to guide him to the Arctic Coast in winter because they would starve for lack of game, but they agreed to do so in the spring. This set up Howard's trip to Barrow.

On June 15, 1886, Fort Cosmos was abandoned and the boats started downriver. In the general movement toward the coast, and later from Camp Purcell on Hotham Inlet, side expeditions to the lower Noatak, Jade Mountain, and Selawik Lake

completed Stoney's survey goals. On the night of August 25 the entire party came together on the Revenue Cutter Bear, which had earlier retrieved Howard at Barrow, and sailed next morning for San Francisco, courtesy of Captain Healy.[51]

Stoney's summary of the expedition's work testifies both to his leadership and to the devoted service of the whites and Natives who made his crew:

> The Northern Alaska Exploring Expedition was in existence one year, six months and fourteen days. From the time we landed from the "Viking" until we went aboard the "Bear" on our return trip, we were four hundred and eight days in the country, during almost every day of which time we were actively engaged in hard work, walking, rowing, tracking, surveying, housebuilding, sledging, etc.
>
> Sledging excursions were out from the fort twice for more than a month at a time, during a total of two hundred and seventy-three days, covering some 3000 miles of journeyings.
>
> During the whole period there was not an accident or a case of illness of any kind, though the life was one of unusual hardship and unceasing exposure, often in a temperature seventy degrees below zero. Each officer and man entered into the spirit and purpose of the work

> with cheerfulness and determination, and each and every one did his duty well, and in a manner worthy of the highest commendation, and I take this opportunity of again thanking them. Nor should the natives be forgotten. They were honest, willing and obedient, and of incalculable service to the expedition.[52]

The following excerpts from Stoney's Explorations (including Howard's formal report of the Barrow trip) convey the discoverers' views of a new country. They also give a last view of interior Eskimo life at the break point between traditional ways and the new ways brought by traders, whalers, and other white men whom the Eskimos met each summer at the coast. By 1886, most of the Eskimo groups had been severely affected by the combination of caribou decline and the diseases and trade goods of the white man--particularly introduction of the rifle, which largely eliminated communal hunting patterns. Starvation, death from disease, and a desperate kind of mobility as people fought for survival and access to addictive trade goods had already disrupted normal seasonal rounds and wreaked social havoc. "Howard [and Stoney] travelled through an impoverished Eskimo world, shorn of many of its participants and contaminated by introduced traits, a world that would soon cease to exist".[53]

Lieutenant Stoney's account comprises summary reflections on conditions and techniques of travel, shelter, and the like, punctuated with interludes of direct experience and

observation. He is a bluff, no-nonsense man, seemingly impervious to doubt or introspection. This sampler, including trips to the Noatak headwaters and up the Alatna River past the Arrigetch Peaks, which Stoney recorded for the first time, shows a leader of exploration at work:[54]

> Experience has proven conclusively to me that in Arctic Alaska the surest and best routes for travel lay along the rivers and lakes. Going across the country is seldom practicable. In summer walking over the tundra land is so fatiguing that but little headway can be made. While in winter the snow lies to a depth of from ten to fifteen feet, in many places drifting to a much greater depth. A road has to be broken ahead of the sledges by men on snow-shoes, and the snow is so dry that the least motion in the air will cause it to move and cover your tracks before you can retrace them. Then, too, you encounter brush through which a way is hard to make. Along the rivers and lakes you have the banks to guide you, and where the snow has been blown off, which is often the case, you have a smooth surface to sledge over. In places where the current is strong, however, the ice overrides and makes it very rough, and a road has to be cut through or you must go around.
>
> . . . . . .

For transportation sledges drawn by natives or dogs or by both are the most practicable. Reindeer are not desirable, as they have little strength and endurance as compared with the others. The fact that the Siberian natives, who have herds of tame reindeer, use their dogs for transporting their camp outfits, proves the superiority of the latter.

As between the natives and the dogs, the former are to be preferred, as in addition to their intelligence, they can pull nearly three times as much as the latter, and can exist on as little food. Four natives can pull a sledge-load of over one thousand pounds over a comparatively rough country, while it would require at least ten dogs to do the same work. My dogs were the subject of careful investigation; they were carefully weighed before and after trips, their habits were noted, and I fed them myself.

. . . . . .

On December 1st, 1885, I left Fort Cosmos, with Ensign Howard and four natives, to explore the headwaters of the Notoark [Noatak] or Inland River, and to decide on the practicability of sledging to the northward to Point Barrow. My outfit consisted of three sleds, twenty dogs, rations for twenty-five days and a complete traveling equipment.

The route lay across the tundra on the northern side of the Putnam [Kobuk] valley, over to and up the Nut-vuck-to-wo-ark [Ambler] River. This road is good in early winter; later the snow is drifted into the valleys by the high winds to a great depth. A great objection to this route is that the rapids do not freeze; a thin ice forms over them, which is so deceptiv that dogs and sleds break through, necessitating the making of roads along the banks among the growth of low brush; and even here are numerous springs so treacherous that I often went through. Sometimes there is no covering to the fast-flowing water and fordings have to be made; the water is shallow enough, but the dogs have to be pulled in, and one's boots of deer-hide must be changed for others of seal. The dogs suffer from the water freezing on them, and changing boots in an atmosphere of 50° F. below zero is not pleasant.

To cross the thin ice over running water, the natives make a bridge by laying saplings, two and three feet apart, over th

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 on to the bridge; once on, they quickly get over to the strong ice. By these bridges I crossed, with a sled weighing several hundred pounds, over ice so thin that it could not bear the weight of a single dog.

Whenever stops for the night were made, the dogs were chained up and the tent pitched when the weather was bad, otherwise a native camp was constructed, as follows: Selecting the most sheltered spot, a pit is made in the snow about fifteen feet square and six inches deep by stamping it down with the feet. Around this is built a wall about four feet high by laying young spruce trees on top of one another, and cutting off their inside branches on the side you sleep. This wall has two openings or breaks at one end opposite each other, dividing the wall and pit into two parts with a through passage way separating them. Along this way, which must always face the wind, a fire is made of dead wood. On one side of the fire, fine boughs are laid down on the snow and on top of them the sleeping gear. Such night camps are recommended; they are easily made and the coldest nights can

be comfortably passed in them. The only drawback is the annoyance of getting wood.

. . . . . .

On December 9th, I reached Nimyuk (Cotton-wood), the highest settlement on the Notoark River. The village consisted of four huts and thirty inhabitants, subsisting almost exclusively on deer-meat of which they had at least two thousand pounds on hand. The day of my arrival they killed thirteen deer; and in some of the caches were as many as thirty. I was considerably annoyed by the curiousity of these people and by their superstitions. 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 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. In most places these habits could be overcome by paying, but I met with no success at Nimyuk though offering tempting inducements.

From Nimyuk I stood to the northward and eastward, following one of the branches of the Notoark to its source in the

mountains, then over the dividing ridge where I struck the headwaters of the Colville River, down which I traveled several miles, coming to Issheyuk, a village of fifteen huts, situated near the northern limit of the mountain range. Approaching the settlement, I was stopped by some natives who demanded tribute; my natives becoming terrified, advised compliance. Suspecting foul play, I told them I would consider their request when the village was reached, and so proceeded on, and soon learned that my supposed ignorance of their ways had induced some scamps to attempt to impose on me. 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. I remained one day at Issheyuk and learned that some of the natives went to Point Barrow every summer. This information was verified by the army blankets, army overcoats, and army buttons which they had, and which they said, they got from white men at Point Barrow, evidently the party of Lieut. [P.H.] Ray, U.S.A. I offered every inducement to be taken to Point Barrow, but without success, for they declared that to go at such a time would result in starvation. However, they

offered to take me next spring. Not having enough provisions to last until then, I decided to return to Fort Cosmos and to try more to the eastward. Before leaving I made arrangements with the most influential man, Owpuk, to send a party with him to Point Barrow in the spring in case I could find no better route to the eastward. So on December 12th, I left for home, following the same route, and arrived at Fort Cosmos, December 19th.

At Nimyuk, at the headwaters of the Notoark, the natives live in hemispherically shaped huts similar to those of the Putnam; they have two ice windows on either side the entranc 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 meat 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 the 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.

Stoney's trip to the Alatna River, providing the first recorded description of the Arrigetch Peaks, occurred in March 1886:

> Ten miles up the Al-lash-ook [Alatna] to the northward and westward, the A-koo-loo-ik River enters the left bank. Still higher up at the bend in the river, the Ping-ing-a-look River comes in on the left bank. At this point the valley narrows to less than two miles and is well wooded; the mountains are nearly bare and steep, with numerous waterfalls running down to the swift and tortuous river here only thirty yards wide.

About five miles beyond, the Koo-to-ark [Kutuk] River comes in from the northward and eastward. The configuration of the surrounding heights [Arrigetch Peaks] at this junction is worthy of note. 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.

The Al-lash-ook was followed to a fork near its head and then the Koo-to-ark, a small branch on the left bank, was taken, and followed to its headwaters. The Koo-to-ark River at its junction with the Al-lash-ook is thirty yards wide. It flows from the northward in a tolerably straight course. Coming close down to the water are dome-shaped mountains 3000 feet high, for the most part bare, with here and there little patches of soil with a scant growth. Twenty miles up the Koo-to-ark even this growth practically ceases, excepting at long intervals, when a few poor cottonwoods and willows are found. At one of these spots near the headwaters is the small village of Nimyuk (cottonwood), well up in the mountains. It is a stopping place for deer-hunters and traveling parties.

After thirty-five miles on the Koo-to-ark, I crossed the mountains to northward and eastward over a pass 1070 feet higher than the Koo-to-ark, and came to the village of My-og-arg-a-look. Twelve miles beyond to the northeast, we came to O-co-mon-e-look after crossing a pass 1000 feet higher than the previous one. The road then lay in the gorges over small streams filled with boulders and snow. When ten miles northeast from O-co-mon-e-look, I crossed another pass, unmistakably the work of a glacier, and reached a chain of lakes and the limit of the mountains.

The largest lake, which I named Lake Chandler, after the Hon. Secretary of the Navy, lies between two regular mountain chains, which rise 1050 feet above its level. The shape is regular, running ten miles in length, N.N.E.1/4E., and from one mile to 1000 yards in width, and it is so deep that no bottom can be seen. The lake was frozen with ice five feet three inches thick. There is no growth about the shores nor on the mountains. The lakes undoubtedly are supplied with water from springs; the numerous air-holes and cracks indicated this, as well as the bubbling appearance of the water. I was told that this lake rarely froze over completely, ordinarily a strip of water six feet wide remained open all winter. This part of the journey was still

harder because of the scarcity of fuel and consequent sameness of food, frozen deer-meat.

When at the head of the last lake I felt the actual need of some warm food and drink. No fuel could be procured and my alcohol being out, I purchased a sledge for fuel so that some meat could be cooked and tea made. 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.

I reached the lake on March 18, and learned that there were no natives beyond this point until the coast was reached. I again endeavored to get the natives here to go with me to the Point Barrow coast, but they refused, saying, however, that later, when the rivers that flowed to the northward broke, they would take me. Seeing the impracticability of going any further at this time, I decided on returning as quickly as possible, in order to send an officer with these people some of whom went to the Arctic Ocean every spring. So arrangements were made with them for taking a party later on.

Ensign Howard, by contrast to Stoney, had to overcome the normal human foibles of fear and uncertainty in strange places. With perseverance and growing confidence throughout his journey, he did overcome, brilliantly. A keen and respectful observer, he was willing to live off the country and follow the lead of the Natives, whose knowledge he admired. In short order, they incorporated him into their lifeways and seasonal rounds in a manner that transcended formal hospitality. On April 12, 1886, Howard left Fort Cosmos with Crewman F.J. Price and three Eskimos, en route to Barrow. As on the earlier trip with Stoney, the party ascended the Ambler River and crossed the divide into the Noatak basin in search of Owpuk, the Eskimo leader who in December had pledged to Stoney his guide services for the trip to Barrow. We pick up Howard's account as he proceeds through the villages of the Noatak and across the Arctic Divide to the Etivluk River in the Colville basin. What follows is a unique description of Eskimo life on the knife edge of tradition and transition. Howard's participation in and description of the traditional mountain Eskimo spring gathering and trade journey to the coast is one of a kind. There is no other first-hand record of this event, soon doomed to extinction.[55]

> April 15, made Koolooguck and learned that Owpuk, the native with whom I intended traveling to the coast, was still at

Issheyuk. The deer hunters returned, bringing five deer. April 16, left the village and reached Aneyuk on the Notoark river, distant about ten miles N.W. Found the guide of my former trip, Ashewanuk, who said Owpuk was not at Issheyuk and that the village was deserted. Hired this guide to help me find him. Aneyuk is the highest point on the Notoark river reached by the natives in boats. In the fall they come here and wait for the snow to sled into the interior. The skins of the boats are cached until the next season and their frames are placed on high racks to prevent animals eating the lashings. In the spring the people come down by sleds to Aneyuk, put together their boats, and go by water to the coast. This custom is general, only a few families remaining in the mountains. April 17, left Aneyuk and arrived at Shotcoaluk twenty miles distant N.E. where I remained until the 20th on account of a heavy wind storm that filled the air with fine snow obscuring the nearest objects. Here I received one hundred pounds flour that had been sent ahead. April 20, left Shotcoaluk for the mountains. The snow drifted so the leading dogs could not be seen, and everybody suffered from the piercing cold. Connected all the dogs and sleds in line ahead and made for the nearest valley, clinging to the sleds to avoid getting lost. Finally went into camp in a shelter cut out of a large snow drift. April 21, left this camp; made about 12 miles north and reached the Etivluk

river whose headwaters are at Issheyuk and which helps form the Colville river. The village, twenty miles west of Issheyuk, contained one family, and I was informed that all the natives had gone down this river and were encamped below. April 22, started down the Etivluk; came to a deserted village and was disappointed in not finding Owpuk. Continued on and reached the village of Toolooouk where I found him. The natives seemed glad to see me and sent dogs to help as soon as we were sighted. There were ten houses in this village and seventy natives; but this number varied as people were constantly coming and going. After a long talk with the natives, Owpuk consented to take me to "salt water." In the meantime a special hut had been built for myself and party, out of poles stuck in the snow with their upper ends bowed and lashed together and over this frame was put a cover of sewed deer skins. At this place I discharged my new guide and sent back the two natives brought from Fort Cosmos, with a large sled and eight dogs, and a written report of my trip up to date.

We spent a week at this village situated in a deep valley just off the Etivluk river. On the hills above, natives were always on watch for deer, and when sighted, all the young men would leave for them. A number were killed which the women brought in, dressed and prepared. All the work in the

village was done by the women; 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. 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. These natives had immense bundles of skins to trade on the coast for seal oil, rifles, etc., the natives on the coast depending on them for their skin clothing. The skins are dried and kept in bundles outside the houses, except wolf skins which are hung from poles at some distance from the village, as a charm against disease. Whenever the sleds stopped the wolf skins were first taken off and hung away as above. A grand dance took place which I attended. This was a rehearsal in preparation for the dance upon meeting the Point Barrow natives. May 1, twelve sleds, including mine, left Tooloouk. Each sled averaged four natives and four dogs. Some were bound down the Colville river and some down the Ikpikpuk. Stopped twice to get deer and learned that the long wait at Tooloouk had been to allow the deer to get ahead as they depend upon them for food. All the deer killed were covered with parasites which the natives eat greedily.

May 2, under way; making frequent stops to allow the old people to catch up. All hands traveled on snow-shoes, the sleds being too heavily loaded for any to ride. . . .

[On May 5 the travelers made camp] at the limit of the mountains; on all sides and ahead was undulating land. May 6, under way, making frequent stops; made about six miles N. by W. During the day an addition was made to the party in the form of a baby boy. A place was hollowed out of a snow drift and a couple of deer skins put in. The caravan then continued on leaving the woman behind alone. Towards evening the mother with her infant came into the camp, having walked a distance of three miles.

May 7, under way. Made about twelve miles N. by W. when reached the village of Etivoli-par. This is situated at the point where the Etivluk river flows into the Kungyanook, or Colville river. At this place those who go down the Colville river leave their boats in the fall and wait for snow to sledge to the mountains. Most of the natives with whom I was traveling remained here waiting for the ice on the Colville to break up. The woman with the baby had hard work to keep up; upon my offering her a ride the other interfered, saying she must go on foot; she also had to make her own fire, cook her own food and use her own special utensils; according to

their superstitions to do otherwise would result in misfortune to the child. May 8 to 12, remained at the village, during which time it was either snowing or raining. The natives opened their caches made last fall, and deer meat and fish were taken out frozen solid and in perfect condition. On May 11, 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. I was not allowed to shoot it. Natives here brought me a small mammoth tusk, but I left it on account of my load and their telling me there were plenty on the Ikpikpuk.

May 12, eight sleds, including my own, started for the Chipp or Ikpikpuk river, going on down the Colville . . . . May 23, under way. Made the rendezvous village of Kigalik, consisting of thirty tents and one hundred and fifty natives. Just before arriving at Kigalik, came upon the racks holding the boat frames, and each native examined his to see that it was all right. Counted eighteen oomiak and twenty kyak frames. Under the frames was a cache containing the boat covers. As we neared the village our party was met and assisted with extra dogs and escorted to the lower end of the camp which had been reserved for us. In the center of the village a large dance house had been made by sticking poles into the ground and hanging skins over them, everyone

furnishing a few skins. In this house the men worked at new boat frames during the day and all hands danced at night, their food being carried there by the women. The latter spent their time in tanning skins and making clothing. The wood for the boats came from the rivers to the southward, passing through many native hands. The boats are lashed with strips of whalebone; the oomiaks are covered with sealskin and the kyaks with deerskins.

May 24 to 30. In camp at Kigalik . . . . Made a sledging trip to the headwaters of the Ikpikpuk river. It is formed by the junction of several smaller streams which drain the hills between it and the Colville. From the top of the highest hill on the river (500 feet), I got a good view of the Ikpikpuk. It is tortuous in the extreme, bending and doubling upon itself in a remarkable manner. During my absence the natives had made all preparations for starting down the river, boats were covered, sleds put away, etc. I gave my sleds and dogs to Owpuk.

June 2 to 8. In camp at village. The ice began breaking and the river rising. The high water forced everybody to leave the quarters on the spit and move into the interior. Many natives moved only a foot or two at a time. 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 picked up their submerged knives. Instead of dancing in the evenings the favorite amusement now was tossing in the sealskin blanket. The river rose six feet by June 6, and then commenced falling. Boats were got ready and all stuff not needed for the journey was cached. June 8, left Kigalik, five oomiaks starting, and made about fifty miles down the river. Just before camping passed a small creek coming in on the left which was stated to be very long. The boats are loaded and handled very skillfully; poles are stuck along the sides to keep the load in place, which is piled four feet above the gunwale. Some heavily loaded oomiaks have kyaks lashed each side to insure stability. The owner steers from the stern, the family sit in the bow and paddle with short handled broad bladed paddles. Each boat has a long handled narrow bladed oar which the women pull, using a hide oarlock. Stopped often to get mashoo root for food, and killed three deer at the last stop. Upon reaching camp the boats were discharged and turned up to dry. This rule was always followed, and occasionally they were well rubbed with oil . . . . I learned that in going down only a few boats went together as enough food could not be provided for all hands at the same time. Their principal food now was the seal meat and oil

which had been brought up the previous fall and cached. The young men were out after deer all the time. The dogs were fed on bones and pieces of deer skins with the hair soaked in seal oil. Sighted a few deer, all hands started after them, some going barefooted over the snow and ice tundra, but none were killed . . . . The surrounding country was now changed to a level waste of tundra with an occasional mound-shaped sandhill from 50 to 100 feet high. The river banks were low and of sand, on top of this was a network of roots. Low brush grew in scattered places. From this point no rocks were met with, hence all the boats carried stones to crack bones upon.

June 15 to 19. In camp; detained by bad weather. The snow was all gone so the deer had to be brought in on dogs saddled 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. I noticed a great number of sick people, especially women and children who appeared to have severe colds. I gave them medicine and as they all recovered I was always consulted . . . . June 20, under way and made about twelve miles. June 21 to 23, in camp, detained by sick people. The natives could not shoot game on this account and I was asked to do it. Only wooden bowls could be used in

dipping water from the river as to use metal pots would cause the fish to leave. The fish caught here were dried and kept for future use as they became less plentiful lower down.

June 24, under way and made about thirty-five miles. Banks of river so low as to be scarcely perceptible. Passed through two lakes made by the river widening over the tundra . . . . While crossing the second lake we sighted two tents of Point Barrow natives which caused the wildest excitement, the natives paddling their hardest, and shouting with all their might, although the tents were several miles away. I came to the conclusion from later observations that these people are afraid of the Point Barrow natives, though they have never harmed each other. The paddling and shouting were kept up until we reached the tents. These Point Barrow natives were filthy in appearance and condition, their clothing being covered with grease and oil. 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. Their language I could not understand at first, the words seemed the same but the pronunciation different, being short and jerky, like that of the Yukon people. These natives had left Point Barrow a week before and were at this place to hunt deer and fish. We camped near these tents and the natives began visiting us. These people

were on their way to the Colville and Mackenzie rivers, and crossed the tundra to meet us. 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. They communicate and trade with the Hudson Bay natives, the latter sometimes visit Point Barrow, and some of them visited us at this camp. They differed in appearance from the Alaska natives; the tattooing, only seen on the women, being several parallel strips across the checks. The women wore their hair in a knot on top of the head standing about six inches high similar to that of the Eskimos of Greenland. They spent the day dancing and feasting. On hearing that I was out of flour they gave me a fifty-pound sack, which they packed several miles across the tundra.

June 25 to July 12. Remained at this camp waiting for the ice to break off from the coast. I offered every inducement to natives to take me to Point Barrow, but without success. One day a party arrived from the Point to trade. 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 fire-arms out of sight. They

stole everything they could put their hands on, the women returning them as fast as taken. The orgie lasted all night, and the next day they boasted of having been drunk and wanted more liquor. Considerable trading was done here, the interior natives exchanging all kinds of skins for rifles, cartridges, caps, lead and tobacco, which the coast natives had in abundance . . . . July 12. Ten oomiaks started for Point Barrow. We followed, the edge of the ice being out of sight of land about an hour. Camped on beach. July 13, in camp, detained by ice. July 14. Underway, pushing through the ice. Dense fog set in part of the time and we were out of sight of land. The navigating of these people was wonderful. We made our way through leads, heading in every direction, and towards evening made the beach along which we tracked until 4 A.M. the next day, only six boats reaching this camp, the others being delayed by the ice and difficult navigation.

July 15, tracked along the coast, and at 9:30 P.M. made Point Barrow six miles above the old headquarters of the U.S. Signal Station, under Lieutenant [P.H.] Ray, U.S. Army. I made my way overland, and at 2 A.M., July 16, reached the house, ninety-six days from Fort Cosmos.[56]

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As a result of the military explorations of 1883-86 the geographic framework of the central mountains and upper rivers became available to experts on the Arctic and to the prospectors who now began to filter into the region. Given its remote location hundreds of miles up difficult and fluctuating rivers, this fringe land above the Arctic Circle offered little to white men. Even the Natives were few in number and scattered across vast distances. Gold mining in these early years centered on the upper Yukon, hundreds of miles away. Trading posts found no profit where only occasional prospectors roamed, where Native trappers and fur-bearing animals were spread thin. The explorers' search for a trans-mountain rescue trail from Kobuk or Koyukuk to Arctic Coast had died in the mountain topography and seasonally closed expanses of northern Alaska. Evidence of precious metals brought back by the explorers and the prospectors who followed them would bring miners in some numbers to the region, especially in the false rush of 1898-99, but never near the scale of the Yukon and Nome rushes. Remoteness and difficult access would hold the region essentially in trust until the airplane and the recent discovery of giant oil fields broke the barriers of distance and economic limbo.

Thus, geographic discovery did not trigger an ordered progress of settlement and civilization in this region. Instead, excepting occasional short-lived gold-mining flurries, the country would remain largely a refuge for people who liked being on the edge of nowhere, Native and white person alike. Lacking the necessary critical mass of economic incentives and numbers of people, progress passed the region by.

In this perspective, the history that ensued after 1886 is a story of minor booms and long busts, of tiny communities not quite getting there, struggling to keep alive such symbols of civilization as a post office or a school, or folding entirely--with the deserted sites then salvaged by the hard core of Natives and whites who dwelt in the distant camps of a marginal place. It is this concept of the margin, of the borderland, and of the kinds of people who by heritage or choice lived there that dominates the history. The fact is, until World War II the history of most of Interior Alaska was like this. The Gates of the Arctic region, being a margin of the margin, was until very recently the epitome of that earlier Alaska--a place where time usually stood still, then jolted forward a bit, and again fell back after the current boom ran its short course. In this arrested space-time environment, the evolving guard of old timers and a few new recruits who stayed after each boomlet kept alive until just yesterday traditions of both Native and

frontier-American sort that had just about vanished in most of America at the very time this region's history started.

The nature of this remote world and the responses to it and to each other of the people who lived and visited there form the central theme of this history. People were few, institutions practically nil. So this is personal history--biographical and anecdotal. Great movements and faceless masses did not surge this far north. Everyone who stayed more than a season hardened up and became a part of the country. The code of time and place allowed plenty of room for idiosyncracy; it required self reliance. But individualism was tempered by the notion that nobody would let lown a neighbor when the chips were down. The selection process, a fine screen of demanding natural and social conditions, worked along these lines.

Chapter Two Notes

1. "Maniilaq's Vision," in The Kotzebue Basin, Alaska Geographic, 8(3), 1981, 182. The term Inupiat, meaning "The Real People," is the proper collective name for the Eskimos of northern Alaska.

2. Summary of early explorations from Dorothy Jean Ray, The Eskimos of Bering Strait, 1650-1898 (University of Washington Press, Seattle, 1975), 11-26.

3. A. Grenfell Price, ed., The Explorations of Captain James Cook in the Pacific as told by Selections of His Own Journals, 1768-1779 (Dover Publications, Inc., New York, 1971), 240.

4. Melody Webb (Grauman), "A Historical Overview of the Seward Peninsula-Kotzebue Sound Area" (National Park Service typescript report, 1977), 10-23.

5. Melody Webb (Grauman), Yukon Frontiers (Cooperative Park Studies Unit, University of Alaska, Fairbanks, 1977), 22-27.

6. Ray, The Eskimos of the Bering Strait, 69.

7. For accounts of exploration, trading, and whaling--and their effects--see, e.g., Ibid.; Oswalt, Eskimos and Explorers; Burch, Eskimo Kinsmen.

8. Clark, Koyukuk River Culture, 82-83. Clark states that no further explorations occurred on the Koyukuk until after the 1867 purchase, and approaches to the upper reaches awaited trader Al Mayo's visit to the Kanuti River village of Kenootena in 1884.

9. Lael Morgan, ed., "Exploration and Development," The Kotzebue Basin, Alaska Geographic, 8(3), 1981, 68.

10. Webb (Grauman), Yukon Frontiers, 29-30.

11. Ibid., 30-32. In 1901, mergers of competing shipping and mercantile interests, with Alaska Commercial Co. as prime mover, resulted in two corporations: Northern Navigation Co., for transportation and shipping; Northern Commercial Co. for mercantile trade. See L.D. Kitchener, Flag Over the North (Superior Publishing Co., Seattle, 1954), 46.

12. Sherwood, Exploration of Alaska, 93-97; P.H. Ray, "Report of the International Polar Expedition to Point Barrow, Alaska," in Compilation of Narratives of Exploration in Alaska (56th Cong., 1st. Sess., Senate Rpt. 1023, Washington, 1900), 371-374.

13. U.S. Army, The Army's Role in the Building of Alaska (Headquarters, U.S. Army in Alaska, Pamphlet 360-5, 1969), 24; Maj. Gen. A.W. Greeley, Handbook of Alaska, Its Resources,

roducts, and Attractions in 1924 (Kennikat Press reprint edition, Port Washington, New York, 1970), 28-30; Edwin C. Bearss, Proposed Klondike Gold Rush National Historical Park Historic Resource Study (National Park Service, Washington, 1970), 13-17.

14. Gary Stein, "History of the Northwest Arctic," typescript report prepared for Cooperative Park Studies Unit, University of Alaska Fairbanks, 1978, 105-106; William H. Dall, Alaska and Its Resources (Lee and Shepard, Boston, 1870), 48-52.

15. Ibid., 110-111.

16. Sherwood, Exploration of Alaska, 98, 99.

17. Ibid., 118.

18. Ibid., 115, 116.

19. Ibid., 109-114; Lt. Henry T. Allen, Report of An Expedition to the Copper, Tanana, and Koyukuk Rivers, in the Territory of Alaska in the Year 1885 (Washington, 1887), 89-93.

20. Allen, Report of an Expedition, 26-28, 89-93.

21. H.T. Allen, Lieut. U.S. Army, Cmdg Alaska Expedition, field notebook, Henry Allen Papers, Library of Congress. The references to Lt. John C. Cantwell and Capt. Michael A. Healy of the Revenue Cutter Corwin, and to the Stoney (Kobuk) River, an oblique reference to Lt. George M. Stoney, U.S. Navy, who had already explored 300 miles of the Kobuk in 1884, not only juxtaposes the principals of mid-1880s northern Alaska military exploration, but also illustrates the rapid flow of transportation and communications around the closing rim of the diminishing central wilderness.

22. Allen, Report of an Expedition, 93, 94. Earlier, on the Copper River, having jettisoned tent and extra blankets to reduce weight, Allen and his men adopted the Native practice of sleeping "doubled up" for warmth. Ibid., 43.

23. Ibid., 93-97.

24. Allen's field notebook, August 4, 1885.

25. Allen, Report of an Expedition, 101. The general account from the Kanuti to the Ascheeshna is in Ibid., 97-101.

26. Dall, Alaska and Its Resources, 48.

27. Allen, Report of an Expedition, 101-113; field notebook entries, Aug. 9 to Sept. 5.

28. George M. Stoney, "Explorations In Alaska," in U.S. Naval Institute Proceedings, September and December, 1899 (Shorey Reprint, Seattle, 1974) 802-810.

144

29. Allen, Report of an Expedition, 141-42.

30. Sherwood, Exploration of Alaska, 124-125, 130. The role of the Revenue Marine Service (precursor of the Coast Guard) in north Alaskan waters is summarized in Jon M. Nielson, "Conduct Most Becoming: The Revenue Marine Service in Alaska," Alaska Journal, 9(3), 1979, 12-13, 91. Its responsibilities included law enforcement, civil administration, navigation aids and rescue, medical services, transportation, mail, and supply. As arm of government and link to the outside world, the revenue cutters ". . . were sources of law, comfort and security for Native and white alike" (Ibid., 12).

31. Stoney, Explorations in Alaska, 535-36.

32. Gary C. Stein, "A Raving Maniac: Captain Michael A. Healy's Cruise of 1900" (Typescript, 1984), 1.

33. Capt. Michael A. Healy, Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1884 (Treasury Department, Washington, 1889), 49.

34. Stoney, Explorations in Alaska, 541-544; Sherwood, Exploration of Alaska, 124-127; Dennis L. Noble, "Fog, Reindeer, and the Bering Sea Patrol, 1867-1964," in The Sea in Alaska's Pas (History and Archeology Publications No. 25, Alaska Division of Parks, Anchorage, November 1979), 118-123; John E. Caswell, Arctic Frontiers, United States Explorations in the Far North (University of Oklahoma Press, Norman, 1956), 198-199; Cantwell's "Alaskan Ethnological Notes" in Cruise of the Corwin, 1884, 79-85.

35. Healy, Cruise of the Corwin, 1884, 51-52, 107; Stoney, Explorations in Alaska, 548-49.

36. Cantwell's narrative, in Michael A. Healy, Report of the Cruise of the Revenue Marine Steamer Corwin in the Arctic Ocean in the Year 1885 (Washington, 1887), 33; Sherwood, Exploration of Alaska, 127-28.

37. Report of the Cruise of the Corwin, 1885, 33-34.

38. Ibid., 34 et seq.; the excerpts are selected from pp. 34-40.

39. Ibid., 41.

40. Sherwood, Exploration of Alaska, 128-29; McLenegan's narrative, Cruise of the Corwin, 1885, 59, et seq.

41. Ibid., 58.

42. Ibid., 59, et seq.

43. Sherwood, Exploration of Alaska, 129-30; Stoney, Explorations in Alaska, 550-53.

44. Sherwood, Exploration of Alaska, 130.

45. Stoney, Explorations in Alaska, 533.

46. Sherwood, Exploration of Alaska, 131; Caswell, Arctic Frontiers, 200.

47. Brooks, Blazing Alaska's Trails, 278. The expedition log (ship's log of the U.S.S. Explorer) is in Record Group 24, National Archives; the rough maps are in the National Archives map section, Alexandria.

48. Edwin S. Hall, Jr., "William Lauriston Howard and the First Crossing of Interior Northern Alaska" (typescript, Brockport, New York, 1978). This study includes Howard's diary.

49. The expedition log's September entries provide a detailed account of camp work.

50. Stoney, Explorations in Alaska, 561.

51. Ibid., 561-63, 846.

52. Ibid., 846-47.

53. Edwin S. Hall, Jr., "William Lauriston Howard," 11, 15-16.

54. Stoney, Explorations in Alaska, 563-577.

55. Ed Hall's "A Memento of the Northern Alaska Naval Exploring Expedition of 1885-86," Alaska Journal, 7(2), 1977, 81-87; and his study of Howard (n. 48) are the sources for this sketch.

56. Howard's report in Stoney, Explorations in Alaska, excerpts from 812-22.

Chapter 3: Early Mining and Klondike Overflow

Even as the first explorers reported their findings, prospectors extended their quest toward the central Brooks Range. In fact, an old miner named Miller went up the Kobuk with Lieutenant Stoney in 1884, hired to chop wood for the steam launch. Wherever they stopped, Miller washed the sand of the stream bars looking for "color," the specks of fine gold that might lead to riches. He ". . . invariably found traces of precious metal" and begged Stoney to stake his further search, which Stoney could not do.[1] Lieutenant Allen associated with prospectors along the Yukon, rating them the most qualified men of the country for any wilderness enterprise. He had travelled with prospectors Bremner and Johnson from Copper River to Yukon. These two would follow Allen's tracks to the Koyukuk in 1887. Over the next few years a pattern emerged of single prospectors and scattered mining partners testing the streams and bars of the main Koyukuk and its South and Middle forks. A few small strikes were made, enough to keep a cadre of 20 or 30 men looking further.[2]

These men and the traders who staked and supplied them operated initially from Yukon River stations and, as best the record indicates, held mainly to the Koyukuk drainage, leaving the other rivers of the region to later waves of prospectors. Blessed with river transport to bring tools and supplies, a tight community of

knowledgeable men thus came together on the far margin of the Yukon gold fields. They were mainly old hands, veterans of Sierras and Rockies. Some had pioneered the early placers on the upper Yukon, beginning in the 1870s. These were the rugged scouts in ceaseless search of gold. They prowled the far creeks and in time found paystreaks that spurred inexperienced hopefuls to actual and rumored fields of gold.[3]

Typical of these hardy men was James Bender, who died in 1932 in Fairbanks. Sourdough Historian Joseph Ulmer sketched Bender's life for the Pioneers of Alaska: Bender's family, originally from Germany, followed a hundred-year course westward from Pennsylvania to Minnesota, whence James joined the Union Pacific Railroad construction as a wagon boss. He then hauled supplies to gold camps in Montana, became a deputy marshal, and later joined the rush to the Little Rockies in Montana. In 1887 he and 13 others crossed Chilkoot Pass and went down the Yukon to Fortymile River, where he hooked up with Al Mayo and floated down to Nuklukayet. There he met John Bremner and Pete Johnson, Lieutenant Allen's former partners. In the fall of '87 the three of them went overland to the mouth of John River on the Koyukuk. Next spring they whipsawed lumber for a boat and ascended the John, working the bars that summer and taking out fair pay. Bender and Johnson returned to Mayo's Landing (Tanana) while Bremner continued prospecting along the Koyukuk. On his way out, an Indian killed

him. A messenger from Nulato brought the news to the miners, who were waiting for the last boat upriver. A miner's meeting was called and Gordon Bettles was chosen as judge, Jim Bender as marshal. Numbering more than 20 men, they commandeered a river steamer and proceeded up the Koyukuk to apprehend the murderer, who after being tried by a jury was executed by hanging. Later, trader Jack McQuesten outfitted Bender and he mined for a number of years in the Circle District, finally settling in Fairbanks. Ulmer concludes: "He was an outstanding figure of that type of real frontiers men. . . ."[4]

Here in one life--and the places, people, and pursuits it knew--is a microcosm of that Yukon River decade before the Klondike Rush.

Capt. Billie Moore, son of the Capt. William Moore of Skagway and White Pass fame, was another Koyukuk pioneer. He had come down the Yukon from Fortymile to Nuklukayet at the same time Jim Bender did. With Bender and Bettles, he joined the avenging posse, serving as engineer of the commandeered steamer Explorer on the cruise up the Koyukuk to find John Bremner's killer. After the hanging, he went to St. Michael and sailed for Juneau. There he helped his father build a 20-ton schooner. Then, in the summer of 1889 he came back to the Yukon via Chilkoot Pass. After mining for 3 years in the Fortymile and Seventymile country, near the Canadian border, Moore and a partner gave it up, because ". . .

the bar didn't pan out as well as we expected." In later years, in an application for an Alaska Pioneers' allowance, he told what happened next:

1892

I went over to St. Michael and met G.C. Bettles. We went into partnership. I went to Golovin Bay and brought a small stern wheel steamer to St. Michael and towed a small barge with trading goods up the Yukon, thence 300 miles up the Koyukuk River where I built a house and started trading. Bettles went up to Nuklukayet, which post he had acquired after [the trader] Walker's death.

1893

As soon as river broke, I moved up and built Arctic City. [E.] Chapman and [Johnny] Folger had struck coarse gold on a creek up the middle fork. Van Henricks, I, Folger and Chapman struck gold on a high bench which they named Tramway Bar. Bettles and I purchased half, buying out Chapman and Frank Hawley, paying them $2,000.00.

1894

Bettles went down with the steamer for supplies when the ice went out. I went up and dug a ditch from lake to bar, employing eight men to do so. We whipsawed lumber for

> sluice boxes, mined three weeks and found the pay streak pinch down as we went into the Bar. I gave it up, taking Howard, who had a felon on his finger, with me in my boat down to Nulato. I separated from Bettles. I wintered at mouth of Yukon.[5]

Capt. Billie Moore's early mining career on the Koyukuk ended in disappointment. But that did not stop him. He went on to many more years as master and pilot of Yukon River steamers, miner, fisherman, and trader. In old age he finally consented to the pleadings of his friends and left St. Michael for the Pioneers' Home in Sitka. His work as Gordon Bettles' partner on the Koyukuk was part of the slow creep up that river. Their little 35-foot, open-hold steamer Cora and the building of Arctic City some 400 river-miles up the Koyukuk provided an advanced base for miners, who built their own cabins there so they could overwinter. Indians of near villages began trading furs, forcing Moore and Bettles to give them the same prices as prevailed on the Yukon. Thus Arctic City became the prototype of the typical upriver post, with a trader, miners, Indian trappers and hunters, and a small river steamer to keep them all supplied. The 150-mile leap upriver from Arctic City to Tramway Bar on the Middle Fork had been strongly aided by Cora's supplies in 1892-93. All of this set the stage for further advances by trader Gordon Bettles. As more miners heard the news of upper Koyukuk strikes, a perceptible

momentum--well short of a rush, but promising--began to gather. Bettles would read the signs and put his chips on the Koyukuk, shifting his trading operations ever farther up that stream. The frame was building for the next stage of Koyukuk history.[6]

Depending on which generation of old timers was talking or writing, Gordon Bettles was the father or grandfather of the Koyukuk mining district. Nor, with good reason, was he loathe to accept this tribute. As a trader with mining interests in a remote, underpopulated region (he claimed that when he arrived in 1888 there were only 17 white men on the Yukon between St. Michael and Fortymile), he became a skilled promoter of the region's prospects. In 1893, with George T. Howard, earlier the printer of the St. James Mission (Tanana) press, Bettles set up the Yukon Press at Fort Adams, 6 miles down the Yukon from present Tanana. "The Remotest Periodical from Civilization," as it was subtitled, with its first issue of January 1, 1894, began the printed call that echoed ceaselessly down the decades for better transportation and communication with the States, including mail to the Interior stations at least once each winter--as a government responsibility, not dependent on the good graces of the Alaska Commercial Company. Bettles was well suited to his varied work, having trained as typesetter and newspaperman in Ontario and Detroit, having mined throughout the west, British Columbia, and uneau before coming to the Yukon. He sealed his ties with the

country by marrying Sophie, the daughter of Gregory Kokerine, a Russian trader at the Nowikaket Station on the Yukon.[7]

The Yukon Press provides a running commentary on the development of the Yukon corridor, together with reflections on the larger prospects and problems of the country. In the first issue, Bettles, who wrote most of the copy, traced the miners' progress up the Koyukuk through 1893, including the Tramway Bar strike. He stated that 22 miners were on the Koyukuk and 6 more were wintering at Tanana Station. He concluded with a caution: The Koyukuk looks promising, but it is not a place of easy riches. Thorough prospecting and development must precede mining. Be prepared to overwinter before any chance of pay.

One story, about Christmas at Al Mayo's Tanana Trading Station, told of separate religious services conducted for Indians and whites by Rev. J.L. Prevost of St. James Mission. It described a sumptuous dinner and an evening of singing followed by "quaint and original stories" by Al Mayo. Attendees included Mr. and Mrs. Bettles from Koyukuk, the Reverend Prevost and G.T. Howard from Fort Adams, and a 4-man contingent from Fortymile.

Advertisements give a sense of quickening pace along the river:

> G.C. Bettles & Co.
> Arctic City, Alaska
> Miners Goods
> "From a Pickaxe to a Candle"
> Highest Prices Paid for Furs and Gold Dust
>
> x x x
>
> The A.C. Co. steamers Arctic and Yukon will carry passengers and freight to all points on the Yukon.
>
> Henry Newmann, Agent
> St. Michael

A.C. Co. and independent traders along the river include Al Mayo at Tanana Station; T.H. Beaumont, A.C. Co. agent at Fort Yukon; L.N. (Jack) McQuesten at Fortymile; and A. Harper at Fort Selkirk, catering to Lewis River [upper Yukon] miners.[8] The A.C. Co. competitor, North American Transportation & Trading Co., advertises its trading stations at Circle City, St. Michael, Kotzebue Sound, and Fort Weare (near Tanana).[9]

In the January 1, 1896, issue Gorden Bettles editorialized on the "Downfall of the Indians and Eskimos." First of the evils is liquor, supplied by the whalers. The Native is dragged down by

this addiction and does not hear "the childrens' cry for food." Endless gambling with cards means loss of outfit, dogs, and everything. Then they don't hunt and fish, and they starve in winter.

When the Revenue Cutters prevent the smuggling of kegs of whiskey cached in Siberia, unscrupulous whalers and traders provide raw goods so the Natives can make home brew--with devastating results. Here Bettles pays tribute to Capt. M.A. Healy for trying to control the booze traffic.

Next Bettles castigates the salmon canneries established at river mouths, which destroy Native food supplies. The history of fished out rivers along the Pacific Coast, writes Bettles, shows the future if this practice is not stopped.

Next he takes a shot at missionary Sheldon Jackson, whose introduction of reindeer to relieve the starving Natives is characterized as a flawed plan: ". . . it may be as hard to turn these born hunters into the comparatively tame vocation of herding deer, as it was to make a farmer of the Sioux and Apache."

He urges good breech-loading rifles for the Natives so they can effectively hunt the reduced game. And he states that it would be better to let legitimate traders supply them than to continue

firearm prohibitions that open the trade to those evil traders who wipe the Natives out with liquor.

He concludes that the Natives of these lands need at least some of the protections granted their brethren in the States.[10]

Altogether, this is an enlightened plea for justice and protection of people undergoing great stress. It might be added: "Particularly in the light of the times." But the qualification is unjustified. Many intelligent people of the late 19th Century, in Alaska and in the States, had allied themselves with the objectives of Indian Policy reform. Of people thus oriented, some who dealt with Native people day-by-day on a practical basis had acquired more profound cultural sensitivities than those possessed by idealistic reformers removed from the shocks of culture contact. Bettles seems to have been one who informed his principles with pragmatics, based on direct experience.

In that same January 1, 1896, issue it is reported that recent gold excitements at Birch and Munook (Minook) creeks, up the Yukon, have drawn miners away from the Koyukuk, partly because of easier steamboat access at these near-Yukon sites. Bettles is not discouraged. The $20,000 in gold already taken out of the Koyukuk bodes well for future exploration.

Bettles' editorial in June 1896 cites compelling reasons for optimism:

* 5 years ago only 200 tons of freight came into the Yukon Valley; last summer 2,000 tons were freighted to the upper Yukon.

* 4 years ago, one large steamboat could supply the whole river with two trips; today there are three larger boats, each making three trips a season, and still the lower river is not fully supplied.

* 4 years ago there were hardly 200 white men in the country; now 2,000 are here, brought by the placer diggings; quartz or hardrock mining has not started yet, but in time capital must awake to opportunity.

* The latest wave has brought women and children, pioneer families, repositories of values, progress, devotion and loyalty; compare these courageous families to the chronic grumblers who want to get rich quick and get out.

* Finally, Bettles notes that they have raised a school in Circle City and the government has appointed a teacher, the first nondenominational school in the region, which Bettles strongly approves. Circle City also has a post office, another first. Bettles concludes that it is time to rid the country of evil elements and get on with the work at hand.

In the same issue, eight steamboats are noted, mostly undergoing refitting and lengthening to carry the burgeoning trade. Captain Moore, Bettles' old partner, made five trips up the river in Arctic last year, a record.

The next two issues of the Yukon Press record the initial effects of the Klondike discovery in Canada's Yukon. Klondike fever would first drain the mid-Yukon and Koyukuk country, then create a back-surge of disappointed miners seeking claims in Alaskan gold fields. By the fall of 1897 the rush of miners already in the country, plus the early waves of stampeders from the outside world had already glutted the Klondike with thousands more claimants han there were claims available. An estimated 6,000 Argonauts now centered on the upper Yukon--at Dawson and the Klondike itself, or marooned at river stations such as Circle and Fort Yukon. The riverboat transportation system, beset by the short open-water season and the business-as-usual distribution of food supplies to competing trading stations proved unable to match people and food. Chaos threatened. Adding to the clamor was the imposition of restrictive Canadian law--relating both to mining claims and royalties, and to the stern enforcement of law and order by the Mounties. Out of the Klondike's combination of too many people and too few claims, Canadian restrictions, and the breakdown of transportation and supplies would be fashioned the verflow stampeders to the Koyukuk and the Kobuk in the summer of 1898.[11]

By the late winter of 1898, the migration of stampeders from Canada's Klondike to Alaska was already underway. Army Capt. Patrick Henry Ray, exiting the upper Yukon after a reconnaissance to check conditions in the gold fields, met ". . . fully 300 people going down the river [from Dawson], and the general answers to my questions were, they were going to Alaska to stay." By this time, transfer of foodstuffs to areas of need had averted the immediate threat of starvation. But the deluge of stampeders poised on the upper river and lakes, and at Skagway and Dyea just below the passes, disturbed him greatly. He estimated that nearly 18,000 people would flood the Yukon country as soon as the river broke. They would be reasonably well supplied because the Canadians required them to haul a year's supply of food across th passes. But what would happen when they got to the Klondike and found nothing for them there? They would flood on down the river into Alaska, which ". . . is without any semblance of law, civil or military." To avert anarchy, Ray urged that military posts be established at the mouth of Mission Creek (where overflow miners were already building Eagle City), at the mouth of the Tanana, and at St. Michael.[12]

Already, in the fall of 1897, armed parties of miners had commandeered food from river steamers. By December, dogs for winter travel had become rare and valuable commodities. Inflationary prices for food, climbing rapidly with demand, woul keep climbing as the flood of people gained volume. Scurvy,

product of a beans, bacon, and flour diet, had struck down miners in the Klondike. The prospect loomed of a horde of unemployed stampeders--armed, dangerous, and desperate--roaming the country in predatory packs gleaning the last scraps of food, ultimately dying of starvation, scurvy, and cold.[13]

Captain Ray and his Canadian counterparts in the Mounted Police agreed that speculators and transportation companies had conspired to broadcast to the world an endless bonanza in the Klondike. Thus lured, the unwary and inexperienced came in droves to buy worthless claims. True, the operating mines at Minook Creek, Birch Creek, and Fortymile, and the promising prospects along the anana and Koyukuk showed that gold was available in Alaska--but only in limited amounts, far from supply points, where the cost of food would prohibit more than a few miners to survive, much less make a living. Only deliberate development of the country, based on roads and trails to the remote gold fields, could assure orderly progress in Alaska. To this end, Ray proposed roads to the Interior from Seward, one of them north to the Koyukuk.[14]

This was the atmosphere as spring turned to summer in 1898. The waves of people bound for the Klondike crested at this time. Those camped on the lakes at the head of the Yukon rafted and boated down the river to Dawson as soon as breakup allowed. More nd more gold seekers landed at Skagway and Dyea, then funneled through the passes. All were too late for good claims. Other

parties came by ocean steamer to St. Michael, then took passage on the scores of river steamers now plying the Yukon. Some of these took heed of rumors and of direct word from disappointed Klondikers floating down the river: the Klondike is filled up. As the word spread, some adventurers--not to be denied their adventure--looked to other fields, for they meant to strike it rich even if it did take all summer. Both Koyukuk and Kobuk figured in the search for alternatives.

Thus did the Klondike overflow evolve. In part it was made up of people who had physically got to Dawson and experienced the welter of crowded frustration there; in part it recruited newcomers en route to the Klondike who branched off to the Koyukuk and other fields from the Yukon River, or reset their objectives while still at sea. Some of these latter would go directly to Kotzebue Sound to test the rumored wealth of the Kobuk.

In the main, these stampeders knew almost nothing of the country nor of prospecting and mining. They were hopeful innocents, recruited from every occupation and walk of life in the States and many other countries. For economic or family reasons, prodded by intangible yearnings, they had taken the leap to adventure promised by the Gold Rush. With few exceptions they were ill-equipped physically and mentally for wilderness life. Too numerous for the slim pickings of the upper rivers, and unprepared for the winter rigors of arctic Alaska, they

nevertheless entered the country with high spirits.[15]

Gordon Bettles, meanwhile, kept track of events through association with traders and steamboat men along the Yukon. The progress of prospecting on the Koyukuk boded well for that district, just as the Klondike overflow picked up stride. In 1898, with discovery of gold in paying quantities at Bergman--a few miles up the Koyukuk from Arctic City--Bettles established another trading post or "beanshop" at that location. "And when the news of this strike became general knowledge throughout Alaska via the mukluk telegraph and reached the States a real stampede was on. . . .

> So I ordered enough supplies for a camp of about 1000 men. . . . But I was hardly prepared for the tremendous gold rush that developed. Bergman was established at the head of navigation, but was on low ground and as a result was flooded out. So I opened another beanshop a few miles farther up the Koyukuk and called it Bettles.
>
> I can't tell you how astonished I was that summer when I saw a constant procession of river steamers chuffing up the Yukon and heading up the Koyukuk. Most of these steamers came knocked down from Seattle and were re-assembled at St. Michael and all were loaded to the danger line with stampeders and their supplies. Some of the smallest were

able to ascend the Koyukuk a few miles above Bettles, but most of them were stranded down the river.

Then Satan or somebody pulled one of those dangerous tricks out of the bag--the kind that has given the Koyukuk a very bad name. A sudden freeze occurred almost overnight, and sixty-eight steamers were frozen in solid for the long cold winter. There were nine hundred persons on these sixty-eight steamers, and when these adventurers realized that they would have to remain a whole year in this desolate part of Alaska, five hundred and fifty of them took emergency rations and mushed out to the Yukon. A good many went downstream to St. Michael, vowing never again to visit such an inhospitable country.

Those who stayed in and around Bettles numbered three hundred fifty stampeders, and I assure you we had quite an interesting winter with such a varied assortment of men in camp. However, most of them were broke. But with the supplies they had on the sixty-eight ships and the two hundred fifty tons of provisions we had, none went hungry that winter. Before spring I had to carry the camp on my books to the extent of just about an even $100,000.[16]

The stories of these overwintering 1898-99 stampeders and the camps they built survive in the diaries and letters of the

participants. For most of them, people and camps alike, it was a one-winter stand. Probably 90 percent of the people departed in the spring without once looking back at the scenes of their suffering. The camps or "cities" on the Alatna and the Middle and South forks ". . . were mostly clearings in the woods along the riverbanks, with a few shacks, a sawmill, and a steamboat. Almost all of them were abandoned in less than a year." There were bright spots in the gloom. "Arctic City had electric lights, which glistened through the darkness during the long arctic winter." Bergman boasted a rough nightlife of whiskey drinking, fighting, wrestling, "shooting out the lights, and also shooting the cabin full of holes." Peavy had a schoolhouse and a platted townsite with named and numbered avenues. Little remains of these places, or the others--Union City, Jimtown, Beaver City, Soo City--except for a few ground depressions and rotted sill logs.[17]

An early historian of the Koyukuk recalled seeing ". . . here and there along the river banks . . . the bleaching bones of little steamers which once formed a part of the gallant fleet which bore the first stampeders to the Koyukuk."[18]

Despite hardships and, for most, failure--as measured by bags of gold--the Koyukuk stampeders speak in their diaries and letters of other, rarer values found in the far north of darkness and perpetually frozen ground. Hamlin Garland, a "Ninety-Eighter" himself, touched on the force that moved so many:

> I believed that I was about to see and take part in a most picturesque and impressive movement across the wilderness. I believed it to be the last great march of the kind which could ever come in America, so rapidly were the wild places being settled up. I wished, therefore, to take part in the tramp of the goldseekers, to be one of them, to record their deeds.[19]

Typical of this breed of goldseekers were the members of the Iowa Company, who would prospect and mine for small returns on a midcourse tributary of the Koyukuk during the 1898-99 rush. This large company hauled tons of machinery and supplies over White Pass. On the shore of Tagish Lake they built two boats, the 60-foot sternwheeler Iowa and the smaller, screw-driven Little Jim. At breakup in June, they, with thousands of others (Pierre Berton estimates 30,000 people and 7,000 boats), descended through the Yukon's canyons and rapids to Dawson. After visiting the mines of Bonanza and Eldorado creeks, where he saw a fortune in nuggets and fine gold, E.G. Abbott of the Iowa's declared: "This district is all taken and no chance to locate anything within sixty miles." With rumors of fraud and fakery abounding, he yet could say, "We hear nothing but good reports from the Koyukuk country [where we will go] to try and find the elephant ourselves. . . ."[20]

Another member of the party described conditions in Dawson:

> You never saw so many heartbroken, discontented people as there are here. No work at any price and no money nor anyway of earning it. Wages are $10 per day, but you can't get a day's work at any price. It costs nearly $10 a day to live.
>
> It is a shame for people to rush in here the way they are. Men here are doing everything they can to get out. You ought to hear their tales of woe; it is heart rending. I am glad we have some other place in view. We still think we will find the Eldorado. Everyone we see who has been on the Koyukuk river says it is good and we are sure to hit it.[21]

This optimism was ill-founded. The Koyukuk enterprise of the Iowa Company ended up "a dead failure," stuck on a fine-gold creek that could not pay with the crude mining techniques of that day. But the Iowa's had planned as well and perservered as strongly as they could. One of their members, Mrs. Jesse Thomas was among the first white women to overwinter on the Koyukuk.[22]

By far, the majority of Koyukuk stampeders came by ocean transport to St. Michael, thence by steamboat up the Yukon, and then, by a variety of rivercraft, or overland, up the Koyukuk. St. Michael

became a caldron of activity, full of rumors, competing shippers, mountains of freight and miners' outfits, and thousands of goldseekers, off-loaded from ocean ships, clamoring for riverboat passage up the Yukon. Thousands more of the disappointed from Dawson, most of them broke and desperate, fought for passage home on the returning steamers. The presence of this fleeing army, the stories they told of dispossession and despair in the Klondike, steered many newcomers to the Koyukuk.

Capt. W. P. Richardson, Captain Ray's lieutenant in 1897, witnessed the churning scene. He renewed the call for temporary military government on the Yukon: to protect life and property; to regulate the illegitimate phase of commerce that preyed on innocents, both Native and white; and to avert the building pressure toward "those lawless and bloody days" that had marred the mining camps of the West.

He noted the increase of fly-by-night transportation companies with dishonest motives, and the cooperative companies of miners, most of them laboring under incapable management and insufficient means to accomplish their purposes. These enterprises:

> . . . after giving birth to the most original and unique inventions in the way of river craft perhaps ever assembled in one harbor, came ultimately to grief and abandonment in nearly every instance. . . .[23]

In most ways, the 1898-99 Koyukuk rush (and its contemporary on the Kobuk) was a repeat of a phenomenon patterned in earlier mining camps. The same varieties of characters assembled: the strong, the weak, the knowing, and the innocent. By far, most of them were decent people, though villainy was not entirely absent. Most of them came away with nothing, and in the Arctic gold fields the incidence of success was slimmer than usual.

Differences between this rush and others hinged partly on remoteness and climate. For all but the experienced and equipped there was no way out once winter closed. Moreover, the economic geology was marginal. To this day, placer mining in these bove-the-Arctic Circle districts is a small-scale affair. In that day, with frozen-ground mining methods yet to be perfected and prospecting in these fields in its infancy, it was possible to find color, but rare to find a real paystreak and nearly impossible to develop and exploit it. Few of the stampeders came equipped for the years of patient labor that later miners lavished for occasional big pay, but usually modest returns. Remoteness and difficulty of access prohibited resupply and a second start for most novices--who had already liquidated all they once owned to get here in the first place. As get-rich-quick dreams went aglimmering with the disappearing sun, the dark, sub-zero winter demoralized all but a few. These factors in combination turned he rush around in a hurry; it became a nearly complete evacuation as soon as energy or breakup allowed. Many people went out during

fall and early winter, at least as far as the Yukon. By June, with rivers clear of ice and in flood, most of the rest flooded out, too, riding the high water.

This ephemeral quest produced different kinds of heroes. Some just hung on tight, then left as soon as they could. Others, weak and homesick at first, hardened up and kept trying. Many, who did no mining (most of the novices gave up after an empty prospect hole or two), kept busy with camp chores or saw the country while hunting and ice-fishing, with occasional holiday parties. Sprinkled thinly through the few hundreds who got to the upper rivers and creeks were some tough, competent cases who went about their prospecting and mining with high energy and spirits, taking the cold and darkness and difficulty in stride. All of these varied folks, including a number who wandered off and froze to death and others who hunkered down in far cabins and watched the black-leg scurvy rot their bodies away, were, if not individually heroic, at least participants in a heroic venture.

Their own stories confirm these thoughts, and say them better.

Typical of the novices who started weak but gained strength from adversity, was a New York man named Charlie Miller. His diary-letters to his wife and children, and to his father, trace the journey to the gold fields from Seattle to St. Michael, then to sites along the Yukon, and finally the Koyukuk. His personal,

gut response to the big, bad current of forces, people, and events, which he could not have foreseen when he left home, encapsulates the real world of the Gold Rush, devoid of the patina of romance later applied to it. And yet, his coping with this world, once caught in that current, restores the sense of a grand venture and vindicates the essentially romantic vision that moved both participants and later commentators. On the way, his fine-stroke descriptions of people and places lend detail to the broad outlines of history.[24]

> Hotel Stevens, Seattle, Wash., May 23, 1898
> Dear Wife.
> does this sound queer. but Dodie I can't tell you how terable it is to be away from you and the children. I feel too miserable to discribe the tripp on the train. dearest if I ever thought it would efect me so . . . I would never gone away. I hope i'll be able to brace up in a few dayes. . . . I could not tell enything about the Steamship . . . there was nothing sure of the ship sailing . . . a new company had the ship and all that had tickets were to go by 5 to 9 June. still there is nothing sure. but I be able to tell in a few days. . . . [To survive until sailing, Charlie and his partner Gordon will go to work at a blacksmith shop at $2 per day.] This whole city of Seattle

is nuthing but Klondike stores. it is a very tuff place.

from your loving husbin

Charlie

May 28, 1898

. . . you write that [if] you had me home [you] would not let me go for all the Gold in the Klondike. I feel the same way. if I had only never Started for its something terable how home sick I am. I hope I will feel better if that dam Ship ever starts.

May 30, 1898

. . . the latest is now the Columbia is to sail 15 of June but it think she will never leave.

Columbia is condemned and they are assigned to a small "hulk" that they believe unseaworthy. Charlie's ticket money goes with default of the Columbia Co., $450 lost. To save diminishing dollars Charlie and Gordon sail as deckhands in a shallow-draft, sternwheel river steamer, W.H. Evans, to be towed by an ocean tug to St. Michael. Evans nearly breaks up at sea and the tug tows them in to Prince of Wales Island and leaves them. If they can't repair Evans and steam up the Inside Passage, Charlie is going to go home. Repairs are made and Evans proceeds, heaving and pitching, bows under, stern free across the Gulf of Alaska and

through False Pass to the Bering Sea. Another river boat in tow is lost at sea and Evans seeks shelter in the Yukon delta. After many days of groundings on river bars and being lost in false channels, Evans threads the delta and reaches St. Michael. The great fear now is that all the delays have thrown them too late in the season to get up the Yukon before freeze-up. If they cannot get at least 1,000 miles up the river, where they can start prospecting, they will wait and walk on the ice.

August 31, Fort St. Michaeles

St. Michaels is the most miserable place in the world. There are hundreds of men heare who came across the pass or came up the river and did not find eny Gold. they are working for the Transportasion Companys to earn enough money to get home. The chances for me are not verry good, as we want to get far enough up the river Before it is froze. if we should get up we intend to get off at eather Rampart City or Circle City. there are 200 tents along the shore with from 3 to 8 Men living in them, all who came down the Yukon, all with the most pitifull stories of hard luck. i supose Dodie the Newspapers are still Booming the place up. i could get all the work i want at $3 a day, but that is no good as i want to get up the river to prospect. i and Roovers went to the Armey Post. i saw 3 Solders i knew from Governers Island . . . and they are the most discusted Solders i ever saw. the place is all wet. there is only 2 foot of ground and under that is

> solid ice that makes it wet mud and water to our knees. there is no water to drink. it all has to be condenced. ther was 2 Steamers came down from Dawson just loaded with sick. i spoke to 10 of them. all of them have the Scurvey and lots have feavers from the Bad water. there was one young fellow 26 years old who layed in a row Boat sick with the Scurvey who Beged for God sake to save his life as he was diying . . . Dodie i was so efected that i cried.

Passage up the river is delayed as transportation companies with thousands of tons of river freight haggle with independent boat captains over freight rates. The captains want $150 per ton; the companies offer only $50. And yet more trouble: boat crews are striking for higher pay. And already it is September. Finally the captain of Evans makes a deal to ship 250 tons of freight up the river. Charlie helps load the boat, at $3 a day.

> September 10, 1898, St. Michaels
> every Man on the Boat went ashore to work except 3 Men and one of them was that Big Slob Roovers. you must know he is too great a man to work for eny body. Dodie I wish he was in hell. he is no good. but i make it hot for him this winter if he dont get a move on him.

September 11, 1898

Left St. Michaels Sep. 11 at 5 a.m. the weather was fine and we went along at a good rate, when at 4 p.m. we struck a Sand bar and stayed there till 6:20 p.m. when we steamed along [and] got stuck again [at] 7 p.m. now we are stuck till 2 a.m. and there we stayed till 4 a.m. and in 2 hours we got stuck again . . . we cant get off till the tide rises and there is only 1 tide in 24 hours so we are heare till 3 a.m. of the 13. Dodie we are not the only Boats that is stuck. this morning at Day light, there was 11 River Steamers . . . stuck all around us. There was 2 small Steamers belonging to the Navey Surveying. they were stuck. Dearest wife . . . I am so home sick . . . . My Darling you see as long as I was at St. Michaels I felt I was neer to you. but now that we have started up the Yukon River we are going away from all Communication. . . . things I think would be diferent if we only got up the river. but heare we are getting stuck every few Miles and at that rate we never get up the Yukon far enough to Prospect.

After 6 days of delta mud flats and river bars, Evans approaches the deep-water channel of the Yukon. On September 16 three Indian river pilots came aboard. The Chief Pilot gets $700 for the trip, plus flour and tobacco; his assistants get $25 a day. Another steamer passes over news clippings with the "first War News we heard since we left Seattle."

Sep. 17, 1898, Yukon River

Dodie we are carying the Mail for the Government, we have 3 tons of it. this part of the Country we are going through is the most Desolate part of the World. for thousands of miles there is nuthing but swamp and not a Tree. and the Indeans that live heare are sickley as they live in thease swampes. but in the Winter they go up the river as in the spring the whole lower Yukon Country is under water. it looks queer to see a uncivilized Indean come onboard a Boat and take full charge. that is what the Indean Pilots do. there is one thing, they know the Yukon. . . .

Yukon River, Sep. 21, 1898

Went 20 miles when we came to some wood piles. stoped 2 a.m. bought 11 Cords at $15 a Cord from some white men who came over the pass last feburary and [could] not find Gold so now they are Choping wood and making a good thing out of it. but one troubel is when their provisions are gone, then is the time when the Steam Boat and Trading Company get Square on the wood chopers. then they charge $10 for 100 pounds of flour and 25¢ a pound for sugar and 50¢ a Can of condenced Milk and a $ a pound for Tea and so on. and that way they get their Money Back

Yukon River, October 1, 1898

. . . Stoped at Tannar [Tanana] to land the Mail . . . the

place has 3 log Cabins. the place is not at the Mouth of the Tannar River but across from it. the Charts and Maps have most of the places on the river placed wrong. one of the log Cabins at Tannar Station is 2 Storie house. it is the Trading Post owned by the Alaska Commercial Company and the Store Keeper is a White man named Mayo. he is Maried to a Indian woman and she has 10 Children. we have her as a passinger and 7 of the children. they are all very pritty children. they are going up to Rampart whare the Father is tending a new trading post . . . . the oldest of the girls is 6 years old and her name, just think Dodie is Libbie. how I wished it was my [daughter] Libbie.

Rampart City, October 4, 1898
The reason all our Passingers got off at Rampart is because this is the only place for 800 Miles whare there is a Town, and have law and order and every thing is safe. that is what the Solders are heare for. if the mines turn out good this is going to be a great place. we leave Rampart this evening for Dall River. it is 80 miles from Rampart.

Dall River Alaska, Oct. 28.98
we had quite a hard time to get in Dall River as it was froze up. we had to lower a life Boat and Brake the Ice to get the Boat in. now Dodie, Dall river is a small River like Bronx River, but not so nice. the Banks are from 40 to 50 feet high

> and they are Mud. it is more like a Brook than river but in the spring it is a raging stream . . . we are still living on the Evans. we are waiting for good Cold weather to freeze up all the small streams. as then we have to have heavy snow fall before we can travel across the Country to the Koyukuk River. the place we intend to go is Tramway Bar. it is on the . . . [Middle] fork of the Koyukuk . . . about 75 Miles North of the Artic Circle.
>
> Waiting for the time for us to start . . . but not one of us knowes the way across the Country so we had a Miners meeting. all the men came to geather to deside what to do. so we desided to hier a Indean as a gide, and he wants one hunderd Dollars to gide us to the Koyukuk. it is going to be a terable trip, as it is 150 miles. the troubel is we can only take about 300 Pounds on our Sleds, and that will just be enough to take us to the Koyukuk and stay about 2 Weeks, when we have to come back. . . .

Charlie fishes through the ice while waiting to start, then sells his fish to make money. The three partners buy a Klondike stove for $12 from an Indian; they sort their camp provisions and sell off the extra grub, of which they have plenty for they have used none of their camp provisions and it is already late October.

No. 3, 1898

Dear Wife every thing is settled now. there are 40 Men in Dall River who are going to the Koyukuk. we had a miners meeting and each of us payed $3.50 so we have hired an Indian Gide . . . and we will start the 9th of November . . . . Dearest let me tell you eny one who has ever gone prospecting for Gold it is the hardest earned money a man ever earned, for this is the most Miserable place on earth. Now Dodie dont worrie as I am all right. . . . Dodie set a plate for me Christmas night just as if i was home. I must stop dear Wife, I feel too Miserable.

Sunday, Dec. 12, 1898

Dear Papa

This is a queer note I am sending you but it is just to let you know that I am well and have just crossed the last Montain Range and am in the Koyukuk district and 20 miles from Bonanza Creek where I hope to be tomorow and Stak a Clame for you and I. Oh Papa if you could only see me in our tent on a side of a Montain writing this note. the Thamomater is only down to 38 below 0. and laying on Blankets trying to write this note. not that it is Cold. But It make me so home Sick. if I only know that my Dodie and my dear Children wer all well. Gordon and I are alone, and Roovers had enough and is staying on the Steamer Evans. we have been 26 days so far on the tripp and in that time we travled over 225 Miles and only took enough provisions along

to get to the Koyukuk and Stak Clames on some of the Creeks, and then we have to start back to the Boat and bring in all our grub. it is a verry hard place to get to as we have to Cross 2 large Montain Ranges. I cant write you eny encouraging News yet. . . . when on the Trail today met 3 Men who are going to Dawson City. one Came all the Way from St. Michaels all alone . . . taking letters for one Dollar apiece. this is the way he is making money to get out of the Country. . . . Dont write. There is no way to get letters here.

From your Son

Charlie

March 19, 1899, Dall River, Steamer Evans

Oh My Dearest Wife

How are you and my Darling Children. . . . I have not got a letter from you since I left Seattle. today, Sunday, the Mail Carrier came from Circle City with Mail but not a letter for me. infact there has been no mail come in from Dawson this Winter. . . . I supose you know that Roovers is not with Gordon and me. . . . Gordon and I started for the Koyukuk on Jan. 16 and it took us 30 Days to go into Bonanza Creek. we had a verry hard time of it crossing the 3 Montain Passes as there was such deep snow and no one had travled over the Trail. and Jan. and Febuary are the Stormiest and

most dangrest to travel, but we got there all right. and had good luck for Gordon and I each got a Claim on Bonanza Creek. . . . I went down in my hole 13 feet before eny Gold was found. Dodie you can amagine how I felt when I saw that I was the oner of a Placier Mine that had Gold in it. we are the first to find Gold on Bonanza Creek. . . . Dodie the next thing that has to be done is to sink more holes and find the pay streak. then you have to tunel and foller the gravel that carries the Gold. but that cant be done this year as it is too near spring. then comes the most important part if there is enough gold that it will pay to Work the Claim. . . . the principle thing is to find if there is realy Gold in the Claim, which verry few have done in the Koyukuk. the way that most have done was to get a lot of Claimes but not prospect them. they expect this part of the Country to be Boomed the same as Dawson was, and sell thare Claimes to the New comers next Summer. Gordon and I are going to take another trip. but this time we are going up the Koyukuk River and try to get another Claim, as it is too late in the season to work on our Claim on Bonanza. and then come right back to the Steamer Evans and sell the rest of our provisions. and then ship as one of the Crew of the Steamer Evans and make the trip up to Dawson City and back to St. Michaels and come home. Now my Dear Wife this is what I intend to do. but by the time you recive this letter all may

be changed. it is hard to tell what may happen that may change all my Plans.

*****

The last entry in Charlie Miller's diary, a postcript on the above-quoted letter, is dated May 29, 1899. He was 40 miles from Circle City steaming toward Dawson City on Evans. He notes that he intended to mail the letter when he "rote" it, but decided to save a dollar because it would just end up in Circle City.

It would appear that Charlie Miller got home safely. His letters and mementos--outfitters receipts, hotel cards, and newsclippings--ended up in a scrapbook for his family and posterity to share. After delays and frustrations that would test Job himself, Charlie finally got to the scene of action, and on two, possibly three, cross-country winter treks through the mountains, pulling his own sled of provisions and gear, staked his claims and found Gold in the Koyukuk. Whether he and Gordon ever came back to work the Bonanza claims is unknown, at least to this writer.

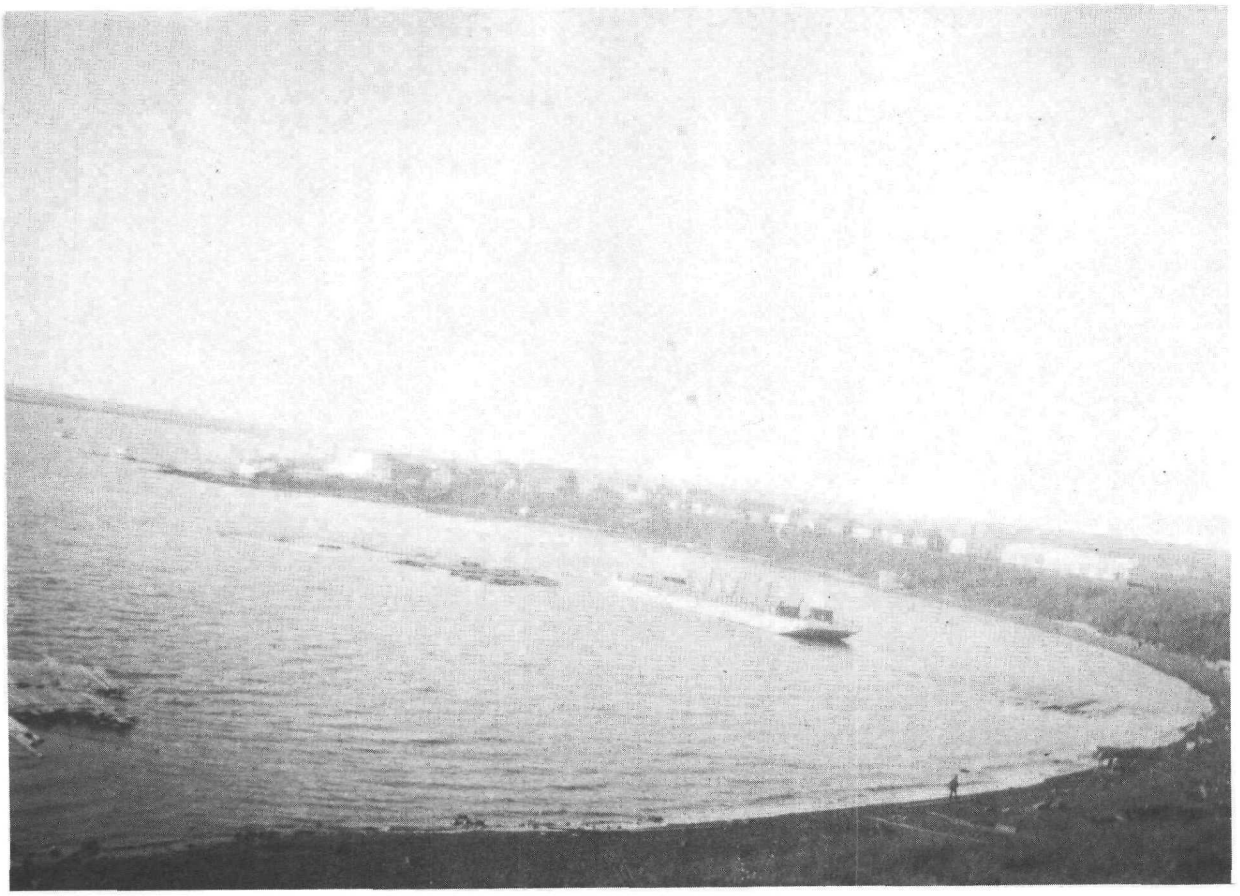
The diary ends on a positive note, qualified, to be sure, by hard experience in a country that played tricks with human plans. Charlie's difficulties and his personal evolution from the limbo

of defeat and homesickness to competent action were not all that unusual during the 1898-99 adventure. He, like many others, came for the gold and found themselves instead.

Most of the Koyukukers came by boat, either steamers or row boats. R.J. Young sailed from Portland as mate of the river steamer Lavelle Young. Later in the summer he became captain and pilot of the boat on the run up the Koyukuk to its winter pull-out at Peavy, above the junction of South Fork and the main Koyukuk.[25] In addition to 50 tons of saleable freight--food, tools, clothes--which spurred financial backing for the expedition in Oregon, the steamer carried elaborate dredging equipment. Captain Young planned to prospect during the winter and employ the dredge during the summer months. His letters to his wife chronicled both success and failure:

> I succeeded in getting up farther than any other boat bringing 50 tons of freight which I think will be in big demand before spring. I think I have surprised them all and opened their eyes by bringing a boat of this size to this point. Passed 8 steamboats high and dry on bars and rocks which I don't think will ever get off. They will be a total loss. I came through without a scratch making record breaking time passing boats that had two weeks the start

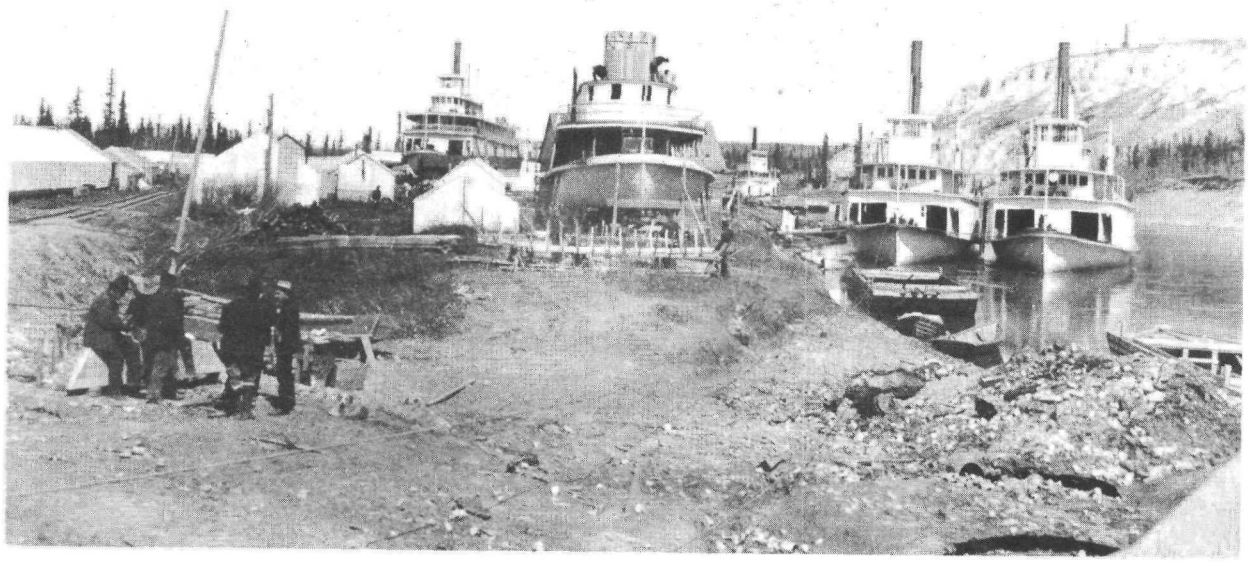
From winter quarters Young made a number of dog-team prospecting trips to stake claims on upper Koyukuk tributaries and beyond the



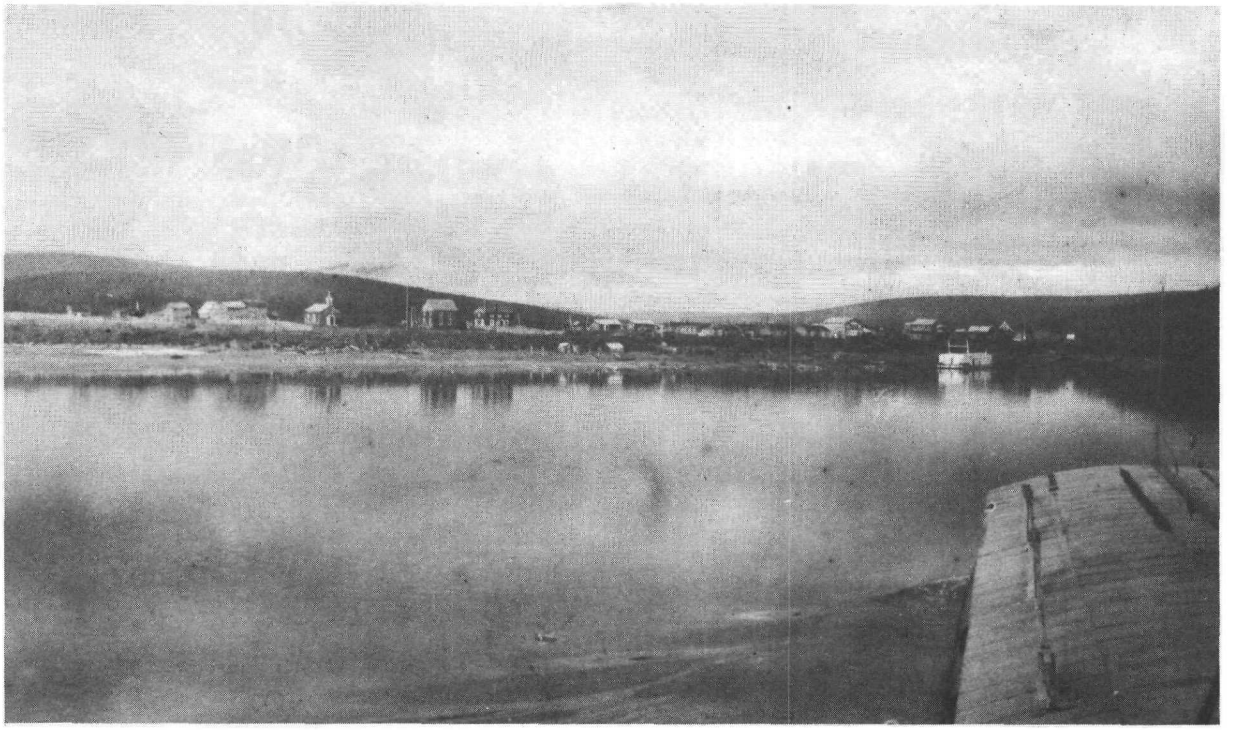
St. Michael and the harbor, with barge near shore. A.H. Brooks photo 157 of 1898. USGS Historical Photo Library, Denver.



Riverboats on ways at St. Michael. J.B. Mertie photo 488 of 1916.
USGS Historical Photo Library, Denver.



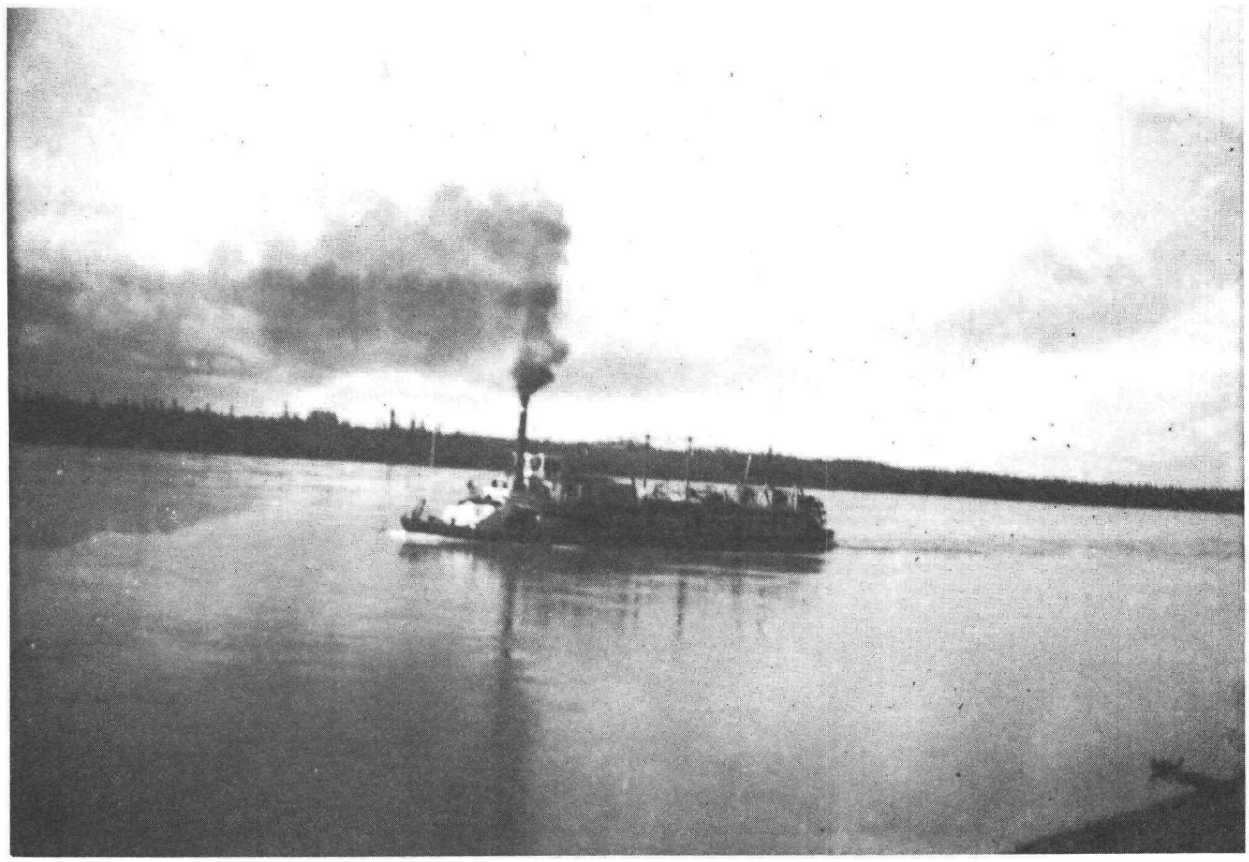
Building steamboats along river-front at White Horse, Yukon Territory. W.C. Mendenhall photo 137 of 1901. USGS Historical Photo Library, Denver.



Nulato on the Yukon River, from bow of steamer Sarah, looking across barge being pushed. A.G. Maddren photo 140 of 1909. USGS Historical Photo Library, Denver.



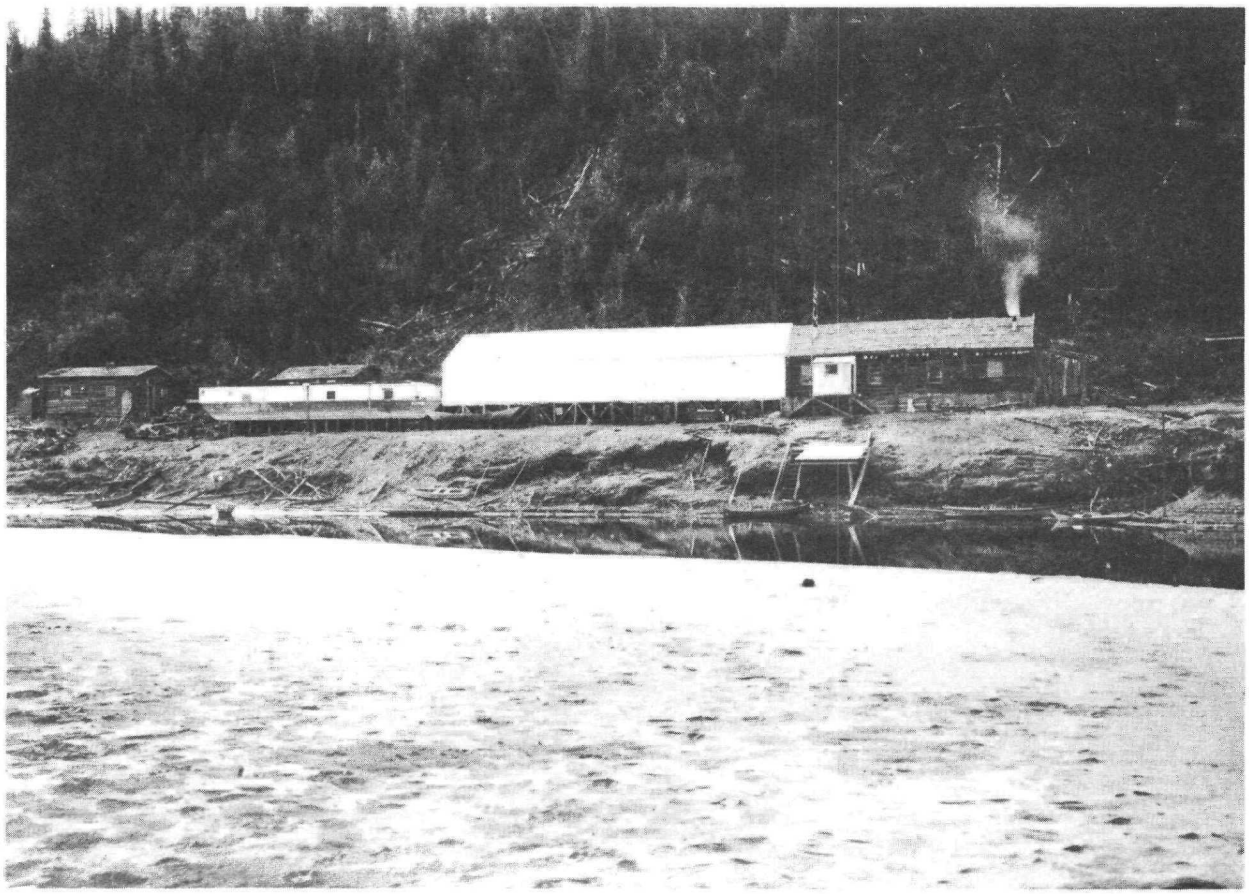
Prospectors with horses on raft approaching Dall River junction on the Yukon. W.C. Mendenhall photo 178 of 1901. USGS Historical Photo Library, Denver.



Steamer on the Yukon River at Weare (Tanana). A.H. Brooks photo 148 of 1898. USGS Historical Photo Library, Denver.



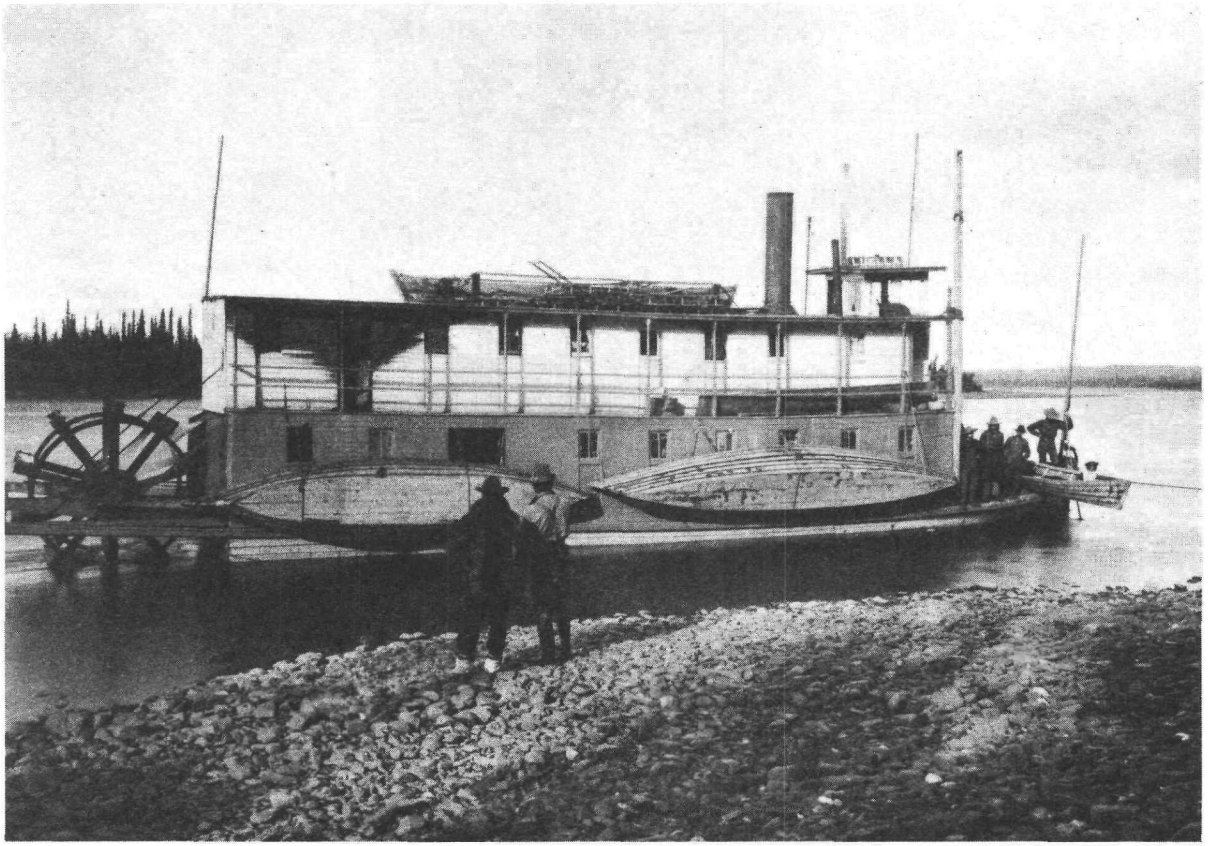
Weare (Tanana) Trading Post on Yukon River. A.H. Brooks photo 145 of 1898. USGS Historical Photo Library, Denver.



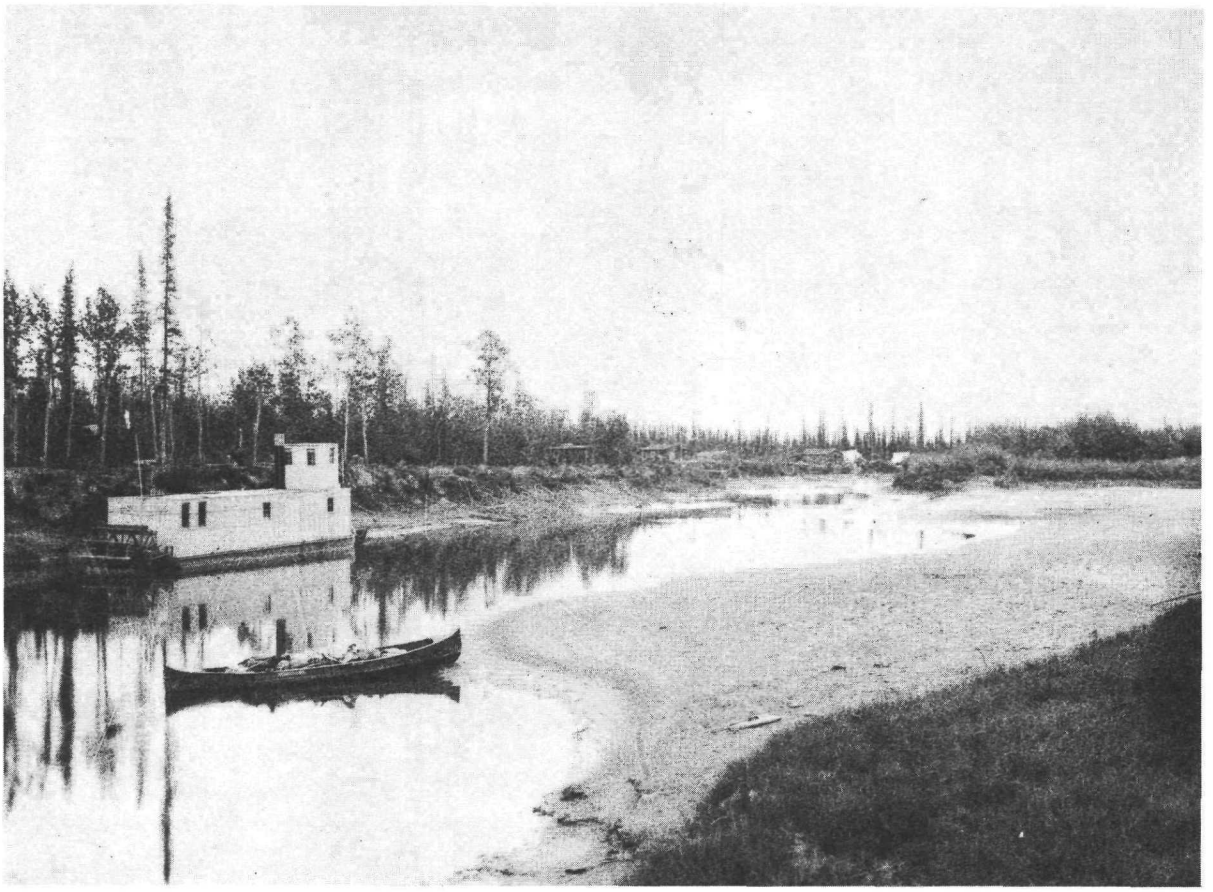
Bergman on Koyukuk River. F.C. Schrader photo 453 of 1899. USGS Historical Photo Library, Denver.



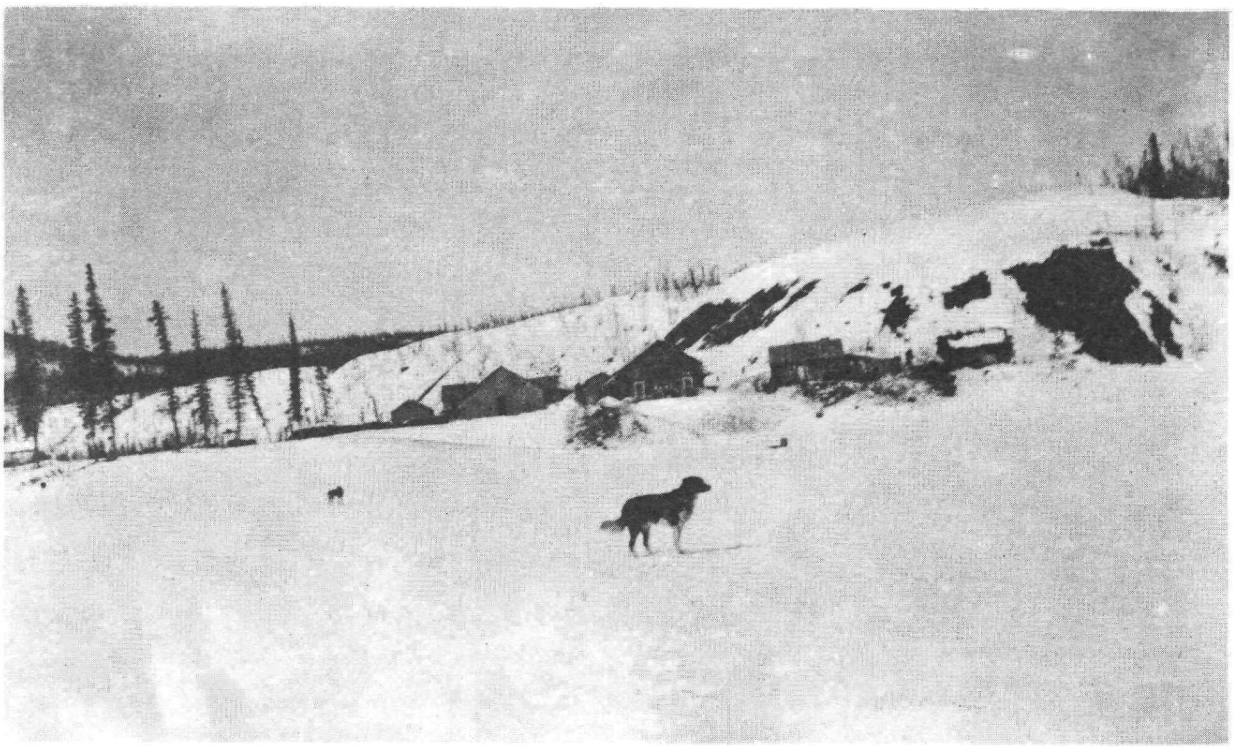
Interior of trading post at Gold Rush town of Bergman on Koyukuk River. F.C. Schrader photo 845 of 1899. USGS Historical Photo Library, Denver.



Steamer Luella on Koyukuk River above Bergman. F.C. Schrader photo 449 of 1899. USGS Historical Photo Library, Denver.



Town of Peavy on Koyukuk River below Bettles; note small, shallow-draft steamboat used on upper river. F.C. Schrader photo 437 of 1899. USGS Historical Photo Library, Denver.



Town of Bettles on Koyukuk River; slope of Mt. Lookout rises to left. F.C. Schrader photo 808 of 1899. USGS Historical Photo Library, Denver.



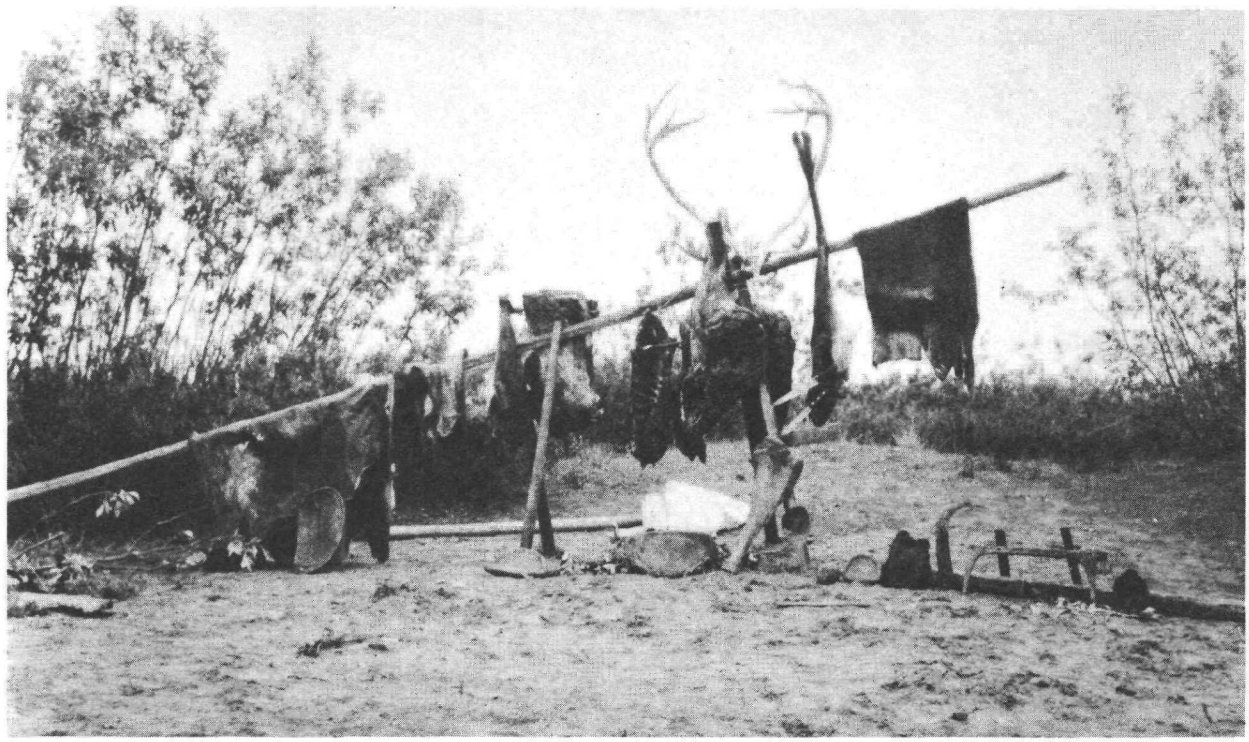
Miner's panning on Myrtle Creek in the Wiseman District, 1899. Note cleavage and attitude of gold-bearing schist. F.C. Shcrader photo 402, USGS Historical Photo Library, Denver.



Native fish-drying camp near mouth of Alatna River. F.C. Schrader photo 447 of 1899. USGS Historical Photo Library, Denver.



View down Noatak River from hill overlooking Lucky Six Creek. P.S. Smith photo 592 of 1911. USGS Historical Photo Library, Denver.

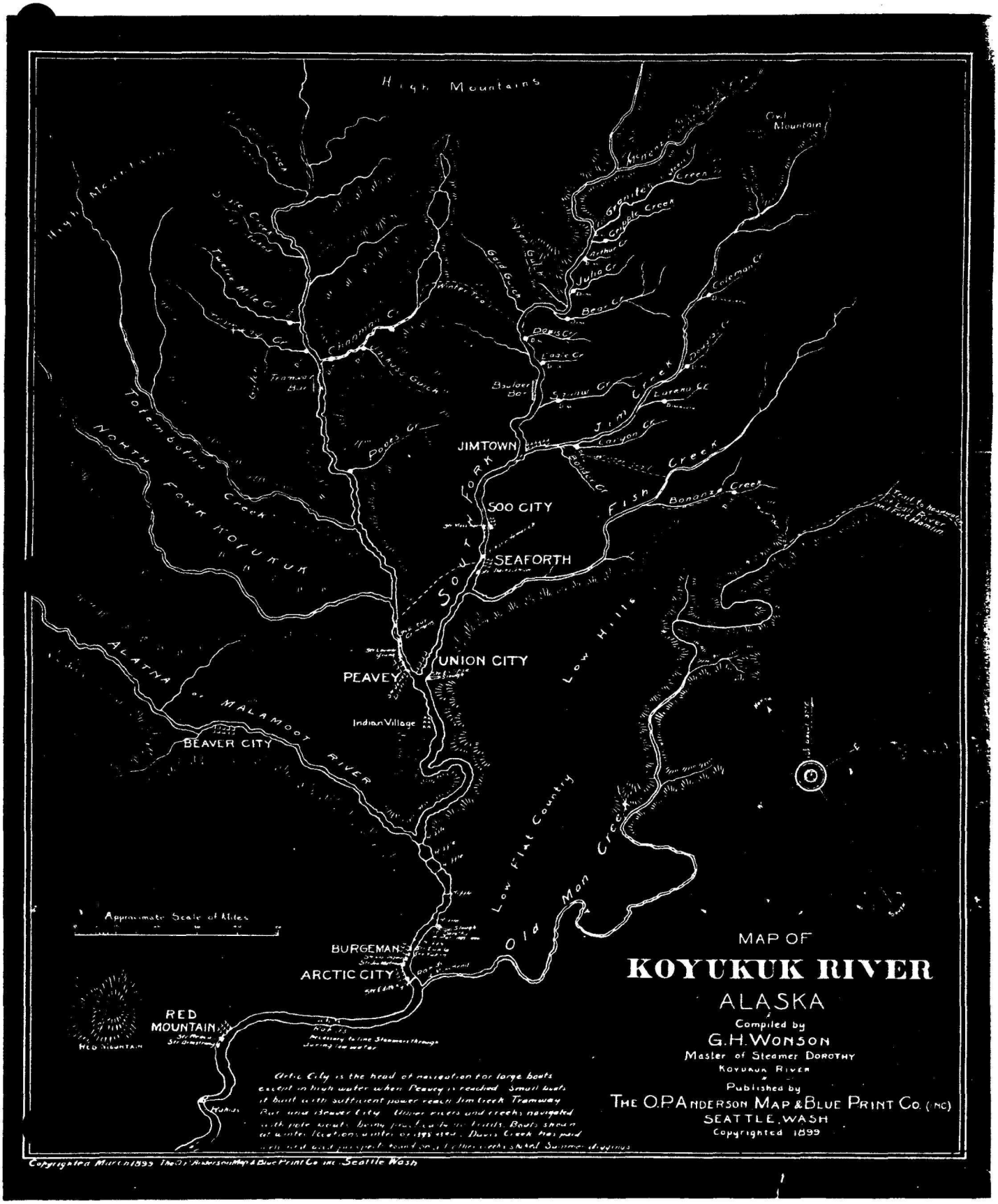


Caribou drying rack at Native camp on Noatak River. P.S. Smith photo 771 of 1911. USGS Historical Photo Library, Denver.



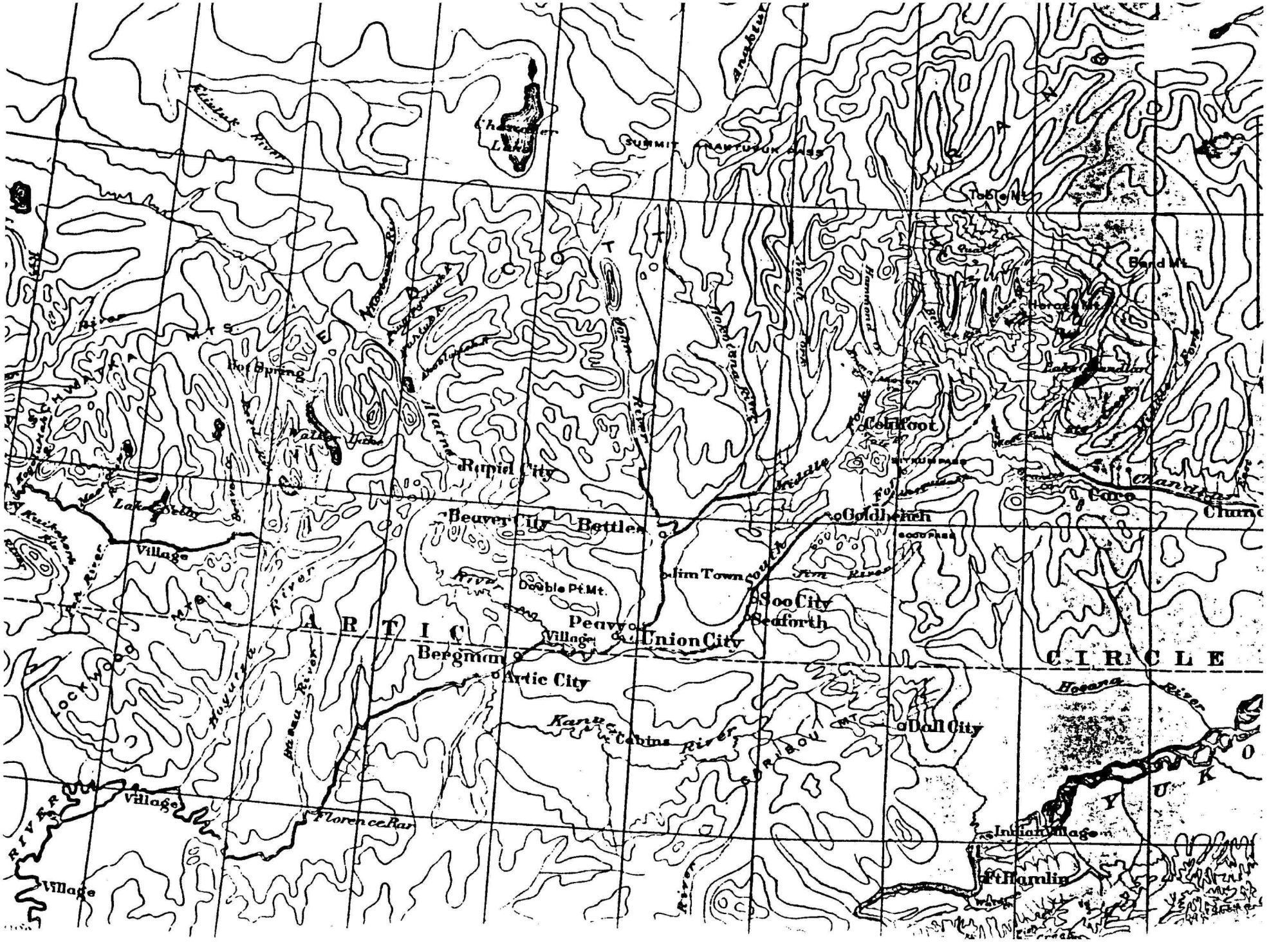
Mendenhall party pulling canoe through riffles on way to Kobuk River. W.C. Mendenhall photo 182 of 1901. USGS Historical Photo Library, Denver.

An inaccurate guide map of 1899. Map 12025 of the Alaska Historical Maps Collection, Library of Congress.



Copyrighted March 1899 The O.P. Anderson Map & Blue Print Co inc. Seattle Wash

This full-size section of the Alaska Road Commission general map of Alaska roads and trails in 1909 shows the locations of the many mining towns (most of them primitive camps) established during the 1898-99 rush to the Koyukuk. By the time this map was printed most of these sites were abandoned and in ruins. RG 126, Map 1, National Archives.



Chandler Lake
SUMMIT
Table Mt.
Bend Mt.
Horace Mt.
Hot Spring
Walker Lake
Rapid City
Beaver City
Bettles
Coldfoot
Goldbench
Caro
Village
Jim Town
Double Pt. Mt.
Peavy
Village
Union City
Soo City
Seaforth
A R T I C
C I R C L E
Bergman
Artic City
Kanuti
Cabins
River
Dall City
Hosana River
Village
Florence Bar
Village
Indian Village
Ft. Hamlin
Y U K O

Arctic Divide. His Koyukuk claims ". . . prospered well but we were unable to work them on account of the water shutting us out."

Because rich deposits of coarse gold lie deep in the Koyukuk's ancient streambeds, dredging did not work:

> I left all the dredging machinery up the Koyukuk. We would have been better off if we had left it in Portland. I can say as a dredging proposition it is a decided success as a failure.

Young's resolve to shift from the Koyukuk to the new strike at Nome faded as his health gave out from overwork and perhaps a touch of scurvy. Just before his scheduled sailing home from St. Michael in July 1899 a discontented member of Lavelle Young's crew assaulted Captain Young with a knife, stabbing him seven times. Young overcame the assailant and attended the trial, almost fainting from loss of blood. An invalid when he finally got home, he later recovered to captain Willamette River steamers and manage an ocean transportation company. According to his descendents, he never made a penny from his Alaska claims.[26]

Thomas Moore and two partners, Bill Heitmann and Dan Dauber, built and rowed, poled, and cordelled a 40-foot boat loaded with more than 2 tons of supplies to prospects on the Hogatza River, about

midway up the Koyukuk. They travelled in company with two other parties for mutual support. Moore recorded his adventure in a reminiscence entitled, "Grub Stake."[27] It is valuable for observations of daily life, the winter economy of the Yukon, and the Indians of the Koyukuk. . .

> Day after day, in the damp wet weather, we toiled from early in the morning until late in night. We found with one steering and two rowing we could make better time, as it was extremely hard to keep the boat headed with all three rowing. So Dan took the steering oar, Bill and I did the pulling and in this way, with a few exceptions, we toiled for 400 miles. The mosquitos and gnats had us completely at their mercy, and we had both hands occupied with our oars.
>
> . . . . . .
>
> September 6th we camped for the night near an Indian village and woebegone, wretched looking people they were, only half clothed and looking only half fed. The next day we laid up on account of rain and they came across the river in canoes to see us. One little fellow had only a light shirt on which was ripped up one side to the sleeve. He had been through the wet woods and was soaking wet and

shivering with cold. We had him dry his clothes and warm up by our stove. . . . Among our visitors was an old man, who, when he would spy a flock of geese would squat down on the sand bar and utter a call that would bring them almost within shooting distance of the camp. Several young squaws also visited us and as they started in their canoes for their camp they called out "Good bye, Sweetheart."

We left next day and a little incident happened that will illustrate the character of the Indians. There was a high wind blowing when we started and when Spencer raised his sail his mast snapped in two. He landed for repairs and it was some days before we saw him again. We learned that after putting in a new mast . . . [Spencer and his partner], had started again, but the wind upset them and they lost a good part of the supplies in that boat, and after a narrow escape had landed bottom side up near this Indian village. The natives, thinking they had lost all they had, came to them with dried fish and other eatables, offering to give them to them. They are very kind and generous.

On the evening of the 9th, we came to what is known as the Cut Off. Here the river takes a long swing to the left while a more direct channel to the right saves the traveler

> 60 miles and forms a large island called Treet's island. We had labored all the way against a swollen stream and a very hard rain further up had raised the river higher . . . . The river had risen over a foot during the night and the cut off was booming. The sand bars were nearly all covered and we found the next four days it took us to go that 30 miles, days of torture. We had to cross the river repeatedly, as it was out of the question to buck the swift current. In doing this we would run up along the sand bar until we came to the high bank, we would take a spurt and run as far as we could up into the swift current and then letting her play off at an angle of 45 degrees would shoot across for the other side. The hard kind of pulling at these times would barely hold us even and we would usually strike the bar on the other side some yards below the point we had left on the other side.

In December 1898, their claims in the fine-gold country a bust, Moore and Dauber gave up and with two other men, returned to the Yukon. There they would chop wood for the steamers to get ticket money for the passage home. After completing a small cabin, they began to chop wood in earnest, except for Moore who was temporarily laid low with mumps.

> On the evening of the 8th of February, I announced to the boys that on the following day T.W. Moore would make his debut

wood chopper, and, contrary to their advice, did so, but it was a sad failure, for I found that the three weeks' sickness had left me as weak as a kitten, and after chopping for half an hour I had to retire. I heard innumerable definitions of and references to "dabue" for months afterwards.

In a few days I got squared away and as we all worked hard the pile in the draw grew rapidly. The timber we were cutting consisted of birch from 4 to 8 inches in diameter. We would chop down the trees, trim them and hauling the poles to the head of the chute would chop them into the proper length and split the larger ones. Then every night we would spend half an hour throwing what wood we had chopped into the chute. We would take turns standing at the foot of the chute and watching the wood as it started at the top and came down with ever increasing speed. When it reached the bottom it was going with the speed of the wind, here it would leave the end of the trough and fly through the air turning all sorts of somersaults until it struck the pile some 50 feet beyond, where it would bound along and finally settle down. Now and then a crooked stick would fly out of the chute before it reached the bottom, and it was well for the watcher to keep an eye open for such pieces. Our chute was a source of amusement to the Indians, who would stop on their way up and down the river and watch the wood as it came down. . . .

Thus the days passed, and although we were all soon heartily tired of wood chopping we forced ourselves steadily to our task.

We made arrangements with Pickard [Pickarts], the storekeeper at Koyukuk Station, by means of which we got supplies on credit with the understanding that we should pay for them in the spring when the wood was sold. We made trips up to the Station every three or four weeks for supplies . . . 15 miles up and 15 miles back making a total of 30 miles . . . .

These trips tired us out completely, as we were not used to walking and well do I remember how, as I dragged one tired foot after the other over the last weary miles, I thought of all the comforts of that home I had left in the States. How I cursed the day I left it and took a solemn vow that I would chase the 1st cake of ice to St. Michaels in the spring and go home. But a day's rest would revive our tired muscles and drooping spirits and we would be all right until the next trip.

Prices were very high on the Yukon that winter, and we soon found to our consternation, that our grub bill was growing nearly as rapidly as our wood pile. We economized all we

could, denying ourselves all the luxuries one after another until our bill of fare was a very slim affair. . . .

For breakfast we had pancakes made of flour at $10.00 per hundred and baking powder at $1.00 a pound. On these we ate a gravy made from bacon grease, flour and water. A few slices of bacon at 30 cents a pound completed the list. At first we had both tea and coffee, but after the last sugar had been used it went begging, so we made no more.

For dinner we had bacon, beans at 15 cents a pound, baking powder biscuits and stewed dried fruit at 30 cents a pound, and the same thing for supper with rice added.

. . . . . .

The rice gave out at the end of the first month and we could get no more. Salt, pepper, nutmeg and cinnamon were luxuries we did not deny ourselves of for the simple reason that a little of it went a great ways. Dried fruit we were never out of and I think that it was owing to the fact that we ate it two or three times a day that scurvy kept away from our door.

Thomas Moore finally got home after an experience typical of the more resourceful gold seekers who failed as miners but maintained their health and spirits through the long winter.

Life in the remote, upriver mining camps comes to life in Capt. J.D. Winchester's account, published in 1900 soon after his return from the gold fields.[28] Winchester joined a Lynn, Massachusetts, mining company and sailed by schooner through the Straits of Magellan to San Francisco, thence by ocean steamer to St. Michael. With other Massachusetts companies the Lynn group finally made its way by rowboat up the Koyukuk and Alatna rivers to the site of Beaver City at the mouth of Helpmejack Creek, just as the streams froze up in early October 1898.

After building cabins and gathering firewood, the companies organized their town and, after some dispute and compromise, reached agreement on staking and recording claims:

> We were called up to Beaver proper to organize the city, The meeting was held in a large double shack, and there we made the miners' laws for the city and for staking out claims. A claim was to cover five hundred square feet, and a man could take only one claim on a creek. Staking by power of attorney was prohibited. . . .

The dangers of prospecting alone are illustrated by the fate of one miner who wandered from his companions:

> I attended a meeting one night in Beaver, when it was reported that one of the Eclipse party was lost. He was up the "Help Me Jack," with his partners, and was on the trail home when he walked away from his companion. That was the last they saw of him. The weather was cold--fifteen and twenty degrees below zero--and they were afraid he would freeze. He had his pack of eatables with him, but his disappearance was so strange that they began to fear the worst. They wanted volunteers to go and hunt for him, and quite a number volunteered. I had frozen one of my toes and was unable to join this party, which was to start next morning.
>
> They had for a guide an old hunter and Klondiker by the name of Sly--a man of good judgment in such cases. . . .
>
> The second day on the hunt they found him away up a ravine, at the beginning of the ascent of a mountain. He had travelled out beyond the timber line, and as he began his ascent he fell, and was found there dead. He had been tracked close by the Kyle shacks, where he had passed back and forward over their claim. There was no place on his

> trail that showed he had ever stopped to rest or cook anything to eat, although he carried provisions with him. He had thrown away his blanket and all of his pack but an old frying-pan and bottle of matches. . . .
>
> This affair seemed to cast a gloom over the inhabitants of Beaver. The deceased was brought down the river and buried in an icy tomb one hundred miles north of the Arctic Circle.

Winchester fell ill as prospecting and supply trips emptied Beaver City of his companions:

> Everybody now way up in the creeks putting up shacks and getting ready to work their claims, which could not be done until the ground froze down to bed rock, so that when they came to dig, the hole would not fill up with water. In order to sink a shaft it was necessary to build a fire and thaw the ground. Then there would be about three inches to work over after every thawing. This process was continued until bed rock was found, and there the gold was supposed to lie. The boys had left for Arctic City on the tenth of November, and had been gone a week, when I attempted to arise one morning and found I was hard and fast. I lay there and thought what I had best do.

I decided I would crawl over to the Serenes and ask them to get my wood for me, and probably I could get others to help. So I put on all of my warm clothes and got a long staff. With this I hobbled over to the Serenes. I was passing the "Jenny M." shack when they asked me where I was going. I told them, and they told me that the Serenes had gone up on the creek that morning. They invited me in to warm myself, and I informed them how I was situated. I asked little Frank, as we called him, to cut me some wood. He came over with me and went into the wood-pile, and soon had a lot of wood cut.

I asked him if he knew of any Knights of Pythias, as I belonged to that order myself. He replied in the affirmative, and I requested him to notify them at once, which he did and brought three or four to see me. I had moved the benches together by the stove to make me a bed, and I could put wood in the stove and cook from these benches. I had plenty of bread baked, which I soaked and ate with condensed milk. My legs were so bad that it was impossible to straighten them out, and I moved about on the stools. My teeth were loose and gums sore.

The doctor made a friendly call and I asked him what he thought of the case. He called it inflammatory rheumatism.

> I had a high fever and was drinking water a quart at a time. He advised me to take a drink of citric acid once in a while. This was something we had plenty of, it being called a scurvy preventative. I had used but little of it, and I liked the drink, but I thought acid was not good for rheumatism.
>
> I was alone night and day. In the morning some one came and cut my wood, brought it in and left me alone until next morning, although I told them I knew that I ought not to be left alone nights. Still no one offered to stay, and finally the Swede who cooked for me told me that he would have to go up on the creek, so, of course, I was left alone. . . .

Finally, Winchester's companions returned from their claims to find him helpless and out of firewood, resigned to death. A Doctor Cunningham from Philadephia diagnosed scurvy and prescribed raw potatoes. An emergency trip to Arctic City for potatoes saved the captain's life. He noted the prejudice among the miners against those afflicted with scurvy--they were lazy, dirty, and inactive. A hard-working man was immune. As dietary deficiencies crept through the camp, felling even the most strapping and active miners, Doctor Cunningham's advice on diet (citric acid, raw potatoes, dried fruit) gained credence.

Return of the sun dispelled the "dark gloom of night . . . and we began to feel like human beings again." Still the dearth of gold deranged individuals and the fragile bonds of the mining companies. Fights and duels resulted from major disputes over claims and malingering, and as often from petty complaints over cooking, snoring, and the way one clicked his teeth while eating. Partnerships dissolved and disputes over division of joint property ensued. Plans for evacuation became more urgent as the sun skipped across the southern horizon. Those who were sick feared that their partners would desert them. Winchester, still recovering from scurvy, tried to mush to Arctic City with the others, but his weakness forced him to turn back to the accursed shack. One by one the companies joined the exodus. Winchester had plenty of time to contemplate the ruin of their dreams and the evil machinations of those who had lured the innocent to this disaster:

> Dorcross, the boomer of the Koyukuk, was a squaw man. He made his living by going down to the mouth of the Koyukuk, and inducing the people he met there going up the Yukon to go up the Koyukuk instead, by telling them stories of the fabulous wealth that lay within the gold belt of the Koyukuk. He himself had a claim that he would not take twenty thousand for. The Kyle party had fallen into his trap. They engaged him to run their steamboat up and down

> the river, besides giving him a year's grub stake for himself and family, and paying him for his services on the boat. They had worked according to his dictation, and here they were, ready to go down the river without an ounce of gold. . . .
>
> Other men were operating on the different tributaries, the same as Dorcross. I wondered if some were not in the employ of the steamboat companies, who were carrying on a nefarious business by inducing men to leave their families, and mortgaging their little belongings to pay their passage up to Dawson. Many familes were left destitute for the craze of gold had seized their natural protectors, and the, rushed off to Klondike.

Finally, their rowboat Mary Ann repaired and ready, Winchester and his loyal partner Lepage watched the ice break up and began the run for home:

> After I left the old shack I never turned back to take a last look, for there was nothing to see or remember about it but suffering. I got on the boat and we pushed away from the bank and were soon shooting down the river at great speed. Lepage rowed while I steered. I found it quite difficult to keep clear of the heavy ice that was

caught on the sand bars; with a mad current dashing, whirling and foaming around them, it was hard work to keep our boat from being drawn under this ice. . . .

[The next] . . . day we came out on the Koyukuk, making the passage in seventeen running hours. We had no trouble coming down as the river was high enough to carry us over the rapids without danger, and we camped that night on the site of old Arctic City. . . .

As we neared New Arctic City we could see the beach lined with boats getting ready to go down the river. My two days in the boat had weakened me considerably and when I got on the shore I could not stand. . . .

Arctic City had grown to quite a town since I saw it last. They even had electric lights. The Kyles owned the plant and the town folks kept it in firewood to pay for the light. Dorcross had a dance hall here and ran dances and sold houche, a sort of Indian rum. The women who attended the dance were three squaws and a white woman who was washing for the men to get money to pay her way out. . . . These dancers made a grotesque appearance in their Klondike attire, with long, bushy hair and beards, waltzing the squaws around over a rough and uneven floor. Men who would

> be insulted at the offer of such a drink at home, turned the houche down with a relish, after treating the squaw, as though it was the best. . . .
>
> Some of those who could not dance stood up by the bar and drank this Indian rum until they became crazed, and were ready to pick up a word or act that they counted as an insult to themselves or somebody else and fight. . . .
>
> . . . . . .
>
> Well, we were about through with Arctic City, a place soon to be deserted. We embarked on the Mary Ann one fine morning, and started on our long journey.. . .

The overriding reality of failure and disappointment that attended the 1898-99 gold rush to the Koyukuk and Kobuk rivers was brightened by the exploits of experienced men who overcame all difficulties. One of these was Herman Carpenter, who came to the upper Koykuk in the spring of 1898. Even Carpenter left the country without any gold, but he matter-of-factly assigned blame to the geology of the region, a place of "grub-stake diggings . . . where a man can make a living from year to year, and scarcely anything more."[29] (Aside from a few pockets of concentrated coarse gold at deep bedrock, discovered over the years,

Carpenter's description remained and is still a valid summary of the Koyukuk's economic geology.)

Despite a capsized boat and loss of provisions, Carpenter refitted and throughout the winter freighted for pay by dog team to the scattered mining camps. Between jobs, he explored and prospected the country, including a transit across the Arctic Divide. He and his partner Trembly joined the Indians on a caribou hunt that covered about 700 miles over a period of a month. They concluded their prospecting on Wild River, following the instructions of some "Mallemuttes" who showed them samples of quartz rock from that drainage. With his Wild River claims staked and recorded for future reference, Carpenter proceeded to Nome and there struck the jackpot.

Having wintered over on the Yukon in 1897-98, before coming to the Koyukuk, Carpenter knew the ropes, kept his health, and enjoyed the winter. He came out with a grubstake from freighting that got him started at Nome. Thus, as the Prophet said, "time and chance happeneth to them all."[30]

The 1898-99 rush to the Kobuk followed essentially the same script as that on the Koyukuk. It came about for the same causes, and it, too, brought many more prospectors than the few low-paying placers could sustain. As on the Koyukuk, many stampeders bailed

out early--some portaging to the Koyukuk for a double dose of disappointment. Those who wintered on the Kobuk built similar camps and cabins, and coped in the same ways as did the Koyukukers.

But there were some differences. Despite old man Miller's invariable washing out of colors on Lieutenant Stoney's 1884 expedition, and Lieutenant Cantwell's confirmation of precious metals on the upper Kobuk, that river had not experienced the decade-long evolution of prospecting, transportration, and trade that launched early

Koyukuk history. Doubtless this neglect was caused in part by the highly localized nature of paying gold placers on the Kobuk--on its upper reaches limited to streams draining the Cosmos Hills near present Shungnak. But it can be argued that geography was as important. The Yukon River was the natural route to the Alaskan and Canadian gold fields. Its tributary streams invited prospecting from the drift of people plying the main river. By contrast, commercial ventures north of Bering Strait centered on maritime resources, particularly whales, or on trade with coast-dwelling or visiting Eskimos. For the sailors and traders who might seasonally congregate at Kotzebue Sound there was little incentive to thread the Kobuk's intricate delta and probe the river's upper reaches upon which no hint of civilization could be

found. Even when the parallel rushes took place, the proven placers of the Yukon drew most of the stampeders and virtually all of the experienced gold miners. Thus the Kobuk rush may have been the least substantial of all the gold rushes in the grand sweep of the Klondike years--both in the event itself and in the aftermath of long-term mining. By 1910, fewer than a dozen miners were working the upper Kobuk drainage.[31]

The vagrant nature of the Kobuk rush owed as much to chicanery as to geology. Capt. Barney Cogan of the whaling bark Alaska hated to sail north to the whaling grounds in an empty ship. On his return to San Francisco in the fall of 1897 he dropped anchor in Kotzebue Sound and picked up a prospector reputed to have found some coarse gold on the Kobuk. The find was confided to a few aboard the ship, who, when they reached San Francisco, found ready ears for a tale of unlimited wealth waiting for deserving takers in the gravel bars of the Kobuk. The story reached epic proportions instantly. Cogan himself was said to have dug out $15,000 in gold in 2 hours with a pocket knife. Steamship companies advertised "nuggets as Big as Hickory Nuts" on the bleak shores of Kotzebue Sound. The secret of the precise location of the gold sold for $600, but only to those who paid cash.

Cogan's ploy worked. He sailed his bark north in the spring of '98, in company with Captain Whitesides of Northern Lights,

carrying 40 propectors and fortune seekers for the Kobuk River. Altogether, more than 1,000 people made the journey to the Kobuk, where lack of gold and winter's entrapment soon cooled their Klondike fever. One of the few real prospectors in this crowd, Lewis Lloyd, discovered gold in the Cosmos Hills. He and a few more would hold their ground and make it pay modestly in succeeding years. The others disappeared like a receding wave sinking in the sand.[32]

As Alaska sailed north to Kotzebue Sound with the eager Kobukers, one of her crew, a Swede named Eric Lindbloom, jumped ship at Port Clarence on the Seward Peninsula. After a stroll on the beach, and a saving feed by reindeer herders, he hooked up with two other Swedes prospecting Snake River and Anvil Creek. Together they made the original discovery of the great Nome gold fields. This happened while hundreds found nothing on the Kobuk. Such were the ironies of the Gold Rush.[33]

It is a blessing akin to not knowing one's own death date that the patterns and judgments of history are drawn up after those who make it have had their fling at life. The classic account of the Kobuk rush is contained in the journal of a young bird collector named Joseph Grinnell, who joined the Kobuk adventure as a member of the Long Beach and Alaska Mining and Trading Co. The outlook of the company as it departed San Pedro harbor in the schooner

Penelope can best be described as raw optimism--somewhat tempered by a sense of humor given thrust by the presence of a doctor member named Coffin, whose best friend, also a member, was an undertaker. Grinnell essayed that "The combined influences of these two are sufficient to insure proper termination of our trip, if not a propitious journey."[34]

The schooner's passage through Bering Strait at midnight of June 26, the sun still glinting on the horizon, gave rise to a celebration of singing, dancing, and wild capers, including the throwing of shoes and socks into the ocean by some of the company. Ringing out over the austere seascape of the strait and somber Cape Prince of Wales, where American missionaries followed purposes "as eternal as the icebergs," came the cheer: "Penelope, Penelope, zip, boom, bah! Going up to Kotzebue, rah! rah! rah!"[35]

True, Grinnell himself would soon pattern and judge the abortive Kobuk rush, but for a while at least, infectious fantasy reigned.

Grinnell's observations as a trained naturalist were acute and his sympathies broad. In addition to descriptions of migratory birds and the bursting life of summer tundra, he noted the difficult work of the Friends' Mission at Cape Blossom, near present-day Kotzebue, trying to ameliorate the effects of traders' liquor and avarice upon the Natives. He quickly detected the change of

stampeders' attitudes as prospecting proved futile and skeptically assessed the new flights of rumor that induced even members of his own company to cross over to the Koyukuk. He clinically analyzed the taboos of the Natives, trying to unravel the reasons for their fears and aversions. One instance of this sort nearly proved the company's undoing. At their winter camp, named Penelope, some 170 miles up the Kobuk, they hosted some Eskimos, including one woman, to a dinner of beans covered with gravy made with the juice of fried bear meat. When one of the Eskimo men detected the taste of bear the woman threw down her food, for it was taboo for women to eat bear. The men proclaimed that she would die, and indeed she did within 2 weeks. Grinnell concluded, "It is awful to think of; how we might have been held up for murder in that desolate land. . . ."[36]

Loafing in camp became the norm along the Kobuk. A flurry of panning with no result would lead to frustration. With arrival of freeze-up, the uninitiated holed up in their cabins, waiting for someone else to sink a shaft and confirm the presence of gold near their claims. "It seems that people expected to find mines all ready to work, and, since none are visible, sit down and give it up."[37]

One prospector, a German known as the Flying Dutchman, having given up on gold, donned ice skates and contracted with the

isolated miners to carry letters down the frozen river to Kotzebue for $1 each. In his travels up and down the river he had mentally mapped the gold-camp names and locations from Hotham Inlet to the Pah River, and beyond to the uppermost camps on Reed River. Every few miles along the Kobuk stood one of these winter camps--Riley, Stony, Kate Sudden, Jesse Lou, Nugget--in a country "where a year ago a white man's track in the snow was a thing unknown." Grinnell pondered whether future "prospecting parties will wend their way into these parts, and, seeing our deserted villages, pause in wonder at the lesson they teach."[38] Already by mid-November, Grinnell sensed the inevitable exodus once the river flowed in spring.

The company, split between two camps on the Kobuk, with another contingent on the Koyukuk, had had no success. Its gold fever was fading into vapor. As the winter dragged on, talk about going home became the main topic, hedged with fears that they would be ridiculed as "fake gold hunters" or "prodigal sons." Even Grinnell, stuck with camp cooking and more prescient than some of the others, flirted with the idea of staying on another year--they had ample provisions--so he would not "return with empty gold-pan."[39]

A visit from the Friends' missionaries, Robert and Carrie Samms, roke the monotony, as did ptarmigan hunts and more rumors of gold

strikes, one of them on the Noatak River. But time passed glacially despite occasional diversions. On February 11, Grinnell wrote: "It must be admitted that life is getting a little humdrum. There is nothing in particular to write about unless one has a poetic turn. Poetry doesn't come to any of us anymore."[40]

The Samms erected a mission cabin near the company's camp, and while Robert Samms went on up the Kobuk to take a census of the Natives, Carrie taught a class of Eskimo children at the cabin. The missionaries feared a famine among the Eskimos, for they had spent too much time watching and visiting the whites, neglecting their hunting and fishing.[41]

One day Grinnell engaged in an hours-long trading session with an Eskimo, emerging exhausted but possessor of a pair of snowshoes. The haggling over every item of food or equipage offered in trade seemed endless. One curiousity of the sessions recalled Lieutenant Stoney's expeditions. The Eskimos found a torn place in the proffered shirt and sneered "All same stoney-house," meaning "no good." The expression derived from the fact that Stoney's winter quarters at Fort Cosmos had by this time collapsed.[42]

In mid-April the Flying Dutchman brought news of the big strike at Nome. Letters and other reports confirmed that this was no fraud,

but another Klondike in the making. Soon spring broke winter's lock--birds, frogs, leaves came with a rush and the river was open. In their little river steamer, Helen, the reassembled company headed for Kotzebue Sound and their schooner. On the way downriver they passed an Eskimo camp, whence issued six young men in kayaks. As they followed downriver they showed off, maneuvering their agile craft with great dexterity. When they turned to go back upriver they sang in chorus, "There'll Be a Hot Time," prompting Grinnell to write: "Evidences of the great Kotzebue rush will be found among the Eskimos, in their language as well as in other ways, for many years to come."[43]

From Kotzebue Sound, Grinnell and company, joined by many other parties, sailed to Nome. By July 20, Penelope was anchored close off-shore the Nome gold fields, with seven claims staked, plenty of gold in sight, and "Hurrah for the Arctic gold-hunters of the 'Penelope' crew!"[44]

Though their beach claims began to pay, the remaining members of the Long Beach and Alaska Mining and Trading Co. (a few had already left on steamers) decided to leave for home before the ice closed. Precipitating that decision was Grinnell's declaration that he would not cook another day. Dissolution of the company threatened. But Grinnell martyred himself for a few more weeks. Meanwhile, mobs and cutthroats began to dominate Nome,

manipulating the chaotic claim records, bribing officials, and jumping claims by force. Grinnell's own claim was taken over by a gang from whom he feared disfigurement should he press his objections.

On October 2, with the creeks frozen and thousands of gold seekers still pouring into Nome, Grinnell and his companions sailed south in the schooner, their cheer revised: "Penelope! Penelope! zip! boom! bah! Going home from Kotzebue! rah! rah! rah!"[45]

A 40-year old cattle rancher, George L. Webb, was one of the few Ninety-Eighters who prospected both the Kobuk and the Noatak rivers. With his partner Leo Chase, who left for home with the great spring 1899 exodus, Webb carried out active prospecting on the Kogoluktuk and Reed rivers, then hiked over the mountains via the Reed drainage to the Lucky Six camp on the upper Noatak. He kept tasting success with colors and a few nuggets from his scattered claims, but real pay eluded him. Yet he could not bring himself to leave the country and go home empty handed, to the disappointment of family and other backers. Thus, though crazed with anxiety about his family--particularly his elderly mother from whom he had received no letter for 2 years--he hung on through the 1899-1900 winter with only about 30 others of the 800 or 900 gold seekers who had overwintered the previous year. This distilled remnant of hard-core miners suffered few of the mishaps

and illnesses common the year before. Their survival, dietary, and travel routines had been perfected. They had also established functional relations with the Eskimos, opportunists who became suppliers, hunters, and mail carriers for the remaining miners. The mail run from the Reed River, where most of the 30 men left on the Kobuk were camped, depended on Eskimo traders, who portaged to Arctic City on the Koyukuk. This shift in orientation for supplies, mail, and transit out of the country, from the Kobuk River and Kotzebue Sound to the Koyukuk, reflected the fact that the Kobuk was now essentially deserted, with only a handful of miners persisting in the Cosmos Hills, a hundred river miles downstream from Reed River.

On June 28, 1900, Webb wrote:

> Camp Noatak, the Land of the Midnight Sun; the Home of the Woodchuck and Eskimo and Mosquitos.
> Dear Mother, Brother, and Sisters:
> Again I have a chance to write, but I may get there before it does. If I do, I will be busted, for I haven't found anything but hard work as yet. I cannot stay away from poor old mother much longer. How I long to see her again and eat another meal that she cooks!
> Mother, I could astonish you with my appetite. I have plenty to eat here, such as it is, but it is not like the

> grub we had in Utah. You bet I miss the fruit.
> I am going back to my little old Utah ranch which is better than any place I have seen since I left, and I can find as much gold as I have here. We had great hopes in the Noatak River country, but I am satisfied there is no use fooling away any more time here. The other prospectors think the same. Some have gone out, and the rest are going soon. From here I'm going to Arctic City. . . .

Webb made the portage, and after one more try at prospecting on the Koyukuk, built a raft and headed downriver. His raft capsized, dumping gear and supplies, so he worked his way from camp to camp down the river, then crossed overland to Nome. There he joined other stranded miners as a "potatoe peeler" on the Revenue Cutter Bear, and sailed home.[46]

Other first-hand accounts of the Kobuk rush repeat the themes of isolation, hard-work prospecting, cabin-sloth waiting, and eventual disappointment for all but a very few who remained to mine at subsistence levels in the Cosmos Hills.[47] Amazingly, given the inexperience of the vast majority of the Kobukers, the incidence of death, derangement, and scarring defeat was low. Improvisation, mutual support between the camps, and inner reserves called forth by winter's grim entrapment sufficed for most to assure survival and strategic retreat, if not victory.

Assistance from the Eskimos in hunting, travel techniques, and provision of good clothes and boots also proved significant, as testified by the miners themselves and by the Friends' missionaries.[48]

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Beyond the short-term effects of the 1898-99 Gold Rush on Natives-- liquor, disease, and diversion from subsistence rounds being foremost--[49] the long-term effects would prove to be profound, even though the spring 1899 exodus practically emptied the Kobuk and Koyukuk drainages. Trading posts, missions and schools, and opportunities to work as laborers, guides, and hunters came with the Gold Rush or shortly filtered into the upper country made known by the rush. The few hundred indigenous people would shift from seminomadic subsistence patterns to essentially concentrated and sedentary village living within the next few years. Growing dependence on white man's foods, clothes, and tools shifted Native energies from full-time subsistence hunting and fishing to cash or in-kind mine labor, trapping for furs, transportation and supply work, and hunting and fishing for the miners. What started as opportunistic diversions, would become set patterns, because the breakdown of seasonal subsistence rounds, combined with concentrated village populations, forced ever greater dependence on trading-post goods, thus greater

allocation of time and energy to cash pursuits.

A frame of mutual dependence evolved between the whites--miners and traders in the main--and the Natives. Across the region--which over the next few decades supported only a few hundred whites, most of them scattered in mining camps--a rough equivalence of life style developed. All the people, Natives and whites alike, lived in cabins or sod-house variations, they all ate wild meat and fish from the streams, and they all had to pay trading-post bills. Whites and Natives partnered up on commercial, mining, and connubial ventures. A clear-cut "dominant" white society, segregated from the Natives (as developed in Fairbanks and other towns), failed to develop on the upper rivers. Economic activity, distinguished by a workable division of labor, consumption of trading-post goods, and a modicum of gold, furs, and wild meat, was functionally spread amongst both whites and Natives. In a loose way, they joined in a larger community. Robert Marshall would later treat this phenomenon--the mutual dependencies of small numbers of culturally diverse people in isolation--in Arctic Village.

The far-flung prospecting of the 1898-99 rush pretty nearly disposed of bonanza fantasies on the upper rivers. Enough good prospectors had come away empty handed to keep future "rushes" down to a few hundred men each. The great rush had been a kind of

shakedown cruise. What was left after the exodus was a fair notion of the kinds of stakes available in the country and a few real miners willing to work long and hard for modest returns, only occasionally punctuated by pockets of wealth buried in deep channels at bedrock. Dreamers would come in future years, but in much smaller numbers, and most of them did not stay long. Big strikes in this country, such as did occur over the next three decades, would have been small strikes in richer fields. Technical improvements in above-the-Arctic Circle mining techniques, skeletonized and simplified compared to techniques used in easier, more accessible diggings, required experience, skills, and persistence of a kind not available to fair-weather adventurers. Finally, a rudimentary transportation and supply system, attuned to the numbers and needs of the upper-country camps, survived the exodus. To those who lived in the far-north isolation of the Koyukuk and Kobuk districts, this system was never enough. Traders and boomers wanted roads to bring capital in and really develop the country. But the marginality of the economic geology joined up with distance and terrain to frustrate the vision of a new bonanza. Generations of lives and adventures would yet be played out in the far north camps and communities, but the human scale would be small, spread thinly over a big mountainous landscape that gave only a little to a hardy few.

Chapter Three Notes

1. Stoney, Explorations in Alaska, 824.

2. Terrence Cole, "Early Explorers and Prospectors on the Koyukuk," Alaska Geographic, 10(4), 1983, 29; Sherwood, Exploration of Alaska, 151.

3. Pierre Berton, The Klondike Fever (Alfred A. Knopf, New York, 1974), 6-8.

4. Paraphrased from Joseph Ulmer's Historical Sketch of James Bender, typescript in Ulmer Collection, University of Alaska, Fairbanks, Archives. One account of Bremner's killing, based on the perspective of an experienced Russian Creole, blamed the Native doctors or medicine men. They warned the Indians that too many white men were coming into the country and would scare away the game; maybe killing a few of them would keep them out. Plunder of Bremner's outfit seemed also to have been a motive. See Will H. Case, Reminiscences of Captain Billie Moore (Burton Publishing Co., Kansas City, Missouri, 1947), 153.

5. William Domingo Moore, Application for Allowance to the Board of Trustees of the Alaska Pioneers Home, June 1923, State Archive and Record Service, Juneau.

6. Chase, Reminiscences of Captain Billie Moore, 212-23, 236; Gordon C. Bettles, "First Surgery on the Koyukuk," Alaska Life, July 1941, 5.

7. Biographical sketch of Bettles and Howard by Judge James Wickersham; Yukon Press, Jan. 1, 1894; Bettles story in Seattle Sun-Times, July 11, 1937--all in UAF Per. 163 m/f.

8. Yukon Press, Jan. 1, 1894, 1-8.

9. Ibid., May 1, 1894, 8.

10. Ibid., Jan. 1, 1896, 1-2.

11. Yukon Press, April 1897 and March 1898; Bearss, Klondike Gold Rush, Chap. VII; Webb, Yukon Frontiers, 73, et seq.; Berton, The Klondike Fever, Chap. 5; William Schneider, "Capt. P.H. Ray on the Alaskan Frontier in the Fall of 1897" (typescript report, Fairbanks, 1984), 6-11. The Schneider paper summarizes the wise and heroic control exercised by Captain Ray and Lt. W.P. Richardson in 1897-98, when they provided the only United States authority on the boiling Yukon frontier. It also details Captain Ray's significant influence on subsequent events and reforms made necessary by the gold rush: exploration for an All American Rout

to the Alaska gold fields; establishment of army posts along the Yukon to both regulate and assist the hordes of miners flooding the country; regulation and inspection of Yukon River transportation and supply to prevent starvation, disorder, profiteering, and steamboat disasters; and the need to provide assistance to Indians, whose dependence on trading posts for their own supplies was by this time critical. The reports of Ray and Richardson are found in Compilation of Narratives of Explorations in Alaska (Washington, 1900).

12. P.H. Ray, letter reports of May 5 and Jan. 13, 1898, to Adjutant-General, U.S. Army, in Compilation of Narratiaves, 501-02, 552-53.

13. Ray, Ibid.; E. Hazard Wells, "Up and Down the Yukon," in Compilation of Narratives, 511-13.

14. Ray, Ibid., 503.

15. Berton, The Klondike Fever, 116-20; Cole, "Early Explorers and Prospectors on the Koyukuk," 29; Robert Marshall, Arctic Village (The Literary Guild, New York, 1933), 30-31; Lt. W.P. Richardson, "Report of an Expedition into Alaska [Feb.-July 1898]," in Compilation of Narratives, 504-07.

16. Gordon C. Bettles, "First Surgery on the Koyukuk," Alaska Life, July 1941, 5, 20. The surgery was performed on Bettles himself. The pulling of a molar led to a near-fatal infection, finally lanced by "a Doctor Nolan, who had come in on the steamer Minneapolis." Ibid., 20. The later mining site of Nolan may have been named for the doctor.

17. Cole, "Early Explorers and Prospectors," 31, 33.

18. H. Pingel, "A Short History of Mining on the Koyukuk," The Pathfinder, 2(5), April 1921, 14.

19. Earnest Gruening, ed., An Alaskan Reader, 1867-1967 (Meredith Press, New York, 1966), 165.

20. Ltr of E.G. Abbott, 6/16/98, in John Clark Hunt, "The Adventures of the Iowa Gold Seekers," Alaska Journal, 3(1), 1973, 5, 6.

21. Ltr of T.T. Barbour, 6/26/98, Ibid., 7.

22. Ibid., 11.

23. Capt. W.P. Richardson, "The Mighty Yukon as Seen and Explored," in Compilation of Narratives, 747, 750.

24. All selections are from "Diary of an unidentified miner" in the Robert and Jessie Bloom Papers, University of Alaska, Fairbanks, Archives, Box 5, File 41. Identification of "Charlie" as Charlie Miller is based on a listing of the members of the party in the Aug. 17, 1898, entry. These included Charlie Miller, D.J. Gordon, Mr. Roovers, and a Dr. Russell, who early withdrew from the party. As did many participants in the Gold Rush, Charlie maintained a diary of letters, which were mailed in batches when opportunity came. Evidently the Blooms, a Fairbanks business family, did not know the diarist. With minor exceptions for clarity, the diary is presented exactly as written.

25. According to the Yukon Press of January 31, 1899, Peavy was the largest town on the Koyukuk. J.R. Austin, recorder for the whole Koyukuk district, resided there and had deputy recorders at other points. Jim Town was the most important supply center; Bergman had a post office. On the more remote creeks, miners' meetings designated a recorder for initial staking, with the local records eventually deposited with the official recorder. The same issue reports 53 boats wintered in on the Koyukuk, rather than the 68 recalled by Bettles in later years. Given the many types of boats and their scatter on many creeks, the disparity is understandable.

26. Evey Ruskin, ed., "Letters to Lizzie: A Koyukuk gold seeker writes home," Anchorage Daily News, May 6, 1984, Magazine Section "We Alaskans," 0-8 to 0-13; quotations from 0-9 and 0-12.

27. Thomas W. Moore, undated typescript at British Columbia Provincial Archives, Victoria; furnished to author by Dr. Wendy Arundale, University of Alaska, Fairbanks.

28. Capt. J.D. Winchester's Experience on a Voyage from Lynn, Massachusetts, to San Francisco, Cal., and to the Alaskan Gold Fields (Newcomb & Gauss, Printers, Salem, Mass., 1900). Below selections quotes from 198-203, 205-209, 218-219, 221-222, 227-228, 230-232, 234-235.

29. Herman Carpenter, Three Years in Alaska (The Howard Company, Philadelphia, 1901), 78.

30. Ibid., 40-77.

31. Philip S. Smith and Henry M. Eakin, "The Shungnak Region, Kobuk Valley," in Alfred H. Brooks, Mineral Resources of Alaska, Report on Progress of Investigations in 1910, USGS Bulletin 480 (Washington, 1911), 280; Edward H. Cobb, Placer Deposits of Alaska, USGS Bulletin 1374 (Washington, 1973), 59-60.

32. Joseph Ulmer, "Original Discoveries," one-page typescript, n.d., UAF Archives, Ulmer Papers, Box 4, Folder 5; Berton, Klondike Fever, 116-17.

33. Ulmer, "Original Discoveries."

34. Joseph Grinnell, Gold Hunting in Alaska (David C. Cook Pub. Co., Elgin, Ill., 1901, Facsimile Reproduction, 1964), 3.

35. Ibid., 10.

36. Ibid., 10.

37. Ibid., 27.

38. Ibid., 31-32.

39. Ibid., 52.

40. Ibid., 60.

41. Ibid., 52-53.

42. Ibid., 67.

43. Ibid., 81.

44. Ibid., 86.

45. Ibid., 96.

46. G.L. Webb, edited by Dorothy Jean Ray, "Kobuk Diary," Alaska Sportsman, 27(8, 9, 11, 12), 28(1-5), 1961-62; letter quoted from 28(5), 42.

47. See for example Maurice Hattem, ed., "The Letters of William K. McKee From Alaska During the Gold Rush of '98," The Branding Iron, Los Angeles Corral of Westerners, No. 142, March 1981, 1, 4-12; Eugene McElwaine, The Truth About Alaska (Published by the Author, 1901).

48. Arthur O. Roberts, Tomorrow is Growing Old, Stories of the Quakers in Alaska (The Barclay Press, Newberg, Oregon, 1978), 181, et. seg.

49. Ibid.

Chapter 4: Far North Camps and Communities, 1900-1930

In autumn 1899 the Revenue Steamer Nunivak took station on the Yukon River. After wintering at the mouth of Dall River 1,000 miles up the Yukon, the steamboat's commander, 1st Lt. J.C. Cantwell of Kobuk fame, began the Revenue Marine Yukon River patrols that marked a growing governmental presence in Interior Alaska caused by the gold rush.

During that summer of 1900 the lingering momentum of the Klondike rush helped swell the rush to Nome, which now became a torrent. Down the Yukon came hundreds of boats, scows, and rafts loaded with people, equipment, horses, and beef cattle, ". . . all bound for that distant land of promise and prospective wealth."[1]

Cantwell made constant stops to help travelers, mend boats and equipment, and resolve disputes. He noted that some boats had been cut in half, the new ends then patched, so that erstwhile partners could sail separately after altercations.[2]

At Fort Hamlin, an Alaska Commercial Company post above Rampart, he inspected steamboats for proper marine documents and compliance with customs laws. Three steamers, the Canadian Florence S, and the Alaska Commercial Company's Victoria and Leah carried parties of miners and provisions from Dawson, bound for the Koyukuk minin

camps, which reportedly were in distress. To discover the facts, Cantwell sent 2d Lt. B.H. Camden up the Koyukuk on Leah in early June 1900.[3]

Camden found Arctic City deserted, "its departed and prosperous days" attested only by 14 abandoned cabins. At Bergman, metropolis of the Koyukuk, a fluctuating population of some 15 whites and 100 Indians patronized the Pickarts and Bettles store. Near the South Fork junction, Union City stood silent, its sawmill rusting. Peavy, 50 miles above Bergman, hosted only Mr. Rose, the land commissioner; otherwise its 15 or 20 cabins were empty.

Twenty-eight miles above Peavy was Leah's objective, the new station of Bettles. Here the latest Pickarts and Bettles store supplied the upper Koyukuk camps, which were yet another 50 or 75 miles up Koyukuk forks and tributaries. Small, shallow-draft steamers could get as far as Bettles during times of high water. But Leah, drawing 5 feet, and even the 20-inch-draft Victoria sent ahead as a scout, grounded a few miles above Peavy when the water abruptly dropped on June 13.

Captain Young of Leah unloaded his 160-ton cargo and 110 passengers and waited for a surge of water to carry him back down the river.

Meanwhile, Gordon Bettles confirmed that the Bettles post and the camps were critically short of supplies, which he asserted would lead to an exodus within two weeks lacking resupply. He requested and received special permission from Lieutenant Camden to activate the abandoned, light-draft steamer Dorothy so he could relay Leah's off-loaded cargo to Bettles, whence pole boats could get supplies to the scattered camps.[4]

This grounding of steamboats short of objectives, followed by piecemeal relaying and hauling of supplies up ever shallower and swifter streams was repeated each year on the fluctuating Koyukuk. At Bettles, some 400 river-miles from the Koyukuk's mouth, the costs of goods and transport began to overtake the gains from mining. Every mile of additional haulage by pole boat, dog team, and later horse-drawn scows and freight sledges further whittled away the net value of gold extracted. Thus did this and neighboring far-north mining districts become a separate province of Alaska mining, hovering always on margin. Compared to their peers in more southerly districts along the major rivers, far-north miners led spartan lives, developed simplified versions of mining equipment and technology, depended less on store-bought goods, and salvaged for reuse everything that could be possibly adapted to future utility.

Camden summarized his impressions of the Koyukuk with an essay on the enormous costs and distances that had to be overcome if this district were ever to rank with the more fortunate gold fields of Alaska. Surprisingly, he estimated that as many as 360 miners might be scattered through the fan-shaped district north of Bergman, bounded by the Arctic Divide and the Alatna and South Fork (Koyukuk) rivers. Most of them centered on the Middle Fork at the Myrtle and Slate creek diggings, where a cluster of cabins called Slate Creek was about to become Coldfoot, in ironic tribute to green stampeders who got cold feet and left the country. Yet more miners were on the way, traveling overland from Fort Yukon via the Chandalar route.[5] Residual overflow from the Klondike still lapped against the northern mountains, but with smaller waves composed mainly of experienced men.

Camden estimated that 300 Indians occupied the Koyukuk drainage that June of 1900. This number dropped in late summer as epidemics of measles and influenza compounded by pneumonia swept up the Yukon and its tributaries, laying waste whole villages. Cantwell's Nunivak, the Army at St. Michael, and missionaries, traders, and agents at Yukon River stations rendered aid and supplies to the sick and starving Natives. But disease was on a rampage, with sick, dying, and dead everywhere. Nunivak's surgeon, Dr. J.T. White, lamented that "Though we went everywhere, distributing food and medicine and doing the best we could," the

Natives ". . . lay about waiting for death to relieve them."[6]

Surgeon White found relief from the Native tragedy during a visit to Fort Gibbon, the new Army post at Tanana. Freshly assigned West Pointers hosted the Revenue Marine officers to drinks and dinner, dress uniforms and all. Cantwell remarked that Fort Gibbon had ". . . an air of civilization somewhat out of keeping with its wild surroundings." Its well-made frame structures overlooked graded streets, and the hum of machinery echoed from bordering woods.[7]

Fort Gibbon was the largest of the recently established Army posts serving the Yukon, including Fort St. Michael, Fort Egbert at Eagle, and temporary camps at Rampart, Circle, and other points. What a change from 1897-98, when Captain Ray and Lieutenant Richardson provided the only United States authority along the entire Yukon frontier! In summer 1899 Patrick Henry Ray, now a major and commander of the Military District of North Alaska, had the satisfaction of distributing whole companies and battalions of troops at the posts he had recommended in 1898 to regulate and assist the miners flooding the country.[8]

In addition to the Revenue Marine and the Army, the U.S. Geological Survey began the series of expeditions that would probe the range soon to bear the name of the Survey's chief Alaska

trailblazer, Alfred Hulse Brooks.[9] The U.S. Congress had provided authority and wherewithal for all these initiatives. More important, as the century turned, it passed a body of laws that gave remote Alaska improved civil government and a smattering of administrative and judicial functionaries to carry it out, even to the fringes of the arctic mountains. These developments and others resulted from the phenomenon called "Klondicitis." The gold rush first, then glimmerings of copper, coal, and oil suddenly changed the territory's accustomed slow pace to full speed ahead. Business interests around the Nation smelled wealth in the natural resources of Alaska, and in the trade that would be generated by their extraction. Congress was responding to these interests and to the plight of both unprepared newcomers and a Native population reeling from the negative effects of Klondicitis.[10]

For Alaskans, it had been a long time coming, this Congressional shift from disdain and neglect of the worthless possession, Seward's Icebox. Alaska was the first noncontiguous territory administered by the United States. In his essay on its early governance, Alfred Hulse Brooks dwelt on the Nation's seeming unfitness to cope with problems of colonial administration. For 17 years, he demonstrated, Alaska had had no civil government at all. Passage of the 1884 Organic Act finally provided a semblance of civil government. Alaska became a civil and judicial district,

but was governed under the laws of Oregon. This expedient relieved Congress of the task of drawing up a new code, but saddled the northern stepchild with laws only marginally applicable to Alaskan conditions. A governor and various judicial and adminstrative officials appointed by the President were based in the Southeastern Panhandle and for a time at the Aleutian port of Unalaska, leaving mainland Alaska void of any authority. No provision was made for representative government. Though general land laws were excluded, thus disallowing homesteading, the mining laws of the United States came into effect. The rights of citizenship now followed the flag to Alaska, and a criminal code allowed selective law enforcement where there had been virtual anarchy. In remote areas, however, and that meant all of Alaska north of Pacific waters, the code meant little; judical officers had no travel budgets, nor were there established travel routes into the unmapped Interior. The only sign of District Government in all inland Alaska was a roving revenue officer on the prowl for intoxicating liquors, prohibited by the act.[11]

Ernest Gruening judged that the most significant benefits of the 1884 act were extension to Alaska of the mining laws, thereby making mining possible, and of the principle of public education through a small appropriation for that purpose. The governor, largely a figurehead, did have a voice to the Nation through his annual report to the Secretary of the Interior. But for four

successive administrations, the governors' recommendations and pleas for Alaska ". . . were in varying degrees crying in the wilderness."[12]

In the far reaches of this district not-yet-a-territory, the small communities and placer camps forged ahead anyway. They rigged their own governments, most of them under the Miners' Code clause of the mining statutes. They adopted mining claim regulations and enforced their own decrees. Lacking any other authority, the codes comprehended all essential elements of community life, with a majority vote in the miners' meetings the mode of policy and judgment. In criminal cases, imprisonment being impractical, three punishments sufficed: hanging, banishment, or a fine. An elected recorder was the only permanent official. For a set fee he recorded claims, minutes of meetings, and the disposition of civil and criminal cases. He also filed homemade certificates of marriage, signed by principals and witnesses, after the simple "I do's" that consummated betrothal in a mainly preacherless realm.[13]

In the far north, the flurry of Congressional enactments between 1898 and 1900--the response to Klondicitis--changed only slightly the tenor of life established during the previous decade. Extension of the homestead laws in 1898 meant little to miners living in unsurveyed, mostly unmapped, regions. Mining claims occupied their interests, and these they filed under mining

statutes already in effect. The Criminal Code Act of 1899 provided for impaneling of legal juries in Alaska, heretofore impossible because the patched-on Oregon law required jurors to be local taxpayers, and until 1899 Alaskans paid no local taxes--one of many paradoxes in the Organic Act. In practice the miners' meeting had served the same purpose as juries. In fact, in the smaller settlements typical of the far north, advent of the jury system caused problems during litigious periods, which matched the rhythm of seasonal discontents. If several cases were on the docket the mix of judicial and law enforcement officers, lawyers, jurors, plaintiffs, defendants, and witnesses exhausted and overlapped the population.

The 1899 act recognized the futility of prohibition enforcement; liquor became legal, including home-made hooch, and the taxing of liquor licenses, along with other occupational taxes, was used to fund the district government.

All of these provisions awaited the Civil Government Act of June 1900, which provided the administrative machinery to implement them. For the northern hinterlands the most important parts of this act were those extending and enhancing the administration of justice. Now a judge sat at Eagle, and he could circuit-ride his vast Interior judicial division. The judge in turn appointed commissioners in local precincts. These officers, assisted by

marshals and deputies, performed the functions of justices of the peace, recorders, probate judges, and coroners. Except for the most serious cases, which were reserved to the division judge, the commissioners exercised magisterial power, combining judicial, administrative, and enforcement authorities. Given this latitude and the fact that commissioners served without salary, "living off the land" by fees collected, the commissioner system was subject to abuse and generally came under heavy attack. But in remote parts like the upper Koyukuk, the commissioner was usually appointed from the community and subject to its constraining pressures. In its better guise, where temptations were few--as in the Koyukuk precinct--the commissioners system had the advantages of immediacy and proper scale for frontier conditions.[14]

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The theme of the Nation's neglect of Alaska has been pervasive through its history. As has its opposite theme: the tyrannical meddling of the Federal Government in affairs that only Alaskans can comprehend. Because much that follows in this narrative is illuminated by these arguments and the documentation they produced, an interlude of discussion is useful, for perspective.

Always there have been those who, for economic reasons, opposed Alaska's evolution beyond colonial status. Often representing

monied interests from "outside"--Seattle, New York, London--they sought freedom to harvest or extract wealth from this natural storehouse without interference from strong regional or local governments, which would tax and regulate their enterprises and conserve resources for public purposes. At the same time these interests wanted what is today called infrastructure assistance from government--ports, roads, and the like. And they knew how to match their interests with those of local boomers, who also wanted that kind of assistance and little interference. Others, local to the land, wanted freedom from all these forces, governmental and economic. And finally, settlers, missionaries, and community builders simply wanted Alaska to progress from wilderness to civilization along the same path followed in the western territories and states.

Compounding and complementing these strands were others of climate, geography, and extremes of seasonal and cyclic economy. These factors hindered development of stable populations and foiled unitary solutions applicable across the many Alaskas.

Alfred Hulse Brooks and Ernest Gruening, among many others, spoke eloquently to the neglect thesis. Jeannette Paddock Nichols, who watched much history happen as secretary to Judge and later Delegate to Congress James Wickersham, recounted the "complexity and perplexity" of the natural and human combinations during

Alaska's first half century under United States rule.

With a bow to all of these, a later historian, Ted C. Hinckley, qualified the neglect thesis by asserting that Congress was probably as well informed and generous respecting Alaska as it had been with the western territories, particularly given the accelerating pace of the Nation's domestic and international affairs as 19th became 20th century. He concludes that until 1940, Alaska, with its remote and tiny population, was simply irrelevant to the Nation's central concerns.

Even the Klondike and subsequent Alaskan gold rushes proved ephemeral in real terms, however enduring as romance. Because Alaska lacks the holding power of agricultural and commercial alternatives to mining, as in California and Colorado, the gold excitement could not remedy the population deficiency. "From this critical deficiency everything else suffered. And because it was basically a problem that could not be remedied by Alaskans, they blamed their government . . . ." Nor could pioneer or boomer have expected to subdue Alaska in short order. Even the trans-Mississippi West, with its overland trails and later railroads, its advancing frontiers of settlement, and the attractions of the West Coast and the Pacific trade, had taken generations to transform. The weekly steamship to an Alaska

hardly populated except for a cluster of towns in Southeast could not compare.

Hinckley credits military invasion and the application of technological might to military strategy and natural resources for Alaska's arrival in the national consciousness. He suggests that Alaska could not be prematurely unlocked by a few pioneers and symbolic gestures from government. Larger combinations were needed. In the big business combinations of the early 20th Century--the Alaska Commercial Company trading monopoly, the Morgan-Guggenheim copper and transportation syndicate--he glimpses the future that would happen, when ready, whatever the intervening rhetoric or Congressional mood. The combination of modern technology, militant geopolitics, and big oil became that future--overcoming distance, terrain, climate, and all. These things, not tracts and speeches, finally wrenched the door off Seward's Icebox.

If Hinckley is right in terms of structuring forces and trends, then Alaska in its entirety must be viewed as a fringe area until the threat and actuality of Japanese invasion moved it to at least the wings of the national stage. Only then did a critical mass of population, investment, and political concern, extended by post-World War II strategies and oil, begin to counter the dominance of empty distance and high latitude.

Ernest Gruening noted the population problem in his history of neglect. As the number of Alaskans declined after the 1900-era gold rushes, the populations of western states and territories continued to increase. The northern giant was slipping back to dormancy. He attributed this to a national policy designed to thwart Alaska's evolution into the family of states. Neglect of Alaska's constitutional and political aspirations for representative government, locking up of the coal lands, withdrawal of virtually all timbered areas into National Forests, and failure to extend to Alaska railroad subsidies of the sort that opened up the West were critical elements of that thwarting policy. In Gruening's view, neither the 1906 law that recognized Alaska as a Territory and authorized a nonvoting delegate to Congress, nor the Home Rule Act of 1912, providing limited self-government by a Territorial Legislature, could counter that national policy.

Hinckley sees less a designed policy in all this, more a back-burner reality based on geography, demographics, and the economics of resource development. Resource development in Alaska still requires exceptional richness, gigantism, or strategic necessity to warrant the costs of high-latitude exploitation. In this view, national policy, such as it was, did not cause Alaska's condition but merely reflected it.

This thesis, applied with the aid of a microscope, illuminates the history of the far north camps and communities within our study area. Remote, isolated by lack of roads and fluctuating rivers, marginally productive of gold--until recently its only commercially attractive resource--this was an area that could not evolve beyond its frontier beginnings. It was a holdout until just yesterday of the 1900-era Alaska that once raised such howls of national neglect and is now nostalgically yearned for.[15]

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In the summer of 1903 a Senate subcommittee of the Committee on Territories visited Alaska to assess conditions there and take testimony from its citizens. Of greatest import to the far-north miners were the interrelated problems of attenuated transportation and high costs of supplies. The next most perplexing matter was the unrestricted use of power-of-attorney in locating mining claims. This provision of mining law allowed fast-stepping speculators, "pencil miners," to grab up whole groups of claims, crowding out real miners on the ground. As a side effect of this practice, the thin-spread judicial system staggered under a mounting press of mining litigation.[16]

Partly as a result of the subcommittee's visit, which highlighted transportation problems, a limited system of winter pack trails

and wagon roads would be developed, beginning in 1905, by the Army-run Alaska Road Commission. But not until 1912 did Congress finally impose restrictions on the number of claims a person could stake on one creek.[17]

For many years, Koyukuk and other far-north miners benefitted little from the roads and trails program, whose limited funding in a vast territory lacking ". . . a single public wagon road over which vehicles can be drawn summer or winter"[18] naturally gravitated to richer, more populous mining districts south of the Yukon and around Nome. In time a rudimentary system of winter pack trails and shelter cabins would reach north of the Yukon to the upper Koyukuk and Chandalar districts, and east from Kotzebue Sound. Still later, a short, isolated road system would serve the Koyukuk's Middle Fork communities and camps. But throughout the historic period, and indeed until the 1970s, no road suitable for all-weather transport of bulk goods and heavy equipment connected the far north districts with the outer world. Small-scale steamboating and scows on rivers intermittently navigable, with limited overland transport on winter trails, as reported in the 1903 testimony, remained a fair description of far-north logistics until North Slope oil development began. The airplane would ameliorate personal isolation after 1925. But not until World War II and its aftermath would significant air freighting begin. And when it did, it largely overflew the far-north mining districts

en route to North Slope defense installations and oil-exploration camps.

This situation shaped the history of the region. Thus, did the upper rivers and central mountains form an island deep within the mainland. Small in population and lacking any but marginal economic attractions, the region could not swing the political weight to achieve a transportation breakthrough. In due course, after the sequence of localized gold strikes ended about 1916, the region became a sociocultural island as well. Its population slowly eroded as old timers emigrated and died to be replaced only in part by new recruits.

Testimony from a Koyukuk man before the 1903 subcommittee foreshadows these realities in the constant harping on transportation problems. But this was still a time of hope spiced with healthy skepticism, with new discoveries yet to be made. The descriptions of country and people are fresh, as was their history in the making.

Judge D.A. McKenzie, commissioner of the Koyukuk precinct, domiciled at Coldfoot, testified at Rampart on July 20, 1903. He described his precinct as running from the Yukon River to the Arctic Ocean and from the Chandalar River to the Colville, an area larger than the states of New York, Pennsylvania, and New Jersey.

In this vast landscape dwelt about 500 whites, most of them around Coldfoot, and an equal number of Natives. Supplies for the camps came up the Koyukuk, via Bettles, at a cost of $337 a ton from Seattle and San Francisco, with 10 to 20 cents a pound added to that for the final relay to the mines. In response to a query from Sen. William P. Dillingham about the need for wagon roads, McKenzie replied: "According to Mr. Frank Schrader, the Geological Survey man, it is 96 miles in a straight line from Coldfoot to the Yukon River. A practical wagon road that could be built there would be about 125 miles in length."[19] He contrasted this with the 600 river-miles from the Yukon to Coldfoot (an estimate more than 100 miles longer than modern measurement).

Given the cost of provisions, only the richer placers could be worked, those paying $115-125 per shovel, which was the amount one man could shovel into a sluice box in a 10-hour day. The low-grade ground, at $8-20 per shovel, could not pay at current costs, but large areas could be worked ". . . when we are able to get supplies at the prices which prevail . . . on the Yukon River."[20]

He describes his precinct as a country without homes, very different from California, where miners could bring their families and settle down. At Coldfoot miners could not afford to bring families. Only 20 or 30 women shared Coldfoot with nearly 500

men. In these conditions nobody planned to stay on. They wanted to find a stake then get out.

As to claims and their regulation, the Koyukuk precinct had made local laws under the Miners' Code clause. Claims were 1,320 feet long, following the creek, and 660 feet wide. The Koyukukers allowed only one claim per man per creek or bar. Evidently, power-of-attorney claims presented no big problem at Koyukuk camps. Where this was a problem, McKenzie advocated $100 worth of assessment work on such claims before they could be recorded, along with expenditure of at least $500 per year for labor and improvements to hold the claim. Individual miners filing in thei own behalf would need to spend only $100 per year. This distinction would hold off the speculators.

Filing the claim entailed going to the recorder, i.e., the commissioner, within 90 days of locating and staking the claim to file the notice of location. This notice described the claim by metes and bounds, and gave the owner's name and the date of location. The first claim on a creek was designated discovery claim, with subsequent claims numbered 1, 2, 3, etc., above and below discovery.

McKenzie estimated that $225,000 in gold came out of the Koyukuk in 1902, but that had been a dry year with little water for

sluicing. He forecast three or four times that return in 1903.

McKenzie happened to be at Rampart for the subcommittee visit because he was attending court, convened there by Third Judicial Division Judge James Wickersham. The commissioner had traveled nearly 1,000 river-miles in 27 days to get to Judge Wickersham's roving court. He cited this long journey as evidence that the third division (covering all of Interior Alaska) was so large that it effectively deprived people in remote camps of legal protection. Going further, he stated that until railroads could be built to overcome "these magnificent distances" representative territorial government was out of the question. It would be impossible to get the representatives together. Vast, underpopulated precincts like the Koyukuk could not afford self-government and the taxes to support it. He favored continuation of direct government by Congress or a commission under Congress, ". . . provided the Government will pay some attention to us." On that score McKenzie recited the usual litany of sad and shameful neglect and the need for adjustment of the laws to meet Alaskan conditions. He lit into the deficiencies of Coldfoot's postal service, which, coming from Fort Yukon by dogteam "shut out" delivery of newspapers, magazines, and books. Then he let fly with a plaint, strangely modern in tone, reflecting the Nation's latest imperial obligations after the war with Spain: "It seems strange that our Government spends so large

sums of money in trying to civilize those foreign greasers, while wide-awake and intelligent American-born citizens here in Alaska can hardly receive any recognition whatever."[21]

In contrast to that lapse into bigotry, McKenzie praised highly the Koyukuk and Kobuk Natives, the latter only recently arrived into the country. "They are a very fine class of Indians, of good habits, never drink or use tobacco, and they never were in court with any charges against them." He and others who testified painted a dark picture of the Natives' exploitation and abuse at the hands of unscrupulous white men who undermined their morals with liquor and illicit sex, hunted out their game, and spread disease. He recalled the epidemic of "Russian grippe" of 1901 that killed hundreds, wiping out some large camps. He concluded: "I would like to see some law passed to protect the Indians in the upper country when they can't get game. They are too good a people to starve in that way; they are really industrious Indians; they will work at anything you will give them to do."[22]

McKenzie loosed some heavy bolts at the commissioners' fee system. Because his precinct had little money and kept him busy full time, he was practically destitute. Any commissioner would be broke who did not drum up strife and litigation to keep the fees flowing. In fact, McKenzie was wrapping up precinct business at this session of court because, lacking a salary, he was compelled to

tender his resignation to Judge Wickersham. He noted that if salaries ever were provided, they should be adjusted to the nature of the precinct. He made this point by quoting the price of a bag of flour in Nome, $1.50, and in Coldfoot, $11.[23]

These were the main concerns of the upper country in the early years: improved transport, secure mining claims, and a rudimentary form of government for a rudimentary society that wanted a few services without cost or bother. The broader issues that exercised politicians, syndicates, merchants, and missionaries in the more accessible parts of Alaska did not wash on the high creeks--there was hardly enough water for sluicing. The immediate and proximate condition of the "Indians," a generic term then, produced some concern. But short-term miners performing prodigies of back-breaking labor in the most difficult conditions, had little time for altruism or amenity. Within a few years a loose community of whites and Natives would evolve, permanently attached to the upper country. They would cohere for the essentials, like a school, but even then the active community-builders contended with a kind of benign anarchy practiced by people who mainly followed their own lights.

Of all the government enterprises flowing from the gold rush, the one most apparent and of greatest interest to the folk of the upper country was the work of the U.S. Geological Survey.

Remember, Commissioner McKenzie had mentioned Frank Schrader, "the Geological Survey man" and his assessment of the feasibility of a wagon road to Coldfoot. This kind of helpfulness and knowledge was typical of Survey men. Beginning with its first formal expedition to Alaska in 1895, and emphatically from 1898 on, in response to the gold rush, the Survey adopted the role of the Nation's trailblazer in Alaska. It stressed practical information on geography, routes and conditions of travel, and the realities rather than the hopes and false lures of economic geology. The objectives of this service-oriented mission were two: to help the serious prospectors and miners who were opening up the country and to caution and guide inexperienced stampeders. Alfred Hulse Brooks first came to Alaska in 1898 with these objectives already paramount. Shortly thereafter, appointed head of the Survey's Alaska work, he assembled and supervised a corps of volunteer geologists, topographers, and other scientists that conducted mapping and geological investigations throughout the known and unknown regions of Alaska. Brooks was himself a field scientist of the first order, always encouraging his men to combine practical geology with ". . . researches which advance the knowledge of basic principles."[24]

The reports of the Survey men comprise the best early documentation for the upper country. Details of the country abound even in the published USGS Bulletins; the original field

notebooks are richer still. Here, among sketch maps and marginal notes, with occasionally the pressed remains of a pesky mosquito dead nearly a century, are the names, places, and exploits of those early days.

The Survey people got on well with the prospectors and miners. Like everyone else before the airplane, they travelled light and tough with dog teams, pack horses, and canoes--often for months, through the whole round of seasons. They all shared information with one another. The prospector knew the local country; the geologist added science to the miner's practical knowledge. The fellowship of far places shines in these notebooks, along with some of the oddities. Usually, prospectors had been there, wherever it was, first. But prospectors did not make maps and geological assessments for other people. The Survey did, producing in aggregate a splendid system of public and scientific knowledge about Alaska's geography and geology.[25]

In a special publication[26] authorized by Congress on March 1, 1899, the USGS summarized existing knowledge of travel routes and mining prospects in Alaska. By providing authentic data and maps, the USGS aimed to counter a burgeoning Gold Rush literature, more often than not inaccurate and promotional, that was luring stampeders to disappointment and disaster.

The section on the Koyukuk River derived from Lt. Henry Allen's 1885 exploration and subsequent scraps of information from prospectors. It warned that above the 67th degree of latitude "no surveys have been made," a reference to Allen's northernmost attainment on the John River. Beyond that point, the sketchy map could not be compared in accuracy ". . . to the results of even the roughest surveys which have been made elsewhere in the Territory."[27] The Kowak or Kobuk River description cited Lt. J.C. Cantwell's explorations and, again, fragmentary data from prospectors and miners. Despite hints of gold throughout the Kobuk drainage, "No well-authenticated finds of gold have been reported." Brief mention of the Noatak River relied on S.B. McLenegan's 1885 exploration and noted that in 1898 a party of prospectors had ascended the river 250 miles in rowboats but found no gold.[28] As the 1899 season began, this pittance was the state of public knowledge about the upper country; the only solid information dated from the original explorations of the 1880s.[28]

Even as this guide was being assembled for printing the first of the USGS far-north expeditions got underway. In the period 1899-1911, six major USGS reconnaissances traversed the upper country, mapping its topography and general geology and defining the patterns of economic geology so important to prospectors and miners.

In 1899 geologist F.C. Schrader and topographer T.G. Gerdine surveyed up the North Fork of the Chandalar River, portaged across the mountains to Robert Creek, surveyed that creek and Dietrich and Bettles rivers, then descended Middle Fork River and Koyukuk River to Nulato. During the Middle Fork survey, topographer D.C. Witherspoon separated from the main party and portaged from Slate Creek to South Fork River, mapping it to its mouth.

In 1901 after a spring reconnaissance up the Alatna and John rivers, Schrader and topographer W.J. Peters proceeded up John River to its head, crossed the Arctic Divide and floated down the Anaktuvuk and Colville rivers to the Arctic Coast.

That same year W.C. Mendenhall and D.L. Reaburn made a geological and topographical survey up the Dall River, down the Kanuti to the Koyukuk, and then up the Alatna and across the portage to the Kobuk, which was followed to Kotzebue Sound.

A.G. Maddren's 1909 expedition ascended the Dall River to its headwaters, crossed over to the Mosquito Fork and South Fork River, then through Sitkum Pass and down Slate Creek to Coldfoot. The survey continued up Middle Fork River to the Wiseman and Gold creek areas, then crossed over to Chandalar River and out of the country.[29]

In 1910 Philip S. Smith and H.M. Eakin, geologists, went from the Koyukuk via the Hogatza River trail to the upper Kobuk basin, then followed the Kobuk to its mouth. The next year Smith, with topographer C.E. Griffin, surveyed the Alatna, crossed the mountains and descended the Noatak to its mouth.[30]

These pioneering expeditions mostly during the "open season" up swift rivers and across endless stretches of soft, wet country, hauling bulky survey and photographic gear, must be viewed with greatest respect. The survey network now extended from the Yukon to the Arctic Ocean, from the Chandalar to Kotzebue Sound. In human terms a tradition of indomitable wilderness endeavor and self reliance had been established. The esprit of the Survey men was legendary. In the amazing heat of arctic summer, alternating with chilling rains and freezing night temperatures, besieged by mosquitoes and attrited by constant setting up and breaking of camp, climbing rugged mountains to investigate exposed formations, they yet produced exquisite maps and finely wrought drawings of geological sections. Sweat and human blood from sated insects blur the old notebooks, but the gathering of data went on unabated.

As the miners discovered, and as the USGS geologists explained, gold mining in the southern foothills of the central Arctic Mountains[31] traces a belt of gold-bearing schist that forms an ar

from the upper Chandalar across the Koyukuk forks and then cuts southwesterly across Wild, John, and Alatna rivers. The schist is bounded on the north by a massive shield of limestone that covers the gold-bearing rocks and cuts off mining. Spotted through this schist belt are domes and mountain masses containing lode gold in quartz lenses and veins. Fractured and glaciated in the past, these mountains are eroded and drained by streams that transport fragments of gold released from the mother quartz down valley, where they are deposted in the rock and gravel of the high gulches and in the sands and silts of the lower valleys. In the higher creeks coarse gold is found; farther downstream the gold gets progressively finer. This process of transporting and sorting nuggets and flakes of gold--placer gold--has been going on a long time.

Valleys had been ground down to bedrock by glaciers. Then retreating glaciers and stream erosion of the mountains laid down new deposits hundreds of feet deep over the valley bedrock. These deposits, in turn, were cut down by later stream action to form the present streambeds. At each stage, placer gold has been deposited, part of it newly eroded out of the mountain lodes, part of it redistributed from the old placer deposits.

Except in the Chandalar district, where accessible quartz-lode gold did occur in mineable quantities, gold mining in the upper

country was exclusively of the placer kind. Geologic forces had formed the gold in ancient times, and in subsequent ages had broken it out of its bedrock hiding places to be distributed along the stream channels.[32]

In the long view, the miners were completing a process already carried to the penultimate stage by Nature: glaciers and runoff had already "mined" the lode gold; then streams had acted as gigantic sluices, catching the placer gold in natural riffles. The miners, with their dumps of gold-bearing gravel and their sluice boxes, finished the concentration of gold at Nature's paystreaks. Some of the paystreaks were found in deep or bedrock channels, ancient streambeds buried under hundreds of feet of frozen ground. Others occurred in high channels, intermediate-age streambeds in benches and terraces overlooking the present valleys. The first placers worked were those located in shallow channels, the beds of current streams. Each of the gold-bearing locales--from upper gulch to mid-course river bar, from high channel to deep channel--demanded distinct mining techniques.

From 1900 until World War I, the population of the upper country surged, waned, and surged again in a rhythm determined largely by improved prospecting and mining techniques. Throughout this period the combination of scientific and practical geology helped prospecting. As the period progressed, introduction of

drift-mining plants, perfected earlier in the frozen-ground goldfields of the Yukon and Tanana rivers, produced a series of deep-channel strikes that revitalized gold excitement and brought in new recruits. Robert Marshall, who first came to the upper Koyukuk in 1929, sketched this sequence as recalled by old timers, some of them participants in the 1898-99 rush. After the 1899 exodus ended that first rush, the experienced prospectors and miners who stayed on intensified their search for "sunburned" gold found in the shallow gravels of many creeks, especially the tributaries of Middle Fork around Coldfoot. From 1900 through 1903, cleanup of these shallow placers kept 300-350 miners busy. Then came a lull caused in part by depletion of the shallow diggings and in part by the lure of strikes elsewhere (Fairbanks in 1902; Chandalar in 1906).

Except for a minor boom on John River in 1905, more rumor than mineral in content, the mining population declined steadily. These straightened circumstances, combined with the high cost of living, also forced out the camp followers who depended on the miners' pokes for a living.

In 1907 deep-channel strikes on Nolan Creek north of Coldfoot revived the Koyukuk. Wood-fire thawing was progressively replaced by steam-thawing techniques that opened up the ancient streambeds deep in frozen ground. Pockets of coarse gold, with nuggets worth

hundreds, even thousands of dollars brought in hundreds of miners and the train of suppliers, haulers, saloon keepers, and prostitutes that fed their various needs and appetites. As the Nolan Creek bonanza began to fade, new discoveries on Hammond River, yet farther north, took up the slack. Coldfoot became a way station as stores and supplies moved on up the Middle Fork to the mouth of Wiseman Creek. Here evolved a community at first called Wright's (for the roadhouse there), then Nolan, and finally Wiseman.

From 1908 through 1916 the upper Koyukuk boom, along with lesser excitements on the Chandalar, the Kobuk, and many streams in between, kept the upper country hopping. Then came the World War, with high wages outside. This event, combined with exhaustion of the richer diggings and the onset of prohibition in a region inordinately fond of whiskey, drained the country again.[33]

The Twenties would bring partial revival in the form of outside capital to fund large-scale mining schemes. But these promotional efforts ended in failure, defeated by the old bugaboos of remoteness, fluctuating rivers that foiled heavy transport, and shortage of on-site water for industrial-level mining.

Ensuing years were left to a hard core of people, Native and White, for whom moderate mining returns were only part of a

regional subsistence economy at least equally dependent on trapping, hunting, and gardening.

Within this sequence of boom and bust and consolidation occurred a colorful history. It is a history made by those both anciently and recently indigenous to the land, and by their visitors, who found in this land and people, left mainly to their own resources, a world apart.

Geologist Frank Schrader's 1899-1901 expeditions to the Arctic Mountains record the changing scene as mining on the upper rivers shifted from stampede to long-term development. Both his diary and his geological field notes contain descriptions of the stunning landscapes traversed.

In July 1899, Schrader's party arrived at Chandalar Lake after a long trek via Skagway, the Yukon River, and the swift flowing Chandalar. At the lake they found four prospectors and 40 Natives. The miners were getting color but no pay; the Natives, destitute and half-clad, roamed incessantly in search of game and fish. From the Chandalar North Fork the Survey party crossed over to the Koyukuk Middle Fork via Robert Creek and Bettles River, trading cloth with Natives in exchange for their packing freight and canoes across the portage summit. The campsite at the portage had "long been used by the natives, both Koyukuk and Chandalar."

As the surveyors floated down the Middle Fork they met prospector George Bowman, who said 60 to 80 men were working the Slate Creek diggings. Farther downstream they found prospectors and Native freighters tracking supplies and hydraulic machinery upriver. Gordon Bettles, as trader and miner, had his hand in all of these operations.

Three steamers--Louella, Dorothy, and Lavelle Young--were hauling supplies and miners' grubstakes up the river in August. Schrader met Bettles on Louella and gave him a ride in the USGS canoe back to Bergman, getting some first-hand history of the country as they floated. Bettles credited Herman Rielman with being one of the first discoverers of gold on the Koyukuk, moving from the Minook Creek district to the South Fork in 1887. Tramway Bar, a bench placer on Middle Fork below Coldfoot discovered by G.H. Chapman in '93, was so named because the miners trammed the paydirt down to the river for sluicing. It turned out that Bettles had commissioned the hauling of hydraulic machinery to Slate Creek, to work his group of claims there. He was also providing lumber for the camps from his sawmill at Bergman.[34]

In his geological field notes of August 6, 1899, while on Robert Creek, Schrader noted the boundary between the goldbearing schist formations and the overlying limestone belt to the north, which trended southwest across the country. Earlier, on July 20, from

the 5,500-foot peak of a mountain overlooking Chandalar Lake, he had described the snow ranges to the north: "Much of the crest of the divide is doubtless granite, northeastward as well as northward, and westward as far as the eye can reach, all is a sea of mountains generally rugged."

On August 12, while floating down Middle Fork, he stopped at Wiseman Creek, its name taken from a tree marked by a prospector. There he found three abandoned caches, but no sign of recent prospecting. Over the next two days, he proceeded to the mouth of Slate Creek and hiked up to its tributary, Myrtle Creek, where gold was first discovered in mid-March 1899 by Martin L. Nelson and C.L. Carpenter. Just a few weeks before Schrader got there, F.E. Parker and Joseph McGuire found the first gold on Slate Creek. Now both streams were staked solid from mouth to head--more than 30 miles of claims. Already the shallow gravels had been worked and the miners were breaking up the schist to a depth of 5 or 6 feet, finding gold nuggets and colors.[35]

Even before he could get his 1899 work reported and printed, Schrader had to add a postscript about new discoveries on Middle Fork creeks: Clara, Marion, Emma, and Gold. He also noted the emergence of the settlement of Bettles as the principal supply post for the region, having taken over that role from Bergman during the year since Schrader was there.[36]

Schrader's 1901 expedition across the mountains to the Arctic Ocean began with a spring reconnaissance up the Alatna and John rivers. Members of his party had earlier mushed with dog teams all the way from Whitehorse on the Canadian upper Yukon to Fort Yukon, then up the Chandalar and across the Koyukuk Middle Fork via the Chandalar's West Fork. After refitting at Bergman with supplies shipped the previous year, topographer W.J. Peters led a scouting party up the John River in April, guided by a Native. Nearly a week of hard trail-breaking with snowshoes brought the party to timber line and bare river ice, making sled travel easier. A party of Koyukon hunters had earlier told them they were nearly through the snow and warned of wind storms in the shelterless high country. Within sight of Anaktuvuk Pass, Peters set up camp and reconnoitered, finding the pass suitable for the summer canoe portage.

Peters counted about 30 Indians--men, women, and children--on this trip. He learned that it was their custom to ascend the Koyukuk tributaries in winter to hunt caribou for meat. In spring they built rafts and floated the skins down to Bergman for trade. The Indians never went north of the timber line and the Eskimos seldom came south of it.[37]

On June 13, with ice cleared from the rivers, Schrader and party started up the John from Bettles. They hired one horse for packing over the divide, but on the ascent worked their freight upriver in canoes. High water at first forced them to cling and pull at snags and branches of the shoreline willow thickets, a mode of propulsion called "milking the brush." As the water level fell they were able to track and pole the boats a few miles each day. After a month of grueling labor they reached the divide and portaged over to the north-flowing Anaktuvuk River to begin the float down it and the Colville River to the Arctic Ocean. Once out of the mountains and past the rolling tundra of the foothills, they traversed a country ". . . almost flat, covered with moss, and dotted with small lakes."[38]

From the transcript of his field notes one gains an intimate perspective of Schrader's traverse. He noted the veneer of glacial till lying over the country around Bettles; this and the smoothed off shapes of the mountains convinced him that the ancient ice sheet had once passed over the tops of the lower mountains. The bedrock, a mica schist, resembled that at the head of the Koyukuk and on Slate Creek--probably the same formation. The ice-planed mountains of the lower John were replaced by peaks sharp and pinnacled as the party progressed up the river. Progress involved not only milking the brush but also chopping and digging through driftwood and lagoons to make about 6 miles a day.

Schrader surmised that the river's great meanders originated in part from glacial till deposits; without these bends in the river, which slowed the current and created eddies of slack water, they would have made no distance at all. Throughout the high-water phase of their trip the river continued roily, loaded with silt and glacial rock flour in solution. It was not the milky color of a true glacial stream, but more buff and brownish, derived from sediments laid down long ago by the old ice sheet. The spruce forest was too thin and scattered for sawmill purposes, with only occasional trees of good height and girth.

As they got higher the mantle of glacial drift or till thinned out. Bedrock, fluted and grooved by the ice sheet, became more prominent.

At the mouth of a small creek, possibly Crevice Creek, on June 22 they found placer gold claims staked, and they panned some colors.

On July 4, a few miles above the Hunt Fork junction the scientists found ". . . the last lingering remnant of the John River Valley glacier."

> It consists of an almost circular mass of ice approximately 300 feet in diameter rising to a height of about 60 feet above the valley floor . . . . Toward the top the ice

> terminates in three distinct knob-like peaks 10 or 20 feet above the main mass, one of which is almost cylindrical or pipe-like, and the others roughly pyramidal. The ice is partially capped and flanked by genuine till from one to several feet in thickness, to whose protection the ice doubtless . . . owes its preservation. From 3 sides small streams of thick rock flour laden, milky and muddy water arising from the melting of the ice flow down, and the glacial mud and silt of very light color and sticky character differs entirely from anything yet seen in this valley. It is a miniature picture of genuine glacial activity.39

The next day they found old signs of brush cutting and stumps along the river. Schrader believed these were cut for boat lining purposes and were perhaps evidence of the original prospecting party led by John Bremner, the river's namesake. Beyond timber line the river changed character, becoming straighter, swifter, with frequent riffles over coarse gravel and boulders. From 6,200-foot Fork Peak, where the headwaters of the John break into a number of feeder creeks, Shrader scanned northward and described the panorama:

> . . . the topography to the northward and northeastward is very rugged and deeply dissected, mostly into sharp peaks

> and some sharp-crested ridges . . . . The accordance of the peaks to a common level . . . seems to leave no doubt about their being but portions of a great elevated plateau-like country whose former surface or top stood at about this level or a little higher and has since been dissected down to its present stage. Though the country is deeply dissected, look in whatever direction one will, there is no notch or gap seen between any two peaks that is not quickly filled in by some peak a little more distant. This continues in all directions until the entire surrounding panoramic country, so far as the eye can see, becomes a great peak-studded plateau.40

On arrival at Anaktuvuk Pass, then unoccupied, the party portaged about four miles from the head of John River across the ponds and small channels of the summit flats to canoe water on the Anaktuvuk River. Heavy thunderstorms blew in from the mountains to the south and sparse willows offered no shelter from gusting winds. As they proceeded down Anaktuvuk River, a meandering but swift stream that floated their laden canoes handily, the vegetation improved in variety and growth:

> The willows are much taller and more abundant. There is a small grove of balm of Gilead [cottonwood], the trees being approximately 16 or 18 feet high and the first yet seen by

> us on the Arctic slope. There is also some grass of luxuriant growth and a greater variety and richer growth of flowering plants, the golden poppy and others.[41]

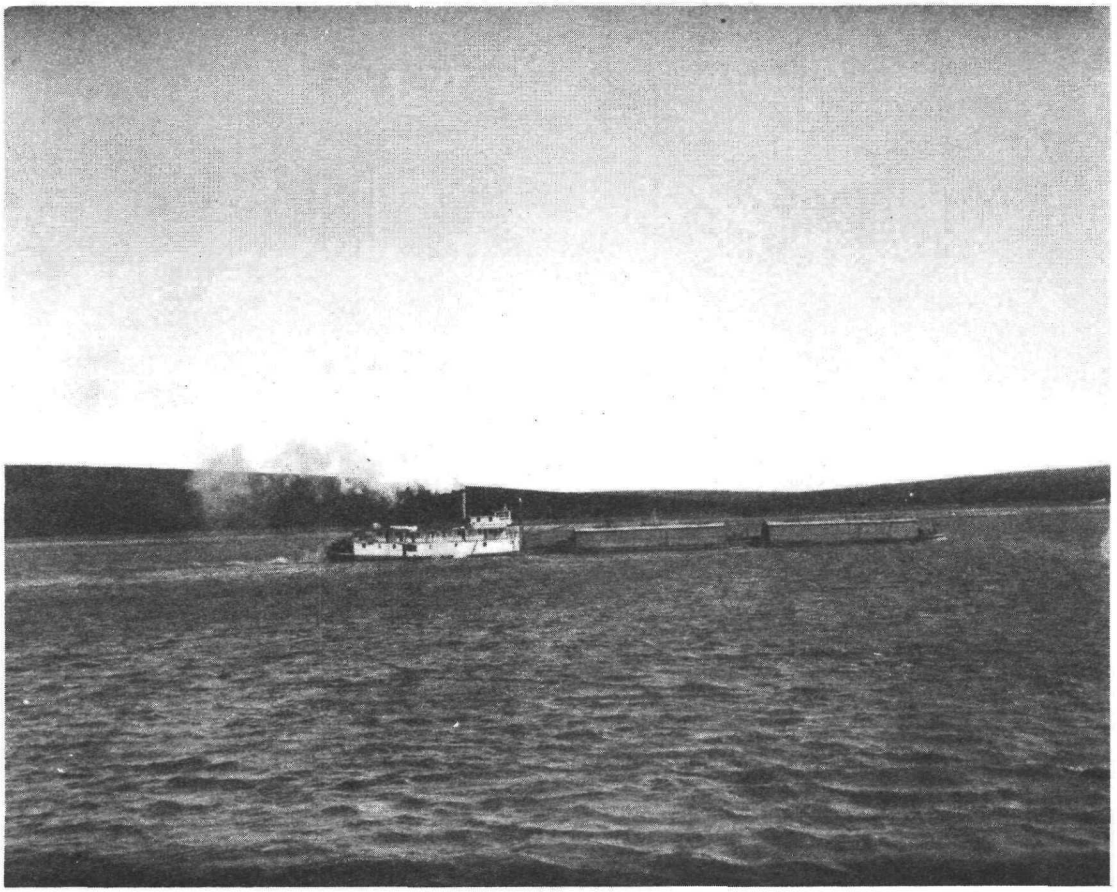
At the mouth of Anaktuvuk River Schrader described the Goobic or Colville River as larger than the Koyukuk below Bergman, about 500-800 feet wide with a regular gradient helpful to navigation by small boats. Descent of the Colville went smoothly and the party reached the Arctic Ocean via the main or east channel of the Colville delta, having missed the west channel and a chance to visit the Eskimo trading center at Niglik. Eventually the surveyors joined a party of Eskimos en route to Barrow, sailing with them in seaworthy walrus-skin boats. During this voyage, the Eskimos provided meat, the USGS party contributed flour, from which the Eskimos made an abundance of doughnuts and flapjacks, all fried in seal oil.[42]

As he traveled Schrader carefully observed the mining scene and gathered geographic data from people in the country. One informant told of a 1900 prospecting expedition up Dietrich River through Atigun Pass to the Arctic drainage. He learned, too, of deserters from whaling ships who had made their way south from the Arctic Coast to the Yukon, crossing the mountains in the Chandalar country, "a waste of rugged mountains." Even as Schrader wrote up his report in 1903 communications from the north told of

prospectors S.J. Marsh and T.G. Carter, who struck south from Camden Bay, up Canning River. After wintering north of the divide in the arctic barrens, where they found no minerals, Marsh crossed the divide in 1903 to find a mineralized zone in the upper Chandalar. Another group of prospectors in 1903 traversed from the Kobuk to the Noatak and Alatna headwaters, then crossed over the divide to Killik River and down it to the Colville. On the latter's upper reaches they found veins of bituminous coal, which they burned in their campfires, but no gold. From these reports Schrader concluded that gold locations were limited to the south flank of the mountains.[43]

On the Koyukuk Schrader noted the distribution and employment of Koyukon Indians, scattered in camps at stream mouths along the main river, with a relatively large village at Bettles indicating ". . . the disposition of the natives to remain near a trading post and the abode of white men."

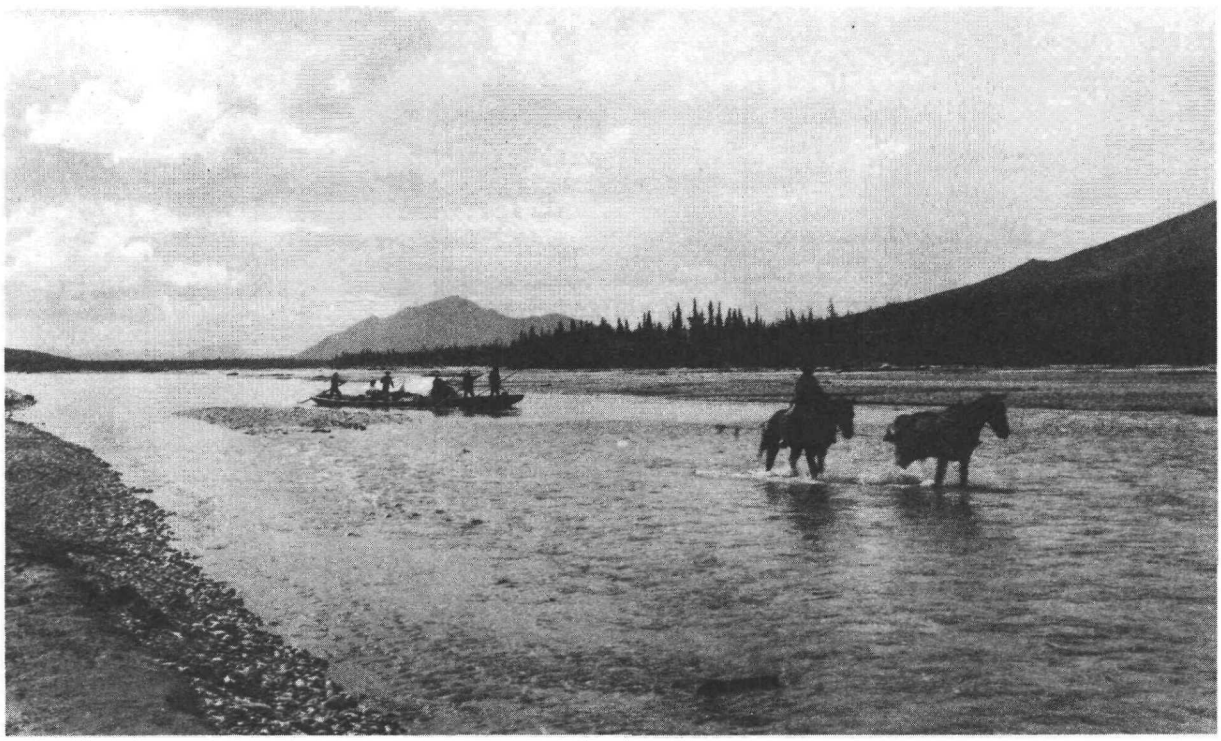
> At the post the natives are frequently employed by the whites for boating, sledding, and other work, for which service they receive provisions and clothing, which, added to what they get of game and fish, make up their living. They take but little interest in prospecting or mining.[44]



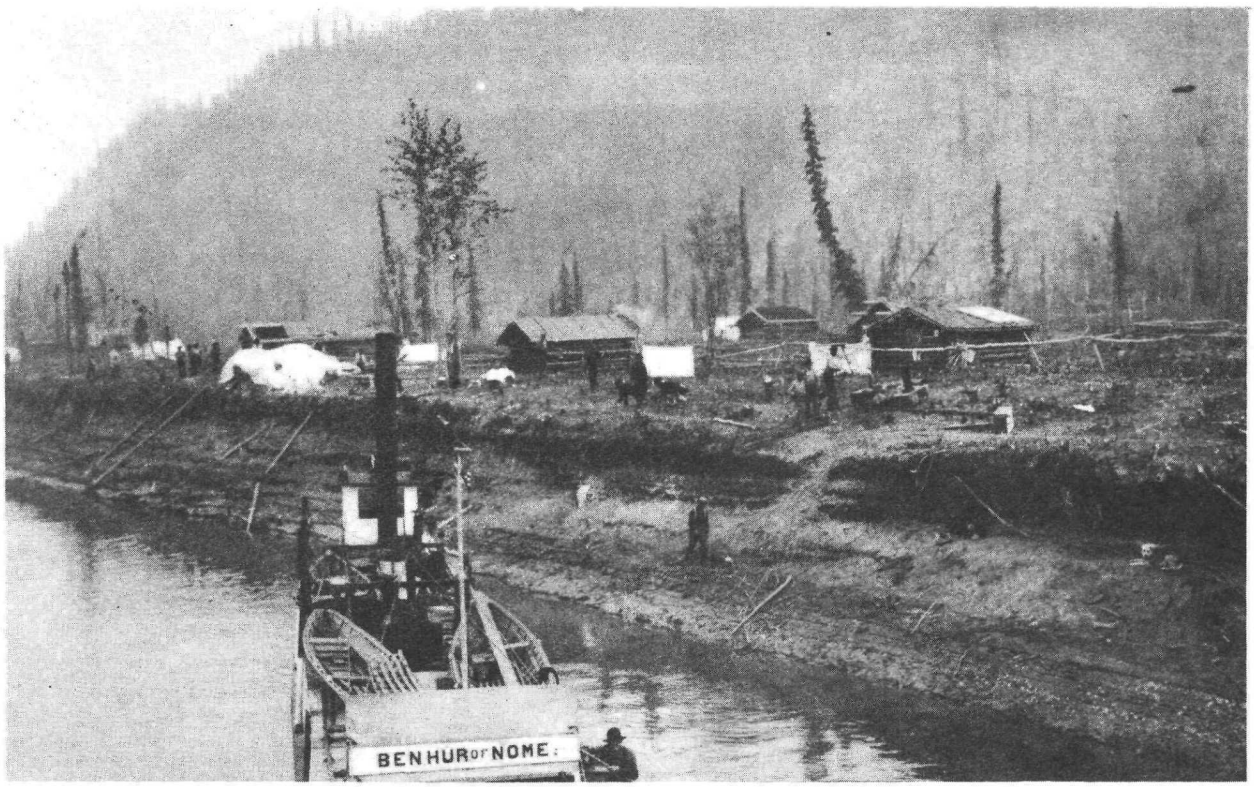
Steamer pushing barges upriver on the Yukon. J.B. Mertie photo 475 of 1916. USGS Historical Photo Library, Denver.



Teddy H. approaching Bettles with freight barges. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Horse-drawn freight scow on Middle Fork, Koyukuk River, at Coldfoot, enroute from Bettles to Wiseman-Nolan mining camps. A.G. Maddren photo 19 of 1909. USGS Historical Photo Library, Denver.



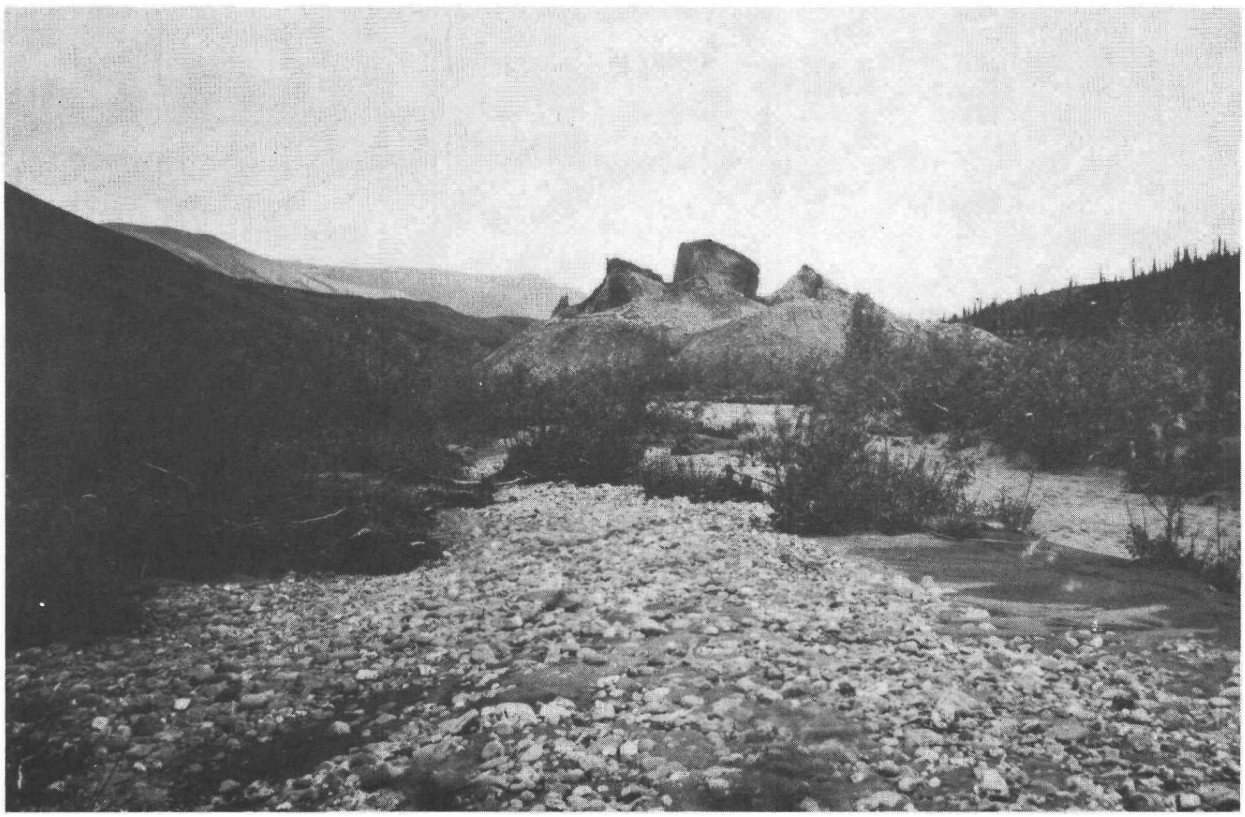
Hughes City on Koyukuk River. P.S. Smith photo 750 of 1911. USGS Historical Photo Library, Denver.



Geologist at work with planetable on Koyukuk near Alatna. F.C. Schrader photo 463 of 1899. USGS Historical Photo Library, Denver.



Robert Camp of Gens de Large Indians near head of Robert Creek on the portage to Koyukuk River. Natives from this camp helped Schrader and his USGS party over the portage. F.C. Schrader photo 335 of 1899. USGS Historical Photo Library, Denver.



Remnant of John River Valley glacier rising 60 feet above valley floor. F.C. Schrader photo 883 of 1901. USGS Historical Photo Library, Denver.



USGS pack train on tributary of upper Kobuk River. H.M. Eakin photo 116 of 1910. USGS Historical Photo Library, Denver.



USGS party lining boat up Alatna River, approaching Alatna-Noatak portage. P.S. Smith photo 753 of 1911. USGS Historical Photo Library, Denver.



Mendenhall party dragging canoes through shallows of Helpmejack Creek, near Alatna Portage. W.C. Mendenhall photo 215 of 1901. USGS Historical Photo Library, Denver.



Sluicing gold placers on Myrtle Creek near Coldfoot. F.C. Schrader photo 407 of 1899. USGS Historical Photo Library, Denver.

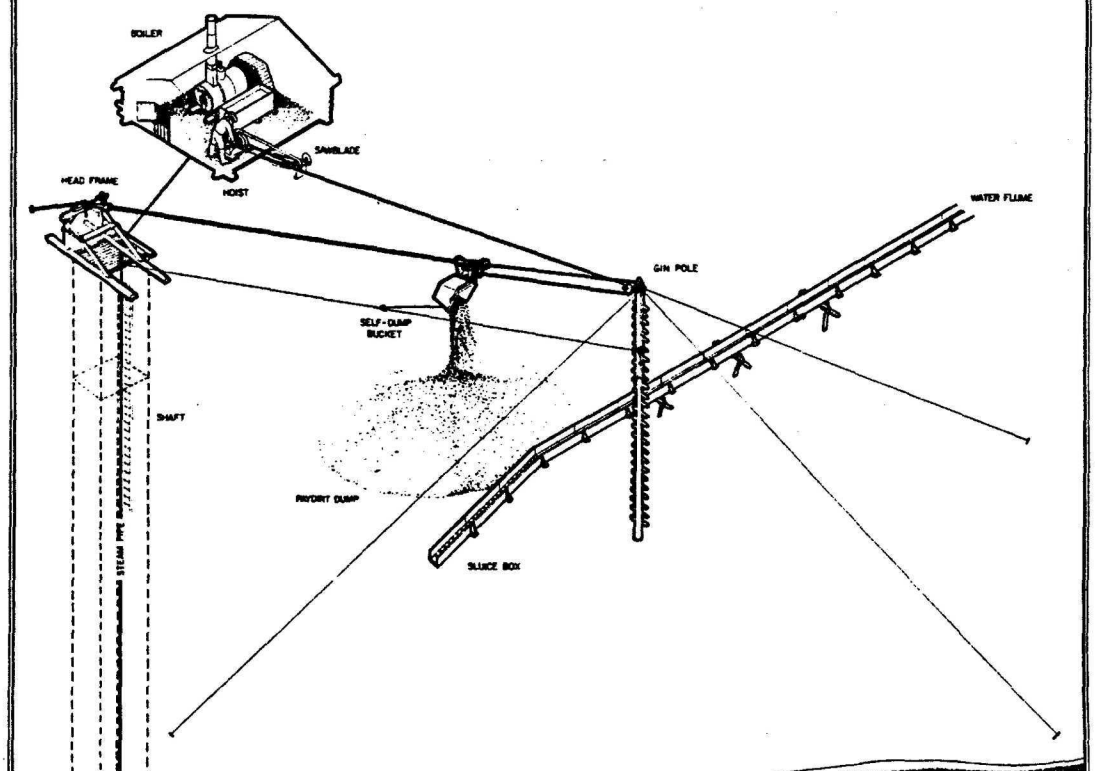


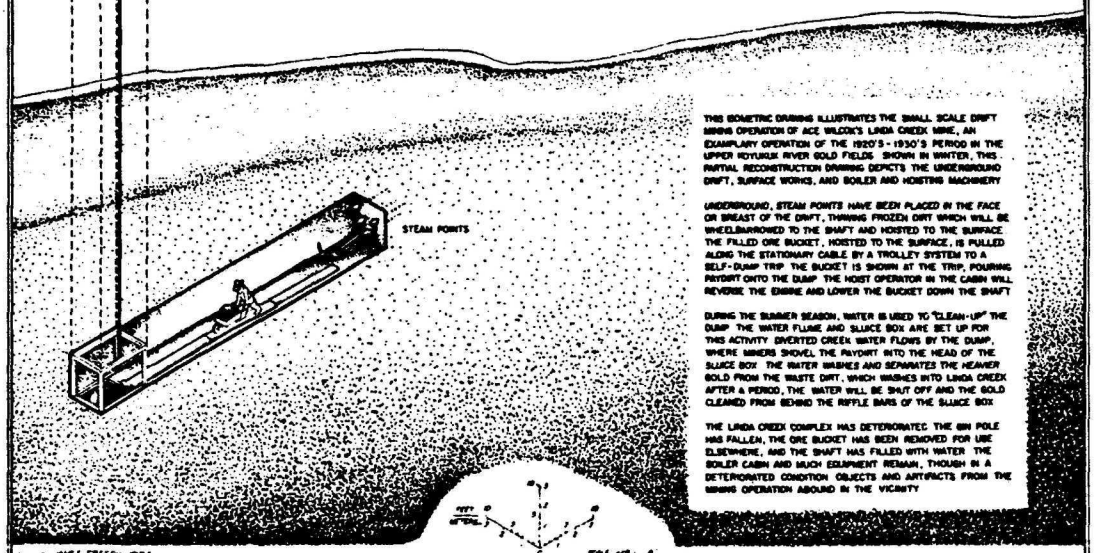
The Nolan Camp in its heyday showing boiler cabins, gin-poles, and dumps in operation. A.G. Maddren photo 37 of 1909. USGS Historical Photo Library, Denver.



A complete drift placer plant in operation at Nolan, showing miners' tents and cabins, left, gin-pole and dump, center, boiler cabin and stacked wood fuel, right, with water flume in background. A.G. Maddren photo 40 of 1909. USGS Historical Photo Library, Denver.

DRIFT MINING
1920 - 1930





THIS ISOMETRIC DRAWING ILLUSTRATES THE SMALL SCALE DRIFT MINING OPERATION OF ACE WILCOX'S LINDA CREEK MINE, AN EXAMPLARY OPERATION OF THE 1920'S - 1930'S PERIOD IN THE UPPER KOYUKUK RIVER GOLD FIELDS SHOWN IN WHITE. THIS PARTIAL RECONSTRUCTION DRAWING DEPICTS THE UNDERGROUND DRIFT, SURFACE WORKS, AND BOILER AND HOISTING MACHINERY

UNDERGROUND, STEAM POINTS HAVE BEEN PLACED IN THE FACE OR BREAST OF THE DRIFT, THAWING FROZEN DIRT WHICH WILL BE WHEELBARROWED TO THE SHAFT AND HOISTED TO THE SURFACE. THE FILLED ORE BUCKET, HOISTED TO THE SURFACE, IS PULLED ALONG THE STATIONARY CABLE BY A TROLLEY SYSTEM TO A SELF-DUMP TRIP. THE BUCKET IS SHOWN AT THE TRIP, POURING PAYDIRT ONTO THE DUMP. THE HOIST OPERATOR IN THE CABIN WILL REVERSE THE ENGINE AND LOWER THE BUCKET DOWN THE SHAFT

DURING THE SUMMER SEASON, WATER IS USED TO "CLEAN-UP" THE DUMP. THE WATER FLUME AND SLUICE BOX ARE SET UP FOR THIS ACTIVITY. DIVERTED CREEK WATER FLOWS BY THE DUMP, WHERE MINERS SHOVEL THE PAYDIRT INTO THE HEAD OF THE SLUICE BOX. THE WATER WASHES AND SEPARATES THE HEAVIER GOLD FROM THE WASTE DIRT, WHICH WASHES INTO LINDA CREEK. AFTER A PERIOD, THE WATER WILL BE SHUT OFF AND THE GOLD CLEANED FROM BEHIND THE RIFFLE BARS OF THE SLUICE BOX

THE LINDA CREEK COMPLEX HAS DETERIORATED. THE GIN POLE HAS FALLEN, THE ORE BUCKET HAS BEEN REMOVED FOR USE ELSEWHERE, AND THE SHAFT HAS FILLED WITH WATER. THE BOILER CABIN AND MUCH EQUIPMENT REMAIN, THOUGH IN A DETERIORATED CONDITION. OBJECTS AND ARTIFACTS FROM THE MINING OPERATION ABOUND IN THE VICINITY

JAMES CREECH, 1984

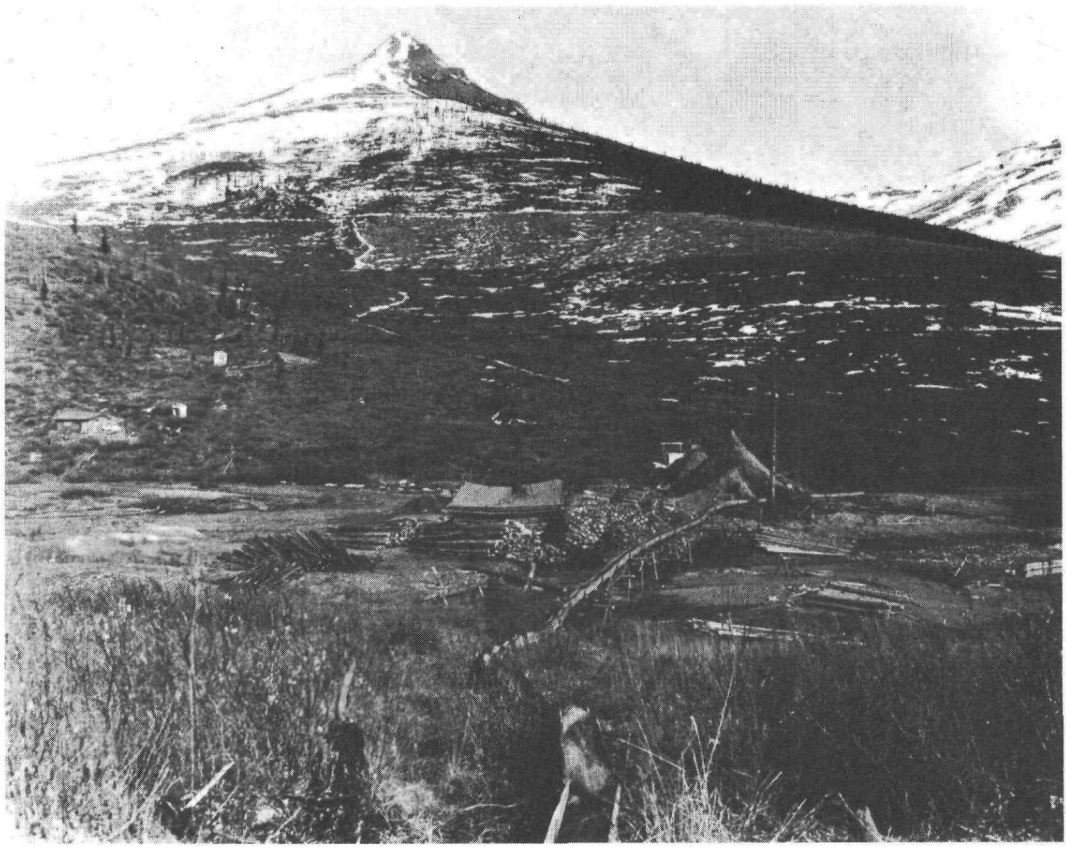
A.D. WILCOX COMPLEX

LINDA CREEK DRAINAGE VICINITY

ALASKA

ON MICROFILM

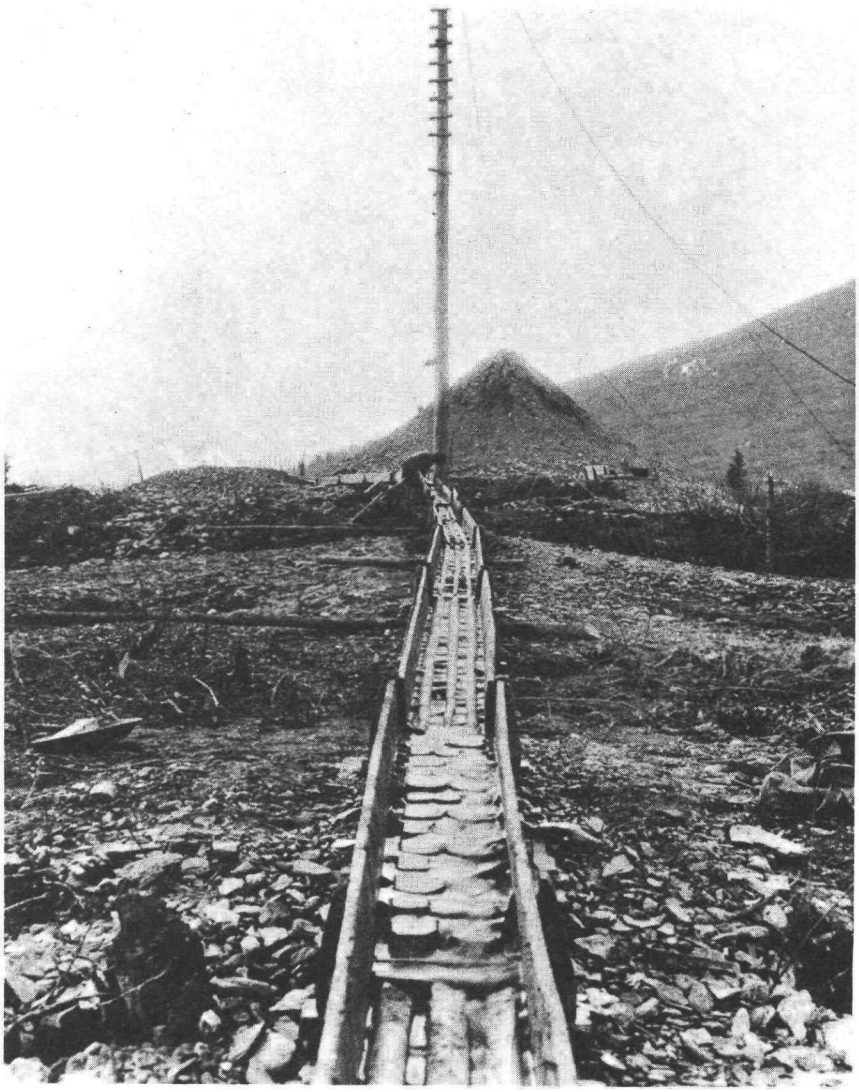
185/25001
1 of 1



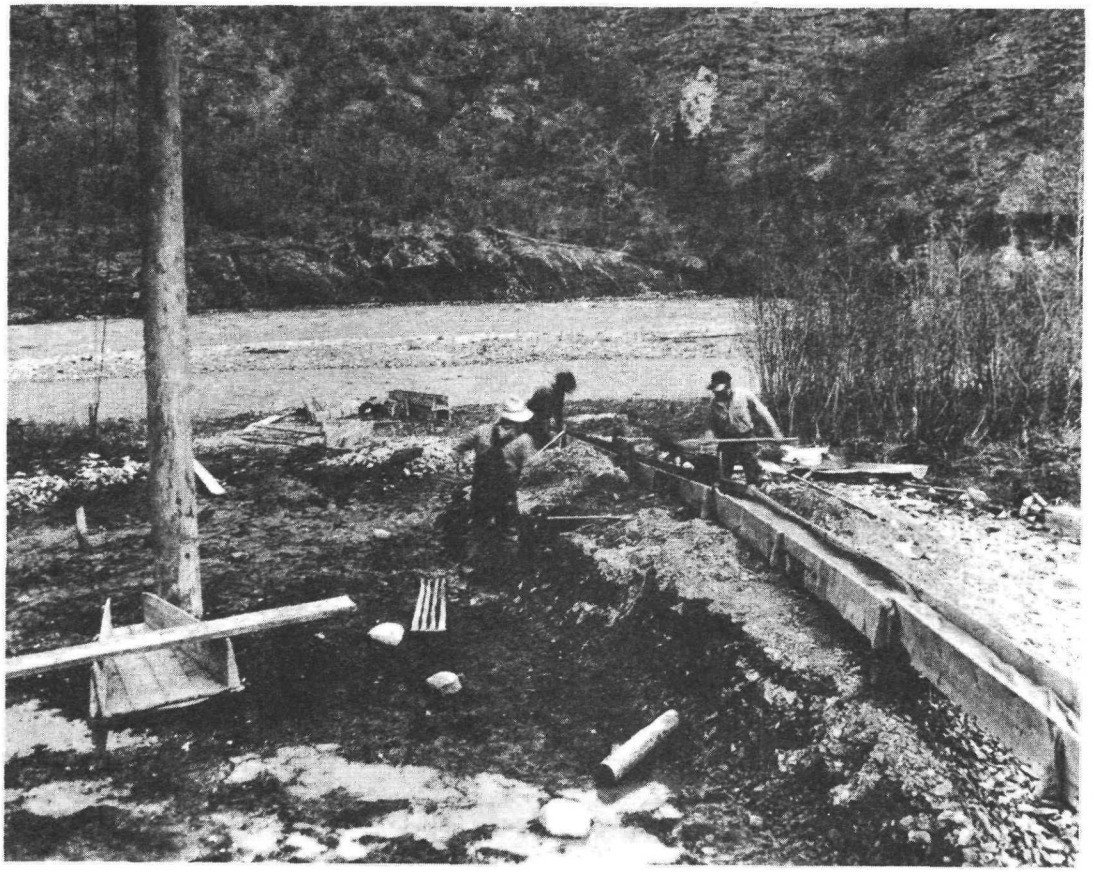
Nolan Creek drift mining plant, with Smith Creek Dome in background. Robert Marshall photo. Courtesy of the Bancroft Library, University of California. Berkeley.



August "Deep Hole" Tobin just before leaving Boston for the Gold Rush. Reproduced from a family photo loaned by Doris Bordine of Eagle River, Alaska, his grand-daughter.



Sluice boxes and gin-pole at Vern Watts' claims on Hammond River. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Shoveling in at Vern Watts' claims on Hammond River. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



The settlement of Beaver on the Yukon River, entrepot to the Chandalar District. A.G. Maddren photo 149 of 1910. USGS Historical Photo Library, Denver.



Caro on the Chandalar River at Flat Creek. J.B. Mertie photo 930 of 1924. USGS Historical Photo Library, Denver.



ARC-built tram across Chandalar River at Caro. J.B. Mertie photo 1026 of 1924. USGS Historical Photo Library, Denver.



Stone cabin on Big Creek headwaters, Chandalar District. J.B. Mertie photo 947 of 1924. USGS Historical Photo Library, Denver.



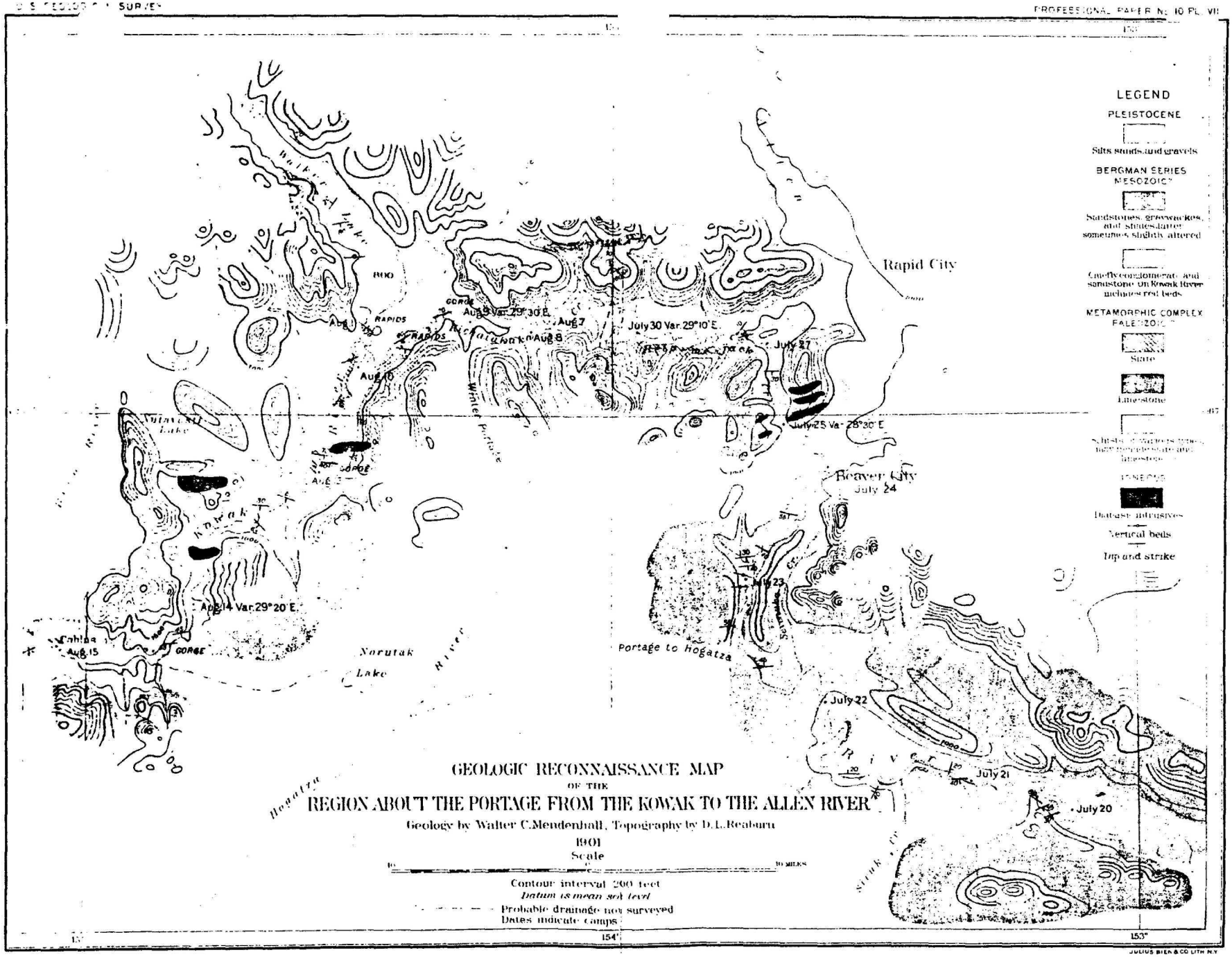
Gin-pole and self-dumping bucket at Big Creek mining operation, Chandalar District. J.B. Mertie photo 948 of 1924. USGS Historical Photo Library, Denver.



Creecy's open-cut operation on Big Squaw Creek, Chandalar District, showing flume and miners. J.B. Mertie photo 949 of 1924. USGS Historical Photo Library, Denver.

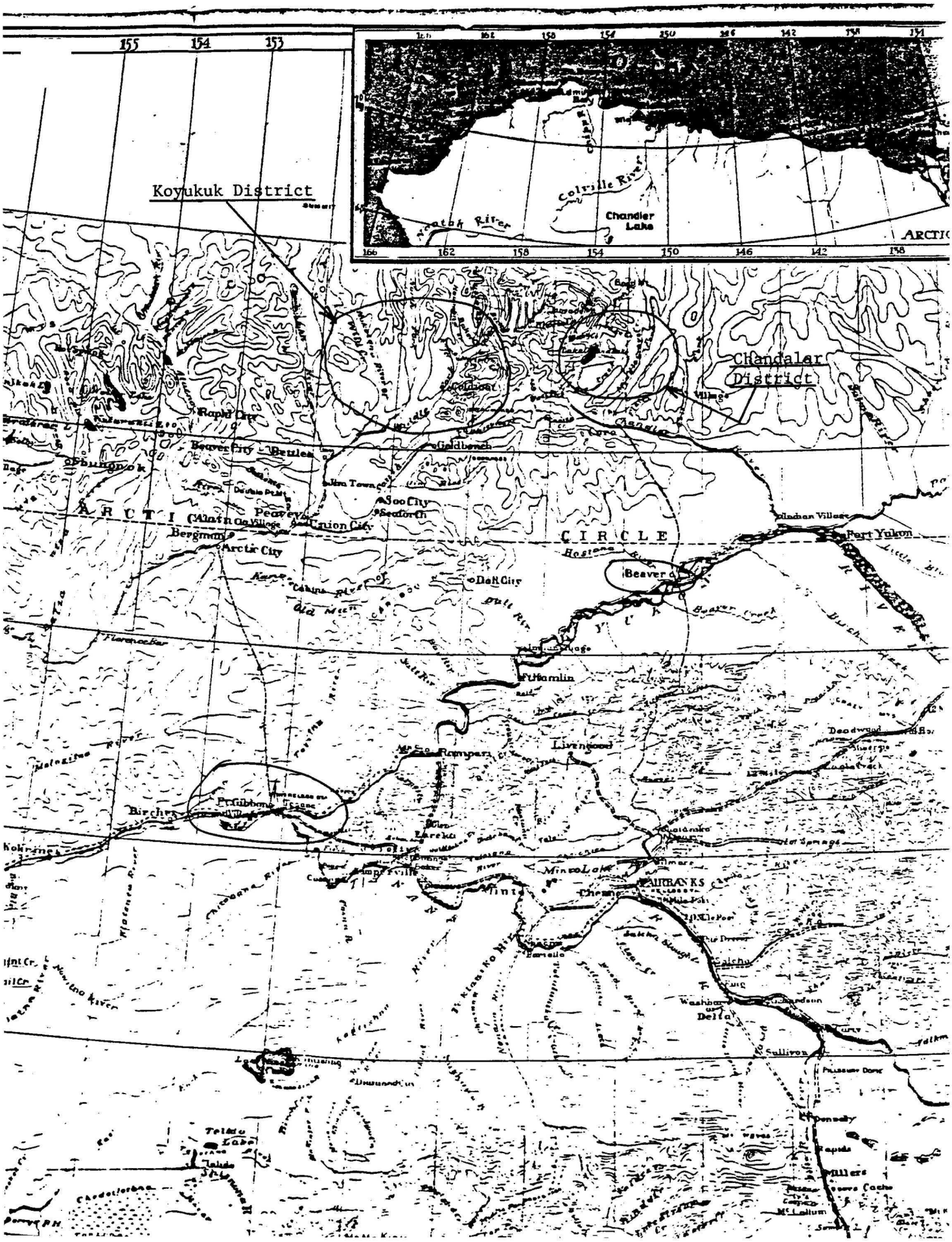


Ruby Creek Mine in Cosmos Hills near Shungnak of Kobuk River. P.S. Smith photo 522 of 1910. USGS Historical Photo Library, Denver.



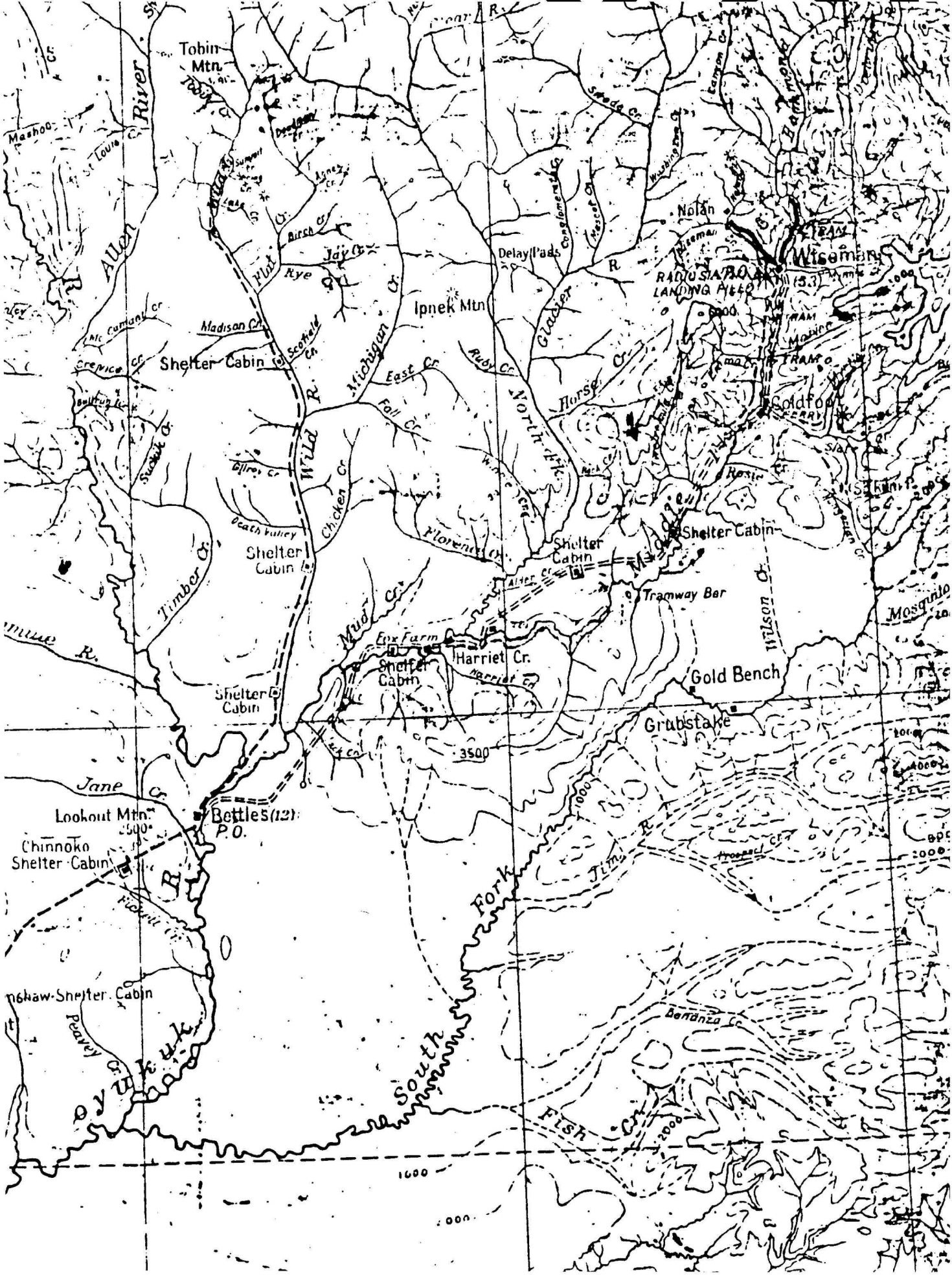
JULIUS BIEN & CO. LITH. N.Y.

This reduced section of the Alaska Road Commission general map of Alaska roads and trails in 1916 shows the tenuous pack trail connections between the Yukon River supply artery and the Koyukuk Mining District (Tanana-Fort Gibbon to Arctic City and on to Coldfoot). The Yukon River to Chandalar route begins at Beaver and goes via Caro. RG 126, Map 5, National Archives.



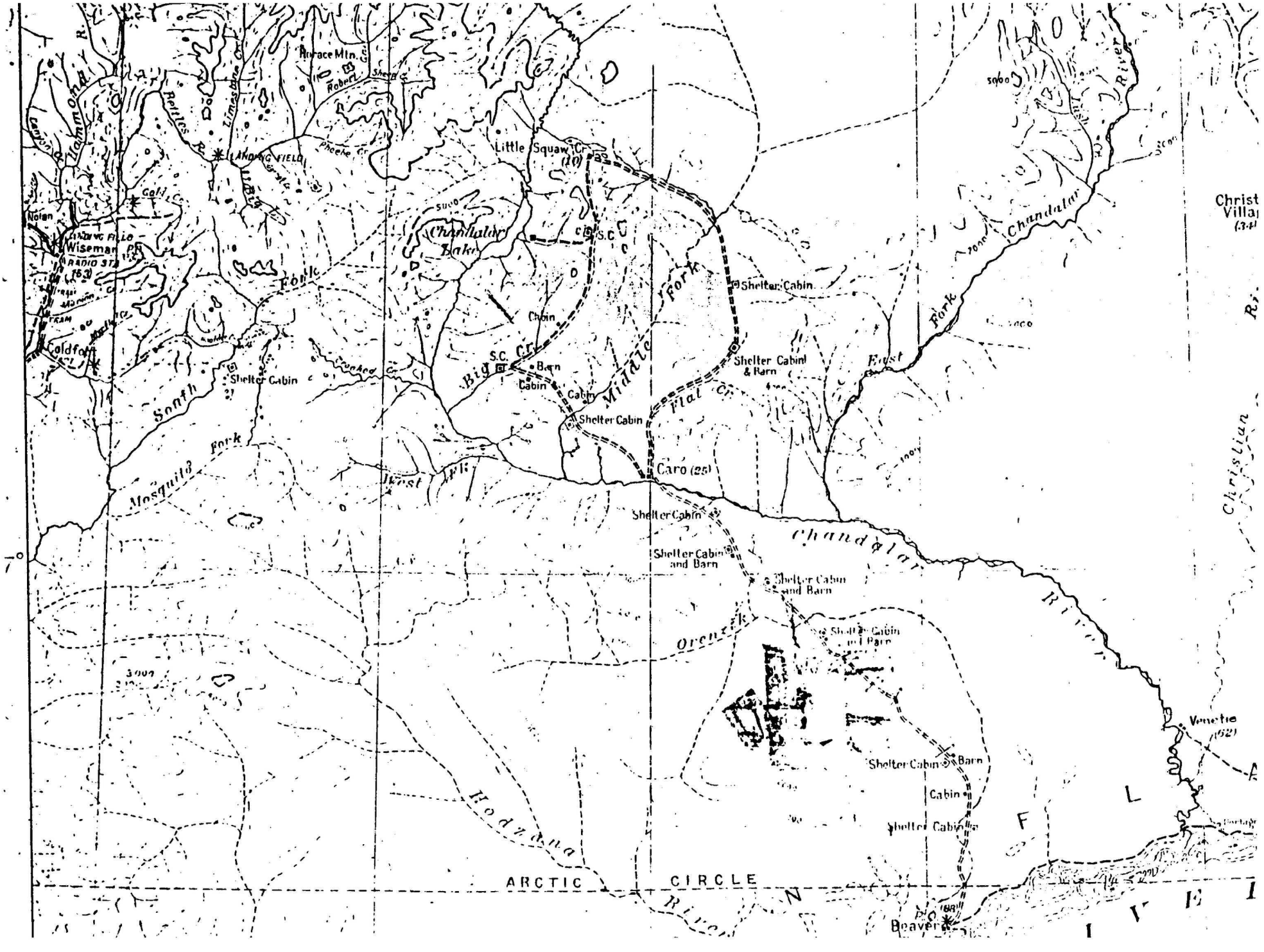
Koyukuk District
Chandalar District
Colville River
Chandler Lake
Rapid City
Beaver City
Bettles
Goldbench
Soo City
Seaforth
Peavey
Union City
Bergman
Arctic City
CIRCLE
Beaver
Fort Yukon
Indian Village
Dall City
Ft Hamlin
Livengood
Rampart
Birches
Pt Gibbon
Minto Lake
FAIRBANKS
Cheena
Salcha
Delta
Sullivan
Millers
Teldo Lake

This full-size section of the Alaska Road Commission's Koyukuk District map of 1923 shows the pack trails (single dash) and sledge trails (double dash) in the Bettles to Wiseman and Wild Lake areas. Note the many ARC built shelter cabins, the tram and ferry connections across Middle Fork, and the importance of Wiseman, with its post office, wireless station, and landing field. The two spur wagon roads out of Wiseman serve the Nolan and Hammond River mining camps. RG 126, Map 21, National Archives.



Tobin Mtn.
Allen River
Wild R.
Michigan Cr.
Ipnek Mtn
Delay Pass
Glacier R.
Nolan
Wiseman
Goldfoot
Shelter Cabin
Madison Cr.
Scofield Cr.
Crevice Cr.
Suckik Cr.
Timber Cr.
Death Valley
Chicken Cr.
Fall Cr.
East Cr.
Ruby Cr.
North Fk.
Horse Cr.
Florence Cr.
Mud Cr.
Fox Farm
Harriet Cr.
Tramway Bar
Wilson Cr.
Gold Bench
Grubstake
Jane Cr.
Lookout Mtn.
Bettles (12)
P.O.
Chinnoko Shelter Cabin
Peavey Cr.
Oyukuk R.
South Fork
Fish Cr.
Benanza Cr.
Jim R.
Prospect Cr.
3500
1000
2000

This reduced section of the Alaska Road Commission's Fairbanks District map of 1924 shows the extended trail system from Beaver on the Yukon River to the Big Creek and Little Squaw Creek mining centers in the Chandalar District. Trail connections between the Wiseman-Coldfoot area and the Chandalar mines existed at this time, but were not maintained by ARC. Note the rapid adoption of the airplane even by 1924, with landing fields (*) at Bettles River, Gold Creek, Wiseman, Myrtle Creek, and Beaver.
RG 126, Map 22, National Archives.



Horace Mtn.
Robert
Sheep Cr.
Hammond R.
Bettles R.
Limestone Cr.
Pheebe Cr.
LANDING FIELD
Little Squaw Cr.
(10)
Gold Cr.
Nolan
LANDING FIELD
Wiseman
RADIO STA
(53)
Chandalar Lake
S.C.
Fork
Shelter Cabin
Cabin
Big Cr.
S.C.
Barn
Cabin
Cabin
Middle Fork
Shelter Cabin & Barn
Flat Cr.
East Fork
Chandalar River
Christian
Coldfoot
Shelter Cabin
South Fork
Mosquito Fork
West Fk.
Caro (25)
Shelter Cabin
Shelter Cabin and Barn
Shelter Cabin and Barn
Shelter Cabin and Barn
Orenzik
Shelter Cabin
Barn
Cabin
Shelter Cabin
Hodzana River
ARCTIC CIRCLE
Beaver
Venetie
(62)

Already, Kowak (Kobuk) Eskimos were coming across the Alatna portage, attracted as the Indians were by the job opportunities and trade goods at Bettles. Schrader judged these people more hardy and industrious than the Koyukons.[45]

Schrader credited the "hundred sturdy men" who had persisted on the Koyukuk after the 1899 exodus for the surge of mining activity which he witnessed in 1901. Their diligent prospecting and development work, leading to authenticated finds of gold had stimulated a new influx of experienced miners from the Yukon fields--with a total of about 200 wintering over in 1901-02, increased to 350 as he wrote in 1903. Many more people came into the country for summer-only work on their claims. The standard wage for the miners was now $12 a day; ground that did not support this wage was not worked.

Though Bergman persisted as a supply and relay point, Bettles had by 1903 become the leading distributing point for the mining camps, which were located some 75 miles farther upriver. The Northern Commercial Company, successor of the Alaska Commercial Company, had bought out the trading posts at both settlements. Winter dog-sled hauling, beyond steamboat navigation, was the preferred mode of transport, with small boats used in the open season. Some supplies came by summer pack trains from Fort Yukon via the Chandalar trails, and from Fort Hamlin via Dall River.

But heavy snowfall precluded the use of horses in winter for either freighting or work at the mines.

Bettles had the official post office, though mail was also distributed from Bergman and Coldfoot. The judiciary of the district was located close to the mines at Coldfoot, with D.A. McKenzie holding the commissioner's offices of judge, coroner, and recorder.

As of 1903 the gold placers were exclusively shallow deposits worked only in the 2-1/2 months of summer. Men of moderate means--those who could rustle up a $1,000 grubstake of supplies and equipment and stick it out for long, hard work--could make it on the Koyukuk. But it would not be an instant-riches venture.

Good quality coarse gold occurred on a score or more creeks and side gulches, some only recently discovered. Mining centered on the Koyukuk's Middle and North Forks, though Gold Bench and lesser mines on South Fork still produced with some success. The yield of the district to date (1903) totalled about $717,000.

Even as Schrader wrote, the swift progress of new discoveries and development was expanding the geographic frame of Koyukuk mining nearly to the limits that still obtain today: as far north as

Gold Creek on Middle Fork, up the Hammond River to Vermont Creek and the limestone belt, the early Nolan Creek discoveries, and westerly to the North Fork drainage, where Mascot Creek had already yielded about $100,000. Prospects farther to the west, in the Wild, John, and Alatna drainages would be developed within the year, with a few creeks becoming long-term producers.[46]

Schrader's report of 1904 comprehended the shallow-placer phase of Koyukuk mining through 1903. Up to that time, though burning and drifting had been tried on limited scale with small success, the deep-channel dimension of the Koyukuk's economic geology remained to be discovered.

Geologist W.C. Mendenhall and topographer D.L. Reaburn in summer 1901 led a traverse of the upper river country from Fort Hamlin trading post on the Yukon to Kotzebue Sound. They ascended Dall River in canoes, performed an arduous portage of 18 miles involving a 2,500-foot climb to the headwaters of Kanuti River, then ran and lined their boats through its dangerous upper rapids and canyons to eventually reach the Koyukuk. Refitting at Bergman, they then tracked up the Alatna 80 miles to Helpmejack Creek, which heads in a low saddle leading to the Kobuk headwaters. This pass, the Alatna Portage, was reached July 30. The portage to the Kobuk took more than a week. The party then descended the Kobuk, reaching Hotham Inlet on September 3.[47]

The delays occasioned by Kanuti rapids, including severe damage to the canoes, led to exhaustion of the Survey party's supplies before they reached Bergman. So they were forced to live off the country, shooting geese and ducks, which fortunately were plentiful. In a switch from the usual pattern, the whites purchased flour and bacon from a Koyukon fishing party on the lower Kanuti.

With aid from Alaska Commercial Company agent James Powers at Bergman, Mendenhall's group sorted preshipped supplies, repaired and packed canoes, and hired on as guide a Kobuk Eskimo named John, recommended by Powers as trustworthy and knowledgeable abou the Alatna Portage route. Except for a forest fire caused by a carelessly placed smudge at their mid-portage camp, the Alatna River ascent and portage presented no special difficulties. After the fire, which nearly took their camp, the surveyors repaired and shared clothes and gear to make up for items burned, and went on to canoe water on the uppermost Kobuk.

The party had followed in reverse order, the portage route used by Lieutenant Stoney 15 years earlier on his trip to Chandler Lake. When they reached the mouth of Walker Lake's outlet, they duplicated Cantwell's ascent of that stream, improving upon it by lining empty canoes through the rapids near the lake and cruising nearly to its upper end.[48]

Descent of the Kobuk proceeded without a hitch; even the Lower Canyon rapids posed no problem for the light canoes. At the mouth of Selby Lake's outlet river they found a Native encampment where they laid over a day to visit and map the lake, five miles to the north. Between Selby Lake and the mouth of Ambler River they passed many Native fishing camps, it being the late August fishing season. Empty cabins along the way recalled the stampede of 1898. At Riley Camp, just below present Shungnak, one white man subsisted on fish without salt, awaiting resupply by the steamboat. A well-equipped prospecting outfit with 12 pack horses brought overland from Nome was encountered at the mouth of Black River a little farther downstream. These men intended to winter on the Noatak or the Kobuk. The last sign of prospecting action before the Survey party left the upper river was a small sailboat clawing up the Kobuk above Ambler River, with three white men in charge hauling two or three tons of supplies.[49]

Since the 1899 exodus the Kobuk had been almost deserted: ". . . a very few white men have been on the stream each summer, and the river steamer John Riley, commanded by Captain Coogan, has spent two winters there, and again wintered in the neighborhood of Black River during the season of 1901-2."[50]

Mendenhall commented on the difficulties of reconnaissance and mapping in high latitudes, which, being carried out mainly in

summer, must sacrifice completeness to the ". . . paramount necessity of gaining ground"--during this expedition some 1,200 miles of ground.

> Through difficult regions all the energies of the scientific, as well as the other members of the party, are of necessity often devoted to overcoming the physical obstacles encountered. Work under these conditions can not be uniform in quality. Observations made while the observer is struggling ahead at the end of the tracking line, or bending all his energies to the prevention of disaster in the wild waters of a gorge, or perhaps zigzagging up a 1,000-foot climb with 90 pounds on his back are not always as complete as is desirable.[51]

Despite these difficulties, the Mendenhall expedition prepared excellent traverse maps, geologic and topographic, which for the first time accurately depicted the Dall River route from Yukon to Koyukuk, and the Alatna Portage route long used by Native traders and recently by prospectors.[52]

Mendenhall also described several Dall River-Fort Hamlin travel routes between the Yukon and the Koyukuk that reflected seasonal imperatives--highlands for summer travel, lowlands for winters.

John, the Kobuk guide, pointed out a network of Native travel routes branching off from the Alatna and the Kobuk. Among the more important were: the lowland route to the Kobuk by way of the upper Hogatza River and Norutak Lake; the Malemute Fork route to the John and Wild river valleys; the upper Alatna passes to the Noatak; the Reed, Mauneluk, and Kogoluktuk river passes to the Noatak; and the Pah River route to the lower Koyukuk.[53]

Throughout the traverse, Mendenhall noted signs of 1898-99 prospecting. But aside from the large pack-train party at Black River, he saw only a handful of miners: two on Rockybottom Creek, an upper Alatna tributary and ". . . a few white men in the valley" of the Kobuk.[54]

Mendenhall, like other travelers of the period, described Athapaskans as independent and loathe to work for white men unless in real need of supplies. The fishing settlement of perhaps 75 Koyukons on the Kanuti River was, however, ". . . very generally supplied with food and clothing of white manufacture through the work which they do for the Koyukuk miners, or by the exchange of game and furs for articles kept by the traders at the various stations." He reserved highest praise for the Kobuk Eskimos, who ". . . seem intelligent and imitative, and are very anxious to learn the English language and civilized ways. They are highly

regarded by all of the whites who have visited the region in which they live."[55]

During the winter of 1898-99, the Quaker missionary Robert Samms had estimated the Kobuk Valley Native population at 500. Mendenhall in 1901 estimated 250. He attributed most of this decrease to the Natives' following white men to adjacent gold fields for work, and to absence of some families on trading trips.[56] Doubtless, too, after the diversions from hunting caused by the white invasion during the rush, resulting in starvation and sickness, many Native men had by 1901 resumed the summer pattern of mountain hunting while the women stayed on the river to fish.

One short note in Mendenhall's Note Book No. 2 (along with mounting evidence from other quarters) would lead to major explorations north of the Arctic Mountains beginning in the 1920s: "John reports a lake of petroleum, or covered with petroleum in the Colville valley not very far from Lake Chandler. It burns & many ducks are killed by it. White men do not know of it."[57]

The sharing of information and assistance between USGS surveyors and men of the country is typified by Mendenhall's July 17, 1901, Journal entry: Send J.F. Powers -- Bergman, Alaska

Stoney's reports

Alaskan reports & maps generally

Send also Koyukuk Reports to

Donald McKenzie, Land Commissioner

Cold Foot City

Koyukuk R.

Alaska

Pickarts, Bettles & Pickarts

Bettles

Between them, the Schrader and Mendenhall expeditions had traversed and mapped the major routes and locations associated with upper-country placer mining through 1903. The lay of the land, both geographically and geologically, could be grasped from their reports. Over the next few years the edge of the mining activity would keep pushing into yet untested creeks and gulches and down into the deeper channels; but the frame of major drainages and gold-bearing formations that they described held firm.

*****

Susan Will has chronicled the progress of Coldfoot from initial claim staking and miners' meetings, through the ambitious townsite plat of 1901, with numbered avenues stretching far into the woods

beyond the clustered cabins in the angle of Slate Creek and Middle Fork; to the town's demise as mining shifted northward to Nolan, later Wiseman. Original documents of the 1900-1906 period project a mix of boomer optimism, hard-scrabble living, and constant motion into and out of the Koyukuk precinct depending on the locale of the latest gold excitement.[58]

A miner's meeting of February 22, 1902, produced a series of resolutions addressed to his Honor Judge Wickersham of the Third Judicial District [Division]. These resolutions distilled the major problems facing Coldfoot residents at that time. Most important was the need to untangle the records of the precinct. All legal instruments, from deeds to marriage records, had been crammed into one recorder's book, making it nearly impossible to get information on mining ground locations. The records needed to be classified and copied in separate books with good indices. And the recorder had to get a salary to keep the books in order. Another resolution complained of rotten food obtained from the trading stations and stores. Purchased by the miners at great cost, then transported by them under the most trying circumstances to their remote camps, the food made them sick or was found to be inedible. They charged that unscrupulous corporations and fly-by-night private traders purposely shipped these decaying provisions to arctic stations, having failed to sell them elsewhere. The resolution called for pure food laws and

enforcement by the Federal Government, including a resident food inspector.

Only a resolution for improved mail service seems to have been officially heeded. Coldfoot's first postmistress, Jane Durie, was appointed on April 28, 1902, followed by Agnes E. Hammer, F.E. Howard, Mrs. Jesse Howard, and Brudenell E. Plummer. In 1912 the Coldfoot post office closed and mail went direct to Nolan, where a post office had first opened in 1909.

The official records remained chaotic, all mixed together as Susan Will found during her research.

Solution to the food problem came not from official sources, but from the Northern Commercial Company, whose Bettles agent, Volney Richmond, had a reputation for integrity. In summer 1902 he sent R.D. Menzie, an ex-miner himself, to open a Coldfoot branch store. This upstream move coincided with big strikes on Middle Fork to give the store a good start. Improperly handled canned goods still caused occasional food poisoning, but the pattern of poor-quality goods seems to have ended with the N.C. Co. presence.[59]

Though upper-country commerce would increase steadily over the next few years, the marginal nature of far north mining and

settlement would not change. U.S. Customs Service valuations of freight shipped (coal, lumber, hardware, provisions, liquor, and all other commodities) in 1906 allow comparisons at selected places:

Nome	$3,740,188
Fairbanks	2,128,392
Bettles	22,990
Kotzebue	10,396[60]

D.A. McKenzie recalled the death of John Mytier, taken away by exposure to cold on the trail. To give the native of France decent burial, his companions had to thaw a grave from the frozen ground. Then they gathered in Coldfoot's "Government building," and "whole-souled miners," warm-hearted and generous, sent him to his reward. Lacking any praying man in that remote place, unassuming Jim Adamson volunteered to bid adieu with words that stirred the hearts of the rough miners. One remarked: "By Jingo, when I have to shuffle off I hope Jim will send me across the Divide, because if anyone's talk will amount to anything with the 'Boss,' Jim's ought to go."[61]

A major source for upper country history is the Bettles Log.[62] Though this is an anonymous document that began as a hotel

register, internal evidence points to George L. Rice as the principal keeper of the log during its Bettles period. Rice had earlier owned the Pack Train Inn in Skagway and another establishment of the same name in Bennett, British Columbia, a way station on the upper Yukon trail to Dawson. The log in question was evidently started in Bennett, where Rice is recorded as a frequent visitor from Juneau. Sometime after August 15, 1900 (the last Bennett entry), Rice relocated, probably because completion of the White Pass & Yukon railway in July 1900 killed the inn business at Bennett. Eventually Rice arrived in Bettles, where, effective October 1, 1901, Judge James Wickersham issued him a one-year business license ". . . to sell intoxicating liquors at retail at Bettles, Alaska, in a log building. . . ."[63]

In an undated "Special Memorandum for the Log," Rice or his agent set forth these vital statistics to begin the Bettles record, which became a running commentary on people and events from March 1902 through June 1905, with occasional notes added by another party in the early 1920s.

> The Koyukuk River closed at Bettles October 6th 1901
> The coldest day in Winter 1901-1902 at Bettles 78° bel. zero in Jan. 1902
> Rise and Fall of the Koyukuk from May 8th till the outgoing of the Ice (after May 8th).

Ice started moving in the Koyukuk at 4:43 P.M. May 15th 1902

First Steam Boat to arrive was the Koyukuk June 27th

Census taken of Bettles Aug 7th 1902--31 White Men, 8 Women, 4 Indian Women, 4 Indian Kids, 2 Indian Men

Two Men drowned in the Koyukuk under the same circumstances and almost the same time, refer to July 1st and 9th 1902

The July 1st entry lists Burt Barton, and others, as "left for Coldfoot," then relates:

Sad Accident

Burt Barton while on his way to Coldfoot was drowned this morning about 9:30 in the Koyukuk at the mouth of John River--deceased was 23 years old last April, he leaves his father in this town to mourn his loss, at the present writing 1:30 P.M. the body has not been found, a large [party] of Men are dragging the River for the Body. Deceased was remembered as a bright young man and of good character, the entire community mourns his loss. His father and relatives have the sympathy of all, his former home was Seattle, Wash.

> Dr. [J.A.] Cleveland an Eye Witness testified as to the accident: Dr. Cleveland and others left here this morning about 8 O'Clock for Coldfoot with a Scow loaded with freight. Burt was driving one of the Mules, in crossing the mouth of John River, Burt was swimming along with the lines in Hand, in some unaccountable manner he lost his hold, perhaps he was frightened, by the Mule being swept under the Water, and as Burt was trying to gain the shore, he suddenly disappeared under the Water, and never was seen after that.
>
> The Body was not found up to 8 O'Clock P.M.

The July 9 episode drowned Ed Kreber ". . . about noon in Koyukuk opposite Laland's Road House. He was crossing the River with [Jack] Brazzill's Mule, they were en route to Coldfoot with a Scow load of freight for Bob Menzie." Both bodies were found downriver that summer.

Comings and goings at Bettles can be pictured by sampling two typical pages of the log, one for winter and another for summer, contrasting the mainly in-country, overland travel pattern of the cold season and the steamboat influx from the ouside world during open water. In early March 1902, with the weather clear and cold nd occasionally windy, people leave for and arrive from Coldfoot,

Union Gulch, Hammond River, Minnie Creek (Miller) Road House (on Middle Fork opposite present Wiseman), Peavy, Wilde Creek (Wild River), Dawson, and Davis Creek. Others arrive from Myrtle Creek, Gold Creek, Hughes Road House, Bergman, South Fork Bench, and Alatna River.

On June 27, 1902, the N.C. Co.'s new steamboat Koyukuk arrived with Capt. J.S. Greg in command and Capt. T.L. Haines as Pilot. She brought 39 tons of welcome freight and 18 passengers, having left Dawson on June 17. The names of passengers speak of Scandanavia and immigrants from Germany: Aug. Erickson, A. Carlson, Albert E. Guenther, H.B. Burkhart. Another arrival, Mrs. F.M. Wright, would, with her husband, open a roadhouse at Wiseman Creek. Handsome Harry and Hungry Bill depart for Nome two days later, as a prospector named Nolan comes in from Coldfoot.

By July 4 Koyukuk is back with 52 tons of freight, and on the 7th at 4 P.M. she is back again, having made the round trip to the 17-Mile Cache in 46-1/2 hours with 38 tons of freight. The boat, taking full advantage of high water completes her fourth trip to Bettles from the downriver supply caches on July 10, this time with 32 tons of provisions and tools.

Koyukuk completed her 18th freight shuttle to Bettles on 31 August. All summer she had raced between Bettles and downriver

caches, one a barge cache 300 miles downstream. If Koyukuk could not get all the way to Bettles on one of these runs, she off loaded at 12 Mile or 17 Mile, then went back downstream to the barge cache for another load. As soon as summer rains raised the river, Koyukuk dashed back and forth between Bettles and the upper caches, getting as much freight as possible into the N.C. Co. warehouses before winter. On Wednesday, September 3, Koyukuk left for winter quarters at St. Michael.

Two gasoline launches, Rough Rider and Chief, also hauled passengers and small amounts of freight to and from Bettles that summer. As early as 1902, a powered scow was tried on the Bettles-Coldfoot freight run, but this technology would not supplant horse- or mule-drawn scows for many years.

Occasional entries smack of Wild West doings, as when Tom McIntyre took a rifle shot at Ed Maher near Fatty's Saloon (nobody hurt) on March 9, 1902. Mainly, people were working too hard to engage in or put up with random violence. Between cold, isolation, and the ever-present risks of daily life, avoidance of confrontation made sense. One character, the exception to the rule, crops up repeatedly in the upper country literature: Argo Bill. His real name was William Henderson and he had been a mate on the old Alaska Commerical Company steamer Argo. Bob Marshall recorded old-timer Carl Frank's impression of Henderson:

> I got tangled up with Argo Bill as a partner. I had a hell of a time with him. He was a tough fellow. He always want to shoot the gun. He growl: "You do what I say or I blow out your brains." I don't understand much English in them days, but I understand that.[64]

On April 1, 1902, "Argo Bill made a demand from Richmond of the N.C. Co. for Meat he had left at the Warehouse, which was refused him, henceforce Gun Play by Argo Bill, Bill got the Meat." On April 13 the log records Argo Bill's arrest by U.S. Deputy Marshal J.H. Johnson for assault with a deadly weapon.

An entry of April 16 provokes speculation: Napoleon and Lucy of the French Scurvy Cure Co. arrive from Coldfoot. A few weeks later they would remove to Nome.

That April of 1902, faro tables were installed at the Saloon and Albert "Smiling Al" Liebert opened a jewelry store there, too.

News from the mining camps enlivened the log. On April 23 the Argo Bill controversy erupted in a fistic contest between Judge McKenzie and attorney G.A. Salisbury at Coldfoot ". . . in which his honor was knocked out in one round." Salisbury spent two hours in jail until $500 bond was raised. The next day the attorney had a jury trail and was acquitted. Nor did Argo Bill

feel the full lash of the law a week later, because prosecution witness Volney Richmond failed to appear at the trial and Argo Bill was discharged. Richmond's absence cost him a citation and payment of court fees, which he appealed.

Typical of the Bettles chronicle as spring unlocked the country were notations about starting up the sawmill (May 6), putting in the foundation and posts for Rice's building (May 11 and 13), the arrival from timber camp of a raft of saw logs for the Pickarts, Bettles and Pickarts sawmill, which substained light damage from a fire (May 21), the launching of the steam launch Nina, and a report of big strikes on Hammond River and Vermount Creek (May 22).

In mid-June the pace picked up as steamboats and barges forged up the lower Koyukuk with hundreds of tons of supplies and rumors of hundreds of passengers from Dawson (June 13). A new scow was launched and a miners' committee called upon Volney Richmond and Bob Menzie seeking relief from high N.C. Co. prices. They decided to wait upon a visit from a Mr. Schloss, an N.C. Co inspector, to press for price reductions (June 14).

By June 19 the steamboat Rock Island had gotten nearly to Bergman, with 26 passengers rather than the 300 earlier reported. But not until the specially designed, shallow-draft Koyukuk reached

Bettles on June 27 did the upper river steamboat season really begin.

Names familiar in later years crop up repeatedly in the log: H. Pingle, Pete Dow, the Plummers, the Wrights, Joe Mathews. They move in and out of Bettles on rounds that service their upriver businesses, mines, and prospecting expeditions. Once in a while a note tells of a big find, such as Andy Matheson's $880 nugget found on No. 6 Hammond River (September 6). Such events and the hope of more explain the bustling traffic at Bettles and the need for the new N.C. Co. warehouse built by Pat Mahoney that summer of 1902.

In the pattern of self-reliance that would always distinquish the upper country is the October 2, 1902, entry:

> The following Citizens [of Bettles] constructed a new bridge over the Gulch today, which is a very creditable Job. Martin Christenson, Olsen, Ernest Bier, Brown, Roberts, Mike McNeal, Charley Pickarts, Barber, Chas. Mathews, O.M. Manzar, & L. Hirsch. The N.C. Co. furnished the nails & 2 x 3 Lumber for Railing, Pickarts, Bettles & Pickarts furnished the Slabs, and a lunch was given by James Baird, the N.C. Co. contributing Crackers, Cheese & Sardines.

On that same date the log reported a suicide at Coldfoot: "Andrews the Barber committed Suicide the 30th. Left by tying a Rock around his Neck and jumping in to the Koyukuk River in front of Coldfoot. Cause unknown . . . ."

With the hardening ground of October, crosscountry travel again picked up. On the 5th, Chas. Pickarts, Gordon Bettles, and Martin Christenson went prospecting on Wilde Creek (Wild River). Ernest Bier and Barber prospected in a westerly direction, 40 to 50 miles out. On the 8th came a report, possibly from Martin Nelson who had just arrived from Coldfoot, of "Another new strike made on the North Fork on a tributary to Glacier Creek called Mascott (Mascot). Discovery made by Burt Johnson about 3 weeks ago."

Slush ice began running on the Koyukuk on October 17. Doc Cleveland and Jack Haggard, who had left with a freight scow for Coldfoot on the 16th returned a couple of days later, foiled by the ice, forced to leave their freight at Laland's Road House.

Now, winter's grip begins to tighten: Snow has been falling for about a week, three inches one day, eight inches the next. Slush ice continues to run until October 22, when it is reported, "The Koyukuk River closed in front of the Saloon at 10 A.M." The next day "Medas with Wife & Kid (Indians) first to cross the Koyukuk River on the Ice this A.M." Next two Indians go downstream with

dogs and a sled, ". . . the first to leave here over the Ice." On Friday the 24th, "V. Richmond & Joe Jury went down to Luella Riffle and back with dog team, they report a good trail." Over the next few days Mike McNeal, Chips Anderson, and Ed Lord head out in various directions under the notation, "went Moose hunting." Wood-gathering and trail-repair parties get busy.

With the close down of summer mining and the exodus of many miners for the winter, the action at Bettles gears down to slow. The land is silent and congealed; the sun a mere glimmer on the horizon. But then, in late May of 1903, the ice begins to move and jam in front of Bettles. The water rises to the bank and six inches over. Nina breaks loose from her line and is almost lost to the grinding ice. Day after day great segments of ice break loose from the upper forks and the John to sail past Bettles. Finally it clears and traffic begins again. The steam launch Nina sails downriver on June 1 with four passengers. By the 8th the first man has gotten a pole boat up the river to Bettles. Finally, on the 18th, Koyukuk makes it to Bettles with 64 tons of freight. A number of old hands, remembering the Mascot Creek report from last fall, take off in that direction fighting the high water of North Fork. The year's hopes and hard work have begun.

The summer ends with a report of Joe Mathews' new discovery on the headwaters of Wild River. In these early years there is always one more discovery to savor over the long winter, to lend excitement to thoughts of spring.

*****

Koyukuk Commissioner's Court papers add further substance to the history of the upper country. These court dockets and journals, now in the State Archives in Juneau, depict a steady flow of litigation, particularly in the early years, with many cases of claim jumping, unpaid store and labor bills, felonious assault, burglary, and disturbance of the peace. Given the small population of the precinct, the number of cases speaks to the stresses of life in the isolated, unstable mining camps as lived by predominatly lonely men far from home and family. The dearth of women and the chaotic mining records could only make more volatile an already explosive situation.

The criminal docket speaks of assaults with pick handles, cudgels, and knives. One miner, E.H. Barstow stabbed and cut his partner Tom Baldwin because Barstow's girl friend, one Laura Cristi from Dawson, had "taken up with Baldwin." The pathos of the case can be read in Barstow's words, "All Laura wants is to get rid of me."[65]

Typical of the confusion over who owned mining claims is this statement by a man charged with trespass:

> Edward Kreber is my name. I am 29 years old, I was born in the state of Iowa . . . . I have resided . . . [on Emma Creek] since Feb. 28th, 1901. I am a miner by occupation. On or about Feb. 15th, 1901, I bought 1/4 interest in No. 9 or Nelson's Discovery on Emma Creek from U.G. Crocker for $500.00. The property was sold to me clear from all incumbrance. Crocker stood good for the legal title of the claim and he claimed to be the lawful owner. On or about 30th of July 1901 V.V. Lowery had me arrested for trespass on said ground. V.V. Lowery never notified me that he was the owner of said claim either in writing or personally. Lowery and I met on or about April 16th 1901 at Mouth of Marion Creek and in my presence Crocker asked Lowery if he had seen Nelson in Dawson. Lowery said once, while in Dawson, [he] met him in the opera house and that's the only time he ever saw N.E. Nelson while in Dawson. When Lowery got ready to leave Crocker and I . . . [he] said, Crocker I wish you good luck. I suppose when Nelson gets here you and him will have your outs. . . . Mr. Lowery has met me time and again and he never informed me that he was or claimed to be the owner of the claim.

Despite Kreber's plea, Judge McKenzie found him guilty as charged, based on evidence of title adduced by Lowery.[66]

Tucked in with charges of theft (of a case of Eagle Brand Condensed Milk from Volney Richmond's warehouse) and an unlawful pugilistic contest for money, involving one "Hot Air Bob" Herald, is the woeful tale of Mary Hastings, who ". . . on the 20th day of January 1902 was found in the town of Coldfoot, Alaska, with a child about one year old, with no visible means of living soliciting shelter and food from 'door to door'." Mary was fined $180, and, unable to pay, was committed to the U.S. Government jail in Coldfoot. Perhaps, given the season, this was an act of mercy. She did survive the winter, for in May 1903, Judge McKenzie sentenced her to six months on similar charges. By now her son Jimmie was three and Mary had another child, "one William, an infant at breast." They too were committed, with their mother, "for their support."[67]

The civil docket cites case after case of forcible entry on mining claims, sometimes involving power-of-attorney claims, with agents representing absentee claimants filing suit against miners working the ground. Jury trials tended to favor the local miners. Store debts plagued not only drifters but also solid citizens and long-term miners temporarily down on their luck. Liens on claims were used to satisfy indebtedness in a few cases. Nellie Wentzel

complained that George L. Rice had not paid her $882.50 owed for cooking at his Bettles establishment. Rice failed to appear in court and Nellie won her case.[68]

John C. Hatch, owner of Discovery Claim on Gold Creek sought judgment in the amount of $1,000 against Frank Decarie, who in May 1902 trespassed on the claim ". . . by digging, excavating and removing a portion of bed-rock and pay gravel therefrom, and also by depositing large quantities of poles, rocks, tailings and debris from adjoining claim upon Discovery Claim, thereby covering up . . . [plaintiffs] pay Streak." When the defendant failed to appear at trial, attorney Allan P. Joy moved that "judgment and costs be awarded as prayed for," and it was done.[69]

Insanity struck suddenly and with frightful consequences in the isolated camps. Thomas McIntyre and John Bowman brought in Dominic Zehnder from Wild Lake when, in January 1904, the Swiss immigrant became mad with guilt over having stolen a small nugget the summer before while working on Mascot Creek. He begged his companions to kill him, and seized with inner demons, alternated between trying to run away himself and hallucinating about his partners, grabbing weapons to chase their chimeras over the frozen lake. When McIntyre and Bowman got Dominic to Bettles, soothing him with the notion that they were taking him "outside," the citizens there urged them to take him immediately to Coldfoot,

where the authorities could restrain him from being a threat to himself and others. At one point on the journey, Dominic took off his pants and handed them to Tom McIntyre, saying: "Take care of these, so Al Thompson [another Wild Lake miner] can't steal the cartridges in my pocket; I want to use those cartridges to-morrow to kill myself--say nothing to nobody."

Commissioner Howard had Dominic arrested, then called in D. Conley, a practicing physician in Coldfoot, who found him unsafe to be at large. He was committed to the Coldfoot jail until he could be transferred to the district court during the spring travel season.[70]

The coroner's docket records some bloody deeds, often between mining partners. On March 25, 1907, F.M. Wright hurried to Coldfoot to inform Commissioner Frank E. Howard of the attempted murder of Louis Troxler at claim No. 9 Below on Minnie Creek. Howard impanelled a coroner's jury and hastened to the scene of the action. There, Charles A. Benzick was sworn and testified that upon returning to the No. 9 cabin from Mr. Wright's Roadhouse on Wiseman Creek he had found his partner "Slapjack Louie" Troxler lying unconscious on the floor, his head crushed in by blows from a bloody blacksmith's hammer lying nearby. He rushed out and called for his other partner, Sylvester Burkhart, but got no answer. Realizing he could not save Troxler, whose brains were

oozing out, Benzick went for help to Wright's Roadhouse.

Benzick recalled that just as he had left that morning to break trail to the roadhouse, Burkhart had said: "This is my week to cook." Though Burkhart had been acting "rather out of his mind" the night before, Benzick expected no trouble that morning.

Troxler died shortly and the coroner's jury ruled it murder, with Burkhart the prime suspect.

Special Deputy Peter Dow later found Burkhart's body frozen tight in a mining drift on No. 10 Below, where the partners had been working. Dow's reconstruction of events indicated that Burkhart had descended by ladder 55 feet into the mine shaft, then stabbed himself in the chest and staggered along the drift until he fell.[71]

Even among the very few hundred people who wintered over in the upper country, worst-case flights into derangement and paranoia were statistically insignificant. In most of the camps and communities, tough folks went about their business with only the usual foibles caused by winter's cloistral confinements. The feverish action unleashed by spring light and breakup turned crammed up energies to physical things, banishing boredom and introspection.

One of those who maintained mental and physical health in the Far North gold fields was August Tobin, a Swedish immigrant who left depression, a faltering house-painting business, and a wife and two babies in Boston to seek Gold Rush wealth in 1897. Tobin, whose Irish name went back to the shipwreck of an Irish fisherman off the Swedish coast, sailed to Kotzebue, then trekked via Kobuk and Alatna Portage to the Koyukuk. There he stayed for 17 years. He finally returned to Boston in 1916 after making a strike on Hammond River that allowed him to pay off his debts.

Tobin got around as a prospector: Tobin Creek and Tobin Mountain north of Wild Lake bear his name, as do another creek and a pass in the Chandalar drainage. He and his early-years partner, Ernest Morton, held 18 claims on Middle and North fork creeks. In between hardscrabble mining ventures that yielded only enough to keep him going and occasionally send some token cash to his family, August freighted with dog teams and horsedrawn scows, cut wood for steamers, and ran a roadhouse on the South Fork portage trail out of Coldfoot. His energy impressed all who knew him. They called him "Deep Hole" Tobin for the 300-foot shafts that marked his stubborn prospecting. While living at Wiseman, August built the cabin that served as the Wiseman post office in the 1950s.

The hardships of the Tobin family--August unable to get home; his wife, son, and daughter supporting themselves thousands of miles away--would have broken most spirits and marriage bonds. But the Tobins survived as a family, eventually reuniting in Ketchikan, where August ran the fish-cold-storage compressor plant until his death in 1938. His descendants, unto the fifth generation, continue to contribute to Alaska history. August's son, the late Emery Tobin, with his wife Clara, founded The Alaska Sportsman magazine (now Alaska Magazine) in 1935.

Known even to his relatives as a "stubborn Swede," August simply would not quit. The grit that sustained him, a combination of iron will and unbreakable optimism, comes through in a January 1900 letter to his wife, Emma, written at Winnie Creek on the North Fork: "My fortune is in the ground. How much my claims are worth, I cannot say, but no one could buy me out for $100,000. No! I dream of millions."[72]

Measures of upper country industry and energy can be found in the periodic "newsy" items that appeared in newspapers and the distinctive tabloids and all-Alaska magazines that marked the era. These publications served to network the far-flung Alaskan communities. When people left the remote camps for a rare trip outside, they stopped by editorial offices in Valdez or Seward or Seattle to tell of people and events in their part of Alaska.

Because the oldtimers had circulated together in earlier years, everybody knew or knew of just about everybody else. Ex-miners of the Koyukuk might be merchants in Southeast or retired in Seattle. Old Yukon hands were now raking it in at Fairbanks or Nome. So these facts and stories, spiced with projections of new strikes, more water, and big pay "next year," kept alive the pioneer comaradarie of a land still so raw and new that "old times" meant 10 years ago.

A July 19, 1904, report from Bettles gives the feel of it: Koyukuk arrived last night with many passengers . . .

> Machinery is being taken to Nolan creek, which is the richest yet worked in this district. Gold and Myrtle creeks employ about the same number of men they did last year . . . . About twenty men are at work on Wild creek. Many others are prospecting on the upper portion of Wild and on John River.
>
> Mr. Frisbee, of the well known Frisbee Bros., died suddenly of heart disease at Mascot creek on July 16.
>
> Government surveyors have left Coldfoot to survey a wagon road to the Yukon.

> McNamer & Co. are installing a hydraulic plant on Emma creek.
>
> Prices on staples are about the same here as at Fairbanks.[73]

A "Newsy Letter" from the Koyukuk of June 23, 1907, quotes Archdeacon Hudson Stuck to the effect that the Episcopal Mission at Allakaket will be completed in a month, with chapel, hospital, and cabins for the staff. The correspondent notes that 150 Natives can be found in the Bettles area, but only a dozen whites. The miners deserted Bettles because of a big strike on the Chandalar. The N.C. Co. runs the only store in Bettles, which contains 25 cabins. A moment of joy occurred when Bettles' lady schoolteacher got a big load of mail off the steamer Delta. Low water on the Koyukuk forced much lining, winching, and off-loading of cargo to get over shallows. The prospect is for no more steamers to Bettles this year, or only with great difficulty.[74]

Just as the Chandalar strike gained momentum, pulling people from the Koyukuk and other fields, a major strike on Nolan Creek, a fork of Wiseman Creek, brought the upper Koyukuk back to the headlines. A page-one Seward Weekly Gateway article in January 1908 quoted Koyukuk district Commissioner Frank Howard's news of the most important strike ever made in the history of Koyukuk

mining: bedrock strikes, new life in camp, deep shafts being sunk on all claims.[75]

More stories followed. On May 9 the Nolan strike was compared to the Klondike.[76] Under the lead, WILL CLEAN UP MILLION, the Gateway published a story fresh from a Seattle interview with Episcopal Bishop P.T. Rowe who came out over the ice to bring the first authentic news of the deep strike on Nolan Creek by Three Lucky Swedes, brothers John and Louis Olson and John Anderson. The clergyman himself had washed a $500 pan and seen a $1,800 pan! Forty-thousand dollars worth of high-quality gold had been taken out already. The total would exceed a million by end-of-summer cleanup. The strike was important because it broke the pattern of Koyukuk mining, where prospectors lacking machinery hunted only the richest shallow ground and quickly moved on. The spotty nature of Koyukuk pay hindered development of the country. Now the Swedes had gone deep to bedrock, through the false bedrock, striking big pay at 150 feet. All the miners on Nolan Creek were sinking to bedrock.[77]

On July 7, 1909, John Olson and John Anderson--described as "mining magnates of the Koyukuk district"--reached Seattle with half a million in gold.[78]

A year earlier, while in Seattle, Louis Olson told the story of the Nolan Creek deep discovery. During his eight years on the Koyukuk, Louis had always had a hunch about Nolan Creek.

> Last fall [1907] we started to sink on the creek between Nos. 3 and 4 [below] and the first bucket we got off bedrock netted $7. Bedrock, which is a slate, was pitching to one side of our hole, and we followed that down, and when we struck a level bedrock we got $260. Yes, it was a happy night for us . . . and I thought of my brother and sister back in Dalarne, Sweden.
>
> How did I happen to strike it? Well, I picked out Nolan Creek, as I said, on a hunch. There was a hole started there four years ago. We had a little prospecting boiler, and John Anderson and myself, who were partners, decided that we would try our luck on Nolan. My, but that was a "lucky hunch."
>
> . . . Yes, you can see it laying there. It is right in sight.[79]

A story in the Alaska-Yukon Magazine stated that the Swedes did not own the claims (Nos. 3 and 4 below discovery) where they made the deep-hole strike. But they did own a small steam boiler and

hoist. So they were given a 600-foot lay on bordering parts of the two claims in return for sinking to bedrock with their thawing and hoisting equipment; a Captain Johnson owned No. 3 below; the partnership of Calhoun & Swift owned No. 4 below. An immediate deep-hole, steam-thawing boom developed, with steam boilers and hoists being rushed to the country. A number of claim owners let lays on their claims to any miners who could rustle up steam plants, with laymen getting 50 to 75 percent of the take.[80] By March 1909 about 50 steam plants were said to be in operation in the Koyukuk region, chiefly on Nolan Creek. Some 300 miners were in the district.[81] A number of the plants were located on benches as much as 200 feet above Nolan Creek. Rich bench mines had been located on Archibald and Smith creeks, tributaries of Nolan.[82]

The shift from shallow diggings to underground mining of old channels deep beneath the surface of the earth brought to the upper country a stripped-down version of drift mining technology already perfected in Yukon and Tanana goldfields. Mining geologist and historian Tom Bundtzen notes that by 1905 there were at least 330 drift mines operating in the Fairbanks district, and several hundred more in other parts of Alaska. Lacking tractors and other mechanized equipment for removing overburden (which in today's standard practice produces an open-cut mine) early miners had to penetrate through or into the deep, frozen deposits of organic muck and gravel that overlie gold-bearing bedrock

paystreaks.

The typical drift mine comprises a vertical shaft, usually about seven feet by seven feet, that descends to bedrock, sometimes more than 300 feet below the surface. From the bottom of the shaft, a drift or horizontal passage follows the paystreak (in placer mining) or the vein (in hardrock or lode mining). Exploratory crosscuts off the drift may be used to track the paystreak. In bench mining, the drift may be entered through an adit, without the need for a vertical shaft.[84]

Critical elements of the drift-mine plant included:

1. A boiler to provide steam for thawing and for powering the hoist that lifts pay gravels to the surface;
2. Steam pipes, fittings, hoses, and points (steel tubes that can be pounded into the ground then hooked up for steam injection);
3. A tackle mast called a gin pole, shaft headframe, cables, and self-dumping bucket;
4. And ore cars on rails (or, in the upper country, more typically, wheelbarrows on board ways) to bring the ore from the breast or work face of the drift to the bottom of the shaft, whence it is hauled in the bucket to the surface and dumped.

Prospectors and small-scale operators used small boilers for thawing and hand-operated windlasses for hoisting ore. The most primitive drift-mining operators used direct wood or coal fires to thaw the ground. Thawed gravel was "hand mucked" with picks and shovels.

Drift mining is done in the winter while the ground is securely frozen--for safety and for a dry mine. The objective is to accumulate a large dump of pay gravel that can be sluiced during the open-water season.[85]

After World War I, summer drift mining was introduced in the larger mining districts. Miners employed cold-water thawing techniques (with water points instead of steam points), necessitating complex surface-water diversion and mine-pumping operations. In time, hydraulic removal of overburden, large-scale dredging and drag lines, and the introduction of modern earth-moving equipment replaced underground placer mining altogether, except for a few drift mines operated by isolated miners of the old school.[86]

In the upper Koyukuk district, where remoteness, difficult access, scarcity of surface water, and the prevailing small scale of mining operations prohibited modernization, old-style winter drift mining persisted into the modern era. Miners salvaged and

repaired old boilers, hoists, and other paraphernalia, moving them on skids to new mining sites. Thus they retained a traditional mining technology long after it had disappeared elsewhere. Even today, on Nolan Creek and at Wild Lake, two drift mines continue in operation. And a few of the younger miners on Nolan, presently using hydraulic and earth-moving equipment, still gather steam points, hoists, and buckets, moved by the notion of firing up the old plant some day.

Given the isolated, small-scale mining pattern of the upper Koyukuk, the persistence of old-style drift mining was not simply an exercise in nostalgia, nor a second-best solution. Earlier mining operations had left a lot of repairable equipment around, and frozen ground, paradoxically, proved a boon.

> The frozen condition of the placers in Alaska and the Yukon seemed, at first, an insurmountable obstacle. In the end, it proved an aid to mining. To sink a shaft in the creek deposits of a warm climate means a persistent contest with water. Pumps are necessary, or a long and costly drainage adit. The loose ground requires careful timbering. Some of the best portions of the channel may be unworkable because of an excessive influx of water. All of this would have checkmated the diggers of the North in the early days of discovery. Pumps were 1500 to 2000 miles away, heavy

> timbers were scarcely to be obtained in most localities, a fight with water would have discouraged men unused to mining, as were most of those that rushed to Dawson, Fairbanks, and Nome.
>
> The frost, indeed, was the miner's friend. It enabled him to sink a shaft even in the bed of the creek; it permitted him to dispense with timbering; it allowed him to burrow with safety and to follow the layer of golden gravel with impunity under the ice-bound surface. Moreover, it obviated work on a large scale. One man could, and sometimes did, work alone, descending the shaft, filling the bucket, ascending to the surface, hoisting the load, and so forth. No machinery was needed save the simplest tools; no organization was required, beyond a willing partner; no capital, save muscle.[87]

Thus wrote Thomas A. Rickard, a mining engineer, who wrote both scientific and popular accounts of far north mining after a visit to the Yukon and Alaska in 1907-08. His descent into a Fairbanks-district drift mine resulted in this evocation of underground mining: The shaft was 7 feet square and 70 feet deep. At its bottom, a well had been sunk into bedrock to collect drainage from the drift. The level or drift, 6 feet wide and 6-1/2 feet high, ran "upstream" along the top of the bedrock for

200 feet, with galleries extending at right angles to the full width of the paystreak, which varied from 240 to 300 feet.

To thaw the frozen ground, the steam points were first fed with hot water [or in simpler operations with steam] while being driven into the ground; then, with points inserted [usually 4 to 6 feet], the steam was turned on for 24 to 30 hours. This "sweating period" thawed the ground around each point for 2 to 2-1/2 feet. Next, the points were withdrawn from the softened gravel and the miners used picks to break it from the breast so it could be shovelled into wheelbarrows, which were trundled to the shaft. The "dirt" was then discharged into the bucket, which was hoisted by a steam-engine to the surface for later washing in sluice-boxes.

About 1-foot deep of bedrock and 6 to 7 feet of overlying gravel was removed in this mining operation. Both the gravel and the top layer of cracked and decomposed bedrock contained particles of placer gold.

> We went underground, standing erect on the edge of the bucket and holding the steel rope, while being quickly lowered to the bottom of the shaft. Lighting the candles offered by the manager, we walked along the boarded way over which the wheelbarrows pass. Being warned of their

approach, we stepped to one side with our backs against the side of the level, while the procession of six men trundling wheelbarrows proceeded toward the shaft. Each barrow holds 15 cubic feet or 375 pounds of gravel, six of them being enough to fill the bucket. The men are paid $5 and their board, which is worth $3 more per day, so that each laborer costs the mine-owner $8 per day. Each man picks, shovels, and wheels his own share of the output of the mine at a pace regulated by the leader, who is chosen by the manager. Turning to one side we entered a cross-drift communicating with a low cavernous chamber made by the removal of the gravel in the course of mining. There we saw a group of 38 "points" silently at work, with nothing to indicate the process, for all leaks of steam are carefully prevented. Such leakage not only means waste of energy but leads to heating the air in the mine and the consequent thawing of the roof of the workings. Everything is in a frozen condition. The air has the feel of a cold-storage chamber. In walking through the workings one hears the dropping of gravel loosened overhead by the slight warming of the air by the bodies of the miners and by the little heat given out by the steam-pipes. Occasionally the visitor will not only hear, but feel, the crumbling of the over-arching ground, for a chunk of "dirt," obedient to the immutable law of gravity, will tap

> him on the shoulder. To avoid danger, it is best to keep close to the frozen sides of the excavation, avoiding a position under an overhanging stretch of gravel. Returning to the main gangway, we crossed to the other side of the mine, where the men were removing the gravel previously softened by a battery of steam-points such as we had seen at work. No time was being wasted. Nowhere have I seen men working more efficiently.

Rickard concluded his account with an essay on the nature of the work and the problems of the mine laborers. Though their wages were high for that era, the laborers could not get ahead because of high costs of incidentals (e.g., 25 cents for a glass of beer) and of transportation each season to and from the country ($300 to $500). The work itself ". . . is exceedingly hard; a man will average 80 to 100 wheelbarrows [on a 10-hour] shift, equivalent to 6 or 7 cubic yards . . . , and it needs an engineer to appreciate what that means. Suffice it to say, that it represents the maximum of manual labor."[88]

After 1907 drift mining remained the dominant placer mining mode of the upper Koyukuk throughout the historic period, but simpler surface-mining methods also survived, particularly on the upper reaches of remote creeks. Boomer dams, ground sluicing, shoveling in, and other techniques using the simplest tools--axes, pans,

picks, pry bars, and shovels--fitted the needs of summer miners who sought only enough gold to stake them for off-season hunting and fur trapping. Farther down the main rivers, beach miners sifted sand and fine gravel from river banks and bars, which were seasonally renewed as mining sites by active river cutting and deposition.

In all of these mining processes, the goal was to get paydirt that could be washed with water, which concentrated the heavy gold as it flushed away lighter minerals. The generic term for gold washing is sluicing. Sluice boxes or launders came in many forms. But all of them--excepting the short rockers used by prospectors and small-scale operators--were long, inclined troughs. Riffles or other gold-saving devices trapped the heavy gold in the trough as water under pressure swept away rock, sand, and clay. Miners had to be practical hydraulic engineers to develop the ditching, damming, and pressure systems that brought water to the mine site, then released it under a head of pressure into the sluicing apparatus. At drift-mining sites, sluice boxes were covered by shelters so the paydirt could be dumped right over them, thus reducing shovel labor when sluicing began. After a period of sluicing--varying in length with the kind and richness of the paydirt--the sluice box was cleaned up. The resultant concentrate was then screened, picked over by hand, and panned to get every last particle and flake of gold. Amalgamation, a further step in

gold recovery, used mercury to attract fine gold. The "amalgam" of gold and mercury was then placed in a small furnace and evaporation system, producing a molten gold brier and a vial of mercury, which could be used again.[89]

From contemporary accounts of the 1910-15 era, it appears that deep-hole mining on Nolan Creek and Hammond River had a stabilizing effect on upper Koyukuk society and population. D.A. McKenzie's 1903 testimony before the senators had depicted a drifting, even desperate, population of surface miners who sought a quick stake and a fast exit from the north country. Other evidence of social turbulence and stress during the earlier, Coldfoot, era has been cited.

Beginning in 1906, Archdeacon Hudson Stuck of the Episcopal Church began his visits to the upper Koyukuk. After a series of such journeys associated with the establishment and administration of St. John in the Wilderness mission at Allakaket, he traced the northward migration of mining activity from Coldfoot to Nolan/Wiseman and the Hammond River. He described the "Koyukuk camp" as a small, but spread out community at the farthest extremity of transport and supply:

> Yet the smallness and the isolation of the camp have their compensations. There is more community life, more "esprit

> de corps" amongst the Koyukuk miners than will be found in any other camp in Alaska. Thrown upon their own resources for amusement, social gatherings are more common and are made more of, and hospitality is universal. Like all sparsely settled and frontier lands, Alaska is a very hospitable place in general, but the Koyukuk has earned the name of the most hospitable camp in Alaska. Since the numbers are small, and each man is well known to all the others, any sickness or suffering makes an immediate appeal and brings a generous response. Again and again the unfortunate victim of accident or disease has been sent outside for treatment, the considerable money required being quickly raised by public subscription. There is probably no other gold camp in the world where it is a common thing for the owner of a good claim to tell a neighbour who is "broke" to take a pan and go down to the drift and help himself.[90]

Ida Williams, a special correspondent for the Alaska-Yukon Magazine, turned to Canadian poet Robert Service "to express the feeling . . . better than I can" for the beauty of the upper Koyukuk and its people, then went on in her own words:

> One never sees poverty, sickness, or real distress. Every one is honest and kindly. No one is ever quite without

> funds so long as the rest have any. Mutual helpfulness to the fullest extent of each individual capacity is universal and a matter of course. It is a country that one can never forget and never cease loving . . . . I seem to leave my heart here when I go out.[91]

Already, by 1910, the upper Koyukuk pattern of isolate self-reliance tinctured with mutual support, later to be documented by Robert Marshall, seemed well established.

Both Ida Williams and Hudson Stuck provided clues to the changing nature of Koyukuk society. Stuck noted that the Koyukuk was known as a "pocket" camp. "Now and again a 'spot' is found which enriches its discoverers, while on the claims above and below that spot the ground may be too poor to work at a profit; for ground must be rich to be worked at all in the Koyukuk . . . due to its remoteness and difficulty of access."[92]

Miss Williams commented on the small number of people on the Koyukuk (about 160 in 1910), the limited number of rich claims, and the pattern of claim owners letting lays after accumulating a decent fortune that would keep them comfortable in Seattle during the declining years. "It is a strange condition of affairs, and seems almost incredible when you come to think of it. People do

so well here that the region is depopulated instead of growing up."[93]

From these observations can be reconstructed the socioeconomic pattern that marked the country clear into the Thirties. With exhaustion of easy surface placers and development of a few good drift mines, the country attracted and held only a few long-term miners--both serious drift miners and the kind of pick-and-pan miners for whom gold was more a means to enjoy the country than to make a fortune. The term miners included claim owners, laymen, and laborers. As owners of the few rich claims made decent fortunes, they left the country, leaving their claims in the hands of laymen, who in turn might make good money and leave, opening the way for laborers to become laymen . . . and so on. Occasional new discoveries and new recruits kept the system open and balanced. The pace was deliberate, with periods of stability, because drift mines took time to develop, and rich pockets were few and elusive. A good part of the population, perhaps half of it,[94] did little if any mining, performing instead the services that miners could not take time for: getting and hauling supplies and wood, running roadhouses and saloons, hunting, gardening, teaching school, and filling the few government posts.

Another writer, Emil Hurja, in 1914 confirmed the insularity, approaching clannishness, of Koyukuk-district miners, who had the

highest per capita gold output of any camp in Alaska. Noting recent deep finds on Hammond River, which had drawn the attention of mining men throughout the North, he stated: "There is a natural tendency among the men of the Koyukuk to look with disfavor upon any influx of outsiders. Because of its remoteness and difficulty of access, the district has had an even population for many years. Gold dust still is largely the medium of exchange."[95]

Hurja wrote that by 1914 the center of action had shifted north from Nolan Creek to Hammond River, beginning with a deep strike in 1911. Coarse, high-quality gold was making a few men rich. John Bowman and S. Schofield on No. 4 above had mined a winter dump worth an estimated $40,000, and in the spring found $24,000 more in coarse gold at the bottom of their shaft. The Halser ground, downstream, was being worked by Knute Ellingson, F. Wilson, and Jack Halser, who were finding an average of $100 a day in nuggets on bedrock. Vernon Watts picked up $400 in one day in his second hole.

Gold and Vermont creeks were somewhat active. Hughes and associates had found "pay" on Linda Creek. August Tobin, he of deep-hole fame, put down a 227-foot hole on Bettles River, the east branch of Middle Fork, but found no bedrock. Prospecting

continued on Mascot Creek and on Wild and John rivers, with nothing of great import found so far.

Coldfoot was now dead, many of its buildings moved to Wiseman, which had become the upriver center for government, post office, and stores. An experienced mining man himself, Hurja critically evaluated the mining equipment of the Koyukuk district, ". . . nearly all of the patchwork variety, made up of odds and ends of machinery . . . ." Here was a district that had produced nearly $3 million in gold since 1900, yet it had been ". . . assisted less by outside capital than any district of Alaska. Its population is kept down because every person in the district has to work, and there is work for but a very limited number of men."[96]

The Chandalar district offers a case study of outside-capital failure in the far north mining camps. Though tangential to the central region of this study, the Chandalar was closely related to it by supply networks and trails, and by the people who shifted back and forth between the upper rivers in the quest for gold. Moreover, the analogues of attempted development and ensuing frustration are so neatly focused in the Chandalar district as to offer a kind of confirming mirror image of later experience on Koyukuk and Kobuk.

Like the Koyukuk forks, the Chandalar's northerly branches head in the Brooks Range at the Arctic Divide. Being a much shorter river, the Chandalar falls rapidly in its upper course from highlands to Yukon basin, making navigation to the mining district even more difficult than on the Koyukuk. This fact and the lack of road access (except winter trails) from the Yukon would lay a curse on the mining effort.

Because nomadic Kutchin Indians of the area roamed a large country, they were called "Gens de Large" by French employees of the Hudson's Bay Company. The phrase, corrupted into "Chandalar," became the name of country, river, and indigenes. The ubiquitous Hudson Stuck had repeatedly traversed Chandalar country by the time he published in 1917 an account of the Chandalar Stampede and its aftermath. He divided the Chandalar excitement into two phases: a disappointing placer-mining phase that began in 1906, and a second, equally disappointing quartz-ledge flurry that gained momentum about 1910. The Chandalar placer strikes drew many Koyukuk miners, who transferred to the new creeks the small-scale mining pattern perfected on their home creeks, to which most of them soon returned. Promotion of the Chandalar's hardrock prospects resulted in the first infusion of outside capital for trans-Arctic Circle mining.

The early placer mining led to establishment of an N.C. Co. post at Chandalar Station, at the head of steamboat navigation on the Chandalar River, and the town of Caro a few miles farther upriver. The lode-mining prospects and promotions spurred the Alaska Road Commission to build a trail from Beaver City on the Yukon to Caro, whence haulers relayed supplies via winter trails and pole boats to remote mining camps on the Chandalar's North and Middle forks. Stuck recorded that the N.C. Co. post was abandoned by 1909 and

the town of Caro ". . . was decayed to practically nothing in 1910."[97]

Shortly thereafter came a brief revival as outside interests shipped lode-mining equipment to Beaver City and lobbied successfully for the ARC trail to Caro. But the government trail could not overcome the Chandalar's tenuous logistics. Heavy machines defied all efforts to transport them, ending up in scattered dumps (some items still in packing cases) all the way from Beaver City to Caro and beyond. By 1916 the collapse of Chandalar lode-mining efforts had left only a handful of men in the country.

To show cause for this failure, Stuck repeated the litany of far north mining problems: a very short season in high, barren mountains critically short of wood and water, and transportation

costs that limited mining to only the richest ground, of which there was precious little. An added factor was the rush to capitalize and develop a lode-mining venture inadequately prospected and understood. "By the common judgment of the Chandalar men, the money that should have been spent in tunnelling and uncovering the ledges in order that the real extent and value of the quartz might be known was wasted in the costly transportation of stamp-mills while as yet there was nothing to stamp."[98]

On the level of individual strivings, the Chandalar story is a mother-lode of dream-fueled adventure and boundless energy. Three men on the ground--Sam Marsh, Tom Carter, and Frank Yasuda--prospected and discovered the Chandalar gold in a series of expeditions that ranged from Barrow to the Yukon, from Nome to the Colville delta and the Canadian boundary, with winterings-over north of the divide in previously unexplored regions. Eventually, Marsh sought and got guaranteed backing from New York politician and financier William Sulzer, who for 25 years poured his earlier rewards from Nome investments into the Chandalar venture, to no avail. Yasuda, a Japanese whaler and trader of Barrow and the Arctic Coast, would bring his own and other Eskimo families south to the Yukon where, at Beaver City which he founded, he established a trading post and a refuge for Eskimos displaced by the crash of the Arctic whaling industry.[99]

The reports, maps, and letters of mining engineer Sam Marsh[100] trace the Chandalar story: from its inception in exploration and prospecting; through the years of energy and optimism despite challenging odds; to the times of travail and anemia as far north geography bled dry the heroic venture. Marsh's "Report on Northeastern Alaska," accompanied by a reconnaissance map, covered the 1901-03 exploration. His description of Alaska north of the Arctic Circle and east of the Colville, including the Chandalar headwaters, was incorporated in 1903 USGS publications, serving for many years as the basic geographic outline for the region.

During one period in 1902, Marsh made a 128-day solo exploration of the Canning River's arctic headwaters. In spring 1903, he and Tom Carter built a cabin on the Chandalar headwaters, then Marsh took off alone to prospect, finding an important mineral belt about July 1. His exit from the country--forced by imminent starvation--entailed a float down the Chandalar that nearly killed him when his raft spilled in bad rapids. Eventually, he reached a Chandalar Indian village, revived on dried moose meat, and got a canoe ride to Fort Yukon with the Koyukuk mail carrier, Jack Carr.

Among Marsh's observations was a reference to "natural oil" found by Natives on the Colville forks--another datum that would spur later USGS explorations north of the Brooks Range. Marsh challenged the prevailing notion that the Arctic Slope was simply

"a barren and desolate section," asserting that "it possesses many points of interest to the fearless and unprejudiced explorer."

After a summer 1904 traverse of the upper Kobuk, Noatak, and Colville rivers, Marsh "concluded to come to the outside for a much needed rest before making another trip."[101] During this outside excursion, Marsh contacted New York Congressman William Sulzer, who had himself joined the rush to Nome a few years before. Marsh persuaded Sulzer to back him and his partners in their Far North prospecting. Meanwhile, after an interlude of market hunting, wage labor, and prospecting in the Koyukuk camps, Marsh's partners, Carter and Yasuda, headed for the Chandalar in spring 1906, hoping to rendezvous with Marsh. They prospected while they waited, striking gold on Little Squaw Creek between the Chandalar's North and Middle forks. When news of this strike got out, 200 Koyukuk miners stampeded to the Chandalar. Marsh arrived in December and began building the town of Caro to serve as main camp for the Chandalar. He bore credentials from Judge Wickersham as commissioner-recorder of the newly created Chandalar mining district, reputedly through Sulzer's influence.[102]

Marsh had sought and received the commissioner appointment (and also that of postmaster) for reasons of strategy. In discussions with Judge Wickersham in Fairbanks on October 10, 1906, Marsh urged that the new mining district continue to include everything

from the Chandalar to the Firth River on the Canadian border, where Marsh and his partners had also staked promising claims. This despite Wickersham's offer to split off part of the district because of its great expanse and Marsh's problems in managing two mining ventures hundreds of miles apart. With partners and crews spread through the country, all of whom could file claims, Marsh wanted the information that the office of recorder gave him. He would split his energies between Chandalar and Firth at least until the value of the two strikes could be determined.[103]

Very soon, Marsh and his men "were worked down to shadows" by mining, logistical, and judicial responsibilities. Marsh's frustrated attempts to supply the Firth River camp, initially his favorite prospect, combined with a criminal case on the Arctic Coast to wear down even his prodigious energies. He was chagrined that the Chandalar stampede had occurred during his northern journeys. But he did not pause. In late December he reported from Caro that the Chandalar looked good. "About 150 men here, 12 creeks located, however we are in time to get plenty of ground. As soon as Boys get here shall send them out to stake & shall later send them to the N.E. [East Fork of Chandalar] where I was in 1903, which is not stampeded yet." During the few daylight hours he worked on the recording and post office building, which

also served as his house; at night he performed his duties as recorder.[104]

A month later Marsh was still trying to solve the problem of managing two mining districts as one. He was stretched not only by 400 miles of intervening geography, but also by his dual function as field agent for Sulzer's syndicate and as public official. This was his plan:

> It is my purpose to get hold of all [the claims] we can here [on the Chandalar] this winter & probably, in March to send one Man in company with . . . [Yasuda], who . . . knows the country well across via the head of the East Fork [of the Chandalar] & the Hoola Hoola [Hula Hula River] to the Firth & to appoint him (with the consent of the Judge, which I must get) a Deputy Recorder, which will give us a good hold in both sections. Later in the Spring one of the others, or perhaps Myself can go via the Porcupine & Old Crow, taking supplies for a year from the base at Fort Yukon.
>
> There is mutch talk & seems to be some question of wheather Judge Wickersham will be confirmed. The point I wish to make is this: It is important that my Official Position be made as strong as posible, at least untill we have secured

> what we set out to get, including holding the two recording places under the Jurisdiction of one Commissioner, so that I may work at both places. You will readily see the advantage of this. The Recording Office gets all the news & and that in advance of most everyone else.
>
> . . . . . .
>
> Fred has just got in & has located 4 more claims including an Association of 160 acres. Will send you the Certificates of Record as fast as we can make the necessary discoveries & Record them.[105]

Subsequent correspondence[106] reveals continuing attrition of Marsh's energy and hope. Plans and promises vie with recitations of obstacles--distance, terrain, costs of supplies and equipment, fading enthusiasm of the men. Despite Marsh's optimistic estimates of quartz prospects, the balance keeps shifting to the negative; a growing sense of desperation creeps in, qualified by protestations of loyalty and devotion to the impossible task. He exhorts Sulzer to keep the faith: One more season will get us over the hump; the quartz looks promising--we can pay for its development with the placer claims; send us a small stamp mill to test and develop the quartz prospects; exert all your influence for the ARC road; send money. All this while, Marsh keeps

performing prodigies--as operating manager and miner, and as commissioner-recorder. He locates a stamp-mill site in the Little Squaw Basin; he gets dogs and sleds lined up for hauling quartz ore to the mill site; he plans to move his office to the mining site to better combine his functions; he battles with the N.C. Co. over indebtedness, extends his own trail system to beat N.C. Co. obstruction. His fees as commissioner-recorder sustain the mining operation during interludes between Sulzer checks. Other operations are broke, too, the other miners going into debt with the N.C. Co. for supplies ". . . at prices which will keep them in debt."

The burdens become palpable in a letter of March 1909:

> You, Sir, who have been in Alaska and have seen for yourself the conditions which obtain in every piece of frontier work, will appreciate the difficulties which I have to encounter in such a work as I have undertaken. To attend to the duties of the office of Commissioner and Postmaster, to try to keep in line and to instill . . . the spirit of progress, in a lot of men, who often are faint-hearted, to get out and do hard, physical work, long hours and to study the moves and try to offset them, of the tools of a Corporation [N.C. Co.], that would block--if possible every avenue of approach to this camp that will

> give any competition, is not a path of roses. When I left here, in December, many men in the camp were enthusiastic at the prospect of a new trail and were willing to assist. When I returned, the same men, who have been given a little credit and patted on the back, have been educated to say, like a parrot, "The old way is good enough." I am not complaining, but am trying to show you the facts as they exist. Every move that could be made to block the work and to make it as expensive as possible has been done. This Co. refused to take the freight from Fort Yukon to Chandalar or as far as the steamer could get, last summer, with the excuse that "It must be prepaid and someone must sign clear for it." I was forced to take the action I did take, in cutting a new trail and in bringing our supplies that way and time will show that I was right. I trust that with your assistance, the Road Commission will build the Road THIS SUMMER.[107]

In time, after helping the ARC survey the freight trail from Beaver (completed in 1910) and arranging for purchase of a giant 28-ton Allis-Chalmers stamp mill, Marsh faded from the scene. Sulzer hired new managers, who one after another, down the years--through the twenties into the thirties--sank into the bogs with the scattered pieces of massive machinery. The Great Depression finally killed the Alaska-Chandalar Mining Company.[108]

Historian Bill Hunt has delivered the obsequies:

> The Allis-Chalmers stamp mill still lies spread out along the northern trail, an effective symbol of the travails of gold mining above the Arctic Circle. If the Chandalar region had held anything like the millions in gold of Nome or Fairbanks, it would undoubtedly have been developed fully. As it was, the paydirt existed in just enough quantity to keep a few men at it, men of courage and will. But it did not exist in bonanza proportions. The visionaries, Marsh, Carter, Yasuda, Sulzer, and a few others like them, did not realize their golden dreams in the Chandalar.[109]

As Chandalar fever subsided and disappointed miners drifted back to the Koyukuk, two agents of the USGS, A.G. Maddren and Philip S. Smith, checked the progress of mining development in the arctic regions. Maddren worked the Chandalar and Koyukuk; Smith traversed Kobuk, Alatna, and Noatak. Maddren's observations on the Chandalar foreshadowed the history just presented. East of Chandalar Lake, in a 100-square-mile mass of rugged mountains deeply dissected by gulch valleys, the creeks contained placer gold derived from the mineralized country rock into which the gulches had been eroded. Despite some remarkably rich gold-quartz prospects (which would continue to lure Sulzer and company),

Maddren came to a pessimistic conclusion about the district:

> . . . the fact that the placer gravels are not very rich, although they evidently represent the concentration of gold from the disintegration of a great thickness of country rock during a long period of erosion in a locality which does not appear to have been glaciated, may be used as evidence that the gold-quartz veins contain only small amounts of gold.[110]

In his field notes Maddren reflected on the Chandalar's geologic history, stating that recent vigorous uplift had produced the characteristic warping, sharp folding, and faulting of the country rock. The whole movement had produced a northward tilting and stranding of an old main drainage course as evidenced by Chandalar Lake, whose waters were ponded by the low lip marking the southern edge of the tilt. This reconstruction was followed by a direct statement of economic geology almost certainly relating to Sam Marsh's quartz prospect, which he had just visited on September 4, 1909:

> Because a few persons might consider generalized statements as to probable persistence of the quartz bodies in the schists to the extent that they may be termed fissure vein deposits, it appears advisable to dismiss the subject with

> the remark that up to the present time it has not been demonstrated that there is a fissure vein gold bearing lode in Alaska north of the Arctic Circle that is known to be of commercial value as a gold mine, for the difficulty and high cost of operating in that part of Alaska are prohibitive.
>
> Even the richest placers that do not require a large capital do not yield adequate returns under present commercial conditions, so that quartz lodes may only be operated upon at a tremendous disadvantage.[111]

Maddren's visit to the Koyukuk in July and August 1909 provides--through the published bulletin and the field notebooks--an extremely detailed account of people, places, and production. Based on previous reports, his personal on-ground experience, and additional data from the Koyukuk until the 1913 publication of his bulletin, Maddren estimated total gold production of the Koyukuk district (1900 through 1912) at $2.7 million. During the latter part of this period, 75 percent of the production came from deep placers on Nolan Creek and those recently developed on Hammond River. Because of high operating costs in the district, the net yield was about 50 percent of total production.

Population had settled out at about 200 white persons and additional numbers of Natives. About 100 persons actually worked at mining, with a few leaving each year "for the outside with a homestake," and a few others coming to replace them.

Maddren repeated the statements of other observers that Koyukuk drift-mining plants were inadequate, poor, and expensive--"patched up makeshifts." Only on the proven rich ground of Nolan and Hammond could reasonably systematic deep-hole prospecting and development occur under these unsatisfactory conditions. On the other 30 or so creeks he listed as producers, shallow placer mining held sway. The main methods used, hand shoveling and ground sluicing, were crude, expensive, and inefficient, wasting much gold. Hydraulic equipment, using high pressure jets of water, would allow mining of many shallow deposits unavailable to pick-and-shovel miners, but up to 1913 only one hydraulic plant was in operation, on Myrtle Creek.

Maddren concluded that only the richest ground yielded commercially acceptable returns--the deep ground on Nolan and Hammond, and rare, easily-worked shallow unfrozen ground, notably on Mascot Creek:

> Most of such opportunities have been short lived, and a large part of the mining has been done with a relatively

> low percentage of profit, so low in many instances as to furnish no more than a bare living under the harsh conditions of climate and isolation that characterize this region, where only the optimism that is the predominant characteristic of the gold-seeker's temperament serves to stimulate many of these men to continued effort from year to year.[112]

Meanwhile, Philip S. Smith checked progress to the west. He found that the Cosmos Hills placers on the upper Kobuk still kept a few miners busy. But the usual problems of isolation and supply-and-labor costs ". . . will prevent working deposits whic in a milder climate and in more accessible regions could be successfully mined." Dahl Creek was the center of activity, such as it was. When Smith and his party visited the mines in July-August 1910, no work was in progress on any claims, though they had been worked earlier that season. A few rich spots of creek gravel might yield several hundred dollars in a few days, to be followed by weeks of unpaying labor. Mining was small-scale and primitive: pick and shovel, short ditches, and whipsawed sluice boxes.[113]

Even Lewis Lloyd--discoverer of the Dahl Creek placers, notary public, and resident promoter of the good life in Shungnak--was modest in his assessments. The miners who held on after the 189

rush ". . . although not yet millionaires, are making a living in Shungnak. The placers pay every expense of the few remaining whites and the Eskimos." He noted that new placers were coming on line, on Shungnak River and Riley Creek, and that a promising quartz property had been located at the head of Dahl Creek. More significant for the future, he described the major copper deposits at Ruby Creek and Aurora Mountain, as well as jade, coal, and asbestos resources in the vicinity.

Refreshing understatement lent credibility to his words: "Shungnak is rather quiet about what it is doing," but the mines were paying for all development, labor, and supply costs. Here was a small but self-sufficient mining district that paid its bills and grew prize vegetables in the Midnight Sun. "If staying qualities are all that are needed, this district is sure to come to the front in time."[114]

Farther downstream, a minor boom in the Squirrel River-Klery Creek drainage had attracted miners from the Nome district. Summing up the new prospects a more typical booster claimed that "The Kobuk district with its neighbor, the Noatak, are among the most satisfactory of all the north Alaska regions for residence and mining." Enthusiasm waned somewhat as specifics unfolded: "There is some timber to be found throughout the basin, and although it is sparse and of stunted growth, it has proved large enough for

the building of sluice boxes." Countering the paucity of timber was news of lignite discoveries that would aid winter mining. But government bans on exploitation of coal deposits caused consternation and further qualification of regional satisfactions:

> Here is an extraordinary situation. Men facing the hardships of an Arctic winter in an unknown waste, must deliberately break the law in order to keep themselves warm. . . . This is the Alaska coal situation reduced to its utmost absurdity and it excellently illustrates the ridiculous inconsistency of the theoretical conservationists. Even the sympathy of the most hide-bound Easterners will surely be with these courageous law-breakers of the North.[115]

Smith's 1911 traverse of the Alatna-Noatak drainages led to these conclusions: Prospecting in the Alatna drainage during the 1898 excitement had left ". . . only a few insignificant pits driven on quartz stringers." Subsequent work on Kutuk River, an Alatna tributary, showed colors ". . . but uncovered no gravels of workable value." Reported lode deposits of gold and copper in the divide between Alatna and Noatak had assayed less than $2 a ton in gold, insufficient ". . . to warrant development under the high costs prevailing in the upper Alatna Valley." Smith dismissed the Noatak as potential bonanza with these words:

> Within the Noatak basin gold has been found mainly in the headwater region. Even there, however, only two small areas have been reported to afford placer ground and of these only one, that near Lucky Six Creek, has produced as much as a hundred dollars worth of gold.[116]

Thus, as early as 1912, gold mining on the upper rivers had settled into a pattern that would not change significantly until World War II and its aftermath of gathering technological momentum. Perturbations and promotions--such as the Hammond River boom (1911-15), the partial exodus for outside wages during World War I, and the attempt to mechanize mining on the Hammond in the Twenties--only temporarily modified this pattern. The hard facts of economic geology and logistical isolation determined.

For the remainder of the historic period, the center of mining activity would be the upper Koyukuk, especially the Middle Fork and its tributary creeks from the Coldfoot vicinity north to the Hammond River-Gold Creek diggings. Wiseman, strategically located between these points as well as gateway to the Nolan Creek and scattered North Fork mines, emerged as supply and social center for the extended camp. Trails also connected Wiseman to outpost mines on Big Lake and Bettles River.

Eastward, the Chandalar district struggled on: the Sulzer operation glimmering fainter, a few placer miners probing the creeks east of Chandalar Lake.

Bettles continued as relay point for Wiseman, and directly supplied small operations on South Fork and on Wild and John rivers.

Upper Kobuk mining stayed pretty much as Lewis Lloyd described it in 1909--quiet and limited to streams draining the Cosmos Hills.

Stories of lost mines invited occasional prospectors to the upper reaches of Alatna and Noatak, where colors, but not pay, kept the legends alive.

Increasingly, as the years passed by, gold mining became a kind of medium for a way of life. It shifted from being the end of human endeavor to becoming a means, joined with others like hunting and trapping. An occasional modest fortune taken from some deep-hole pocket on Nolan or Hammond kept gold in force as the ostensible reason for it all. But the community of people meant more to most of those people than the driblets of gold that allowed them to stay on as members of the community. That this evolution was happening already before World War I has been documented ("I seem to leave my heart here when I go out"). That it gained strength

after the war, on through the Thirties, was documented powerfully by Robert Marshall--actually by the friends he made, whose lives and words told him and us, why they stayed.

In this historical perspective, gold is transmuted, as by some powerful alchemy, into something more valuable than gold. The theme of this history changes accordingly. The mining story continues as a core foundation for economics and stated motivations. But building upon this foundation, even requiring its extention, rises an edifice of many components. Its elaborations are social, intercultural, scientific, and aesthetic. People--Native and non-Native, resident and visitor--enrich a society of a few hundred folks profoundly integrated with landscapes that produce pay not only of the gold kind, but also of human mettle and appreciation.

Chapter 4 Notes

1. First Lieut. J.C. Cantwell, R.C.S., Report of the Operations of the U.S. Revenue Steamer Nunivak on the Yukon River Station, Alaska, 1899-1901 (Washington, GPO, 1902), 47-60.

2. Ibid., 59.

3. Ibid., 59-61.

4. Second Lieut. B.H. Camden, R.C.S., "Reconnaissance of the Koyukuk River, Alaska" (Paper I in Cantwell, Nunivak), 239-242.

5. Camden, 247-48; Marshall, Arctic Village, 39.

6. Camden, 245; Cantwell, 68-70; Gary C. Stein, "Ship Surgeon on the Yukon," Alaska Journal, 11, 1981, 232.

7. Stein, 234; Cantwell, 62.

8. The Army's Role in the Building of Alaska, 43-44.

9. Sherwood, Exploration of Alaska, 179-80.

10. Jeannette Paddock Nichols, Alaska a history of its administration, exploitation, and industrial development during its first half century under the rule of the United States (Arthur H. Clark Co., Cleveland, 1924; reprinted in 1963 by Russell & Russell, Inc., New York), 141-43.

11. Brooks, Blazing Alaska's Trails, 501-08; Ernest Gruening, The State of Alaska (Random House, New York, 1954), 47-55.

12. Ibid., 53.

13. Brooks, Blazing, 509-11.

14. The summary of 1898-1900 laws is derived from Gruening, The State of Alaska, 105-113, and Nichols, Alaska, 154 ff. Reflections on jury system problems and the efficacy of the commissioner system in the Koyukuk precinct derived from study of Koyukuk dockets and journals obtained from the Alaska State Archives, Juneau. For criticisms of the commissioner system, see Gruening, 340-47.

15. Above discussion based on Gruening, State of Alaska, esp. 140-41; Nichols, Alaska, 407-09; Brooks, Blazing Alaska's Trails, XXVII; and Ted. C. Hinckley, "Reflections and Refractions: Alaska and Gilded Age America," in Robert A. Frederick, ed., Frontier

Alaska: A Study in Historical Interpretation and Opportunity (Alaska Methodist University Press, Anchorage, 1968), esp. 101-03.

16. Nichols, Alaska, 223-25.

17. Gruening, The State of Alaska, 120-21, fn. 51.

18. Conditions in Alaska, 58 Cong. 2d Sess., Senate Rpt. 282 4570), 9. Emphasis in original.

19. Ibid., McKenzie's testimony is on pages 107-18; quote on page 107.

20. Ibid., 108.

21. Ibid., 116.

22. Ibid., 114.

23. Ibid., 117-18.

24. Philip S. Smith, quoting Brooks in "Memorial of Alfred H. Brooks," published in volume 37 of the Bulletin of the Geological Society of America, 1926; reprinted as an appendix in Brooks, Blazing Alaska's Trails, 549.

25. Surveys of early USGS history in Alaska and the study region can be found in Brooks, Blazing Alaska's Trails, Sherwood, Exploration of Alaska, and in Philip S. Smith and J.B. Mertie, Jr., Geology and Mineral Resources of Northwestern Alaska, USGS Bulletin 815 (Washington, GPO, 1930). Original field notebooks are on file at the Alaska Geology Branch technical library, USGS Western Regional Office, Menlo Park, CA.

26. Maps and Descriptions of Routes of Exploration in Alaska in 1898 (Engraving and Printing Division, USGS, Washington, 1899).

27. Ibid., 88

28. Ibid., 127-29.

29. This summary derived from Irving McK. Reed, "Upper Koyukuk Region, Alaska" (Dept. of Mines, Territory of Alaska, typescript report, 1938), 3-4.

30. Smith and Mertie, USGS Bull. 815, 8.

31. Brooks used the name Arctic Mountains. After his death in 1924, they were renamed Brooks Range; see Orth, Dictionary of Alaska Place Names, 162.

32. A.G. Maddren, The Koyukuk-Chandalar Region, Alaska, USGS Bull. 532 (Washington, GPO, 1913), 32-35, 74-76.

33. Robert Marshall, Arctic Village, 37-44.

34. Frank C. Schrader Diary, USGS Field Notebook #106 (typescript transcription), 22-28, July 17-Aug. 26 entries; _____, "Preliminary Report on a Reconnaissance along the Chandlar [sic] and Koyukuk Rivers, Alaska, in 1899," from USGS 21st Annual Report, Part II, 1899-1900 (Washington, GPO, 1900), 447-486.

35. F.C. Schrader, Geological Field Notes on the Chandalar River and Middle Fork Koyukuk River, June 21 to August 16, 1899 (edited by J.B. Mertie, Jr.), FN 62, entries for July 20, Aug. 6, 12-15.

36. Reconnaissance on Chandlar [sic] and Koyukuk Rivers, 486.

37. Frank Charles 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, USGS Professional Paper No. 20 (Washington, GPO, 1904), 30-31.

38. Ibid., 22-23.

39. Schrader Note Book I, Arctic Ocean Trip, 1901, as transcribed by J.B. Mertie, Jr., 40-41.

40. Ibid., Book II, 15.

41. Ibid., Book III, 1.

42. Ibid., 16.

43. Schrader, A Reconnaissance in Northern Alaska, 19-21.

44. Ibid., 33.

45. Ibid., 34.

46. Ibid., 99-104; Irving McK. Reed, Upper Koyukuk Region, Alaska Dept. of Mines, Territory of Alaska, 1938 (typescript report), 111 ff.

47. Philip S. Smith, The Noatak-Kobuk Region, Alaska, USGS Bull. 536 (Washington, GPO, 1913), 5.

48. Walter J.C. Mendenhall, Reconnaissance from Fort Hamlin to Kotzebue Sound, Alaska, by way of Dall, Kanuti, Allen [Alatna], and Kowak [Kobuk] Rivers, USGS Prof. Paper No. 10 (Washington, GPO, 1902), 9-10,24.

49. Ibid., 10-11.

50. Ibid., 16.

51. Ibid., 18.

52. Ibid.

53. Ibid., 24-26.

54. Ibid., 50.

55. Ibid., 52.

56. Ibid.

57. W.C. Mendenhall, Reconnaissance from Fort Hamlin to Kotzebue Sound, Alaska, 1901, Note Book No. 2, Aug. 29 entry, 52.

58. Susan M. Will, Coldfoot, an Historic Mining Community on the Middle Fork of the Koyukuk River, Alaska (Bureau of Land Management, Fairbanks 1982, unpaginated typescript draft cultural resources report).

59. Ibid., History chapter; Kitchener, Flag Over the North, 159-160; Melvin B. Ricks, Directory of Alaska Postoffices and Postmasters (Tongass Pub. Co., Ketchikan, AK, 1965), 14, 46.

60. Clarence L. Hobart, "United States Customs Service in Alaska," Alaska-Yukon Magazine, Mar. 1907, 3(1), 91.

61. "Pioneering Days of Northern Alaska," Alaska Magazine, 1(2), May 1905, 234-236.

62. The original Bettles log is owned by Tishu Ulen, an old time resident of the upper Koyukuk now living in Fairbanks; the following notations from the log are with her permission.

63. License Applications, Vol. 1, U.S. District Court, 3d Division, July 1900-Aug. 1904, 81-82.

64. Marshall, Arctic Village, 32.

65. Koyukuk Court Docket (criminal), 10.

66. Ibid., 21-22.

67. Ibid., 60, 110.

68. Ibid. (Civil), 259-60.

69. Ibid., 261-62.

70. Ibid. (Insane), 386-92

71. Ibid. (Coroner), 356-64.

72. August Tobin's granddaugher, Doris Bordine of Eagle River, Alaska, provided letters, historical photos, and other memorabilia of August Tobin. An undated speech script by August's son, Emery, "The Gold Rush," and an article by his daughter, Florence Tobin Thornton, "Father Wanted Gold," Alaska Magazine, June 1983, 18-21, gave details of August Tobin's Koyukuk adventures. August Tobin himself recorded the 1907 marriage of Frank "Brainy" Smith at Wiseman, in a poem written in Swedish, translated into English prose by Florence Thornton, which appeared in The Alaska Journal, A 1981 Collection, XI, 172-75.

73. Fairbanks Weekly News, 7/30/04, 1.

74. Fairbanks Daily Times, 7/9/07, 3.

75. Seward Weekly Gateway, 1/4/08, 1.

76. Seward Weekly Gateway, 5/9/08, 2.

77. Seward Weekly Gateway, 5/16/08, 4; and 4/17/09, 4.

78. Seward Weekly Gateway, 7/10/09, 4.

79. Seward Weekly Gateway, 7/25/08, 4.

80. G.M. Hill, "The Koyukuk, One of the Richest Districts in the Far North," Alaska-Yukon Magazine, June 1909, 8(3), 211-12.

81. Seward Weekly Gateway, 3/6/09, 4.

82. Hill, "The Koyukuk," 212.

83. Tom Bundtzen, "Drift miners -- Alaska's incurable optimists," Alaska Mines & Geology, 33(1), January 1984, 1; anon., "Promising Mining Camp, Rich Strike Made in Old Placer Diggings on the Koyukuk," Alaska-Yukon Magazine, 5(2), April 1908, 90-91.

84. Paul W. Trush, comp., A Dictionary of Mining, Mineral, and Related Terms, Bureau of Mines, Dept. of the Interior (Washington, GPO, 1968).

85. Ibid., 2. Many technical works describe with narrative and diagrams various levels of drift mining technology. The most useful to this writer were: Robert Peel, Mining Engineers' Handbook, I, Third Edition (John Wiley & Sons, Inc., New York, 1941); Ernest Wolff, Handbook for the Alaskan Prospector (University of Alaska Fairbanks, 1969); C.W. Purington, Gravel and Placer Mining in Alaska, USGS Bull. 263 (Washington, GPO, 1905); Norman L. Wimmler, Placer-Mining Methods and Costs in Alaska, Bureau of Mines Bull. 259 (Washington, GPO, 1927).

86. Bundtzen, "Drift miners," 2-3; Peele, Mining Engineer's Handbook, I, 10.617.

87. T.A. Rickard, "Mining Methods in the North," Mining and Scientific Press, Jan. 9, 1909, 86.

88. T.A. Rickard, Through the Yukon and Alaska (Mining and Scientific Press, San Francisco, 1909), 271-78; direct quotations from 272-74 and 276 respectively.

89. Trush, Dictionary of Mining Terms, various entries; Wimmler, Placer Mining Methods, 123-25; Wolff, Handbook, 315-20.

90. Hudson Stuck, Ten Thousand Miles With a Dog Sled (Charles Scribner's Sons, New York, 1914), 48-49.

91. Ida Williams, "Nolan on the Koyukuk," Alaska-Yukon Magazine, 10(3), Aug. 1910, 221.

92. Stuck, Ten Thousand Miles, 48.

93. Williams, "Nolan," 221.

94. Interview with Al Withrow, Old Bettles, 6/26/85.

95. Emil Edward Hurja, "Mining in the Far North, The Koyukuk Mining District," Mining and Scientific Press, 109(11), Sept. 2, 1914, 416.

96. Ibid., 417.

97. Hudson Stuck, Voyages on the Yukon and Its Tributaries, A Narrative of Summer Travel in the Interior of Alaska (Charles Scribner's Sons, New York, 1917), 258; "N.C. Company's Chandalar Operations," Seward Weekly Gateway, June 1, 1907, 4; "New Mining Camps," Alaska-Yukon Magazine, 3(5), July 1907, 430.

98. Ibid., 259.

99. Irving McK. Reed, "Frank Yasuda, Pioneer in the Chandalar," Alaska Sportsman, 29(6), June 1963, 14-15, 42-45; William R. Hunt, North of 53°, The Wild Days of the Alaska-Yukon Mining Frontier, 1870-1914 (Macmillan Publishing Co., Inc., 1974), 233-39; Evelyn Mertie, Thirty Summers and a Winter (University of Alaska, Fairbanks, 1982), 64-66.

100. The S.J. Marsh materials cited and quoted in this section are found in the Eskil Anderson Collection, University of Alaska, Fairbanks, Archives.

101. S.J. Marsh report to Sulzer of May 1906.

102. Hunt, North of 53°, 236-37; Bob De Armond, comp., "This Month in Northland History," Alaska Sportsman, Sept. 1969, 18.

103. Marsh to Sulzer, October 11, 1906, 2-3.

104. Marsh to Sulzer, December 24, 1906.

105. Marsh to Sulzer, January 23, 1907, 7-8, 9.

106. Marsh to Sulzer, selected letters from November 23, 1907, to December 30, 1909.

107. Marsh to Sulzer, March 3, 1909, 2; edited for spelling.

108. Hunt, North of 53°, 239.

109. Ibid., 239.

110. A.G. Maddren, The Koyukuk-Chandalar Region, Alaska, USGS Bull. 532 (Washington, GPO, 1913), 110-116; quotation on 115-16.

111. A.G. Maddren, Koyukuk-Chandalar Region, Notebook IV (file No. 274).

112. Maddren, Koyukuk-Chandalar, Bull., 532, 29-32, 68-73; quotation on 73.

113. Philip S. Smith and Henry M. Eakin, "The Shungnak Region, Kobuk Valley," in Alfred H. Brooks, et al., Mineral Resources of Alaska, Report on Progress of Investigations in 1910, USGS Bull. 480 (Washington, GPO, 1911), 291-294.

114. Lewis Lloyd, "Shungnak--On the Arctic Slope," Alaska-Yukon Magazine, 7(6), March 1909, 478-80.

115. Anon., "Kobuk District May Prove a Real Bonanza," Alaska-Yukon Magazine, 10(5), November 1910, 316-17.

116. Philip S. Smith, "The Alatna-Noatak Region," in Alfred H. Brooks, et al., Mineral Resources of Alaska . . . 1911, USGS Bull. 520 (Washington, GPO, 1912), 332-33. A.G. Maddren interviewed Manuel Louis, probably in Bettles, in 1909. Louis stated that in the spring of 1899 he and about 30 other men sledded from the upper Kobuk (specifically from their winter camp at Reed River Hot Springs) to Lucky Six Creek on the Noatak. During the summer they put in a bedrock drain with dynamite and black powder, and produced $500 in gold. This changes Smith's figure, but not his conclusions. Maddren, Koyukuk-Chandalar Region Notebook III (file No. 273).

Chapter 5: The Civilization of the North

Wiseman's heyday lasted about 5 years, 1911-15. It was fueled by continuing production from Nolan Creek Valley and the $1 million taken from deep placers on Hammond River, starting with Vern Watts' discovery in 1911. Robert Marshall's history of Wiseman during this period is heavily loaded with whiskey and prostitutes. Of 400 tons of freight brought to Wiseman in the peak year of 1915, 60 tons was booze--400 pounds (including kegs, bottles, and packing) for each of the 300 whites and 75 Natives living in the area. That year 14 prostitutes plied their trade. One miner, John Bowman, reputedly blew $11,000 on one of them in a 2-week period. A reformer gave $2,500 to a "soiled dove" to improve herself with an education, but skeptics urged that "she knew too much for him already."

This flurry of high pay and high living ended quickly. Exhausted bonanzas, World War I wages in the States, and Prohibition hustled the boomers outside and quenched the appetites of those permanents who had strayed. Population and economy declined precipitately to low levels: less than 100 whites, with gold production less than $100,000 annually (much less than that some years) for the entire district.[1]

Those who were left tightened up a notch or two and turned to the business at hand: keeping their community alive and functioning. One of the old timers, Albert Ness, put it this way to Marshall:

> Always, after any stampede, it's not the successes who build up the country. They go home with the stakes they made. It's the failures who stay on, decade after decade, and establish homes.[2]

In 1911 Wiseman boasted two stores, the N.C. Co. and Plummer's General Merchandise, as well as a number of roadhouses, including the Wrights', original namesake for the community. Cabins and other business houses had been disassembled and moved from Coldfoot to Wiseman. The ARC trail was extended from Caro to the Middle Fork via South Fork and Slate Creek. The main trail from Tanana closely paralleled Henry Allen's route to the Kanuti, then ran upriver via Allakaket, Bettles, and Coldfoot to Wiseman--a distance of 273 miles. These trails were strictly winter dog-team trails for many years.

In 1912 a Nolan Creek miner put in a telephone system that eventually connected Wiseman with Nolan Creek and Hammond River. This was a great convenience, for these next-door neighbors were still a hard day's round-trip apart. Now the far-spread camp could set a date for a dance, alert its members of arrival of important mail or supplies, or mobilize for emergency.[3]

In 1918 the people of Wiseman petitioned Territorial Governor Thomas Riggs, Jr., for a wireless station. They based their request on Wiseman's position as the largest and most centrally located town ". . . in the heart of the present mining industry being carried on and developed throughout a vast section of country lying north of the Arctic Circle . . . ." Citing the deficiencies of a mail service monthly in its intervals, they prayed further: "The great retarding factor in the present and future development and advancement of this great North Region is the lack of adequate and speedy communication with the outside world . . . ."

The 153 signatories had George F. Bemis, The O.K. Jeweler of Tanana, forward the petition to the governor. Bemis, a friend of the governor's, recalled the latter's visit to Tanana the previous summer, ". . . at which time you kindly assented to recommend and also use your influence with Mr. Sulzer to have their petition granted at an early date." Reflecting the intimacy and intricacy of Alaska politics in this era when everyone knew everyone else, Bemis added: "If [Territorial Delegate to Congress] Wickersham had given his efforts to the needs of his constituents instead of spending his time abusing Alaska's friends, these people would have had relief long ago."

Riggs responded positively to the petition in a letter to Bemis: He had recommended the Wiseman wireless station in his annual report for 1918, and he would follow up with both the Army Signal Corps and Congressman Sulzer. The governor discreetly avoided comment on Delegate Wickersham's battles with the Alaska mining syndicate. As it turned out, the wireless station came to Wiseman in 1925, the same year as arrival of the first airplane.[4]

Marshall estimated a population of 150 permanent white residents in the Wiseman area in 1918.[5] The petition seems to have involved them all. Of the 153 signatories, 15 are women, all but one of these a Mrs. No obvious Native names appear on the petition, but James Minano, a Japanese immigrant, resident of Coldfoot and married to an Eskimo woman, did sign. James and his wife Sucklarlalook had some children, and thereby hangs a tale.

Minano was an old Barrow friend of Frank Yasuda. The Minano family joined the Yasuda-Carter prospecting expedition in 1903, ending up on the Koyukuk, where James took a job in Coldfoot as a cook.[6] By 1917 the Minanos' had four surviving children (an infant son had died at Anaktuvuk Pass during the prospecting). At that time the Territorial Government was responsible for the education of white children; the U.S. Bureau of Education supported schools for Natives.[7] Territorial statutes required a minimum of 10 white children for establishment of a school

district. The proposed Wiseman district had only 8, but with the Minano offspring there were 12.

On August 13, 1917, Daniel Webster of Wiseman forwarded a petition for a school district to the clerk of the district court in Fairbanks. That worthy, one J.E. Clark, responded testily to Mr. Webster's communication: Certain information was lacking in the petition, and, of greater consequence, four of the children were Japanese and two others were underage. Obviously the petition did not meet the careful definitions of law. To assure Mr. Webster's edification and future compliance, Mr. Clark enclosed Chapter 22 of the 1917 Session Laws, with key passages plainly underscored. He also returned the petition.

Daniel Webster--a man of means and reputation in the Koyukuk district, viewed locally as a reincarnation of his famous namesake and ancestor--took umbrage at this officious dismissal. He fired off a letter to the governor, citing previous understandings regarding the petition and affirming his desire to obey the laws of the land. Then he appealed for justice and equity in their administration:

> There was no law to prohibit the Japanese from immigrating, if there was, it was not enforced. There is no law to prevent him from taking to himself a wife. And there seems

> to be no natural or moral law violated, after marriage, by propagation.
>
> . . . . . .
>
> The facts are, we have the children in our midst, leading a civilized life, what shall we do with them? Neglect to provide them with privileges and thereby inflict the world with the results? "Forbid it Almighty God."
> The most lamentable thing that impresses my mind just at present is that the Clerk at Court had not been born a Chinese so as to have realized something of the contempt he is attempting to administer to others.
> If the Clerk at Court has erred . . . I wish you to correct his error and offer friendly information to guide his onward course.

Consonant with these magisterial flourishes, Daniel Webster alerted the governor that he could expect a personal visit in Juneau upon Webster's return from Boston.[8]

The governor took quick action on the matter. By letter of February 25, 1918, he counseled the Clerk at Court:

> There are certain equities in the Wiseman case which have moved me to waive to some extent the strict legal technicality of the law as to "white" children. I cannot bring myself to think that it would be an act of justice . . . to deny a school to eight white children in a community as remote as is Wiseman, when there are sufficient other children of school age . . . to make up the requisite ten.

The Governor softened this intervention by recognizing the clerk's concern about discretionary precedents, advising a case by case weighing of substance over "the legal phase."[9] This would not be the last time that government functionaries would know the wrath of the independent souls of Wiseman; nor would Webster's be the last articulate letter to higher office to proclaim some higher truth.

In due course, despite further delays brought about by the Alaska attorney general's review of the case, the Wiseman school district was authorized and a school was built in Coldfoot in time for the fall 1919 term.[10] For a few years, Coldfoot was more centrally located for school children than was Wiseman.

Correspondence between Wiseman school district officials and Lester D. Henderson, Commissioner of Education in Juneau, provides

a refreshing model of personalized administration of a remote district needful of special assistance. For the decade of his tenure, Henderson filled the funding gaps caused by communication lags. He personally attended to emergency supply requests, sending wires to suppliers in the States, arranging steamboat and dog-team relays of supplies thus obtained. He mediated altercations between teachers and parents with letters full of wisdom and the counsels of patience. In return, the people of Wiseman--whose school was a central, perhaps the central, institution attesting their civilized attainments in the wilderness--reciprocated with earnest endeavor and honest employment of Henderson's largesse. Wiseman's decline as a mining camp seems to have unleashed enlightened energies that focused on the school. In truth, beyond personal matters and social affairs, such energies had few other targets. (In 1927, George Huey, a community pillar, proclaimed: "We have the best little camp in the North today. . . . There is not a lawyer, a preacher or a doctor in the camp, and we don't need 'em.")[11]

Henderson's first efforts resulted in money to build a school and hire a teacher. The Wiseman School Board appointed a local woman, Jessie Howard, to start the term because Juneau could not provide a teacher in time. When teacher Vanda Coffey did arrive from Fairbanks with a 9-month contract, Jessie had already taught a ıonth. Both Jessie, by teaching, and Vanda, by contract, were

owed $200 for that first month. Henderson forked up the extra $200, "thus making it possible for you to pay the respective parties the amount specified."[12]

When Henderson appealed to the community to make up the difference in a deficient appropriation for the school's firewood, Daniel Webster, Clerk of the Wiseman School Board replied:

> The School Board met . . . and decided to have a chopping bee at Coldfoot to cut the wood and pile it for the school-house, on Oct. 8. Fifteen men turned out and we cut ten cords of wood and in the evening had a very good dance. . . .
> We decided to hold a raffle . . . to raise money to have the wood delivered to the school-house and worked up for the stove. The articles donated for the raffle are one morris chair, one caribou and one crate of potatoes . . . .[13]

With Daniel Webster's death in 1922, W.D. English became clerk of the Wiseman School Board. George Huey, acting clerk in English's absence, posted the sad news to Henderson:

> Mr. Webster's death was a great loss to our isolated community. He was a man of sterling worth and integrity

> . . . . there is not a person in the community who is not under some obligations to him for some act of kindness or assistance rendered during his life. We shall always miss
>
> him. It seems as something vague and unreal had happened to our community
>
> With best wishes for the cause of education.[14]

Vanda Coffey's marriage to Jesse Allen in 1923, followed by her resignation, caused real distress. She was a teacher liked by the entire community. W.D. English relayed the parents' wishes regarding a replacement:

> . . . they suggest we get a teacher who has had previous experience in Alaska and who is not adverse to settling in a quiet community. It is also the opinion of the parents and others interested in the welfare of the school that we endeavor to get a teacher of about middle age.[15]

Henderson agreed to these conditions and initiated recruitment of such a teacher. Then the school census stopped everything. Only six children remained, most of them bearing the name Minano. Henderson was forced to close the school for the 1924-25 term.

George Huey immediately challenged this action, tying it to other signs of neglect--poor mail service, no road. The radio outfit and an operator had arrived in Wiseman; the little community of 63 people was expending its own slim resources to construct the wireless building and erect the antenna masts. Soon, one senses from Huey's words, the folks of Wiseman would have some pretty direct things to say to the outside world. "This little neck of the woods has produced more gold than the Government paid for the whole of Alaska, and is justly intitled to some little consideration from the powers that be . . . ."[16]

But winter intervened and the wireless waited until next year. Through winter and spring letters between Wiseman and Juneau crossed somewhere on the dark and frozen tundra: Henderson regretting the closure; Wiseman importuning for answers about school next year. The correspondence got completely out of sequence in the long intervals between mails, with Henderson's first answer getting to Wiseman after the second and third letters had been sent from there. On January 9, 1925, Huey wrote as Secretary-Treasurer of Wiseman Igloo #8, Pioneers of Alaska, bringing to bear the influence of that Alaska-wide organization of old timers. Citing no response to School Board letters, he asked, "Why this silence?" Clarifications and resumption of good relations had to wait upon the wireless.[17]

An exchange of telegrams and relaxation of the law distinguishing between Native and white schools led to reopening of the school in 1927, in a rented cabin at Wiseman. (The Coldfoot school building was not moved to Wiseman until spring 1928.)[18]

A school board election brought in Ruth Allen (who was the former teacher Vanda Coffey) as director, H.S. Wanamaker as treasurer, and E.C. "Joe" Ulen as clerk.[19]

Joe Ulen, the radio operator in Wiseman, tangled with the new school teacher, Miss Jean B. McElroy. She rented his cabin and refused to sign a $600 fire-insurance agreement. Ulen, moreover, cared little for her teaching methods. Another man, contracted to cut Miss McElroy's fuel, provided green wood only.

Miss McElroy was having a bad time. To compound matters, all of her students except for a Minano child were Eskimos. Ulen sympathized with the Natives; he was married to one, a young woman named Tishu, who figures prominently in the pages that follow. Miss McElroy was perceived by some parents as being less than sympathetic to the Eskimo children. In her letters to Henderson she cited serious trouble with an old woman, who evidently baited her in the classroom. A "native element" within the white community controlled the school, she said. On the other hand,

some of the whites resented paying taxes for what was in fact a Native school.[20]

Former teacher Ruth Allen tried to mediate, writing a "To Whom It May Concern" letter that attested Miss McElroy's skill as a teacher and her conduct of an efficient and happy classroom.[136] Miss McElroy felt trapped. The Bureau of Education could not pay her transportation Outside, and she could not save enough money to get out herself without teaching another year.[21]

Finally, the incompatibilities between Miss McElroy and selected members of the community prevailed. Though most of the community remained passive to avoid trouble, the school board requested a new teacher. Henderson responded by recruiting Clara B. Carpenter. Miss McElroy, disappointed but proud of her efforts in a most difficult assignment shipped out to the States, bearing the sympathies of many, who nevertheless put the peace of their community first.[22]

It had been a microcosm of village life, this decade of school history. The best and the worst had been called forth in these formative years: from chopping bees and countless other voluntary efforts to vindictiveness and quick resentments. When push came to shove the community closed ranks and ejected one who could not fit in, whatever the fine points of equity might be.

Acculturation, as it turned out, was a two-way street. Miss McElroy, idealistic but unprepared, could not find the combination to Wiseman's tight little society. Its hidden hierarchies and subtle racial adjustments snared her. Many another teacher or visiting functionary since has been similarly surprised in Alaska's bush communities.

The first decade of school history ended on a happy note. Clara Carpenter's appointment healed community divisions, producing a resurgence of unified effort during the 1928-29 school year. The moved and reassembled Coldfoot school building and a refurbished teacher's residence gave Clara a comfortable and functional school plant. This resolution, both personal and physical, coincided with Lester Henderson's transfer from the position of Commissioner of Education. In his last letter to the Wiseman School Board, he justified an extra $88.65 for the Wiseman school budget to share community costs in "rebuilding [the] school house and fixing up the teacher's dwelling":

> In view of the spirit which the residents of Wiseman have displayed in this matter and of the expense to which they have already been placed, I can see no reason why the Territory should not assume this deficit. . . .
> I wish to take this opportunity to . . . convey my thanks . . . to the school board and to the residents of the

> community in general for the splendid cooperation which they have rendered me during the period of my incumbency in this office.[23]

Presence of Eskimo children in the Wiseman school is part of a larger acculturation story that evolved parallel with the mining booms and their aftermath. Relationships between Natives and whites in the upper country varied from place to place--partly because some Native groups were more receptive than others to Euro-American ideas and technology, partly because the geographic spread of the region isolated and insulated some groups more than others. The core of the region was far beyond the easy transportation and dominant white populations that enhance the influence of missionaries, teachers, and government agents. Thus, their ability to impose ideas and dictate cultural change was inhibited at the center, greater at the periphery along the Yukon and the Arctic Coast. Many Natives did respond positively to the jobs and technology brought by miners and traders, and to the ideas of missionaries and educators. But in the upper country the Natives exercised a large element of choice in these responses.

As previously noted, the general life-style in the far north camps and communities allowed little distinction between Natives and whites based on wealth or hierarchies of work. Particularly afte

1915, most people lived pretty much alike, combining cash and subsistence economies to make ends meet. Moreover, the upper Koyukuk mining area lacked the wealth of furs, which, in richer places, segregated Natives into a fur trapping-subsistence economy. In sum, sparse population and marginal resources drew Natives and whites together in a mutually supportive blend of life-style and labor. Isolation buffered change, slowing and diluting the directed change of outside agents--giving Native people the chance to pick and choose, to balance change with ongoing elements of traditional life. And since most of the whites in the upper country concentrated on their mining and commercial enterprises, only incidentally harvesting wildlife, there was minimal competition on the land between them and traditionally oriented Native people. This allowed Natives to be opportunistic: they could take jobs with the whites, or they could hunt and fish, or they could do both.

What emerged was an upper country society in which social distinctions between Natives and whites were not absent, but were muted because of continuing interdependence, including frequent intermarriage. Many Natives became proficient workers, and some became partners with whites, in mining, transportation, and mercantile enterprises. At the same time, because these "imported" activities occurred seasonally or at marginal levels and could not sustain families year-round, traditional hunting and

fishing expeditions kept families close to the land. Children, accompanying their parents, learned traditional ways of travel, harvest, and survival. Thus recruited, they carried on those traditions.

The upshot of these combinations on the south flank of the divide, was a more comfortably blended Native-white society than that found in most parts of Alaska. Out of this functional context evolved Native people competent in both the modern and the traditional worlds.

The Nunamiut people, north of the divide, had a different history. Gold mining played only a minor role in their home territory. Because of the attractions of coastal trading and the decline of caribou after the turn of the century, the Nunamiut began to leave the mountains, a few going to the Kobuk and to Wiseman, but most of them relocating along the Arctic Coast. When some familes began returning to the high Brooks Range in the mid-1930s, they came back to an area and a pattern of life that would remain isolated from steady white influences until about 1950.

Thus, whether in the societal combinations of the upper Kobuk and Koyukuk rivers, or in the high mountain valleys of Nunamiut country, the buffering effects of isolation would help perpetrate strong traditional components in both Eskimo and Indian societies

These were certainly not pre-1850 people. All of them, including the Nunamiut during their coastal interlude, had absorbed large doses of Euro-American disruption, culture, and technology. But relative to more accessible regions, Native people of the upper country had more time to adapt under less intense acculturative pressure.

Among the whites who shared the upper country with the Natives during this period, there was more of a live and let live attitude than usual. Most of these whites were not oversocialized themselves, and were, like many of the Natives, far removed from steady institutional pressures to become so. As a result, the usual progressive attitudes of the day respecting material and spiritual uplift applied only marginally to most resident whites, some of whom had rejected any rigorous adherence to them. Missionary impulses at Allakaket (Episcopal), Shungnak and Noatak (Friends), and among the Nunamiut (Presbyterian) spread thinly across a vast area, competing with, rather than utterly dominating and erasing traditional views and values. As with so many other Euro-American approaches to this far-margin country, religion had to settle for half a loaf, in a kind of partnership with place and people. For example, when Society of Friends missionaries on the Kobuk attempted too strict a regime to counter secular influences in the 1920s and 1930s, the flock faded away, leaving only the older, sanctified members.

Archdeacon Hudson Stuck understood the need for accommodation between Euro-American and Native values. To his missionaries at St. John's he conveyed the philosophy that: "The wise teacher, the wise missionary, will not seek to keep boys at school who should be out in the woods serving their apprenticeship." In 1917 he preached to the assembled people of Alatna and Allakaket:

> Reading and writing are good things, and the other things the school teaches are good things, and that is why we put the school here to teach them, but knowing how to make a living on the river or in the woods, winter and summer, is a very much better thing, a very much more important thing, and something that the school cannot teach and the fathers must. Let us have both if we can, but whatever happens don't let your boys grow up without learning to take care of themselves and of their wives and children by and by.

It is recorded that old Chief Moses came up to him and thanked him, saying that "he was alwayus trying to tell his people the same thing."[24]

*****

Biographies of Arctic Coast and upper Kobuk Eskimos describe the early migrations of members of these societies into the upper Koyukuk mining area. Long established trade patterns and travel routes between these people and the Koyukon Indians had set the scene for these movements. The Koyukon, having withdrawn southward toward river trading posts, had effectively vacated the country north of Bettles. In this unexploited territory game abounded in comparison to conditions on the Kobuk, where caribou populations were crashing. Arctic coast Eskimos, some of them associated with Japanese trader Frank Yasuda, were drawn and pushed toward Koyukuk game and mining camps by ties to Yasuda and the weakening whaling industry on the coast. Opportunities on the Koyukuk included market hunting for the miners and wage jobs in mining and freighting.[25]

Oscar Nictune, an old timer of Alatna, born in 1901 of Kobuk parents, remembered being carried on his Mama's back as an infant:

> She was packing me around Gold Creek mining camp, thirty miles out of Wiseman. I saw those miners working. They work and never stop, no matter how hot the sun. They don't think about mosquitoes, nothing. They just want that gold and get it, too.[26]

Turak Newman, who lived most of his life in Beaver, was born in Barrow in 1897. He and his family came south with the Yasuda-Carter prospecting party. In 1906 they wintered at timberline on the North Fork of the Koyukuk:

> We built an igloo, and off and on Frank [Yasuda] came up. We had a lot more game than we needed. Frank generally took, oh, a couple sled loads down to the miners at Wiseman and Coldfoot. There were a few people there at that time. He traded off for flour, sugar, rice and tea. That is the way he kept us in supplies.[27]

Turak's mother made fur clothing and traded it to the miners "for a little rice, tea and sugar." She had poor light for sewing, but when she got candles "there was light in the evening."[28] Turak continued:

> Well, in 1908 during the summer, Big Jim [an Inupiat Eskimo from Unalakleet] and Peter Nectune [Oscar Nictune's father] came over [to the Chandalar] and . . . told my father, "It's easier to live over in Koyukuk. I'm working on the scows for the Glenn brothers. I can work there all summer; wife can go down to Allakaket with you and fish. I'll come down

in the fall and supply you with store goods there.

You'll have some fish so we will live all right that way."[29]

This last arrangement illustrates an adaptation still prevalent and critical in modern Native life. Subsistence activities must coincide with seasonal availability of wild resources. In the mixed cash-subsistence economy of village Alaska, wage jobs often conflict with wild-harvest seasons. One cannot be two places at once, so a division of labor allows some people to hunt and fish, others to work at a wage job. After the season is over, wild harvest and store-bought goods are shared. Often these roles rotate so everyone gets time on the land.

As documented earlier, the Kobuk migrants to the Koyukuk were especially admired for their attentiveness to work and their eagerness to get white man's religion and education. Frank Tobuk--born in 1900 on Hunt Fork of John River while his family was out hunting--shared this enthusiasm, but with reservations.

In a late-life interview Frank commented on the difficulty white people had pronouncing Eskimo names. His father's name, Duvak, became Tobuk. Frank's own Eskimo name, Dalakaduk, became Aklanuk, but with customary politeness he acquiesced, "That's

close enough, I guess."

Frank's father worked for the steamboats for awhile at Bettles, mostly longshoring in the summer. In winter and spring the family followed traditional hunting and fishing rounds. Then the family moved to a Kobuk Eskimo camp called Alatna, at the mouth of that river, for better fishing. Across the river from Alatna, Archdeacon Hudson Stuck founded St. John of the Wilderness Mission in 1906. The goal of the Episcopal Church was to provide religious, educational, and health services for both Eskimos and Indians at this central location on the upper Koyukuk. Soon the upriver Indians came in from Arctic City and their South Fork camps to establish Allakaket village around the mission. With Frank and his brothers and sisters in school, the old patterns changed. He recalled that once the mission came,

> . . . our family didn't travel out to winter camp or spring camp much any more. Mostly all we ate was fish and rabbits. No big game in Alatna then. Dinook [his mother] and Tobuk wanted us to be in school so we were tied up. Can't go nowhere.[30]

In these few recollections is a congregation of acculturation influences and responses: migration for job opportunities, population and settlement-pattern changes, a combined

Eskimo-Indian community (even if in separate across-the-river villages) drawn together by mission services, and a young boy's regret that school kept him away from hunting camp. Other passages from Frank Tobuk's life story tell of the confusion he experienced from the mix of Eskimo, Athapaskan, and mission exposures all at the same time. Yet, in retrospect, he recognized the benefit of living and working with different kinds of people His mature life reflected the diversity of his upbringing: traditional hunter, worker on steamboats and scows, winter dogsled guide, employee of Wien Airlines at Bettles Field.

Tishu Ulen's life story touches all facets of upper Koyukuk social and cultural evolution. A spry 80 years old at this writing, with a steel-trap memory of people and events that made Wiseman history, she has shared her recollections with this writer on a trip to Wiseman and in subsequent interviews.

Tishu was born about 1905 in the Chandalar Lake vicinity, where her Kobuk Eskimo family was traveling about ("trucking around" in her phrase) hunting and fishing. The Chandalar Indians had by this time moved farther east, leaving the west Chandalar country open to Kobuk people ranging afar from their game-depleted home territory.

Tishu's mother, Mary, later divorced her Eskimo husband and married William English, a white man with stores in Bettles and Wiseman. Tishu herself married Joe Ulen, the Signal Corps telegraph operator in Wiseman, when she was 18 and he was 36.

Tishu was baptized by Hudson Stuck and as a child often attended services at St. John's mission in Allakaket. She went to school at Coldfoot and had particularly fond memories of teacher Mary Glenn, who had married the Koyukuk scowman Bill Glenn. Tishu knew biologist Olaus Murie and Margaret Murie, recalling their 1924 marriage and their visit to Wiseman en route to a honeymoon in the Brooks Range where Olaus was studying the caribou.

Tishu and her mother roamed the upper Koyukuk country by dogsled, hauling freight on the Bettles-Wiseman trail and to the remote mining camps, and making long hunting and fishing trips. On these journeys Tishu, a strapping woman in her youth, hunted and cared for the dogs; Mary butchered the game and cooked. Later, Tishu ran Joe Ulen's mine on Nolan Creek, supervising a crew of white miners.

When Noel Wien flew the first plane into Wiseman in 1925, it was Tishu who raced with Jimmy Tobuk to touch the plane first on its river-bar landing strip. Some years later, in the Thirties, the Wiseman mail pilot flew her to Wild Lake to visit ex-Wiseman

friends who were mining there. When Tishu started to climb out of the plane, Ernie Johnson, who would guide Bob Marshall into the North Fork, grabbed her and carried her to her waiting friends--"I never touched the ground!" Frank Smith mined at Wild Lake on Spring Creek. His Indian wife, Mary, cried when she saw Tishu, for Tishu and Mary's deceased daughter had played together as children.

One of Tishu's earliest memories was a trip to fish camp at Kotzebue with her mother and uncle. At that time the town was just an assortment of drab cabins. The place to be was down on the beach, where tent camps of Eskimos from Kivalina, Noatak, Kobuk, and Seward Peninsula villages--even some from Siberia--lined the beach for miles, each group in its own established camping place. (Even today these distinct fish camps still line the beach south of Kotzebue.) Tishu's mother, a woman noted for assertive character, even irascibility, would not stand for the missionaries attempts to stop Native dancing. She, in Tishu's words, "jumped the hired Eskimo police" who tried to enforce religious restrictions and curfews, and the dances went on. Tishu remembers disliking the dreary, damp weather of Kotzebue Sound, longing for quick return to the mountains.

Mary taught her the intricate stitches of Eskimo sewing, ripping

out seams unless they were perfect. Tishu became expert, making waterproof mukluks for trade to the miners. Later she sewed canvas hoses for the miners, triple stitching them for strength until her hands were raw. A long hydraulicking hose brought her $18.

Tishu's far-ranging hunting and trapping rounds (she sent her daughter to school on proceeds from lynx trapping) required a good dog team. She ran five big dogs, mixing tallow with snared rabbit meat to keep them going, with a dash of garlic for flavor and worming. Tishu selected out any bad-tempered dogs; she could not afford disabling fights on distant trails, nor did she want her children chewed up.

When ex-nurse and medical student George Rayburn came to Wiseman as the school teacher, Tishu assisted him in emergency medical treatment for the burns, breaks, and crushings of outback, heavy-labor life. When George extracted a barb-up safety pin from the throat of Lucy Perrin's baby, Tishu was there, holding the baby's head.

As storekeeper, Tishu knew everyone and got in the middle of the squabbles of village life. When a volatile Irishman named Billy Burke got drunk and a little wild, he chased his nemesis, the frail Agnes Wanamaker, into the store and began pushing her

around. Tishu broke up the fight. Agnes would declare: "There was no gentlemen present; I had to be rescued by a woman."

Burke was later found crying alongside the road, because someone told him he had hurt Tishu in the melee. When she told him she was OK, he was all smiles again.

Happy memories abound in Tishu's recollections. On the big holidays people from the far camps assembled in Wiseman for feasting and dancing (as they still do) and the Pioneer Hall of Wiseman's Igloo #8 filled with groaning tables, which were later cleared for the all-night dances that made up for months of isolation.

Tishu helped Bob Marshall in his sociological research at Wiseman and figures prominently in Arctic Village. She still has a cabin in Wiseman and visits the dwindling population of old timers left from the Thirties and Forties.

She is a favorite of the younger people who now occupy many of the old cabins and carry on the Wiseman story. Her half-brother, Bill English, Jr., grew up in Wiseman, partaking of the mixed Eskimo and modern life styles of his parents. He only recently retired as chief pilot for Wien Airlines.

Tishu's life has spanned the last phase of traditional times to the ultra-modern present: from her birth at a nomadic hunting camp, through the early years of mining, trading, and missionary work, to the radio-and-airplane breakthrough that shrank the country she once crossed by dog team. Today, ensconced in a comfortable apartment in Fairbanks, she watches TV and shops in a supermarket.

One episode symbolically illustrates that span. On a Christmas Eve 1952 flight from Fairbanks to Wiseman, Tishu and pilot Dick McIntyre were forced by fog to land on the ice of Middle Fork some miles from town. Tishu's Eskimo survival skills pulled them through a night of minus 40° cold despite lack of tent and sleeping bags. At first light they flew to Wiseman and joined the festivities.

Hers is a world view enriched by the combination of traditional and modern perspectives. On a cold November drive back from Wiseman in 1983, she shared one of those older perspectives with the writer and our companions. A phenomenon called a sundog by meteorologists highlighted the southern horizon as we drove. In form it was a truncated halo caused by the arctic sun's refraction through an overcast of high stratus clouds: the bracketing arms of the halo extended like curved sticks from sun level down to the horizon. She told us that Eskimos call thes

the sun's canes, needed at this time of year because it is getting colder and the sun is getting weaker.

In a philosophical moment she confided to her sister-in-law, Shirley English:

> Today I have more comfort than I used to have, but I like the old ways best and sometimes I pine for the way it was. . . . We had to make do with a little bit, but we were active and happy . . . .
>
> In the old days we never hurried. Life moved by the sun. We didn't need to look at watches. Our work followed the order of the seasons. . . . We worked hard, but we played hard too. In winter I used to take my kids out to see the sky lit up by red and green northern lights. We'd clap our hands and say "Shhh," a hissing noise, to make the northern lights dance.[31]

Another archetype of the North was Tishu's friend Nellie Cashman, white haired and elderly when Tishu knew her, but still a force to be reckoned with. She was more than a notable frontier woman. Her varied contributions to the mining booms of Arizona, Canada, and Alaska over half a century made her a

symbol of all that was admired in frontier life. Once she found the edge of civilization, she could never leave it. By 1908 Nellie was already an established miner on Nolan Creek,[32] evidently coming into that camp with the deep-placer boom. In January 1924, just a year before her death at more than 70 years of age, the Valdez Pathfinder ran this story:

> After mushing on a seventeen day trip from the Koyukuk, Miss Nellie Cashman, super pioneer woman of Alaska, and mine operator, arrived recently in Anchorage. Despite her slight figure and years of pioneering in the North, Miss Cashman in making the trip has maintained her record for being the only white woman in Alaska who at her age, travels over the roughest country in any weather by dog team. Miss Cashman was one of the first white women in Alaska, coming first to Wrangell, in the southeastern district, before the north had been extensively explored. She went into the Cassiar Country and has pioneered in many other gold rush camps including Dawson and Nome. . . . [33]

A year later, under the heading "Pioneer Woman Prospector Goes on Last Stampede," the Pathfinder reported her death in a Victoria, B.C., hospital.[34] Her experience in gold camps had

begun in Arizona a half-century earlier, after she and her sister migrated from Ireland to Boston and later to San Francisco. Having presided over her sister's marriage in San Francisco, Nellie spent nearly 20 years in Tucson and Tombstone before going to the Cassiar and Old Caribou districts in British Columbia. Then followed nearly 30 years of Yukon strikes and camps, beginning with her organization of a mining company in the Klondike in 1898.[35]

During the Arizona years, Nellie supported her widowed sister and five children, then, following her sister's death, raised the orphans as her own. Fulfilling those family tasks, she turned over most of her various fortunes to charity. Indeed, she became a one-woman organizer of charitable institutions.[36]

Her death was deeply mourned across Alaska and the Yukon, as well as in Arizona, for she had been an Angel of Mercy in all the camps, curing scurvy, getting her way with merchants to provide relief and succor for the afflicted. Admiration mixed with softer sentiments, for she was tough on the trail, leaving the best men dog-drivers panting, then setting up camp and fixing grub while they rested. Her hope and enterprise never flagged. She came to her end on a business trip aimed at expanding her placer operations on the Koyukuk. Now, this remarkable woman was "resting in the Last Roadhouse."[37]

* * * * *

Since the early explorations, only the geologists of the USGS had viewed the central Brooks Range through scientific eyes. Even for them, pure science remained subordinate to basic mining geology and reconnaisance mapping. Alaska's more accessible regions had attracted biologists, paleontologists, vulcanologists, glaciologists, and ethnologists, but the upper country remained, as in most things, a neglected region.

Broader scientific investigations in this mountain fastness awaited some functional stimulus. The mixing of imported reindeer with the native caribou of Alaska provided a small nudge in that direction.

Modern biological studies began in the central Brooks Range with the arrival of the Murie brothers during the winter of 1922-23. Olaus, the older brother, and Adolph, his assistant, had been raised on the Red River in Minnesota, where natural history had been their boyhood pastime. Olaus had been hired by Dr. Edward W. Nelson, chief of the U.S. Biological Survey and an old Alaska hand himself, to study the relationship between wild caribou and domestic reindeer.

Reindeer had been introduced to Alaska from Siberia by Presbyterian missionary Sheldon Jackson in 1892 to provide a stable food supply for Native people. Spreading from the Nome region, reindeer herds became an important staple or supplement of village food supplies, with one herd proximate to the upper country of this study based at Shungnak from 1907 to the early 1940s. Reindeer, a smaller and less robust animal than the wild caribou, tended to join caribou as they passed by on migration. Dr. Nelson feared the effects on caribou of cross-breeding with the inferior domestic deer. He wanted scientific data on caribou ranges and migration patterns so reindeer-industry regulations could be designed to keep the two varieties of deer apart. Olaus had already studied caribou herds in the Tanana Valley and around Mt. McKinley when he invited Adolph to join him for an all-winter Brooks Range caribou survey in 1922.[38]

Basing at Fairbanks, the brothers assembled dogs, sleds, and supplies. While waiting for good mushing conditions, they made what became lasting friendships with professors and students of Alaska's newly established land grant college. Finally, in late November they took off for the Koyukuk. In Adolph's words, "These were the blessed days before the advent of the airplane in the north." It was a time of winter journeys by dog team and summer cross-country hiking. Except for a small stash of staples, the scientists lived off the country. At remote camps

and cabins, Natives and sourdoughs welcomed the travelers, whose coming into the country the hard way was prove-up enough for them. Both their unbounded hospitality and their knowledge of wildlife helped the brothers in their work.[39]

The Muries mushed from Nenana to Tanana crossing, then across country to Alatna-Allakaket on the Koyukuk. After Christmas and New Year's celebrations there--where they joined assembled miners, Eskimos, and Indians in all-night dances, and returned trader Sam Dubin's false teeth, found in a mail-shelter cabin en route (Johnny Tobuk, the Eskimo dance caller, hung them on the Christmas tree)--they headed up the Alatna River. An attempted crossing to the Kobuk foiled them because of brush thickets, lack of game, and unbroken trails. So they headed up the Alatna and Kutuk rivers to collect sheep specimens. Then, in the mode of Eskimo hunters, they ridged-and-valleyed eastward along the mountain axis to Wiseman. Thence they took the Chandalar trail back to the Yukon River, returning via Fort Yukon and Circle to Fairbanks. The 1,500-mile trip was accomplished with simple but adequate gear, including a small silk tent and a Yukon stove. January and February temperatures averaged nearly 40 degrees below zero, and dropped to minus 68 degrees during one cold spell. Yet they managed "easily and routinely."[40]

In his summary report, Olaus described the Alaska-Yukon caribou as primarily a mountain animal, despite its seasonal resort to lowlands. He showed that areas of caribou concentration ". . . practically outline the main divides between river systems." The mingling of the Yukon-Tanana plateau herd and the Brooks Range herd, which at that time migrated south along the Koyukuk-Chandalar divide, ". . . takes place by means of the only mountainous routes available--near Rampart, where more or less rugged topography reaches the Yukon from both sides."[41] His recording of Eskimo and Indian information on caribou population and range fluctuations, and responsive Native hunting patterns through the years, was a significant contribution to knowledge of long-term caribou cycles.

Aside from scientific contributions, this trip and one taken two years later by Olaus and his bride, Margaret, provided valuable perspectives, both social and esthetic, about the upper country. Bob Marshall read Olaus Murie's writings and later consulted with him and Margaret. This association helped to lure Marshall to the central Brooks Range. In time it led to a team effort by Marshall and the Muries that resulted in joint development of a wilderness philosophy and, eventually, formation of The Wilderness Society in the 1930s.

The Muries' writings on the Brooks Range combine the prosaic of scientific documentation and travel logs and the inspirational of people in tune with appealing physical and social environments. At the brink of the mountains, Olaus looked back on December 21, 1922, at the barrens just crossed:

> . . . wide, almost level stretches of tundra and gently sloping plains. These opens somehow impressed me profoundly. I wanted to linger and assimilate the full beauty of them. I do not know in what it consists, the charm of it all. Perhaps the dogteams trotting along, threading a ribbon trail across it, belonged in the picture. I thought of herds of caribou dotting such a scene. Certainly the wildness of it and the expanse of it seemed to require some wide-ranging animals and perhaps therein lay its charm for me. I seemed to want to roam over these plains myself, like the caribou, and feed on lichens, face the winds, and travel on and on.[42]

The brothers based part of their trip out of Pooto Hope's cabin some 30 miles up the Alatna. Pooto, an Eskimo whose father came from the Noatak, had the only cache of whitefish available for dogfood. He and his family traveled with the Muries up the Alatna and Kutuk rivers, where Pooto's expertise in hunting the

wary mountain sheep helped the brothers bring both meat and specimens into camp. He provided historical data on caribou movements, remembering, for example, that when he was a boy caribou had been plentiful on the Alatna, wintering there after migration from the Arctic Slope through the Endicott Mountain passes. During that period of plenty, he related, many Eskimos came into the Alatna country from the arctic side, returning north in the late spring. He told the brothers that he had hunted moose on the upper Colville River, that grizzlies were common north of the mountains, but not black bear. His lore, combined with that of other Natives and prospectors, gave time depth to the brothers' own single-season observations.[43]

One touching story shows how close the Murie brothers and the Pooto Hope family had become after weeks of living, traveling, and hunting together. Pooto's old wheel dog had finally given out after 15 years of faithful service. Normally, Pooto confided, he had no trouble shooting a worn out or injured dog, but this one was a member of the family, dear to them all. It was a pregnant hint and Olaus took it, volunteering to do a good and painless job of it. Pooto eagerly accepted. After Pooto and his wife, Annie, gave the aged female one last rabbit feed, Olaus took her far down the river, as Pooto requested, ". . . so Annie she don't hear."[44]

From a vantage point on the upper Kutuk near their sheep hunting site, Olaus described the panorama:

> . . . we could look out over the mountain mass and were impressed by the expanse of it, a maze of peaks, higher and higher, stretching off to the backbone of the range, which the Eskimo pointed out to me in the distance. To the west of the Alatna, opposite the mouth of the Kutuk we saw a jagged mountain mass which the Eskimo call, "Ar-re-ga-ger-nich," meaning "hand," referring to the sharp finger-like peaks.[45]

Having broken many miles of trail through deep snow, having faced the howling winds of mountain gaps, Olaus wrote this of the Alatna's winter weather:

> On the lower portion [of the river] there is very little wind and the snow falls evenly to a great depth. Above Helpmejack Creek high winds are frequent, in fact windy weather is the normal condition. The wind was practically always down stream, from the north. In many places on the river and on Takahula Lake we traveled over a rough surface of fantastically carved snow drifts. Sometimes it is practically impossible to travel against the storm.[46]

Margaret Murie had come to Alaska as a child. She grew up in Fairbanks, where her stepfather was a U.S. Attorney, and where she met Olaus Murie, a reticent Norwegian, who would in time win her heart. After becoming the first woman graduate from Alaska's new college (with Olaus' coaching in mathmatics), she rendezvoused with Olaus at the Yukon River village of Anvik in August 1924. They married in the mission church. Then they steamed up the Koyukuk in Teddy H., Sam Dubin's little sternwheeler, en route to an extended honeymoon in the Brooks Range, where they tracked the caribou together.[47]

Margaret's recollection of that trip--the friends made, the adventures, the beauties of the country and its wildlife--depict a legendary yet real Alaska--deep Interior Alaska before its modern denaturing and shrinkage. Through her writings she has shared an Alaska of realized dreams, lived by people at home in their place.

Teddy H. brought together a small host of people important to this history--Sam Dubin himself, a burly, bearded, bear of a man with a faint Russian accent--premier trader on the Koyukuk since the N.C. Co. had sold out; lanky Frank Smith, "a Bret Harte" character--boat cook in summer, Wild Lake miner in winter; and Otto Geist, a young German immigrant--boat engineer and budding

scientist, who would collect specimens for Olaus and go on to become an Alaskan savant in his own right. Teddy H. was a little box of a boat with four staterooms and a tiny pilothouse perched over the engine room, freight hold, and crew's quarters below.[48] As was usual in riverboat navigation, a Native pilot, David Tobuk, guided Teddy H. through shifting bars and channels.

At Alatna, Teddy H. unloaded cargo for Dubin's store, then crossed to Allakaket to drop supplies for the mission and Indian village. Two women missionaries ministered to the well being of the villagers, and one of them, nurse Amelia Hill, mushed to the outlying camps in winter.

Low water grounded Teddy H. repeatedly, so passengers roamed the woods shooting rabbits to replenish the boat's larder. Finally, the steamboat blocked by emerging bars, the Muries transferred to a small gas boat for what they hoped would be the last leg to Bettles. The delays en route had not been wasted. Olaus had probed the Native crew's knowledge of the country ahead. And he and Otto Geist, by now an eager scientist's apprentice, had collected specimens and prepared them for shipment.

The Muries finally reached Bettles, but only after descending through all low-water transportation stages--from steamboat to gas boat to scow to poling boat to hiking the last few miles

through brush and swamp. By the time they got there slush ice was beginning to run in the Koyukuk.

At Bettles they met Bill English, Tishu's stepfather and storekeeper for Sam Dubin; they stayed in one of Jack Dodd's roadhouse cabins. While they waited for mushing weather, Margaret met Pooto Hope, Olaus and Adolph's guide two years before. She joined Fred and Mary Smith, as well as Ludie Hope, wife of Pooto's brother Sammy, for grayling fishing. On September 30, a fair day, she climbed Lookout Mountain and gazed northward, as Lt. Henry Allen had done just 39 years before. In her dairy she wrote:

> . . . from the top of the mountain there were spread the Koyukuk Valley and the Endicott Mountains in blue and white tranquility, broad brown and green valley, twisting river, high snowy peaks; soon it will surely be a picture in black and white. . . . We came home at sunset time; the air is tingly smoky cold these days, the mountains where lies Wiseman, far upriver, flooded in sunset pink.[49]

With freeze-up came final preparations for winter travel. Olaus and Margaret headed upriver for Wiseman; Otto Geist and the Smiths would soon follow as far as the mouth of Wild River, then

branch up that stream to Frank's mine on Wild Lake.

Except for sunlit patches, the "black and white" of winter landscape dominated as Olaus and Margaret sledded northward. Resting the dogs after a long climb, Margaret viewed the northern forest, ". . . more lovely than I had ever seen . . . spruce trees, black in shadow and emerald in the light, willows full of purple shades and alive with gossiping redpolls. There in tall poplars were some pine grosbeaks, yellow and red caps lighted up by the sun . . . very busy about their own affairs."[50] At Roy King's fox farm and roadhouse they took rest and refreshment after a 19-mile day of hard going. Roy took part of their load and went ahead in his own sled the next morning, leaving guide tracks for them to follow along the treacherous river trail. The trail to Wiseman provided more hospitable encounters with wintering miners and trappers, including one with South Fork Henry, a reclusive trapper whose excited German-English dialect "was quite unintelligible" until he had refreshed his talking skills. At Coldfoot, the only residents left, the Minanos, brewed hot tea and put them up for the night.

Next day they got to Wiseman. Martin Slisco took them in at his roadhouse, a large cabin flanked by two smaller ones connected by enclosed passageways. Olaus' friends from the earlier trip

crowded in; and though they were at first tongue-tied by the presence of such a young white woman--there were none like her in the Koyukuk camp--the clamor of questions, explanations, and news from outside soon filled their small room.

That night at dinner, Margaret was the only woman with 10 men. She asked, "Are there no women here at all, then?" Judge Huey told her that there were seven white women in camp, all at the Nolan Creek mines. He had already phoned Louisa Pingel to come keep her company. (Louisa, an ex-missionary, had married miner Henry Pingel; she and former teacher Ruth Allen visited Margaret the next day.) After talk of dogs, a critical subject where they furnished the only transportation, conversation turned to life in this Far North camp. Smith Creek miner Bobby Jones summed it up:

> You know, we've all been in the Koyukuk so long we're afraid to leave it; we cuss the blame place and still we're so darn fond of it we keep on staying and digging and freezing and forking over all our dust to Sam, to get enough to eat to keep on digging and freezing and cursing the country. . . .[51]

Olaus' caribou study got off to a fast start. A large herd

wandered through the Wiseman vicinity the next morning--their first appearance there in many years. Olaus took two specimens, which also provided meat for the Muries journey to Bettles River, where hundreds, perhaps thousands of caribou were reported. Having noted the Koyukuk's thick growth of "caribou moss" or lichen on the upriver trip, Olaus speculated that the barren-ground caribou vacated large sections of country for years at a time so their slow-growing forage could recover. Somehow, the caribou knew when to leave an active range and return to one that had lain fallow. This cycle of grazing and recovery explained the caribou's extended and shifting migration patterns and their survival in the spare Arctic.[52]

From their tent camp on Bettles River, north of Wiseman, Olaus and Mardy, as he called her, roamed the winter scene together in the intervals between his long marches after the caribou. With increasing cold the sound of trees cracking could be heard. No longer were the snowy peaks a jagged horizon to the north; they were straight up. One afternoon, awaiting Olaus' return, Mardy and her dog Ungiak paused on a mountainside:

> . . . the slopes flanking the river looked like chalk drawings, chalk-blue lines and ranks of trees filling all the little gullies, reaching up toward the tops of all ridges, giving way at last to the chalk-white of

> snowy summits; these two colors. Yet an hour later as we came running and sliding down to the valley, the western sky was flame-red as it so often is in the Arctic in winter, dyeing the mountaintops a rose color, lifting the forest into inky black contrast.[53]

Return to Wiseman coincided with the presidential election of 1924. The territorials had no legal vote, but they held a mock election anyway--combined with a dance at the Pioneers' Hall, a sheep raffle ("An Eskimo hunter had learned the money-making schemes of the white man."), a midnight supper at the roadhouse, and a resumption of dancing until 5 a.m. Periodically, Joe Ulen checked the election returns from the States at the Signal Corps office (he could receive signals by then), a great change from the former month-long wait for election results.

The disparity of sexes--45 men and only 5 dancing women, two of them Minano daughters--was solved by Deputy Marshal Vaughan Green, ". . . who announced 'tag dance' nearly every other dance. There would follow a mad rush by all the stags, and a raucaus melee, in which we women changed partners about every five steps . . . ."[54]

The next day was filled with visits and invitations. Gifts and goodbyes prepared the Muries for departure to Fairbanks. The

frontier party and its aftermath made Mardy regretful that ". . . we had not had enough of this Koyukuk, of these people who had so taken us into their lives. . . . [They] were living in grace and comfort far north of the circle. They had serenity."[55]

Years later Olaus and Mardy came back to the Brooks Range. Together they witnessed one of earth's primordial scenes, here painted in her words:

> Just before dinner I walked up the slope behind camp toward the mountain, and stood and searched the western landscape, for Olaus was sure the caribou had all been somewhere to the west all this time, having their calves. White caps still dotted our lake, but the landscape was quiet; nothing moved except one of our gulls, startlingly white against the blue sky. After the wind, it all seemed breathlessly still, as though we were all waiting for something.
>
> . . . . . .
>
> [After dinner came the cry, "caribou, caribou . . ."] By now the great herd covered the flat, and the sounds it made were fantastic. . . .Olaus and I kept going uphill, trying to get above for a good look, and finally we collapsed on a high slope, on the grass, and settled down to look and listen. They were



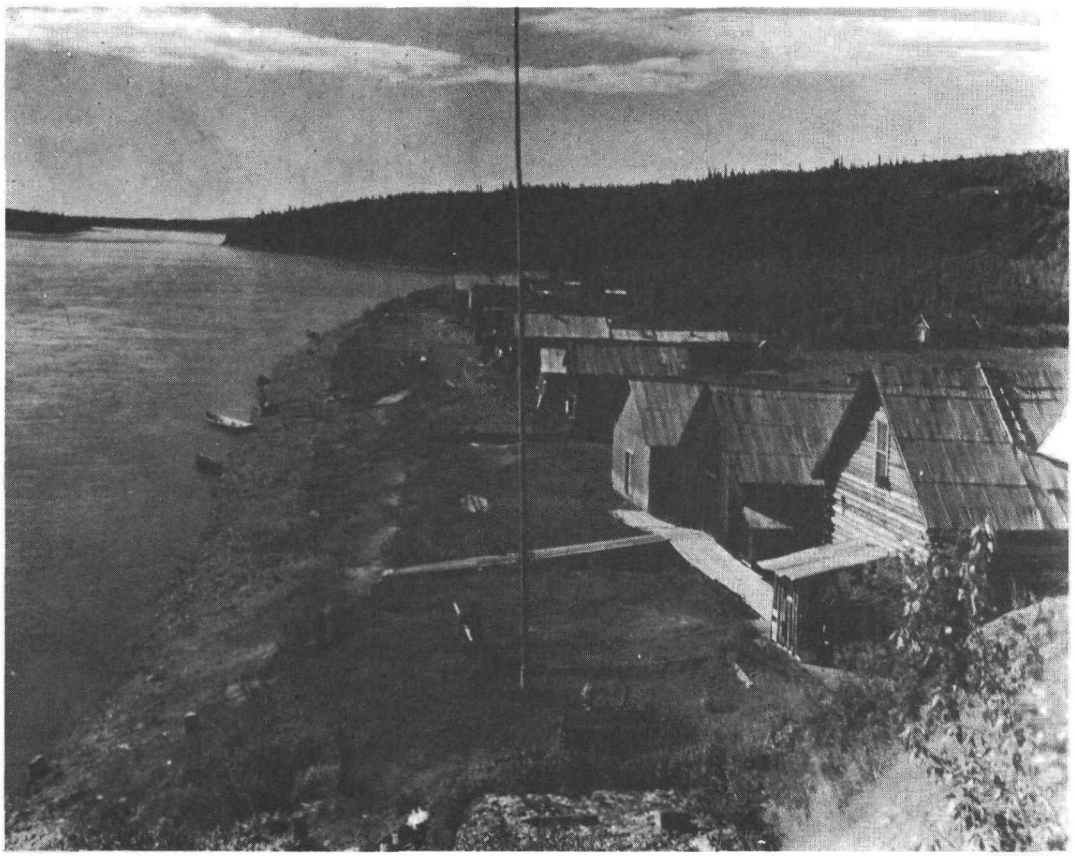
Village of Alatna on Koyukuk River. J.B. Mertie photo 1061 of March 1924. USGS Historical Photo Library, Denver.



The mission at Allakaket. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



The missionaries at Allakaket. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Bettles about 1930. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Wiseman from across the Middle Fork, Koyukuk. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



The old roadhouse at Wiseman, with the 1929 'Cat hauling logs. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Martin Slisco's Roadhouse, Wiseman. From the Alaska Sportsman Collection, Archives, University of Alaska, Fairbanks.



Kaypuk, Nakuk, and Mary English (Tishu Ulen's mother). Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



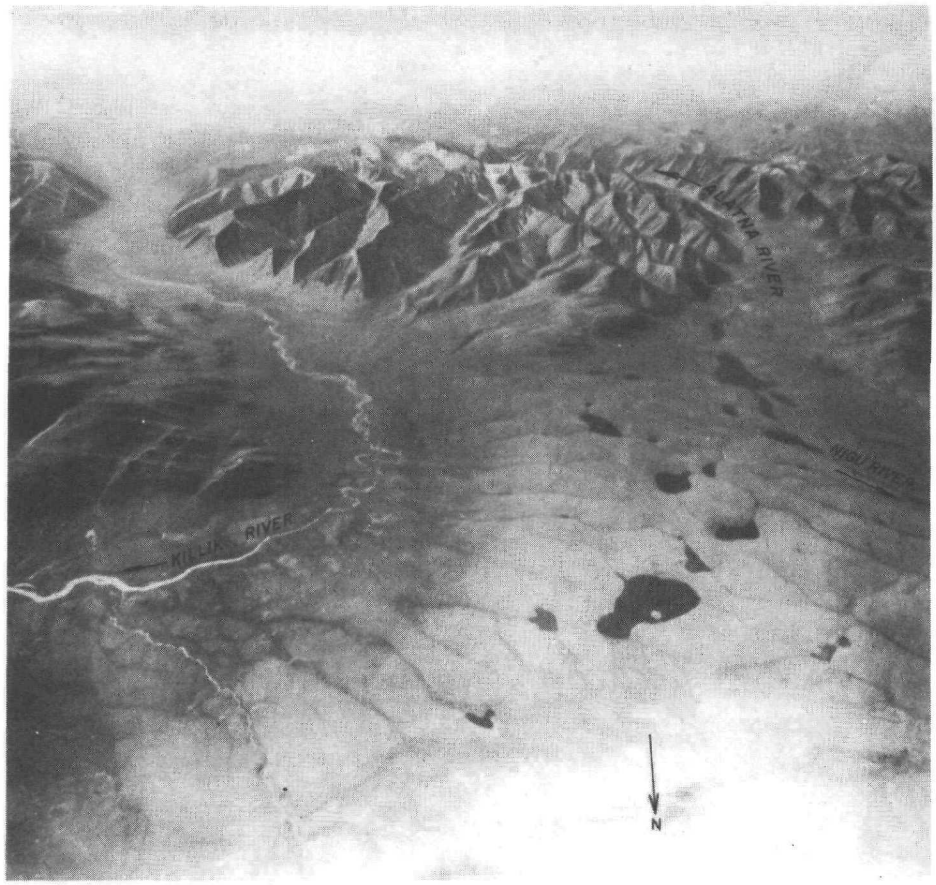
Smith-Mertie party with eight sleds on way to Killik River winter camp; note nested boats on last sledge. J.B. Mertie photo 1078 of March 1924. USGS Historical Photo Library, Denver.



Topographer R.K. Lynt returning from sheep hunt to USGS winter camp in Brooks Range, March 28, 1924. J.B. Mertie photo 1099, USGS Historical Photo Library, Denver.



Geologist J.B. Mertie taking the first bath of the spring at the USGS winter camp site in the Brooks Range, May 28, 1924. P.S. Smith photo 1596, USGS Historical Photo Library, Denver.



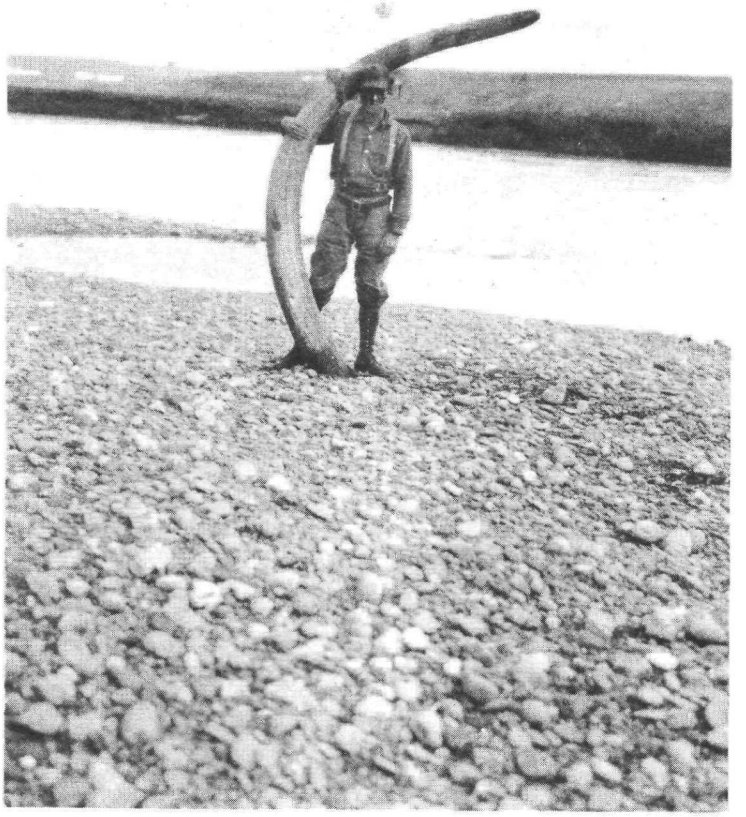
Aerial view of Killik River Pass through Brooks Range. The Smith-Mertie USGS party of 1924 winter-camped in the area shown and floated down the Killik in the spring. R.M. Chapman photo 368 of 1947. USGS Historical Photo Library, Denver.



Uncrating canoes in preparation for Colville River survey of Smith-Mertie party. J.B. Mertie photo 1129 of May 1924. USGS Historical Photo Library, Denver.



Two Smith-Mertie party geologists in Peterboro Canoe on Colville River. J.B. Mertie photo 1185 of July 1924. USGS Historical Photo Library, Denver.



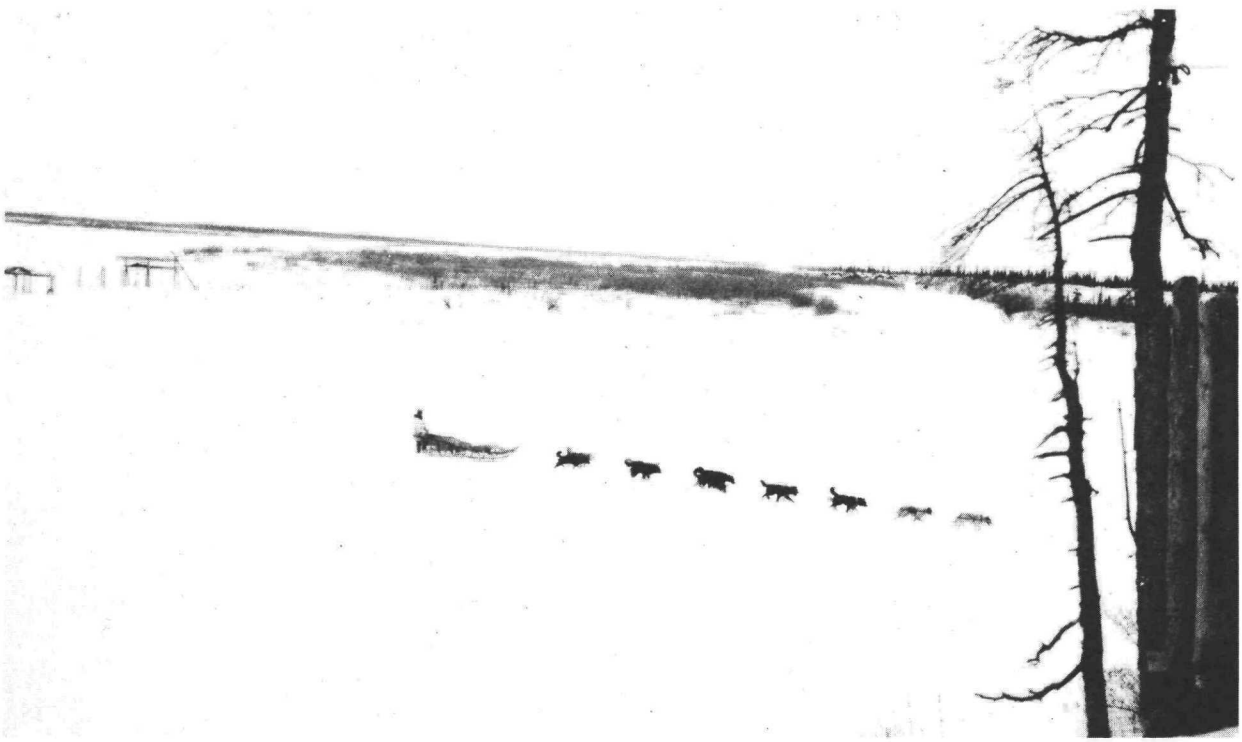
Geologist holds mammoth tusk on Colville River near junction of Etivuluk River. P.S. Smith photo 1681 of 1924. USGS Historical Photo Library, Denver.



The Foran party on the Utukok River: left to right, Belgard, Lonseth, Wix, Foran, and Hughes. W.T. Foran photo 41 of 1923. USGS Historical Photo Library, Denver.



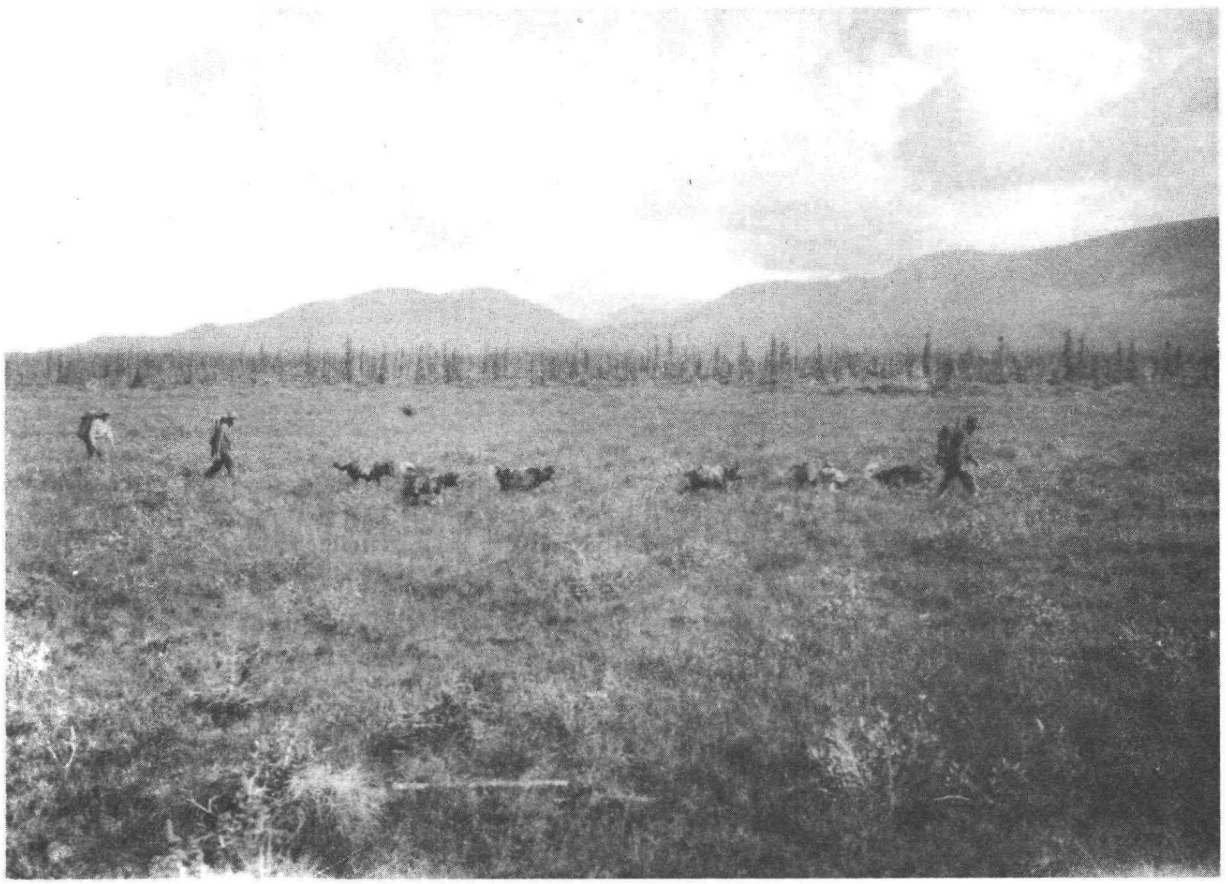
The Foran party dragging canoe up narrow Meridian Creek on the approaches to the Arctic Divide. W.T. Foran photo 59 of 1924. USGS Historical Photo Library, Denver.



Eskimo dog-team and sled near Noatak Village. W.R. Smith photo 202 of 1925. USGS Historical Photo Library, Denver.



Natives of Noatak Village on Noatak River. W.R. Smith photo 199 of 1925.
USGS Historical Photo Library, Denver.



USGS party back-packing and dog-packing in Arctic Alaska. J.B. Mertie photo 1401 of 1926. USGS Historical Photo Library, Denver.



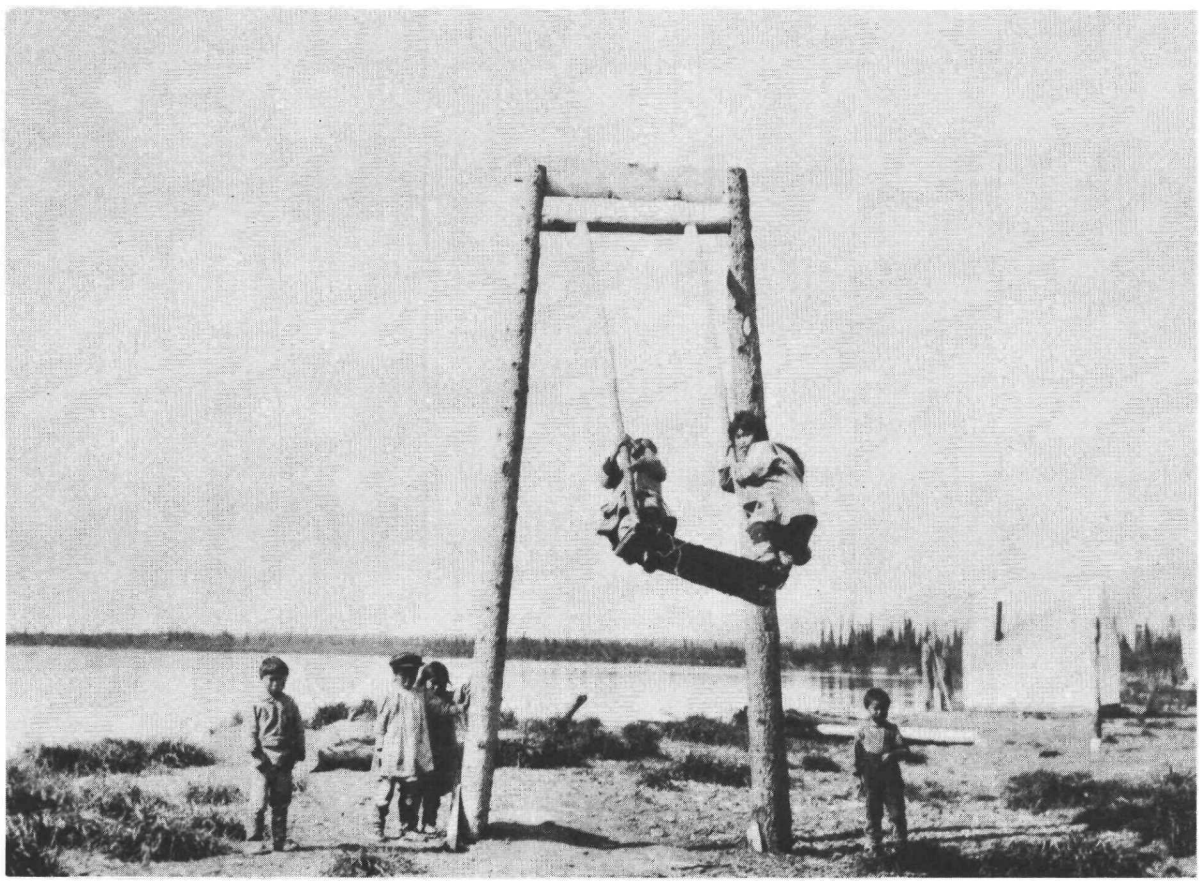
Geologist and horse mosquito-proofed in northern Alaska. J.B. Mertie photo 1575 of 1930. USGS Historical Photo Library, Denver.



A moment of rest while hauling canoe over arctic portage. W.R. Smith photo 278 of 1925. USGS Historical Photo Library, Denver.

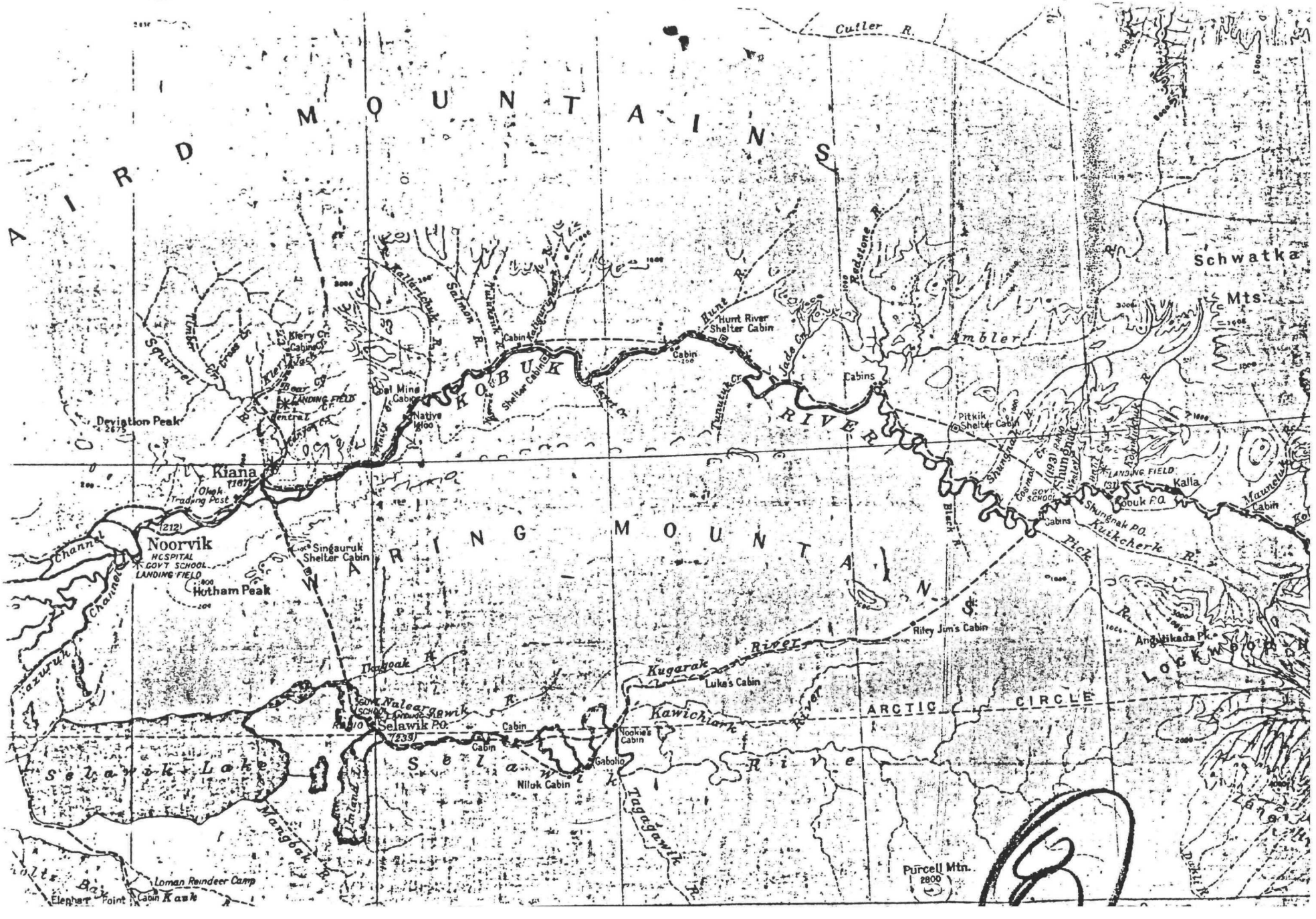


Identified as the Detroit Mining Company site on Hammond River by Harry Leonard. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Eskimo children at the mission swing, Shungnak on the Kobuk River, 1917.
H.M. Eakin photo, USGS Historical Photo Library, Denver.

This reduced segment of the Alaska Road Commission's Kobuk District map of 1923 shows the development of transportation and government activities in that district, including a landing field on Dahl Creek to serve the Cosmos Hills miners, post offices at Kobuk and Shungnak villages, and a government school and a wireless station at Shungnak.
RG 126, Map 20, National Archives.



AIRD MOUNTAINS
WARING MOUNTAINS
Cutler R.
Schwatka Mts.
Ambler
Redstone R.
Hunt R.
Hunt River Shelter Cabin
Cabin
Jade Cr.
Cabins
Pitkik Shelter Cabin
KOBUK RIVER
Shelter Cabin
Salmon R.
Kallarichuk R.
Coal Mine Cabin
Native Igloo
Klery Cr. Cabins
Squirrel
Deviation Peak
Kiana
Okok Trading Post
Noorvik
HOSPITAL
GOVT SCHOOL
LANDING FIELD
Hotham Peak
Channel
Singauruk Shelter Cabin
Shungnak
Kalla
Kobuk P.O.
Shungnak P.O.
Kuikcherk R.
Pick R.
Black R.
Riley Jim's Cabin
Kugarak River
Luka's Cabin
Kawichiark River
ARCTIC CIRCLE
Lockwood
Angutikada Pk.
Ikagoak R.
Naleargawik R.
Selawik P.O.
Cabin
Nookie's Cabin
Gabolio
Niluk Cabin
Selawik Lake
Selawik River
Tagagawik R.
Mangoak R.
Loman Reindeer Camp
Elephant Point
Purcell Mtn.
2800

traveling steadily along, a great mass of dark-brown figures; bulls, cows, calves, yearlings; every combination of coloring, all bathed in the bright golden light of this arctic night. The quiet, unmoving landscape I had scanned so carefully from the ridge before dinner had come alive--alive in a way I am not competent to describe. The rightful owners had returned. Their thousands of hoofs, churning through the gravel and water of the creeks and the river, had been the great mysterious "train" we had heard and puzzled over. . . . Collectively, they make a permeating, uncanny rumble, almost a roar, not to be likened to anything else I can think of. But the total effect of sound, movement, the sight of those thousands of animals, the clear golden western sky, the last sunlight on the mountain slope, gave one a feeling of being a privileged onlooker at a rare performance--a performance in Nature's own way, in the setting of countless ages, ages before man. . . .[56]

Shortly after the Muries began their trip to Wiseman, Otto Geist and Frank and Mary Smith followed their tracks to Wild River, en route to Frank's Wild Lake claims. The two men had worked together on Sam Dubin's Teddy H. that summer, but freeze-up put them on the beach. Otto had no hope of working for Dubin as a store clerk that winter. The trader had been caught with a large inventory of furs when prices tumbled the previous spring; low water in the Koyukuk had doubled his freight costs. His business was limping and he could afford no extra help.

Otto wanted to stay longer in the north country, but not loafing through the winter and spending all his money in Bettles. He and another young German named John Summers decided to pool their cash with Frank Smith to grubstake a winter mining venture on Frank's Wild Lake claims. They would split the take three ways.[57]

After 33 days of extreme cold and hardship, making innumerable relay trips by freight sled over the river ice to haul their mining equipment and supplies, the party finally reached Wild Lake and the site of Smith's tiny cabin near the mouth of Spring Creek. Immediately they started building another cabin so the four people and their supplies could fit indoors; Frank and Mary tent camped in minus 50 and 60 degree temperatures until it was done. That job finished, the men began hauling clay and rocks out of Frank's 90-foot shaft on nearby Lake Creek, accumulating their

dump for spring sluicing. Smith and Summers dug in the hole; Otto manned the steam winch to pull up the bucket. On Sundays Otto cut wood on surrounding hillsides and hauled it to the cabins and the shaft for use as heating and thawing fuel. He also had to haul snow, then melt it to replenish the water in their little steam boiler. They used a combination of wood fires and steam thawing in the drift.

> Chop wood, build fires, melt snow and ice, operate the winch and empty the bucket on the dump--that was Otto's winter routine, day after day, and the hours spent working in the cold and dark were long ones. But there always was the happy thought that when spring came they would run the material through the sluice and leave the Wild Lake country as rich men. . . .[58]

As winter progressed and their frozen meat and fish gave out, humans and dogs became desperate. Mary Smith set out miles of snare lines and caught hundreds of arctic hare--their frozen carcasses had to be hauled in by freight sled, another of Otto's Sunday jobs. After months of fried, stewed, broiled, baked, chopped, and grilled rabbits--a total of more than 2,500 of them--even Mary's cooking variations could not stave off monotony and nausea. Since rabbits lack fat, and a diet of meat alone means progressive lassitude, sickness, and starvation, Mary added

remnant bacon grease, then dog tallow to the rabbit dishes. They made it, but they felt like rabbits themselves before spring brought the first fresh bird meat.[59]

Finally came breakup, and sluicing began. After many days of hard labor they cleaned up the sluice, picked and sifted the concentrate, and came out with a grand total of $300 in gold--only $100 apiece. Otto had put his entire $1,600 summer's pay into the partnership. He gave up mining at that moment.

After a wild ride down the ice-and-debris choked Wild River in a whipsawed boat, Otto worked another season as engineer in Teddy H., then went on to become one of Alaska's leading archeologists and naturalists, finally dying in 1963 on a visit to his ancestral home in Bavaria.[60]

The paltry result of Otto's venture was not unusual. Creeks in the Wild River section--as in other drainages of the upper Koyukuk--contain many sites of similar busts. Upper reaches of the Wild Lake creeks, particularly Spring and Surprise (earlier called Summit), illustrate the primitive mining techniques of men remote from heavy equipment. Remains of automatic boomer dams and long walls of piled rock begin to hint at the incredible hand-labor required to remove overburden and get to pay gravel and bedrock in these high creeks and gullies. In 1937

Irving Reed visited and compiled the history of mining on these creeks draining Mathews Dome. Typical was Austin Duffy's venture on upper Summit or Surprise Creek, whose gradient put him a half mile above the lake at a point only 1 1/4 miles back from it:

> . . . in early days [he] put in a dam and built a cabin. He piled out rocks and boomed in the creek bed 6 or 7 feet deep for 120 feet. It is said that he had to quit work on account of lack of supplies and that bedrock was not reached in his cut.[61]

Pockets of gold did exist, and a few ventures paid well. But time after time a season's work on dams, rockpiles, and shafts produced $93, $45, or $10.[62] Just climbing up to these sites is a pretty good workout, not to speak of hauling supplies and working the ground month after month. Contemplation of the physical results of that work, including hundreds of feet of rock walls reminiscent of Inca ruins, stretches one's definition of faith and hope as practiced by gold miners.

In the larger view, the Alaska of the 1920s was "on the skids" and "going backward." Ernest Guening called the period "The Twilit Twenties." He summarized Alaska's problems with a quotation from Isaiah Bowman: "Civilization needs continuity of effort in place." Such was not the condition in most of the territory. The

exodus of population caused by exhaustion of easy placers and the high wages of World War I industries was not followed by a new wave of immigrants after the war. Rather, the lusty and expansive economy in the States during the 1920s kept people there. They were not prodded by hardship to seek fulfillment of desperate dreams in the distant territory.

Alaska's dwindling population and fading economy, including a precipitate drop in mining, broke continuity and set remote sections adrift, particularly those in the Interior. Except for completion of the Alaska Railroad from Seward to Fairbanks, federal programs and initiatives atrophied. Alaska Road Commission appropriations plummeted, and what limited funds did come through had to be used mainly for maintenance. This meant few new ARC roads and trails even in the economically active regions. The upper country remained isolated by lack of any but winter-trail overland connections to the outside world. An internal road-and-trail system completed in the Twenties connected Bettles to Wiseman by winter sled road, and Wiseman to the Nolan and Hammond diggings by wagon road. Beginning in the mid-Twenties a significant part of territorial (and local) transportation funding supported construction of airfields under ARC supervision. This effort responded to Alaskans' instant and enthusiastic adoption of the airplane as a means to jump over roadless expanses. In 1926 the citizens of Wiseman contributed $1,613.25

in money and labor for construction of their airfield. Others would be located at Shungnak on the upper Kobuk, at Bettles, and at the Bettles River and Chandalar mining camps.[63]

The upper country's rudimentary transportation and communication system, completed by about 1930, would remain essentially unaltered until after World War II. It comprised small steamboats, barges, and scows on the rivers; isolated, internal road-and-trail systems, with tenuous winter trails marked by occasional shelter cabins extending to the Yukon River and to Kotzebue Sound; and scattered wireless stations and airfields. The winter-trail extensions to the periphery became marginal as the airplane became more prevalent.

Another modification occurred in the Wiseman area when in 1929 Sam Dubin bought a Caterpillar tractor and brought it to Wiseman. Once the mysteries of the machine were solved (after a winter of breakdowns), the tractor wreaked a revolution in local transportation. Hauling freight on sledges from Bettles to Wiseman and the camps, bringing in wood, and performing all manner of hired jobs for miners, this one machine would in time put Jack White's horse scows out of business and generally replace dogs and manpower for the heavy work of the community. According to Walter Johnson, who later drove the machine for the ARC and became co-owner of the store in Wiseman, this tractor became "an amazing

source of power" in a place where nothing like it had existed before. The Cat still stands behind Harry Leonard's cabin in Wiseman, a bit rusty, but salvagable. Even today, there are those among the old timers who plot to "rev up" the old Cat and put it back to work.

The Cat made life easier in the way of labor. But in an economy as marginal as the upper Koyukuk's its economic impact was profound. Teamsters, dog-sled freighters, wood haulers, and mine laborers lost their jobs to the machine. And most of the money grossed by the Cat went outside for imported fuel. So the net result was fewer jobs and less money in the community.[64]

Other examples show that machines fitted uneasily into Alaska's frontier conditions and economy. Airplanes put dog-sled mail carriers out of business; and, in contrast to the all-weather mushers, pilots waited when the weather closed down. As the mail carriers faded from the scene, ARC-maintained mail routes and shelter cabins became less essential, and less maintained. Trails deteriorated, inhibiting trail travel. Roadhouses that served travelers went out of business. Many people in remote camps were effectively stranded by the neglected trails and the cost of air travel.

Both airplanes and the railroad worked to destroy river commerce and the culture that had grown up around it. Steamboat freighting and riverway trading began to decay. Woodcutters and the scores of camps and roadhouses along the steamboat routes withered on the vine. The sense of community that linked the riverine camps and villages ended when people flew directly to Fairbanks, missing the leisurely visits with friends and trading partners along the steamboat routes. People paid for progress as they embraced it.[65]

The amazing effects of the Alaska Railroad on Yukon steamboating stemmed in part from a natural phenomenon. Because of the breakup sequence on the Yukon, the lower river stays closed a month longer in the spring than the middle and upper reaches. For this reason, as soon as the railroad was completed to Nenana on the Tanana River, the Koyukuk trading firm of English, Feger, and Dubin shifted from the St. Michael upriver supply route to the Tanana-Yukon downriver route. Others in the Interior, short-seasoned by its fleeting summers, followed this example. In a flash, Nenana on the Tanana became the freighting entrepot for the Interior. Now the mouth of the Yukon could open when it liked. St. Michael and rows of pulled out steamboats were soon rotting on the beach.[66]

The Great Depression brought a flurry of New Deal programs to

Alaska, but they hardly touched the upper country. It was out of sight and out of mind even in Alaska. Moreover, depression had been its condition long before 1929, so nothing much had changed.

By Presidential Order in 1933, the price of gold rose from $20.67 to $35 an ounce. This stimulus aided the big mining companies with major dredge operations in the Nome and Fairbanks districts, but could not propel out of the doldrums the marginal mines of the upper country. Its rich paydirt apparently exhausted, its logistics prohibitive for any outside-capital development that might discover new riches, the region continued through the Thirties with the small-scale mining and subsistence pattern set during World War I. World War II produced another exodus for war-industry wages, and gold mining was declared unessential to the war effort, killing what little remained of the mining economy. Nor did the postwar years bring recovery. By 1952, for example, only 21 people lived in Wiseman and the surrounding area.[67]

A general pattern of low-level stability prevailed on the upper Kobuk during the inter-war period. Small-scale mining continued in the Cosmos Hills. Commercial, governmental, and missionary activity serving the upper-river Native villages--freighting, trading, health services, and schools--produced a more diversified economy and more stable communities than on the Koyukuk. With

improved health services after World War I, a steadily increasing Native population allowed miner-entrepreneurs like the Ferguson family to gradually expand their transportation and trading businesses in the Kobuk-Shungnak area.

A dearth of wage jobs forced most Kobuk Eskimos to depend heavily on fur trapping for cash to buy coveted store goods. When fur prices crashed in the early Thirties buying of store goods declined. But fur trapping and trading, however paltry the profits, continued anyway, for furs were the sole source of cash for most Native families.

With the coming of hard times Native people reverted to greater dependence on traditional fishing and hunting, as observed by anthropologist J. Louis Giddings in 1940. Lack of caribou in the Kobuk Valley had earlier forced some Kobukmiut eastward to Koyukuk-Chandalar country. Those who stayed on in the Kobuk villages responded to the lack of big game by taking long hunting trips into the upper Noatak country--an unpopulated area during this period, because the Noatagmiut of the high mountains had gone downriver to Noatak village and most of the other Nunamiut had evacuated to the Arctic coast. Caribou and sheep met meat and clothing needs, and a sideline of wolf, wolverine, and fox trapping brought in a little cash.

The relative diversity of resources on the upper Kobuk and in easily adjacent drainages--minerals, timber, fish, wildlife, and fertile gardening soil--gave the Kobukmiut enough alternatives to weather hard times and make a reasonable living.[68]

The flexibility and mobility of the Kobuk people during this period exemplifies an ancient pattern. Survival over the centuries in a spare environment required a constant readiness to shift from one combination of resources to another, wherever those resources might be found. It took a huge geography in the Arctic to find new combinations when starving times hit the home territory. This need for access to alternatives is a living part of the Native heritage today, especially in those traditional villages where subsistence livelihood remains strong. It is a culturally ingrained form of insurance. After all, the modern world has its cycles, too, just like the caribou. Tomorrow may bring hard times. Then the people may have to range widely--over the mountains, down to Selawik, across the portage. Lines on maps do not change this reality. For this reason the people do not like lines on maps.

Two major episodes in the middle and late Twenties symbolized the geographic and economic realities of the upper country. In combination they marked the transition from dreams of Eldorado to the vague potential of a future based on oil. Paradoxically, the

old-style Argonauts brought new combinations of technology and capital to their quest for golden riches; the harbingers of black gold, which would spawn giant combinations of technology and capital, brought only dog teams and canoes--and the scientific tools in their heads.

The last spasm of the dying past began in 1926 when the Detroit Mining Company, a European and American financed firm under the field direction of English promoter William Royden and mining engineer L.S. Robe, tried to bring big-time mining to Hammond River. Royden and Robe were well known in Fairbanks mining circles. They had money, 75 bench claims, and a dream. They would surmount the lack of mining water with a 60-mile long pump-and-pipeline system tapping the North Fork drainage. They built special boats and scows to haul heavy machinery, hundreds of tons of it, to Hammond River. They flew in 35 men from Fairbanks and built a town on the Hammond. They mobilized political support for extending the railroad 400 miles to the Wiseman district. Once on track with the placer mining, the company would extend its operations to copper, coal, and even the rumored oil of the Colville headwaters. Newspapers proclaimed revival of the Koyukuk district. The old days of individual miners grubbing out gold by hand would soon be over. At last, with capital at hand and large-scale production imminent, the upper country would get its

long-sought road and break the transportation barrier that had held it back.

But then reality set in. Low water on the Koyukuk grounded the new tunnel-drive boats and the scows. Cabling them over the bars ripped out their bottoms. This plus the short season frustrated hauling of machinery, pieces of which--giant boilers, pumps, and winches--ended up scattered along the river from Bettles to the mining sites. The airplane, useful for prospecting, could not help in hauling the tonnage needed for this scale of development work. Neither road nor railroad penetrated the far north. Season after season, the Koyukuk persisted with its low-water perversities. Attempts at winter freighting broke down on terrain and costs. Mining creeks ran dry, foiling large-scale hydraulicking operations. The pipeline remained a pipe dream. Detroit Mining brought out a couple of good pokes from its Nolan Creek claims, but only enough to keep the promotion alive. Newspaper accounts shifted from the "bright future" promised by outside capital to the old storyline from the Koyukuk: Christenson and Ulen sluiced a dump on California Creek; the Stanich brothers did well this year on Porcupine Creek, as did Workman and Wanamaker on Smith Creek; Billy Burke has found pay on a bar of Bettles River. The district is struggling to exist; population decreasing; freight costs going up as volume goes down. Without some transportation relief this fine old camp will die.

After four seasons of frustration, Detroit Mining folded, leaving a scatter of machines, boats, scows, and buildings rotting on the banks of the Koyukuk. The river continued to flow as always--deep one day, shallow the next. And the old timers continued to mine as they always had--before the promise of outside capital broke into their world, tarnished, and went away.[69]

Partly as a result of the Detroit Mining venture, which stimulated air transport in the Far North, a new breed of airborne prospectors began searching the mountains. One of them, Fred Moller, became known as the Flying Prospector. He asserted that the virgin areas of the Brooks Range and the Arctic Slope held "a dozen Eldorados" until now hidden by inaccessibility.[70] In truth, most mineralized areas had been thoroughly searched already by the old breed of foot sloggers, but much of that early prospecting history had been lost. For new generations of the eternally hopeful, the speed and convenience of the airplane, paired with the great extent of vacant country, encouraged the illusion of untracked valleys, virgin territory. That illusion persists today.

A Fairbanks company, Arctic Prospecting and Development, modified a Swallow aircraft with a light-weight Fairchild engine using a cam instead of connecting rods, allowing extra long-distance

flights over the vast country.[71] Another prospector designed a light-weight testing drill so that it could be flown to distant prospects.[72]

Noel Wien flew four members of the Arctic Prospecting outfit to Walker Lake in spring 1928, landing on the ice. He relayed half a ton of supplies in two flights from Alatna, logging 10 1/2 hours of flight time for the 645 miles flown. He noted turbulence in the Endicott Mountains and warned that the lake basin should be approached from the south.[73]

These rapid adaptations of a new technology to an old quest would be perfected and transferred to the search for North Slope oil during World War II and after.

Meanwhile the USGS began the last and most ambitious of its old-style explorations in northern Alaska. During his 1901 traverse to the Arctic Ocean, geologist Frank Schrader had found the North Slope to be a great sedimentary basin. Coal deposits and oil seeps and pools had been reported by many others. In 1914, Ernest de Koven Leffingwell, a private scientist who volunteered his findings to the USGS, obtained a sample of petroleum residue from the Smith Bay-Cape Simpson area. Tests of this and other samples from various North Slope locations indicated that the asphalt-based residues came from rocks hard

enough to show well defined structures. As a result of these clues, it seemed likely that deep reservoirs of oil might be found. In February 1923 President Warren G. Harding issued an Executive Order establishing the Naval Petroleum Reserve No. 4 in arctic Alaska. The Navy Department called upon the USGS to provide geographic and geologic information about the new reserve that would allow its proper administration. Immediately, Alfred Hulse Brooks, Director of the Survey, wrote a paper summarizing the current state of knowledge about the tract, and pointing the way for field studies and laboratory research. His charge to the leaders of the multiyear exploration was to provide a regional-framework geology based on extant data and original information gathered in the field. Because so much of the immense tract was unknown, basic topographical and geographical studies were an essential part of the project.[74]

All of the experience gained in three decades of Survey work in Alaska came to focus during this great exploration from 1923 through 1926. Of the many expeditions that ranged along the Arctic Coast and followed the rivers of the Arctic Slope, the most important for this history was the one led through the Brooks Range passes to the upper Colville drainage by Philip S. Smith and his co-leader J.B. Mertie, Jr. A subsidiary expedition into the upper Noatak, headed by W.T. Foran and plagued by hardships, is of anecdotal interest.

In the Twenties, the laborious overland-and-overwintering expedition style was still the only way to conduct geological reconnaisance and mapping in the Brooks Range and upper Colville area. Not until development of World War II-era fixed-wing aricraft logistics and later arrival of the helicopter, the "automatic mountain climber" of today's geologist, could modern transportation match the effectiveness of foot-slogging geology. The man on the ground could zig-zag and scramble through all kinds of surface terrain, tracing the lines of structure that would point to potential oil reservoirs deep below the surface. Thus the irony of the Smith-Mertie expedition, using pioneer methods to wedge open a modern industrial history amazing in its technological sophistication, must be enjoyed with qualification.[75]

The Smith-Mertie expedition winter-camped in 1924 at timberline on an upper Alatna tributary, the Unakserak River. During February, members of the party had transported winter and summer supplies and four crated Peterborough freight canoes by sleds and dog teams from Tanana. This wintering strategy gave them a jump on the short summer season; a summer-only traverse to the remote Colville headwaters would have left little time for exploration. In April the party moved over the Arctic Divide to the Killik River, setting up camp at the mouth of April Creek. From both camps,

geologists and topographers surveyed several thousand square miles of hitherto unmapped and undescribed country.

At breakup in late May, the party broke out the canoes and loaded them for travel. Smith and topographer R.K. Lynt quickly floated down the Killik to the Colville, then turned westward upstream and investigated a large part of the upper Colville basin, including about 20 miles of the Etivluk River. Later they turned eastward down the Colville, portaged into the Ikpikpuk drainage and floated north to the Arctic Ocean.

Meanwhile, Mertie and topographer Gerald FitzGerald slowly descended and surveyed the Killik, ascended some miles back into the range on the Okokmilaga River, mistakenly thought to lead to Chandler Lake, then descended the Colville to a point that gave access to a portage route near present Umiat. Both parties came together on the Ikpikpuk, then split again, with Mertie's group descending the Chipp River to the coast, whence they all proceeded to Barrow.[76]

The 1924-26 USGS exploration of the Naval Petroleum Reserve succeeded in providing ". . . a reasonably adequate but still very generalized picture of the major geologic features of the Reserve."[77] Both the geology and the geography of the reserve were mapped to reconnaissance scales. The geologists recognized

and described the faulted and overthrust structure of the Brooks Range. Though Smith and Mertie had very little stratigraphic information, the widespread occurrence of oil shales and indicators of favorable structural features led them to express conditioned optimism about retention of petroleum in pools at a depth within reach of drilling. Not until World War II would their recommendations begin to be carried out for further geologic field studies and drilling for stratigraphic and structural information. But they had alerted the Nation to a potential that would lead in 40 years to one of the more significant oil finds of all time, and an Alaska changed forever.[78]

The explorers had experienced the usual mix of hardship, adventure, boredom, and flashes of inspiration during their long journey. On April 1, Mertie stood at the 3,400-foot summit of Survey Pass, which divided the Alatna and Colville drainages: "It was a clear day and the view from the crest was stark and barren but beautiful."[79] Smith wrote that the Brooks Range ". . . is extremely attractive because of its sculpture, which has produced ragged mountain masses interrupted by steeply trenched or glacially opened-out valleys. . . .[80]

The seemingly endless period of waiting in winter camp for breakup produced the frictions of men crowded together in wet tents, storm-bound and frustrated: "Every little cough, sniffle or pape

rattle got on one's nerves. We thought spring would never come. I kept pondering the beauties of solitude." Every stomach pang, frequent given the dried foods, brought visions of appendicitis.[81] When the weather allowed, the men cleared the tents to do camp chores or go on mapping trips. They had to start shooting the dogs as the animals' utility and food supply diminished. They wanted to keep one strong, well-fed team so FitzGerald could keep on mapping. One evening they took 18 dogs out:

> Poor devils! It seemed a shame after they had worked so hard for 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![82]

They became obsessed with the need for something green, some sign of life. Finally it came, Smith caught the moment:

> Early in May the rigors of winter had largely disappeared. Much of the snow on the adjacent hills had melted. . . . Soon afterward birds that had wintered in more southern regions put in their appearance, and flocks of ducks and geese could be heard whirring northward over the camp. . . .[S]uddenly, May 19, a loud roar announced the

> breaking of the ice on one of the small streams in the neighborhood.[83]

The trip down the Killik nearly wrecked the expedition. Standing waves in the high-water rapids foundered canoes and soaked cargoes. Rocky shallows meant endless dragging, which ripped the heavy-laden cedar boats. Mosquitoes soon came in their multitudes, driving the men to distraction. Yet they continued mapping, studying the geology, and exploring tributaries. When opportunity came they hunted for food, trying to save their rations for what now appeared to be the interminable trek to Barrow, nearest resupply point.[84]

The mysteries of geology and the geologists' detective work of observation and deduction are caught in Mertie's field notes along "the big loops" zone of the Colville River:

> The chert-limestone series is here about 4 miles wide. At the 4224 [elevation] hill, the chert and limestone are intimately mingled, sometimes interbanded in the seams, sometimes interbedded in thick beds. The limestone . . . is fine [and] for the most part silicious. Most of it is crystalline. There are some few beds of fine grained or dense black non-crystalline limestone. Much of the limestone, both crystalline and non-crystalline, has a

> strong organic odour. The limestone is highly fossiliferous. . . I wonder if this Lisburne limestone could have been the ultimate source of the oil in the younger formations near the coast.[85]

The sense of scientific dedication pervades the pages of Smith and Mertie's field notes. Mosquitoes, arduous portages, fatigue, and the thousand frustrations of Arctic Slope rivers--whose meanders coil back upon themselves everlastingly--were simply the price of discovery. Late in August the surveyers walked the last few miles of ice-bound beach to the trading station at Barrow.[86]

On August 5, the western party of the 1924 exploration, led by W.T. Foran, started southward from Wainwright on the northwest coast. After several days lost to river scouting and portaging, Foran's crew reached the Utukok River and finally attained its headward parts in late August. Thus, just as the Smith-Mertie party reached safety and succor at Barrow, Foran and his men stood looking at the north flank of the already snow-covered Brooks Range. Between them and the Noatak, as they would find to their dismay, lay some 60 miles of continuous portage over two major divides, one of them 4,000 feet above sea level.

Foran's trip diary conveys the dawning realization of their predicament:

August 22: Cold--Snowing. . . . Still carrying all equipment and two canoes.

August 23: Snow & Cloudy. . . . Small fork [of Utukok] won't float loaded canoes--packing half of equipment making light loads for canoes. Dragged canoes up river--both canoes leaking badly--will have to cache one soon and start back packing.

August 24: Bad weather--only made 2 miles progress. Back packing and dragging canoe slow process. Will have to move much faster or start back for Icy Cape. Can take no chances of early winter setting in.

August 25: Hot, Clear (No Mosquitoes). Held consultation of war. [F.W.] Belgard says he hired out as cook, not packhorse, [H.G.] Hughes declares himself boatman, and [H.] Lonseth rodman. Final arrangement is to cache about one ton of equipment & supplies and backpack rest of outfit. Men all satisfied. . . . have decided to cross mountains instead of hiking back to Arctic coast.

August 26: [O.L.] Wix [topographer] and I mushed to top of high E.W. ridge with gap to east. This fork of Utukok ends

> at gap. Wide valley with bottom only two or three hundred feet below top of ridge.
>
> The [valley] river is large and flows east. It will add several days on our estimate for crossing mountains. . . . Looks like about 20 or 25 extra miles of portaging with this valley to cross. Told rest of party the sad news but they are inspired by the good weather, mountain scenery and wanderlust and want to make the Noatak.

After several days of portaging, which put them out of reach of quick return to their cached food supply, they found themselves stranded in a maze of mountains. A scout southward by Lonseth discovered no pass for at least 20 miles ahead. On September 1, "Cold--Cloudy--Snow," Foran noted that it was late to be in these parts with only a summer outfit. "Grub situation getting serious" and no caribou in the neighborhood. Members of the party feared that they were doomed to starve or freeze to death. The men ripped their individual sleeping bags, making double bags so they could sleep together for warmth. Belgard had nothing to cook; the men could not get their minds off food. Belgard "murdered" some ptarmigan, but they added more flavor than substance to the starvation diet of men depleting their bodies with hard labor in deepening cold.

Finally, on September 4, Foran set up camp at a high lake and sent Belgard and Hughes back to the cache for emergency food. While they were gone, Foran and Wix scouted south through the mountains, ascending one ridge where Wix, exhausted, turned back. Foran continued south hour after hour, finally climbing a lofty peak on the crest of a high group of mountains. Looking into a deep valley, he spotted their objective, the Nimiuktuk River, a tributary of the Noatak. After hours of lost wandering in ice fog he finally got back to camp at 10 o'clock the next morning.

Still without food except for biscuits, the three men in camp alternated rest with the relay of supplies to the next ridge. Finally Belgard and Hughes returned from the cache with 60 pounds of food. They were tired and miserable from toil, bad weather, and no sleep.

September 8 they broke camp and began packing gear and supplies over the first mountain wall. At supper, high above the scrub willows of the creek beds, they rustled up plant stems to barely cook their food. It got so cold that their water froze as they tried to heat it. The men crawled into their double bags with all clothes on and shivered through the night. Next morning they broke up tent poles, tripod legs, and a canoe paddle to cook 3 days' rations.

Finally they scaled the last divide into the Nimiuktuk valley. After many relay trips across the pass, they set up camp a few miles downstream at a good wood supply of cottonwoods and willows. For one day the contrast in weather on the south side was "Like dropping out of northern Alaska into California." They celebrated with a big fire.

But their troubles were far from over. The creeks were freezing and low water plagued them almost to the Noatak. Dragging, packing--it was just one more leg of the endless portage. As the cold closed in the food disappeared, except for some dried soup and a few bacon rinds.

On September 16 the weakened men were able to climb into the canoe and float the last few miles to the Noatak. When a late-season seagull flew close to the boat, Foran shaking with fatigue and anxiety, aimed, held, aimed again and shot it. Wix, disappointed in his tiny share, accused Belgard of having wolfed down the seagull gizzard during the cooking. Talk of retribution with lead forced Foran to sequester the firearms.

After some close calls in the Noatak Canyon rapids and lower riffles--the worn canoe was gunnel down and heavy with water--they reached an Eskimo camp and gorged on the proffered raw and cooked

caribou and biscuits. Coffee with sugar, the first in weeks, topped off the feast.

When they finally arrived at the Quaker mission at Noatak village, they ate steadily for 11 hours, then collapsed sick and groggy from surfeit. Despite the abundance of food, Wix and Belgard still fought over the gizzard; Belgard spread the conflict by accusing Lonseth of the crime.

On September 21, sick with stomach problems and edema from overeating, they struggled through the last miles of the lower Noatak against upriver wind and waves. The weather broke just long enough for them to get their sodden canoe across Hotham Inlet to Kotzebue. There the gizzard row ended when trader Paul Davidovitz told the still muttering men that meat-eating seagulls don't have gizzards.

All ended well after a stormy passage by tugboat to Nome, where they boarded the ocean steamer Victoria for Seattle. Foran signed off: "Exciting trip from start to finish." Philip S. Smith praised Foran's leadership and the indomitable pluck of the entire party.[87]

*****

The Twenties drew to a close quietly in the upper country. Its bonanzas, such as they had been, were over. Improvements in mining technology and capitalization in other parts of Alaska had been unable to penetrate this remote region.[88] In the larger perspective, its social and economic development had plateaued earlier and in the Twenties became eroded and intrenched, rather like the country itself. Those people who chose to remain perservered in their own ways at their own pace, largely untouched by the actions of national or territorial government, insulated from progressive trends to the south. The future was put on hold.

But events of local interest kept happening. Mercifully, the people did not accept the notion that their world was moribund. In time, some of them believed, they would get a road; a new strike would revive mining; a new round of excitement would ensue. Others, deprived of economic opportunities of modern sort, fell back on traditional ways, adaptively reviving the seasonal rounds of hunting and gathering. In a melded sort of way they all adapted and adjusted to a lifeway low on cash and modern institutions, substantial in dependence on each other and the wild resources of the country.

Into this arrested region came a pilgrim. He came as a forester to study the advance of spruce trees toward the Arctic Divide. Quickly that scientific inquiry became an excuse for an affair of

the heart, the human and geographical exploration of the central Brooks Range. In the mix of few people and large country, the integration of environment and attitude, Robert Marshall divined a set of values that would enlarge the meaning of wilderness.

He came from a man-built world that he and a growing number of others viewed as a dynamo accelerating toward destruction, dragging a diminished humanity along with it. In the landscapes and people of the Brooks Range, in the fit between them, he found an alternative to the careening madness of the artificial world outside. For him and for his followers, wilderness became a sanctuary where people could revive their connections to the real world that had mothered them. In the deepest sense, his idea of wilderness did not stand opposed to that of its homeland people. Indeed, he challenged the perspective of Western culture, which had long viewed wilderness as a desert to be overcome. He infused wilderness with human values, both inspirational and pragmatic. In the lives of the natives of the Brooks Range--whether of ancient Asian or recent European descent--he found a remedy for troubled modern society. The Natives had never really left home; the whites had come back to it. In this view wilderness <u>means</u> homeland.

Marshall's concept has evolved to become perhaps excessively ethereal--doubtless a protective reaction to ever increasing human

population and its remorseless effect of ever diminishing wilderness. But in the robust days of its youth, Marshall's idea of wilderness could not be separated from the people who lived in it and were shaped by it. He simply and profoundly wanted the essence of their experience to be generally available for others who needed it.

Given the trend lines of the modern world, he and others like the Muries knew that everyone could not, would not live in the wilderness. They sought preservation of wilderness landscapes so there would be some places left where the connection between people and the wildlands that had first nourished them could always occur. This was far from an exclusivist, elitist mission. Wilderness was not to be preserved from people but for them.

Chapter 5 Notes

1. Marshall, Arctic Village, 42-44; Marshall's table from pp.37-38 shows the periods of boom and decline in the Koyukuk camp:

Year	Permanent White Population	Gold Production in Thousand Dollars	Prostitutes
1898	200	...	0
1899	120	...	0
1900	270	107	2
1901	320	173	6
1902	350	200	10
1903	300	301	7
1904	210	200	0
1905	220	165	1
1906	160	165	0
1907	120	100	0
1908	240	220	6
1909	230	420	5
1910	190	160	8
1911	160	130	5
1912	230	216	9
1913	250	368	8
1914	270	260	13
1915	300	290	14
1916	250	320	12
1917	200	250	7
1918	150	150	2
1919	130	110	2
1920	119	90	0
1921	107	78	0
1922	101	132	0
1923	97	37	0
1924	92	54	0
1925	88	50	0
1926	93	68	0
1927	98	78	0
1928	90	46	0
1929	83	32	0
1930	77	31	0
1931	71	27	0
Total	...	5,028	...

2. Ibid., 47

3. Ibid., 131; Susan M. Will and Pamela K. Hotch, The Wiseman

Historical District, A Report on Cultural Resources (typescript), Bureau of Land Managmeent, Fairbanks, 1982, 17, 20; Bureau of Outdoor Recreation, The Iditarod Trail and Other Gold Rush Trails (Anchorage, 1977), 142, 145.

4. Ltrs and Petition for Wiseman Wireless Station, Alaska State Archives, Juneau; Marshall, Arctic Village, 135.

5. Ibid., 38.

6. Irving McK. Reed, "Frank Yasuda," 44.

7. A.W. Greely, Handbook of Alaska, Its Resources, Products, and Attractions in 1924 (originally published in 1925 and reissued by Kennikat Press, Port Washington, N.Y., 1970), 256-59.

8. Clark to Webster, Sept. 7, 1917; Webster to Governor, Jan. 1, 1918, in Wiseman School District ltr file, Alaska State Archives, Juneau.

9. Ibid.

10. Ibid., ltrs of 5/31/18 and 8/3/19.

11. Alaska Weekly, November 4, 1927, 5.

12. Wiseman School District ltr file, ltr of 7/5/20.

13. Ibid., ltr of 10/21/21.

14. Ibid., ltr of 7/31/22.

15. Ibid., ltr of 1/16/23.

16. Ibid., ltr of 9/3/24.

17. Ibid., ltr of 5/15/28.

18. Ibid., telegram of 5/17/27.

19. Ibid., ltrs of 2/10/28 and 4/2/28.

20. Ibid., ltr of 4/5/28.

21. Ibid., ltr of 2/14/28.

22. Ibid., corres. of 4/5/28 to 10/17/28.

23. Ibid., ltr of 6/11/29.

24. This essay on upper country society and acculturation is based partly on personal observation, personal communications with Dr. William Schneider and David Libbey, interviews with old timers, and intuition; and partly on synthsis of key source material cited below. Marshall's discussions of Native-white accommodations and attitudes in Arctic Village is important here. See also Richard K. Nelson, "Relationships Between Eskimo and Athapascan Cultures in Alaska: An Ethnographic Perspective," Arctic Anthropology, XI-Suppl., 1974, 50-52; Don Charles Foote, "Human Geographical Studies in Northwestern Arctic Alaska, The Upper Kobuk River Project, 1965," (typescript report, Montreal, Canada, June 1966); Arthur O. Roberts, Tomorrow is Growing Old, Stories of the Quakers in Alaska (The Barclay Press, Newberg, Oregon, 1978), 287-88; Grant Spearman, Anaktuvuk Pass; William Schneider, Beaver, Alaska: The Story of a Multi-Ethnic Community (doctoral dissertation, Bryn Mawr College, 1976); Hudson Stuck, A Winter Circuit of Our Arctic Coast (Charles Scribner's Sons, New York, 1920), 38.

25. Susan M. Will, Coldfoot. I am indebted to Ms. Will's outline of these events and her original probing of the sources used below.

26. Curt Madison and Yvonne Yarber, Oscar Nictune, Sr., Alatna, a Biography (Hancock House Publishers, Ltd., North Vancouver, B.C., 1980), 17.

27. Turak Newman (with commentary by William Schneider), One Man's Trail: An Old Timer Tells the Story of His Life (Adult Literacy Library, Anchorage Community College, 1978), 9.

28. Ibid., 10-11.

29. Ibid., 11-12.

30. Curt Madison and Yvonne Yarber, Frank Tobuk, Evansville, A Biography (Hancock House Publishers, Ltd., North Vancouver, B.C., 1980), Chap. 1; quotation on 24.

31. Tishu Ulen, as told to Shirley English, "Tishu's World," in the "Up the Koyukuk" issue of Alaska Geographic, 10(4), 1983, 98. The above vignettes of Tishu's life were derived in part from the Alaska Geographic source, but mainly from discussions with Tishu in November 1983 and interviews of 10/24/84 and 2/1/85. Mark Standley and Bonnie Friedman arranged the Wiseman trip and assured Tishu's comfort throughout.

32. Daily Alaskan (Skagway), 8/21/08, 1; Seward Weekly Gateway, 10/1/10, 2.

33. Pathfinder, Jan. 1924, 14.

34. Pathfinder, Jan. 1925, 16.

35. John P. Clum, "Nellie Cashman," Arizona Historical Review, v. 3, Jan. 1931, 26-28.

36. Odie B. Faulk, Tombstone, Myth and Reality (Oxford University Press, New York, 1972), 199.

37. Pathfinder, Jan. 1925, 16.

38. Olaus J. Murie, Journeys to the Far North (The Wilderness Society and American West Publishing Company, Palo Alto, California, 1973), 104, 128; _____, "Alaska-Yukon Caribou," North American Fauna, No. 54, U.S. Dept. of Agriculture, Bureau of Biological Survey, Washington, D.C., June 1935, 4-5; Adolph Murie, A Naturalist in Alaska (The Devin-Adair Co., New York, 1961), 3-4; Richard O. Stern, Eskimos, Reindeer and Land (Agricultural Experiment Station, Bull, 59, University of Alaska, Fairbanks, 1980), 24-31; Foote, The Upper Kobuk River Project, 33.

39. Adolph Murie, A Naturalist, 4.

40. Ibid., 6-7.

41. Olaus Murie, Alaska-Yukon Caribou, 50-51, 63-69.

42. Olaus Murie, Journeys, 131-32.

43. Olaus Murie Field Notebook, 1922-23, Record Unit 7176, Smithsonian Institution Archives, U.S. Fish & Wildlife Service Field Reports, 1860-1961, Boxes 11 and 12, 508, 510, 520. These notes provided the writer by Holly Rekord.

44. Olaus Murie, Journeys, 138-39.

45. Olaus Murie, typescript draft report, in Olaus Murie Collection, University of Alaska, Fairbanks, Archives, Box 1, "Physiography," 5-6.

46. Ibid., 7.

47. Margaret E. Murie, Two In the Far North, second edition, (Alaska Northwest Publishing Co., Anchorage, 1978), 75-91.

48. Ibid., 98-99. The following account is taken from Margaret Murie's narrative in the Upper Koyukuk section of her book; only extended quotations are cited by page number.

49. Ibid., 136.

50. Ibid., 145.

51. Ibid., 171.

52. Ibid., 176-77.

53. Ibid., 184.

54. Ibid., 189-90.

55. Ibid., 191-92.

56. Ibid., 324.

57. Charles J. Keim, Ahgvook, White Eskimo, Otto Geist and Alaskan Archeology (University of Alaska Press, College, Alaska, 1969), 53-62.

58. Ibid., 66-69; quotation on 68-69. There is some confusion about the Spring Creek residence site during the work on the Lake Creek drift mine. Al Withrow (the elder of a father and son by that name in the Bettles context) later took over the Frank Smith claims on Spring Creek. He informed the writer that the cabin ruin now standing at the Spring Creek site was the one built by Geist, et al., in 1924. Interview with Al Withrow, elder, 8/22/85. During summer 1985 field inspection of this site, bundles of rabbit snares were discovered at the older cabin ruin.

59. Ibid., 72-73.

60. Ibid.

61. Irving McK. Reed, Upper Koyukuk Region, 118.

62. Ibid., 120.

63. Gruening, The State of Alaska, 269-293; ARC Annual Reports, 1922-33. A detailed account of upper-country roads, trails, shelter cabins, and communities is found in Joseph Ulmer's 1923-34 Log of a Reconnaisance Survey, Fort Gibbon to Kobuk and Koyukuk Rivers, performed for the ARC, Joseph Ulmer Collection, Box 10, University of Alaska, Fairbanks, Archives.

64. Interview in Wiseman with Walter Johnson, 6/12/84; Claus-M. Naske, "Paving Alaska's Trails: The Work of the Alaska Road Commission" (manuscript in preparation), 316.

65. Elizabeth Hays Goddard, Diary of Koyukuk River Journey Aboard the Episcopal Mission Boat Pelican (typescript, 1934), University of Alaska, Fairbanks, Archives, Elizabeth Hays Goddard Collection, Box 1, 101-02. See Melody Webb, The Last Frontier (University of New Mexico Press, Albuquerque, 1985), Chaps. 9, 10, and 11 for a comprehensive survey of transportation and its evolution in the Yukon Basin.

66. Alaska Weekly, 3/23/23, 1; Webb, The Last Frontier, 221-22.

67. Gruening, The State of Alaska, 297-305; Naski, "Paving Alaska's Trails," 316-18.

68. Foote, Upper Kobuk River Project, 10-35.

69. Various issues of the Alaska Weekly from Mar. 5, 1926, through Sept. 27, 1929; author's site visits from Old Bettles to main Detroit Mining sites on Hammond River and Nolan Creek, 1984 and 1985.

70. Alaska Weekly, 9/27/29: 7.

71. Alaska Weekly, 1/27/28: 8.

72. Alaska Weekly, 9/7/28: 7.

73. Newsclip dated "1928" from Joseph Ulmer Collection, Box 5, University of Alaska, Fairbanks, Archives.

74. John C. Reed, Exploration of Naval Petroleum Reserve No. 4 and Adjacent Areas, Northern Alaska, 1944-53, Part I, History of the Exploration, USGS Prof. Paper 301 (Washington, D.C., GPO, 1958), 19-20; A. H. Brooks, Geology and Petroleum Resources of Northern Alaska and Plans for Survey of Naval Petroleum Reserve No. 4 (typescript paper, 1923, obtained from Technical Data Library, USGS Menlo Park, CA.), 34-44; E. Leffingwell, The Canning River Region, Northern Alaska, USGS Prof. Paper 109 (Washington, D.C., GPO, 1919), 178.

75. Telephone interviews with North Slope petroleum geologists Gil Mull and Marvin Mangus, 12/16/85 and 12/17/85, respectively.

76. Philip S. Smith and J.B. Mertie, Jr., Geology and Mineral Resources of Northwestern Alaska, USGS Bull. 815 (Washington, GPO, 1930), 9-17; Reed, Exploration of Naval Petroleum Reserve, 19-20.

77. Ibid., 19.

78. Smith and Mertie, Mineral Resources, 87; Marvin D. Mangus, "A History of the Exploration and Development of North Slope Oil &

Gas Reserves," in Mining in Alaska's Past (Office of History and Archeology, Alaska Division of Parks, Pub. No. 27, 1980), 61-68.

79. Evelyn Mertie, ed., Thirty Summers and a Winter (University of Alaska, Fairbanks, 1982), 84.

79a. Smith and Mertie, Mineral Resources, 34.

80. Mertie, Thirty Summers.

81. Ibid., 86.

82. Smith and Mertie, Mineral Resources, 12.

83. Mertie, Thirty Summers, 96-99.

84. J.B. Mertie, Jr., Naval Petroleum Reserve No. 4, Field Notes book II, 1924 (USGS file No. 521), 7-8.

85. Smith and Mertie, Mineral Resources, 16.

86. W.T. Foran, Naval Petroleum Reserve No. 4, Field Notebook (USGS File No. 484); Smith and Mertie, Mineral Resources, 17-19.

87. See Webb, The Last Frontier, 282-86.

Chapter 6. Robert Marshall's Koyukuk

What impresses one about Robert Marshall is the breadth of his interests and the energy with which he pursued them. A ramble through his many publications and the letters, research notes, and field journals in the Marshall Collection at the University of California's Bancroft Library reveals a man of liberal instincts striving for a world enlightened and equitable. He believed that decency and fairness should extend not only to people but also to a natural world besieged by misdirected political, industrial, and technological forces. As a man of substance and reputation, Marshall corresponded with scientists, academics, and men of power across the United States and around the world. During his short life, he fought with equal vigor the destructive commercial forestry practices that were desecrating America's timbered country, the rise of Fascism in Europe, and a host of other evils and derelictions that caught his roving attention.

In the north Alaskan wilderness he found a place and a people that represented the antithesis of the many things going wrong with the stressed world beyond. His fondness for the friends and haunts of Alaska could only be heightened by the ominous developments Outside during the Thirties.

Through his northland adventures and his writings about the Koyukuk country he channeled part of his powerful energies toward a saner and more civilized world. It may seem ironical that in this wilderness and its outpost community of Wiseman he found values that he believed could help remedy the problems of the larger world. As this was part of Marshall's message, so had similar thoughts issued nearly a century earlier from another thinker on the outskirts of Concord.

Though Bob Marshall had started out as a shy lad, he became a man who radiated charm and dragged people along with infectious enthusiasm. In the Koyukuk wildlands, in company with the competent people who found satisfaction there, he discovered personal growth as well as a wondrous geography. Born in New York City in 1901--his father ". . . a prominant constitutional lawyer, a leader in Jewish affairs, fighter for minority rights, humanitarian, and conservationist"--Marshall naturally became a professional man, but not in law or medicine. His boyhood treks and nature studies at the family's summer retreat in the Adirondacks led him to choose the study of forestry, ". . . so that he could spend the greater part of his life in the woods he loved."

His academic career took him to the New York State College of Forestry, Harvard University, and Johns Hopkins, where he received

his doctorate in 1930. During his advanced studies he worked with a U.S. Forest Service experimental station in Idaho and Montana, where he could combine the ". . . mental adventure of science with the physical adventure of life in the woods." With maturity and experience, he would become Director of Forestry for the Office of Indian Affairs in Washington, D.C., and later, Chief of the Division of Recreation and Lands for the U.S. Forest Service, the position he held at his death in November 1939. Throughout his professional career he worked to improve the science and practice of forestry, the economy and opportunities of Indian people, and the preservation of virgin forest lands that would be accessible for the recreation of the people at large.[1] His joy of living combined with moral courage to make him a potent force in the many causes he espoused. He needed both wilderness and people to fulfill his life. In Alaska he found an ideal mix of the two.

Marshall's affair with the upper Koyukuk country began with a search for uncharted places on the map. Turning his atlas pages to Alaska in the spring of 1929, he found a vast, blank zone in the central Brooks Range that lured him north for a summer in the Arctic.

> . . . [S]o I rationalized a scientific investigation as a reason for my expedition. As a forester and plant physiologist, it seemed eminently appropriate that I should

make a study of tree growth at northern timberline.

> I cannot say that I learned very much either about tree growth or timberline. But I did come away with a vivid impression that the few white and Eskimo people who were scattered through this remote region were on the whole the happiest folk I had ever encountered. It is so easy, however, to found an erroneous impression on the superficial contacts of a couple of months that I decided to return for at least a year in order to make a detailed study of this civilization of the North.[2]

He would return to reside a year in Wiseman in 1930-31, and for subsequent summer visits in 1938 and 1939. Thus, for the last decade of his life, the Koyukuk environment--as on-site reality and as abiding ideal when he was away--served as touchstone for a maturing philosophy that celebrated the human values of wilderness.

In pursuit of his scientific investigation, Marshall established sample plots beyond the spruce timberline. Using white spruce seeds gathered locally and from the northern states, he sowed various plots to test his theory ". . . that the only reason spruce is not far north of the present timberline is that there has not been enough time, since the last ice sheet receded, for

seeds to blow north from the most northerly spruce trees left after the glacier . . . ." He calculated that the spruce forest advanced about a mile north every 250 years, each increment requiring maturation of trees for development of cones and scattering of seeds. One of his plots 8 miles north of timberline on a North Fork creek ". . . would be anticipating nature by 2,000 years."[3] Revisits to two plots, 9 years after initial sowing, showed no positive results. He pondered the reasons: environmental? faulty sowing technique? But from the beginning his other interests had overshadowed the mysteries of forest advance and the subtle combinations of plant succession. He shrugged off the disappointment of barren plots ". . . as the clouds gradually disappeared from the mountains and the great peaks of the Arctic Divide jutted all around us into the sunlight."[4]

More important than Marshall's botanical experiments were the geographic explorations and mapping that initially flowed from the timberline studies. Almost immediately these explorations--particularly the pioneering work on the North Fork--became the basic rationale for Marshall's upper country rambles. Using extant USGS maps; the services of local Eskimos, miners, and trappers; and his own rough surveys and triangulations, Marshall filled in the main physical features of an area long of interest to the USGS, but deferred because of

other demands on the agency. Philip S. Smith, by now Chief Alaskan Geologist for the Survey, encouraged Marshall and was instrumental in having his upper Koyukuk description and sketch map published as a USGS bulletin.[5]

In the bulletin foreword, Smith stated that "Mr. Marshall has prepared a sketch map showing all the principal streams of the region, has determined from local sources the names of many of the features, and has otherwise contributed to the knowledge of the geography of the region. His record . . . partly fills the need that has long been felt for more adequate and reliable information about . . . [the Koyukuk's] remote and less accessible parts . . . '[6]

Even geographic discovery, a time- and culture-bound abstraction, faded before the grand and tangible visions that Marshall met at every turn of the Koyukuk's mountain drainage:

> It is doubtful whether any of the famous scenic areas in the United States contain more magnificent scenery than that at the head of the different Arctic tributaries of the Koyukuk River. To the writer the great U-shaped valleys at the head of Ernie Creek, the North Fork, and Clear River are not a whit less stupendous than those of the famous Yosemite, and the grandeur of the deep gorge of the Kenunga Valley is not excelled by any of the magnificent valleys of Glacier

National Park. Grizzly Creek flows through a canyon 2 miles across at the top, with walls about 3,500 feet high on the north side and 2,500 feet on the south. Blackface Mountain, at the foot of the Valley of Precipices, has a sheer cliff of about 3,000 feet, resembling Gibraltar in appearance but more than twice as high. The Arrigetch Peaks of the Alatna River are a series of unscalable needle peaks such as probably cannot be duplicated anywhere else in the world. The Alatna and John Rivers flow for miles through high, rocky mountains which rise almost from the margins of streams. On Hunts Fork of the John River is Loon Lake, from the very shore of which a high, rocky mountain juts thousands of feet in the air, with a great waterfall plunging in several leaps for a drop of at least 2,000 feet.

All through this country in the clear days of winter the pure-white snow, the dark-green spruce trees, and the deep-blue sky mingle in an infinite variety of patterns. In summer the snow is gone, except on the north face of the higher mountains, but in its stead are the black and brown and gray and yellow rocks and the different colors of the varied vegetation, including the wild flowers, which blossom from early May until late August in gorgeous profusion.[7]

Spartan survivors of the Survey's old Alaska Geology Branch had trouble swallowing such poetic flights in a USGS bulletin, nor could they happily accept his sketchy map--except there was no other. But they had to approve Marshall's alliance with local people who guided him and shared their knowledge of the country. Marshall credited Big Charlie Suckik, whose wide-ranging pursuit of game and furs provided the basis for mapping the Iniakuk River, large parts of the John River, and many other streams. Trapper Ernie Johnson led him through large parts of the North Fork, Allen River, and Wild River country. Wiseman miners Jesse Allen, Kenneth Harvey, and Albert Ness sketched in Middle Fork drainages and also served as guides, along with mining geologist and prospector Al Retzlaf of the Fairbanks College. According to Marshall, these men were ". . . not only able field men but also companions with whom it was a great joy to live in the intimacy of the trail." Others whose landscape lore Marshall tapped included Selawik Sam, James Murphy, George Huey, Victor Neck, and Al West.[8]

Always, Marshall's enthusiasm for the Koyukuk people and wildlands obtrudes from the lean pages of the USGS bulletin. Having paid his respects to those who knew the passes through the jagged and forbidding mountains, having applied local geographic names wherever possible and been smitten with the ". . . innumerable mountains and streams in this unexplored country which, so far as could be learned, had never been named by either whites or

Eskimos," Marshall concluded his description of the Koyukuk wilderness with a stunning statement on comparative population densities in the year 1930:

> The distribution of 127 people over an area of 15,000 square miles means that the region has an average population of only about 0.0085 per square mile. Compared with this figure, Alaska, as a whole, is about 12 times as densely populated, the United States proper 5,000 times, Belgium about 80,000 times, and Manhattan Island almost 10,000,000 times.[9]

Marshall's two major works on the Koyukuk country, Alaska Wilderness and Arctic Village, comprise a kind of steropticon in which the Koyukuk landscape and the people living there dissolve into one another to form a single image. Yet the first is essentially a journal of exploration, the second a sociological study of Wiseman. The dominance of land and climate, and the response of a few isolated people to these dominant realities, fascinated Marshall.

Despite his chosen profession as forester and his extensive field work in the West, Marshall was essentially a displaced urban man, a highly educated man moved by ideas and the celestial visions manifest in the wilderness. Reminiscences of Koyukuk folk who knew

him, including the stalwarts who guided him, draw an affectionate picture of a man often overcome with the joy of wild adventure, pushing the risks in remote places, sometimes a bit clumsy. Men who lived there, like Ernie Johnson, avoided risk because their entire lives--in that land and climate--were full of risk. Moreover, their automatic competence, built of long experience in that place, made them seem naturalized, integrated in a way that Marshall could never quite attain, as he freely acknowledged. In physical action and in emotional response, Bob Marshall retained to the last a strain of delighted adolescence in the Alaskan wilds.

It was this quality, expressed in mad scrambles to topmost heights in a slipped knot or a broken tool, in journal notes that painted landscapes as though with brush and oils, that endeared him to his bemused trail companions, even as they muttered cautions and repaired the damage. It was this quality that bred Marshall's subtle dependence upon these sturdy denizens, providing a crack of space that allowed him to indulge his exhuberance and them to be indulgent. And, of course, it was this quality of everlasting youth, of unfailing faith in new glories to be discovered each dawn, that shaped his vision of the ultimate wilderness.

Nothing in this interpretation takes away from Bob Marshall's adventuring soul, his zest for trekking, his zeal for doing more than his share of camp chores. But most certainly, it was the

minor discrepancy between him and those he travelled with--that shade of unconformity, of not being quite naturalized--that allowed him to see challenge and glory where Ernie Johnson, who also loved the country, saw a gradient too steep for pack horses.

Marshall's first trip in 1929 touched upon all the elements of his future studies and writing about the Koyukuk. Al Retzlaf and he flew from Fairbanks to Wiseman with Noel Wien to begin their summer adventure. Dropping into the valley to the little strip beneath the mountains,

> A crowd of about twenty people met us, greeted us like old friends, helped us carry our luggage the half mile from the field to the roadhouse and gave us all sorts of information about the country. The roadhouse was a one-story log structure with the usual north-country peaked roof. Like other roadhouses in Alaska, it served primarily as a shelter in winter to dogteam travelers; in addition, it combined the functions of hotel, restaurant, bar, banquet hall, dance floor, store, and major social center of Wiseman. Martin Slisco, the roadhouse proprietor treated us like brothers and even lent us shoes for the dance which they staged specially for us at the Pioneer Hall. There, five Eskimo women and twenty men, of whom about half danced, were present. With the day still bright at midnight despite

> rain, with the long-yearned-for Arctic actually at hand, with the pleasant Eskimo girls as partners, with the queer old-fashioned steps which the prospectors had brought into the country at the start of the century, with friendly strangers smiling and welcoming, and with little Eskimo kids having hopping races with me--that evening seems today a dear, half-remembered dream.[10]

After two days of getting supplies, renting horses, fixing pack saddles, and picking the brains of old timers about routes to the verge of the North Fork country they would explore, Bob and Al set out. That first day of 25 that they would spend in the wilderness got them no farther than Ed Marsan's cabin on Nolan Creek, where his and his wife's hospitality could not be refused. Miners Charlie Irish and Jesse Allen dropped by and told them that in the memory of the locals only trapper Ernie Johnson had been farther north than the Clear River junction on North Fork. His line camp at the confluence of later-named Ernie Creek and North Fork was the last outpost. Beyond its environs, apparently, only Natives had travelled.

Next day the packers traversed Pasco Pass and dropped into Glacier River valley, which they would follow to North Fork. On the way they rested at Charlie Yale's cabin--long abandoned by that early miner, but maintained by local people as a shelter on the

Wiseman-North Fork-Wild Lake trail. Bob marvelled that for 10 years the hermit miner's "lonely light [had] shone out on the snow with never a soul around to see it . . . for the sake of a fortune he never attained."[11]

Beyond Yale's cabin the trail disappeared. Already sedge tussocks and mosquitoes were taking toll. The mushroom-shaped clumps of cottongrass, with swampwater in between, made every step a pitching, lurching gamble both for the men and the heavy-laden horses. The insects descended in clouds, making headnets, gloves, and tucked-in pants essential.

Al's fishing skills provided grayling for lunch and dinner. A floored tent with tied-off tunnel entrance allowed respite and sleep despite the constant hum of mosquito hordes outside.

Finally they left Glacier River, cutting westward across Jack Delay Pass to the North Fork. Now they headed north, alternating between hillsides and brushy terraces on the one hand and gravel bars on the other, as dictated by the river's meanders. Whenever they stopped, Bob made ecological observations: tree borings, plant types, exposure, slope, soil and air temperatures, moisture.

Their daily progress settled into a routine of predictable tasks and sequences. Freed from petty decisions, they could absorb their

surroundings and enjoy the country, despite the usual irritations of insects and tough terrain marked by snagging brush, slippery slopes, tussocks, and blocking canyons.[12]

On July 31, after a rough climb above Clear River canyon--nearly losing the horses in the landslide steeps of what Bob named Moving Mountain--they attained the peak some 2,500 feet above the water. Bob's journal records the moment:

> The view from the top gave us an excellent idea of the jagged country toward which we were heading. The main Brooks Range divide was so high that it was entirely covered with snow. Close at hand, only about 10 miles airline to the north, was the exceedingly precipitous east portal of the Gates to the Arctic, which I tentatively christened Boreal. The west portal I called the Frigid Crags.[13]

At a high camp that night, exhausted and besieged by mosquitoes, they crawled into the tent. Because of the rough ground and sparse feed they had taken a chance and left the horses unhobbled. Hearing no horse bell they peeked out to find the horses gone. Al spotted their tracks and dashed up the mountain to retrieve them, then hobbled them near the tent. Again they broke for the mountain and the men raced over tussocks and slopes to bring them back.

Lacking any brush to scratch on in this barren campsite, the horses were going crazy from mosquitoes. Neither hobbles nor anything else could hold them. So the wornout men broke camp at 10:30 and headed for North Fork 8 miles away.

It was a dreamlike time, that long trek in the twilit night of arctic summer. At such times the gathering dusk of sunset quickly dissipates into sunrise as the sun itself circles just below the mountains. Peaks stand silhouetted, crowned by underlit clouds. The depleted men and numb horses moved placidly through the pink glow of this ethereal night. About 2 a.m. they camped by the river, with plenty of scratching brush for the horses, just as the sun tipped the high peaks to the west.

Next day they made good time. The higher reaches of the river were shallow enough to ford, so they crossed back and forth to fetch the easily travelled gravel bars.

> As we advanced, the mountains became more and more precipitous until finally they culminated in the Gates of the Arctic. Here on the west side of the valley a whole series of bristling crags, probably at least a score, towered sheer for perhaps 2,000 feet from an exceedingly steep 2,000-foot pedestal. From a similar base on the east rose the 4,000-foot precipice of Boreal. This mountain rose

> straight up for almost 6,000 feet. Between these two stupendous walls, the valley was probably two miles wide, consisting mostly of dry gravel bars.
>
> Fortunately this gorge was not in the continental United States, where its wild sublimity would almost certainly have been commercially exploited. We camped in the very center of the Gates, seventy-four miles from the closest human being and more than a thousand miles from the nearest automobile.[14]

On August 3, after camping at the Ernie Creek-North Fork junction, they ascended Ernie Creek about 6 miles, where they stopped for rest and lunch. While Al fished, Bob climbed.

> My mountain rose about 3,500 feet above camp. It was just one great pile of loose slate heaped up in spots to the very steepest angle of repose. At places I had to go exceedingly carefully in order not to start a landslide which would carry me down a couple of thousand feet. The final going was along a knife edge ridge of crumbly rock.
>
> The view from the summit . . . but I must jump into the superlative again. This really was the finest of all. The hour and 20 minutes I spent on the top of the Slatepile were

> easily worth the entire journey to Alaska. In every direction rose mountains higher than mine. I seemed to be on a pedestal in the center of a great towering amphitheatre with more precipitous and lofty walls than anyone ever dreamed of. But there was variety as well as grandeur. To the southeast were three ragged giants with great glaciers near their summits. One of the three (Boreal) together with the ever cragged Frigid bounded the great Gates of the Arctic to the South. Westward, against a clouded sun six massive black needles projected into the sky, and there was also a great black basin at their base. Northward about 15 miles was the main Endicott Range, least jagged of the visible mountains, but higher than any and capped with snow. Through a notch I could see rocky mountains still farther beyond, on the Arctic side of the divide. They appeared utterly barren. In the same direction I could also look into the head of the . . . [Anaktuvuk] River, and could pick out the route we were to follow, though . . . [the] Pass itself was hidden by an immense nearby rock looking something like the pictures of Gibralter, but three times as high . . . .[15]

Next day Bob and Al pushed up Ernie Creek to camp near its head. The upper ". . . valley was bounded by high, dark, and dangerous looking precipices, surpassing in my estimation, the grandeur of Yosemite."[16]

> . . . On the West side, black cliffs of brittle slate towered into the air for 2,000 or 3,000 feet from a thousand-foot steeply sloping base. The strata were tilted at all angles, sometimes dipping north, sometimes south, and occasionally running nearly horizontal. On the east side of the valley, the mountains were less abrupt, but rose for about 3,000 feet with strata tilted at thirty degrees. These immense boundaries of the U-shaped canyon stretched with only four narrow breaks on the east side where chasms cut in the softer rock lead back to lofty cliffs and great peaks of tumbled conglomerate. Wherever the soft strata crossed the skyline they had crumbled away leaving hard serrations which added to the jaggedness of the scene.[17]

After a tangle with grizzlies, with Bob--on duty as camp guard--trying to hold the terrified horses and defend the camp at the same time, a climb out of Grizzly Creek toward the fog-shrouded divide, and days of rain that swelled the mountain streams, the men decided to return to Wiseman. High water forced them into difficult terrain, away from the easy crossings and gravel-bar travel of the ascent. Extremely rough ridges alternated with bog swales turned into quagmires by the constant rain.

From a layover rest camp near the Ernie Creek-North Fork junction, Bob hiked up North Fork on a stormy day, the flooded river turbulent and unfordable.

> Leaning trees from cut banks extended over the water and framed shifting vistas of gray mountains, which looked exceptionally wild as a strong wind blew low-flying black scuds across their summits. On either side of the broad U-shaped glacial valley, tremendous rock masses rose into cloud-capped peaks. The highest and most rugged were to the south, forming the two easterly of the "ragged giants" which I had observed from Slatepile Mountain. These great mountains rose probably 5,000-6,000 feet above the valley floor. They were topped by hanging glaciers and sheer precipices. The most westerly of these two mountain masses I called Hanging Glacier. The easterly one was a towering, black unscalable-looking giant, the highest peak in this section of the Brooks Range. For the moment I called it Matterhorn of the Koyukuk, although it looked less ascendable than its celebrated Swiss namesake. Two years later I renamed it Mount Doonerak . . . . the name Doonerak I took from an Eskimo word which means a spirit or, as they would translate it, a devil. The Eskimos believe that there are thousands of dooneraks in the world, some beneficent, but generally delighting in making trouble.[18]

The long haul back to Wiseman was cold, damp, and dreary. The men forded side streams and sloughs endlessly, soaked up to the waist in icy water. Restricted to the east bank of the swollen North Fork they had to make long detours around cutbanks and over ridges through bogs and brush. At night they split deadwood for dry fuel, then dried themselves and their clothes under a tarpaulin. Fortunately, their waterproof tent and careful packing kept the sleeping bags dry and they got good sleep.

At Clear River, where they had camped 12 days before, they found their food cache intact, but it gave them only five days of slim rations for the 50-mile trek to Wiseman. The rains continued and even Clear River was unfordable. Rising waters surrounded their island camp. Gloomily they went to bed.

> At three in the morning I awoke from the noise of rushing water. It was raining hard when I looked outside and, much to my surprise, I discovered that the water in the quiet slough next to camp had risen almost to the fire, and had become a strong, churning current. I moved the cooking pots back to what I thought was a safe place, commented casually to Al on the phenomenal rise of the water, and hurried back to bed. Moved by my report, Al took one sleepy look out of

the tent and immediately was all consternation.

"Hurry, get up," he shouted, "we've got to get out of here quick. The main river's cutting back of our island and if we're not damn fast we'll be cut off from everything."

I thought he was exaggerating, but one look at his grim countenance and feverish haste in dressing made me change my mind, and I started putting on my clothes with all speed. It was now about three-thirty. Al, dressed first, grabbed the halters and started after the horses, calling for me to hurry and pack things. In a few minutes he was back, even more agitated.

"It's too late to pack the horses. It may be too late even if we carry the stuff ourselves, but we've just a chance. Water's up to my thighs already and cutting out the bottom. We've got a few minutes at best. Never mind the little things. Just pack up the tent and bed rolls, but for heaven's sake hurry. I'll take this box."

And away he went with his little packsack on his back, a heavy box of food on one shoulder, and the ax.

I continued the packing at breakneck speed, appreciating the

danger, but strangely enough I felt quite calm. Al was back again before I had finished with the tent. He started across again with my big packsack, the gun, and the extra harness. When he returned a third time I had the tent done up.

"Just about time for one more load," he shouted, taking up the other box of food and the tent. But the load was too big and he had to drop the tent. I followed with his bed roll which also contained many stray items. We got across safely, though the water was nearly to our waists and just about as swift as we could stand. We immediately turned back, Al to pick up what was left around the camp and I to pick up the tent. I recovered it, deposited it on shore, and returned halfway into the water to relieve Al, staggering under a clumsy load, of his bed and some pots while he continued with the saddles, tarps, and shovels. It was four o'clock when we had led the horses across too and reached the safe shore for the last time, just thirty minuted after Al's alarm. Ten minutes later the channel was absolutely impassable for any human being. Had we slept even a little longer, we would have been caught on a tiny island covered only with willows and half a dozen slender cottonwoods, with no game, and food for only five days.

> Some time during the excitement it had stopped raining. We set up camp again at what we believed to be a safe distance from the river on the highest spot of ground we could find, but it barely gave us a four-foot margin. I walked down once more to the edge of the river in the grim, gray light of a cloudy morning, and watched the mad torrent raging. Man may be taming nature, but no one standing on the bank of the North Fork of the Koyukuk on this gray morning would have claimed that nature is conquered.[19]

After more adventures with the raging rivers and a long hike on iron rations--ending up with only a few ounces of salt and tea--Bob and Al made it back to Wiseman. Their reception was warm, made doubly so by fears that they had been lost. The kidding and questions went on as they devoured caribou stew at Slisco's Roadhouse. Bob's journal concludes:

> Adventure is wonderful, but there's no doubt that one of its joys is the end. That night there was a pleasure unknown to anyone who has not experienced days on end of cold and soggy weather in sitting in a dry room by a warm fire. That night lying in bed with no rising rivers, no straying horses, no morrow's route to worry about we enjoyed a peacefulness which made a glorious conclusion to a glorious adventure.[20]

As he left the northland that late summer of 1929, Bob was already making plans for return the next year. Study of the "civilization of the North" would be his primary task, for he wanted to know if these people had truly achieved the balance and happiness he had observed and, if so, how. During his 13-month residence of 1930-31, he would combine sociology with wilderness adventuring to gain ". . . the absolutely unassessable thrill of just looking at superb natural beauty." As sidelines, he would make a bow in the direction of timberline studies and expand his preliminary mapping of the North Fork. And it was on this trip that he met Ernie Johnson, who would become his principal trail companion. In early September 1930 he recorded his first meeting with the Daniel Boone of the Arctic:

> . . . we were startled by a voice shouting to us from the other side of the North Fork. I ran down to the bank and saw a man poling a boat across the stream. In a few moments he landed and introduced himself as Ernie Johnson. He had a friendly open face and the springing stride of a woodsman. The slight accent of his speech betrayed his origin from Sweden.[21]

Ernie was held up among the pioneers of the region as the most competent woodsman of the lot. He lived most of his time alone on

the upper reaches of the North Fork, though ". . . he is not an anchorite by preference but merely because he seldom can find anyone to share his difficult life."[22]

During this first encounter, Ernie regaled Bob and his companions with stories of the North Fork. He shared his intimate knowledge of its landscapes: the passes, the cutoffs to avoid bogs and tussocks. "It was the vital information of the wilderness."

Ernie told of his life: birth in Sweden 50 years before, migration to Minnesota where he became a carpenter, then the Gold Rush and Alaska. He spent all but 2 weeks a year away from the "cities" of Wiseman and Bettles. As trapper and hunter he made about $2,500 a year. He could make much more as a carpenter, for his cabins were tight and dry and lasted for decades, "but I am staying out here because I like it among these ruggedy mountains better than anywhere else in the world."[23]

On the spot Bob and Ernie agreed to an upper Alatna exploration together the next summer. Then they parted, Ernie floating south to his town base at Bettles, Bob and his party heading for the Arctic Divide. For a moment the two camps had shared thousands of square miles of wilderness. A few days later Bob and Al Retzlaf would camp near Ernie's cabin at the Ernie Creek-North Fork junction and use his cook stove.

Back at Wiseman after the September trip to the North Fork, Bob began a series of long journal-based letters to his family and friends. These letters, with their anecdotes of travel and stories of friends made, form a large part of the Alaska Wilderness text. They also contain ruminations and summings up that show the progress of Bob's thoughts as he discovered new places in the central Brooks Range. In the letter of September 23, 1930, he recalls the effect of his second visit to the Ernie Creek headwaters area. It was ". . . an explorer's heaven, the sort of thing a person of adventuresome disposition might dream about for a lifetime without ever realizing."

> Each day I set out to climb some fresh peak or explore some fresh valley which apparently no human being had ever visited. Often as when visiting Yosemite or Glacier Park or the Grand Canyon or Avalanche Lake or some other famous natural scenery of surpassing beauty, I had wished egotistically enough that I might have had the joy of being the first person to discover this grandeur. I had read Captain Lewis' glowing account of the discovery of the Great Falls of the Missouri and was completely thrilled. At about the ages of 11 to 20 I used to feel that I had been born a century too late, that though I might have some good times I would never enjoy anything as glorious as I would have know

> had I lived in the days of Lewis and Clark. Later I changed these notions as I became more realistic and appreciated that, statistically viewed, I would probably have been bumped off by Indians or died of fever before having many good times, and that anyway background is much less important than psychological processes in determining how happy a person can be. Later still I realized that though the field for geographical exploration was giving out, the realm of mental exploration--aesthetic, philosophical, scientific--was limitless. Nevertheless, I still maintained a suppressed yearning for geographical discovery which I never seriously hoped to realize. And then I found myself here, at the very headwaters of the mightiest river of the north, at a place where only three other human beings aside from myself had ever been and with dozens of never visited valleys, hundreds of unscaled summits still as virgin as during their paleozoic creation.[24]

As far as Bob Marshall knew or could know, this <u>was</u> a fresh world--unvisited, virgin. The facts are that the upper Koyukuk was a natural travel route and hunting area that had been used by Native Americans for millennia. Ernie Pass between the headwaters of Ernie Creek and Anaktuvuk River was a major access into the Koyukuk country for historic-period mountain Eskimos and for their prehistoric Indian and Eskimo antecedents, as was the pass between North Fork and Itkillik rivers. Archeological investigations in

1985 found scores of historic and prehistoric sites in these upper drainages. Their locations and artifactual remains indicate camping and hunting uses, including butchering stations. Scientific dating and artifact morphology give strong evidence of at least 6,000 years of human presence, probably several millennia more. Clustered sites at and within a few miles of the Ernie Creek-North Fork confluence show intensive use of a sporadic, seasonal sort from dawn times to the present. Camp sites and hunting lookouts have always been chosen for advantages of terrain, drainage, and visibility. These factors and their channeling influence over animal migration routes have changed little in the passage of recent geological time. Sheep are plentiful in the are today. They, along with migrating caribou, were probably major attractions in earlier times, as they still are.[25]

Bob Marshall was not the first explorer to imagine himself the first human being in some remote place. Certainly his idols, Lewis and Clark, visited no place unknown to generations of vanished and living tribes. Since the early dispersions of humankind, geographical exploration has been a generational thing, a renewable resource in the world's wildlands where forgotten histories left few reminders. When Marshall spoke of preserving wilderness for its human values, this was part of what he meant. In wilderness, certain psychological processes could be revitalized--among them the sense of discovering an earth fresh and whole. That he had

unwittingly partaken of his prescription for others--experienced the discoverer's exaltation where many had trod before--is fine irony and validation of his prescription.

That Bob Marshall and later pilgrims to the central Brooks Range could and can still have such experiences tells us much about traditional land use there. Anthropologist Richard Nelson draws this conclusion in a 1977 study of the subsistence way of life in what were then the proposed Alaska parklands:

> The areas proposed for new parks remain in an essentially pristine condition, with healthy populations of wildlife and virtually unaltered floral communities. Except for scattered cabins and threading trails, subsistence users have left the landscape practically free of visible human impact. Thus, several thousand years of continuous subsistence use has left us with environmments worthy of preservation as the most wild and beautiful in our nation.[26]

During the winter of 1930-31 Bob alternated his Wiseman studies with dog mushing trips. One 10-day circuit took him to the Dietrich River branch of Middle Fork, about 60 miles north of Wiseman. Jesse Allen and Kenneth Harvey invited him along to recover cached sheep from their fall hunt. Bob discovered both the joy and dangers of winter travel--the rush of the dogs through

starlit and twilit arctic landscapes; the menace of overflow on frozen rivers, where a breakthrough on crusted snow or thin ice can wet and freeze a foot in minutes. In tent camp one night:

> I thought of my friends on the Outside who were spending the night comfortably in steam-heated rooms in the heart of steam-heated cities. We spent that night scarcely less comfortably near the Arctic Divide, though the thermometer dropped to 40 below and we had only a thin canvas shelter. But ours was a single oasis of warmth and comfort in thousands of square miles of freezing wilderness.[27]

At mid-passage of their journey Albert Ness showed up with a borrowed team to get Jesse, who's wife had fallen seriously ill. Jesse rushed back alone with an empty sled; Ness stayed on to haul the meat. It was an emergency "met by the community in a way typical for this frontier," considered by all involved as merely "normal neighborliness," no thanks or pay expected.[28]

In March 1931 Bob joined Ernie Johnson on an expedition to the Clear River headwaters. No one locally knew whether it headed at the Arctic Divide or a south slope ridge. They would find out.

Following the usual route via Yale Cabin and Glacier River, the men and two teams aimed for Ernie's cabin at the Tinayguk-North Fork

junction. After caching some food there, they mushed up Clear River toward the head of its lower canyon. There they set up a base camp in deep snow so dry that a person without snowshoes sank instantly to the waist. Camp routine started as Ernie stomped out a tent space with snowshoes and tied the tent ends and sides to spruce trees and brush. Bob cut and spread spruce boughs for a floor and rolled out caribou-hides and bags. Then they got the stove going. They melted snow for water in 5-gallon tins, two for dogfood and one for themselves. The camp work--setting up, securing the dogs for the night, feeding themselves--kept them busy until late evening. But a warm tent and a pot of boiled meat capped the long day pleasantly.

They had books, for both of them were voracious readers. Good talk, however, was their basic fare once the work was done. Bob caught Ernie's views and philosophy in another of those long letters to the folks. They had stimulating discussions about socialism and personal liberties, and the freedom of bush living. Ernie was no socialist (as many Wiseman residents were), for he feared the anthill effect. But he was critical of the capitalistic order. "We've got to get some system . . . which will stop this amassing of fortunes, otherwise in a few years the whole world will be peonized to a handful of men." He admired the Natives for their lack of hypocrisy and their avoidance of false modesty. If he got $100,000 all at once he would not leave the country. He would get

better equipment and go Outside for a wife, then come right back. "I wouldn't quit this life in the hills. . . . I know what the life outside is like and it don't appeal to me. I've lived this free life in here too long." His idea of working for someone else was summed up as "getting down on your knees and wearing out your pants legs . . . ." Ernie thought there might be a hereafter, but since neither he nor preachers knew what it was he did not feel a need to attend church. He was contemptuous of the "modern, high-power publicity explorers" of the period: "Jesus Christ, do they call that exploring. Why, they had everything they could ask for except women. . . . They ought to get out in the hills here where they have to live on themselves, and can't radio for help every time they get in trouble." As Bob confided, conversations with Ernie seldom ended in "tedious agreement."[29]

Next morning they reconnoitered with light gear, leaving the constricted canyon and breaking out into "a great, sunny amphitheatre" about 6 miles long and 3 or 4 wide. At its upper end it appeared that Clear River issued from one of three gorges. But when they got there they found the river coming out of a long, hidden valley from the east. Great walls and domes rose 3,000 feet straight up. Pinnacles and jagged gorges embellished the scene. The serrated skyline at the head of the valley was built of summits towering nearly a mile above them, "and over everything the fresh snow, and the blue sky, and the clarity and sparkle of the

midwinter atmosphere." As they proceeded up the valley, they found 10 unique gorges, each, according to Bob, worthy of National Monument designation, each a bit of perfection. "Taken all together with the main valley they formed a whole beyond even the characterization of 'perfect'." After other revelations of stunning beauty in this intricate and deeply gashed country, they tracked Clear River's head to a point that was later determined to be well south of the main divide.

Nothing would ever top Bob's first journey with Ernie Johnson up Clear River. It had become a series of transcendent days, each more amazing than the last. Finally, as the sated travelers started back, vistas that would have been great and memorable anyplace else became merely pleasant.[30]

A break at Ernie's cabin gave them time to refit. Then the men broke trail up Tinayguk River and went over a pass to Flat Creek in the Wild River drainage. The climb over the last ridge to Wild River was the toughest mile of the trip. Breaking trail at 100 yards a clip, Ernie would tramp the snow out once, then back to the sled and out again. Through the trough in the snow Bob would pull the dogs with all his strength, but they still wallowed breast deep in the dry fluff, having to rest every 30 feet. The steep drop-off to the river required roughlocking the sled runners with wrapped chains, and the men braking as hard as they could. When the chains

caught on snow-covered snags Bob chopped them out. Once he chopped into the runner itself, prevented from chopping through only by the steel at its center. In his letter Bob reminded the folks at home of his inept axemanship, then described Ernie's reaction: "Indicative of Ernie's rare patience, his only comment was an amazed: 'Jesus Christ!'."[31]

At Spring Creek on Wild Lake, they were greeted by Ludie Hope, an immense Koyukon Indian woman who rushed out of her cabin and embraced Ernie and instantly made Bob feel right at home. After 16 days in the wilds he felt that he had stepped back into civilization.

The Wild Lake camp took them in, with Ernie renewing old friendships and Bob making new ones. Sammy Hope, Ludie's Eskimo husband, showed off their adopted son Henry, half Eskimo, half Japanese. The Hope family had a good time, living by a philosophy summed up by Sammy: "One day's as good as another as long as we got life and enough to eat and a little laughing now and then."[32]

R.H. Creecy, "the Koyukuk's only negro" and a Wild Lake miner, was disliked by some, though well liked by others. He told tall tales of his own heroism, which was frowned upon, and housed his dogs in the government shelter cabins while on the trail, a distinctly unsocial act. But Bob found him to be a most interesting person.

He had served under Maj. Gen. Nelson Miles in the old frontier army. During the Great War he had been jailed for criticizing Woodrow Wilson, who, Creecy averred, had promised to keep the United States out of the war, then got them into it. When he was called pro-German for making such statements, Creecy replied: "When my country does wrong I'm going to criticize. That's what the real hundred per cent American will do . . . ." Though lacking formal education, Creecy had been around and he had an active mind. Among the views he shared with Bob was this one: "We say (concerning the Natives) 'those poor, innocent devils, they don't know enough to develop their resources.' But we come along and squander all our resources till we haven't any left. Now who's the ignorant devils?"[33]

Lake Creek miner Gus Wagner had been driven out of Germany in 1904 for ultraradicalism. Though he had lost his family in the process, he thought it better that it had happened so, because otherwise he would probably have died in the war. He had no personal ties and his only interest was gold.

By contrast, Wagner's partner, Hans Leichmann, was filled with intellectual curiosity. He subscribed to German- and English-language publications and read scholarly books. He delighted in classical music. On a later visit to Wiseman he and Bob listened for hours to Bob's symphonic phonograph records.

Hans found life at Wild Lake unnatural because most men had no mates. But he would not change with a working man Outside. "You have so much freedom, and you work for yourself."

Both of the Germans were socialists. Ben Sirr, who worked for them, was a bitter antisocialist. He stopped taking two popular publications of the day because "they're too damned socialistic." A small man, constantly talking, he was an unusually active worker at 65. His great talent, which made his various viewpoints academic in the northland, was to find dying people on the trail and save their lives.

After 3 days with this diverse, interesting, and pleasant company, Bob and Ernie headed back to Wiseman via Bettles.[34]

In the last of his major journeys during the 1930-31 residency, Bob joined Ernie for their earlier planned summer circuit through the Alatna and John river drainages. Ernie rendezvoused with Bob at Wiseman during the July 4 celebrations that attracted everyone from the distant creeks and camps for feasting, games, and endless dancing.

On July 5 the men traveled down the Koyukuk in a whipsawed boat that Ernie had made, powered by a 10-horsepower kicker. As they

made their way up the Alatna they mingled with Eskimos who had left Alatna village for their summer fishcamps. Farther upriver, they encountered a team of prospectors.

From a base camp on Kutuk River, they hiked toward the Arctic Divide, past Arrigetch Peaks and on to the high country, to map the intricate drainages that fell away toward arctic seas and the Yukon. At one point, high on a ridge, Bob mused:

> When we got a thousand feet above our Unakserak valley camp we left all the mosquitoes behind. It was now between six and eight in the evening, and rays of the sun were so pleasantly warm and peaceful that it was hard to believe there could be confusion and anxiety anywhere in the world.[35]

On the way back down the Alatna, they found the old site of Rapid City. To Bob the rotting cabins spoke of the horror that certainly gripped unprepared stampeders marooned by early freeze-up, their dreams of quick fortune dead, their isolation from family and accustomed comforts complete, perhaps permanent. And yet, he thought, those who finally made it back "to the desired safe and gregarious life of ordinary America" would surely in later years describe that lonesome winter as life's great adventure.[36]

The John River, swift and clear, with striking scenery, seems to have appealed more to Bob than the muddy, meandering Alatna. The men and pack dogs ascended in Ernie's boat as far as Hunt Fork, whose headwaters they had glimpsed from the Alatna highlands. Switching to back- and dog-packs, they proceeded up the fork toward the passes across the divide. Following one of the plunging creeks they came upon

> . . . a gorgeous lake, a mile and a half long and fresh as creation. Great mountains rose directly from its shores and disappeared about 3,000 feet above the water into low-lying clouds. How far they jutted above the zone of visibility we could not even guess, but seeing the sweep of the mountains end in oblivion gave an impression of infinite heights beyond the experience of man. Nothing I had ever seen . . . had given me such a sense of immensity as this virgin lake lying in a great cleft in the surface of the earth with mountain slopes and waterfalls tumbling from beyond the limits of visibility.[37]

Days more of exploration allowed them to tie together visually and on the map the mountain landmarks of previous experience in a great swath of the central Brooks Range from the North Fork to the Alatna. Then they returned to the Koyukuk and motored up its sunny valley toward Wiseman. At a point a few miles below the town,

Ernie allowed as how they could easily make it all the way before dark. But they happily agreed that they should have one last camp--making an even 50 nights on the trail. Bob knew that there was plenty of time to leave this "wilderness," where good people lived the good life, for the outer world of growing misery and danger. They savored Ernie's lamb stew, then sat together in gathering darkness on a log by the fire.

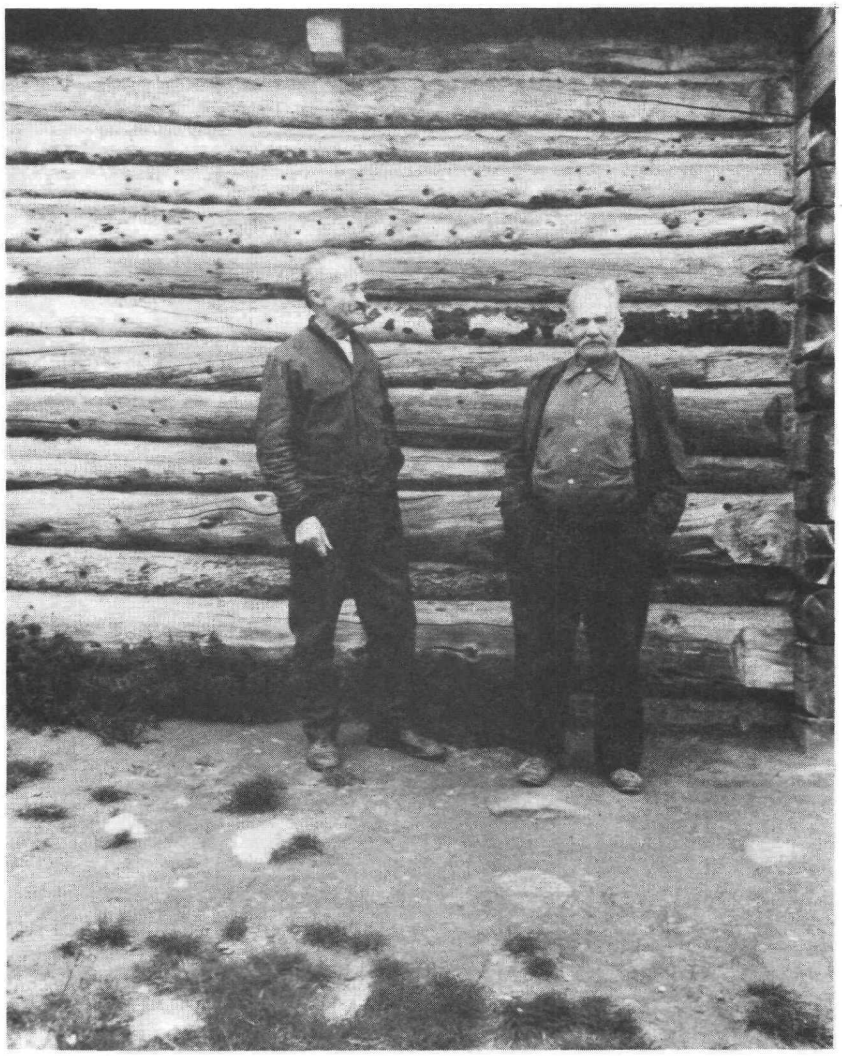
> We didn't say very much sitting there. You don't when it is your last camp with a companion who had shared the most perfect summer of a lifetime. We just sat, with a feeling warmer than the crackling fire, exulting in the sharp-edged pattern which the mountain walls cut against the northern sky; listening to the peaceful turmoil of the arctic river with its infinite variation in rhythm and tone; smelling the luxurience of untainted arctic valleys; feeling the wholesome cleanliness of arctic breezes blowing on cheeks and hair.[38]

The later trips of 1938 and 1939 play again these many themes. Confined mainly to the Doonerak Mountain vicinity of North Fork--with sorties into the limestone canyons of the upper Anaktuvuk River and the headwater creeks of Hammond River--Bob resolved many geographic questions raised by earlier explorations. As before, times of adventure and scrapes with death alternated

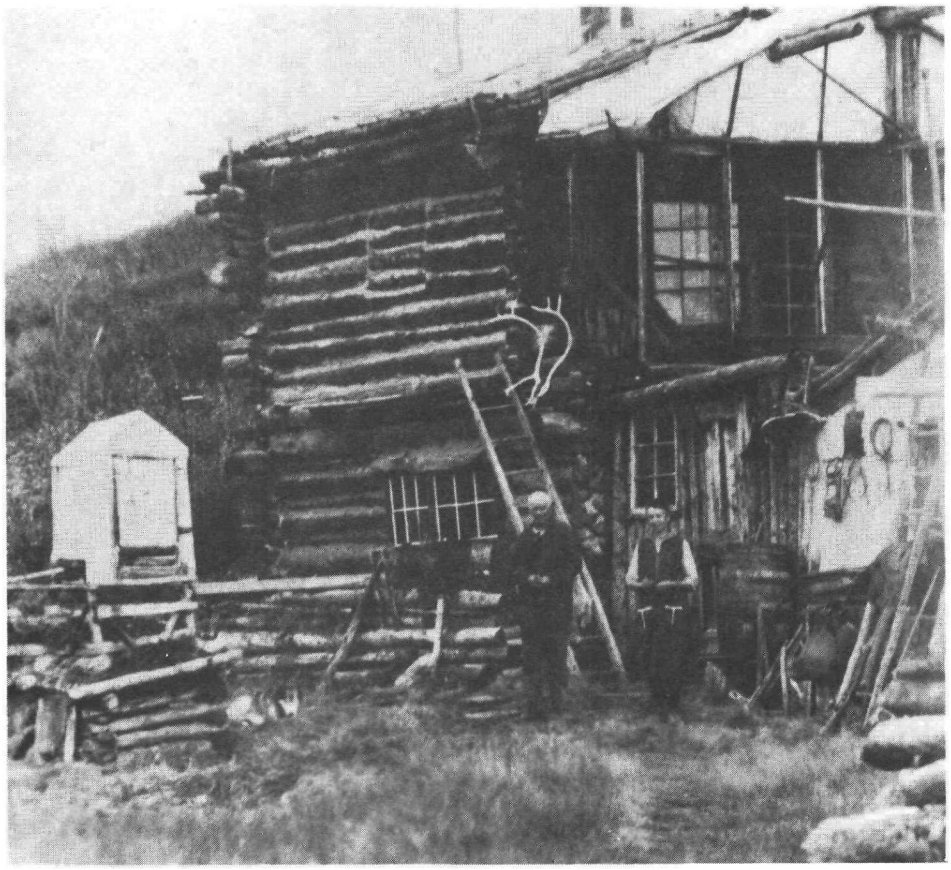
with moments of ethereal beauty and quiet contemplation.

Like many philosophers before him, Bob Marshall found the wilderness a place of peace and purity, a pattern for the lost Eden of man's origins. He realized that only a minority of the world's teeming millions could or ever would find their happiness through direct experience with primeval nature. Yet he believed that perpetuation of the dream of Eden--"of freshness and remoteness and adventure beyond the paths of men"--benefitted and could be shared by all people.[39]

Throughout his life Bob associated and corresponded with people who shared his vision of preserved tracts of wilderness. As the destructive pace of the modern, mechanized world increased, he and those like-minded others focused their energies on founding The Wilderness Society to save representative fractions of virgin country from otherwise inexorable invasion and destruction. In time, with the aid of founders and supporters like Robert Sterling Yard, Aldo Leopold, Dorothy Jackson, and Olaus and Margaret Murie, the Society would become a national force, engendering a movement that allied many conservation and other constituent groups, resulting eventually in passage of the Wilderness Act of 1964. Bob Marshall's contribution to this movement was profound: as benefactor, as strategist and philosopher, as organizer and coordinating correspondent, and as propagator of the faith through



Carl Frank and Poss--"came in 1898 and still active." Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



The Pingel's in front of their cabin on Nolan Creek. Robert Marshall photo, 1930-31. Courtesy of the Bancroft Library, University of California, Berkeley.



Biner Wind, Bobbie Jones, Poss Postlethwaite, and Smithy Wanamaker (in shaft) on Nolan Creek. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



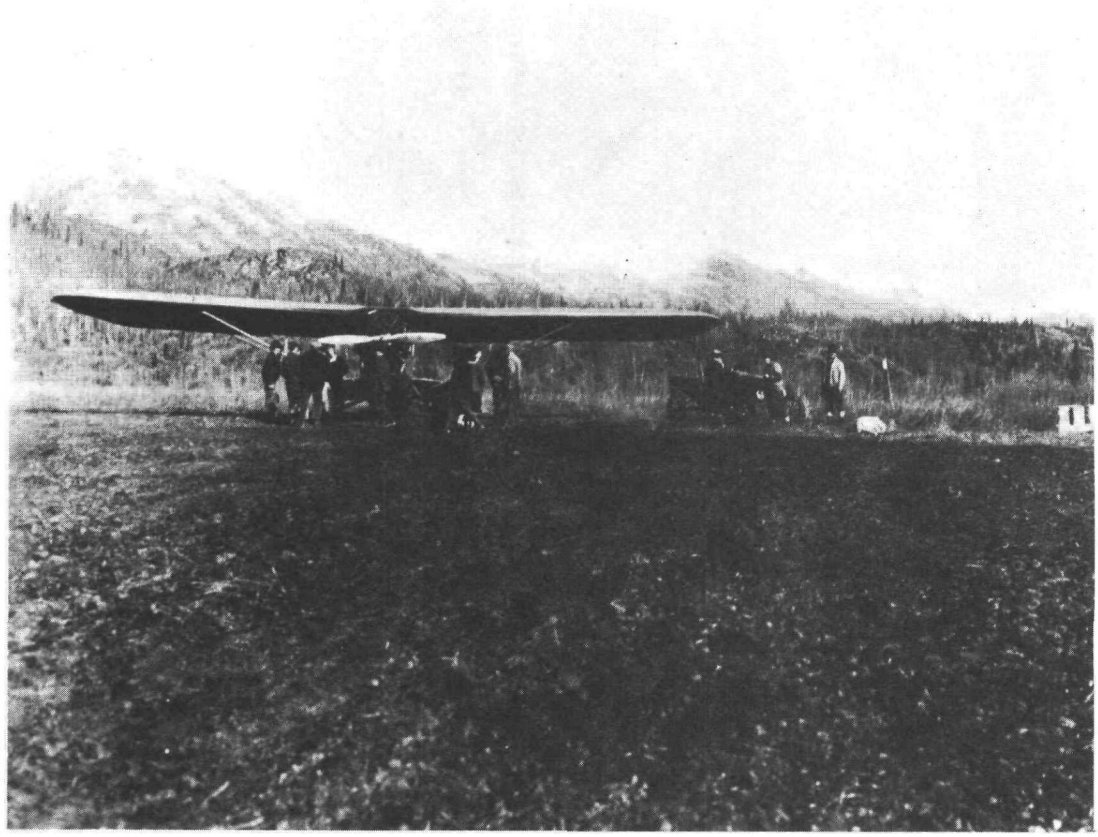
Pioneers of the Koyukuk identified by Marshall, left to right: Billy Burke, Ace Wilcox, Jess Allen, Martin Slisco, Smithy Wanamaker, Carl Frank, George Huey, Pete Davey, Jack Hood, Earl Workman. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



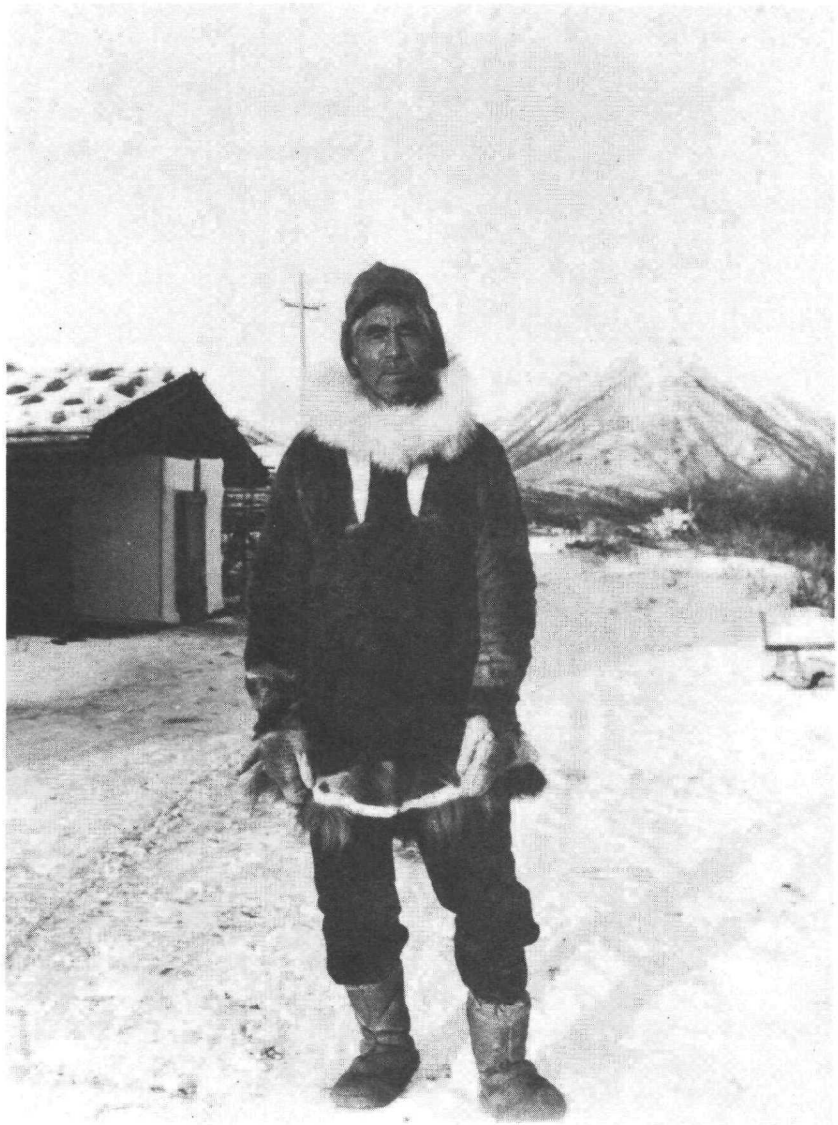
Some of the old-timers at Wiseman, as identified by Tishu Ulen:
1. Ike Spinks 2. Ekok 3. Lucy Jonas 4. Albert Ness
5. Martin Slisco 6. Kitty Jonas 7. Kenneth Harvey
8. Vaughn Green 9. Mamie Green 10. Clara Carpenter
11. Harry Snowden 12. Vern Watts 13. Victor Neck.
Robert Marshall photograph 1930-31. Courtesy of Bancroft Library, University of California, Berkeley.



The "School is Out" picnic at Wiseman. Tishu Ulen holding daughter Mary's hand at left. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



The old airfield at Wiseman with Wien's Fokker airplane and Joe Ulen's truck. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Big Jim in front of Bob's cabin. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



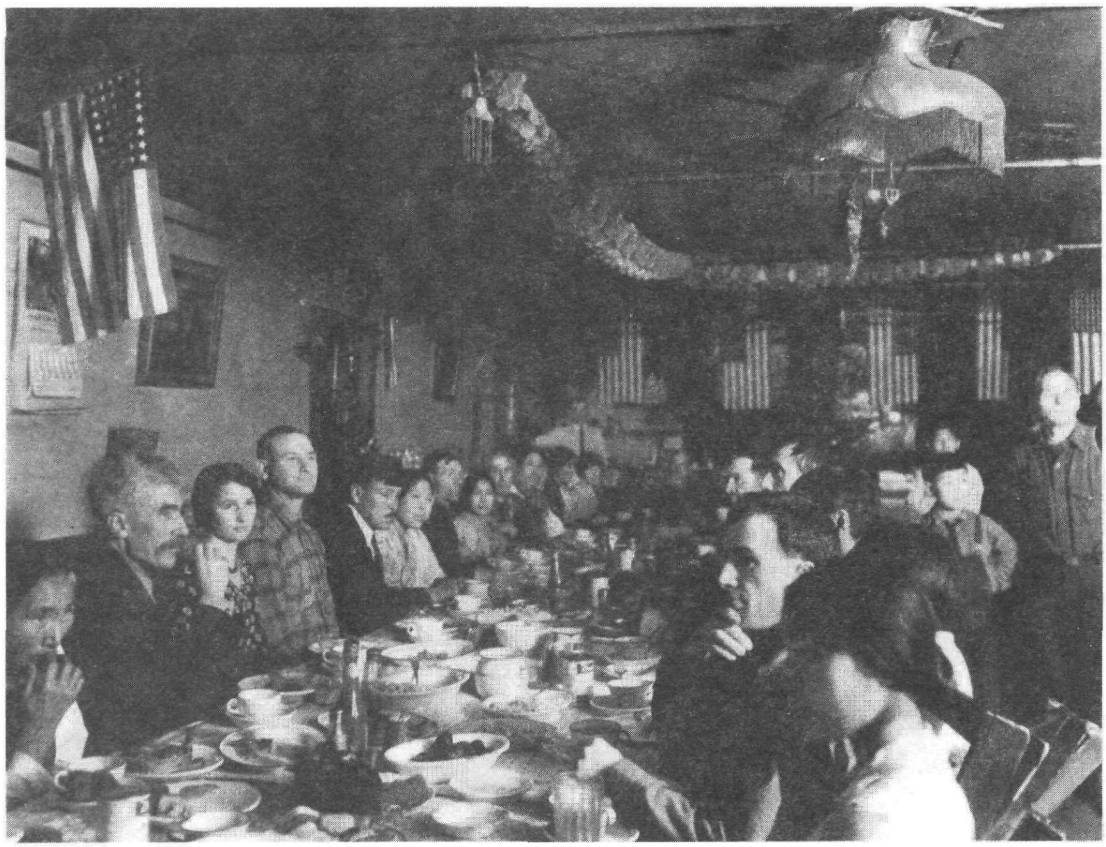
Arctic John (Etalook) and Lucy Sackett at Wiseman. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Mrs. Jonas and family in front of her sod house in Wiseman. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Dance at Pioneers Hall. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Fourth of July at the Roadhouse; Arctic John's mother at extreme left. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



The N.C. Co. store at Wiseman, looking north. Robert Marshall photo, 1930-31. Courtesy of the Bancroft Library, University of California, Berkeley.



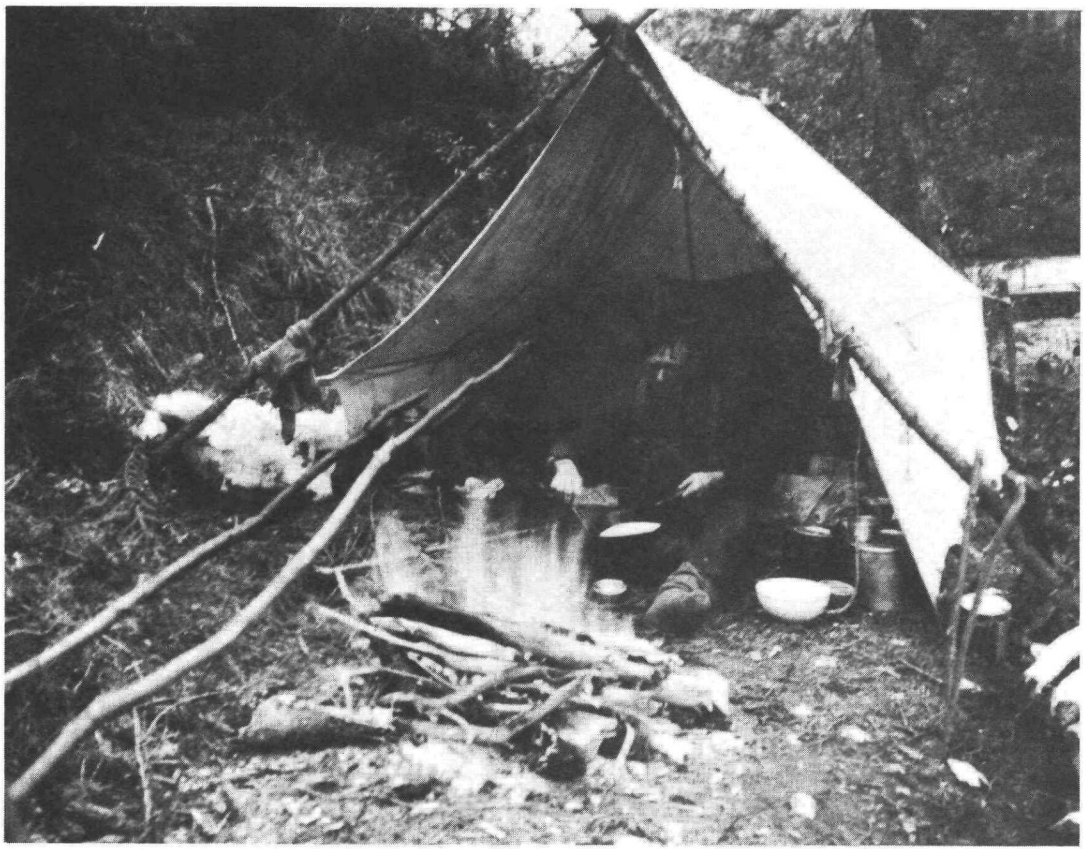
Robert Marshall standing in front of his cabin at Wiseman. Courtesy of the Bancroft Library, University of California, Berkeley.



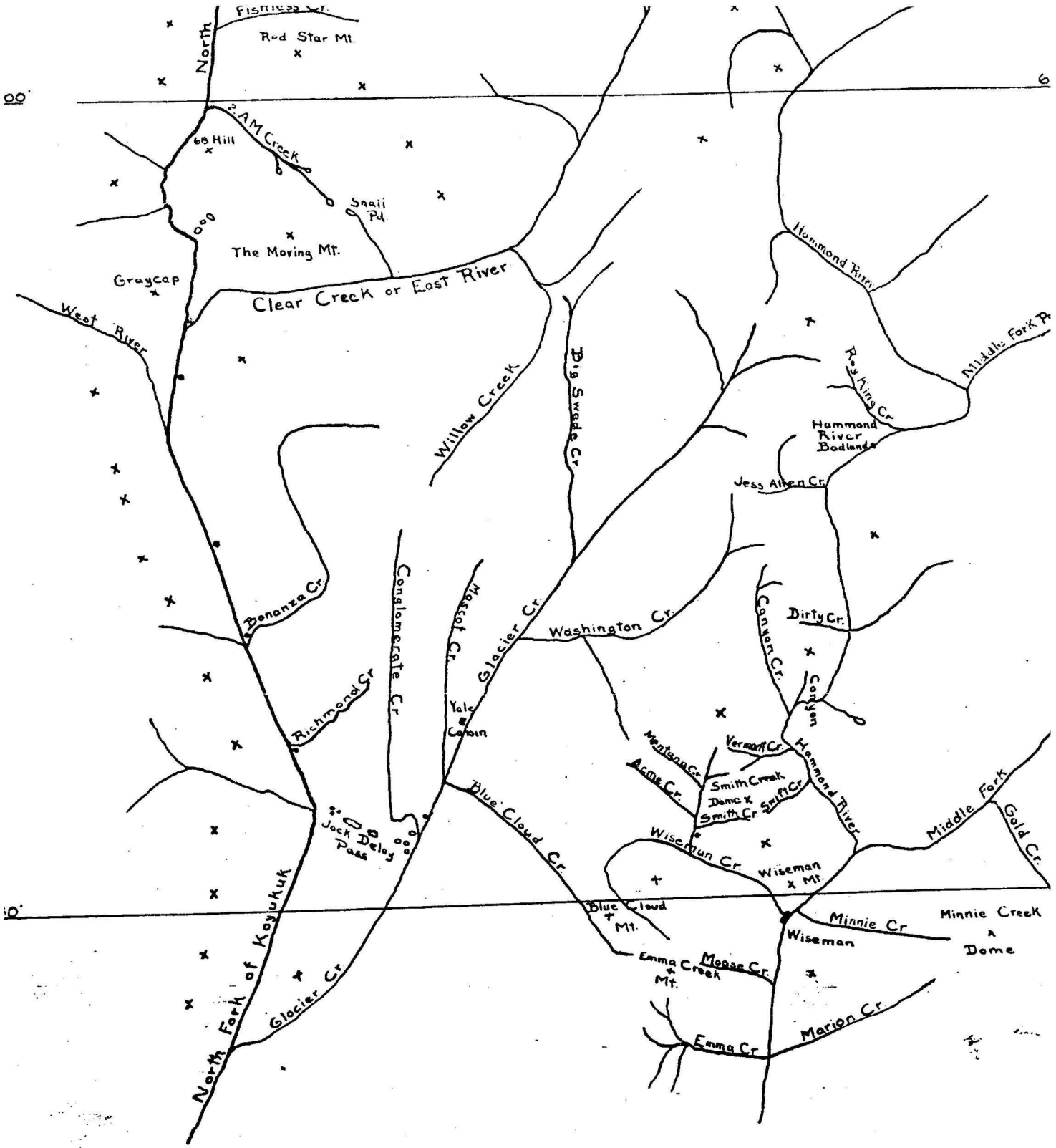
Interior of Bob's cabin at Wiseman. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



Al Retzlaf with two sheep taken during 1929 North Fork trip. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



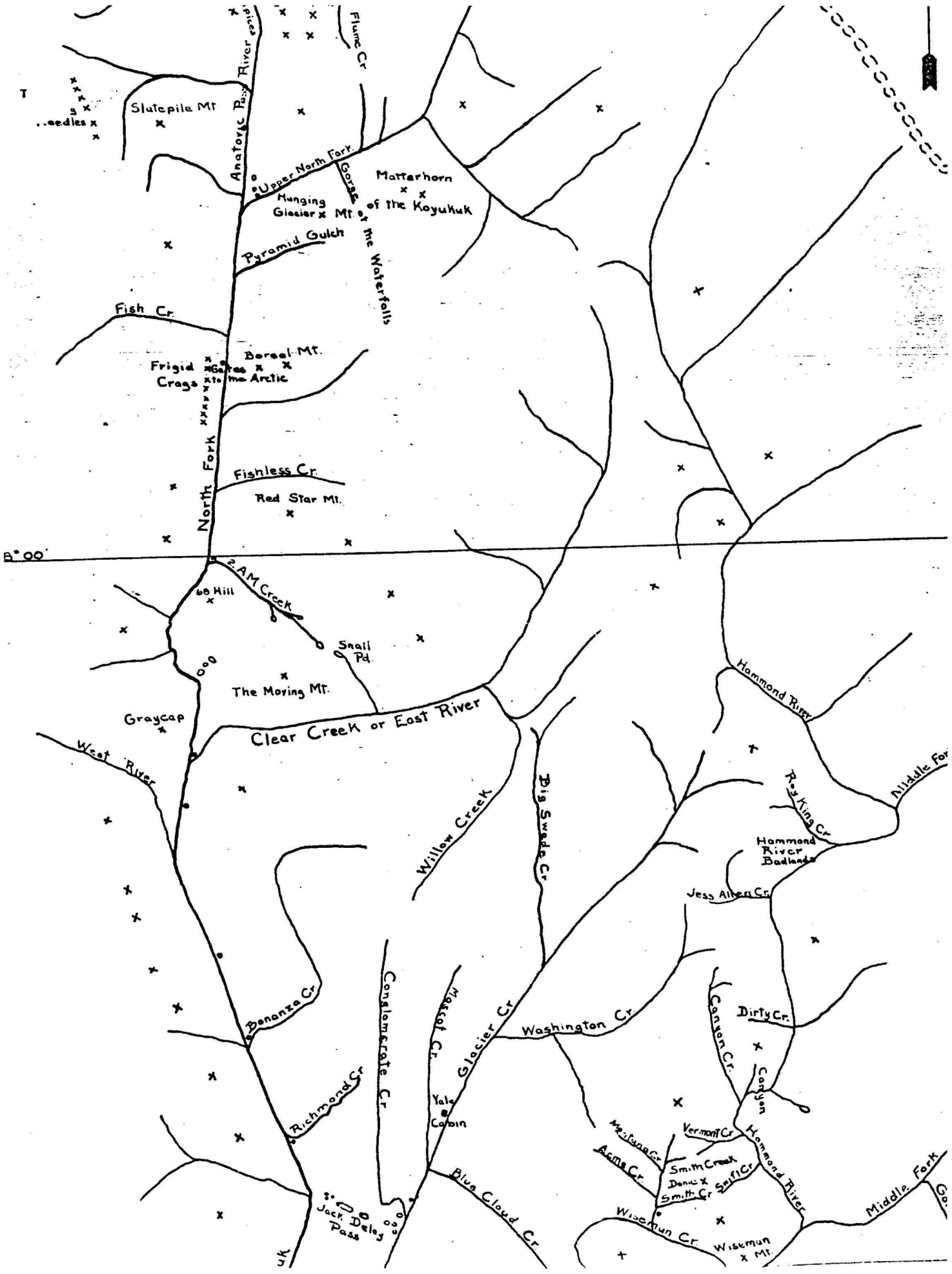
Ernie Johnson cooking at summer camp. Robert Marshall photo. Courtesy of the Bancroft Library, University of California, Berkeley.



RECONNAISSANCE MAP OF NORTH FORK OF KOYUKUK AND HAMMOND RIVER DRAINAGES IN NORTHERN ALASKA

By Robert Marshall, Jess Allen, Alexander Retzlaf

August 1929


Slatepile Mt
Anatoryc Pass
Flume Cr
Upper North Fork
Gorge
Matterhorn
Hanging Glacier
Mt. of the Koyukuk
Pyramid Gulch
The Waterfalls
Fish Cr.
Boreal Mt.
Frigid Crags
Gates of the Arctic
North Fork
Fishless Cr.
Red Star Mt.
68° 00'
2 AM Creek
60 Hill
Snail Pd.
The Moving Mt.
Graycap
Clear Creek or East River
West River
Willow Creek
Big Swede Cr
Hammond River
Ray King Cr
Middle Fork
Hammond River Badlands
Jess Allen Cr.
Bonanza Cr
Conglomerate Cr
Moose Jr Cr
Glacier Cr
Washington Cr
Canyon Cr.
Dirty Cr.
Canyon
Richmond Cr
Yale Cabin
Vermont Cr
Arctic Cr
Smith Creek
Smith Cr
Hammond River
Middle Fork
Blue Cloud Cr
Jack Pass
Delay
Wiseman Cr
Wiseman Mt.

his experience-based scholarly and popular writings. During the last decade of his life, the central Brooks Range vitalized his work, provided him the ideal of what wilderness should be and what it should mean to the Nation. Gates of the Arctic National Park and Preserve, established by Congress in 1980 to perpetuate the country's wilderness character, bears the stamp of Marshall's ideal.[40]

With specific reference to Alaska, Bob Marshall became chief spokesman for the Society. He believed that Alaska, as the last great frontier expanse of the Nation, should be protected from the usual developmental intrusions and progressions that had wracked the rest of the country. In 1938, for example, the Society opposed a proposal for a road through Canada to Fairbanks, declaring that easy international road access would upset both the fragile subsistence economy and the biological integrity of the Interior. Bob argued that the wilderness and recreational values of an undeveloped Alaska were worth far more to the Nation than agricultural settlement would be. The marginal environment and the distance to markets made proposals for agricultural development infeasible.[41]

In Bob's view, the development of Alaska's resources should be retarded for social as well as economic and biological reasons--especially in northern Alaska, where both Native and

pioneer people had evolved lifeways that would be lost in the modern hurly-burly. Promoters and speculators would destroy the last chance for a balanced, nationwide planning outlook, wherein Alaska's highest value would be realized through preservation. Commenting on a report to Congress on Alaska's recreational resources and facilities, Bob argued:

> When Alaska recreation is viewed from a national standpoint, it becomes at once obvious that its highest value lies in the pioneer conditions yet prevailing throughout most of the territory. . . . [T]hese pioneer values have been largely destroyed in the continental United States. In Alaska alone can the emotional values of the frontier be preserved.[42]

The 13 months that Bob spent in and around Wiseman in 1930-31 gave him an opportunity to check the impressions of northern civilization gained during his brief visit of 1929. As he had found joy exploring in the Koyukuk wilderness, so did he find joy in exploring the attitudes and behavior of Koyukuk people.

Titles of main parts and chapters of his book, Arctic Village, show an analytic, scientific mind at work. In the Marshall Collection, box after box of file cards show the indefatigable thoroughness of his research. From daily associations with his friends,

painstakingly recorded in journals and on note cards, came a rich portrait of a unique community.

He delved into the physical setting and history of the place, the people as individuals and as community, economy, sex, recreation, and philosophy. His study is rich in the anecdotes and perspectives of both Natives and whites, and the communal blending that allowed them to live in basic harmony. It was a world that he captured, a panorama of humankind in exquisite and detailed miniature. In his own characterization, Wiseman exhibited ". . . the independent, exciting, and friendly life of the Arctic frontier . . . 200 miles beyond the Twentieth Century."[43]

It is tempting to dip deeply into this repository of a world now mainly gone, but the interested reader can do that with a library card, or through a rare book dealer, for unfortunately Arctic Village has not yet been reprinted. Periodically, through the winter of his residency, Bob wrote more of those long letters home, distilling the essence of his Wiseman experience. A few excerpts from these letters and the journals give the spontaneous flavor of Bob's research while the study was in progress; a review of his book conclusion pulls together the larger patterns he saw in Wiseman society.

After setting up in a cabin rented from Martin Slisco, next door to

his roadhouse, Bob began his rounds, visiting people individually and in such gathering places as the roadhouse or the store. He was what a modern anthropologist would call a participant-observer in community life. He helped where help was needed, learning by doing. His extensive library and phonograph-record collections became community resources, as did his up-to-date knowledge of the Outside world, known only through publications and fragments of news by most Wiseman residents.

One of the first friends Bob got to know well was George Eaton, whose cabin in Nolan was the scene of long discussions. George had been in Alaska since '98, coming over White Pass in mid-winter. He partnered with Smith Wanamaker and Jess Allen mining a hole on Four Below. One day he shared a poem he had written for a social affair at the Pioneers Hall. It was the story of an Alaska miner who made a stake and married a fair woman of Seattle; but he could not settle down and ended up breaking her heart: "The devil's deep voice called me, And damned if I could resist . . . .

> The devil was my leader
> I obeyed each and every command
> And drank, sported and gambled
> With the rest of the fallen band.

When Bob praised the poem, especially the part about the devil's

deep voice calling, George went on:

> That's the part [ex-missionary] Mrs. Pingel didn't like at all, but it's the truest lines in the whole poem. Of course you understand that poem hasn't nothing to do with me really . . . . A person has to change things a little to put them in poetry. But I'm atelling you, Bob, Alaska's broken up more lives than any god damn place in the world. There's Pete Dow and George Huey and myself and god almighty only knows how many thousands more in here lost their homes by coming to Alaska.[44]

On an October dogteam trip down the Koyukuk with Nolan miner Bobby Jones, Bob met the Stanich brothers, Sam and Obran. Central European immigrants, they mined on Porcupine Creek opposite the deserted site of Coldfoot. Bob's visit provided excuse for a holiday so the brothers could talk with Bob and show him their new hole, their new cabin, their remarkable garden vegetables, the whole establishment that they had made. Bob described them as simple, modest people, but strong, clear-eyed, and justifiably proud of the life they had built in the wilderness of a strange land: "We did this all ourselves . . . without anyone else's help."

After 2 days' listening to their life story m working in smelters and mines outside and in Alaska, steadily laboring at the heavy rock work of their Porcupine Creek mine since 1916, building a modest fortune--Bob reflected on what "economic security and freedom can do for men."

> Outside I can plainly picture Sam and Obran. With their lack of education and modest amount of intelligence they would be unskilled laborers, half the time unemployed, struggling desperately to merely exist . . . . But up here, though they work more laboriously, and go through greater physical hardships than they ever would in industrial civilization . . . they live with every comfort they crave (except women) . . . and are conscious always of the joy of being their own bosses and guiding their own destinies.[45]

Bob was fascinated by the variety of topics that might be discussed in a random gathering at Wiseman. In one 2-hour session at Slisco's Roadhouse he noted 21 subjects, from the conservation of matter, through Koyukuk weather, to the best way to cook a porcupine (Vaughan Green's recipe: "Place the porcupine and a rock in a kettle of water and boil. When the rock gets tender enough to stick a fork in it throw out the porcupine and eat the rock.").

Bob delighted in copying verbatim the utterances of the old miners, ". . . most of them cut off from the main stream of civilization for 30 or more years":

> Billie Gilbert (referring to some hair-splitting)--"That's a distinction without a difference."
>
> Harry Foley--"Worry never made me gray-haired. It was early piety, getting down on my knees in church too much."
>
> Harry (in another vein)--"It's nice to sit on the sidelines and look at life as it goes by and wonder what it's all about."
>
> . . . . . .
>
> Of their life in here opinions vary.
> Martin Slisco says: "Gold mining is the cleanest living you can make. You're not robbing anyone or hurting anyone to get it; you're just taking it clean from nature."
>
> Billie Gilbert . . . is less enthusiastic. "Of course everybody in here has some idiocyncrasies. They wouldn't be in here if they were normal. Outside at least a person has a chance to see something and hear something and learn

> something even if they're not making any money."

> Albert Ness is unqualifiedly enthusiastic. "I have absolutely no desire to go outside. In here we have no police, no press, no church, no priests, no tenements, no big business men, no crimes or any of the other things with which they're cursed outside."

The prevalence of socialists in Wiseman astounded Bob. Martin Slisco and Carl Frank thought the capitalists ought to be beaten or hanged. Pete Radicevitch stated: "We won't get socialism until people are hungry. Their minds aren't in their heads; they're in their stomachs." Militarism was another sore subject. Many immigrants had fled Europe to escape conscription. One of these, Pete Radicevitch, who had served one stint in the Serbian army, had this to say:

> You hitch up a horse to a wagon and put bridle on him and whip him to drive him where you want him to go, it's just the same as you put man in army. The rulers, they get the poor producer in the army to kill himself and they wear the nice uniform and roll the mustaches.

Religion came up often, usually resulting in spirited debates. On one occasion Ace Wilcox cited the spirits of animals that taught

them "where to find trails which haven't been used for years." In the same way, the spirits of men transferred their knowledge to new generations. This explained human progress and the phenomenon of geniuses like Thomas Edison, who "must have gotten the spirit from many men." Martin Slisco, scarcely able to read and write, rebutted Wilcox: "No, I tell you how I figure it. When you die you dead and nothing left only a little dust, maybe a pipeful perhaps." When Ace countered with the notion of some psychic spirit, Martin replied:

> You believe that craziness? It's like that Bill Waah who used to be in here. He got a letter from his wife that she had a kid and he hadn't seen her in five years. But he tell everybody he have dream nine months before that he sleeping with wife and baby must have been born that way by dream. She have two more kids while he gone and he think they born too because he have dream.[46]

From his first contact with Wiseman people, Bob had been impressed with their sharp minds. He attributed this partly to voracious reading of magazines and books during the long winters, and partly to the selection process in a difficult environment where intelligence and foresight were essential to survival. His administration of Stanford-Binet intelligence tests to a cross-sectionof age and racial groups confirmed the early

impressions. In every group, the tests registered a majority of above-average results. Children of Native and mixed parentage were all above normal in their attainments. While attempting to find the limits of one bright Native child, Harry Jonas, Bob pushed too hard on a vocabulary test. Harry's reproach demonstrates a clever mind: "You do something wrong to me, you make me don't know."[47]

Bob's thumbnail descriptions of people and events enliven his scholarly efforts. At a roadhouse dance he jotted down appearances and actions. The men, clad in normal working clothes, usually chose the records; but occasionally a woman, in neat but not fancy dress, would play a special favorite. Men and women grouped separately while waiting for a dance. Given the larger numbers of men in the crowd, the women danced almost constantly throughout the night. Kobuk Mary, Tishu's mother, was at the time attending first grade, along with her granddaughter, little Mary.

At the age of 48, Mary, "like most Eskimo women of that age . . . looks to be 80."

> Her skin is dry and parchmentlike, she has blue tattoo marks all over her chin. But she is light as a feather on her feet, dances superbly, has a delicate figure something like Peggy Rankin and indeed when I dance Look For the

Silver Lining with her I might think it was Peggy if I had more imagination and didn't look down at her.

Her daughter, Tishu Ulen, is a remarkable girl. She is strong as an ox and once in a single day carried 75 pounds for 33 miles over a snowy trail. But she is as quiet and refined as she is strong . . . .

Over here is Mamie Green, shouting some pert remark across the floor to one of the men. She is a contemporary of Tishu's, both are about 22. At the age of 16 she was married to Vaughan Green, deputy U.S. Marshal for the district. He was 47. Since then one of the favorite biennial pasttimes of the Wisemanites has been guessing who might be the father of her child. This has happened three times so far and the only thing which seems certain is that Vaughan has been the father of none of them. But he cheerfully lives the fiction that he has and everybody is happy, most of all Mamie . . . . She dances and flirts better than any woman in camp and might fairly be considered the reigning belle of Wiseman.

But not for much longer. Little Lucy Jonas is coming right along. She is only 14 now but in a couple of years she will have the requisite poise and maturity . . . . She is

in the fifth grade in school and doing remarkably well considering that six years ago when she came over from the Arctic Ocean she couldn't speak a word of English. In winter she lives luxuriously in the Jonas Igloo, built of poles and mud and branches, in summer less elegantly beside some moose which her father has shot, the whole family establishing home wherever the animal expires. Lucy's Mamma, Mrs. Jonas or Kal-habuk as she is called in Eskimo, is built along the lines of a cider jug. She looks young for an Eskimo of 33, probably because she has preferred semi-starvation to work. Despite the loss of one eye she is quite good-looking. Considering that she was 27 when she first came among white men she has picked up their dances remarkably well.

That homely little white woman over there is Mrs. Pingel. She dances about as you would expect from an ex-missionary of 63 who took up dancing at the age of 50.

Mrs. Wheeler, the other white woman, is a grandma. She has one paralyzed leg but she drags it gamely through every dance. She says when she can't dance any more she will be ready to die. . . . She is one of the kindest women in the world, has given the old woman-starved miners of the Koyukuk just the sympathy they needed and has been almost

> like a mother to the eskimo girls just starting to raise families . . . .
>
> Knute Ellingson, who has fallen in love with practically every woman, native and white, who has been in the Koyukuk during the past 31 years, had this to say about her in comparison with Mrs. Pingel. "She's done more for this camp than any woman who's ever been here. To hell with this 'come to Jesus' stuff.[48]

Bob worked hard at learning the Kobuk Eskimo dialect to increase his rapport with Wiseman's Natives. "In this language just the slightest mispronunciation may have disastrous effects on your meaning."

> For example, Kobuk Mary who has been one of my three chief teachers, had a cold in the eyes. I knew that Con-no-wit-bit meant "how are you feeling" and I got from one of my other teachers, Harry Snowden, that e-dik meant "eyes." So very proudly I greeted old Mary one morning with con-no-wit-bit e-tik, unconsciously substituting a "t" for a "d". To my chagrin Mary responded with most raucous laughter and told me not to let Harry teach me any more bad words. I finally discovered what my mistake was, that e-tik in king's English (which assuredly wasn't the English

> used in explaining my error) means "rectum" and that I had gone up to Mary and asked: "How do you feel in the rectum."[49]

On Election Day, which was an excuse for holiday and hilarity, miners drifted in from the far camps to vote on who should be their territorial delegate to the U.S. Congress. Bob stood by the Pioneer Hall voting booth and recorded the good-natured banter between proponents of Republican James Wickersham and Democrat George Grigsby. Nobody took the election too seriously, as these random remarks indicate:

> It's a sure bet anyway that neither of them cares what happens to us.
>
> Whatever way the vote goes, things will be just the same as ever on the Koyukuk when it's all over and the world will keep turning once in 24 hours.
>
> All these politicians have the same motto: follow me and you'll wear diamonds, otherwise I'll put you in jail.
>
> Whichever one's elected, we know both of them ought to be in jail.[50]

Even today, as regards government and its agents, one may hear similar sentiments expressed on the Koyukuk--and most other parts of bush Alaska!

In the Koyukuk camp, far from paternalistic arms of government, the community solved its own problems, as this passage from Bob's letter attests:

> After the votes were counted there was a meeting of Igloo No. 8, Pioneers of Alaska. This is the one fraternal order of the community but unlike most organizations of that sort it is almost completely democratic. Anybody who came to Alaska prior to January 1, 1906 can join. There are no secrets and no member is ever favored, no non-member ever discriminated against for that reason. All its property is shared by the whole community, members and non-members alike. This includes a hall where the biggest dances are staged, a large phonograph, a library and a fund for taking care of the sick who are broke. Since there is no civil organization in the community the Pioneers function as a voluntary cooperative for performing many of the tasks usually done by the local government. They supervised the building of the airplane field, raised funds to buy a wireless station, protested to the Post Office Department on the abominable mail service. It was the result of this

> latter action which principally occupied this meeting which I was invited to attend. Also to my surprise they elected me as an honorary member.[51]

Bob's reaching out to the Native people of Wiseman was warmly reciprocated. His family letter of January 27, 1931, is devoted exclusively to his Eskimo and Indian friends. It is a priceless and sensitive documentation of lives, attitudes, and character, centering on the families of Big Jim, Big Charlie, and Oxadak [Aqsiataaq]. For this reason it is included in its entirety as an interlude in this chapter.

*****

(Note: This letter will be set in different type and formatted, in published narrative, so it can be skipped over to pick up continuation of narrative. Historical photos of people mentioned will add to "interlude.")

ROBERT MARSHALL

WISEMAN

ALASKA

January 27, 1931.

I.

Dear Family et al:

Since nothing very thrilling has happened during January, other than the return of the sun after an absence of a month, I shall devote this letter to making you better acquainted with some of my Eskimo friends.

Of course the place to begin is at the cabin of Big Jim and Nakuchluk, for this is the center, social, spiritual, and economic, of the native population of Wiseman. I think the economic is most important, for I can't see any other sufficient reason for Jim's immense prestige among the natives here, which makes most of them look up to him for leadership in all the important problems which confront them. He is not a medicine man: there are none in Wiseman. He is not the oldest native here: that superlative belongs to Oxadak. He is not the best musher: that honor goes to Riley. He is not the ablest hunter: Harry Snowden beats him in that respect. And of course Big Charlie and Jonas have the pretty daughters. But one thing Jim always has possessed has been an amazing amount of energy which has sent him out to the trap lines, out on the hunt, down the river hauling freight, when the other natives were idling around town. In addition, his word has always been scrupulously kept, so that the store has given him large credits. Consequently, Jim has invariably had more food, more worldly wealth in general than any of the other natives. With the prevalent Eskimo custom of potlatching, dividing up whenever one has more than the others, Big Jim has been the principle support of the entire Eskimo

community. Many winters Jonas, who is perhaps the laziest man in the world, has fed his whole family of six, principally on the meat which Big Jim has shot. In addition to this economic prestige Jim is wise, kind, and without favoritism, so it is quite natural that he should be the leader, and his large, clean cabin the communal center of the Eskimos of Wiseman.

Perhaps some night, after supper and half an hour of chewing the rag around the roadhouse, I decide to pay Big Jim a visit. So I start across the town. First, down the main street, across the Wiseman Creek bridge, with yellow light pouring out on the snow from a couple of cabins to my right, and moonlight flooding the whole frozen valley of the river to my left. Then at the store I turn and cut diagonally back from the river, passing more snowcovered cabins with cheery lamplight in the windows, and also several deserted ones, looking even by moonlight very black and cold. All the while the bright waves of the aurora flicker in the sky overhead, and the stars twinkle in the thirty below air like shuttering magnesium powder.

I open the door to Jim's cache, which serves for the storage of all non-perishables as well as for a vestibule, and then open the inner door and enter the house. Jim smiles cordially and says a hearty Konnowitbitch (how are you?), and of course I reply Nakurunga (I am fine). Nakuchluk laughs, says Alapas (it's cold), and I say Alapas apie apie (it's too cold), and then everybody laughs and they all continue with what they were talking about when I entered.

My Eskimo vocabulary is still so limited (only about 700 words) that it is quite an effort to follow the conversation at all, and try as I will, I continually lose the train of thought altogether. So I will take the easier course and describe what I observe after I repose myself on the floor, perhaps beside Cupuk.

At one end of the single room of the large cabin, which measures 14 x 32 feet, all the women are seated on the floor, Nakuchluk is working on some skins, scraping them thin with an amazing collection of homemade instruments, some iron, some bone, some obsidian. She sits with her legs straight out in front of her, her body bent forward, her head bowed over the skin on which she is working. She is a little, dried up old woman, wrinkles all over her face, but with the sweetest childish smile. All the while she works she hums, except when she breaks into the conversation, which is often.

Beside her, smoking an 18 inch long pipe, wih legs also straight in front of her, sits old Utoyak, most elderly woman in camp. She is probably about 70. She is very quiet, seldom smiles, seldom even sings. Although she has lived intermittently among the

Whites for a dozen years I have never heard her speak even one word of English. I think she is entering dotage, and I imagine that her mind strays most the time over the windswept tundra to the north where she wandered for more than half a century. She is the most tattooed woman in camp, with five blue lines running from her lower lip to the tip of her chin, whereas her closest rival, Nakuchluk, has only got three to beautify this part of her face.

Beyond Utoyak sits Kalhabuk, youthful mother of four strapping Jonas children, and wife of the Lazy Jonas. She is the most powerful woman I have ever known. When the store burned down four years ago, and all the people around carried out everything they could in the few minutes before they were driven out, Kalhabuk emerged several times with an hundred pound sack of flour on her shoulder and a fifty pound sack under one arm. I am sure she could lick three out of four men in Wiseman in a fight. But the test could never come off, because she is the most placid of mortals, and takes everything as it comes along in the greatest good humor, including Jonas' indolence. If you ask her why she doesn't make him work she replies vaguely: "Oh, that's all right." She exerts almost no parental authority over her children. She is simply crazy over her daughter Lucy, and would, I believe, sacrifice almost anything to make her happy. She sits there with a cynical smile on her face, unless she is laughing or yawning, and peacefully smokes her pipe.

Between me and Kalhabuk sits Cupuk. She is about 26. She married Louis Sackett, a native from Alatna, who soon after ditched her and left for the Kobuk. Her face is homely, her back deformed, her temper rather fiery, her I.Q. low, so the poor girl has had rather a hard time picking up another man. Externally she keeps up a jolly, lively appearance, and as I sit beside her she jokes, and nudges me, and whispers about licentious dreams, but I know that underneath she is terribly depressed.

In the center of the room, facing the women, Big Jim, Oxadak, and Arctic Johnie sit on chairs. Big Jim is about 65. He has closely cropped gray hair, bright eyes, a protruding jaw with a little stubble on it. On either side of his mouth are two holes into which he used to insert ivory ornaments for the dance. One hole has all closed up, but you can observe soup oozing through the other when he eats. His clearly enunciated voice is always the dominant one in the conversation. His wrinkled forehead and a worried look in his eyes make you feel he must have known great tragedy, until he smiles when you forget everything except his sincere geniality.

Oxadak is a couple of years older. He is Utoyak's husband. He speaks hardly any English either, but is much jollier than his wife. He has a deep, base voice, in striking contrast to the high

pitched voices of the other Eskimos. Arctic Johnie, his adopted son, is a surly looking native of perhaps 35 years. He seems solemn and morose, and this impression is accentuated by his very dark skin, the other Eskimos here being as light as dark complexioned Whites. He dresses exquisitely, mostly in furs, and seems to take great pride in his personal appearance. About ten years ago he brought down his wife, Louise, from the Arctic and she refused to go back with him. This November he came in with his wife, Annie.

I sit beside Cupuk and watch them all: Big Jim and Oxadak talking in loud, guttural voices together; Nakuchluk working; Utoyak smoking her pipe; Kalhabuk smiling across at me; Cupuk whispering about the dream she had last night; all women, now chattering together, now singing in a low voice, now breaking into the conversation of the men. Very frequently everybody in the room rocks with laughter. Sometimes Big Jim tells me in English what the joke was about. Here is one typical story, in the exact words which he used to explain it, which caused everybody to roar, made Big Jim pretty nearly break down laughing before he could finish it, and almost compelled Nakuchluk to choke. Remember that him, as the Eskimos use it, means it as well as him.

"Long time ago, me young man, six men go hunt. Take him along fish, take him along seal oil, pack them over. Pretty soon no more grub, all gone, he no last long, somebody get him little bit of flour from ship. No steamboat. Ship.

"Make camp, old man get him over close to fire all time, no one else get close. Take off parky, all time close fire. Turn one side to fire, turn other side to fire, no keep him warm. Young man fix it up, mix him flour in frying pan, no grease in it, put him on fire. Says, 'Here, old man. You all time too close fire, you hold him pan.' Old man says he no savvy make hot cake. Young fellow give it to him right away, says: 'You hold it.'

"Pretty soon hot cake burn him on bottom. Young fellow says: 'You turn him. Move him.' Hot cake no cook him on top at all. Old man shake him little bit higher, little more up, up, up, up, up above him head, (all the while Jim talks his whole attention is concentrated in acting out what he is telling, the old man shaking the frying pan and gradually raising it until it is high above his head, and at the same time nervously uncertain of how he should flap the hot cake over) pretty soon throw him up, pretty soon (hot cake) fall, hit him over head, old man turn head round, pretty soon he (hot cake) roll him down back of head. Hot cake stick him there on neck behind, no parky, no nothing. Everybody laugh then, old man roll down in snow, take him out. Old man no mad, he laugh too."

Stories like this, of funny or ridiculous experiences, both of themselves and their friends, form one of their favorite subjects of conversation. Hunting experiences, and especially current discussions of where the game is now are of special interest. So too are geographical discussions, how the rivers fork, where the passes lie, where the niggerheads [tussocks] are especially bad. But the favorite topic of all seems to be gossip, for they are for the most part very catty, and always are down on at least one of their number about whom they can't make mean enough remarks.

Often late in the evening Jim will bring in the bass drum, while Oxadak and Johnie will take the little ones, and then everyone joins in singing until the rafters fairly ring to the stirring music of Tunga Chunga and A Yah Yah E Yah.

II.

When Big Jim was still a young man in his native Sellawik country along Kotzebue sound, just north of the Bering Straits, he fell under the influence of the Missionaries. Their teachings became the dominant force in his life. All the complexities of nature, all the perplexity of how the infinitely varied world he knew came to be, all the fear provoking superstitions, were simply resolved in a perfect faith that a beneficient God, not so different in character than Jim himself only infinitely greater, had created the universe for the happiness of mankind. In a severe life in which young friends were continually being carried violently to death, in which beloved parents died and apparently rotted away, it was very consoling to learn that after death everybody would be reunited in an existence infinitely happier than that on earth. "We know nothing about all this, me no know how earth come, till me learn God business. Now me learn God business, everything fine."

But Jim's religion, which eases his mind of worries, and teaches him to live a life which sincerely strives to follow the admonitions of the Ten Commandments and the Sermon on the Mount, is far from a puritanical one. He decries the missions which forbid the natives to dance. He likes to see people happy all the time. He drinks when he can get something, though unlike almost all the other drinking natives, he almost never gets drunk. He smokes, dances, sings, has sexual intercourse, and isn't ashamed of any of them. He doesn't even resent his wife going to bed with whomever she wills when he is away. These liberal beliefs he claims to owe to the famous Archdeacon Stuck (first climber of Mount McKinley). I imagine if Jim were asked to name the three greatest people in the history of the world he would enumerate God, Jesus and Archdeacon Stuck.

Jim's morning program when he is out in the hills is as follows: "Just get up, pray first and sing little bit. He no forget anything you pray him, God. Some people forget him pray, no help him God. White people, native people, all same (to) God. All of us just like brothers. Then me build him fire. Pretty soon sing some more, singing good morning, sing pretty hard, open him lung, feel pretty good. Me never sick, sing hard morning. Feel fine. Nakuchluk sing too."

He is entirely fearless of any of the many dangers of the North. He is so exceedingly competent that despite sixty years of wandering in the wilderness he has never seriously frozen himself, never even suffered a single major injury. About five years ago he killed a bear near Coldfoot with an axe. When I asked him if he wasn't scared he replied: "Dogs scared, me no scared. Me scared of bear, he kill me all right. Me no scared, he no kill me."

Although Jim is no medicine man, he has many practical home remedies. Here is his attitude toward boils.

"I see him boiling business sickness lots. He bust, he no all come out, he grow again. You cut him, you no clean him good, bime by he come back again. You keep him rotten all time, put on rag, put on soap, chew up sinew, put him on, keep him warm with cotton, then pretty soon he get very rotten, you clean him good knife then, no more come out. Old man, me father and me father's father all teach him that. Call him boiling business."

Which in other words simply means, wait until the boil is ripe before lancing.

Both Jim and Nakuchluk have taken the kindest interest imaginable in me. Jim says: "You know me boy, Johnie? You all same me boy." And Nakuchluk says: "Me be your mamma." So they have done the loveliest sort of unexpected things, brought me old trinkets which they took from the Arctic, made fancy gloves and fur boots for me, shown me how to make fire without matches. Especially Jim has delighted in teaching me how to talk, how to sing, how to dance in Kobuk fashion. He is a severe teacher in that he insists that what he teaches be learned exactly right. He may take [a] few minutes to get me to say a single word just correctly. He makes me watch his lips, shows me where his tongue is placed for each sound. If I make the slightest mistake he shakes his head and says: "No good. No good at all." But when I get it right he beams all over, as if he'd just gotten a silver fox in his trap, and he encourages me to further effort with his happy "auriga!" He had a terrible job teaching me to dance, my rythmical sense being so poorly developed, but he would encourage me with remarks

like: "Learn to sing, dance together just like telegraph. Hard work at first. Pretty soon you learn him, no more hard work, fun all time."

III.

Ike Spinks told me that I must be sure to get the story from Nakuchluk of how Peluk, her first husband, disappeared. Ike said the only way to get it really right was to wait until Big Jim was gone some night, and then go to bed with the old woman. I didn't think it was necessary to adopt such heroic measures, but I did think she might be less inhibited in telling her tale if Jim wasn't around, so I came over one evening when Jim was off to the Mosquito Fork. This is the story I got, about one quarter from her Eskimo, about one half from her English, and about [one] quarter from Cupuk's excellent translations.

The whole trouble commenced one spring, some thirty-three years ago, when an unknown Eskimo, encamped on the tundra along the Arctic Coast, heaved a stone at his dogs who were barking. Now it chanced that the trajectory of this missile, instead of carrying it to the ribs of one of the raucous canines, collided with the skull of a passing Eskimo named Mukollik. Mukollik dropped unconscious to the ground, and his loving wife, Missonik, rushed posthaste to Peluk, who was a great Medicine man.

Please do not think I am exaggerating his prominence. I will quote you one little example of his miraculous ability, just as his own wife Nakuchluk told me about it, to prove to you his potency. "Man sick. Peluk put big bugs on him, big bugs. Pretty soon he take them off, swallow them himself, bime by vomit them up. Man get all better again, pretty soon he all well."

As soon as Peluk saw Mukollik he realized his case was very grave. But extraordinary conditions may sometimes be cured by extraordinary measures, so he prescribed this unusual treatment, that he, Peluk, should have sexual intercourse with Mukollik's wife. Nevertheless, Mukollik died.

Now Tunach, the devil, was exceedingly wrath for he did not approve of adultery with the prospective widow as a treatment for a fractured skull. So he gave Peluk to understand that he had better beware. Then Peluk explained to Nakuchluk that Tunach would surely get him if she ever let Peluk get out of her sight, that to circumvent Tunach she must always follow Peluk wherever he went. Peluk also told Nakuchluk that if Tunach ever did capture him he would try his best to get back, but that she must never allow any men to live with her or he could not return.

In the autumn of that year Peluk and Nakuchluk headed for the Arctic divide to try their luck on the Koyukuk. They crossed over at the head of John River, and food having run short, spent some time there snaring rabbits and ptarmigan. One day they spied some caribou on the hillside a short distance above them. This was rare luck, and Peluk hastened to get his gun. He left Nakuchluk to attend to the snares, but cautioned her to keep an eye on him constantly.

She watched him mount the hill, but as he approached the caribou they started to walk away. Pretty soon they disappeared behind a little hummock. He followed them, and she continued working on her snares, expecting him to reappear at any moment. But he didn't. The short December day drew to a close and still no Peluk. She spent a sleepless night in their skin shelter, and at first daylight started out to hunt for him. But the wind had blown during the night, and Peluk's tracks were all covered over, so she saw not the faintest trace of him. The next day she set out again, looking for him, and the next day, and the next. But all in vain. Peluk had vanished as completely as the flowers of summer.

A few days later a couple of hunters from the Arctic passed by her camp. They joined her in the hunt, and slept that night in her shelter. Next morning when they went outside they saw Peluk's fresh snowshoe tracks coming almost to the shelter, and then abruptly ending. There were no back tracks. Tunach had snatched him again when he was almost to safety.

The hunters wanted her to come along with them, but she refused to go. Maybe she could still find Peluk. Maybe he would try to come back again. She would stay there without a gun, living on what ptarmigan and rabbits she could snare, and hunt for Peluk every day.

"Me look round, me look round lot, me look round every day, me no find him. Me no find him at all nothing. Every morning, me wake up, me go outside, put him ear on snow, listen, maybe me hear him come. Him no come. Me hear nothing, me hear nothing, only wind, only wolf howl, only ice break him. Me snare few ptarmigan, no more rabbit. Dog die, no nuff ptarmigan (for) me (and) dog. Me get pretty poor, pretty near me die too. Bime by sun come up, pretty soon lots people come along. Me pretty glad, me so glad me forget Peluk."

Of course they came into her shelter, men and women both, and she told them the story of her misfortunes. While they were talking they heard a sound outside, like the wind, and saw a man's shadow on the snow.

"'Ha! Peluk come home!' everybody say. Me run out, look, nobody, just black shadow. Bime by me look again, no shadow at all, nothing. Me never see Peluk again, me never see him no more."

IV.

One night when I was over alone with Big Jim, learning to sing, there was a frenzied knocking at the door. Jim opened it, and there were Bessie and Jennie, almost choked with crying.

"My Charlie dying," Bessie wailed. "He coughed up blood, he's bleeding from the lungs, come quick."

Then she and Jennie started back on the run to their tiny cabin, about 50 yards away, and Jim and I followed. One the way, Jim made a very practical division of labor. He said: "Me make praying business, you give him medicine."

And so it was arranged. When we got inside the cabin Jim immediately flopped down on his knees, and, with bowed head, commenced an earnest prayer for Charlie's recovery. Charlie was sitting at the edge of his bed, bent over an old butter can which was used as a cuspidor, and now and then spitting out a little blood. It was a slight hemorrhage, and on the spur of the moment I could think of no medicine to give him except to have him lie down, as quietly as possible, and to loosen everything tight about his clothing, which was almost nothing. When these simple operations were completed I joined Jim on the floor, and helped with the "Amen" in which Jennie also joined, but Bessie shook so with sobbing she could not enunciate a sound.

I have never seen such a picture of complete, woebegone misery as Bessie presented. You would have thought she was watching her husband and daughter being burned at the stake. No, it was worse than that, for in such an event she would perhaps have mercifully fainted. Now all she could do was stand and howl and shake, with a look like a woman of ninety on a face which chronologically was only 33 years old. After a while, when the bleeding had stopped, she managed to splutter out a few phrases.

"Oh, my poor Charlie.---- Why did I ever come to Wiseman. ---- If Charlie dies I rather be dead. ---- That's how I lost my two little children already. ---- Marie was sitting right beside me sewing. ---- All of a sudden she started choking. ---- Whole lot of blood come up, just like this. ---- In a few minutes she was dead. ---- I wish I was never born. ---- I wish I was in Bettles. ---- Oh, my poor, poor Charlie. ----

Then she would lay her head on Charlie's chest and just sob again, until I would have to impress on her that it was essential that

Charlie be kept quiet.

Meanwhile Charlie took the whole matter with stoical indifference. He wasn't the least bit excited about the blood, assured Bessie that he felt a whole lot better since he had coughed it up, that the cold which had been bothering him for two months would now be cured in no time. He said to me, with philosophical resignation: "Funny thing, my Bessie. Me get sick, anyone get sick, she act just like crazy. She love me too much, I guess. Funny thing."

And Bessie, with great heaving of her breasts, sobbed out: "I can't help it."

V.

After that evening I came on exceptionally intimate terms with the Suckiks, as they call themselves for that is Big Charlie's Eskimo name, and the last name which the whole family has adopted. Bit by bit, I have picked up both their biography and their philosophy.

Big Charlie was a native of the Kobuk country, where as a boy he grew up largely on caribou, seal oil, berries, and fish. In 1898, when he was sixteen, he and his father set out on an all summer's hunt across the Endicott Range to the Koyukuk. It was here that they met the first white men they had ever seen. I will let Charlie tell the story.

"First white man I ever saw down below Bettles, '98. Me and old man come over from Kobuk down head of John River. We see white thing like smoke against hill, and we go see what it is. Pretty soon we see man, look different any man I ever see. He say: 'Hello!' I don't even savvy hello. He give me tobacco, and I smoke that fine. Pretty soon he motion like this (making beckoning motion). Then me and old man follow. Then he walk a little ways and motion again, and we follow some more. Pretty soon I says to old man: 'Maybe he want us to go with him.'

"Then we follow him, and pretty soon we see big boat in slough. We never see anything like that, white smoke coming out and everything, and we scared. But he go on board over gangplank, and pretty soon he go down in cabin, and come out with tobacco, and throw it at us. We know that, and when he motion some more we think he all right, so we come on over gangplank. Then he take us down to cabin and make motion, and long time we no savvy nothing. But then old man says to me: 'Maybe he wants us fetch him caribou skins, he give us tobacco.'

"Then he take us to other cabin, and we set down at table. I never see him table before. Funny thing. Then man come in and bring all sort of grub, set him on table. I know nothing about that sort of grub. I don't know nothing about use him fork, I no savvy plate. I no know which way to hold knife and fork. Pretty soon I eat bread and tea, I know that all right. Pretty soon white man put something yellow on bread. Pretty soon I swallow it, pretty soon it go down just like strong whisky. I feel it go all the way down to stomach, it burn like fire in stomach. My papa all scared, he try doctor me up this way with hands, blow on me. Pretty soon I all better.

"Stay four days, pretty soon I like white man's gun. He show me bullets, 30-30, and I think he too small to kill anything with. I think his gun bum, no good for nothing.

"Us fellows no savvy white language for long time. Pretty soon we find native boy, he savvy quickly, he tell us few words. Then we know few words, pretty soon we learn real quick."

The year before Charlie came over from the Arctic, Bessie was born somewhere down the river near the mouth of the South Fork. Her people were Koyukuk Indians, and she had the childhood which most Koyukuk girls must undergo of terribly hard labor before she was ten years old, packing huge loads of wood, working on the gee-pole, curing the meat which the men cooked. I have heard the life of the Koyukuk girls described by a white man who has lived a great deal among that race "as part way between how we treat our children and our dogs, but a whole lot nearer the dogs."

When she was still a tiny baby her father, Big William, had taken sympathy on his brother, Big Betas, who had just lost his only child, and had given Bessie to him and his wife to raise. At eleven she went to work at the roadhouse in Bettles, and for five years she stayed there, waiting on tables, helping in the kitchen, dancing all night long, drinking heavily, smoking, giving the men who stopped there frequent sexual gratification. She learned there, both the white language and the white customs.

Meanwhile Big Charlie had prospered exceedingly well in the Koyukuk. He was strong, energetic, intelligent, lucky, and made good money, mining in the summer; trapping, hunting, and freighting in the winter. He was scrupulously honest, and the old Northern Commercial Company often trusted him with the transportation of several thousand dollars in gold. At one time he had over $2,000 deposited at the Northern Commercial store, which was something absolutely unprecedented among the natives. He made his home in Bettles, living right next door to Bessie's home.

In the spring of 1913, shortly after the breakup, Charlie was starting out for a summer up the John River. As he was about to shove his boat off, Bessie came down to say goodbye. She had liked him very well for years, had come to think of him as a big brother, in fact called him brother. When she came down this morning Charlie said jokingly: "Don't you want to come along with me up John River?"

"Sure", she said instantly. She went right home to get their things, and left with him that day. They must have spent a very happy summer together, judging by their frequent fond recollections of little incidents. They returned in the autumn by way of the North Fork and Wiseman, where they were officially married in the white manner.

During the next four years they wandered all over, mining, hunting, trapping. Three children were born to them, and they were very happy. But in the spring of 1919 all of their children developed severe colds, and the oldest and youngest died within a few weeks.

This broke them up completely. For weeks they did nothing but bemoan their fate. They never again seemed to develop their old energy. Thereafter, Charlie never would do any work at all as long as there was something left to eat in the house, and he kept putting off things so consistently that the other natives got to nicknaming him Tomorrow Charlie. Bessie, who can make the most beautiful beaded moccasins, rarely indulged her art, except under the pressure of necessity, and spent most of her time dancing, loving Charlie, and fondling Jennie, the one child left her.

Today time has worn off much of their misery, and they are generally an exceedingly jolly family. They are continually joshing you, and they all have a hearty laugh. But they still remain as lazy as ever, making their living just as much as possible from handouts which the whites, who are mostly very fond of them, frequently give.

They are both passionately devoted to Jennie, who is 14-1/2 years old, and exceedingly good looking. Bessie shows me the magnificent bead work she can already do, Charlie points with pride to some drawings she has made. Both stress what a very good girl she is. Both delight in telling stories of her precocious remarks, just like any white parents. For example, when she was five she had asked her papa: "What make ptarmigans so wild? Do you think maybe little mice chase them all the time?"

Charlie asked amazedly: "Who told you that?"

To which Jennie replied saucily: "Don't ask too much question."

After nine years they still are made all happy, just by recounting that tale.

As I have said, they love to joke. Here is a typical conversation.

Bessie--This is some old shack. Look at the floor there.

Bob--Don't you get your feet all full of slivers when you get up in the morning?

Bessie--Sure, my big toes are just full of them. That's why I don't come up to dance anymore.

Bob (advancing with open knife)--Take off those moccasins and I'll amputate your big toes. Then you can dance again.

Bessie--You don't get fresh to me or I'll burn your whiskers off.

Jennie--"Where's the coal oil, Mom.

Bessie--That's right, we sprinkle a little coal oil on them, touch a match, and zing, it goes.

Meanwhile Charlie sits and chuckles, and the rest of us all laugh.

Although they are on good terms with all the natives of Wiseman, they and Harry Snowden alone remain aloof from the potlatch, and the custom of keeping continual open house. "I feel all sick if I can't be alone some time," Bessie says.

In religion they are even more unique, for they are the only ones who don't go to the prayer meetings which Jim conducts periodically. Both Charlie and Bessie are agnostics. When you ask Bessie what she thinks will happen after she dies, she just shrugs her shoulders. Charlie is a little more verbose on the subject, though no more plain.

"Long time ago, before you're born from mamma, you don't know. Then you born from mamma, you do know. After you dead pretty hard guess what happen. You guess, I guess, all same. All us fellows know, he dead and buried and leave him there. All I know, I want to have as much good time I can when I live, no worry about when I dead."

He is very tolerant on the subject of belief.

"Long time ago, even before white man come, native have story

spirit leave body, go other place. Good thing to believe, I guess. Got to believe something. Belief don't hurt nobody."

As for himself: "I no believe nothing I no see. Other natives, they see devils and spirits and all sorts of people that really aren't real. I no see nothing ever. Maybe so, but I no believe it."

About the relation of man and wife they both talk frequently. Charlie says: "Too bad husband, wife can't always die together." Subjectively, he remarked: "My Bessie, me, just like two kids together. Have good time together all the time, never fight."

Bessie's comment on him was: "I think Charlie's the most wonderful man in the world. He's always good natured, never gets angry about anything. I'm not that way at all. I tell person just what I think of him, fly right off the handle."

One day, when Charlie was still in bed, Martin and I dropped in for a visit. Bessie was combing her heavy, black hair, which reached to her waist.

"Are you a barber?" she asked Martin, laughing.

"Gee whiz, you ain't going to cut your hair. You look fine as it is."

Bessie laughed some more.

"Don't worry, Martin," she said, "I'm not that crazy yet. There's no sense in it."

"That's the way I feel about it. You're real, old fashioned woman that way, and the way you love Charlie."

"Sure, I'm old fashioned woman. If you no love husband, what's use to have husband at all."

"Doesn't that make you jealous, loving him so?"

"Of course! The two got to go together. Where you has no jealousy, you can't has any love."

Charlie doesn't believe in the marriages so prevalent in Wiseman, of a man in the late thirties or forties wedding a girl in her early teens. "Old Man, young girl marry, no good. He wants sleep all time, she wants dance all time, they can't be happy that way. Young man, young girl marry, they have same laughs together, same jokes, same troubles, same happy, same everything, then they get along fine all the time."

His advice on courtship was this: "Me tell you Martin, any time you like him girl, you no go after him. No good, that kind of girl for man. You want him girl, him go after you, him all right, that kind. Long time ago me young boy, me savvy girls plenty."

He believes in the essential sameness of the human race, both as regards place and time. "All over just the same: some people fine, some people no good, some people just like dog, no heart at all. Native, White, Arctic, Koyukuk, Yukon, Outside, all over, all the same. Long time ago, maybe one man meet other man in woods, kill him with bow and arrow, long time ago. Today some man all same, only maybe they scared to kill because Marshal arrest them, otherwise all same."

Their attitude toward child education is frequently discussed. It can be summed up in one short remark of Bessie's.

"I never punish Jennie. Charlie and I never spank her in our lives. If she do something wrong I just tell her it's not nice and she don't do it any more. Punishing children all the time is no good. It just makes them mean."

VI.

I had planned to write you about Harry Snowden, lone wolf among the natives here, only Eskimo old bachelor in the Koyukuk, who maintains that if "young kids get married together, all same cat, scratching and fighting together all the time." I wanted to tell of my visits to the igloo where three Arctic families live together, and where upon entry I am immediately knocked down by four little kids who can't speak any English, but who delight in stroking my whiskers, riding on my back, and generally clambering all over me. Especially I wanted to write of the great fight between Arctic Johnie and his beautiful wife, Annie, which caused the latter to leave her husband and set up an independent household for herself and children, as well as breaking the entire native population except the neutral Suckiks into two fiery factions. But I have already drawn this letter out to an indefensible length, so I must reserve those tales for personal narration to any one interested.

BOB.

* * * * *

These have been some of the raw materials from which Bob Marshall fashioned his sociological study of Wiseman. They give only a hint, a flavoring of the 372 pages that make up a narrative full of the philosophy, humor, and wonder of people--Native and white--thrown together on the edge of the world, forced to develop their own social contract.

Bob's Arctic Village narrative concludes with an excerpt from a letter he had received from Mrs. Pingel, who, with her husband, had left the northland for their farm in Iowa:

> We are living among nice people who spend all their days here and have attained to a certain perfection in furnishing and upkeep of the modern home, while I roamed the hills in search of wild flowers and berries. While I walked to town to hoe my potatoes or get the mail, they dusted, polished, garnished. While I sat down by Big Jim or Nakuchluk or Jonas or Kalhabuk or Kaypuk or Dishoo [Tishu] or Mamie or Lucy, they sat around a polished front room table, playing cards. While the hills and the mountains, the valleys and the creeks talked to me, they only beheld their neighbor's house.
>
> And now comes the measuring rod of what they call civilization. All the things they do must be done--the quilt blocks sewed, the house ready for invited guests who will invite them again; while for years we had the latchstring out to any old boy who was hungry. . . .
>
> People here are so impatient with our love for Alaska as a land of scenic beauty when they hear you have to walk to see it. And mining is madness as long as you haven't made a lot of money, the pleasure of hunting treasures in the bosom of the earth is folly unless you know where to dig and where to pick up gold. The wild flowers by the roadside as we walk to town are not interesting to them if

> thereby you must walk.
>
> Oh, these people here have everything a person could wish for--modern homes, electricity, radio, all the good things like eggs, milk, butter, fruit, berries, gardens. I wonder what they would wish more in heaven. Still they are only half awake--dull, routine slaves, tied down to follow each other.
>
> When I picture the life in the North and here I say--my stomach is better off here but my mentality lives its best up there. The big open spaces are alluring, the lovely air, the near-by rainbow, the friendliness of the people. How interested we are up there in everyday occurrences and each other; helpful, ready to do all we can.[52]

Bob chose Mrs. Pingel's words as a kind of benediction that expressed the ultimate, operating principles of the Wiseman community, overriding the petty conflicts of the moment. As well, these words reiterated his theme of blended landscape and people.

His own conclusions touched on the meaning of life, the bases of happiness. After his immersion in the civilization of the North, he stated his personal belief that ". . . the average value of life rises higher above the dead level of oblivion to the people of the Koyukuk than it does to any of the other groups of American people whom I have known."[53]

To the attainment of this condition he attributed specific factors:

* Personal and economic independence, the ability to shape one's own destiny--meaning emancipation from the

interplay of economic forces and the restraints imposed by other men.

* The fact that one can always make a living--from gold if fortune smiles, from living off the land if it does not.

* Interesting work requiring "skilled manipulation, continual planning, and genuine mental exertion." Routinized jobs do not exist; work is inspirited by the "the lure of the unknown."

* Besides independence, there is almost unlimited liberty to do and say as one pleases, short only of hurtful crimes against others.

* Because of the few people in the Koyukuk, each person "takes on a peculiar importance . . . is a vital element in the world . . . not merely one infinitesimal soul among millions." Relieved of the "neurotic strain of trying to be important" in the faceless mass, one is valued "just because he is alive."

* Racial prejudice is eliminated because each person "fills an assured niche in his world."

* Adventure, a daily experience in the wilderness, "adds tone, vitality, and color to the entire functioning of life." As does Arctic climate, whose severe contrast between summer and winter provides variety--in effect, two distinct lifestyles each year.

Bob's final meditation ended with these words:

> It is impossible ever to evaluate just how much beauty adds to what is worth while in existence. I would hazard as my opinion that beautiful surroundings have a fundamental bearing on most people's enjoyment. Consequently, I believe that the happiness of the Koyukuker is greatly enhanced and his entire life is made richer by the overpowering loveliness of the Arctic wilderness.
>
> Most important of all, happiness in the Koyukuk is stimulated by the prevalent philosophy of enjoying life as it passes along. The absence of constant worry about the future and remorse about the past destroys much that tends to make men miserable. The fact that happiness is frankly recognized as a legitimate objective removes at once much futile pursuit of false ideals, and makes it possible for men to live openly as well as subconsciously for what they primarily desire.

> Of course there are also factors which tend to make the Outside a happier place than the Koyukuk. The variety of goods which one may purchase, the every day conveniences unknown in the northern region, the diversified possibilities of entertainment, and the wider opportunities for personal acquaintanceship are clearly advantages for the outside world. Especially, the family life for which most of mankind seems to yearn has very little possibility of fruition among the white men of the Koyukuk.
>
> Nevertheless, the inhabitants of the Koyukuk would rather eat beans with liberty, burn candles with independence, and mush dogs with adventure than to have the luxury and the restrictions of the outside world. 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.[54]

Despite this loving finale, Arctic Village caused some consternation in the Koyukuk after its publication in 1933. Bob sent copies to his friends and they quickly went the rounds. Some of his frank judgments and descriptions of people cut deep. Yet, on his return to Wiseman in 1938, he received warm welcome.

Ominous speculations by others and his own qualms proved unfounded. As a gesture for all the help he had received, he had divided his book royalties fifty-fifty between himself and the 100 people of the Koyukuk camp.[55] This helped the reception somewhat. But the key to his welcome back was expressed by Kenneth Harvey in a later letter to Bob's brother, George: "I like Bob's books as he printed the truth in them."[56]

(John McPhee's book, Coming into the Country, caused similar perturbations on the upper Yukon more than 40 years later. Yet, he received similar welcome when he returned to visit the people of the Eagle-Circle region whom he had written about, and for the same reason. People protested: "I wish he hadn't said that about me, even if it is true." Even today there seems to be a generous tolerance for the truth, warts and all, among bush Alaskans. Perhaps Bob Marshall's idea of each person's "assured niche" explains this.)

Despite the handshakes and jokes and wisecracks when he returned to Wiseman (including pointed questions about whether he was going to write another Wiseman book), Bob's nostalgic reunion was marred. Wiseman had changed. Constant air traffic (2 or 3 times a week), tourists, radios, even automobiles had made their appearance. Wiseman, to a degree unthinkable just a few years before, had become "part of the world." Most important was the

change in the people. In 1931 more than 80 percent of them had been old-timers of the Gold Rush era, freighted with "the distinctive mores developed in the romantic stampedes . . . ." By 1938 half of the people were newcomers, "who lacked much of the tradition of the old gold rush." Moreover, many of his friends--the splendid companions of an unforgettable year--had died. Bob faced that common problem of not really being able to go home again.[57]

Indeed, Wiseman and the larger Koyukuk camp had changed. Mining was in decline. Fur prices crashed during the Great Depression. The school closed in May 1941. Population barely held its own around 75 souls until World War II drew off all but a handful of whites and a sprinkling of Native families.

Irving McK. Reed reported after a mining survey in 1937 that ". . . the upper Koyukuk region as a whole is gradually reverting to wilderness." Lacking new gold strikes within a few years and government help on a road from the Yukon, he foresaw an end to mining in the region. This progression was far along when the wartime ban on gold mining came into effect.

Stubborn tenacity marked the remnant group. One old miner declared:

> Goddammit, I like this country. I don't ever want to go out only to visit my folks once before they die. But I'd just as leave die here as anywhere. I'd keep better.[59]

Wiseman store journals from the Twenties and Thirties show the drastic decline of the cash economy. In the Twenties each page, headed by a customer's name, contains scores of entries: purchases and remittances, along with supply-ordering and banking services provided by this, the community's all-purpose commercial and financial institution. By the mid-Thirties, transactions are reduced to two or three entries, or none at all, for many customers. Gold dust and furs, the principal media for cash transactions, are rarely noted. Instead, labor and other in-kind payments predominate: cutting and hauling wood, provision of fresh meat and garden vegetables. Standing balances remained the same from year to year. People lived off the land, and if they could not pay off their accounts, neglected them until better times, if ever.[60]

Closing of the school and departure of teacher George Rayburn in 1941 symbolized the end of Wiseman's effective contact with the institutions of the outside world. Rayburn came to Wiseman in 1934 after a typical depression round of walkabout book-selling in rural Alaska, a degree at the A&M College, and working as a nurse in a Fairbanks hospital. Carl Frank took a liking to George while

in town for treatment and invited him out to Wiseman to teach. He succeeded as a teacher, despite Joe Ulen's frequent opposition. The community came to rely on him not only for his teaching but also for his medical skills and operation of the community radio station. With benefit of some early medical courses, George was able to treat mining accidents, frozen feet, stab wounds, and the afflictions of his students. He often provided life-saving field treatment that gave time for air evacuation to Tanana or Fairbanks hospitals. Working through Commissioner of Education Anthony E. Karnes, he arranged for a doctor and a dentist to visit Wiseman, where miners, called in from the camps by his messages, received treatment of ailments that had plagued them for decades. As in earlier days, the school and its teacher had focused community energies. Pleas and petitions of Wiseman's people to keep the school and teacher Rayburn failed when the student population dropped to a half dozen children. The ensuing institutional vacuum was never filled.[61]

*****

During this transitional period, the upper Kobuk's Shungnak mining district followed a pattern similar to that of the upper Koyukuk. Except for a few experienced, equipped, and in-residence miners, chief among them the Ferguson family and Lewis Lloyd, mining was on the wane. In the early 1930s attempts to boom the district

with outside capital--fronted by big-name mining engineers and managers from Fairbanks' failing fields--went the way of the Detroit Mining Company on Hammond River. High hopes pushed by speculative fever grounded on essentially the same logistical and geological reefs: high costs of transportation, low-grade gold deposits, and very late ice on Kotzebue Sound, which frustrated ocean transportation and cut the season to only a few weeks.

Lewis Lloyd continued to hope for good times, but was caustic about those hopefuls who thought gold lay scattered on the ground for the picking. Thawed ground and water-filled shafts frustrated even seasoned miners from other districts. Frank Ferguson joined in warning off the novices. The Shungnak fields were not a poor man's district. Wet ground required drills, machinery, and hydraulics. Where there was a patch of frozen ground, getting a boiler to it cost incredible amounts of money, time, and labor. He cited one 30-mile haul that employed 18 Natives for weeks.

In a 1930 parley with pilot Fred Moller, Lewis Lloyd asserted that he would stay on at Shungnak with Mrs. Lloyd until he died. He confided that only seven or eight men were actually mining in the district--most of them old-timers of advanced years. The rest, sunshine prospectors, came through the country lacking even grub to prospect, much less the equipment and staying power to carry a venture through to development and pay.[62]

World War II drained the upper country of all but a few whites. Young miners entered the armed forces. Natives were recruited as scouts in the Territorial Guard. With the wartime ban on gold mining, older miners of the upper-country camps sought war-related jobs in Fairbanks, Nome, and other towns close to military bases, including the airfields that aided the ferrying of Lend-Lease planes to Soviet Russia. The upper Koyukuk was particularly hard hit, for mining, no matter how marginal, had remained the core of its economy, the reason for its settlements. The exodus forced closing of the Wiseman store and Bettles almost became a ghost town.

Native villages on the upper Kobuk, with established populations and a broader resource base for traditional subsistence living, weathered the war better and even benefitted from some of its spin-off. The influx of military personnel revived the market for furs and Native handicrafts. Government services and communications improved. A short-lived attempt to mine asbestos in the Dahl Creek area in the late war years provided some employment for Eskimos of Shungnak and nearby villages as equipment operators, supply haulers, and ore miners.[63]

*****

The passage of years and the war nearly wiped out Bob Marshall's Wiseman altogether. A poignant effect of the war was the death of James Minano in an internment camp for people of Japanese descent.[64] According to Walter Johnson, who first visited Wiseman during the war, the average age was then about 65 years, including Hughie Boyle in his 80s and Carl Frank in his 90s. Most of the others ". . . who had come into the country at the turn of the century or shortly thereafter were dying or moving to one of the pioneer homes." The few still hanging on included R.H. Creecy, Vern Watts, Charlie Irish, Nick Ikovitch, Wes Etherington, Ace Wilcox, and Mr. and Mrs. William English, Sr.--Tishu Ulen's stepfather and mother.[65] Tishu and Joe Ulen continued on also, Joe providing radio-fix and message-relay services for military and commercial pilots flying over the Brooks Range wilderness. On occasion, military pilots in distress or short of fuel landed at Wiseman's airstrip and were treated to the usual frontier hospitality.[66]

After the war, what was left of the old-time cadre, both those who had stayed through the war years and those who came back from war jobs, joined with a few newcomers to perpetuate the Koyukuk camp, whose population varied with the seasons between 25 and 50 souls. Mining continued on a small scale on most of the proven creeks in

the Wiseman vicinity and at a few isolated sites. Importation of Cats and other earth-moving equipment soon made open-cut mining the principal mode of operation. Deforestation to fuel the old boilers had stripped the country of timber for miles around, so old-style drift mining was impossible except in isolated sites that had escaped the woodcutters. Marshall had noted this deforestation, and also the effect it had had upon water supplies for sluicing. The quick runoff over barren ground had shortened the slucing season several weeks by the time he got there.[67]

The postwar generation of newcomers represented the third wave of Koyukuk miners and settlers. The stampeders of the '98 Gold Rush and the first years of the century had been the first. Then came the people of the Teens, Twenties, and Thirties. Despite Marshall's forebodings, enough old-timers survived into the Forties and Fifties to pass on the essential traditions of the country, and in time even the postwar generation would join the parade of pioneers. These are the people who overlapped much of the past. They and the more recent immigrants they have tutored remember the historic people and places--which are still worked by today's miners, for the old prospectors knew their business. The historic site studies that follow this narrative owe much to the memories of these latter-day survivors and recruits. Their still-vital traditions and sense of being members of a century-old historical community recall those earlier days.

Chapter 6 Notes

1. Biographical information and quotations from Robert Marshall (edited and with introductions by George Marshall), Alaska Wilderness, Exploring the Central Brooks Range (second edition, University of California Press, Berkeley, 1970), xxiv-xxv.

2. Robert Marshall, Arctic Village, 3.

3. From Marshall's original 1939 journal and field notebooks, "North Doonerak, Amawk and Apoon" (information on sample plots assembled by USGS, Menlo Park), 16.

4. Marshall, Alaska Wilderness, 123, 154.

5. Robert Marshall, "Reconnaissance of the Northern Koyukuk Valley," USGS Bull. 844-E (Washington, GPO, 1934), addendum to Philip S. Smith, et al., Mineral Resources of Alaska . . . 1931, 247-256.

6. Ibid., 247.

7. Ibid., 248.

8. Ibid., 249-50.

9. Ibid., 253, 256.

10. Marshall, Alaska Wilderness, 5.

11. Ibid., 8. As indicated by early Wiseman store and commissioner's records the old-country spelling of Yale was Yehle. By Bob Marshall's time, Yale was standard usage for man and cabin.

12. Ibid., 9-12.

13. Robert Marshall's Journal, North Fork of the Koyukuk trip, Alaska--July 22-Aug. 16, 1929 (unpaginated), Robert Marshall Collection, Bancroft Library, University of California, Berkeley.

14. Marshall, Alaska Wilderness, 12-14.

15. Marshall, Journal, North Fork.

16. Marshall, Alaska Wilderness, 16.

17. Ibid., 17.

18. Ibid., 22.

19. Ibid., 25-26.

20. Journal, August 16, 1929, entry.

21. Marshall, Alaska Wilderness, 36.

22. Ibid., 37.

23. Ibid., 37-38.

24. Marshall Collection, Outgoing Letter Files, ltr. of 9/23/30, 6-7.

25. Michael L. Kunz, et al., "Cultural Resource Survey & Inventory of the North Fork Koyukuk, Middle Fork Koyukuk, Glacier, and Upper Itkillik River Drainages" (draft National Park Service report, Fairbanks, 1985), I, 24-25, 160-61.

26. Richard Nelson, et al., "Preliminary Report: Subsistence Activities in Proposed Alaskan Parklands" (NPS typescript report, Anchorage, 1977), 13-14.

27. Marshall, Alaska Wilderness, 59.

28. Ibid., 59-60.

29. Ltr of 4/10/31, 4-5.

30. Ibid., 6-12.

31. Ibid., 13.

32. Ibid., 14.

33. Ibid., 15.

34. Ibid., 16-18.

35. Marshall, Alaska Wilderness, 95.

36. Ibid., 97.

37. Ibid., 103.

38. Ibid., 109.

39. Ibid., 157-58.

40. In addition to Alaska Wilderness, see Robert Marshall, "The Problem of Wilderness," Scientific Monthly, 30(2), February, 1930, 141-48; anon., "The Wilderness Society," a 1935 prospectus defining reasons for and objectives of such a society, in Marshall Collection; and various letters in the Marshall Collection, including especially Marshall to Ickes, 2/14/35, Marshall to Oberholtzer, 2/28/35, Marshall to Grosvenor, 3/1/35, Marshall to Yard, 6/27/38; memorandum to Ickes, 4/25/35; report to Society members, 2/24/37.

41. Wilderness Society resolutions draft attached to 6/27/38 ltr to Yard; ltr to Strauss, 11/1/38, both in Marshall Collection.

42. Quoted in George Marshall's introduction to Alaska Wilderness, xxxiii-xxxiv.

43. Marshall, Arctic Village, 9.

44. Family ltr of 10/6/30, quotations on 6 and 7.

45. Family ltr of 10/26/30.

46. Family ltr of 10/31/30, passim.

47. Ibid., 13-14.

48. Ibid., 14-16.

49. Ibid., 17.

50. Family ltr. of 11/5/30, 1-2.

51. Ibid., 2.

52. Marshall, Arctic Village, 371-72.

53. Ibid., 375.

54. Ibid., 376-79.

55. Ltr. to Jesse Allen, 4/4/34, includes 100-name census of royalty recipients.

56. George Marshall, in Postscript to Alaska Wilderness, 2d ed., 167.

57. Marshall, Alaska Wilderness, 113-14.

58. Reed, Upper Koyukuk Region, 165.

59. Marshall, unpaginated notebook in file 79/94 P, Marshall Collection.

60. Wiseman Store Ledger, 1925-27, 1932-36, used by permission of owner, Walter Johnson, Anchorage.

61. Interview of George Rayburn, 2/1/85, in Fairbanks; ltrs of period 1935-39 in Wiseman School District file, Alaska State Archives, Juneau.

62. Compiled from Irving Mck. Reed, "Report on the Placer Deposits of the Upper Kobuk Goldfields", Territory of Alaska Department of Mines, typescript (Juneau, 1931), in U.S. Bureau of Mines microfilm records (BuMines Library, Juneau, MR37-1); various Alaska Weekly issues, period 5/22/25 through 8/28/31.

63. Naske, Paving Alaska's Trails, 317-18; Foote, the Upper Kobuk River Project, 35-37; the Army's Role in the Building of Alaska, Chap. XVII.

64. History of Wiseman, as related by Oliver Chappell, in notes recorded by H.N. Reiser, USGS, in 1959 (provided by W.P. Brosge, USGS, Menlo Park).

65. Walter Johnson, "Wiseman Then and Now," Alaska Geographic, 10(4), 1983, 106.

66. Tishu Ulen, "Tishu's World," Ibid., 84, 87.

67. Marshall, Arctic Village, 162; Interview of Harry Leonard, conducted 7/16/82 by Walter Johnson of Anchorage, who retains transcript.

Chapter 7: Still a Homeland

Walter Johnson, whose association with the upper Koyukuk goes back more than 40 years, is a reflective man. He sees the long span of history in the region in terms of cultural perspectives: the land as viewed and used by aboriginals, by miners and traders, by conservationists and preservationists. He has distilled these perspectives to primary terms: game, gold, athletics/esthetics. During the historic period these categories blended somewhat and crossed cultural lines. But throughout, the archetypes remained: the Native hunter, the miner after gold, and, in the latter days, the wilderness adventurer/philosopher--embodied by Marshall and his followers. It is to the evolving yet stable perspective of historic-period Native people that we now turn. In the life histories of two men, and in the history of Anaktuvuk Village, we shall see how steady the Native perspective has been despite the buffetings of recent history and the eagerly grasped opportunities provided by the coming of the white man.

Joe Sun, preeminent elder of Shungnak, kin of the prophet Maniilaq, was born January 3, 1900, at Coal Mine near the Kobuk River village of Kiana. This was his mother's village. His father descended from upriver people with some distant Indian antecedents centered around the historic settlement of Qala (Kalla), near the Pah River. When 3 or 4 years old, Joe moved with his family to Sun Camp, 10 miles down the Kobuk from present

Shungnak. He grew up in the traditional Eskimo way, moving between seasonal camps in the Kobuk Valley. Early in his life he began working at gold mines in the Shungnak district. During World War II he worked as a carpenter in Nome, and some years later as a miner in the Fairbanks area. In recent years, concerned about the erosion of traditional life and language, he has been active in the cultural revitalization efforts of the Spirit Program, sponsored by NANA, the Native regional corporation based in Kotzebue.[1]

Until very recent years, when age forced Joe Sun to slow down, he divided his time between two worlds, able and competent in both: the world of the white man and that of the traditional Eskimo. His knowledge of his hunting territory in the upper Kobuk and Noatak rivers is profound and one of a kind in today's world. With the aid of his daughter-in-law Susie Sun and ethnohistorian David Libbey, he has done his best to convey that knowledge to his people and to the rest of us.[2]

Joe Sun became a tradition bearer by virtue of an early life nearly devoid of contact with white people and their manufactures until he was well into his teens. His early memories recall Native foods, seasonal camps that responded to hunting and fishing cycles, journeys by dogteam, and trading with Native partners. In the sod houses and bark shelters of his boyhood days, he absorbed

not only the stories of the elders but also the language and rhythms of oral culture. His tutelage in hunting, travel, and survival followed the organic educational pattern of mimicry--accompanying his father, learning by observation, then being pushed to the front to try it himself. Constant critique by his father perfected his methods. His mother taught him how to snare small game. His father helped him set his first muskrat trap, then showed him how to dispatch the trapped animal with a stick before removing it from the trap. After learning to stalk game with a bow-and-arrow, requiring knowledge of animal behavior and perfection of stealth, he was given an old, single-shot .22 rifle and one bullet a day. When he finally shot a duck, early one morning, he waited outside camp until his parents awoke, then came in bearing his game. His father taught him how to make everything--snowshoes, sleds, survival camps, deadfalls, fishtraps. His recounting of these exciting times, when he tapped into a venerable tradition and became one of its functioning members, is full of phrases that tell the how, when, where, why of employing natural things to carry on a life integrated with nature. On field trips to the old sites, he made old-style deadfalls. He named places on the map; sketched shelters made of snow, willows, and skins.

While still a boy, he graduated to long trapping trips by himself, often for several months at a time. Because the family had only

one set of dogs, he would depart in the fall, transporting his gear with the dogs to his distant base camp; then he would return them for his father's use and backpack out to his camp. In spring, after winter trapping, he would hike back home to get the dogs so he could retrieve his outfit.

After his marriage in 1927 he got his own dogteam. Then Joe, his wife, and his children began the annual cycle of long trips to the upper Noatak, leaving in the fall, returning in March. When his children started school, he would take them out for a short time in the fall, then bring them back for school. As winter progressed he brought caribou and sheep meat back to his family, then returned to the trapline on the Noatak.

> I've gone out there and spent the whole year with people, elders born before me, and learned about the area from them. That's how I know that area out there. That's why white people come to me and ask for advice about how to go about living out there.[3]

Until he was in his mid-sixties Joe continued the seasonal journeys to trap and hunt in the Nunataaq (upper Noatak) country. As late as 1982 he ran a trapline near Shungnak.

As a mine laborer, heavy-equipment operator, and carpenter, Joe

had adapted to the white man's world. He had visited and lived in cities and successfully raised his family in the new socioeconomic network of stores, schools, and modern transportation and communications systems. Yet, each year he left that modern world for extended periods and renewed his association with the older world known and conveyed to him by his ancestors.

Ernest S. Burch, Jr., has studied the cultural revitalization movement among Northwest Alaskan Eskimos. This movement is large in scope, involving legal, psychological, economic, political, and land tenure factors. The overall objective of the movement is a culturewide adaptive response to change that artfully blends sustaining traditional ways (language, hunting and domestic skills, sharing patterns, homeland integrity) with those selected elements of modern society that benefit the evolving Native culture yet do not destroy continuity with the past.[4] Control of land and the pace and direction of cultural evolution by the Natives themselves is the essence of the movement. Joe Sun's life--his choices and blendings--provides an individual and familial exemplar relevant to the larger cultural objective. He is, by the example of his life, a bearer of both tradition and the new code for cultural survival.

Joe Sun's life was not intentionally shaped for such high purpose. It was simply his way. When Willie Hensley of NANA first asked

Joe to participate in the Elders Conference, he did not fully understand its purpose. But in time, the idea of the elders helping young people perpetuate their Inupiaq identity--countering the pervasive influences of modern society--became a moving force in Joe's life. He became president of the Elders Conference. The elders' meeting place, a cluster of cabins on the Noorvik River, is called Sivunniugvik, "a place where you plan before you start going further ahead on your future."[5]

The Elders Conference itself is an adaptive form of ancient practice. Always the elders have met and counseled the next step in the future of the people. They gather now by invitations over the radio rather than having them delivered by fleet-footed messengers as in old times. The results of their deliberations are broadcast across the land by radio, TV, or tape cassette rather than in the intimacy of igloo or community house. But the purpose is the same. Such adaptations to a changing world are nothing new. The Eskimo people of the Kobuk Valley have faced change and the need for choice many times before. They have been here a long time.

* * * * *

Arctic John Etalook, dead only a year at this writing, was the last old-time survivor of a lost band of mountain Eskimos, the

Ulumiut. The center of their historic territory was the Ulu Valley ("Oolah" on USGS maps) in the upper reaches of the Itkillik River. The early people had probably moved eastward across the north face of the Brooks Range during the mid-19th Century, coming from the Noatak-Colville headwaters area. They were part of the migration toward better caribou hunting grounds that brought Eskimos into conflict with western Kutchin Athapaskans, forcing the Indians southeastward across the divide into Chandalar country. Into the vacuum thus created filtered Nunamiut bands to occupy the river valleys of the northern Endicott Mountains.

In 1981, anthropologist Grant Spearman realized the value of documenting the history of the Ulumiut--and the urgency of doing so, for Etalook was then very old. Previous studies of the Nunamiut had mentioned the Ulumiut band only in passing. Almost nothing was known about them. Their cultural geography--camps, hunting and fishing sites, sacred places, landmarks, and place names--was represented by only a scattering of names. With the help of Etalook's daughter Louisa Riley, Spearman began a series of interviews and mapping sessons with Etalook, lasting well into 1982. He also consulted with Ben Kavik Aguk, an Anaktuvuk Pass elder who had been a member of the Ulumiut band during its last days in the period 1938-42. Later, overflights of the Ulumiut territory with Etalook pinpointed historic sites and allowed Spearman to groundproof them on foot. The result of all this was

published in a preliminary report that catalogues 243 historic Ulumiut sites and localitites, most of them identified as to resources and uses important to the band.[6]

Etalook, adopted son of Aqsiataaq, began life toward the end of the 19th Century during a period of profound change in the life of northern Eskimos. Declining caribou populations; the attractions provided by whalers, traders, and explorers on the Arctic coast; and death-dealing new diseases caused hardship and disruption among the people. Many of them died from starvation and epidemics loosed upon hitherto isolated populations with no immunity. One of Etalook's earliest memories was the summer 1903 measles epidemic, brought by the ships, that swept away his grandparents and many others who had gone to the coast to trade. When the survivors returned upriver in the fall, the sickness spread to more of the inland people.

Even with its dangers, the coast still attracted families from the Ulumiut and other inland bands. The dearth of caribou meant hard times, even starvation, for those who stayed upriver. For a while, jobs as crewmen on whaling ships or as hunters of fresh meat for overwintering whalers sustained the migrant Eskimos. As the whaling industry faded after 1900, trapping for Arctic fox took its place in the economy of the displaced inland people. Trading posts along the coast bought their furs and provided the

manufactures and staples they craved.

In the fall of 1913, the fur trade brought Aqsiataaq and his family to the coast where explorer Vilhjalmur Stefansson and anthropologist Diamond Jenness visited their camp that fall. Jenness stayed on to study the Eskimos who had come to the Colville delta area to trap, living part of the time with Aqsiataaq's family. His descriptions of lanky, 18-year-old Etalook draw a picture of a self-reliant, skilled young man, already a superior trapper. Jenness noted that the inlanders were viewed as country cousins by the coastal Eskimos, whose contact with white men went back many years. One of Jenness' problems was the spartan diet in Aqsiataaq's household. Fresh meat and fish were not plentiful, and Utuyok, Etalook's mother, was frugal with the biscuits and other store foods that supplemented the wild-food diet. She made no compensation for the relative lack of nourishment in the store foods, as compared to the high energy in the normal meat and fat diet of the Eskimos.[7]

By the 1930s the fur trade had faltered and the caribou were coming back to the inland foothills and mountains. Aqsiataaq and Etalook spent time in the Colville's mountain tributaries beginning in the Twenties, on occasion drifting down to the Wiseman mining district. Etalook and his brother took long winter hunting trips in the high valleys, discovering plentiful caribou

and furbearers. Based on this news, some of the inland families began the return from the coast. Small groups of families filtered into the north-face valleys, from the Killik River on the west to the Sagavanirktok on the east. In time Aqsiataaq became headman or Umealik of a group centered in the Ulu Valley.

Reconstitution of the Ulumiut band lasted only a few years. Aqsiataaq and Utuyok were very old, there was pressure from territorial authorities to enroll children in school, and some of the young people were attracted to Fairbanks. Coming of the war made resupply of store goods and ammunition difficult for isolated groups. By 1942, some of the Ulumiut had gone to Wiseman; others to Fairbanks. Etalook and his family split the difference. They had a cabin in Wiseman but spent most of their time at a camp on Nugget Creek to the north, where they continued hunting and fishing in traditional manner. Finally, age caught up with them, too. In 1970 they moved to Anaktuvuk Pass, then to Fairbanks in 1972.[8]

Marshall had known the Aqsiataaq (Oxadak) family in Wiseman during his 1930-31 residency. He described Etalook (Itashluk) as

> a surly-looking Native of perhaps thirty-five years. He seems solemn and morose, and this impression is accentuated by his very dark skin, the other Eskimos being as light as

> dark complexioned Whites. He dresses exquisitely, mostly in furs, and seems to take great pride in his personal appearance.[9]

Walter Johnson, who knew and hunted with Etalook in the 1940s, seconded Marshall's comments about Etalook's always immaculate dress. His dignity was impressive. When Walter returned seasonally to Wiseman from school, a ritual of reacquaintance ensued: Etalook waited a day, then sent his daughters to Walter's cabin with an offering of sheep liver. Only after another day had passed would Etalook himself formally call, attired in fancy furs for the occasion. Walter interpreted this as part of a larger village-life ritual that buffered and made indirect the relationships of few people living in isolated proximity. Another example of this social cushioning was the care taken not to box people in with direct questions or requests. If Etalook needed to borrow an axe, he did not pose a direct question. Instead, he would casually remark that he seemed to have misplaced his axe. Walter could respond with a loan if he felt like it, or simply note the remark.

Other stories seem to confirm Marshall's early judgment that the young Etalook may have been difficult to get along with. But 15 years later Walter knew a man composed and gracious. He was also capable of joviality. During Wiseman dances in the Forties, when

folk and round dances grew tiresome, Etalook, Arctic John to his Wiseman friends, would bring out the drums and lead Eskimo dances until dawn.[10]

Both Walter and USGS geologist W.P. Brosge recorded that Etalook, his wife Esther, and his daughter continued to live at Nugget Creek as traditional hunters and trappers, avoiding too much integration into town life. Brosge's observations date from 1959 when Etalook was well into his sixties.[11]

The lives of Joe Sun and Arctic John Etalook have spanned a time whose early years reached back toward the dawn of human history in northern Alaska. As traditionalists--initiated by elders who would have been at home with their ancestors of a thousand years before--they have seen and experienced Brooks Range landscapes in ways that more modern men can never know. Consider the richness of their visions: compounded of ancient knowledges and skills, conveyed by evolved language and thought processes attuned to practical and spiritual realities beyond the range of our dulled and ignorant sensitivities. The fragments of these realities gathered by Libbey and Spearman and other workers in these fields give only a hint, an incalculably valuable hint, of the gestalt visions that such a cultural background could provide. We can see but dimly and partially through the eyes of the ancient people. And those whole visions become yet fainter as their beholders grow

old and die and fold into icy graves. Worlds are lost this way; whole species of human perception go to ground.

In remote Alaskan villages where significant dependence on wild resources persists, where the seasonal imperatives of hunted animals still name the passing months (October: nuliagvik, caribou breeding time), critical elements of those older visions still shape Native perceptions. What is now called the subsistence way of life, but was always before simply the life way of hunters and gatherers, ". . . still links the village in many ways with its past, . . . informs the present, and . . . is the means whereby the village can survive in the future. The land, of course, provides the resources and remoteness on which this way of life depends."[12]

Some people view this way of life as an anachronism, a residual thing in the last spasm of phase out. But traditionalist Natives of all ages reject this dismissive idea, this linear progression toward cultural oblivion concocted by outsiders.

These traditionalist people speak of ancestors learning to live in a land of strong winds and cold temperatures, sharing to survive, teaching the young to carry on. They look at the land as source and sustainer of their lives. In Western Civilization they see dollar signs but little spirituality. For them, profit is the

good life derived from land and sea. Land is the heritage, and what they do on that land--as communities, families, and individuals--is their culture.

Amazing as it may seem, these traditionalist people want to continue being what they are. They do not want to join the rest of us. Being Indians or Eskimos, they believe, is what they were created to be. They conceive the passing on of this identity to their children--with the knowledge, skills, language, and land base to sustain it--as their preeminent cultural duty.

Subsistence living, in this view, is more than survival. It is life itself. It is the only worthwhile way to live.[13]

In our study region, a century of the growing influence of Anglo-European culture--including both imposed and chosen elements--has altered irrevocably the bases of traditional Native life. Imported technology, social and educational programs, missionary efforts, and the economic, governmental, and political forces that have created new land-tenure systems and industrial developments, have swept like giant waves over the societies and cultural landscapes of upper country Natives. Erosions have occurred. But rimrocks and hard cores have resisted and still hold. An evolved way of life--part old, part new--is the result of this transition. In practical terms, this evolution can be

described as a mixed cash and subsistence economy. More profoundly, it is a cultural high-wire act that strives to maintain the essence of ancient values in an environment already much changed and still accelerating.

Objectively, given the arrayed forces of modern times, the prospect for survival of indigenous people and cultural pluralism in arctic Alaska seems bleak. But the history of these people is a history of survival. For generations and millennia they have proved their steadfastness in a demanding environment. During the period of recent history, since about 1850, they have seen wave after wave of outsiders come into their world, extract something from it, and leave. Traditionalists are confident that the current inundation--largely oil-and-mineral based; partly sport-and-recreation based--is similarly transient, at least as a major, disruptive force. Their sense is that as long as environmental wisdom and sociocultural equity are guides to the future, they can survive this wave also. During a time like this one, they see the need to exert themselves strongly upon both the external forces that threaten their homeland and the disintegrative forces within their own societies that have been spawned by recent change. Daily they face the dilemma of being both effective modernists to protect their homeland and sustaining traditionalists to preserve their culture.

The village of Anaktuvuk Pass exemplifies the will to survive these stressful times. Its history and its current outlook on the world offer a window on the experiences and perspectives of a people caught in the intersection where the old and the new have only recently met.

The country around Anaktuvuk Pass is one of austere beauty. Crenelated cliffs rise to the west. Wide valleys of the Anaktuvuk and John rivers fall away gently to north and south. High mountains march eastward. Narrower valleys and canyons channel side streams and dry courses toward the main rivers, lacing the rugged terrain with narrow vistas that bend out of sight between the mountain buttresses guarding their secrets. Past these walls and bends, high ridges trend east-west, their flanks cut by headwater streams that step down toward distant valley floors. Lakes large and small dot valleys and isolated plateaus. In the watered places clumps of willow nod a few feet above the dense tundra mat. Great boulders stand alone or in groups where glaciers left them. Scree and surges of rock debris mark the transition to barren slopes and steeps, whose nakedness is barely tinged at lower elevations by lichen colors.

In the midst of this panoramic country, at the point where a gust of wind determines whether rain drops flow to the Arctic Ocean or the Yukon River, stands a cluster of buildings bordering a gravel

airstrip. It seems incongruous. Who could live here? In winter, when all hint of green is gone and wind drives veils of snow over darkened, treeless expanse, that question gets urgent.

Yet, people have lived here for thousands of years. This writer had a chance to visit a few of the old sites with archeologist Jack Campbell and Grant Spearman in summer 1985. First we went four miles northeast of Anaktuvuk Pass village to the Tuktu Site, situated on a well drained glacial terrace. Notched projectile points and other artifacts found here have been dated to 6,000 years B.P. The assemblage identifies a people who hunted big game, people who could move from forest to tundra to coastline as the seasons' offerings came around. They were probably people of the Northern Archaic Tradition, ancestral to the Athapaskan Indians, who came into the Brooks Range passes to hunt caribou. At an adjoining site, artifacts possibly 10,000 years old have been found.

Next we visited a spit jutting into Natvakruak Lake, about 15 miles north of the village. Here, scattered over an extensive site, were the remains of an ancient occupation of about 4,000 years ago. Microblades and cores, and thousands of tiny flakes indicate an inland Denbigh Flint Complex site. The people who left these small tools may have been ancestral to the Eskimos.

We then moved southeast to Tulugak Lake, about 12 miles northeast of the village. On the ridges above this lake we saw great stone meat caches excavated out of scree slides. When stocked with caribou or sheep meat, they were covered by corbelling flat rocks over the top. Below, in the valley leading toward Tulugak Lake, we retraced the wings of an old caribou surround, first shown to Campbell by Anaktuvuk Pass elder Simon Paneak in the Fifties. Cairns of stone 40 feet apart marked the fan-shaped wings leading to the killing site. To these cairns, willows were lashed, giving the visual effect of a person standing there. Other cairns, Inuksuk, bordered the sidehills to keep the caribou from breaking toward high ground. (In later years, Simon told Campbell, the Eskimos inserted strips of toilet paper in the rock cairns: their wind-blown motion animated the Inuksuk.) Tulugak Lake is ringed by ancient and historic-period sites, for it has long been a favored camping place, with fish in the lake, caribou trails nearby, and good access to sheep. The nearby scree provided excellent meat storage, a critical necessity for people whose seasonal hunts during times of abundance supplied meat for periods of scarcity. When the inland Eskimos returned from the coast beginning in the Thirties, Tulugak Lake again became a main camp. In 1949 a number of small bands merged here. Later they would move to the present village site in Anaktuvuk Pass.

At a ridge site southwest of Anaktuvuk Pass, high on the east side

of John River valley, we found an impressive stone ring, which probably served two functions: as a wind shelter for spotters who signalled the approach and direction of caribou to hunters in the valley below, and as a spotting blind for sheep hunters. On down the ridge, other works of stone included more shelters and cache boxes.

Finally, with Anaktuvuk Pass elder Elijah Kakinya (born 1895; died 1986), we flew west to visit the Chandler Lake area, where Elijah and Grant Spearman traced the geography and events of the last traditional kayak caribou hunt conducted by the Nunamiut in 1945. The Chandler Lake environs, as those at Tulugak, had been the center of a band territory, with access to game and fish the compelling attraction. On the flight back to Anaktuvuk Pass, over the lake and across the intervening mountains via the canyons of Kollutarak Creek, Elijah and his interpreter, Anna Nageak, carried on animated discussion in the Inupiaq language, with Elijah pointing out old hunting sites, camps, travel routes, and locations of historic events. We poked around the mountains at his direction to see the sheep he knew would be there. It had been many years since Elijah had last traversed that landscape on the ground, but he remembered, as it seemed, every rock in it.

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Beginning in the mid-Thirties, we have a picture of inland people returning from the coast, the fur trade there down, the wildlife in the mountains resurgent. Remnants of the old bands trickle back to their ancestral territories--Killik River, Chandler Lake, Ulu Valley. For a decade and more, their lives revert to an approximation of traditional times. It is not quite the same, for they have rifles, they periodically travel south to Koyukuk and Kobuk villages to trade furs for store goods, they have a touch of white man's religion. But they are more than less dependent on the old ways and the old landscapes and resources. They are still doing some communal hunting, storing their meat in the old caches, roaming the known places. Until the mid-Forties they see few white men, at least in their home territories.

Pilot Sig Wein did fly in ammunition and other supplies during the war, trading them for wolf hides and other furs. In 1945 a party of USGS geologists poked around the Chandler River looking for oil. In 1947, Wein convinced the Chandler Lake band to relocate in the Anaktuvuk Valley, promising improved air service and the possibility of schooling for the children. This led, in 1949, to the band consolidation at Tulugak Lake. Through the winter of 1949-50, Helge Ingstad, a Norwegian explorer, lived with the Nunamiut. His book about them brought these old-style Eskimos to world attention, starting a train of scientists toward their little settlement. Also, during this turning-point time, trader

Pat O'Connell staged up from the Koyukuk to Hunt Fork and finally Anaktuvuk Pass, where he built a log store. In 1951 came a post office, located in a tent at postmaster Homer Mekiana's hunting camp. Thus did Anaktuvuk Pass, with its store and post office, become a base camp for resupply. In 1958, Presbyterian missionaries came to the pass from Barrow. The Nunamiut went down the John River to good spruce timber at Hunt Fork, cut logs, hauled them to the pass, and built their own church. The church doubled as a school until 1960 when a permanent school was started with full-time teachers.

With school attendance mandatory, Anaktuvuk Pass became a permanent village. The clincher came when an airline-company Cat walked up from the oil-exploration base at Umiat (on the Colville River) and dragged out a landing strip along the creek. The progression of domiciles during this period reflected the changing times: from the caribou-skin tents of a hunting camp, to wall tents, to permanent houses made of spruce logs covered with sod.[14]

Glimpses of these changing times come from the writings of the Nunamiut themselves and of the scientists and observers who visited them. Census enumerator Ethel Ross Oliver hired Simon Paneak in 1950 as interpreter and guide while she visited the remote Nunamiut camps. Entranced by the stories he told, she encouraged him to write of the days when the inland people came

back from the coast.[15]

Simon and his family, along with the families of Elijah Kakinya and Frank Rulland, migrated to the Killik River in summer 1940 after the coastal fur trade broke down. By this time trader Jack Smith at Beechey Point was nearly broke. In trying to carry the Eskimo trappers through hard times ". . . he let out credit too much to his customers, away behind in his book." Word had got out that there might be a market for marmot skins for parkas, so Simon and his partners headed for the mountains. Simon's father, Tonngana, knew the Killik country from boyhood days. But Elijah's father, Poyah, hailed from the Anaktuvuk Pass-Ulu Valley-Itkillik-upper Koyukuk country. So Tonngana would guide them to good marmot country in the Alatna-Hunt Fork headwaters.

The families used pack dogs on their trip. They hunted as they traveled, and one night May Kakinya grabbed a 30/30 and shot a grizzly that intruded their camp.

Simon's only weapon was a .22 bolt-action rifle. He wrote that it could kill any animal in the mountains if it were hit in the right place with the first shot. He proved it by killing a grizzly that had found his meat cache. He used three "little bullets" to do it. From 100 yards he hit the bear in the ear with the first shot, which knocked him down, but "make him mad," so he rolled and

roared and charged. The second bullet knocked him down again, but he sprang up and ran to the side, giving Simon a shot at the shoulder blade, which dropped him for good.

The younger men hiked into the high country and used stone deadfalls to get the marmots. Every few days they brought back a load of heavy, greasy skins for the women to clean and dry. The old men hunted near camp for meat.

After the summer's marmot hunting, with about 300 skins taken, Simon and Elijah decided to go down to Sam Dubin's store in Bettles to trade. They had exhausted all store-bought supplies and were living on meat and meat broth only. No tea, tobacco, "no everythings." Loading up 10 pack dogs, the two men hiked down Hunt Fork to John River, which had plenty of water to float a boat. They made a skin boat from bull caribou and ram sheep skins fitted over a spruce frame and lashed with willow roots. They had to watch carefully for riffles and rocks because these skins would rip easily. They tied the dogs so they would not move around. Simon steered.

Along the way they killed a bull moose, because they knew that Bettles people needed meat. With their marmot skins and meat, they had something to trade. A few poor summer wolf pelts were good for bounty money.

Downriver they ran into Big Charlie Suckik. He had killed two moose and was building a raft to get his meat to Bettles. He needed something to trade because Dubin was not extending anymore credit.

After leaving Big Charlie, Simon and Elijah got another wolf, which stood and looked at them from a sandbar. It had been curious about the approaching boat and waited too long.

From upper Hunt Fork it took them 2-1/2 days to get to Bettles. They stayed 3 or 4 days trading furs for store goods, which Simon noted, were reasonably priced. Then, packing up the dogs, they walked home. Nine and a half days later after spotting beaver, muskrat, grizzlies, and lots of moose, they got back to home camp. "It take us little less than twenty days round trip. Everybody glad see us."

Simon's account is priceless. So many old and new things come together here: Knowledge of the land and the bear's vulnerable anatomy when using "little bullets." The mix of rifles and stone deadfalls. Speed and assurance in travel--for subsistence resources, for trade. Family division of labor. Hankering for store goods. Cashing in on every opportunity for trade or bounty.

Notable is the major shift from the white-dominated coastal trading economy back to the subsistence-based mountain life, with trapping-trading a sideline for acquiring essential ammunition and a few luxuries. This ability to swing with the boom-and-bust cycle, going back to the homeland-hunting life when opportunities in the white economy slacken, illustrates a critical adaptive strategy still employed.

These combinations of the old-new mix are further developed in representative historic sites near Anaktuvuk Pass. With Johnny Rulland, son of Frank in the above account, Grant Spearman visited a number of these sites, with concentration on two of them: Puvlatuuq, to the south in the John River valley just inside the margin of the spruce forest, and Kungomovik, alongside the creek by that name a few miles north of the village.

Puvlatuuq is a place of seasonal occupation in the forest zone, south of the Continental Divide and within the winter range of caribou. A nearby salt lick attracts sheep. And Puvlatuuq is a good base for trapping forest-dwelling furbearers.

Kungomovik, in a lush willow grove providing wind-shelter and fuel, has long been a gathering place for festive and trading activities. Nunamiut from other mountain bands and trading partners from the Kobuk and Noatak, as well as Athapaskans, could

join here under truce conditions at appointed times. At this place occurred the initial falling out between Nunamiut and Kutchin Athapaskans that precipitated the nearby Battle of Itikmalakpuk, which drove the Indians southeastward. As well, the nearby terrain of narrow creek valleys funnels migrating caribou to intercept-hunting sites ideal for close-in killing. The upper Kungomovik Creek drainage is a favored summer hunting area for fat caribou bulls, and provides a base for sheep hunting in the surrounding mountains.

Dwellings at these sites track the evolution of house styles, from traditional caribou-skin tents, itchalik, and moss houses, ivrulik, to more modern sod houses and log cabins.

Artifacts and debris combine the bones of hunted animals and adaptive uses of all manner of white man's packaging and cast out goods. A sled runner shoe is made from metal strips cut from coffee cans. Chunks of metal have been fashioned into a homemade stove. Sections of old oil drums and 5-gallon cans were used to make dogfood cooking vats and feeding bowls.

These sites, with archeological components reaching far back in time and with historic components of the recent past--identified as to individual families of the ongoing village--"serve as living links and stabilizing ties" between today's people and their

cultural heritage. The strategic locations of these sites, proximate to the resources of game, timber, shelter, fuel, and good water, provide a communication with the past and an educational base for the future. Here, in favored parts of the natural environment chosen by their ancestors, village elders can instruct young people in the skills and activities of those who hunt to live.[16]

In summer 1945, USGS geologist George Gryc led a survey party that descended Chandler River from Chandler Lake to the Colville. This was one of four parties that year exploring and doing stratigraphic work in the Naval Petroleum Reserve. The cook in Gryc's party, Charles R. Metzger, was then a student and later became a professor of English at the University of Southern California. Some years after the expedition, Metzger turned his notes and observations into a narrative recollection of Arctic adventure.[17]

Though not an anthropologist, Metzger was a good observer, and he came into Nunamiut country about midpoint in the last phase of their seminomadic existence. From the moment he landed at Chandler Lake to set up base camp in late May, he began recording his impressions of the Eskimos residing there. The first visitor was Simon Paneak, who ran on snowshoes to the airplane with a bag of fox furs, which he requested the pilot to deliver to the N.C.

Co. in Fairbanks, via the next flight from Umiat. "He was, in effect, making a deposit to his account . . . on which . . . he could draw for tea, or ammunition, or traps, or whatever else it was he wanted to buy." Metzger noted that Simon, except for a poplin overparka, was dressed entirely in fur and skin clothing: caribou-skin underparka, moosehide mitts with beaver cuffs, sheepskin pants, and waterproof spring boots of sealskin with bearded-seal soles, worn over caribou-fur socks. Simon's snowshoes were short and narrow, allowing him to run fast, as he had for over a mile that Metzger could see, to catch the plane before it took off. They were made of caribou-skin webbing on willow frames, with skin harnesses. These harnesses, a simple loop wound over instep and around ankle, were efficient yet could be removed by a twist of the foot in emergency.

> The design of this harness like that of all Eskimo equipment we ever saw represented triumphant use of local materials to produce artifacts that were supremely light in weight, simple, and efficient.[18]

One of the tasks of the survey party was to find a rock cairn--marking a point of known latitude, longitude, and elevation--set up the previous winter by Alaskan Army Scouts. The search was complicated by the fact that around its supposed location, the Eskimos had erected their own cairns, Inuksuk, to

aid in driving caribou into the lake for spearing from kayaks. Even Simon could not be sure which was the Army cairn, so the surveyers started over with new observations. The expense and difficulty of getting ammunition made these Brooks Range Eskimos lay their rifles aside whenever they could get meat without them. Persistence of the communal caribou drive was one example; using ground nets to snare ptarmigan was another.

Metzger admired Simon's large dogs and big sled. They symbolized a good hunter, a rich man among the Eskimos. Simon confided that he needed three caribou a week to feed his family and his seven dogs. The sled, made of driftwood slabs, was about 8 feet long. "The other Eskimos such as Elijah [Kakinya] used smaller, lighter willow sleds drawn by fewer and smaller dogs." The hitching arrangement was a lead dog followed by pairs of dogs attached on either side of a lead line, which extended from the sled to the harness of the lead dog.

Simon's first formal visit to the geology camp began with the gift of a haunch of caribou from one of the three carcasses in his sled. Metzger sensed that curiosity, caution, and calculation had combined to draw Simon into camp. As co-umialik (with Elijah) of the band, and one of its two English-speaking members (the other being Elijah), Simon wanted to know what the surveyors were up to, whether they were a threat to the area, and if there were

opportunities for trade or other benefits from their presence.

Immediately, mutualism set in. Simon needed some line for harnesses. The surveyers needed help getting their tons of supplies down past the rapids and shallows of the upper river before breakup made dogs and sleds useless. Simon also knew where there were "rocks that burned," outcrops of oil shale or oil-bearing sandstone. So guiding and transport services from the Natives would be exchanged for rope, foodstuffs, and other supplies.

That night Simon stayed for dinner, because he had provided it and because the USGS party of seven had an 8-place setting. Subsequently, except when hunting or other business called them elsewhere, Simon and Elijah alternated each night as dinner guests. Simon particularly liked cooked dried vegetables, strong coffee with plenty of sugar and powdered milk, and pudding desserts.

During his first visit, Elijah Kakinya related some life history, including the information that he had attended a mission school on the Koyukuk where he had learned his English and had been converted sufficiently to Christianity to know some of its hymns.

Accordingly he began to sing hymns by way of verifying his

Christian education and possibly of testing ours. Inviting us to join in, he led, or tried to lead us in a group sing. He knew the tunes and the words to "The Old Rugged Cross," "Abide With Me," and "Onward Christian Soldiers."

As it turned out, he knew both the tunes and the words a good deal better than we did. We could fake the tunes after a fashion, but the words escaped us; we were in effect led by Elijah to reveal that we had never learned them. Although we tried to respond to Elijah's attempts at establishing rapport with us on Christian missionary terms, we failed him miserably. He was, at least in missionary terms, a much better Christian than we were. Eskimos being eminently adept at one-upmanship, this revelation of our ignorance may have been what Elijah had in mind all the time. But Elijah, not being in direct competition with us, I suspect that his embarrassing triumph was fortuitous. There is a fair chance anyway that he was, like most Eskimos, like most students of missionary education, both a tolerant convert and a syncretist. As one of the more candid Eskimo "converts" admitted to R.F. Spencer the ethnologist, "It is true that God made the heavens and the earth. But Raven made them first!"

Failing to make contact with us on what he considered

culturally to be our own terms, Elijah wisely chose to make overtures in terms of his own culture. He just happened to have in his possession an endless string of about 30" compass with which he proceeded to demonstrate with fascinating agility the craft of cat's cradle, i.e. ayaraq artistry.

With fingers as nimble as any surgeon could ever hope to develop, he portrayed for us, using the string, symbolic pictures, both still, and in motion. First he constructed with the string looped over his fingers the standard elementary abstractions well known to anyone who has serve time as a kid in the Pacific Northwest. Then he progressed to making abstract portraits and landscapes in string. Then he moved on to more difficult figures, a weir for example, which required him to use his teeth as well as his fingers in order to stretch the string into a complex pattern suggesting a taut dip net. Finally he moved into mobile figures, one of the more interesting portraying, as he said, "Eskimo chasing caribou," during the performance of which one loose knot chased another across the string screen stretched between the carefully manipulating fingers of his two extended hands. Finally he produced his masterpiece, "Mouth Eating," involving a complicated knot loosely and flexibly extending and contracting so that the

> loops of string simulated the lips of a mouth chewing. Dinner being long since ready, and we having been thoroughly well entertained, it finally occurred to us that the man wanted to be fed. So we fed him. He trotted off toward his home on snowshoes, well fed, immediately after dinner.[19]

On a visit to the Eskimo camp, Metzger noted its "eminently shrewd" location near the top of an alluvial fan next to the creek that had made the fan.

> It was close to a spring and summer water supply. It was exposed enough to the wind so that in early spring drifting snow would not settle around it and bury it. It was high enough so that its residents could look down on the Chandler Lake valley from just a few yards outside their doors and spot migrating or wandering caribou, and it was masked from the view of either caribou or man looking up at it from below on the valley floor.[20]

The seven or eight houses in the camp suggested no distinctions of status or wealth. Simon's house was typical, about 10 feet in diameter and dome-shaped. Among other things, this shape conserved heat and provided maximum headroom for the space covered.

Its floor, about a foot thick, was composed of willow twigs, which provided not only insulation from the permafrost underneath, but a ready supply of fire wood. This twig floor, when carpeted with caribou skins was resilient, soft, and warm. The overhead frame of the house was formed by about twelve willow poles stuck in the frosted ground at more or less regular intervals around the perimeter of the house. These poles from long usage had become permanently bent, each pole joining its opposite to form a low arch. To the under side of the skeletal dome formed by these poles, the Eskimos fastened caribou skins, fur side down. Outside and over the skins and the frame, the Eskimos draped a large piece of canvas, analagous to the flies over our own tents and to the poplin outer parkas that the Eskimos wore in cold weather over their inner fur ones. The insulation against cold provided by such a structure was impeccable. Our own tents, though suitable enough for our purposes, were grossly inefficient by comparison. Their flat vertical walls when buffeted by the usual winds in that pass fluttered and snapped and admitted cold air through the tough but permeable fabric at a great rate. The flies spread over the tops of our tents, by virtue of the double insulation they suggested, provided some measure of protection against heat loss through the

roof, as long as there was not much wind, but there usually is in any Arctic pass a good deal of wind. Thus a half filled bucket of water left in the cook tent over night would be frozen solid by morning.

In Simon's house heat retention was not so much the problem as heat escapement. That problem as well as a good many other problems of survival and comfort had long since been solved by the Eskimos. When overwarm in his house, the Eskimo takes care of the matter simply by opening the door, namely by lifting the canvas and removing one of the skins to form, between the willow pole supports, an opening chosen for the usual good reasons of location relating to wind and view.

Simon's wife hospitably brewed us up a quick pot of tea over her Yukon stove. It appeared to have been made of two of the more or less square five gallon gasoline cans that had been left at the lake by the bush pilots who commuted regularly between Fairbanks and Barrow, and as regularly left such empty cans at their refueling cache by the lake. The two cans had been opened, each at its punctured end, and brazed or otherwise fastened together to form a fire box about three feet long and twelve to fourteen inches wide and high. With a stove pipe fixed to the top surface

at one end and running up through a hole in the roof, and with an opening for the admission of twig fuel and air at the opposite end, the lady of the house had at her disposal a usable and efficient stove. Eskimos do not cook much, which for them is a good thing, since their major source of vitamin C is from the blood in the raw meat that they regularly eat. They do however brew tea and bake sourdough bread in a frying pan over these stoves. They also use these stoves when need be to provide heat. For caribou Eskimos at least such stoves are a good deal more effficient, economical, and clean than the seal or whale oil lamps used by the coast Eskimos.

Simon's wife was young and pretty. Her skin was pale, being untanned from hunting. She wore a printed calico garment, a long sleeved, fur fringed and hooded version of the Hawaiian mu mu over whatever it might have been that she had on underneath. On her feet she wore calf length spring boots with oogruk (bearded seal) soles, and tuktu (caribou skin) uppers, with the fur scraped off, and ornamented at the tops, that barely showed under her Eskimo mu mu, with strips of colorful rick rack tape garnered from such distant trading posts as Fort Yukon, Bettles, and Point Barrow.

Near the back of Simon's house, prominent yet out of the way, sat his mahogany veneered Zenith all wave receiving set. Its antenna, cadged from God knows where, was a line of insulated copper wire. Simon admitted, if indeed he did not brag, that he listened to our communications with our other two parties, KWYDX-2 and KWYDX-3, and to our reports to WUUR-Umiat over his set. He had also been listening to "G.I. Jill," and "The Voice of America," and "Tokio Rose" . . . .

Hanging from one of the willow supports near the door of his house, Simon had suspended a calendar for the year 1945, the January sheet, now in May, still exposed, and along with it an alarm clock, unset, unwound, and silently not ticking. The Eskimo's view of time is refreshingly unlike our own. Living in an area of the globe where nights and days vary considerably, where either the night or the day may be as much as 24 hours long, or anywhere in between, the Eskimo lives out the time of his life on quite different terms from our own. Clockwise the Eskimo appears carefree to the point of negligence; but he lives strictly enough according to his own time. When he runs low on food, it is time for him to go hunting. When he runs low on fuel, it is time for him to go and gather wood. When the game upon which he lives moves, it is time for him to

> move. Comfortable and conveniently located as it was, the Eskimo village [camp] that we were visiting was there only temporarily, i.e. for as long as the caribou kept moving up through the pass in search of forage, and later on to escape the mosquitoes.[21]

During the wait for the right traveling time, Metzger recorded many events and practices of the Chandler Lake band. One day they buried an Eskimo child who had died of illness. Following Christian custom, they spent all day chipping a grave out of the frozen ground, a departure from traditional surface burials. Afterwards, to relieve themselves of sorrow and the frustration of the day's labor, the men got their teams together and held a race up and down the frozen lake. Periodically, the Eskimos jigged through the ice for arctic char and other fish. As the lake-edge ice melted, they fished with gill nets. Simon set his net using a salvaged prospector's boat from an abandoned cache in the Anaktuvuk Valley. Metzger was assured that Simon had waited the required 2 years after discovering the cache before taking the boat and sledding it to Chandler Lake. He was told that anyone in the Arctic who raided a man's cache before that grace period was up faced death from the injured party. All over the arctic caches containing valuable items were immune from pilfering, for a raided cache could mean death for those counting on it during their travels.



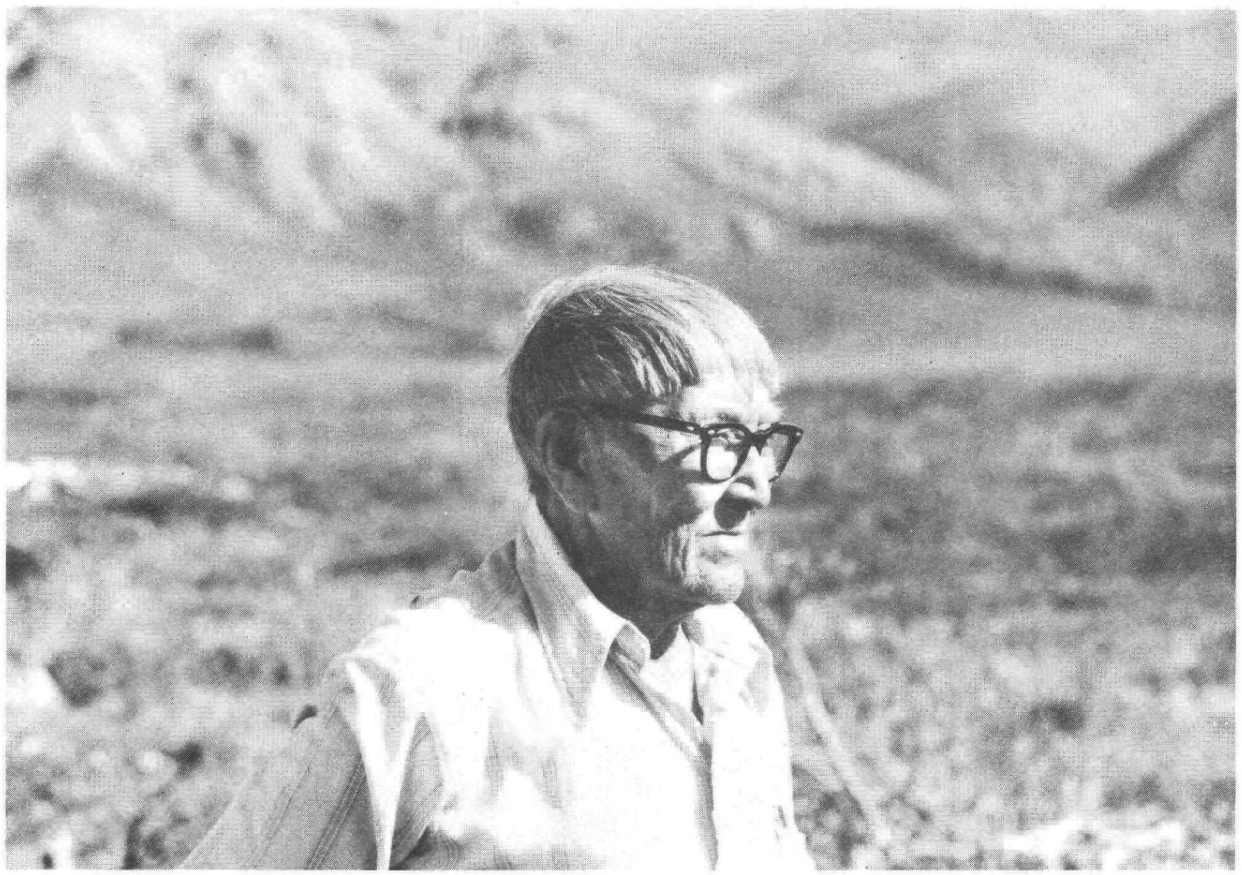
Village of Shungnak. P.S. Smith photo 533 of 1910. USGS Historical Photo Library, Denver.



Eskimo women dragging net on Kobuk River above Shungnak. P.S. Smith photo 538 of 1910. USGS Historical Photo Library, Denver.



Kobuk Eskimos on hunting trip to Noatak River, using pack dogs. P.S. Smith photo 764 of 1911. USGS Historical Photo Library, Denver.



Arctic John Etalook at Itkillik Lake while visiting Ulumiut historic sites in 1982. Grant Spearman photo.



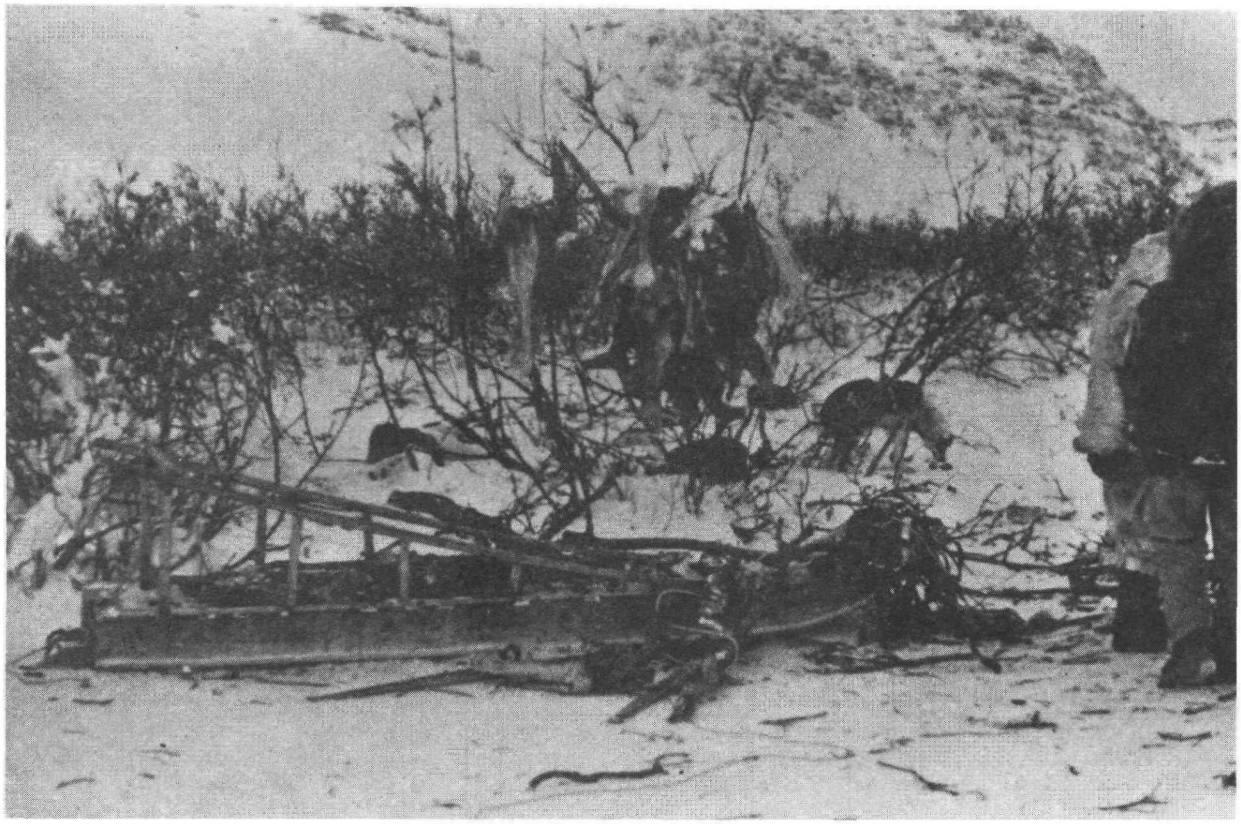
Brooks Range in Anaktuvuk Pass District. J.C. Reed photo 884 of 1949. USGS Historical Photo Library, Denver.



Jesse Ahgook is showing how the old timers used to dress and hunt. His parka and boots are made from caribou skin. He has an old fashioned rifle without a scope, so he uses a telescope to spot game. Grant Spearman historical photo collection.



Before airplanes started flying in supplies, Mountain Eskimos would make long trips by dog sled to villages like Bettles, Kobuk, or Ambler to buy flour, sugar, tobacco, and ammunition. Here are some Nunamiut men at a trading post entertaining people with an Eskimo dance. Grant Spearman historical photo collection.



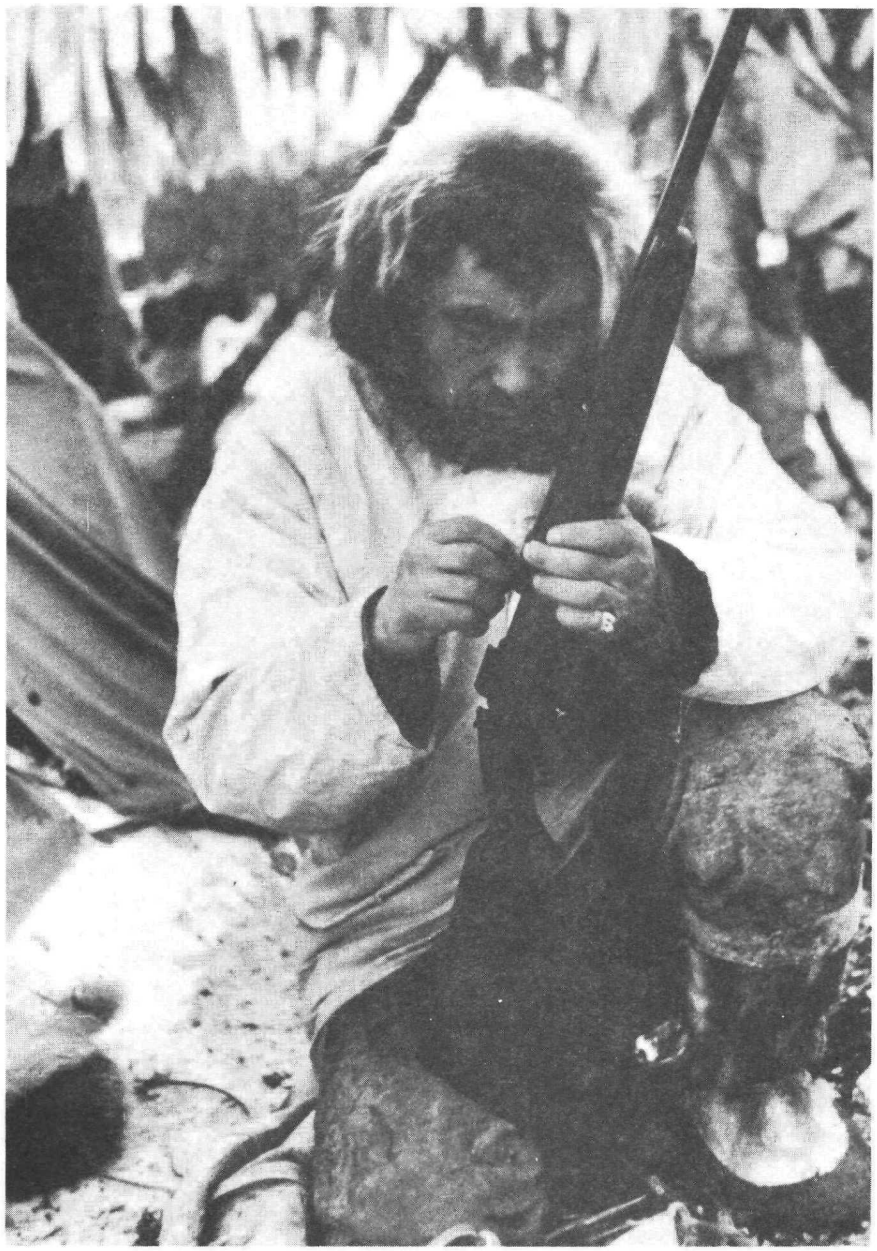
This is the kind of sled still used by the Nunamiut to hunt, trap, and travel. Snowmobiles have replaced the dogs shown here.
Grant Spearman historical photo collection.



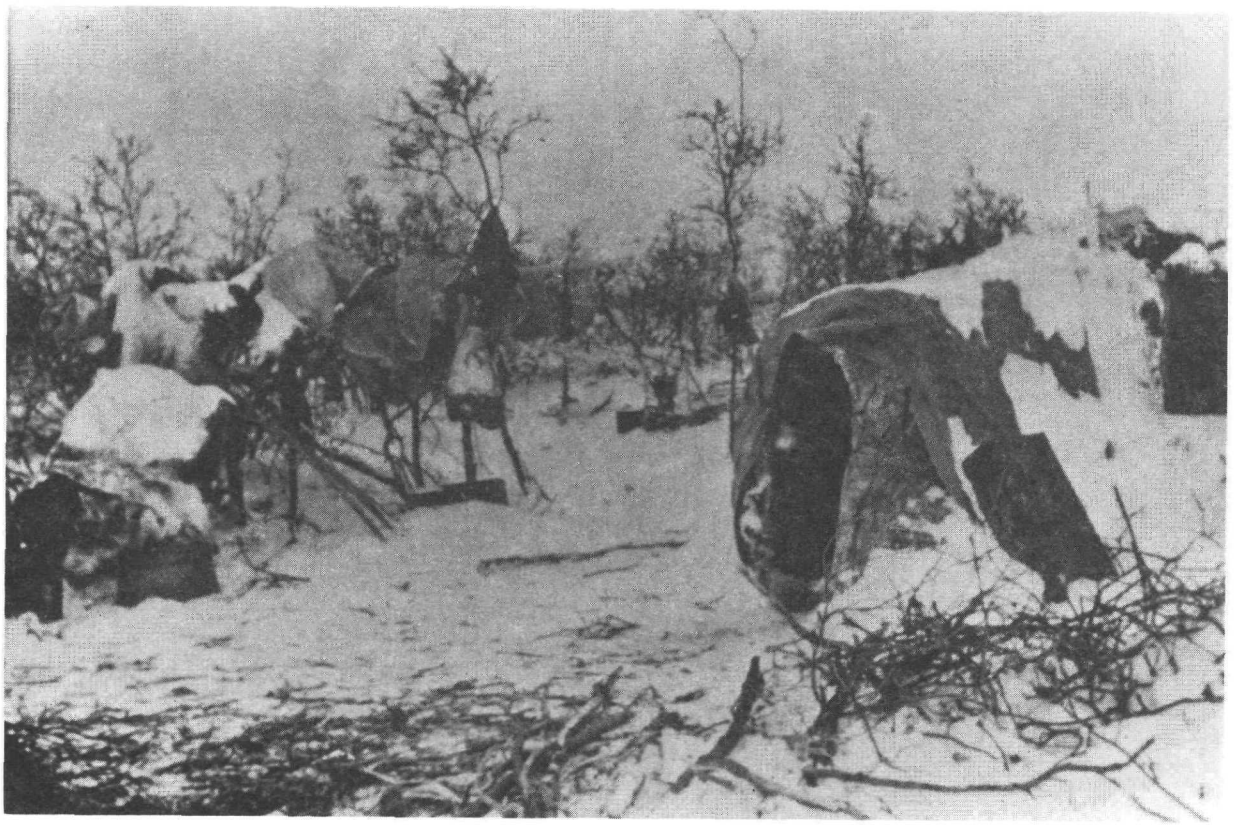
Lunch stop on the trail. Grant Spearman historical photo collection.



A Nunamiut hunter using pack dogs on a summer hunt. His rifle is protected by a caribou-skin case. Grant Spearman historical photo collection.



Simon Paneak, from a slide taken by Helge Ingstad in the Anaktuvuk Pass area, ca. 1950. Loaned for copying by Grant Spearman.



Winter hunting camp. Grant Spearman historical photo collection.



Nicholas Gubser, student of the Nunamiut, being instructed by Simon Paneak. Grant Spearman historical photo collection.



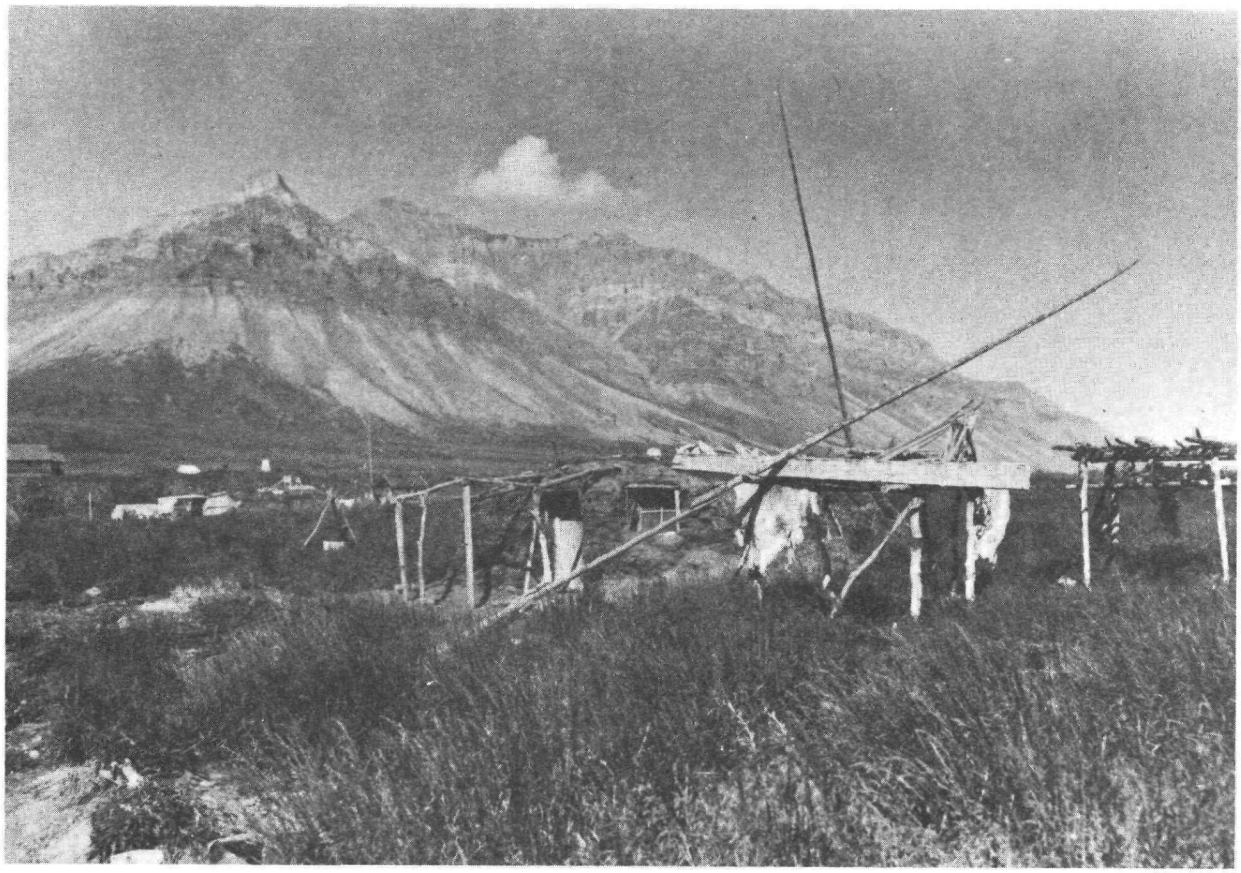
Pat O'Connell, first trader at Anaktuvuk Pass. Grant Spearman historical photo collection.



Homer Mekiana's camp and post office at Anaktuvuk Pass, about 1950. Grant Spearman historical photo collection.



The people of Anaktuvuk Pass built this log church in 1959 and still use it today. They travelled more than 30 miles to Hunt Fork of the John River to cut the logs, then hauled them to the village with dog teams. Grant Spearman historical photo collection.



Sod house and meat racks at Anaktuvuk Village. Grant Spearman historical photo collection.



Traditional Sod House at Anaktuvuk Pass, built by "Old Hugo."
Grant Spearman photo, 1979.

Unexpectedly, at 11 o'clock one night, the Eskimos showed up--sleds, dogs, families, and all--ready to haul the geologists' supplies downriver as earlier agreed. Simon and the rest of the Eskimos knew it was time to go. The thaw was on. But the geologists, unaware that sled travel would be over for the season within 3 days, protested that they were not ready. "Simon answered by saying that, given the situation as he knew it, the Eskimos 'couldn't afford to fool around'."[22] It was now or never, so the gear was piled hurly-burly in the sleds, along with the advance geology party, and they took off. On the return to camp the Eskimos took advantage of their obligatory trip to haul back willow fuel from the downriver thickets.

During the last stage of waiting for breakup, which would allow the USGS canvas boats to be floated down the rapids, Metzger joined a typical caribou hunt from the Eskimos' Chandler Lake camp. While having tea and sourdough bread in Elijah's "fur house," the sun and the cookfire made the tent too warm. Elijah folded back some skins for ventilation, incidentally giving a good view of a lookout who was watching for wandering caribou. Seeing the signal for "caribou coming," Elijah grabbed his rifle and called to Metzger to come along.

The caribou still being several miles away, we walked

without hurrying much up to the top of a flat rise and sat down near its forward edge, close enough to the edge that we could look down upon the flat area below the alluvial fan where the caribou would be coming by . . . yet far enough back so that they could not see us. The caribou as well as our caribou Eskimo neighbors moved to the high country in the spring as soon as the mosquitoes started coming out, in order to escape them. Each Eskimo in our hunting party was armed with two indispensable instruments: a .25-35 lever action carbine from which the blueing had long since worn off the barrel, and a collapsible brass telescope about nine inches long when extended and made in France a long time ago. The Eskimos' carbines were eminently suited to Arctic conditions. They were light in weight, their shouldered shells of ammunition were also light weight but powerful and produced a flat trajectory which in the Arctic is indispensable. While we were waiting around for the caribou to show up, the Eskimos . . . [kept] fairly close tabs on them through their brass telescopes . . . .

Shortly thereafter, as the caribou came within range still upwind of us, each Eskimo lever ejected from his carbine the cartridge case left from the most recent shot he had fired, presumably in most instances only a few days before

Leaving the spent case in the breach after firing was a very effective safety precaution . . . .

Meanwhile the caribou, about six of them, came loping up through the pass. They were running toward the south, down on the rough but flat tundra about two hundred yards below and to the west of us. At almost exactly the same time the Eskimos began firing at their running targets. I counted seven shots and saw five caribou drop. A sixth stood, gut shot and patiently bleeding to death internally, until about four sled dogs that had gotten loose from their staked tethers in the village, charged down the slope toward the poor thing. As the dogs approached the wounded caribou, it decided that it would be less painful to run, though wounded, than stay around and try to make friends. The caribou, making very good time considering that it was better than half dead, fled back north about a quarter of a mile and out into the center of a small pond of water recently formed in the now melting tundra. The pond was about 100 yards in diameter and around three feet deep near the center where the caribou finally dropped and died. Only one of the more eager and inexperienced dogs bothered to swim out after it, and finding the caribou dead and therefore no longer any fun, swam back to the shore, shook himself off, and then joined the others in trotting back to

the village. Meanwhile Elijah, who was pretty darned irritated by the dogs' escape and by their chasing approximately 120 pounds of meat an unnecessary distance from camp and into water, jokingly offered me his carbine and said, "Wanna shoot a dog?"

With the exception of the wounded caribou chased by the dogs all of the caribou shot by the Eskimos lay within a hundred feet of each other. . . . I followed Elijah down to where they lay in order to watch him "skin out" the two caribou that he had just shot. Caribou are relatively small, standing about four feet high at the shoulder. Their split hooves are unusually large and flat, enabling them to run easily over tundra or snow as if they were wearing miniature snowshoes. Their antlers being large for so small an animal, the caribou when running are obliged to tilt their heads back, on account of the weight and the wind resistance of the antlers. Immediately upon arriving at the nearest caribou that he had shot Elijah took out from somewhere underneath his parka a skinning knife and a sharpening stone. Holding the knife in his left hand, cutting edge of the blade turned toward himself, he, with his right hand holding the stone, briskly rubbed the stone with horizontal strokes against each side of the rapidly sharpening blade. This method of sharpening a knife is

much more efficient than the usual method for us of moving the knife against the stone.

Starting at the hooves, Elijah slit the skin along the insides of the four legs until he got to the torso of the animal, then slit the skin from crotch to neck, and loosening the connective tissue underneath the skin all the way around the back, pulled the skin away from the carcass as though he were removing a bathrobe. Then he cut off the head, separating it from both the carcass and hide, and without skinning the head cut out the tongue, which is as much of a delicacy for Eskimos as for other people. In the process he showed us one of the still living bots lodged and wiggling in the throat of the caribou. Caribou are plagued not only by Eskimos and wolves and mosquitoes, but also by botflies which deposit their eggs underneath the caribou's skin. These eggs develop into white flattish larval bots, about the size of a stretched out quarter, which lodging and moving underneath the skin of the caribou must make him miserable. When the caribou licks or chews eggs from his body these get into his throat where developed into bots they compound the animal's misery. Gryc said later that the Eskimos eat these bots as a delicacy.

> After skinning the animal so that the meat could cool promptly without spoiling, and after removing the entrails for the same reason, Elijah threw the skin over the carcass as one might a blanket and resharpening his knife moved over to perform the same service for the second animal he had shot. Later on he or his wife would remove the meat and skin and bones and place these on a raised cache about four feet high made of willow poles and located just outside the door of their house.[23]

Soon after Charles Metzger's visit, the scattered Eskimo bands started shifting to the permanent base camp and eventually the village of Anaktuvuk Pass. This move resulted in part from increasing scientific interest in the area, which brought with it more airborne contact centering on the pass. Geologists, botanists, zoologists, and anthropologists entered the Nunamiut world to study the people and their environment. They brought new technology and opportunities for employment as guides and informants. The pace quickened with establishment of Pat O'Connell's store and the post office, which led to weekly air service. Visiting hunters, government officials, teachers, and preachers followed. Old people began to move from the distant camps to the easier and more secure life of the village. Families came in with their children for school and the religious and social ties of the church.[24]

Homer Mekiana, Anaktuvuk Pass hunter and first postmaster, kept a diary throughout this transition period, from May 1950 to April 1964.[25] The diary records the incongruities of an isolated world of hunters suddenly thrust into the 20th Century. Helicopters, airplanes, and the new landing field compete with notes about wolf hunters and the sighting of 2,000 caribou north of the pass. "Snowshirts," men wearing business suits, sit in council with skinclad Eskimos. Families with pack dogs head down the John River or to Kungomovik to hunt and live in skin tents as a C-46 transport drops supplies, including a gas drum that smashes flat--"no parachute." As hunters gather in a distant tent to exchange information about caribou herds and the price of marmot skins, a radio blares forth news of the world. "Still war on in Korea" is followed by this Stone Age comment: "I ground some bones with stone hammer. Our fat to eat. About 2 pots full of grinding bones."[26]

In the early Fifties, Anaktuvuk Pass was still more a base camp than a village. During most of the year, many families were out at camps on creeks and lakes, coming back to the pass for resupply, then going out again. People like Homer, tied to village-based jobs and responsibilities, still went out nearly every day to hunt or check traps. This latter pattern became the norm as time went on and more people became sedentary because of

the school and other ties. Even "village" families, however, went out to camps when school and village affairs slackened seasonally. Men without family responsibilities and families without young children continued to range the country. These hunters brought back meat to share with families stuck at the pass. Village men would go out to help haul in the meat. Homer, who talked to everyone who came in between hunting trips, passed on information about animal movements and concentrations to the next group coming through. Thus evolved a division of labor between those who ranged and those who mainly stayed home. These and other adaptive responses, such as rapid transit to and from distant hunting places, set the scene for a primarily village-based lifestyle that still depended heavily on far-ranging hunting for livelihood.

These social responses joined with environmental, technological, and economic ones to create a veritable sea change in the life of the people. Villagers restricted to short trips for meat soon depleted resident species in the near environs of the pass. To go far, yet be back in time for work or school, hunters needed machines. By 1970, the dogs that had admirably served a slowly but constantly shifting nomadic people were all but gone. Snowmachines in winter and ATVs (all-terrain-vehicles) in summer provided the rapid transit needed by village hunters.[27]

These changes reduced the amount of meat needed for feeding dogs. But they brought on a whole new set of pressures on the people. Machines and their maintenance and fuel cost money. This meant that jobs and cash flow became central to the hunting way of life--perhaps the most difficult to understand of the compounding sets of changes brought by a 20th Century running rampant. In the landlocked, mountain-stream country of the central Brooks Range, costs and complications became intense. Given the lack of coastal or riverine waters accessible by small boat-and-motor, summer trips in a village that could no longer depend on working dogs required cross-country vehicles.

One upshot of these progressions was a wedge into the integrity of family life and insulating remoteness. Some people went out for jobs, leaving their families. At Anaktuvuk Pass, this phenomenon was not as pronounced as in many other Alaskan villages. For--with the onset of big-time oil development on the North Slope in the Seventies--money, construction, and jobs came to the village.

The transportation revolution, dictated by permanent village living, produced many more short- and long-term effects. One of these, totally unforeseen at the time of inception, arose from the summer use of ATVs across fragile arctic landscapes. It would become an environmental issue a few years later, related to the new land-tenure system that overlaid a National Park on the

central Brooks Range homeland.

Beginning in 1959 with Alaska's achievement of statehood, a series of momentous events, interlocking and reinforcing one another, would sweep across the far north. Together, the discovery of oil at Prudhoe Bay, the settlement of Native land claims, and the Alaska Lands Act of 1980 would create entirely new systems of governance, land management, and development in the region. The "old days" of intermittent visits and quick exists by outsiders were over. Within 20 years, the remote village of hunters at Anaktuvuk Pass would become part of the world.

As the pieces fell in place for these later developments, Homer Mekiana and his fellows continued their busy lives, becoming, in a sense, dual persons living two kinds of lives--partly in the new age, partly in the old. During January and February 1951, the families were scattered to the south and to the north, from Hunt Fork to Tulugak Valley and on many creeks between. A few weeks later Homer took his first airplane ride, going to Fairbanks for medical examinations at Ladd Field's Aeromedical Lab, which was studying Eskimo physiological adaptations to arctic conditions. At the army base he saw a jet fighter--"fast."[28] A few days later Homer was packing caribou meat back to the village with his dogs. The next year wolf-pup hunters had a tough season because small-plane hunters from other places were beating them to the

dens. In July 1952, a number of hikers and recreational floaters (down the John to Bettles) visited the village. On the 25th a photographer from Life magazine flew in, snapped a few shots, and flew out to Bettles.

The comings and goings of the hunters, their information-sharing conclaves, their seasonal attention to sifting and repairing gear in anticipation of the next round of trips contrast forcefully with the boredom of those who were tied to the village. One of these was Rachel, Homer's daughter. A surrogate mother in Homer's broken-marriage home, she was taking care of her little brothers--"always fighting." When Homer was gone she made entries in the diary:

> Gosh! Lonesome around here.
>
> My dad went up to get some meat . . . . Tonight we are going to have service at 7:00 p.m., after that I don't know what else we are going to have. Maybe show, I suppose that is, if we only have film. I wonder what shall I do today.
>
> Me and my girl friend, Ada Rulland, are . . . listening to the radio. Some of the records make us lonesome, especially the ones we used to hear in school.[29]

These expressions symbolize another effect of modern times: the break between generations and genders brought about by school, church, and permanent village life. As family and communal travel and hunting expeditions--involving all members--were replaced by a pattern of hunter specialists and home-based domestics, the older, integrated life ways weakened. Those who became dysfunctional in the old ways sought modern entertainments to fill the hours. The critical role of women in the old-style subsistence way of life--as harvesters, processors, and distributors of its products--could not atrophy without major consequences. Native traditionalists recognize that this trend must be stopped if cultural revitalization is to succeed.

As the diary dates get closer to the present the pace quickens. In October 1962, Simon Paneak flies to Kotzebue "to have Inupiat Conference meeting," a significant early step in the arctic phase of the Native land claims movement. Paneak's baby comes in by plane after treatment at the Native hospital in Tanana. A state trooper flies in to discuss Anaktuvuk Pass problems--they meet in the church on this. The last entry in the diary, April, 3, 1964, signifies yet another quantum leap into the future: "The cat train from Fairbanks reached Anaktuvuk Pass."

Four years later, pushed by the Prudhoe Bay oil discovery, the State Department of Highways punched a winter road--called the

Hickel Highway after Alaska Governor Walter J. Hickel--from the Yukon, across the Koyukuk, up John River, through Anaktuvuk Pass, and across the Arctic Slope to Sagwon, where it joined an existing trail to Prudhoe. For a few weeks huge trucks rushed tons of backlogged freight to the developing oil field. An observer at Anaktuvuk Pass noted that the Eskimos watched silently as the construction tractors moved through the pass. "Their lives, and their children's lives, never to be the same." For the first time Anaktuvuk Pass was connected by road to the rest of the world.[30]

The Hickel Highway symbolized the frustration of an undeveloped frontier state. Finally, with discovery of the giant Prudhoe oilfield, Alaska would realize its destiny as a mineral trove for the Nation. But federal regulations and ownership of land had threatened to choke off oil development. Sea and air logistics were inadequate to the task. A freeze on federal land transfers, including rights-of-way, pending settlement of Alaska Native land claims, further complicated matters. Eventually, under pressure from oil and trucking companies and the active intervention of the state, the winter-road construction was allowed over federal land administered by the Bureau of Land Management. Speed of construction doomed the road with the next thaw. Essentially an ice road lacking the thick insulating gravel base of advanced permafrost road construction, the freight track melted and gullied in 1969's summer sun. Exposed permafrost, its tundra mat scraped

off by the tractors, turned to muck. Grades became canals.[31]

The truck invasion of Anaktuvuk Pass was short-lived. But the ice-turned-to-muck road and the pressure for oil development and land disposition, of which the road had been symptomatic, precipitated hot debates and big decisions. In Alaska and nationally, conservation groups were galvanized by the ill-advised road, which had scarred the Nation's last great wilderness and provoked crisis at Anaktuvuk Pass. Larger questions about arctic conservation and development, licensing and right-of-way for a proposed trans-Alaska oil pipeline, and settlement of Native land claims clamored for solution. Ultimately, the political and economic forces generated by Prudhoe Bay helped to break the land-freeze and license logjams. With great speed the way was opened for oil development and transport via pipeline, resumption of federal land transfers to the State of Alaska as provided by the Statehood Act of 1958, settlement of Native land claims, and conservation of large tracts of wilderness. Resolution of such vast issues could flow from only one source, the National Congress. The central instrument that would allocate for these many purposes Alaska's lands--nearly all federally owned at that time--was the Alaska Native Claims Settlement Act of 1971.

The act was the pragmatic product of a strange-bedfellow alliance. Native land claims had been talked about but had been politically

stymied for years. When state land selections under the Statehood Act began to impinge on Native homelands in the early Sixties, the Natives mobilized politically to protest. In partial response, Secretary of the Interior Stewart Udall instituted in 1966 a freeze on further land transfers until Native land claims could be resolved. Immediately the State of Alaska sued the federal government, jamming the issue in the courts. It was the pressure to deliver newly discovered oil via pipeline from the North Slope to a warmwater port in south Alaska that lent urgency to Congressional consideration of land-claims bills already drafted. To the Natives' plea for justice had been added the potent persuasions of the oil industry, backed by a state desperate for oil-royalty revenues (the state owned the Prudhoe Bay oilfield). With passage of the Settlement Act, the right-of-way for the pipeline and the oil-development haul road could be carved out of the public domain. The routing through the Brooks Range traversed Atigun Pass, some 90 miles east of Anaktuvuk.[32]

Meanwhile, back at the pass, the people reacted ambivalently to the new state of affairs brought about by oil and the spotlight of national concern. Correspondent Jane Pender of the Anchorage Daily News, while preparing a 1969 series of articles entitled "Crisis on the North Slope," visited Anaktuvuk Pass to find out how the winter road had affected the village. She found that consternation at the massive intrusion ("We were so free.") was

qualified by practical considerations. In 1962 the Anaktuvukers, having exhausted their nearby willow-fuel supply, had considered moving to Umiat--leaving school, church, and homes. They were saved from this by emergency provision of oil and oil stoves by government agencies. But they were still on margin. Simon Paneak thought that the road might help them stay at the pass by making supplies cheaper. Generally, the village people--despite the yearnings of anthropologists for continuation of the old culture--wanted some sustaining mix of the good life, as provided by cash jobs and modern conveniences, and the old ways on the land.

Pender's interviews with traditionalists like Charlie Edwardsen, Jr., of Barrow, showed that the Eskimos feared oil-development pressures on the land. The old free-use-of-the-land culture was in jeopardy. Arctic Slope Native Association attorney Frederick Paul, himself a distinguished Native activist, commented ruefully that the oil companies were coming in and nobody could stop them. "No one cares that this is your homeland." A sense of foreboding was pervasive. The temptation of jobs, access, and affordable goods battled with qualms about restrictions on land use, destruction of subsistence resources, and the social problems that would surely accompany an industrial invasion. All of this was happening suddenly. There was no time for job training and acculturative staging. Where would the people be in a few years?

Would they benefit? Or would they be left on the sidelines watching others tear up their homeland?[33]

The Settlement Act not only cleared the way for oil development. It also focused the attention of environmentalists and conservationists on the central Brooks Range. The Native people would be wooed by both developers and preservationists. On the one hand, jobs and material progress were promised to the Natives under a regime of environmentally sound development. Environmentalists countered with concern over fragile arctic ecosystems, oil spills, and wildlife depredations. Given the technical problems of arctic development, they urged that national policy in the Arctic should emphasize setting aside of wilderness areas and wildlife habitat in parks and refuges. This would preserve for the Nation the region's recreation and esthetic values, and at the same time protect the homelands of traditional people.[34]

The Settlement Act also brought a new way of life to the Natives. Statewide, some 44 million acres of land would be conveyed to Native corporations at village and regional levels. Typically, each Native became a shareholder in both a village and a regional corporation. A cash settlement of close to $1 billion would be distributed to the corporations and the shareholders. Suddenly, homelands became property and caribou hunters became executives.

Both land ownership and management of business enterprises were alien concepts for most Native people in isolated villages. These new responsiblities, with their legal and administrative burdens, would further disrupt and dilute the subsistence way of life.[35]

Thus, in rapid succession oil discovery and development, the conservation movement, and the Settlement Act avalanched on Anaktuvuk Pass. On a less structural level was the increasing traffic of casual visitors: day-tourists, hikers, floaters, and hunters. On the good side, these people bought the caribou-skin masks made by the local people--a welcome source of cash. But the seasonal flurry of air traffic was often disturbing. Far worse was the slaughter and waste of game by trophy hunters, who thus took meat from village tables. The synergy of these new forces raised to new levels the pace of change. "Snowshirts" with their briefcases and scenario charts descended in droves on the village. To some extent, to protect their interests, Natives themselves had to join the briefcase brigade. The leaders chosen to represent the village at meetings in the village, around the state, and in Washington, D.C., were often the very ones most admired for traditional skills and prowess. Time on the land for these leaders and tradition bearers became a luxury. Under the prevailing circumstances of stress and disruption, absence or distraction of village leaders from traditional affairs could not help but detract from the social cohesion of the village.

Soon followed capital improvement programs funded by taxes on the Prudhoe Bay oil operation. Construction of new houses and public facilities in the village under sponsorship of the arctic region's municipality, the North Slope Borough, advanced to new heights the villagers' dependence on costly fuel, maintenance services, and other imports from the outside world. Certainly, by any conventional measure, these projects improved the standard of living in the village, and they were welcomed both for their material results and for the infusion of jobs and cash flowing from construction projects. Along with electric power and modern communications came television and other diversions, also welcomed by people increasingly co-opted by a world that only a few years before had been a distant mystery.

To top it off, the caribou hunters of Anaktuvuk Pass--and such they largely remained despite the radical changes--were visited by more and more scientists. Anthropologists crowded in to extract the diminishing base of traditional knowledge before the elders' final slide to mortality. Sociologists recorded the impacts of the changing life style. Natural scientists tapped the remaining fund of traditional science and historical knowledge about animal behavior, cycles, and other phenomena.

lore ominous than these innocent seekings were the radiation

ecology studies conducted by the Los Alamos and other national scientific laboratories. Radioactive elements from worldwide weapons testing descended from arctic skies to concentrate in the slow-growing lichen eaten by caribou. The caribou hunters of Anaktuvuk Pass contained significant concentrations of these elements in their bodies.

Truly, this little village, which entered the period of rapid change with barely a hundred souls, this last outpost of inland Eskimo culture, had come into the world, and the world had come into it.[36]

From the beginning of scientific inquiry at Anaktuvuk Pass, foreboding about the future of this relict culture group has been expressed. More than 20 years ago, when the process of change was still largely ". . . taking place within the framework of traditional Nunamiut culture," Nicholas Gubser predicted:

> A generation hence, most Nunamiut activity, including future change, will take place in an already acculturated context. The Nunamiut of Anaktuvuk Pass will become another typical small north Alaskan native town.[37]

In 1972, Ed Hall noted that hunting peoples were disappearing the world over. Turning to Anaktuvuk Pass, he wondered what change

would do.

> Certainly these Eskimos are acquiring a new view of the world, along with a new technology. Their desire for education and the other apparent riches offered by Western civilization continues unabated. I do not know if the combination of newly available material goods and a growing awareness of other possible lifeways will be the end of the caribou hunters of Anaktuvuk Pass.[38]

Seven years later Grant Spearman tabulated all of the forces for change noted above, and a few more:

* oil and mineral development in the north-neighboring National Petroleum Reserve.

* interdiction of caribou movements by the oil pipeline.

* easy public access via the haul road into the eastern perimeter of Nunamiut hunting and fishing territory.

* village population increase (1982 population, 215), causing more hunting pressure on wildlife.

* creation of a new, surrounding national parkland that,

> among other things, invites still more visitors to intrude the cultural privacy of the villagers.

He urged Park Service planners and managers to take careful account of this need for privacy, for, ". . . with any society in the process of acculturation, a large influx of outside influences (in this case, visitors) can easily upset the balance of the community."[39]

As earlier noted, the prospect for survival of cultural pluralism in arctic Alaska may seem bleak. But the tool kit of the professional survivors at Anaktuvuk Pass contains a multitude of implements, including tenacious ties to the past and hard-headed ideas about the desired future. Fortunately for their cause, Inupiat leaders had foreseen the coming massive change. During a conference of village leaders at Barrow in 1961, named Inupiat Paitot (Peoples' Heritage), they defined the problems they must solve: "(1) Aboriginal land and hunting rights. (2) Economic and social development."[40]

When the Settlement Act was passed, the Anaktuvukers had already plotted the main outlines of lands they must have to perpetuate their village life. With the aid of resource advisors such as David Hickok, a major contributor to the 1968 Federal Field Committee study, Alaska Natives and the Land, and under the

direction of their own land chief, Riley Morry, the Anaktuvuk people prepared the maps and other documents needed to make their land selections.

> Hunting areas for various species were defined, their travel routes were illustrated, the places of wood harvest, berry picking, all were indicated. Additionally, the people noted other knowledge of oil seeps, coal outcrops and mineral occurrence, and of springs and gravel sources.
>
> To their own knowledge was added the input of legal counsel on the potential effects of . . . [conservation-unit] land classification over lands they used, the impact of selection regulations and the portent of the alleged highway right of way through Anaktuvuk Pass. Resource advisors investigated surface and subsurface land values, and it was all put together. The Arctic Slope Regional Corporation and the Nunamiut Corporation of Anaktuvuk developed a joint land selection strategy with its first priority of serving to retain the people's "subsistence way of life," and secondly, to maximize potential opportunities for economic reward and progress within their value system.[41]

By virtue of their early planning and systematic approach to the

land selection requirements of the Settlement Act, ". . . the Nunamiut of Anaktuvuk Pass became the first village in all of Alaska to completely file their village land selections on November 14, 1973."[42]

Special negotiations were undertaken with the Secretary of the Interior to assure that critical areas at ancestral sites, marked for inclusion within the proposed Gates of the Arctic National Park, would be available for Native selection or, failing that, would be recognized as Native use areas under established subsistence patterns. Among other safeguards sought at this time was elimination of any proposal for a transportation corridor through Anaktuvuk Pass.

At a higher level of strategy, the Arctic Slope Regional Corporation and the Nunamiut Corporation of Anaktuvuk Pass proposed a Nunamiut National Park that would be jointly managed by the Native people and the federal government to assure protection of both local subsistence and national interests. This proposal and later variations on it did not survive the legislative process that created Gates of the Arctic National Park and Preserve. But the documentation of traditional subsistence-use areas incident to that proposal continues to bear on management of the parkland, which, under the terms of the Alaska National Interest Lands Conservation Act of 1980, allows subsistence activities to

continue in traditional-use areas within the park.[43]

Consistently, since passage of the Settlement Act in 1971 and on through the creation and early management stages of Gates of the Arctic National Park and Preserve, the people of Anaktuvuk Pass have accommodated new plans and developments when they could and sharply contested them when they could not. In their relationships with the larger world--state and federal agencies, development interests, and their own regional corporation and municipality--they have won some and they have lost some. The struggle for cultural integrity and sustaining land uses goes on. At the time of this writing, negotiations for land exchanges and other agreements that would assure access to key subsistence areas are underway between the people of the village, the National Park Service, and other interested parties. The task before all parties is to find common ground and build amity upon it. For in truth, no matter how apparently divergent may seem the interests that converge at Anaktuvuk Pass, no matter how intricate the new boundaries of land tenure and jurisdiction that wind through its environs, this is one geography comprising both a homeland and a wilderness park.

Some years ago, the noted conservationist Raymond Dasmann, reflecting on the relationship between indigenous people and national parks around the world, said this:

> National parks must not serve as a means for displacing the members of traditional societies who have always cared for the land and its biota. Nor can national parks survive as islands surrounded by hostile people who have lost the land that was once their home.

These words still offer fresh counsel.

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For all the learned commentary and the often pessimistic analyses of societal and psychological impacts brought by 20 years of rapid change, the pragmatic people of Anaktuvuk Pass continue to go their own way. Through the long winter--when cold and darkness reign and visitors taper off--hunters and trappers go out in the country as they always have, camping at the old sites, pursuing the same animals, though with an access of motorized technology. During holiday breaks from school, families trek to the camps to join the hunters. In summer the tent camps can be seen scattered through the country at the lakes and along the creeks. In systematic fashion a cadre of young people is being coached in the skills of living off the land.[44]

There is an awareness in the village that the heyday of

construction projects and wage employment is over, that another boom has crested and that older dependencies on the land and its wild resources are coming to the fore again. It is an old rhythm. A recent study of village subsistence economies in Alaska demonstrates that those communities ". . . far from urban centers, not connected by roads to urban areas, with lower degrees of settlement entry, and with lower community mean household incomes" must for survival continue to depend heavily on wild harvests.[45] These criteria apply with special force at landlocked Anaktuvuk Pass--even the last one now, as the construction-based flirtation with the wage economy cools.

In a recent study of Anaktuvuk Pass subsistence strategies and adaptive responses through time, Ed Hall has summarized the current view of the villagers:

> For the Anaktuvuk Pass Inupiat, the subsistence issue remains basic to life itself. They continue to teach their children, though word and example, the tenets and techniques of the subsistence quest, though most, always seeking survival alternatives, also emphasize the importance of securing marketable skills through formal education. They are continually made aware that subsistence as a means of survival today balances on the razor edge of politics. They know that the contribution of

subsistence activities to their everyday existence cannot fall below a certain critical level, given the economic realities of today's world, without rendering their traditional relationship with the land untenable.

From the perspective of an urban and wage economy based society, it may be difficult to understand how the nature of the Anaktuvuk Pass Inupiat subsistence quest can change so dramatically over time and yet the adaptation itself be seen by many as remaining a distinctive response to the modern Arctic environment. The present subsistence quest is inextricably intertwined with that of the past, woven from the threads of antiquity which both fashioned and constrained a world view that derives from a holistic understanding of the Arctic environment and encompasses a wide range of alternative strategies focussed on survival in the most comfortable and rewarding fashion possible. Still, the present Anaktuvuk Pass Inupiat subsistence quest is a unique response to the circumstances of the present. Even so, as long as subsistence hunting remains part of the Anaktuvuk Pass Inupiat lifeway, the adaptative responses chosen in the future will reflect the lessons of both the present and the past. Experience is not only the teacher, the guide, but also the body of today's existence and the spirit of tomorrow's hope. Innovation, experimentation,

shifts in emphasis, fluctuations in the relative importance of particular resources, the importance of specific areas, and the importance of specialized techniques will all continue to interplay with the accumulated wisdom of the past as the Inupiat struggle in the future to retain their unique adaptation. Mobility, recognition of alternatives, and access to resources will remain the key concepts of that quest, all directed towards the provision and the promise that the land will continue to provide.[46]

Chapter 7 Notes

1. Katrina Kassler, Discussion Guide to "The Oral Tradition; A Film Series on Three Alaska Native Elders," Alaska Native Heritage Film Project, University of Alaska Museum, 1984, 8.

2. The account that follows is based on Joe Sun, My Life and Other Stories (from transcripts translated by Susie Sun and compiled by David Libbey, published by the NANA Museum of the Arctic with a matching grant from Alaska Humanities Forum, 1985). Logistical support during the field survey with Joe Sun was provided by the National Park Service, with special help on site visits and overflights from ranger/pilot Ray Bane.

3. Ibid., 26-27.

4. Ernest S. Burch, Jr., "Cultural Revitalization Among the Northwest Alaskan Eskimos" (draft paper presented in a symposium on the culture history of Alaska Natives in Osaka, Japan, August 1978).

5. Joe Sun, My Life, 110-11.

6. Grant Spearman, Arctic John Etalook, Louisa M. Riley, "Preliminary Report to the North Slope Borough's Inupiaq History, Language, and Culture Commission of the Ulumiut Territorial Land Use Inventory," Dec. 3, 1982. Logistical support for field work was provided by the National Park Service, including flight assistance rendered by ranger/pilot Ray Bane.

7. Diamond Jenness, Dawn in Arctic Alaska (University of Minnesota Press, Minneapolis, 1957), 41-130.

8. Spearman, "Preliminary Report," 48-49; Walter Johnson interview of 6/16/84.

9. Marshall, Arctic Village, 86.

10. Walter Johnson interviews of 1/6/84 and 6/16/84.

11. W.P. Brosge, Notes on Wiseman (Menlo Park, 1959).

12. Thomas R. Berger, Village Journey, The Report of the Alaska Native Review Commission (Hill and Wang, New York, 1985), 53.

13. For recent expressions of these views, see Berger, Village Journey, subsistence photos and quotations following 47; Chap. 2.

14. Gubser, Nunamiut Eskimos, 24-27; Spearman, Anaktuvuk Pass, 66-71; Grant Spearman Nunamiut History (North Slope Borough School District, Barrow, 1982), 11-16.

15. Simon Paneak, "We Hunt to Live," The Alaska Sportsman, 26(3), March 1960, 12-13, 55.

16. Spearman, Anaktuvuk Pass, 75-93.

17. Charles R. Metzger, "The Silent River, a pastoral elegy in the form of a recollection of Arctic adventure" (unpublished typescript, n.d., obtained from George Gryc, USGS, Menlo Park); George Gryc, et al., Geology of the Chandler River Region, Alaska, USGS Prof. Paper 303-E (GPO, Washington, 1963), 224-25. Note: Metzger's work was recently published: Charles R. Metzger, The Silent River (Omega Books, Los Angeles, CA, 1983).

18. Metzger, "Silent River," 15-17.

19. Ibid., 69-72.

20. Ibid., 80-81.

21. Ibid., 81-85.

22. Ibid., 99.

23. Ibid., 111-15. See Edwin S. Hall, Jr., "The Waiting," Alaska Sportsman, 32(12), Dec. 1965, 32-34, and "The Caribou Hunters of Anaktuvuk Pass," Alaska Magazine, 38(11), Nov. 1972, 6-7, 53-55, for other hunt descriptions.

24. Spearman, Anaktuvuk Pass, 68-69.

25. Homer Mekiana, This is the Story About Anaktuvuk Pass Village, Special Report of the Naval Arctic Research Laboratory (Barrow, Alaska, October 1972).

26. Ibid., entry of 1/14/51.

27. Hall, "The Caribou Hunters," 55. For details of this evolution see Edwin S. Hall, et al., In the National Interest: A Geographically Based Study of Anaktuvuk Pass Inupiat Subsistence Through Time (North Slope Borough, Barrow, Alaska, 1985), I, 67-74.

28. Mekiana, This is the Story, entry of 4/5/51.

29. Ibid., entries of 8/8, 9, 14/52.

30. Robert Krumm, "The Long Road North" (undated, unsourced article written and published in 1969, found in NPS historical clipping file; Krumm was manager of the BLM District Office in Fairbanks), 8.

31. Raymond R. Coffey, "Oil Boom Cuts Deep Scars Into Alaskan Wilds," San Francisco Sunday Examiner & Chronicle, 9/14/69, A26.

32. See Mary Clay Berry, The Alaska Pipeline: The Politics of Oil and Native Land Claims, University of Indiana Press, Bloomington, 1975), and Robert D. Arnold, et al., Alaska Native Land Claims (Alaska Native Foundation, Anchorage, 1978 edition) for details of these major developments. David M. Hickock, who served on the Federal Field Committee for Development Planning in Alaska (FFC) during these critical times, cautions against attributing the passage of ANCSA solely to oil-development pressures. He notes that an FFC report to President Lyndon B. Johnson in 1965 recommended no further economic development in Alaska pending settlement of Alaska native land claims. This report sparked renewed interest in Congress on this subject. It led to the drafting of bills on the land claims issue well before oil was discovered at Prudhoe Bay. In a critique of my draft language on this subject he states: "It is a myth that the pipeline forced Congressional action on ANCSA. Bills were already in various stages. The FFC's Alaska Natives and the Land [a 1968 publication that provided the critical data base for Congressional committees dealing with the land claims issue] was already finished, etc., before Prudhoe Bay was discovered. What Prudhoe Bay did was (a) provide urgency and (b) jack up the price of compensation." (Critique of October 9, 1986.)

33. Jane Pender, "Crisis on the North Slope: Last of the Caribou People," Anchorage Daily News, 3/4/69, 4.

34. The development/preservation controversy generated a huge literature, with subtopics such as the fight over environmental safeguards for pipeline construction filling large sections of libraries. Samplings of various viewpoints can be found in the following sources; Robert B. Weeden, "Arctic Oil: Its Impact on Wilderness and Wildlife," Alaska Chapter of the Sierra Club Newsletter, 1(2), 4/15/69, 1, 4-7; "Alaska Strikes It Rich," U.S. News & World Report, 12/9/68, 48-53; Robert Cantwell, "The Ultimate Confrontation," Sports Illustrated, 3/24/69, 67-76; Jeremy Main, "The Hot Oil Rush in Arctic Alaska," Fortune, April 1969, 120-25, 136-42; "We Ask Injunction Against Alaska Pipeline," Wilderness Report, April 1970, 7(1), 1-3.

35. The Alaska Native Claims Settlement Act (ANCSA) is another vast subject. The pros and cons of its effects, particularly as it affects the Native land base and the chances for perpetuation

of traditional life ways, are hotly debated at the time of this writing. Many corporations are in financial trouble and the corporation-owned lands (individual Natives do not own lands conveyed under ANCSA), often selected for commercial rather than subsistence values, could soon be alienated from Native ownership through taxation or sale of stock. A number of Native groups seek amendments to the act that would safeguard Native land ownership and restructure the law in favor of traditional institutions for land control and governance. See Arnold, Alaska Native Land Claims, and Berger, Village Journey, for broad coverage of these issues.

36. Spearman, Anaktuvuk Village, 117-38; Anaktuvuk Pass Village Folio, Arctic Environmental Information and Data Center, Anchorage, 1978; National Petroleum Reserve in Alaska, 105(c) Study, Socioeconomic Profile (Arctic Environmental Information and Data Center, Anchorage, 1978).

37. Gubser, The Nunamiut Eskimos, 27.

38. Hall, "The Caribou Hunters of Anaktuvuk Pass," 55.

39. Spearman, Anaktuvuk Pass, 133-38.

40. NPRA Socioeconomic Profile, 5-6.

41. David M. Hickok, "Nunamiut Experience and Current Approaches to Subsistence Harvest Problems by the People of Anaktuvuk Pass," Address before the Federal-State Land Use Planning Commission for Alaska, February 5, 1974, 8.

42. Ibid., 11.

43. Ibid., 11-14.

44. Annie Calkins, Puvlatuuq (North Slope Borough School District, Barrow, 1982), 4.

45. Robert J. Wolfe and Robert J. Walker, "Subsistence Economies in Alaska: Productivity, Geography, and Development Impacts," Division of Subsistence, Alaska Department of Fish and Game, 1985. 2.

46. Hall, In the National Interest, I, 89.

Chapter 8: Creation of the Park

Since World War II Alaska's Far North has undergone amazing changes. From being a region barely known and noted by the world at large, it has become a focal point of international interests: geopolitical, industrial, and conservationist. The instruments of modern society have come to the far places. They have shrunk the distances that made these places remote from the outer world and from each other.

Individual episodes spurring the recent progression--military installations, Statehood, acts of Congress, oil and mineral discoveries, the oil pipeline, and emplacement of a bewildering array of lines on the map--have aggregated into a more profound and revolutionary change: For at least 10,000 years people dwelt in these landscapes subject to the natural forces around them. The fate of travelers depended on the sufferance and succor of local people. Now all this is reversed, with the greater part of the shift occurring in the last 40 years. Natural forces have been largely tamed, at least temporarily, by modern transport and imported technologies. And the fate of local landscapes and people depends to an extraordinary degree on decisions made elsewhere.

In many discussions with local people, this writer has heard one sentiment more than any other: the heartfelt wish that things had

not changed. The people who call the upper country home remember a vast and mainly vacant public-domain commons whose few inhabitants were governed almost without exception by customary rules. They all knew each other, and they had enough time and room, usually, to dissipate their occasional conflicts. They didn't ask for much, nor were they given a lot of things that they hadn't asked for--like new laws and regulations or suddenly appearing roads through their settlements and villages. But these things have come unasked in recent years.

When they came, a dichotomy developed. Local people divided over the two generic prospects for their future offered them by outsiders. As writer John McPhee has observed, this division

> . . . produced a tension that underlay much of what was happening in the state. It was tension over the way in which Alaska might proceed . . . [I]t was the tension of preservation versus development, of stasis versus economic productivity, of wilderness versus the drill and the bulldozer, and in part it had caused the portentous reassignment of land that now . . . was altering, or threatening to alter, the lives of everyone in the state.[1]

Signs and portents of changing times began with the war and accelerated thereafter. A big landing field was built 5 miles

upstream from Bettles in 1945 to support petroleum explorations in the Naval Petroleum Reserve north and northwest of the central Brooks Range. A new town of Bettles Field grew up there, sheltered partly in buildings moved from what had become Old Bettles. Large-scale air freighting could now commence. Ex-Spring Creek miner Al Withrow, the elder, ran the radio beacon there. A companion Indian village, Evansville, grew up at the north end of the runway in response to job opportunities.[2]

In the Fifties the Kennecott Corporation renewed its interest in the Bornite copper deposits on Ruby Creek near Shungnak. Another big airstrip, development roads, and increased barge traffic resulted. Should commodity markets improve, a mine employing up to 600 people and a community of thousands was forecast.[3]

Increased air access to the Brooks Range periphery encouraged a minor boom in guided hunting into areas heretofore known only to Natives, prospectors, and geologists. Old-style guides like Hal Waugh, Bud Helmericks, and Bernd Gaedeke established camps and lodges on the forested south flank of the Brooks Range at such fly-in sites as Iniakuk Lake, Walker Lake, and Takahula Lake. Hal Waugh, honored as the first Master Guide in Alaska, believed with passion in the principles of fair chase. He fought the growing trend of fast-in, fast-out hunting guides, for whom numbers of hunting parties and big bucks were the objectives of guiding. He

warned his clients that the old ways--getting on the ground, taking time, and sweating for an animal in its own terrain with no guarantees of kill success--would govern any hunt he guided. He took only a few parties each year, screened by these standards, to participate in what he believed was a profound human experience when conducted ethically. He and his peers deplored the cheaters and lamented "the end of old Alaska," which, since the war, had fallen under the sway of "Industrial Religion."[4]

While groups of old timers huddled around campfires and cabin stoves remembering better days, the big world kept coming. Conveyance from the federal government to the state of Prudhoe Bay's potentially rich oil lands opened the way for major oil discoveries. Soon followed the push for roads and pipeline. Jet airliners began service to Barrow, Deadhorse (Prudhoe), and Kotzebue.[5]

Meanwhile, the conservation movement had been busy. Beginning in 1950 and for several years thereafter, the National Park Service fielded an Alaska Recreation Survey team headed by George Collins. Amont the published recommendations was a preliminary concept for an Arctic Wilderness Park. Collins encouraged Olaus and Mardy Murie's expedition to the eastern Brooks Range in 1956, which was fupported by a consortium of scientific and conservation groups in Alaska and across the country.[6] Partly as a result of the Murie's

expedition, the Arctic National Wildlife Range was established by Public Land Order in December 1960. While stumping around the country for Brooks Range preservation, Olaus then president of The Wilderness Society, urged that some vestiges of Alaska's backcountry be saved for all the people before "progress" claimed them. He carried this message in full recognition that land withdrawals of any kind were controversial in Alaska. As an honorary member of the Pioneers of Alaska, he urged that designated wilderness areas would provide the last refuge for Alaska's traditional Native and pioneer life-styles. Far from locking up the land, such areas, properly adapted to the needs of their neighbors and inhabitants, would perpetuate frontier Alaska's beauty, scientific values, social and cultural integrity, and access for the people at large.[7]

This argument succinctly framed the conservationists' position for the years ahead. Places and details would vary. But the lines then drawn would continue to define the intellectual, esthetic, and emotional ramparts of a struggle dedicated to thwarting open season on arctic Alaska by any version of Progress that would be destructively exploitative. In addition to the basic wilderness preservation idea were two complementary elements of the largely homegrown Alaska conservation movement: Concern for preservation of traditional Alaskan life ways, both Native and frontier American; and protection of fragile, frozen landscapes from

industrial projects conceived in ignorance or for narrow economic reasons. These concerns resulted, on the one hand, in alliance of conservationists and traditionalists; on the other, in a strong environmental emphasis that, for example, blocked early pipeline construction plans whose design and engineering principles were ill-adapted to the problems of permafrost.[8]

The national interest in a balanced program of development and conservation for Alaska was formally recognized in the Alaska Native Claims Settlement Act of 1971. The act directed federal agencies to study outstanding areas for possible designation as national conservation units--parks, refuges, forests, and wild and scenic rivers. In part because of Robert Marshall's well publicized adventures in the Brooks Range, as well as the writings of his cohorts and followers, the Gates of the Arctic region had long been viewed as a potential National Park. During the 1960s the National Park Service had conducted its studies of Alaska's natural and cultural landscapes. During this period the central Brooks Range came to the fore as a premier parkland candidate. For example, in January 1965, George Collins, Chairman of the Service's newly formed Alaska Task Force, recommended study of a Brooks Range and Arctic Slope Zone as a potential park; it included the eastern part of the later Gates of the Arctic National Park and Preserve.[9]

In 1966 the fruits of these early studies were brought together in an informal study report that recommended for preservation, among other proposals, certain areas in the central Brooks Range: the Anaktuvuk Pass environs as a significant cultural, geological, and wildlife corridor between the Koyukuk and Colville rivers, and the western part of the Endicott Mountains inscribed by the upper Alatna and Kobuk rivers. These headwater areas contained, according to writer Roger Allin,

> the most rugged, spectacular, fearsome and awe-inspiring mountains in all of Alaska--and the most remote. While they rise only to elevations of 8,000 to 9,000 feet, the vertical drop between peak and valley floor and the exposure of jagged, bare granite peaks, the isolation of the small lakes, which are ice-free only a few weeks out of the year, formed within the glacial cirques add to the appearance of desolation and the feeling of aloneness one experiences in this last region of true wilderness within the United States. . . . While in this part of Alaska nature is a tough and unforgiving adversary, here also she is beautiful beyond all description--remote, pristine, undiscovered and unspoiled.[10]

In an October 1967 meeting in Juneau between Alaska's Governor Walter J. Hickel and National Park Service Director George

Hartzog, Hartzog endorsed a proposal by Federal Field Committee Chairman Joseph Fitzgerald for a joint NPS-State of Alaska study of the Alatna-Kobuk region ". . . from the standpoint of its qualifying as a possible addition to the National Park System." The Brooks Range study would be part of a larger NPS-State cooperative effort across Alaska to set aside park and recreation areas in anticipation of major acceleration of the state's economic development.[11]

Meanwhile, the national organizations of the Sierra Club and the Wilderness Society, joined by Alaskan members and supporting groups, had added their endorsements to the idea of Brooks Range preservation. In 1963, a Wilderness Society conclave at Mount McKinley passed the following resolution:

> It was the consensus of the [Wilderness Society] Council that the staff explore informally with the Secretary of the Interior a suitable form of wilderness type classification for an appropriate area in the Upper Koyukuk-Endicott Mountains region of the Brooks Range.[12]

By 1964 the Bureau of Land Management, then the federal agency in charge of almost all of Alaska's public domain, was inventorying the south slope of the Brooks Range for recreation sites that should be reserved from destructive forms of commercial or

industrial development. Within a few years, under pressure from the Alaska Chapter of the Sierra Club and the Alaska Conservation Society, BLM was preparing a land classification plan that would treat major scenic and recreation sites in the central Brooks Range as wildlands ". . . to prevent the loss of irreplaceable public values." A workhorse in the conservationists' efforts to protect the central Brooks Range was Richard J. Gordon of Juneau. His letters of advocacy and his analyses of the region's resources and values, beginning in the late Sixties, contributed strongly to the development and defense of expansive conservation proposals that foreshadowed the scope of the eventual' parkland.[13]

In June 1968, the NPS unilaterally began the field study of the central Brooks Range endorsed earlier by Director George Hartzog. It occurred in a context of gathering urgency, for the State of Alaska's proposed Arctic Transportation Corridor through the Brooks Range, the recent oil discoveries, and the new tourist invasion of the Arctic via commercial airlines had taken the wraps off the remote mountains.

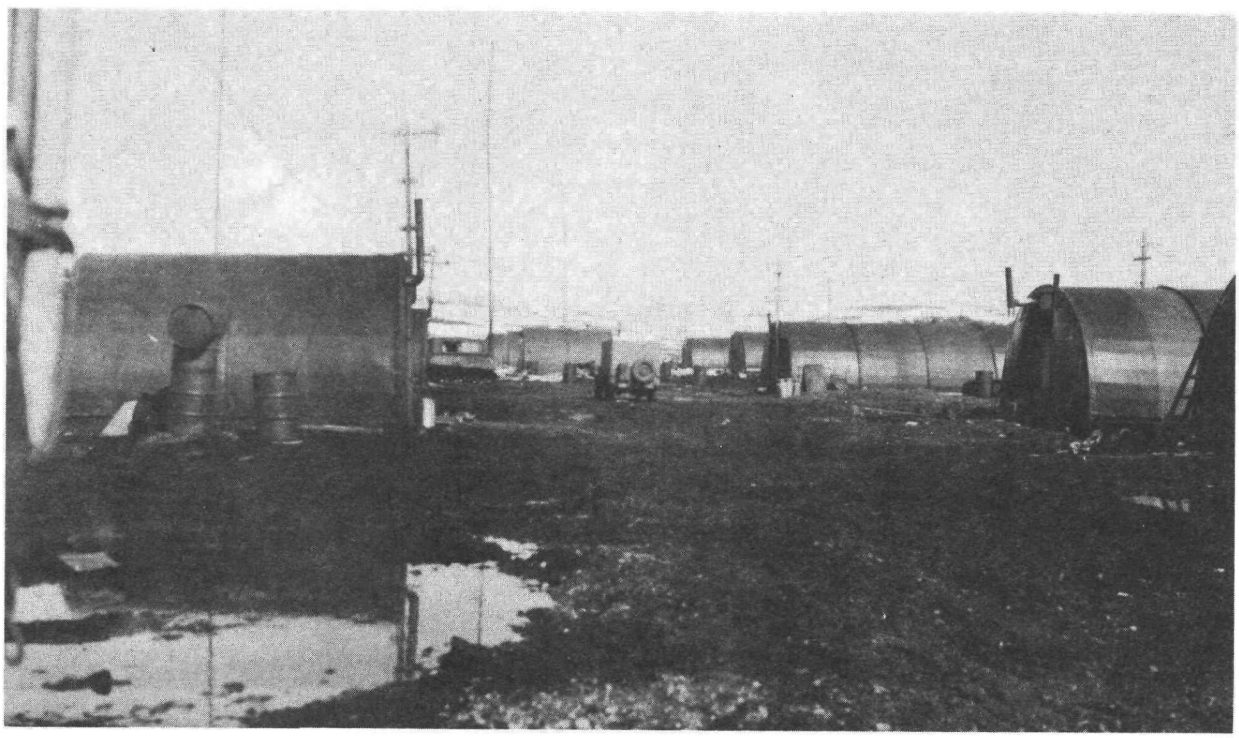
The field reconnaissance was directed by Team Captain Merrill Mattes, a historian, with the invaluable flight assistance of Chief Pilot Theron Smith of the U.S. Fish and Wildlife Service. The three-man team included Bailey Breedlove and Richard Prasil, providing a balance of cultural, landscape architectural, and

natural history disciplines. The team's impressions of the country--its flora, fauna, geology, scenery, and scattered humans--recall those of Marshall, except for the decline of population in the upper country (the Wiseman-Nolan camp comprised only 18 souls). At Wild Lake, a bearded man--doubtless a disciple of homesteader Fred Meador, self-appointed protector of the lake and its creatures--chased the party's taxiing amphibious plane in a rowboat to protest this noisy disturbance of Eden. At Anaktuvuk Pass the visitors were welcomed by patriarchs Elijah and Simon, and the Eskimos' sod houses and meat-laden drying racks were noted. Kobuk village seemed ". . . . a quiet peaceful place", compared to the OUtside's civil rights and anti-Vietnam War strife.[14]

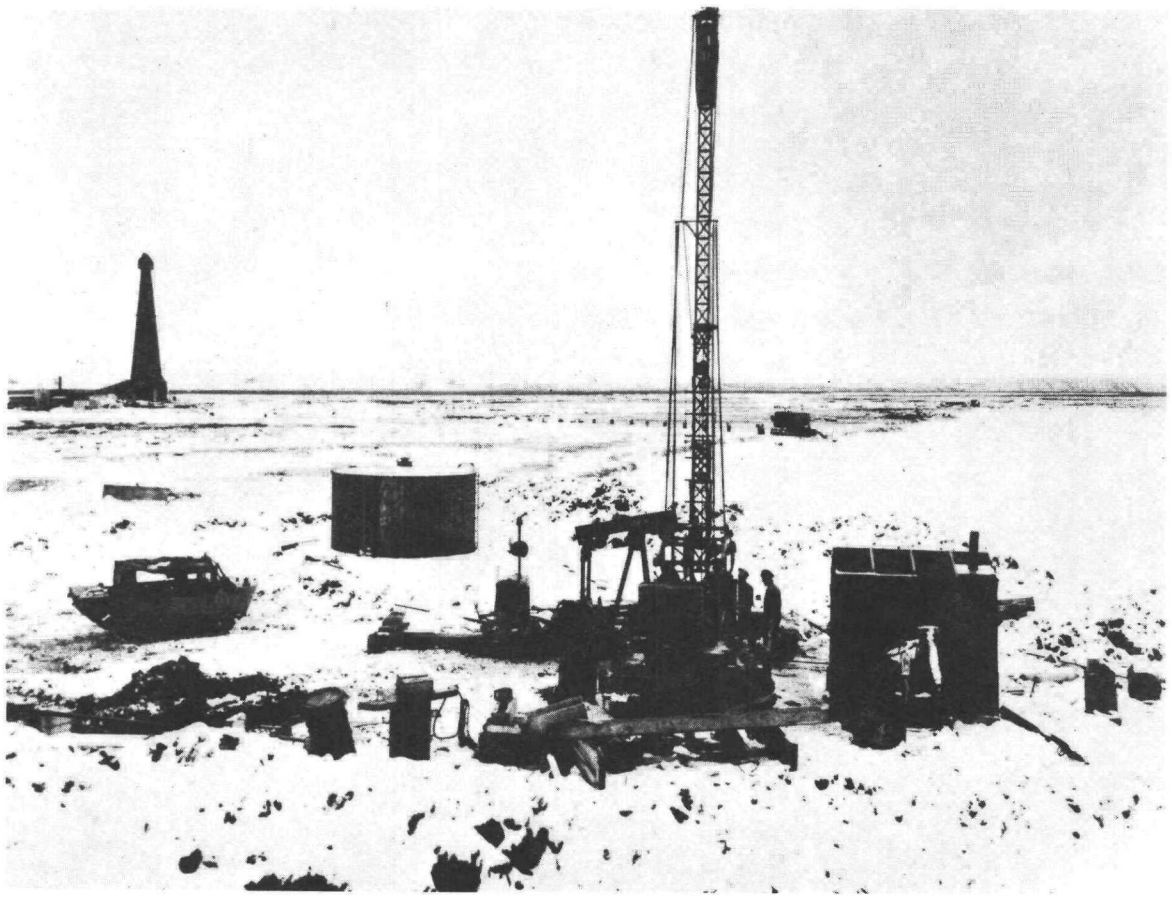
The team's recommendations took account of the State's plan for an Arctic Transportation Corridor--presumably via John River and through Anaktuvuk Pass--proposing a two-part parkland. The small east section centered around Mount Doonerak and included upper North Fork and the Gates themselves; the larger west section comprised the Alatna-Kobuk headwaters, including Arrigetch Peaks, Mount Igigpak, Walker Lake, and the Kobuk canyons. The park was conceived as undeveloped, roadless, and wild, supporting Marshall's idea of the ultimate wilderness. Subsistence hunting by Natives would continue under this proposal.[15]

These modest recommendations struck a middle ground between a larger Alaska Wilderness Council proposal and a restricted lake-recreation site concept pushed by Alaska miners. The preservationists would extend the west section of the parkland north of the Arctic Divide to protect important caribou range and preserve a transect of North Slope tundra. Mining spokesman Jack McCord envisioned a state-federal cooperative program that would develop recreation sites and floatplane landings along selected lake shores, plus pack trails radiating from the landings into the hinterlands where government-built cabins would support mineral exploration by mining engineers.[16]

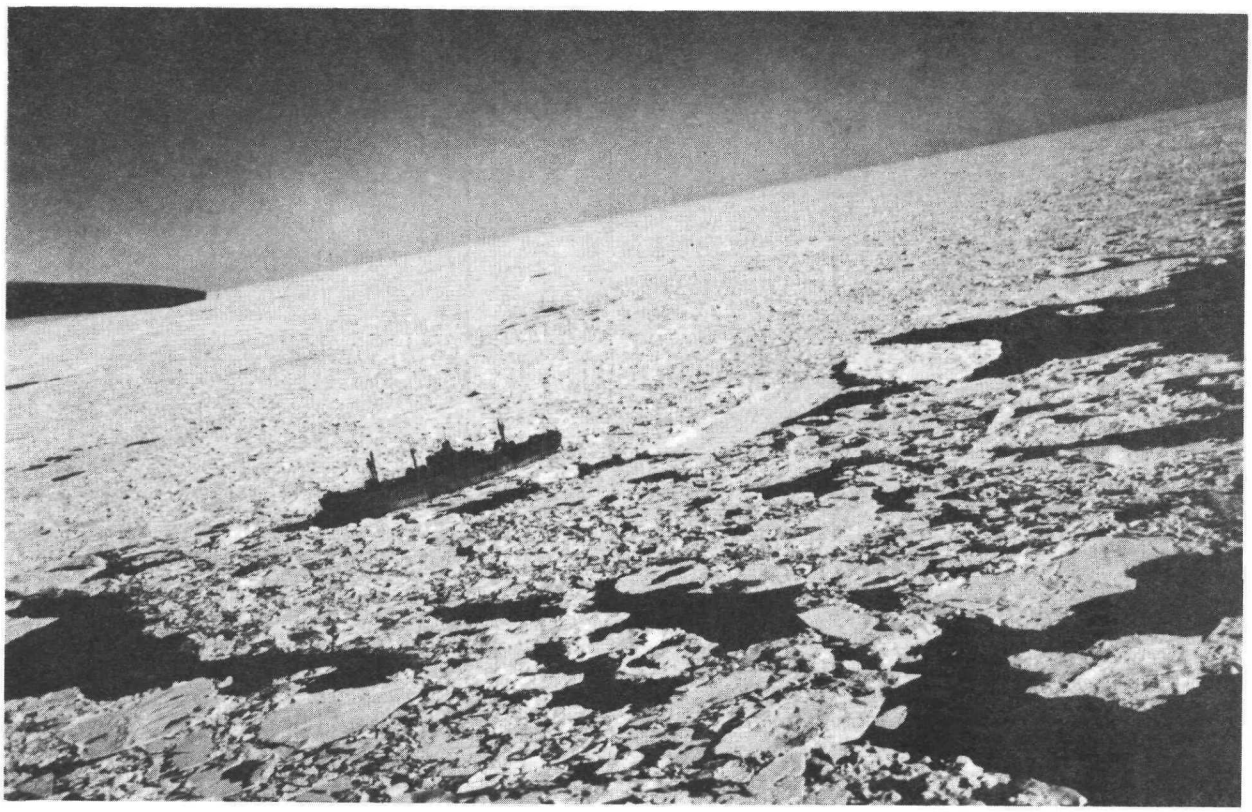
Shortly after the NPS Kobuk-Koyukuk field-study team returned from Alaska, nearly a year before the June 1969 publication of its report, chief planner Theodore R. Swem of the Service's Washington Office had supervised preparation of an extended 4-million acre Gates of the Arctic proposal. It was part of a larger package conceived by Secretary of the Interior Stewart Udall.[17] In the closing months of 1968 Udall presented the package to President Lyndon B. Johnson. The Secretary urged that the Gates of the Arctic and other key Alaskan and Lower 48 areas totalling 7 million acres be proclaimed National Monuments as Johnson's parting conservation gift to the Nation in the last days of his administration. Anticipating Congressional distress at such a broad use of the Antiquities Act (which gave the President



The first Seebee camp at Umiat on the Colville River. This camp helped inaugurate modern oil exploration on the Arctic Slope. R. M. Chapman photo 130 of 1946. USGS Historical Photo Library, Denver.



Oil exploration at Umiat, 1947. J.C. Reed photo 876. USGS Historical Photo Library, Denver. US Navy photo.



Freighter SS Jonathan Harrington caught in ice off Point Barrow, part of the supply operation for oil exploration in the Naval Petroleum Reserve in 1945. J.C. Reed photo 897. USGS HIstorical Photo Library, Denver.

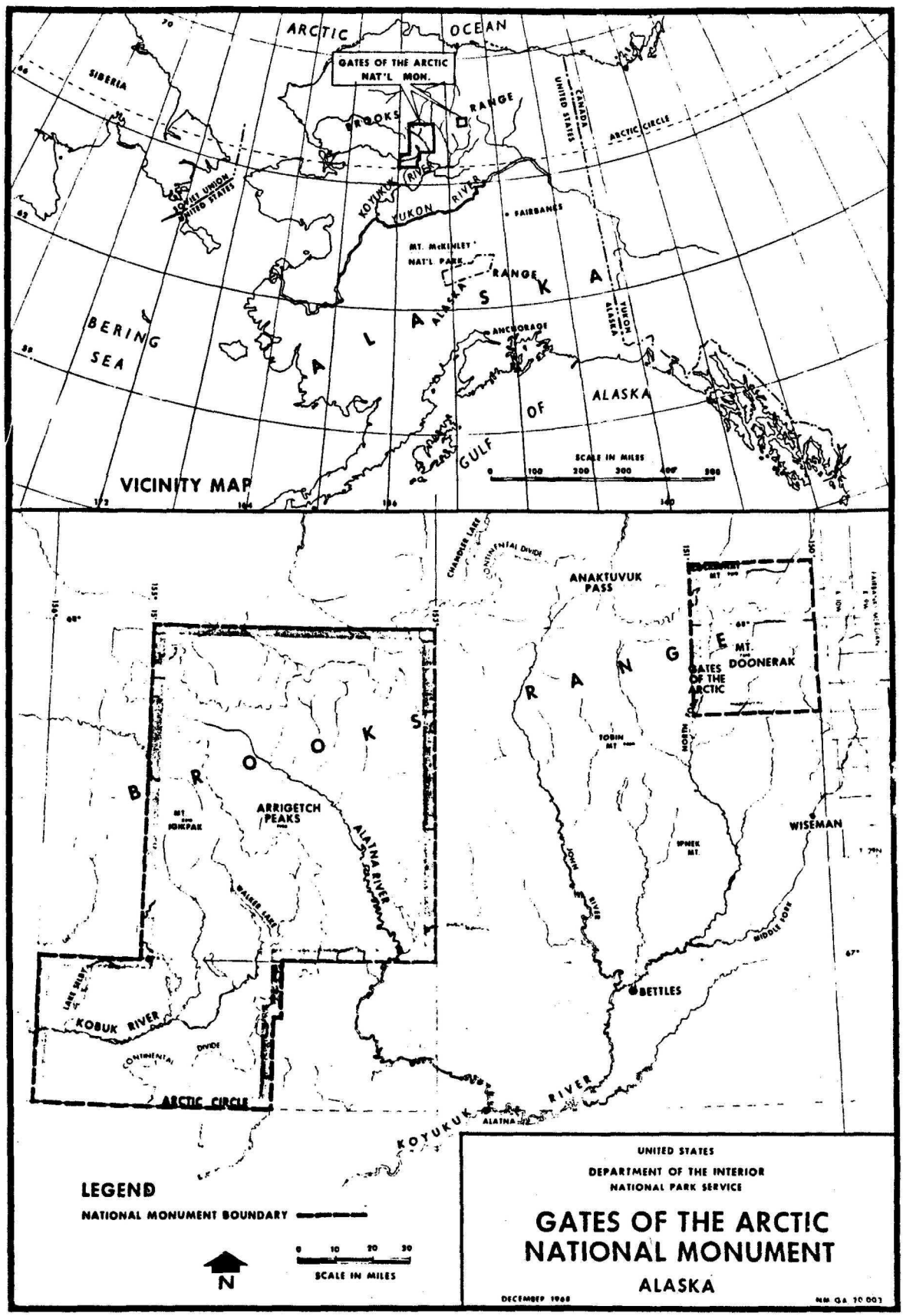


Oil exploration supplies lightered to beach at Barrow during Barrow Expedition of 1947. The new age begins in the arctic. J.C. Reed photo 913. USGS Historical Photo Library, Denver.



Air-freighted supply cache for later use by USGS oil-exploration field teams. The modern infrastructure builds. J.C. Reed photo 917 of 1947. USGS Historical Photo Library, Denver.

The original National Park Service Gates of the Arctic parkland proposal, from the Merrill Mattes, et al., Kobuk-Koyukuk Reconnaissance of 1968.



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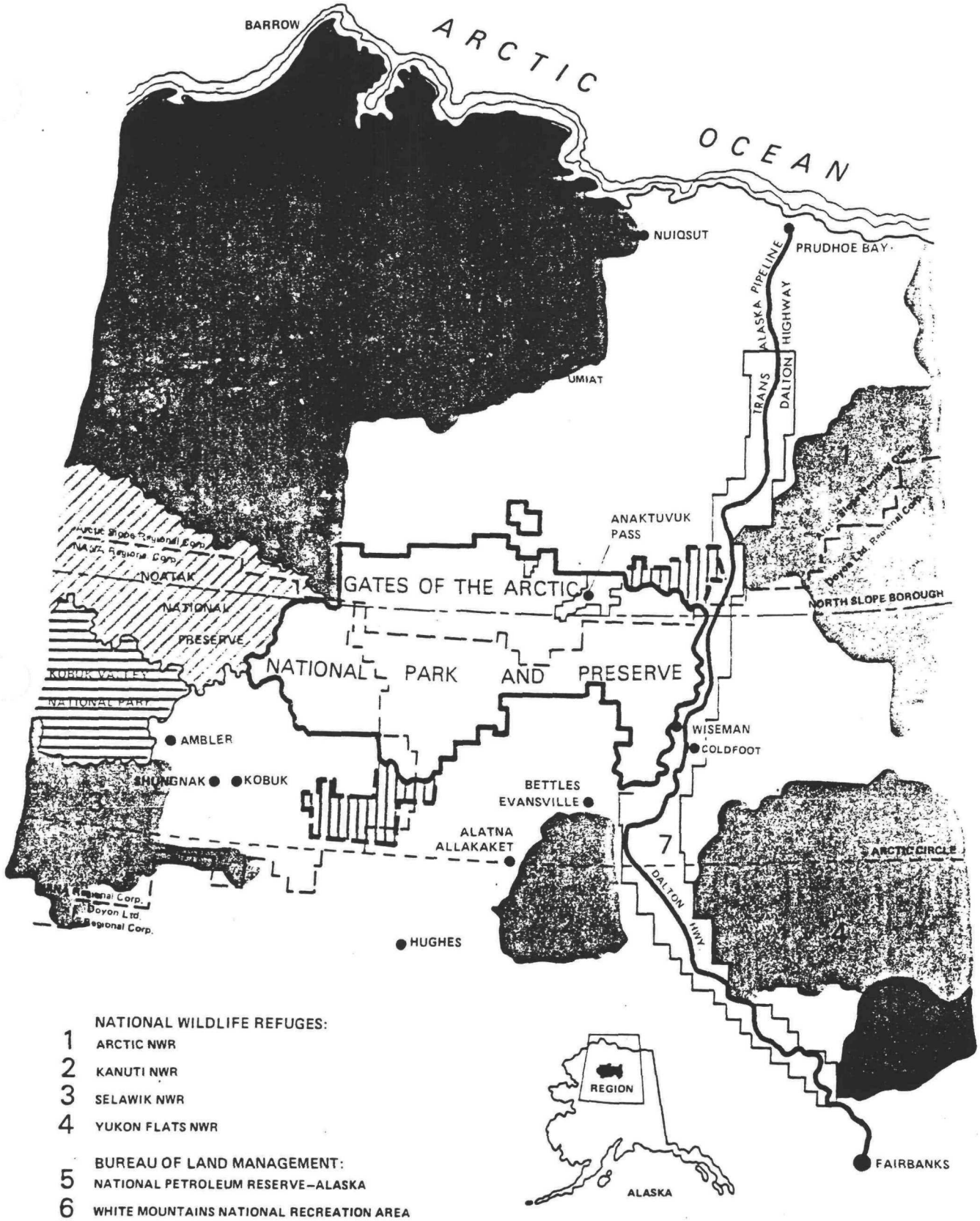
The new land patterns in the Gates of the Arctic region.



NATIONAL WILDLIFE REFUGES:

1 ARCTIC NWR

2 KANUTI NWR

3 SELAWIK NWR

4 YUKON FLATS NWR

BUREAU OF LAND MANAGEMENT:

5 NATIONAL PETROLEUM RESERVE–ALASKA

6 WHITE MOUNTAINS NATIONAL RECREATION AREA

7 UTILITY CORRIDOR

REGIONAL CORPORATION BOUNDARY

PARK BOUNDARY

PRESERVE BOUNDARY

NORTH

0 10 20 30 40 50 MILES

0 20 40 60 80 KILOMETERS

REGION

GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

ON MICROFILM

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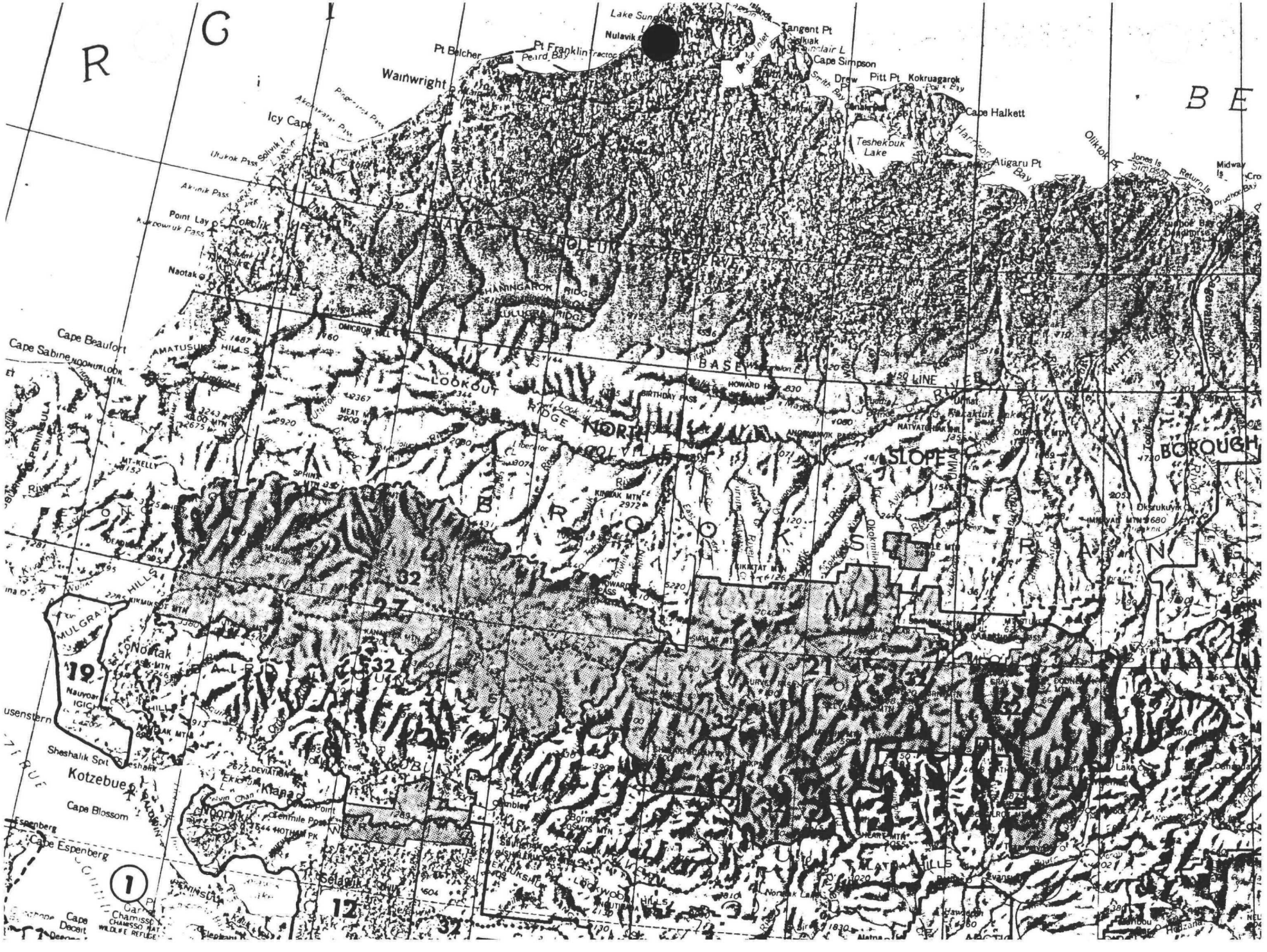
This segment of the USGS Alaska map, showing boundaries of conservation units established by the Alaska National Interest Lands Conservation Act of 1980, depicts the preserved lands across the Brooks Range: No. 21, Gates of the Arctic National Park and Preserve (the preserve is in two units indicated by dashed boundary lines, at the northeast corner and at the southwest corner); No. 27, Noatak National Preserve; No. 25, Kobuk Valley National Park; No. 19, Cape Krusenstern National Monument. At the right center margin is the boundary line of the westward extenstion of the Arctic National Wildlife Range, which carries the preserved lands of the Brooks Range to the Canadian border. Dotted lines indicate Wild and Scenic Rivers, including, from left to right, within Gates of the Arctic NP&P, the upper Noatak, the upper Kobuk, and the in-park reaches of the Alatna, the John, and the North Fork of the Koyukuk. Map reduced for page-size reproduction.



Lake Sun
Nulavik
Tangent Pt
Cape Simpson
Pt Belcher
Pt Franklin
Peard Bay
Wainwright
Icy Cape
Drew Pt
Pitt Pt
Kokruagarok
Cape Halkett
Teshekpuk Lake
Atigaru Pt
Oliktok Pt
Jones Is
Return Is
Midway Is
Point Lay
Kokolik
Naotak
Cape Beaufort
Cape Sabine
AMATUSUK HILLS
LOOKOUT RIDGE
NORTH SLOPE BOROUGH
BROOKS RANGE
MULGRAVE HILLS
Noatak
Nauvoar
Sheshalik Spit
Kotzebue
Cape Blossom
Cape Espenberg
Cape Deceit
Selawik
Kiana
Noorvik
Chamisso
32
27
19
21
12
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authority to proclaim National Monuments), angry at Udall's manuevering to achieve this last-minute coup, Johnson balked and refused to sign the Gates of the Arctic and other large-acreage proclamations. Not until after passage of the Settlement Act in 1971 would the Gates proposal be revived.[18]

*****

The 9 years between passage of the Alaska Native Claims Settlement Act of 1971 (ANCSA) and passage of the Alaska National Interest Lands Conservation Act of 1980 (ANILCA) telescoped historic decisions and events whose counterparts had taken a century in the trans-Mississippi West. The overriding result of this fast-motion Alaskan replay was the disposition by Congress of Alaska's 375,000,000 acres, almost all of which had been owned by the federal government. Through ANCSA, Congress lifted the land freeze that had safeguarded Native land-claim options. Alaska Natives were authorized to select 44 million acres. The State of Alaska could now resume selection of the balance of 104 million acres authorized by the Statehood Act of 1958. And, after a titanic struggle that tested the Nation's political processes, 106 million acres of new conservation units were established by ANILCA.

One of these new conservation units is the 8 million-acre Gates of

the Arctic National Park and Preserve. As finally defined by the statute, the parkland stretches nearly 200 miles from the Koyukuk's North Fork country westward to include the upper reaches of the Kobuk and the Noatak. North of the divide it captures the north-flowing streams and arctic valleys tributary to the Colville--from Itkillik on the east to Killik on the west. Excepting blocs of Native-selected lands in the Anaktuvuk Pass vicinity and scattered private tracts, the parkland comprises an integrated geographic region that extends from the ridgeline of the central Brooks Range to its eaves. Abutting it on the west is the Noatak National Preserve. And on the east, beyond the pipeline-haul road corridor through Middle Fork and Atigun Pass, stretches the expanded Arctic National Wildlife Refuge to the Canadian border. The Gates acts as keystone for this vast reservation of virtually the entire Brooks Range.

Seven million acres of the Gates parkland were designated National Park; 1 million acres in two sections were designated National Preserve. The southwest or boot section of the preserve on the upper Kobuk contains a congressionally reserved right-of-way that would, if needed, allow surface transportation between the Alaska Pipeline Haul Road (now Dalton Highway) and the Ambler Mining District north of the Kobuk River (Bornite and other mineral prospects). The northeast section of the preserve on the upper Itkillik contains acreage whose subsurface mineral rights are held

by the Arctic Slope Regional Corporation. Sport hunting is allowed in the preserve; otherwise it is managed as though it were part of the National Park. Excepting private tracts and Native corporation lands within the park boundary, the entire National Park was designated wilderness by ANILCA.[19] Under that law's provisions, also, the National Preserve lands are being studied for wilderness suitability.

The administrative history of the 9-year-long "d-2" period (so-called from the section of ANCSA that required federal agencies to make conservation-unit proposals to Congress) is, as previously noted, a complex one covered admirably by other writers.[20] Moreover, the Gates of the Arctic proposal was only one small part of larger issues played out on the national stage: philosophical and political contests over preservation and development; mobilization of both prodevelopment and proconservation coalitions to press their causes; and incredibly intricate bureaucratic and legislative histories, whose main fields of action--involving thousands of people--were Washington, New York, Denver, Juneau, Fairbanks, Anchorage, and other distant places. Even slight insinuation of these quagmire topics into this history of a remote mountain fastness would constitute a book-length interlude. It is the landscape of the Gates region and the actions thereon that have moved this narrative thus far. And there we now return.

During the 1970s two latter-day pilgrims, John Kauffmann and Ray Bane, traversed the Gates region summer and winter--learning its secrets, mingling with its people. Kauffmann, a writer and park planner, had been appointed by the Park Service to steer the Gates proposal through the years leading to its establishment-- first by Presidential Proclamation as a monument in 1978, then by Act of Congress as park and preserve in 1980. A seasoned wilderness trekker, Kaufmann was also a poet and romantic. He was attuned, as Marshall had been, to the lure of the central Brooks Range. Bane, his assistant, was an ex-teacher in Arctic Coast villages and an anthropologist. His years of arctic experience, during which he and his wife Barbara had several times circuited the country by dog team, had prepared him for local residence and extended surveys through the region.

In gathering the data that described the park proposal and informed congressional decisions, these men reinforced their already strong attachments to the country. Kauffman's concept of the park would respond to Robert Marshall's plea to "keep northern Alaska largely a wilderness." In a 1976 speech Kauffmann described the subtle variations on the basic theme of the Gates' arctic mountain scenery, from valley to valley, east to west, south to north: "The gothic grandeur of Mount Doonerak . . . The stately valley of the Reed . . . the stark sweep and big skies of

the arctic foothills." He closed with the thought that

> the greatest resource which this proposed park offers is space--space for wandering, space for solitude. It is more than a collection of scenic features; it is an integrity of landscape, its size commensurate with the requirements of its ecosystems and the breadth needed to realize its recreational and inspirational opportunities. For 300 years, Americans have benefitted from such space, beckoning to frontier experiences. Arctic Alaska is the last such frontier and even it is being circumscribed by developments. Big wild, beautiful landscapes, conducive to primitive travel and sojourn, stretch no further under the United States flag.[21]

Kauffmann believed that the central goal of the National Park Service at Gates of the Arctic should be to "retain the park features and ecosystems in the present untrammeled condition." Later, this purpose was given statutory sanction in ANILCA when Congress declared that "The park and preserve shall be managed . . . To maintain the wild and undeveloped character of the area . . . ."[22] Given the special nature of the Gates landscape, Kauffmann urged a protective but unobtrusive management regime, with no in-park developments that would alter wilderness qualities. "While other proposed parks in Alaska and existing

parks in the Lower 48 states offer a wider range of modern recreational opportunities, Gates of the Arctic would be available for the experiences that only wild, untouched country can provide."[23]

The romantic quest, made earnest by hardship, was never far from Kauffmann's thoughts. His prescription for a personal, hands-on approach to working in such a place--a stewardship that would transcend the mere job to scale peaks of aspiration--is a call to greatness:

> No facilities, few visitors do not add up to easy management for the proposed Gates of the Arctic National Park. The area is immense and rugged and inadequately explored, the climate severe, ecological relationships delicate and imperfectly known, local cultural patterns deserving sensitive understanding. A ranger's vehicle will be his airplane, canoe, dogsled--or his boots. He may heat his cabin with wood he has cut, while his wife draws water with a bucket. He must accept arctic dark and cold, few amenities, and the sometimes delicate relationships of small-village living. It is to be hoped that local hire provisions in the legislation will allow the Park Service to alloy experienced NPS supervisors with skilled local residents strong to the life of the arctic and loving of

> the area that is to be preserved in their care. Such a management team, thriving on the hardscrabble life, can grant Bob Marshall's plea, keeping true the faith that somewhere in America there will always be . . . wild country of adventure, a park for discoveries--beyond the ridges and within ourselves.[24]

Ray Bane became the first resident representative of the Park Service at the Gates. He and his wife Barbara had the experience and the tools to start the tradition envisioned by Kauffmann. Excerpts from one of Ray's field-trip reports, recording his and Barbara's exploration of the upper Noatak Valley, resonate with both the severities and the inspirations of that country:

> Up at 5:00 a.m.. Departed with the loaded sled at 9:50 a.m. cutting across a narrow strip of tundra to the river ice. For the first two miles a thin layer of snow over the ice made for excellent traveling conditions, but we came upon an expanse of wind-polished glare ice near the mouth of Portage Creek. The dogs could not gain traction and were literally blown off their feet by winds out of Portage Creek Pass. The sled ice rudder helped to maintain some control. Three miles of slipping and sliding brought us to the beginning of the deep soft snow. For the next six miles I walked ahead on snowshoes while Barbara drove the

team. We averaged 2.3 mph and had to make several rest stops. With the exception of one short portage across a particularly large bend, our trail followed the winding path of the river eastward.

Snow cover at this time of year is often referred to as "sugar snow." Beneath a thin top layer the snow has become granulated and lacks body. Anything crossing such cover breaks through and sinks to the bottom. After the snow has been disturbed it quickly sets up and becomes a firm surface. The trail behind us will easily support a loaded sled and team tomorrow. I once spent five arduous days breaking trail to travel 43 miles and later covered the same distance in eight hours. Snowmachines have a more difficult time than dogs attempting to cross such snow, because they spin out and bog down. The best way to travel across such snow cover is to simply strap on snowshoes or skiis and slog through it.

Five miles east of Portage Creek we crossed an expanse of snow covered overflow. Fortunately the mild temperatures prevented the mush-like mixture from adhering to the sled. This type of overflow is a major hazard to winter travelers during subzero temperatures. Dogs or machines cannot get traction, drag on runners increases drastically, the slush

immediately freezes to any cold surface, and it will soak men and dogs. One must portage around such conditions, wait for them to freeze over, or wade across and then build a fire to dry out.

One mile east of Portage Creek we passed a band of 29 caribou grazing along the north side of the valley. Feeding craters and trails throughout the valley indicate a fairly large number of caribou have been wintering in the area. Fresh wolf tracks and the remains of two caribou were found on the river. Three moose moving together up the valley were sighted as were several flocks of ptarmigan and one red fox. Tracks of wolverine, lynx, and hare were noted on the river or in willow groves.

The Noatak Valley becomes progressively more scenic as one travels into its upper reaches. The mountain walls become higher and more precipitous. Mt. Igikpak's dark granite face and needle-like peak stands above its lesser snow blanketed mates like a beacon luring the traveler toward even greater natural grandeur.

Several willow stands along the river offer potential camp sites particularly where the course of the river runs at a right angle to the alignment of the valley. One may camp

on the west side of such stands gaining the maximum protection from the east wind. Sites conducive to long term camping are found in small willow lined draws along the sides of the valley. The Twelve Mile Creek draw on the northeast side of the valley appears to be an attractive campsite with excellent protection from the wind and an ample supply of large willows. These well protected draws in strategic locations undoubtedly drew human users since their earliest occupation of this area.

We stopped and set up camp at 2:30 p.m. in a small willow grove near the mouth of Twelve Mile Creek. Both we and the dogs are a bit tired from today's travel. Setting up camp, gathering dry willows, chopping and melting ice for water, preparing dogfood and feeding the dogs, cooking for ourselves, etc., takes three to four hours. Then harnesses have to be dried, repairs made to equipment, the day's notes written up, clothes dried, etc. By the time all this is done it's time to crawl into the sleeping bag and turn out the lamp.

The wind is increasing and the overcast lowering this evening.

. . . . . .

Above Lucky Six Creek our route became more southerly. There was a noticeable incline as we progressed. Overflow ice with a few patches of light water provided firm footing. Only a trace of snow covered the ice. These conditions appear to prevail to the very head of the valley.

The terrain is very impressive. The clouds lifted somewhat revealing mountain peaks and ridges resembling giant pieces of broken glass set on edge. Deep cirques and narrow canyons form large cavities into the barren rock. However, there is no denying the bleak productive potential of this headwaters' area. It would not be an attractive place for a hunter looking for game in the winter. Past subsistence use of the upper Noatak Valley was likely minimal above the mouth of Lucky Six Creek.

Unfortunately the wind increased as we moved up the valley with clouds of ground drift and passing snow showers occasionally creating complete whiteout conditions. Igikpak's peak was completely hidden. We were forced to turn around and head back five miles above the mouth of Lucky Six Creek.

> Towards evening the wind subsided and the clouds began breaking. The sun appeared briefly between mountains flanking Iyahuna Creek and painted the ridges and bases of the clouds a deep orange and gold. Dark clouds continue to fill the upper and lower valley.[25]

As an on-site anthropologist Ray became the intermediary between a known past and an unknown future, between the Park Service and the people of the scattered camps and communities who wondered how the new parkland would change their lives. He later explained his role in these words:

> The work of numerous researchers, of which I am but one, has revealed a complex interrelationship between what many have called a wilderness and the people who have and continue to draw upon these environments for their basic subsistence needs. Recognizing its responsiblity to avoid placing undue hardship on established rural Alaskans, the Park Service has pioneered research efforts into subsistence and attempted to develop new management regulations and policies to permit the continuation of this ancient lifestyle.
>
> My personal role in the N.P.S. subsistence effort has been varied ranging from actually living among active

> subsistence based Native peoples to helping these same people to understand and reply to proposed subsistence regulations. Along the way I often find myself assisting in environmental studies, identifying cultural sites, acting as a liaison between N.P.S. and village councils, explaining N.P.S. policies and regulations to miners, trappers, big game guides, and others, assisting visitors to the new parklands, etc. Utilizing a small aircraft, dog team, and boats, I visit numerous remote villages and scattered homesites. My office is my home, a small log cabin in the village of Bettles Field near the Gates of the Arctic National Monument.[26]

In late 1978, the Alaska Lands bill jammed in Congress. The ANCSA-imposed deadline for Congressional action on this issue was rapidly approaching. Fearing that the proposed conservation units would be lost through Congress' inaction, President Jimmy Carter and Secretary of the Interior Cecil Andrus joined in a massive withdrawal of these proposed areas: the President proclaiming 17 National Monuments, including Gates of the Arctic; Secretary Andrus withdrawing 13 potential refuges by public land orders. This action held the conservation units in trust, giving Congress more time to resolve its differences. And it reinforced the need for Congressional action, for the National Monuments would have to be managed much more restrictively than the parklands proposed in

the Alaska Lands bill. The bill had been crafted to blend the national interest with the needs of local people for access, cabin privileges, subsistence use, and sport hunting. The proclamations brought into play general federal regulations only marginally adaptive to Alaskan conditions.[27]

Predictably, all hell broke loose in the hinterlands. Ray and Barbara Bane, still the only resident field representatives near the proposed northern parklands, received the full brunt of resentment in their community. Years of patient work--explaining the proposals, relaying local viewpoints, countering rumors, establishing trust--went down the drain, except for the understanding of a few staunch friends.[28]

This response was felt across Alaska by Park Service people, as large segments of the public and press waxed furious at what they perceived to be an unconstitutional application of the Antiquities Act and public land laws.

Recognizing that the proclamations and withdrawals represented a holding action pending congressional action, the Park Service in Alaska--now headed by John Cook--approached management of the 41 million-acre National Monument accession with caution. Lacking funds, manpower, and public acceptance, Cook determined that the principles of protection, presence, and persuasion, rather than

aggressive management and enforcement, should prevail. By hook and by crook he and his cohorts throughout the Service assembled a temporary-duty Ranger Task Force that provided a thin line of custodial care for the new parklands during the 2-year National Monument period. It was a kind of interregnum, bridging the gap between congressional acts. For both the managers and the carefully chosen rangers in the field, it was a balancing act between opposite public perceptions that criticized Park Service aggressiveness on the one hand and its lassitude on the other.

Despite these criticisms, and instances of threat and vandalism, the handful of Task Force rangers carried out their sensitive assignments at Gates and other areas. They established a presence, greatly restricted illegal hunting, and absorbed much hostility. In time, particularly after some ugly episodes of plane tampering and arson by disgruntled individuals, the great majority of Alaskans who came in contact with them accepted the rangers as people, despite unwavering opposition to the monuments and other withdrawals. A number of the rangers would come to Alaska on permanent assignment after ANILCA was passed.[29]

Passage of ANILCA in December 1980 gave the congressional stamp of approval to the new parklands. The Park Service inaugurated permanent staffing, began legally mandated park planning, and started to develop steady operational relationships with

neighboring individuals and communities. The pioneering phase of Park Service activities during the proposal and National Monument periods had largely vindicated the management principles of gradualism, persuasion when at all possible, and day-by-day integration with park landscapes and neighbors that had long been advocated by the Service's Alaska employees. At Gates of the Arctic and in the other new areas, small field staffs--most of them remotely situated in communities that only grudgingly acquiesced to the new system of land tenure and authority--went about the business of setting up their parks. At Gates, the ultimate wilderness park, the main task would be to allow Nature to rule these landscapes in its own way, with managers intervening in authorized human activities only as necessary to conform them to the natural regime.

As John Kauffmann predicted, this task has not been easy. The initial planning process, now mercifully ended, had forced both the park staff and its neighbors to contemplate the full range of problems that might possibly occur. On the one hand were the fears of park neighbors over potentially arbitrary and capricious administration. On the other was the fear of administrators over potential worst-case violations of law covering a wide range of complex issues--subsistence, access, cabins, sport hunting-- that distinguish wilderness parklands in Alaska from traditional parklands in the Lower 48. Acculturation under ANILCA's

provisions has become a two-way street: local people facing another large dose of change that threatens their traditional patterns; Park Service people required to adapt their own venerable traditions of stewardship to new modes of management flexibility under a law that deals almost as much with neighbors as with natural landscapes.

In contrast to the fearsome systemic levels of concern forced by the planning process, day-to-day operations deal with specific cases. To the credit of park neighbors, there have been remarkably few premeditated violations of law and regulation. And, on the whole, in the gray areas created by the law's complexity, moderation and going half-way have marked the efforts of both park staff and park neighbors to respond rationally to the new realities.[30]

A working example of such efforts is underway at the time of this writing. The park's Subsistence Resource Commission, made up mainly of local people, is working with the park staff to develop a Subsistence Hunting Plan for the park that will satisfy both park managers and subsistence hunters on matters of eligibility, traditional-use zones, and access--all touched upon by ANILCA, but requiring detailed resolution in the specific park context. A phase of this work relates to the problem sketched in Chapter 6--access of Anaktuvuk Pass villagers to summer hunting and

fishing sites by ATVs. Existing access easements across park lands are unsatisfactory to the villagers because of bad terrain, yet summer ATV traverse across park lands not within easements is prohibited by law because of potential damage to vegetation. The Park Service and the villagers are exploring the possibility of a land exchange or, in the last resort, a legislative adjustment to accommodate both park protection and the villagers' subsistence requirements. This is a tough problem; both park protection and subsistence needs are weighty concerns, as reflected by provisions in ANILCA. "Winning" the negotiation is not the point. The people of Anaktuvuk Pass are limiting their access requirements "to an area of demonstrated heavy subsistence use." The Park Service has averred that it will "go to every legitimate length to respond in as helpful a way as possible."[31]

* * * * *

In historical perspective, the problems and controversies of these first years of park establishment can be viewed as a shakedown cruise. Throughout history the laying on of new land-tenure systems has been painful. Parklands, no matter that they are dedicated to holding intact the diminishing spaces of yesteryear landscapes, are parts of Alaska's new land-tenure system--and are therefore resented. The bugs and contradictions in a law as lengthy and broad of scope as ANILCA--product of 9 years of heate

debate and political compromise, pioneering the principle that parks and traditional people dependent on park landscapes can survive together--were to be expected. The fact that all of this is occurring in a larger context of change besetting Alaska could only contribute to stress and turbulence. In this light, for most of the immediately affected people, the transition from an unfenced local commons to a partially fenced national commons shared by local people is progressing remarkably well. In the long run, for those older denizens and their younger followers who wish that things had not changed, creation of the Gates of the Arctic Park and Preserve will be seen as a conservative act. In this place, whatever changes occur around it, the landscapes and life ways of a more innocent age can be perpetuated.

Chapter 8 Notes

1. John McPhee, Coming Into the Country (Farrar, Straus and Giroux, New York, 1977), 83.

2. Interviews with Al Withrows, elder and younger, summer and fall 1985.

3. Foote, The Upper Kobuk Project, 53.

4. Charles Keim, comp., Alaska Game Trails with a Master Guide (Alaska Northwest Publishing Co., Anchorage, 1977), 28.

5. Anchorage Daily News, 3/5/69, 9.

6. Theodore R. Swem, personal communication, 1/28/87.

7. Olaus J. Murie, "Dr. Murie Reports on Wilderness Study of Impressive Brooks Range," undated, unsourced newsclipping (presumed to be from New York Times, late 1956), in Murie Collection, University of Alaska, Fairbanks, Archive.

8. Weeden's Alaska, Promises to Keep, esp. Chaps. 4-6, gives an excellent overview of the conservationists' developing doctrine in response to the oil boom. A special "Alyeska Project" edition of Oil & Gas Journal published in 1974, traces the environmental safeguards built into pipeline construction. In later years, industry spokesmen commented that the conservation injunction spurred improvements in pipeline construction technology that proved of great benefit in the operational stage. Seminal sources on development trends and impacts include: David M. Hickock, "Developmental Trends in Arctic Alaska," July 1, 1970, typescript presentation paper available at Arctic Information and Data Center, Anchorage; anon., "Petroleum Development in Alaska," Alaska Review of Business and Economic Conditions, University of Alaska, Institute of Social and Economic Research, 14(1), Mar. 1977, 1-15; B. Steven Strong, The Social and Economic Impact of the Trans-Alaska Oil Pipeline upon the Alaska Native People, McGill University, Montreal, June 1977.

9. T.R. Swem, personal communication, 1/28/87.

10. Roger W. Allin, "Alaska, A Plan for Action," typescript report, National Park Service, Washington, 1966, 7, 13-14.

11. NPS Briefing Book presented to Governor Hickel in Juneau, October 10, 1967; Ltr from Hartzog to Hickel, 12/7/67; Merrill Mattes, et al., "Kobuk-Koyukuk, a Reconnaissance Report" (typescript report, NPS, San Francisco, June 1969), 2.

12. Mattes, "Kobuk-Koyukuk," 2; personal communication from Jack Hession, Alaska representative of the Sierra Club, 3/31/86.

13. BLM Recreation Specialist Wayne Boden memorandum of 10/21/64, "Inventory of the South Slope of the Brooks Range"; ltr from BLM Fairbanks District Office Manager Robert C. Krumm to Nancy Hundt, Juneau Group, Alaska Chapter of the Sierra Club, 3/28/69. Many other conservationist groups and individuals were involved during this formative period of urgency when the imminence and the subsequent fact of major oil discoveries loomed as a threat to Alaska's arctic wilderness. See Robert Cahn, The Fight to Save Wild Alaska (National Audubon Society, Washington, 1982) for a full account of groups, people, and actions. For a general review of these developments from the NPS perspective, see G. Frank Williss, The National Park Service and the Alaska National Interest Lands Conservation Act of 1980 (NPS, Denver, 1985), 29-93. A select file of Richard J. Gordon's papers has been deposited in the history collection of Gates of the Arctic NP&P.

14. Mattes, "Kobuk-Koyukuk," 4.

15. Ibid., 13 and following map.

16. Ltr from Bailey Breedlove to Chief, Office of Resource Planning, SSC, 4/8/69; Sierra Club, Alaska Chapter-Alaska Conservation Society broadside, Gates of the Arctic NP proposal, printed in Juneau, 1969; McCord quoted in ltr from Sen. Ernest Gruening to Secretary of the Interior, 2/19/64. All ltrs in Gates of the Arctic NP&P history file.

17. T.R. Swem, personal communication, 1/28/87.

18. Williss, National Park Service and Alaska National Interest Lands, 56-59. See John P. Crevelli, "The Final Act of the Greatest Conservation President," Prologue: The Journal of the National Archives, 12(4), Winter 1980, 173-91, for administrative history of the proclamations episode. By personal communication of 1/28/87, T.R. Swem clarified the sequence of events that resulted in the Udall-inspired National Monument proposal, which anticipated both the study-team's published proposal and the conservationists' proposal of March 1969.

19. T.R. Swem notes that the original proposals to Congress in 1973 by then Secretary of the Interior Rogers C.B. Morton would have designated the Gates of the Arctic an "instant" wilderness. That designation was blocked by the President's budget office, but Morton, in a press conference, vowed that he would push the idea with Congress. Swem, personal communication, 1/28/87.

20. See for example the above-cited works of Williss, Cahn, Weeden, and Arnold. Awaiting the serious student are libraries of Congressional reports, reports of the Joint Federal-State Land Use Planning Commission (a monitoring and coordinating agency established by ANCSA to oversee the d-2 process), reports and position papers of the Committee for Management of Alaska Lands (a pro-development group opposed to large conservation-unit withdrawals), and an avalanch of magazine, journal, house organ, and newspaper articles and editorials covering all segments of opinion in the preservation/development controversy unleashed by ANCSA and its progeny.

21. John Kauffmann file, Gates of the Arctic NP&P.

22. Public Law 96-487, Dec. 2, 1980 (94 Stat. 1378, Sec. 201(4)(a).

23. John Kauffmann, "Gates of the Arctic National Park briefing statement, June 1976, Kauffmann file.

24. John Kauffmann, draft management concept, summer 1978, Kauffmann file.

25. Ray Bane, Winter Field Trip into the Upper Noatak Valley, March 16-26, 1981, typescript report, Bane file, GAAR NP&P.

26. Ray Bane, Tasks and Objectives of Subsistence Coordinator in Northwest Alaska, undated (ca. 1980) report, Bane file.

27. Audubon Society briefing paper, "Carter Administration, Alaska Lands," undated (ca. Jan. 1979); Williss, National Park Service and Alaska Lands Act, 209-24.

28. Personal communications from Ray and Barbara Bane, various dates.

29. Ibid., 276-82; personal communications and involvement with Task Force and later permanent rangers.

30. The writer has participated in the Gates planning process and has associated extensively with field staff and park neighbors during the field work incident to this history project.

31. Quotations from correspondence between Jacob Ahgook, Acting President, Nunamiut Corporation and Boyd Evison, Regional Director, NPS. Ltr from Ahgook of 11/7/85; ltr from Evison of 12/6/85.

Epilogue

For the writer, coming to the end of this history after 2-1/2 years of immersion in it is both a relief and a sad leaving of unforgettable friends and places. My partners in bush-whacking field adventures to the old sites will be missed, as will the pilots and park people who got us out to our base camps. The people who welcomed us to mining camps and far communities, even though we did represent the National Park Service, recall the hospitality and helpfulness of an older Alaska--thank God, not dead yet. And from the writings and anecdotes of those long dead, whose footsteps we had the good fortune to follow for awhile, grew a distant friendship and present admiration that surmounted the Great Divide, over which, in awhile, we will follow them once more.

Memories of people and places crowd the tapestry of these 2-1/2 years:

* A river float from Walker Lake through the canyons of the Kobuk, with Cantwell's notes at hand.

* Our camp on Glacier River under the loom of Blue Cloud Mountain, a score of old cabins nearby.

* The Ernie Creek-North Fork junction, with Marshall's Doonerak and Gates of the Arctic in view.

* Elijah's old eyes scanning Chandler Lake for signs of that last great caribou hunt.

* Arctic John's sod-house ruin in the angle of Nugget Creek and the haul road, trembling with the passage of heavy trucks.

* Vern Watts' discovery claim on Hammond River, the boiler cabin still standing, sunbeams shafting through the broken roof.

* The deserted dance hall at Old Bettles, crowded by willow and alder, its lights and laughter gone, melting into the ground.

* Fourth of July at Wiseman, still calling the folks in for games and food and frolic.

At Wiseman, where we spent some weeks recording the old structures, a special relationship grew:

Harry Leonard showed us his cache of old pictures and documents, his museum of mining machines. It was a trove of history

illumined by a memory that reached back half a century in this place.

Walter Johnson, owner with Bill English, Jr., of the old Wiseman store, showed us the old sites and told of his days as ARC foreman in the Forties. When Vern Watts died in 1946, Walter and George Miscovich--then working with a Cat on the Hammond River road--placed their friend in a sluice box and lashed it to the Cat blade for the trip to Wiseman. Before they started back they sat for a moment in Vern's cabin to bid him goodby with the last of his whiskey. Vern was entirely alone except for his Wiseman friends.

Gentle philosopher Ross Brockman--when we met him, completing his 18th year without leaving Wiseman--had tried prospecting during his early years of residence. He told us that he knew of many places in these mountains where there was no gold.

Charlie Breck, who prospected the North Fork with trader Pat O'Connell in 1947, keeps very cold beer in his permafrost- chilled cellar. He showed us around the Linda Creek drift mining site, telling us how the old system worked, and allowing that he had never fancied underground mining because he would be underground soon enough. When we proposed to Charlie that we should record all decipherable data from the fading markers in the Wiseman

Cemetery he acquiesced: "I don't hear many of those stiffs complaining, but go ahead--they won't mind."

*****

And so the tales go on. There is an integrity in these people and places that makes being a historian a joy. Perhaps in no other site did that integrity so strike us as on the upper reaches of Spring Creek off Wild Lake. Here Austin Duffy's old boomer dam and cabin stood untouched except for nearly a century's exposure to the elements. The crafted, salvaged implements, the leaning remains of cabin and dam, the laboriously piled rocks at the side of the creek had brought him no return in gold. Yet one suspects in such a place--alone with the wind and the creek tumbling through slotted mountains to the lake glimpsed far below--that Austin Duffy probably got what he came for.

Recommendations for further work on Gates of the Arctic NP&P Historic Resources

1. Finish HABS documentation of structures in and near the park. Many of the sketches on file at Alaska Regional Office are reproduced in the site descriptions that follow. Many of the structures so sketched are in jeopardy. Finished documentation on file in the Library of Congress would be a valuable service to students of frontier architecture.

2. Perform selected historical archeology at those sites described as having potential. The judgements in Russell Sackett's site descriptions have great validity in this regard, for Russ was a field archeologist for many years before becoming a historical architect. Of greatest interest, perhaps, would be sufficient archeological work to uncover and identify the progression of tools--homemade, adapted, and manufactured--that trace the evolution of mining technology in this isolated district.

3. Develop cooperative relationships with Doyon, Ltd. and/or claim holders to assure preservation of the Yale Cabin site and the Vincent Knorr Cabin site. In terms of structural remains these are the best sites known in the park, and they both have historical associations worth perpetuating.

4. Develop historical data for and revisit to evaluate the historic mining site and cabin ruins visited by mining assessment and compliance teams (see section on these sites below). These sites were not visited by the history survey team. But descriptions provided by the mining survey teams indicate a potential National Register property at Down River Claim No. 2 on the Middle Fork. And the Alder Creek Cabin, because of its unique architectural features, still detectable even in its ruined state, should be recorded by a historical architect.

5. With assistance from Alaska Regional Office cultural resources specialists, the park should develop a position paper on the many lost sites discovered in the park. These are sites too far gone, in ruin, stripped and salvaged, and anonymous. In their deteriorated condition, isolation, and obscurity--as elements of a subordinate theme--they do not warrant public expenditures, though the presumed historic remnants should remain in place for Nature's work. A defined management position on these sites would be evidence of compliance with the National Historic Preservation Act of 1966, as amended. Such a position would encourage focus on those few sites worthy of further work and/or preservation.

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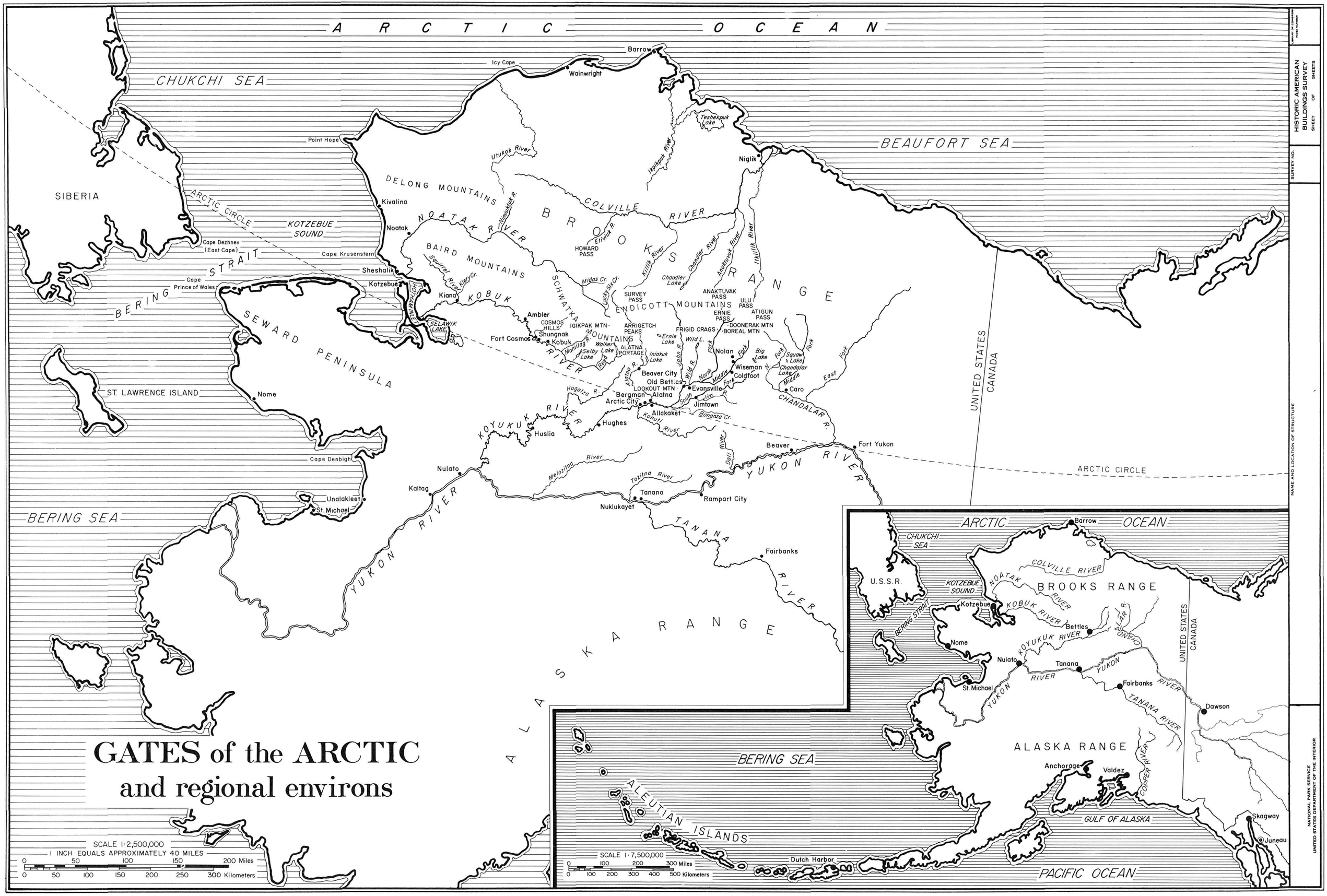
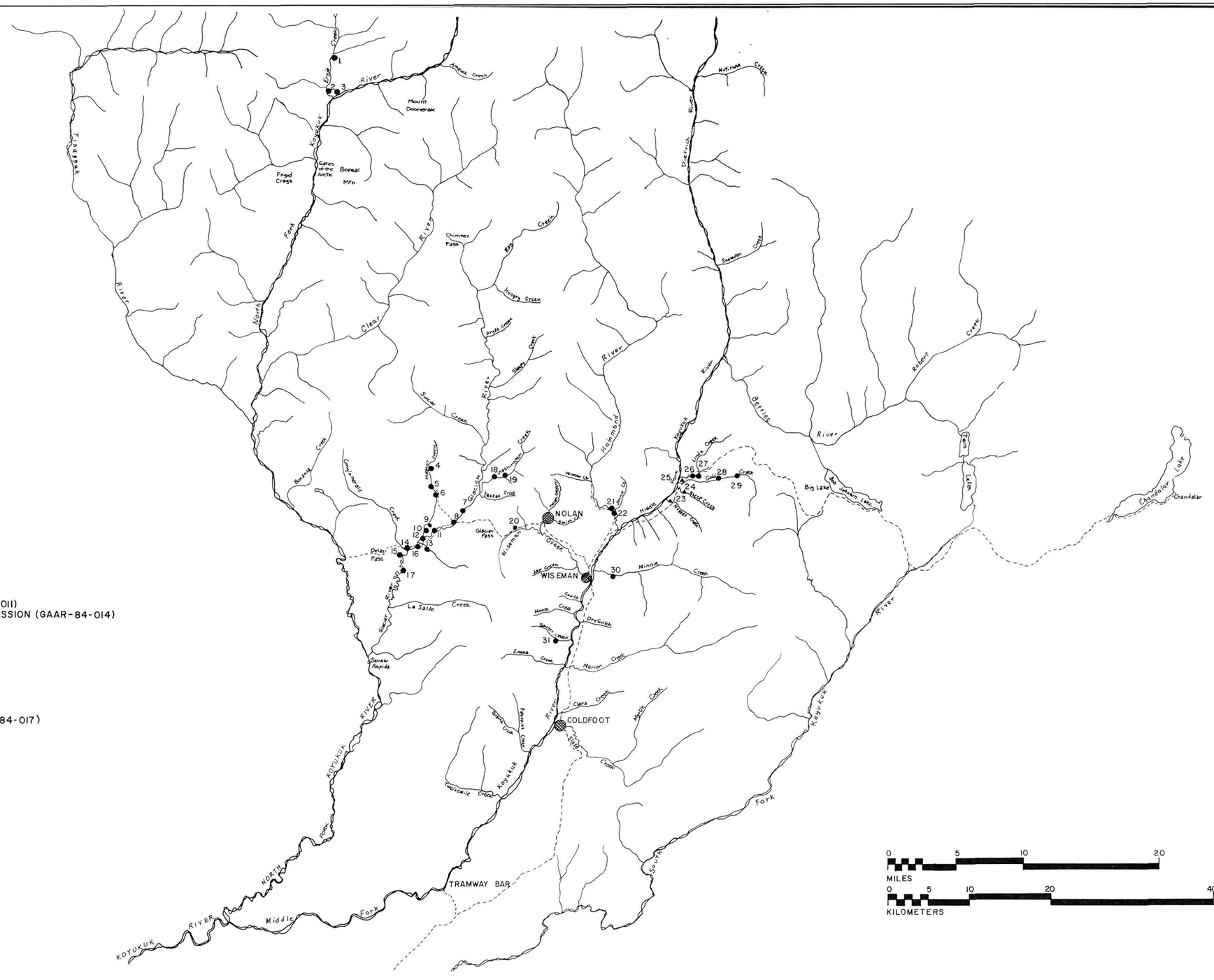


GATES of the ARCTIC and regional environs

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET OF SHEETS
SURVEY NO.
NAME AND LOCATION OF STRUCTURE
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR



KEY:

1	CACHE (GAAR-84-003)
2	TRAPPER'S CAMP (GAAR-84-001)
3	ERNIE JOHNSON'S SITE (GAAR-84-002)
4	IKOVICH'S MINING CABIN (GAAR-84-007)
5	KNORR'S MINING CABIN (GAAR-84-008)
6	MINING CABIN REMAINS (GAAR-84-006)
7	NESS'S DRIFT MINE (GAAR-84-021)
8	YALE'S CABIN & DRIFT MINE (GAAR-84-011)
9	CABIN REMAINS (GAAR-84-009) & DEPRESSION (GAAR-84-014)
10	CABIN REMAINS (GAAR-84-005)
11	DRIFT MINE (GAAR-84-010)
12	DRIFT MINE (GAAR-84-004)
13	DRIFT MINE (GAAR-84-013)
14	CABIN REMAINS (GAAR-84-016)
15	TRAPPER'S CABIN (GAAR-84-018)
16	DRIFT MINE (GAAR-84-012)
17	KNORR'S SHEEP HUNTING CABIN (GAAR-84-017)
18	MINER'S CABIN (GAAR-84-020)
19	MINER'S CABIN (GAAR-84-019)
20	WOODCHOOPER'S CABIN (GAAR-84-015)
21	WATT'S DRIFT MINE
22	DETROIT MINING COMPANY
23	ETALOOK'S SOD HOUSE (CHN-015)
24	JONAS'S SHELTER
25	ARC SHELTER CABIN (CHN-007)
26	SUTHERLAND'S MINING CABIN
27	WILCOX DRIFT MINE
28	DRIFT MINE
29	MINER'S CABIN
30	DRIFT MINE (WIS-050)
31	MILLER'S MINING CABIN
----	WINTER TRAIL

HISTORIC BASE MAP

EASTERN SECTOR GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE AND ADJACENT AREAS

LIBRARY OF CONGRESS INDEX NUMBER

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET OF SHEETS

SURVEY NO.

NAME AND LOCATION OF STRUCTURE

DRAWN BY:

NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR